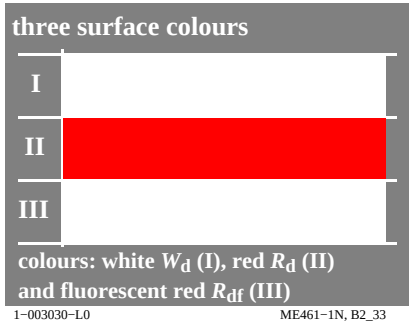
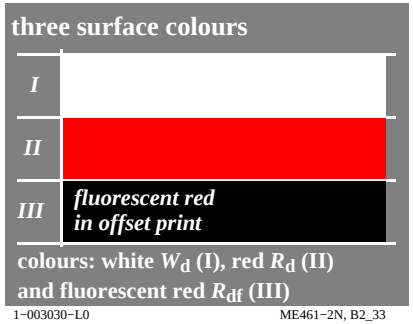
**percieved color terms (colorness: cube root coordinates)**

| percieved color terms | name and relationship with standard chromaticity values | notes: |
|---|---|---|
| **lightness** | $L^* = 116\,(Y/100)^{1/3} - 16$ | *definition 1976 in:* |
| | *Näherung:* $L^* = 100\,(Y/100)^{1/3}$ | *CIELUV, CIELAB* |
| **chromaticness** | *for linear chromatic value diagram (AT, B)* | |
| red−green | $a^* = 500\,[\,(X/X_n)^{1/3} - (Y/Y_n)^{1/3}\,]$ | *definition 1976 in:* |
| | $= 500\,(a' - a'_n)\,Y^{1/3}$ | *CIELAB* |
| yellow−blue | $b^* = 200\,[\,(Y/Y_n)^{1/3} - (Z/Z_n)^{1/3}\,]$ | |
| | $= 500\,(b' - b'_n)\,Y^{1/3}$ | *n=D65 (surround)* |
| radial | $C^* = [\,a^{*2} + b^{*2}\,]^{1/2}$ | |
| **saturation** | **= chromaticness / lightness** | *definition* |
| red−green | $S^*_a = a^* / [\,100\,(Y/100)^{1/3}\,]$ | *for:* |
| | $= 21{,}6\,(a' - a'_n)$ | *CIELAB 1976* |
| yellow−blue | $S^*_b = b^* / [\,100\,(Y/100)^{1/3}\,]$ | |
| | $= 21{,}6\,(b' - b'_n)$ | |
| radial | $S^*_c = C^* / [\,100\,(Y/100)^{1/3}\,]$ | |
| | $= 21{,}6\,[\,(a' - a'_n)^2 + (b' - b'_n)^2\,]^{1/2}$ | |
| **chromaticity** | *for nonlinear chromaticity diagram (a', b')* | *definition* |
| red−green | $a' = (1/X_n)^{1/3}\,(x/y)^{1/3}$ | *opponent* |
| yellow−blue | $= 0{,}2191\,(x/y)^{1/3}$ for *D65* | *color system* |
| radial | $b' = -0{,}4\,(1/Z_n)^{1/3}\,(z/y)^{1/3}$ | |
| | $= -0{,}08376\,(z/y)^{1/3}$ for *D65* | |
| | $c' = [\,(a' - a'_n)^2 + (b' - b'_n)^2\,]^{1/2}$ | |

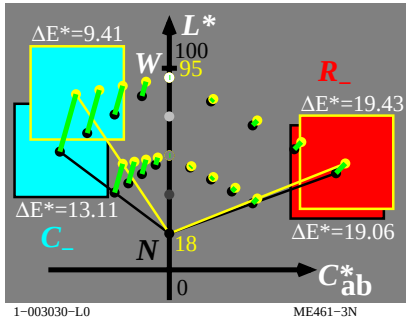
1−003030−L0 ME461−7N, BT9_10



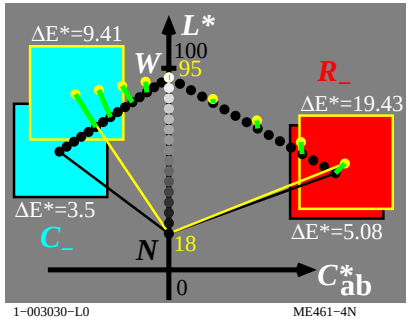

1−003030−L0 ME461−1N, B2_33



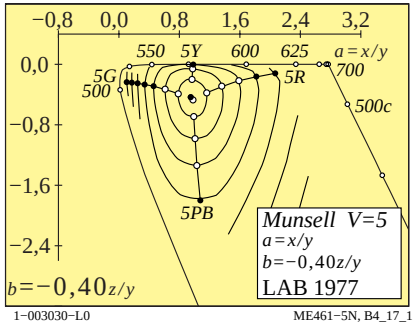

1−003030−L0 ME461−2N, B2_33



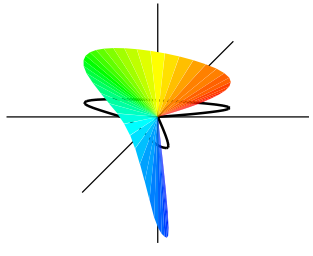

1−003030−L0 ME461−3N




1−003030−L0 ME461−4N




1−003030−L0 ME461−5N, B4_17_1



TUB-test chart ME46; Computer graphics and colorimetry
Image series ME46, 3D=0, de=0

input: *rgb/cmyk −> rgb/cmyk*
output: no change