

# Equal 9 step grey scaling between $L^*_{0aN}=23.6$ and $L^*_{0aW}=95.5$ , $Y_{0ref}=1.8$ , normalisation grey U

$L^*_{0aN}=23.6$ ,  $L^*_{0aU}=59.6$ ,  $L^*_{0aW}=95.5$ ,  $Y_{0aN}=3.6$ ,  $Y_{0aU}=30.3$ ,  $Y_{0aW}=90.0$ ,  $C_{0aY}=Y_{0aW}:Y_{0aN}=25.0$

$L^*_{taN}=27.4$ ,  $L^*_{taU}=59.6$ ,  $L^*_{taW}=94.0$ ,  $Y_{taN}=5.1$ ,  $Y_{taU}=30.3$ ,  $Y_{taW}=86.6$ ,  $C_{taY}=Y_{taW}:Y_{taN}=17.0$

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

$g^* = 100 [\Delta L^*_{min}] / [\Delta L^*_{max}]$ ,  $L^*_{TUBsRGB,W} = 100 [Y/Y_n]^{[1/\ln(10)]}$  with  $Y \geq 0,3$ ,  $Y_n=100$

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

$g^*_5=89$ ,  $g^*_9=85$

$g^*_5=97$ ,  $g^*_9=96$

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

100 75 50 25 0	n0. i	intended output				real output				$(L^*_{tr})^{1/1.06}$	linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$		$L^*_{la}$	$\Delta L^*_{la}$
○	9	95.5	1.0	90.0	1.0	94.0		1.0	86.6	1.0	94.0	
●	8	86.5	0.875	71.7	0.788	85.3	8.6	0.87	69.4	0.877	85.8	8.2
●	7	77.5	0.75	55.7	0.603	76.7	8.6	0.74	54.3	0.754	77.6	8.2
●	6	68.5	0.625	41.9	0.443	68.1	8.6	0.611	41.3	0.629	69.3	8.3
●	5	59.6	0.5	30.3	0.309	59.6	8.5	0.483	30.3	0.504	61.0	8.3
●	4	50.6	0.375	20.8	0.199	51.1	8.4	0.356	21.3	0.379	52.7	8.3
●	3	41.6	0.25	13.3	0.112	42.9	8.3	0.232	14.2	0.253	44.3	8.4
●	2	32.6	0.125	7.6	0.046	34.9	8.0	0.111	8.8	0.127	35.9	8.4
●	1	23.6	0.0	3.6	0.0	27.4	7.4	0.0	5.1	0.0	27.4	8.5

$\Delta L^*_{0a}=9.0$

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

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