

Equal 9 step grey scaling between $L^*_{0aN}=20.0$ and $L^*_{0aW}=103.0$, $Y_{0\text{ref}}=108.0$, normalisation grey U

$L^*_{0aN}=20.0, L^*_{0aU}=61.5, L^*_{0aW}=103.0, Y_{0aN}=3.0, Y_{0aU}=29.8, Y_{0aW}=108.0, C_{0aY}=Y_{0aW}:Y_{0aN}=36.0$
 $L^*_{taN}=56.1, L^*_{taU}=61.5, L^*_{taW}=74.0, Y_{taN}=24.0, Y_{taU}=29.8, Y_{taW}=46.8, C_{taY}=Y_{taW}:Y_{taN}=1.9$

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

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

$g^*_5=100, g^*_9=99$

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

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

$L^*\text{CIELAB}$ n0. i	intended output				real output				linearized output			
	L^*0a	L^*0r	$Y0a$	$Y0r$	L^*ta	ΔL^*ta	L^*tr	Yta	$(L^*tr)^{1/1.68}$	L^*la	ΔL^*la	
100 ↑	9	103.0	1.0	108.0	1.0	74.0	3.7	1.0	46.8	1.0	74.0	2.3
8	92.6	0.875	82.1	0.754	70.3	3.3	0.791	41.2	0.87	71.7	2.3	
7	82.3	0.75	60.8	0.55	66.9	2.9	0.603	36.5	0.741	69.4	2.3	
6	71.9	0.625	43.5	0.386	64.0	2.5	0.44	32.8	0.613	67.1	2.3	
5	61.5	0.5	29.8	0.256	61.5	2.0	0.301	29.8	0.49	64.9	2.2	
4	51.2	0.375	19.4	0.156	59.5	1.5	0.189	27.6	0.371	62.8	2.0	
3	40.8	0.25	11.7	0.083	58.0	1.1	0.103	25.9	0.258	60.8	2.0	
2	30.4	0.125	6.4	0.032	56.9	0.7	0.041	24.8	0.149	58.8	2.7	
1	20.0	0.0	3.0	0.0	56.1	0.0	0.0	24.0	0.0	56.1		
	$\Delta L^*0a=10.4$ (i=1,2,...,8)				normalisation: $Y_{taU}=Y_{0aU} \frac{Y_{0ai}+Y_{0\text{ref}}}{Y_{0aU}+Y_{0\text{ref}}}$							