

**Equal 9 step grey scaling between  $L^*_{0aN}=22.3$  and  $L^*_{0aW}=95.9$ ,  $Y_{0ref}=3.6$ , normalisation white W**

$L^*_{0aN}=22.3$ ,  $L^*_{0aU}=59.1$ ,  $L^*_{0aW}=96.0$ ,  $Y_{0aN}=3.6$ ,  $Y_{0aU}=27.2$ ,  $Y_{0aW}=90.0$ ,  $C_{0aY}=Y_{0aW}:Y_{0aN}=25.0$

$L^*_{taN}=31.6$ ,  $L^*_{taU}=61.3$ ,  $L^*_{taW}=96.0$ ,  $Y_{taN}=6.9$ ,  $Y_{taU}=29.6$ ,  $Y_{taW}=90.0$ ,  $C_{taY}=Y_{taW}:Y_{taN}=13.0$

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

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

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

$g^*_5=77$ ,  $g^*_9=71$

$g^*_5=98$ ,  $g^*_9=97$

$L^*_{CIE LAB}$	n0. i	intended output				real output					linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/1.12}$	$L^*_{la}$	$\Delta L^*_{la}$
100	○ 9	96.0	1.0	90.0	1.0	96.0		1.0	90.0	1.0	96.0	
	● 8	86.8	0.875	69.6	0.763	87.2	8.8	0.863	70.3	0.876	88.0	8.0
	● 7	77.6	0.75	52.5	0.566	78.4	8.7	0.727	53.9	0.751	80.0	8.0
75	● 6	68.4	0.625	38.5	0.403	69.8	8.6	0.593	40.4	0.626	71.9	8.1
	● 5	59.1	0.5	27.2	0.273	61.3	8.5	0.461	29.6	0.5	63.8	8.1
50	● 4	49.9	0.375	18.4	0.171	53.1	8.2	0.333	21.1	0.374	55.7	8.1
	● 3	40.7	0.25	11.7	0.094	45.2	7.8	0.211	14.7	0.248	47.6	8.1
	● 2	31.5	0.125	6.9	0.038	38.0	7.3	0.098	10.1	0.125	39.7	7.9
25	● 1	22.3	0.0	3.6	0.0	31.6	6.3	0.0	6.9	0.0	31.6	8.1

$\Delta L^*_{0a}=9.2$

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

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