

Equal 9 step grey scaling between $L^*_{0aN}=17.9$ and $L^*_{0aW}=95.9$, $Y_{0ref}=90.0$, normalisation grey U

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

$L^*_{taN}=51.9$, $L^*_{taU}=57.0$, $L^*_{taW}=68.7$, $Y_{taN}=20.0$, $Y_{taU}=24.9$, $Y_{taW}=39.0$, $C_{taY}=Y_{taW}:Y_{taN}=1.9$

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

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

$g^*_5 = 25$, $g^*_9 = 19$

$g^*_5 = 89$, $g^*_9 = 73$

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}	$(L^*_{tr})^{1/1.68}$	L^*_{la}	ΔL^*_{la}
100	9	96.0	1.0	90.0	1.0	68.7		1.0	39.0	1.0	68.7	
	8	86.2	0.875	68.5	0.754	65.2	3.5	0.791	34.3	0.87	66.5	2.2
75	7	76.5	0.75	50.7	0.55	62.0	3.2	0.603	30.5	0.741	64.4	2.2
	6	66.7	0.625	36.3	0.386	59.3	2.8	0.44	27.3	0.613	62.2	2.1
	5	56.9	0.5	24.9	0.256	57.0	2.3	0.301	24.9	0.49	60.1	2.1
50	4	47.2	0.375	16.2	0.156	55.1	1.9	0.189	23.0	0.371	58.1	2.0
	3	37.4	0.25	9.8	0.083	53.6	1.4	0.103	21.6	0.258	56.2	1.9
	2	27.7	0.125	5.3	0.032	52.6	1.0	0.041	20.6	0.149	54.4	1.8
25	1	17.9	0.0	2.5	0.0	51.9	0.7	0.0	20.0	0.0	51.9	2.5
0												

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

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

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