

Equal 9 step grey scaling between $L^*_{0aN}=22.3$ and $L^*_{0aW}=95.9$, $Y_{0ref}=1.8$, normalisation white W

$L^*_{0aN}=22.3$, $L^*_{0aU}=59.1$, $L^*_{0aW}=96.0$, $Y_{0aN}=3.6$, $Y_{0aU}=27.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=25.0$

$L^*_{taN}=27.6$, $L^*_{taU}=60.3$, $L^*_{taW}=96.0$, $Y_{taN}=5.3$, $Y_{taU}=28.4$, $Y_{taW}=90.0$, $C_{taY}=Y_{taW}:Y_{taN}=17.0$

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 $Y \geq 0.882$, $Y_n=100$

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

$g^*_5=86$, $g^*_9=82$

$g^*_5=98$, $g^*_9=98$

$L^*_{CIE LAB}$ intended output real output linearized output
 n0. i L^*_{0a} L^*_{0r} Y_{0a} Y_{0r} L^*_{ta} ΔL^*_{ta} L^*_{tr} Y_{ta} $(L^*_{tr})^{1/1.06}$ L^*_{la} ΔL^*_{la}

100	○	9	96.0	1.0	90.0	1.0	96.0		1.0	90.0	1.0	96.0	
	●	8	86.8	0.875	69.6	0.763	87.0	9.0	0.868	70.0	0.876	87.5	8.5
	●	7	77.6	0.75	52.5	0.566	78.0	9.0	0.737	53.2	0.751	78.9	8.5
75	●	6	68.4	0.625	38.5	0.403	69.1	8.9	0.607	39.5	0.625	70.4	8.6
	●	5	59.1	0.5	27.2	0.273	60.3	8.8	0.478	28.4	0.5	61.8	8.6
50	●	4	49.9	0.375	18.4	0.171	51.6	8.7	0.351	19.8	0.374	53.1	8.6
	●	3	40.7	0.25	11.7	0.094	43.1	8.5	0.227	13.2	0.249	44.6	8.6
	●	2	31.5	0.125	6.9	0.038	35.0	8.1	0.109	8.5	0.124	36.1	8.5
25	●	1	22.3	0.0	3.6	0.0	27.6	7.4	0.0	5.3	0.0	27.6	8.5

$\Delta L^*_{0a}=9.2$

(i=1,2,...,8)

normalisation: $Y_{taiW}=Y_{0aW} \frac{Y_{0ai}+Y_{0ref}}{Y_{0aW}+Y_{0ref}}$