

Equal 9 step grey scaling between $L^*_{0aN}=22$ & $L^*_{0aW}=108.2$, $Y_{0ref}=2$, normalisation white W

$L^*_{0aN}=22.8$, $L^*_{0aU}=65.5$, $L^*_{0aW}=108.2$, $Y_{0aN}=3.3$, $Y_{0aU}=37.8$, $Y_{0aW}=120.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=36.0$

$L^*_{taN}=27.8$, $L^*_{taU}=66.5$, $L^*_{taW}=108.2$, $Y_{taN}=5.2$, $Y_{taU}=39.1$, $Y_{taW}=120.0$, $C_{taY}=Y_{taW}:Y_{taN}=22.9$

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

$g^* = 100 [\Delta L^*_{min}] / [\Delta L^*_{max}]$, $L^*_{TUBsRGB,W} = 100 [Y/Y_n]^{1/\ln(10)}$ with $Y \geq 0.39 = 100/255$, $Y_n=100$

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

$g^*_5=88$, $g^*_9=84$

$g^*_5=84$, $g^*_9=80$

$L^*_{TUBsRGB,W}$ intended output

real output

linearized output

n0. i	$L^*_{TUBsRGB,W}$ intended output				real output					linearized output	
	L^*_{0a}	L^*_{0r}	Y_{0a}	Y_{0r}	L^*_{ta}	ΔL^*_{ta}	L^*_{tr}	Y_{ta}	$(L^*_{tr})^{1/1.14}$	L^*_{la}	ΔL^*_{la}
9	108.2	1.0	120.0	1.0	108.2		1.0	120.0	1.0	108.2	
8	97.6	0.875	94.5	0.781	97.7	10.5	0.87	94.9	0.884	98.9	9.3
7	86.9	0.75	72.3	0.591	87.3	10.4	0.739	73.1	0.767	89.5	9.4
6	76.2	0.625	53.5	0.43	76.9	10.4	0.61	54.6	0.648	79.9	9.6
5	65.5	0.5	37.8	0.295	66.5	10.3	0.481	39.1	0.526	70.1	9.8
4	54.8	0.375	25.1	0.186	56.3	10.2	0.354	26.6	0.402	60.1	10.0
3	44.2	0.25	15.2	0.102	46.3	10.0	0.23	16.9	0.274	49.9	10.2
2	33.5	0.125	8.0	0.04	36.6	9.6	0.11	9.9	0.143	39.3	10.5
1	22.8	0.0	3.3	0.0	27.8	8.8	0.0	5.2	0.0	27.8	11.5

$\Delta L^*_{0a}=10.7$ (i=1,2,...,8)

normalisation: $Y_{taiW}=Y_{0aW} \frac{Y_{0ai}+Y_{0ref}}{Y_{0aW}+Y_{0ref}}$