

# Equal 9 step grey scaling between $L^*_{0aN}=3.6$ and $L^*_{0aW}=95.9$ , $Y_{0ref}=90.0$ , normalisation grey U

$L^*_{0aN}=3.6$ ,  $L^*_{0aU}=49.8$ ,  $L^*_{0aW}=96.0$ ,  $Y_{0aN}=0.4$ ,  $Y_{0aU}=18.2$ ,  $Y_{0aW}=90.0$ ,  $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$   
 $L^*_{taN}=46.0$ ,  $L^*_{taU}=49.8$ ,  $L^*_{taW}=62.0$ ,  $Y_{taN}=15.2$ ,  $Y_{taU}=18.2$ ,  $Y_{taW}=30.3$ ,  $C_{taY}=Y_{taW}:Y_{taN}=2.0$

## Regularity index according to ISO/IEC 15775:2022, annex G for 5 and 9 steps

$g^* = 100 [\Delta L^*_{min}] / [\Delta L^*_{max}]$ ,  $L^*_{CIE LAB} = 116 [Y/Y_n]^{1/3} - 16$  with  $Y \geq 0.882$ ,  $Y_n=100$

$g^*_5 = 99$ ,  $g^*_9 = 99$

$g^*_5 = 14$ ,  $g^*_9 = 9$

$g^*_5 = 92$ ,  $g^*_9 = 71$

$L^*_{CIE LAB}$	n0. i	intended output				real output					linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/2.0}$	$L^*_{la}$	$\Delta L^*_{la}$
100	○ 9	96.0	1.0	90.0	1.0	62.0		1.0	30.3	1.0	62.0	
							3.8					2.0
	● 8	84.4	0.875	64.9	0.72	58.2		0.762	26.1	0.873	59.9	
							3.3					2.0
75	● 7	72.9	0.75	45.0	0.498	54.8		0.554	22.8	0.745	57.9	
							2.8					2.0
	● 6	61.3	0.625	29.6	0.326	52.0		0.379	20.2	0.616	55.8	
							2.2					2.0
50	● 5	49.8	0.5	18.2	0.199	49.8		0.24	18.2	0.49	53.8	
							1.7					1.9
	● 4	38.2	0.375	10.2	0.11	48.1		0.136	16.9	0.369	51.9	
							1.1					1.8
25	● 3	26.7	0.25	5.0	0.051	47.0		0.064	16.0	0.254	50.0	
							0.7					1.7
	● 2	15.2	0.125	1.9	0.017	46.3		0.022	15.5	0.148	48.3	
							0.3					2.4
0	● 1	3.6	0.0	0.4	0.0	46.0		0.0	15.2	0.0	46.0	

$\Delta L^*_{0a}=11.5$  (i=1,2,...,8)

normalisation:  $Y_{taiU}=Y_{0aU} \frac{Y_{0ai}+Y_{0ref}}{Y_{0aU}+Y_{0ref}}$