

Equal 9 step grey scaling between $L^*_{0aN}=17.9$ and $L^*_{0aW}=95.9$, $Y_{0ref}=10.0$, normalisation grey U

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

$L^*_{taN}=35.8$, $L^*_{taU}=57.0$, $L^*_{taW}=87.6$, $Y_{taN}=8.9$, $Y_{taU}=24.9$, $Y_{taW}=71.3$, $C_{taY}=Y_{taW}:Y_{taN}=8.0$

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

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

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

$g^*_5=53$, $g^*_9=45$

$g^*_5=97$, $g^*_9=93$

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}	$(L^*_{tr})^{1/1.29}$	L^*_{la}	ΔL^*_{la}
100	9	96.0	1.0	90.0	1.0	87.6		1.0	71.3	1.0	87.6	
	8	86.2	0.875	68.5	0.754	79.6	8.0	0.845	56.0	0.877	81.3	6.4
75	7	76.5	0.75	50.7	0.55	71.7	7.8	0.693	43.3	0.752	74.8	6.5
	6	66.7	0.625	36.3	0.386	64.2	7.6	0.547	33.0	0.626	68.3	6.5
	5	56.9	0.5	24.9	0.256	57.0	7.2	0.408	24.9	0.499	61.7	6.6
50	4	47.2	0.375	16.2	0.156	50.3	6.7	0.279	18.7	0.372	55.1	6.6
	3	37.4	0.25	9.8	0.083	44.4	5.9	0.165	14.1	0.247	48.6	6.4
25	2	27.7	0.125	5.3	0.032	39.5	4.9	0.071	10.9	0.128	42.4	6.2
	1	17.9	0.0	2.5	0.0	35.8	3.6	0.0	8.9	0.0	35.8	6.6
0												

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

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

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