

Equal 9 step grey scaling between $L^*_{0aN}=17.9$ and $L^*_{0aW}=95.9$, $Y_{0ref}=1.8$, normalisation grey U

$L^*_{0aN}=17.9$, $L^*_{0aU}=56.9$, $L^*_{0aW}=96.0$, $Y_{0aN}=2.5$, $Y_{0aU}=24.9$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=36.0$

$L^*_{taN}=23.7$, $L^*_{taU}=57.0$, $L^*_{taW}=94.1$, $Y_{taN}=4.0$, $Y_{taU}=24.9$, $Y_{taW}=85.6$, $C_{taY}=Y_{taW}:Y_{taN}=21.3$

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

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

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

$g^*_5=82$, $g^*_9=77$

$g^*_5=98$, $g^*_9=97$

L^*_{CIELAB}	n0. i	intended output				real output					linearized output	
		L^*_{0a}	L^*_{0r}	Y_{0a}	Y_{0r}	L^*_{ta}	ΔL^*_{ta}	L^*_{tr}	Y_{ta}	$(L^*_{tr})^{1/1.08}$	L^*_{la}	ΔL^*_{la}
100	○ 9	96.0	1.0	90.0	1.0	94.1		1.0	85.6	1.0	94.1	
	● 8	86.2	0.875	68.5	0.754	84.7	9.4	0.867	65.5	0.876	85.4	8.7
75	● 7	76.5	0.75	50.7	0.55	75.4	9.3	0.734	48.9	0.752	76.7	8.8
	● 6	66.7	0.625	36.3	0.386	66.1	9.3	0.602	35.5	0.626	67.8	8.8
	● 5	56.9	0.5	24.9	0.256	57.0	9.2	0.472	24.9	0.5	58.9	8.9
50	● 4	47.2	0.375	16.2	0.156	48.0	9.0	0.344	16.8	0.374	50.0	8.9
	● 3	37.4	0.25	9.8	0.083	39.2	8.7	0.22	10.8	0.248	41.2	8.9
25	● 2	27.7	0.125	5.3	0.032	31.0	8.2	0.104	6.6	0.124	32.4	8.7
	● 1	17.9	0.0	2.5	0.0	23.7	7.3	0.0	4.0	0.0	23.7	8.7

$\Delta L^*_{0a}=9.7$

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

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