

Equal 9 step grey scaling between $L^*_{0aN}=8.1$ and $L^*_{0aW}=95.9$, $Y_{0ref}=10.0$, normalisation grey U

$L^*_{0aN}=8.1$, $L^*_{0aU}=52.1$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.9$, $Y_{0aU}=20.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=99.9$

$L^*_{taN}=32.5$, $L^*_{taU}=52.1$, $L^*_{taW}=85.4$, $Y_{taN}=7.3$, $Y_{taU}=20.2$, $Y_{taW}=66.9$, $C_{taY}=Y_{taW}:Y_{taN}=9.2$

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 $Y \geq 0,882$, $Y_n=100$

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

$g^*_5=39$, $g^*_9=29$

$g^*_5=94$, $g^*_9=91$

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}	$(L^*_{tr})^{1/1.44}$	L^*_{la}	ΔL^*_{la}
100	9	96.0	1.0	90.0	1.0	85.4		1.0	66.9	1.0	85.4	
	8	85.0	0.875	66.0	0.731	76.6	8.8	0.833	50.8	0.88	79.1	6.3
75	7	74.0	0.75	46.7	0.515	68.0	8.6	0.67	38.0	0.757	72.6	6.5
	6	63.0	0.625	31.6	0.345	59.8	8.2	0.515	27.8	0.63	65.8	6.7
	5	52.1	0.5	20.2	0.217	52.1	7.7	0.37	20.2	0.5	59.0	6.9
50	4	41.1	0.375	11.9	0.124	45.2	6.9	0.24	14.6	0.37	52.1	6.9
	3	30.1	0.25	6.3	0.06	39.4	5.8	0.131	10.9	0.242	45.3	6.7
25	2	19.1	0.125	2.8	0.021	35.1	4.3	0.05	8.5	0.123	39.0	6.3
	1	8.1	0.0	0.9	0.0	32.5	2.6	0.0	7.3	0.0	32.5	6.5

$\Delta L^*_{0a}=11.0$ (i=1,2,...,8)

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