

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Y     | Z      | x     | y     | L*    | a*    | b*     | a'     | b'      | OYLCVM_ONW_0 |    |                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|-------|--------|--------|---------|--------------|----|------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |        |       |       |       |       |        |        |         |              |    |                  |
| 48.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 24.62 | 0.91   | 0.656 | 0.331 | 56.7  | 80.0  | 83.4   | 0.2704 | -0.0287 | %00(r>0,009) | 00 | 590_770          |
| 83.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 95.66 | 8.37   | 0.445 | 0.509 | 98.3  | -21.6 | 109.5  | 0.2059 | -0.0382 | %Y0(r>0,009) | 01 | 490_770          |
| 35.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 71.91 | 8.35   | 0.308 | 0.619 | 87.9  | -93.0 | 91.7   | 0.1706 | -0.042  | %L0(r>0,009) | 02 | 490_590          |
| 52.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 76.24 | 99.98  | 0.228 | 0.333 | 89.9  | -54.3 | -17.2  | 0.1898 | -0.0943 | %C0(r>0,009) | 03 | 380_590          |
| 17.29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5.22  | 92.5   | 0.15  | 0.045 | 27.3  | 91.6  | -120.1 | 0.3211 | -0.2246 | %V0(r>0,009) | 04 | 380_490          |
| 65.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 28.94 | 92.52  | 0.348 | 0.155 | 60.7  | 102.6 | -62.5  | 0.2822 | -0.1269 | %M0(r>0,009) | 05 | 380_490..590-770 |
| 48.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 24.62 | 0.91   | 0.656 | 0.331 | 56.7  | 80.0  | 83.4   | 0.2704 | -0.0287 | %00(r>0,009) | 06 | 590_770          |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0(r=0,009) | 07 | 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 08 | 380_770          |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0(r=0,001) | 09 | 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 10 | 380_770          |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |        |       |       |       |       |        |        |         |              |    |                  |
| 42.77                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 21.83 | 0.99   | 0.651 | 0.332 | 53.8  | 82.0  | 78.6   | 0.2741 | -0.0299 | %00(r>0,009) | 00 | 590_770          |
| 77.37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 95.05 | 9.14   | 0.426 | 0.523 | 98.0  | -24.7 | 109.0  | 0.2045 | -0.0383 | %Y0(r>0,009) | 01 | 490_770          |
| 35.41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 74.08 | 9.12   | 0.298 | 0.624 | 88.9  | -92.6 | 93.4   | 0.1713 | -0.0416 | %L0(r>0,009) | 02 | 490_590          |
| 53.08                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 79.03 | 108.87 | 0.22  | 0.327 | 91.2  | -50.5 | -15.0  | 0.1918 | -0.0932 | %C0(r>0,009) | 03 | 380_590          |
| 18.52                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5.83  | 100.7  | 0.148 | 0.046 | 29.0  | 95.9  | -117.2 | 0.3219 | -0.2164 | %V0(r>0,009) | 04 | 380_490          |
| 60.44                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 26.77 | 100.72 | 0.321 | 0.142 | 58.7  | 107.7 | -65.9  | 0.2874 | -0.1302 | %M0(r>0,009) | 05 | 380_490..590-770 |
| 42.77                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 21.83 | 0.99   | 0.651 | 0.332 | 53.8  | 82.0  | 78.6   | 0.2741 | -0.0299 | %00(r>0,009) | 06 | 590_770          |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0(r=0,009) | 07 | 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 08 | 380_770          |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0(r=0,001) | 09 | 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 10 | 380_770          |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |        |       |       |       |       |        |        |         |              |    |                  |
| 68.59                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 33.77 | 0.34   | 0.667 | 0.328 | 64.7  | 79.1  | 96.6   | 0.2644 | -0.0263 | %00(r>0,009) | 00 | 590_770          |
| 104.61                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 98.12 | 5.02   | 0.503 | 0.472 | 99.2  | -4.9  | 94.5   | 0.2133 | -0.0451 | %Y0(r>0,009) | 01 | 490_770          |
| 36.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 65.2  | 5.0    | 0.344 | 0.608 | 84.5  | -85.8 | 69.4   | 0.1727 | -0.0516 | %L0(r>0,009) | 02 | 490_590          |
| 42.19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 67.08 | 35.55  | 0.291 | 0.463 | 85.5  | -74.2 | -24.8  | 0.1789 | -0.0984 | %C0(r>0,009) | 03 | 380_590          |
| 6.22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2.77  | 30.86  | 0.156 | 0.069 | 19.1  | 40.7  | -130.2 | 0.2734 | -0.2715 | %V0(r>0,009) | 04 | 380_490          |
| 73.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 35.64 | 30.88  | 0.525 | 0.253 | 66.2  | 83.4  | -48.9  | 0.2661 | -0.1159 | %M0(r>0,009) | 05 | 380_490..590-770 |
| 68.59                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 33.77 | 0.34   | 0.667 | 0.328 | 64.7  | 79.1  | 96.6   | 0.2644 | -0.0263 | %00(r>0,009) | 06 | 590_770          |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0(r=0,009) | 07 | 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 08 | 380_770          |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0(r=0,001) | 09 | 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 10 | 380_770          |
| <div><div><math>a^* = 500 \left[ \left( X / X_n \right)^{1/3} - \left( Y / Y_n \right)^{1/3} \right]</math><math display="block">= 500 \left( a' - a'_n \right) Y^{1/3}</math></div><div><math>b^* = 200 \left[ \left( Y / Y_n \right)^{1/3} - \left( Z / Z_n \right)^{1/3} \right]</math><math display="block">= 500 \left( b' - b'_n \right) Y^{1/3}</math></div><div><math>a' = \left( 1 / X_n \right)^{1/3} \left( x / y \right)^{1/3}</math><math display="block">= 0,2191 \left( x / y \right)^{1/3}</math></div><div><math>b' = -0,4 \left( 1 / Z_n \right)^{1/3} \left( z / y \right)^{1/3}</math><math display="block">= -0,08376 \left( z / y \right)^{1/3}</math></div><div><math>(X, Y, Z \geq 0,89)</math><br/>CIELAB für n=D65</div></div> |       |        |       |       |       |       |        |        |         |              |    |                  |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Y     | Z      | x     | y     | L*    | a*    | b*     | a'     | b'      | OYLCVM_ONW_1                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|-------|--------|--------|---------|---------------------------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |        |       |       |       |       |        |        |         |                                       |
| 38.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.18 | 0.9    | 0.671 | 0.313 | 49.7  | 81.9  | 71.5   | 0.2777 | -0.0317 | %01 { r>0,009 } 00 600_770            |
| 83.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 93.23 | 5.03   | 0.459 | 0.513 | 97.3  | -17.7 | 121.5  | 0.2076 | -0.0325 | %Y1 { r>0,009 } 01 500_770            |
| 45.34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 75.92 | 5.02   | 0.359 | 0.601 | 89.8  | -72.0 | 108.6  | 0.1814 | -0.0348 | %L1 { r>0,009 } 02 500_600            |
| 61.89                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 82.69 | 99.99  | 0.253 | 0.338 | 92.8  | -43.1 | -12.2  | 0.1956 | -0.0918 | %C1 { r>0,009 } 03 380_600            |
| 17.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 7.65  | 95.85  | 0.144 | 0.063 | 33.2  | 67.1  | -112.2 | 0.2835 | -0.2001 | %V1 { r>0,009 } 04 380_500            |
| 55.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 24.93 | 95.86  | 0.314 | 0.141 | 57.0  | 96.2  | -71.3  | 0.2813 | -0.135  | %M1 { r>0,009 } 05 380_500 .. 600-770 |
| 38.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.18 | 0.9    | 0.671 | 0.313 | 49.7  | 81.9  | 71.5   | 0.2777 | -0.0317 | %01 { r>0,009 } 06 600_770            |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770            |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770            |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770            |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770            |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |       |        |        |         |                                       |
| 33.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.02 | 0.98   | 0.666 | 0.314 | 47.0  | 83.2  | 66.9   | 0.2815 | -0.033  | %01 { r>0,009 } 00 600_770            |
| 77.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 92.36 | 5.45   | 0.441 | 0.527 | 96.9  | -20.4 | 121.0  | 0.2064 | -0.0326 | %Y1 { r>0,009 } 01 500_770            |
| 44.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 77.21 | 5.44   | 0.347 | 0.609 | 90.4  | -71.7 | 109.7  | 0.1817 | -0.0346 | %L1 { r>0,009 } 02 500_600            |
| 61.88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 84.85 | 108.88 | 0.242 | 0.331 | 93.8  | -39.9 | -10.6  | 0.1972 | -0.091  | %C1 { r>0,009 } 03 380_600            |
| 18.69                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8.51  | 104.4  | 0.142 | 0.064 | 35.0  | 70.7  | -109.2 | 0.2847 | -0.1931 | %V1 { r>0,009 } 04 380_500            |
| 51.81                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 23.64 | 104.41 | 0.288 | 0.131 | 55.7  | 99.2  | -73.5  | 0.2846 | -0.1374 | %M1 { r>0,009 } 05 380_500 .. 600-770 |
| 33.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.02 | 0.98   | 0.666 | 0.314 | 47.0  | 83.2  | 66.9   | 0.2815 | -0.033  | %01 { r>0,009 } 06 600_770            |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770            |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770            |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770            |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770            |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |        |       |       |       |       |        |        |         |                                       |
| 56.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25.78 | 0.33   | 0.683 | 0.312 | 57.8  | 82.3  | 85.1   | 0.2711 | -0.0285 | %01 { r>0,009 } 00 600_770            |
| 104.52                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 96.74 | 3.15   | 0.511 | 0.473 | 98.7  | -2.7  | 108.6  | 0.2142 | -0.0388 | %Y1 { r>0,009 } 01 500_770            |
| 48.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 71.82 | 3.14   | 0.395 | 0.579 | 87.8  | -65.8 | 90.0   | 0.1837 | -0.0428 | %L1 { r>0,009 } 02 500_600            |
| 54.29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 75.07 | 35.56  | 0.329 | 0.455 | 89.4  | -59.1 | -18.2  | 0.1874 | -0.0948 | %C1 { r>0,009 } 03 380_600            |
| 6.31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4.14  | 32.73  | 0.146 | 0.096 | 24.1  | 19.8  | -125.2 | 0.2401 | -0.2421 | %V1 { r>0,009 } 04 380_500            |
| 61.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 29.03 | 32.75  | 0.5   | 0.234 | 60.8  | 81.6  | -62.1  | 0.2685 | -0.1265 | %M1 { r>0,009 } 05 380_500 .. 600-770 |
| 56.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25.78 | 0.33   | 0.683 | 0.312 | 57.8  | 82.3  | 85.1   | 0.2711 | -0.0285 | %01 { r>0,009 } 06 600_770            |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770            |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770            |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770            |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770            |
| $a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left( 1 / X_n \right)^{1/3} (x/y)^{1/3} \quad b' = -0,4 \left( 1 / Z_n \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0,89)$ $= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0,2191 (x/y)^{1/3} \quad = -0,08376 (z/y)^{1/3} \quad CIELAB \text{ für } n=D65$ |       |        |       |       |       |       |        |        |         |                                       |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Y     | Z      | x     | y     | L*    | a*     | b*     | a'     | b'      | OYLCVM_ONW_2  |    |                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|--------|--------|--------|---------|---------------|----|------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |               |    |                  |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %02 (r>0,009) | 00 | 575_770          |
| 83.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 93.23 | 5.03   | 0.459 | 0.513 | 97.3  | -17.7  | 121.5  | 0.2076 | -0.0325 | %Y2 (r>0,009) | 01 | 500_770          |
| 22.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 57.78 | 4.99   | 0.263 | 0.677 | 80.6  | -112.4 | 92.9   | 0.1572 | -0.038  | %L2 (r>0,009) | 02 | 500_575          |
| 39.03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 64.54 | 99.96  | 0.191 | 0.317 | 84.2  | -66.6  | -27.1  | 0.1821 | -0.0997 | %C2 (r>0,009) | 03 | 380_575          |
| 17.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7.65  | 95.85  | 0.144 | 0.063 | 33.2  | 67.1   | -112.2 | 0.2835 | -0.2001 | %V2 (r>0,009) | 04 | 380_500          |
| 78.37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 43.06 | 95.89  | 0.36  | 0.198 | 71.5  | 83.4   | -46.1  | 0.263  | -0.1125 | %M2 (r>0,009) | 05 | 380_500..575-770 |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %02 (r>0,009) | 06 | 575_770          |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,009) | 07 | 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000) | 08 | 380_770          |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001) | 09 | 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000) | 10 | 380_770          |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |        |       |       |       |        |        |        |         |               |    |                  |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %02 (r>0,009) | 00 | 575_770          |
| 77.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 92.36 | 5.45   | 0.441 | 0.527 | 96.9  | -20.4  | 121.0  | 0.2064 | -0.0326 | %Y2 (r>0,009) | 01 | 500_770          |
| 22.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 60.32 | 5.41   | 0.258 | 0.68  | 82.0  | -111.5 | 95.4   | 0.1585 | -0.0375 | %L2 (r>0,009) | 02 | 500_575          |
| 40.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 67.95 | 108.85 | 0.187 | 0.312 | 85.9  | -62.6  | -24.1  | 0.1847 | -0.098  | %C2 (r>0,009) | 03 | 380_575          |
| 18.69                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 8.51  | 104.4  | 0.142 | 0.064 | 35.0  | 70.7   | -109.2 | 0.2847 | -0.1931 | %V2 (r>0,009) | 04 | 380_500          |
| 73.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 40.52 | 104.43 | 0.334 | 0.185 | 69.8  | 87.8   | -49.2  | 0.2666 | -0.1148 | %M2 (r>0,009) | 05 | 380_500..575-770 |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %02 (r>0,009) | 06 | 575_770          |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,009) | 07 | 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000) | 08 | 380_770          |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001) | 09 | 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000) | 10 | 380_770          |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |               |    |                  |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %02 (r>0,009) | 00 | 575_770          |
| 104.52                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 96.74 | 3.15   | 0.511 | 0.473 | 98.7  | -2.7   | 108.6  | 0.2142 | -0.0388 | %Y2 (r>0,009) | 01 | 500_770          |
| 21.74                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 50.38 | 3.1    | 0.289 | 0.669 | 76.3  | -106.4 | 70.3   | 0.1577 | -0.048  | %L2 (r>0,009) | 02 | 500_575          |
| 27.06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 53.64 | 35.53  | 0.232 | 0.461 | 78.2  | -92.7  | -37.4  | 0.1662 | -0.106  | %C2 (r>0,009) | 03 | 380_575          |
| 6.31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4.14  | 32.73  | 0.146 | 0.096 | 24.1  | 19.8   | -125.2 | 0.2401 | -0.2421 | %V2 (r>0,009) | 04 | 380_500          |
| 89.05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 50.46 | 32.78  | 0.516 | 0.292 | 76.3  | 68.1   | -35.3  | 0.2523 | -0.1053 | %M2 (r>0,009) | 05 | 380_500..575-770 |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %02 (r>0,009) | 06 | 575_770          |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,009) | 07 | 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000) | 08 | 380_770          |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001) | 09 | 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000) | 10 | 380_770          |
| <div><div><math display="block">a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right]</math><math display="block">= 500 (a' - a'_n) Y^{1/3}</math></div><div><math display="block">b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right]</math><math display="block">= 500 (b' - b'_n) Y^{1/3}</math></div><div><math display="block">a' = (1 / X_n)^{1/3} (x / y)^{1/3}</math><math display="block">= 0,2191 (x / y)^{1/3}</math></div><div><math display="block">b' = -0,4 (1 / Z_n)^{1/3} (z / y)^{1/3}</math><math display="block">= -0,08376 (z / y)^{1/3}</math></div><div><math display="block">(X, Y, Z \geq 0,89)</math><math display="block">CIELAB \text{ für } n=D65</math></div></div> |       |        |       |       |       |        |        |        |         |               |    |                  |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Y     | Z      | x     | y     | L*    | a*     | b*     | a'     | b'      | OYLCVM_ONW_3  |    |                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|--------|--------|--------|---------|---------------|----|------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |               |    |                  |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %03 {r>0,009} | 00 | 575_770          |
| 84.71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 97.84 | 18.48  | 0.421 | 0.486 | 99.1  | -23.2  | 84.6   | 0.2053 | -0.0494 | %Y3 {r>0,009} | 01 | 475_770          |
| 23.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 62.39 | 18.44  | 0.227 | 0.596 | 83.1  | -117.5 | 57.0   | 0.1561 | -0.0574 | %L3 {r>0,009} | 02 | 475_575          |
| 39.03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 64.54 | 99.96  | 0.191 | 0.317 | 84.2  | -66.6  | -27.1  | 0.1821 | -0.0997 | %C3 {r>0,009} | 03 | 380_575          |
| 16.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.05  | 82.37  | 0.159 | 0.03  | 20.2  | 116.1  | -124.9 | 0.3756 | -0.2585 | %V3 {r>0,009} | 04 | 380_475          |
| 77.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 38.46 | 82.41  | 0.389 | 0.194 | 68.3  | 94.8   | -42.0  | 0.2716 | -0.111  | %M3 {r>0,009} | 05 | 380_475..575-770 |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %03 {r>0,009} | 06 | 575_770          |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 {r=0,009} | 07 | 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 {r=1,000} | 08 | 380_770          |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 {r=0,001} | 09 | 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 {r=1,000} | 10 | 380_770          |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |        |       |       |       |        |        |        |         |               |    |                  |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %03 {r>0,009} | 00 | 575_770          |
| 78.66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 97.53 | 20.8   | 0.399 | 0.495 | 99.0  | -26.4  | 83.1   | 0.2039 | -0.05   | %Y3 {r>0,009} | 01 | 475_770          |
| 24.32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 65.49 | 20.76  | 0.219 | 0.592 | 84.7  | -116.7 | 58.5   | 0.1575 | -0.0571 | %L3 {r>0,009} | 02 | 475_575          |
| 40.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 67.95 | 108.85 | 0.187 | 0.312 | 85.9  | -62.6  | -24.1  | 0.1847 | -0.098  | %C3 {r>0,009} | 03 | 380_575          |
| 17.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.35  | 89.01  | 0.157 | 0.03  | 21.4  | 121.6  | -122.4 | 0.3779 | -0.2497 | %V3 {r>0,009} | 04 | 380_475          |
| 71.53                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 35.36 | 89.05  | 0.365 | 0.18  | 66.0  | 101.2  | -45.6  | 0.2771 | -0.1139 | %M3 {r>0,009} | 05 | 380_475..575-770 |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %03 {r>0,009} | 06 | 575_770          |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 {r=0,009} | 07 | 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 {r=1,000} | 08 | 380_770          |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 {r=0,001} | 09 | 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 {r=1,000} | 10 | 380_770          |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |               |    |                  |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %03 {r>0,009} | 00 | 575_770          |
| 105.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.2  | 9.93   | 0.49  | 0.462 | 99.6  | -5.9   | 68.7   | 0.2128 | -0.0564 | %Y3 {r>0,009} | 01 | 475_770          |
| 22.36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 52.84 | 9.88   | 0.262 | 0.621 | 77.7  | -110.0 | 31.1   | 0.1567 | -0.0695 | %L3 {r>0,009} | 02 | 475_575          |
| 27.06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 53.64 | 35.53  | 0.232 | 0.461 | 78.2  | -92.7  | -37.4  | 0.1662 | -0.106  | %C3 {r>0,009} | 03 | 380_575          |
| 5.68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.69  | 25.94  | 0.17  | 0.05  | 13.7  | 57.9   | -128.6 | 0.3126 | -0.302  | %V3 {r>0,009} | 04 | 380_475          |
| 88.43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 48.01 | 25.99  | 0.544 | 0.295 | 74.8  | 73.6   | -23.5  | 0.2559 | -0.0991 | %M3 {r>0,009} | 05 | 380_475..575-770 |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %03 {r>0,009} | 06 | 575_770          |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 {r=0,009} | 07 | 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 {r=1,000} | 08 | 380_770          |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 {r=0,001} | 09 | 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 {r=1,000} | 10 | 380_770          |
| <div><div><math display="block">a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right]</math><math display="block">= 500 (a' - a'_n) Y^{1/3}</math></div><div><math display="block">b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right]</math><math display="block">= 500 (b' - b'_n) Y^{1/3}</math></div><div><math display="block">a' = (1 / X_n)^{1/3} (x / y)^{1/3}</math><math display="block">= 0,2191 (x / y)^{1/3}</math></div><div><math display="block">b' = -0,4 (1 / Z_n)^{1/3} (z / y)^{1/3}</math><math display="block">= -0,08376 (z / y)^{1/3}</math></div><div><math display="block">(X, Y, Z \geq 0,89)</math><math display="block">CIELAB \text{ für } n=D65</math></div></div> |       |        |       |       |       |        |        |        |         |               |    |                  |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Y     | Z      | x     | y     | L*    | a*     | b*     | a'     | b'      | OYLCVM_ONW_4 |    |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|--------|--------|--------|---------|--------------|----|---------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |              |    |                     |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %04(r>0,009) | 00 | 575_770             |
| 90.71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 99.45 | 53.87  | 0.371 | 0.407 | 99.7  | -15.0  | 36.8   | 0.2089 | -0.0702 | %Y4(r>0,009) | 01 | 450_770             |
| 29.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 64.0  | 53.83  | 0.201 | 0.433 | 83.9  | -97.0  | 9.6    | 0.1668 | -0.0813 | %L4(r>0,009) | 02 | 450_575             |
| 39.03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 64.54 | 99.96  | 0.191 | 0.317 | 84.2  | -66.6  | -27.1  | 0.1821 | -0.0997 | %C4(r>0,009) | 03 | 380_575             |
| 16.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.05  | 82.37  | 0.159 | 0.03  | 20.2  | 116.1  | -124.9 | 0.3756 | -0.2585 | %V4(r>0,009) | 04 | 380_450             |
| 71.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.85 | 46.98  | 0.458 | 0.237 | 67.1  | 87.7   | -12.0  | 0.2681 | -0.0934 | %M4(r>0,009) | 05 | 380_450 . . 575-770 |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %04(r>0,009) | 06 | 575_770             |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0(r=0,009) | 07 | 380_770             |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 08 | 380_770             |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0(r=0,001) | 09 | 380_770             |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 10 | 380_770             |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |        |       |       |       |        |        |        |         |              |    |                     |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %04(r>0,009) | 00 | 575_770             |
| 85.74                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 99.43 | 62.55  | 0.346 | 0.401 | 99.7  | -15.9  | 33.3   | 0.2085 | -0.0717 | %Y4(r>0,009) | 01 | 450_770             |
| 31.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 67.39 | 62.52  | 0.194 | 0.417 | 85.7  | -92.6  | 9.1    | 0.1698 | -0.0816 | %L4(r>0,009) | 02 | 450_575             |
| 40.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 67.95 | 108.85 | 0.187 | 0.312 | 85.9  | -62.6  | -24.1  | 0.1847 | -0.098  | %C4(r>0,009) | 03 | 380_575             |
| 17.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.35  | 89.01  | 0.157 | 0.03  | 21.4  | 121.6  | -122.4 | 0.3779 | -0.2497 | %V4(r>0,009) | 04 | 380_450             |
| 64.44                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 33.46 | 47.26  | 0.443 | 0.23  | 64.5  | 92.1   | -12.5  | 0.2726 | -0.0939 | %M4(r>0,009) | 05 | 380_450 . . 575-770 |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %04(r>0,009) | 06 | 575_770             |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0(r=0,009) | 07 | 380_770             |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 08 | 380_770             |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0(r=0,001) | 09 | 380_770             |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 10 | 380_770             |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |              |    |                     |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %04(r>0,009) | 00 | 575_770             |
| 107.42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.84 | 23.46  | 0.465 | 0.432 | 99.9  | -3.4   | 25.8   | 0.2139 | -0.075  | %Y4(r>0,009) | 01 | 450_770             |
| 24.63                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 53.49 | 23.41  | 0.242 | 0.526 | 78.1  | -102.0 | -11.6  | 0.1612 | -0.0923 | %L4(r>0,009) | 02 | 450_575             |
| 27.06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 53.64 | 35.53  | 0.232 | 0.461 | 78.2  | -92.7  | -37.4  | 0.1662 | -0.106  | %C4(r>0,009) | 03 | 380_575             |
| 5.68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.69  | 25.94  | 0.17  | 0.05  | 13.7  | 57.9   | -128.6 | 0.3126 | -0.302  | %V4(r>0,009) | 04 | 380_450             |
| 86.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.36 | 12.46  | 0.59  | 0.324 | 74.4  | 71.3   | 14.9   | 0.2548 | -0.0779 | %M4(r>0,009) | 05 | 380_450 . . 575-770 |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %04(r>0,009) | 06 | 575_770             |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0(r=0,009) | 07 | 380_770             |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 08 | 380_770             |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0(r=0,001) | 09 | 380_770             |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1(r=1,000) | 10 | 380_770             |
| <div><div><math display="block">a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right]</math><math display="block">= 500 (a' - a'_n) Y^{1/3}</math></div><div><math display="block">b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right]</math><math display="block">= 500 (b' - b'_n) Y^{1/3}</math></div><div><math display="block">a' = (1 / X_n)^{1/3} (x / y)^{1/3}</math><math display="block">= 0,2191 (x / y)^{1/3}</math></div><div><math display="block">b' = -0,4 (1 / Z_n)^{1/3} (z / y)^{1/3}</math><math display="block">= -0,08376 (z / y)^{1/3}</math></div><div><math display="block">(X, Y, Z \geq 0,89)</math><math display="block">CIELAB \text{ für } n=D65</math></div></div> |       |        |       |       |       |        |        |        |         |              |    |                     |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Y     | Z      | x     | y     | L*    | a*    | b*     | a'     | b'      | OYLCVM_ONW_5    |    |                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|-------|--------|--------|---------|-----------------|----|-------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |        |       |       |       |       |        |        |         |                 |    |                   |
| 38.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.18 | 0.9    | 0.671 | 0.313 | 49.7  | 81.9  | 71.5   | 0.2777 | -0.0317 | %05 { r>0,009 } | 00 | 600_770           |
| 90.71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 99.45 | 53.87  | 0.371 | 0.407 | 99.7  | -15.0 | 36.8   | 0.2089 | -0.0702 | %Y5 { r>0,009 } | 01 | 450_770           |
| 52.61                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 82.15 | 53.86  | 0.278 | 0.435 | 92.6  | -64.6 | 24.5   | 0.1857 | -0.0748 | %L5 { r>0,009 } | 02 | 450_600           |
| 61.89                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 82.69 | 99.99  | 0.253 | 0.338 | 92.8  | -43.1 | -12.2  | 0.1956 | -0.0918 | %C5 { r>0,009 } | 03 | 380_600           |
| 10.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.43  | 46.95  | 0.173 | 0.024 | 12.2  | 111.7 | -106.7 | 0.4134 | -0.2753 | %V5 { r>0,009 } | 04 | 380_450           |
| 48.22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.72 | 46.95  | 0.423 | 0.164 | 50.3  | 106.0 | -41.0  | 0.2953 | -0.117  | %M5 { r>0,009 } | 05 | 380_450...600-770 |
| 38.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.18 | 0.9    | 0.671 | 0.313 | 49.7  | 81.9  | 71.5   | 0.2777 | -0.0317 | %05 { r>0,009 } | 06 | 600_770           |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } | 07 | 380_770           |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } | 08 | 380_770           |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } | 09 | 380_770           |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } | 10 | 380_770           |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |       |        |        |         |                 |    |                   |
| 33.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.02 | 0.98   | 0.666 | 0.314 | 47.0  | 83.2  | 66.9   | 0.2815 | -0.033  | %05 { r>0,009 } | 00 | 600_770           |
| 85.74                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 99.43 | 62.55  | 0.346 | 0.401 | 99.7  | -15.9 | 33.3   | 0.2085 | -0.0717 | %Y5 { r>0,009 } | 01 | 450_770           |
| 52.58                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 84.28 | 62.54  | 0.263 | 0.422 | 93.5  | -61.8 | 22.6   | 0.1872 | -0.0758 | %L5 { r>0,009 } | 02 | 450_600           |
| 61.88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 84.85 | 108.88 | 0.242 | 0.331 | 93.8  | -39.9 | -10.6  | 0.1972 | -0.091  | %C5 { r>0,009 } | 03 | 380_600           |
| 10.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.46  | 47.22  | 0.172 | 0.024 | 12.3  | 114.8 | -102.4 | 0.4177 | -0.2667 | %V5 { r>0,009 } | 04 | 380_450           |
| 43.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.58 | 47.23  | 0.403 | 0.154 | 47.7  | 109.8 | -41.5  | 0.3016 | -0.1187 | %M5 { r>0,009 } | 05 | 380_450...600-770 |
| 33.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.02 | 0.98   | 0.666 | 0.314 | 47.0  | 83.2  | 66.9   | 0.2815 | -0.033  | %05 { r>0,009 } | 06 | 600_770           |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } | 07 | 380_770           |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } | 08 | 380_770           |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } | 09 | 380_770           |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } | 10 | 380_770           |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |        |       |       |       |       |        |        |         |                 |    |                   |
| 56.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25.78 | 0.33   | 0.683 | 0.312 | 57.8  | 82.3  | 85.1   | 0.2711 | -0.0285 | %05 { r>0,009 } | 00 | 600_770           |
| 107.42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.84 | 23.46  | 0.465 | 0.432 | 99.9  | -3.4  | 25.8   | 0.2139 | -0.075  | %Y5 { r>0,009 } | 01 | 450_770           |
| 51.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 74.92 | 23.45  | 0.345 | 0.498 | 89.3  | -64.7 | 7.5    | 0.1847 | -0.0825 | %L5 { r>0,009 } | 02 | 450_600           |
| 54.29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 75.07 | 35.56  | 0.329 | 0.455 | 89.4  | -59.1 | -18.2  | 0.1874 | -0.0948 | %C5 { r>0,009 } | 03 | 380_600           |
| 3.41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.05  | 12.41  | 0.202 | 0.062 | 9.4   | 47.6  | -97.0  | 0.3092 | -0.277  | %V5 { r>0,009 } | 04 | 380_450           |
| 58.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 25.94 | 12.42  | 0.605 | 0.266 | 57.9  | 87.3  | -13.2  | 0.2744 | -0.0951 | %M5 { r>0,009 } | 05 | 380_450...600-770 |
| 56.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25.78 | 0.33   | 0.683 | 0.312 | 57.8  | 82.3  | 85.1   | 0.2711 | -0.0285 | %05 { r>0,009 } | 06 | 600_770           |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } | 07 | 380_770           |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } | 08 | 380_770           |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } | 09 | 380_770           |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } | 10 | 380_770           |
| $a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left( 1 / X_n \right)^{1/3} (x/y)^{1/3} \quad b' = -0,4 \left( 1 / Z_n \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0,89)$ $= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0,2191 (x/y)^{1/3} \quad = -0,08376 (z/y)^{1/3} \quad CIELAB \text{ für } n=D65$ |       |        |       |       |       |       |        |        |         |                 |    |                   |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Y     | Z      | x     | y     | L*    | a*    | b*    | a'     | b'      | OYLCVM_ONW_6                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|-------|-------|--------|---------|-------------------------------------|
| <b>CIE Illuminant E</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |        |       |       |       |       |       |        |         |                                     |
| 38.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.18 | 0.9    | 0.671 | 0.313 | 49.7  | 81.9  | 71.5  | 0.2777 | -0.0317 | %06 { r>0,009 } 00 600_770          |
| 82.69                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 80.3  | 1.67   | 0.502 | 0.487 | 91.8  | 4.5   | 134.7 | 0.2175 | -0.0237 | %Y6 { r>0,009 } 01 525_770          |
| 44.59                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 62.99 | 1.66   | 0.408 | 0.576 | 83.4  | -46.6 | 120.3 | 0.192  | -0.0256 | %L6 { r>0,009 } 02 525_600          |
| 61.89                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 82.69 | 99.99  | 0.253 | 0.338 | 92.8  | -43.1 | -12.2 | 0.1956 | -0.0918 | %C6 { r>0,009 } 03 380_600          |
| 18.19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 20.56 | 99.22  | 0.131 | 0.149 | 52.4  | -11.7 | -81.4 | 0.2068 | -0.1456 | %V6 { r>0,009 } 04 380_525          |
| 56.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 37.84 | 99.23  | 0.29  | 0.195 | 67.9  | 51.0  | -54.8 | 0.2458 | -0.1188 | %M6 { r>0,009 } 05 380_525..600-770 |
| 38.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.18 | 0.9    | 0.671 | 0.313 | 49.7  | 81.9  | 71.5  | 0.2777 | -0.0317 | %06 { r>0,009 } 06 600_770          |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0   | 0.0   | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0   | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770          |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0   | 0.0   | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0   | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770          |
| <b>CIE Standard Illuminant D65</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |        |       |       |       |       |       |        |         |                                     |
| 33.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.02 | 0.98   | 0.666 | 0.314 | 47.0  | 83.2  | 66.9  | 0.2815 | -0.033  | %06 { r>0,009 } 00 600_770          |
| 76.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 78.41 | 1.79   | 0.487 | 0.5   | 90.9  | 3.8   | 133.4 | 0.2172 | -0.0237 | %Y6 { r>0,009 } 01 525_770          |
| 43.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 63.26 | 1.79   | 0.399 | 0.584 | 83.5  | -44.6 | 120.8 | 0.193  | -0.0255 | %L6 { r>0,009 } 02 525_600          |
| 61.88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 84.85 | 108.88 | 0.242 | 0.331 | 93.8  | -39.9 | -10.6 | 0.1972 | -0.091  | %C6 { r>0,009 } 03 380_600          |
| 19.49                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 22.45 | 108.07 | 0.129 | 0.149 | 54.5  | -9.0  | -77.9 | 0.209  | -0.1414 | %V6 { r>0,009 } 04 380_525          |
| 52.61                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 37.57 | 108.07 | 0.265 | 0.189 | 67.7  | 49.7  | -55.1 | 0.2451 | -0.1191 | %M6 { r>0,009 } 05 380_525..600-770 |
| 33.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.02 | 0.98   | 0.666 | 0.314 | 47.0  | 83.2  | 66.9  | 0.2815 | -0.033  | %06 { r>0,009 } 06 600_770          |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0   | 0.0   | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0   | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770          |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0   | 0.0   | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0   | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770          |
| <b>CIE Illuminant A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |        |       |       |       |       |       |        |         |                                     |
| 56.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25.78 | 0.33   | 0.683 | 0.312 | 57.8  | 82.3  | 85.1  | 0.2711 | -0.0285 | %06 { r>0,009 } 00 600_770          |
| 103.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 87.91 | 0.97   | 0.539 | 0.455 | 95.1  | 11.9  | 131.2 | 0.2208 | -0.0271 | %Y6 { r>0,009 } 01 525_770          |
| 48.43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 62.98 | 0.96   | 0.43  | 0.56  | 83.4  | -48.0 | 111.3 | 0.1912 | -0.0301 | %L6 { r>0,009 } 02 525_600          |
| 54.29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 75.07 | 35.56  | 0.329 | 0.455 | 89.4  | -59.1 | -18.2 | 0.1874 | -0.0948 | %C6 { r>0,009 } 03 380_600          |
| 6.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 12.96 | 34.92  | 0.125 | 0.236 | 42.7  | -54.8 | -97.5 | 0.1687 | -0.1692 | %V6 { r>0,009 } 04 380_525          |
| 62.34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 37.85 | 34.93  | 0.461 | 0.28  | 67.9  | 52.2  | -54.1 | 0.2465 | -0.1184 | %M6 { r>0,009 } 05 380_525..600-770 |
| 56.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25.78 | 0.33   | 0.683 | 0.312 | 57.8  | 82.3  | 85.1  | 0.2711 | -0.0285 | %06 { r>0,009 } 06 600_770          |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0   | 0.0   | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0   | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770          |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0   | 0.0   | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0   | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770          |
| $a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left( 1 / X_n \right)^{1/3} (x/y)^{1/3} \quad b' = -0,4 \left( 1 / Z_n \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0,89)$ $= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0,2191 (x/y)^{1/3} \quad = -0,08376 (z/y)^{1/3} \quad CIELAB \text{ für } n=D65$ |       |        |       |       |       |       |       |        |         |                                     |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Y     | Z      | x     | y     | L*    | a*    | b*     | a'     | b'      | OYLCVM_ONW_7                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|-------|--------|--------|---------|----------------------------------------|
| <b>CIE Illuminant E</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |        |       |       |       |       |        |        |         |                                        |
| 38.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.18 | 0.9    | 0.671 | 0.313 | 49.7  | 81.9  | 71.5   | 0.2777 | -0.0317 | %07 { r>0,009 } 00 600_770             |
| 83.38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 88.27 | 2.68   | 0.478 | 0.506 | 95.2  | -9.0  | 131.9  | 0.2113 | -0.0269 | %Y7 { r>0,009 } 01 512,5_770           |
| 45.27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 70.96 | 2.67   | 0.38  | 0.596 | 87.4  | -62.0 | 118.5  | 0.1854 | -0.0289 | %L7 { r>0,009 } 02 512,5_600           |
| 61.89                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 82.69 | 99.99  | 0.253 | 0.338 | 92.8  | -43.1 | -12.2  | 0.1956 | -0.0918 | %C7 { r>0,009 } 03 380_600             |
| 17.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 12.62 | 98.21  | 0.136 | 0.098 | 42.1  | 28.9  | -98.4  | 0.2402 | -0.1707 | %V7 { r>0,009 } 04 380_512,5           |
| 55.57                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 29.91 | 98.22  | 0.302 | 0.162 | 61.5  | 76.7  | -65.0  | 0.2648 | -0.128  | %M7 { r>0,009 } 05 380_512,5...600-770 |
| 38.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18.18 | 0.9    | 0.671 | 0.313 | 49.7  | 81.9  | 71.5   | 0.2777 | -0.0317 | %07 { r>0,009 } 06 600_770             |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770             |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770             |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770             |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770             |
| <b>CIE Standard Illuminant D65</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |        |       |       |       |       |        |        |         |                                        |
| 33.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.02 | 0.98   | 0.666 | 0.314 | 47.0  | 83.2  | 66.9   | 0.2815 | -0.033  | %07 { r>0,009 } 00 600_770             |
| 77.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 86.92 | 2.88   | 0.462 | 0.52  | 94.7  | -10.8 | 131.2  | 0.2105 | -0.0269 | %Y7 { r>0,009 } 01 512,5_770           |
| 43.96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 71.78 | 2.87   | 0.37  | 0.605 | 87.8  | -60.9 | 119.5  | 0.186  | -0.0286 | %L7 { r>0,009 } 02 512,5_600           |
| 61.88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 84.85 | 108.88 | 0.242 | 0.331 | 93.8  | -39.9 | -10.6  | 0.1972 | -0.091  | %C7 { r>0,009 } 03 380_600             |
| 18.76                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 13.97 | 106.98 | 0.134 | 0.099 | 44.1  | 31.7  | -95.0  | 0.2417 | -0.1651 | %V7 { r>0,009 } 04 380_512,5           |
| 51.88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 29.09 | 106.99 | 0.276 | 0.154 | 60.8  | 77.3  | -66.3  | 0.2657 | -0.1292 | %M7 { r>0,009 } 05 380_512,5...600-770 |
| 33.97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16.02 | 0.98   | 0.666 | 0.314 | 47.0  | 83.2  | 66.9   | 0.2815 | -0.033  | %07 { r>0,009 } 06 600_770             |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770             |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770             |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770             |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770             |
| <b>CIE Illuminant A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |        |       |       |       |       |        |        |         |                                        |
| 56.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25.78 | 0.33   | 0.683 | 0.312 | 57.8  | 82.3  | 85.1   | 0.2711 | -0.0285 | %07 { r>0,009 } 00 600_770             |
| 104.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 93.6  | 1.69   | 0.522 | 0.468 | 97.4  | 2.6   | 123.1  | 0.2166 | -0.0319 | %Y7 { r>0,009 } 01 512,5_770           |
| 48.92                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 68.67 | 1.68   | 0.41  | 0.575 | 86.3  | -59.2 | 104.1  | 0.1864 | -0.0353 | %L7 { r>0,009 } 02 512,5_600           |
| 54.29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 75.07 | 35.56  | 0.329 | 0.455 | 89.4  | -59.1 | -18.2  | 0.1874 | -0.0948 | %C7 { r>0,009 } 03 380_600             |
| 6.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 7.29  | 34.2   | 0.132 | 0.152 | 32.4  | -15.5 | -113.8 | 0.1993 | -0.2035 | %V7 { r>0,009 } 04 380_512,5           |
| 61.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 32.18 | 34.22  | 0.482 | 0.25  | 63.4  | 70.2  | -60.3  | 0.2595 | -0.1241 | %M7 { r>0,009 } 05 380_512,5...600-770 |
| 56.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25.78 | 0.33   | 0.683 | 0.312 | 57.8  | 82.3  | 85.1   | 0.2711 | -0.0285 | %07 { r>0,009 } 06 600_770             |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770             |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770             |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0   | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770             |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0   | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770             |
| $a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left( 1 / X_n \right)^{1/3} (x/y)^{1/3} \quad b' = -0,4 \left( 1 / Z_n \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0,89)$ $= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0,2191 (x/y)^{1/3} \quad = -0,08376 (z/y)^{1/3} \quad CIELAB \text{ für } n=D65$ |       |        |       |       |       |       |        |        |         |                                        |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Y     | Z      | x     | y     | L*    | a*     | b*     | a'     | b'      | OYLCVM_ONW_8                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|--------|--------|--------|---------|----------------------------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |        |       |       |       |        |        |        |         |                                        |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %08 { r>0,009 } 00 575_770             |
| 83.38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 88.27 | 2.68   | 0.478 | 0.506 | 95.2  | -9.0   | 131.9  | 0.2113 | -0.0269 | %Y8 { r>0,009 } 01 512,5_770           |
| 22.42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 52.81 | 2.64   | 0.287 | 0.678 | 77.7  | -100.4 | 102.0  | 0.1619 | -0.0317 | %L8 { r>0,009 } 02 512,5_575           |
| 39.03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 64.54 | 99.96  | 0.191 | 0.317 | 84.2  | -66.6  | -27.1  | 0.1821 | -0.0997 | %C8 { r>0,009 } 03 380_575             |
| 17.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 12.62 | 98.21  | 0.136 | 0.098 | 42.1  | 28.9   | -98.4  | 0.2402 | -0.1707 | %V8 { r>0,009 } 04 380_512,5           |
| 78.44                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 48.04 | 98.25  | 0.349 | 0.213 | 74.8  | 69.5   | -42.1  | 0.2536 | -0.1093 | %M8 { r>0,009 } 05 380_512,5...575-770 |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %08 { r>0,009 } 06 600_770             |
| 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.9   | 0.9    | 0.333 | 0.333 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770             |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770             |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770             |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770             |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |                                        |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %08 { r>0,009 } 00 575_770             |
| 77.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 86.92 | 2.88   | 0.462 | 0.52  | 94.7  | -10.8  | 131.2  | 0.2105 | -0.0269 | %Y8 { r>0,009 } 01 512,5_770           |
| 22.79                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 54.88 | 2.84   | 0.283 | 0.681 | 78.9  | -98.7  | 104.3  | 0.1634 | -0.0312 | %L8 { r>0,009 } 02 512,5_575           |
| 40.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 67.95 | 108.85 | 0.187 | 0.312 | 85.9  | -62.6  | -24.1  | 0.1847 | -0.098  | %C8 { r>0,009 } 03 380_575             |
| 18.76                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 13.97 | 106.98 | 0.134 | 0.099 | 44.1  | 31.7   | -95.0  | 0.2417 | -0.1651 | %V8 { r>0,009 } 04 380_512,5           |
| 73.07                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 45.97 | 107.02 | 0.323 | 0.203 | 73.5  | 72.1   | -44.4  | 0.2557 | -0.111  | %M8 { r>0,009 } 05 380_512,5...575-770 |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %08 { r>0,009 } 06 600_770             |
| 0.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.98   | 0.312 | 0.328 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770             |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770             |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770             |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770             |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |        |       |       |       |        |        |        |         |                                        |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %08 { r>0,009 } 00 575_770             |
| 104.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 93.6  | 1.69   | 0.522 | 0.468 | 97.4  | 2.6    | 123.1  | 0.2166 | -0.0319 | %Y8 { r>0,009 } 01 512,5_770           |
| 21.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 47.24 | 1.64   | 0.307 | 0.669 | 74.3  | -98.2  | 83.9   | 0.1611 | -0.0397 | %L8 { r>0,009 } 02 512,5_575           |
| 27.06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 53.64 | 35.53  | 0.232 | 0.461 | 78.2  | -92.7  | -37.4  | 0.1662 | -0.106  | %C8 { r>0,009 } 03 380_575             |
| 6.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 7.29  | 34.2   | 0.132 | 0.152 | 32.4  | -15.5  | -113.8 | 0.1993 | -0.2035 | %V8 { r>0,009 } 04 380_512,5           |
| 89.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 53.61 | 34.25  | 0.503 | 0.302 | 78.2  | 60.0   | -35.0  | 0.2473 | -0.1047 | %M8 { r>0,009 } 05 380_512,5...575-770 |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %08 { r>0,009 } 06 600_770             |
| 0.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9   | 0.32   | 0.447 | 0.407 | 8.1   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,009 } 07 380_770             |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 08 380_770             |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 { r=0,001 } 09 380_770             |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 { r=1,000 } 10 380_770             |
| $a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left( 1 / X_n \right)^{1/3} (x/y)^{1/3} \quad b' = -0,4 \left( 1 / Z_n \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0,89)$ $= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0,2191 (x/y)^{1/3} \quad = -0,08376 (z/y)^{1/3} \quad CIELAB \text{ für } n=D65$ |       |        |       |       |       |        |        |        |         |                                        |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Y     | Z      | x     | y     | L*    | a*     | b*     | a'     | b'      | OYLCVM_ONW_9                         |                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|--------|--------|--------|---------|--------------------------------------|---------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |        |       |       |       |        |        |        |         |                                      |                     |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %R91 (r>0,009)                       | 00 575_770          |
| 83.38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 88.27 | 2.68   | 0.478 | 0.506 | 95.2  | -9.0   | 131.9  | 0.2113 | -0.0269 | %J90 (r>0,009)                       | 01 512,5_770        |
| 22.42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 52.81 | 2.64   | 0.287 | 0.678 | 77.7  | -100.4 | 102.0  | 0.1619 | -0.0317 | %G92 (r>0,009)                       | 02 512,5_575        |
| 23.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 62.39 | 18.44  | 0.227 | 0.596 | 83.1  | -117.5 | 57.0   | 0.1561 | -0.0574 | %G90 (r>0,009)                       | 03 475_575          |
| 16.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3.05  | 82.37  | 0.159 | 0.03  | 20.2  | 116.1  | -124.9 | 0.3756 | -0.2585 | %R92 (r>0,009)                       | 04 380_475          |
| 77.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 38.46 | 82.41  | 0.389 | 0.194 | 68.3  | 94.8   | -42.0  | 0.2716 | -0.111  | %R90 (r>0,009)                       | 05 380_475..575_770 |
| 2.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10.47 | 16.69  | 0.075 | 0.356 | 38.6  | -94.8  | -15.8  | 0.1287 | -0.1006 | %G91 (r>0,009)                       | 06 475_512,5        |
| 17.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 12.62 | 98.21  | 0.136 | 0.098 | 42.1  | 28.9   | -98.4  | 0.2402 | -0.1707 | %B90 (r>0,009)                       | 07 380_512,5        |
| 9.78                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 26.1  | 12.27  | 0.203 | 0.542 | 58.1  | -89.1  | 28.4   | 0.1553 | -0.067  | %G9x 0.625(475_512,5) ..0.375(512,5) |                     |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)                        | 09 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)                        | 10 380_770          |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |        |       |       |       |        |        |        |         |                                      |                     |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %R91 (r>0,009)                       | 00 575_770          |
| 77.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 86.92 | 2.88   | 0.462 | 0.52  | 94.7  | -10.8  | 131.2  | 0.2105 | -0.0269 | %J90 (r>0,009)                       | 01 512,5_770        |
| 22.79                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 54.88 | 2.84   | 0.283 | 0.681 | 78.9  | -98.7  | 104.3  | 0.1634 | -0.0312 | %G92 (r>0,009)                       | 02 512,5_575        |
| 24.32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 65.49 | 20.76  | 0.219 | 0.592 | 84.7  | -116.7 | 58.5   | 0.1575 | -0.0571 | %G90 (r>0,009)                       | 03 475_575          |
| 17.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3.35  | 89.01  | 0.157 | 0.03  | 21.4  | 121.6  | -122.4 | 0.3779 | -0.2497 | %R92 (r>0,009)                       | 04 380_475          |
| 71.53                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 35.36 | 89.05  | 0.365 | 0.18  | 66.0  | 101.2  | -45.6  | 0.2771 | -0.1139 | %R90 (r>0,009)                       | 05 380_475..575_770 |
| 2.38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 11.5  | 18.89  | 0.072 | 0.35  | 40.4  | -96.8  | -14.2  | 0.1296 | -0.0988 | %G91 (r>0,009)                       | 06 475_512,5        |
| 18.76                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 13.97 | 106.98 | 0.134 | 0.099 | 44.1  | 31.7   | -95.0  | 0.2417 | -0.1651 | %B90 (r>0,009)                       | 07 380_512,5        |
| 10.03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 27.53 | 13.86  | 0.195 | 0.535 | 59.4  | -88.9  | 29.4   | 0.1565 | -0.0666 | %G9x 0.625(475_512,5) ..0.375(512,5) |                     |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)                        | 09 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)                        | 10 380_770          |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |        |       |       |       |        |        |        |         |                                      |                     |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %R91 (r>0,009)                       | 00 575_770          |
| 104.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 93.6  | 1.69   | 0.522 | 0.468 | 97.4  | 2.6    | 123.1  | 0.2166 | -0.0319 | %J90 (r>0,009)                       | 01 512,5_770        |
| 21.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 47.24 | 1.64   | 0.307 | 0.669 | 74.3  | -98.2  | 83.9   | 0.1611 | -0.0397 | %G92 (r>0,009)                       | 02 512,5_575        |
| 22.36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 52.84 | 9.88   | 0.262 | 0.621 | 77.7  | -110.0 | 31.1   | 0.1567 | -0.0695 | %G90 (r>0,009)                       | 03 475_575          |
| 5.68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.69  | 25.94  | 0.17  | 0.05  | 13.7  | 57.9   | -128.6 | 0.3126 | -0.302  | %R92 (r>0,009)                       | 04 380_475          |
| 88.43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 48.01 | 25.99  | 0.544 | 0.295 | 74.8  | 73.6   | -23.5  | 0.2559 | -0.0991 | %R90 (r>0,009)                       | 05 380_475..575_770 |
| 1.64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6.5   | 8.56   | 0.098 | 0.389 | 30.6  | -77.7  | -43.9  | 0.1321 | -0.1332 | %G91 (r>0,009)                       | 06 475_512,5        |
| 6.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 7.29  | 34.2   | 0.132 | 0.152 | 32.4  | -15.5  | -113.8 | 0.1993 | -0.2035 | %B90 (r>0,009)                       | 07 380_512,5        |
| 9.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 21.52 | 6.33   | 0.245 | 0.582 | 53.5  | -81.7  | 7.3    | 0.1566 | -0.0809 | %G9x 0.625(475_512,5) ..0.375(512,5) |                     |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)                        | 09 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)                        | 10 380_770          |
| <div><div><math display="block">a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right]</math><math display="block">= 500 (a' - a'_n) Y^{1/3}</math></div><div><math display="block">b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right]</math><math display="block">= 500 (b' - b'_n) Y^{1/3}</math></div><div><math display="block">a' = \left( 1 / X_n \right)^{1/3} (x / y)^{1/3}</math><math display="block">= 0,2191 (x / y)^{1/3}</math></div><div><math display="block">b' = -0,4 \left( 1 / Z_n \right)^{1/3} (z / y)^{1/3}</math><math display="block">= -0,08376 (z / y)^{1/3}</math></div><div><math display="block">(X, Y, Z \geq 0,89)</math><math display="block">CIELAB \text{ für } n=D65</math></div></div> |       |        |       |       |       |        |        |        |         |                                      |                     |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Y     | Z      | x     | y     | L*    | a*     | b*     | a'     | b'      | OYLCVM_ONW_10                       |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|--------|--------|--------|---------|-------------------------------------|---------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |        |       |       |       |        |        |        |         |                                     |                     |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %RA1 (r>0,009)                      | 00 575_770          |
| 83.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 83.79 | 1.98   | 0.492 | 0.496 | 93.3  | -1.2   | 134.3  | 0.2148 | -0.0247 | %JAx (r>0,009)                      | 01 520_770          |
| 22.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 48.33 | 1.94   | 0.305 | 0.667 | 75.0  | -89.9  | 103.1  | 0.166  | -0.0295 | %GA2 (r>0,009)                      | 02 520_575          |
| 23.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 62.39 | 18.44  | 0.227 | 0.596 | 83.1  | -117.5 | 57.0   | 0.1561 | -0.0574 | %GA0 (r>0,009)                      | 03 475_575          |
| 16.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3.05  | 82.37  | 0.159 | 0.03  | 20.2  | 116.1  | -124.9 | 0.3756 | -0.2585 | %RA2 (r>0,009)                      | 04 380_475          |
| 77.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 38.46 | 82.41  | 0.389 | 0.194 | 68.3  | 94.8   | -42.0  | 0.2716 | -0.111  | %RA0 (r>0,009)                      | 05 380_475..575_770 |
| 2.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 14.92 | 17.39  | 0.072 | 0.428 | 45.5  | -118.7 | -5.5   | 0.1189 | -0.0906 | %GA1 (r>0,009)                      | 06 475_520          |
| 17.79                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 17.07 | 98.91  | 0.133 | 0.127 | 48.3  | 3.8    | -88.3  | 0.2184 | -0.1547 | %BA0 (r>0,009)                      | 07 380_520          |
| 55.92                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 32.09 | 10.45  | 0.567 | 0.325 | 63.4  | 69.6   | 42.7   | 0.2592 | -0.0592 | %Rax 0.125(380-475)..0.875(575-770) |                     |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)                       | 09 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)                       | 10 380_770          |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |        |       |       |       |        |        |        |         |                                     |                     |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %RA1 (r>0,009)                      | 00 575_770          |
| 76.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 82.13 | 2.13   | 0.476 | 0.509 | 92.6  | -2.4   | 133.3  | 0.2143 | -0.0248 | %JAx (r>0,009)                      | 01 520_770          |
| 22.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 50.09 | 2.09   | 0.301 | 0.67  | 76.1  | -87.8  | 105.2  | 0.1677 | -0.029  | %GA2 (r>0,009)                      | 02 520_575          |
| 24.32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 65.49 | 20.76  | 0.219 | 0.592 | 84.7  | -116.7 | 58.5   | 0.1575 | -0.0571 | %GA0 (r>0,009)                      | 03 475_575          |
| 17.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3.35  | 89.01  | 0.157 | 0.03  | 21.4  | 121.6  | -122.4 | 0.3779 | -0.2497 | %RA2 (r>0,009)                      | 04 380_475          |
| 71.53                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 35.36 | 89.05  | 0.365 | 0.18  | 66.0  | 101.2  | -45.6  | 0.2771 | -0.1139 | %RA0 (r>0,009)                      | 05 380_475..575_770 |
| 2.68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 16.26 | 19.64  | 0.069 | 0.421 | 47.3  | -120.6 | -3.8   | 0.1201 | -0.0891 | %GA1 (r>0,009)                      | 06 475_520          |
| 19.06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 18.73 | 107.73 | 0.131 | 0.128 | 50.3  | 6.6    | -84.8  | 0.2204 | -0.15   | %BA0 (r>0,009)                      | 07 380_520          |
| 50.22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 29.15 | 11.29  | 0.553 | 0.321 | 60.9  | 72.7   | 38.6   | 0.2626 | -0.061  | %Rax 0.125(380-475)..0.875(575-770) |                     |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)                       | 09 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)                       | 10 380_770          |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |        |       |       |       |        |        |        |         |                                     |                     |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %RA1 (r>0,009)                      | 00 575_770          |
| 104.28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 90.47 | 1.2    | 0.532 | 0.461 | 96.1  | 7.8    | 128.7  | 0.2189 | -0.0288 | %JAx (r>0,009)                      | 01 520_770          |
| 21.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 44.11 | 1.15   | 0.322 | 0.66  | 72.3  | -90.3  | 88.3   | 0.1643 | -0.0361 | %GA2 (r>0,009)                      | 02 520_575          |
| 22.36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 52.84 | 9.88   | 0.262 | 0.621 | 77.7  | -110.0 | 31.1   | 0.1567 | -0.0695 | %GA0 (r>0,009)                      | 03 475_575          |
| 5.68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1.69  | 25.94  | 0.17  | 0.05  | 13.7  | 57.9   | -128.6 | 0.3126 | -0.302  | %RA2 (r>0,009)                      | 04 380_475          |
| 88.43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 48.01 | 25.99  | 0.544 | 0.295 | 74.8  | 73.6   | -23.5  | 0.2559 | -0.0991 | %RA0 (r>0,009)                      | 05 380_475..575_770 |
| 1.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 9.6   | 9.04   | 0.09  | 0.468 | 37.1  | -100.9 | -35.0  | 0.1205 | -0.1191 | %GA1 (r>0,009)                      | 06 475_520          |
| 6.54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 10.4  | 34.69  | 0.126 | 0.201 | 38.5  | -39.8  | -104.2 | 0.1789 | -0.1816 | %BA0 (r>0,009)                      | 07 380_520          |
| 73.83                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 41.46 | 3.35   | 0.622 | 0.349 | 70.4  | 65.1   | 58.1   | 0.253  | -0.0525 | %Rax 0.125(380-475)..0.875(575-770) |                     |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)                       | 09 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)                       | 10 380_770          |
| <div><div><math display="block">a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right]</math><math display="block">= 500 (a' - a'_n) Y^{1/3}</math></div><div><math display="block">b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right]</math><math display="block">= 500 (b' - b'_n) Y^{1/3}</math></div><div><math display="block">a' = (1/X_n)^{1/3} (x/y)^{1/3}</math><math display="block">= 0,2191 (x/y)^{1/3}</math></div><div><math display="block">b' = -0,4 (1/Z_n)^{1/3} (z/y)^{1/3}</math><math display="block">= -0,08376 (z/y)^{1/3}</math></div><div><math display="block">(X, Y, Z \geq 0,89)</math><math display="block">CIELAB \text{ für } n=D65</math></div></div> |       |        |       |       |       |        |        |        |         |                                     |                     |

| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Y     | Z      | x     | y     | L*    | a*     | b*     | a'     | b'      | OYLCVM_ONW_11     |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|--------|--------|--------|---------|-------------------|---------------------|
| CIE Illuminant E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |                   |                     |
| 61.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.31 | 0.93   | 0.624 | 0.366 | 66.7  | 69.2   | 100.4  | 0.2572 | -0.0254 | %RB1 (r>0,009)    | 00 575_770          |
| 83.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 93.23 | 5.03   | 0.459 | 0.513 | 97.3  | -17.7  | 121.5  | 0.2076 | -0.0325 | %JB0 (r>0,009)    | 01 500_770          |
| 22.47                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 56.08 | 3.86   | 0.272 | 0.68  | 79.6  | -108.3 | 97.2   | 0.1588 | -0.0353 | %GB2 (r>0,009)    | 02 500_575          |
| 23.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 62.39 | 18.44  | 0.227 | 0.596 | 83.1  | -117.5 | 57.0   | 0.1561 | -0.0574 | %GB0 (r>0,009)    | 03 475_575          |
| 16.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.05  | 82.37  | 0.159 | 0.03  | 20.2  | 116.1  | -124.9 | 0.3756 | -0.2585 | %RB2 (r>0,009)    | 04 380_475          |
| 77.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 38.46 | 82.41  | 0.389 | 0.194 | 68.3  | 94.8   | -42.0  | 0.2716 | -0.111  | %RB0 (r>0,009)    | 05 380_475..575_770 |
| 2.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5.49  | 14.34  | 0.098 | 0.249 | 28.0  | -50.6  | -28.6  | 0.1579 | -0.1186 | %GB1 (r>0,009)    | 06 475_500          |
| 17.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7.65  | 95.85  | 0.144 | 0.063 | 33.2  | 67.1   | -112.2 | 0.2835 | -0.2001 | %BB0 (r>0,009)    | 07 380_500          |
| 63.22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 36.5  | 8.4    | 0.584 | 0.337 | 66.9  | 71.7   | 55.3   | 0.2587 | -0.0528 | %RBx 0.2(380-475) | ..575-770           |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.1   | 0.1    | 0.332 | 0.332 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)     | 09 380_770          |
| 100.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 100.0  | 0.333 | 0.333 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)     | 10 380_770          |
| CIE Standard Illuminant D65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |        |       |       |       |        |        |        |         |                   |                     |
| 55.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 32.9  | 1.01   | 0.619 | 0.369 | 64.0  | 71.8   | 95.9   | 0.2602 | -0.0262 | %RB1 (r>0,009)    | 00 575_770          |
| 77.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 92.36 | 5.45   | 0.441 | 0.527 | 96.9  | -20.4  | 121.0  | 0.2064 | -0.0326 | %JB0 (r>0,009)    | 01 500_770          |
| 22.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 58.45 | 4.18   | 0.267 | 0.683 | 80.9  | -107.1 | 99.7   | 0.1602 | -0.0347 | %GB2 (r>0,009)    | 02 500_575          |
| 24.32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 65.49 | 20.76  | 0.219 | 0.592 | 84.7  | -116.7 | 58.5   | 0.1575 | -0.0571 | %GB0 (r>0,009)    | 03 475_575          |
| 17.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.35  | 89.01  | 0.157 | 0.03  | 21.4  | 121.6  | -122.4 | 0.3779 | -0.2497 | %RB2 (r>0,009)    | 04 380_475          |
| 71.53                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 35.36 | 89.05  | 0.365 | 0.18  | 66.0  | 101.2  | -45.6  | 0.2771 | -0.1139 | %RB0 (r>0,009)    | 05 380_475..575_770 |
| 2.31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 6.05  | 16.31  | 0.093 | 0.245 | 29.5  | -51.4  | -27.6  | 0.1589 | -0.1165 | %GB1 (r>0,009)    | 06 475_500          |
| 18.69                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 8.51  | 104.4  | 0.142 | 0.064 | 35.0  | 70.7   | -109.2 | 0.2847 | -0.1931 | %BB0 (r>0,009)    | 07 380_500          |
| 56.66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 33.13 | 9.07   | 0.573 | 0.335 | 64.2  | 74.8   | 51.0   | 0.262  | -0.0544 | %RBx 0.2(380-475) | ..575-770           |
| 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1   | 0.1    | 0.311 | 0.327 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)     | 09 380_770          |
| 95.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0 | 108.89 | 0.312 | 0.329 | 100.0 | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)     | 10 380_770          |
| CIE Illuminant A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |        |       |       |       |        |        |        |         |                   |                     |
| 83.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.21 | 0.36   | 0.637 | 0.359 | 74.3  | 67.3   | 112.1  | 0.2527 | -0.0241 | %RB1 (r>0,009)    | 00 575_770          |
| 104.52                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 96.74 | 3.15   | 0.511 | 0.473 | 98.7  | -2.7   | 108.6  | 0.2142 | -0.0388 | %JB0 (r>0,009)    | 01 500_770          |
| 21.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 49.35 | 2.42   | 0.295 | 0.671 | 75.6  | -103.7 | 76.3   | 0.1588 | -0.0445 | %GB2 (r>0,009)    | 02 500_575          |
| 22.36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 52.84 | 9.88   | 0.262 | 0.621 | 77.7  | -110.0 | 31.1   | 0.1567 | -0.0695 | %GB0 (r>0,009)    | 03 475_575          |
| 5.68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.69  | 25.94  | 0.17  | 0.05  | 13.7  | 57.9   | -128.6 | 0.3126 | -0.302  | %RB2 (r>0,009)    | 04 380_475          |
| 88.43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 48.01 | 25.99  | 0.544 | 0.295 | 74.8  | 73.6   | -23.5  | 0.2559 | -0.0991 | %RB0 (r>0,009)    | 05 380_475..575_770 |
| 1.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3.35  | 7.08   | 0.133 | 0.278 | 21.3  | -38.8  | -52.3  | 0.1634 | -0.1561 | %GB1 (r>0,009)    | 06 475_500          |
| 6.31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4.14  | 32.73  | 0.146 | 0.096 | 24.1  | 19.8   | -125.2 | 0.2401 | -0.2421 | %BB0 (r>0,009)    | 07 380_500          |
| 84.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.28 | 2.71   | 0.627 | 0.352 | 74.3  | 67.9   | 71.0   | 0.253  | -0.0468 | %RBx 0.2(380-475) | ..575-770           |
| 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.09  | 0.03   | 0.445 | 0.405 | 0.9   | 0.0    | 0.0    | 0.2154 | -0.0861 | %N0 (r=0,001)     | 09 380_770          |
| 109.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99.99 | 35.58  | 0.447 | 0.407 | 99.9  | 0.0    | 0.0    | 0.2154 | -0.0861 | %W1 (r=1,000)     | 10 380_770          |
| <div><div><math display="block">a^* = 500 \left[ \left( \frac{X}{X_n} \right)^{1/3} - \left( \frac{Y}{Y_n} \right)^{1/3} \right]</math><math display="block">= 500 (a' - a'_n) Y^{1/3}</math></div><div><math display="block">b^* = 200 \left[ \left( \frac{Y}{Y_n} \right)^{1/3} - \left( \frac{Z}{Z_n} \right)^{1/3} \right]</math><math display="block">= 500 (b' - b'_n) Y^{1/3}</math></div><div><math display="block">a' = (1 / X_n)^{1/3} (x / y)^{1/3}</math><math display="block">= 0,2191 (x / y)^{1/3}</math></div><div><math display="block">b' = -0,4 (1 / Z_n)^{1/3} (z / y)^{1/3}</math><math display="block">= -0,08376 (z / y)^{1/3}</math></div><div><math display="block">(X, Y, Z \geq 0,89)</math><math display="block">CIELAB \text{ für } n=D65</math></div></div> |       |        |       |       |       |        |        |        |         |                   |                     |