

**Equal 9 step grey scaling between  $L^*_{0aN}=22.3$  and  $L^*_{0aW}=95.9$ ,  $Y_{0ref}=10.0$ , normalisation white W**

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

$L^*_{taN}=41.6$ ,  $L^*_{taU}=64.5$ ,  $L^*_{taW}=96.0$ ,  $Y_{taN}=12.2$ ,  $Y_{taU}=33.5$ ,  $Y_{taW}=90.0$ ,  $C_{taY}=Y_{taW}:Y_{taN}=7.3$

**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  $Y \geq 0.882$ ,  $Y_n=100$

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

$g^*_5=59$ ,  $g^*_9=52$

$g^*_5=98$ ,  $g^*_9=93$

$L^*_{CIE LAB}$	n0. i	intended output				real output					linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/1.24}$	$L^*_{la}$	$\Delta L^*_{la}$
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	87.8	8.2	0.849	71.6	0.876	89.3	6.7
	● 7	77.6	0.75	52.5	0.566	79.7	8.0	0.701	56.2	0.751	82.4	6.8
75	● 6	68.4	0.625	38.5	0.403	72.0	7.8	0.558	43.6	0.625	75.6	6.9
	● 5	59.1	0.5	27.2	0.273	64.5	7.4	0.422	33.5	0.498	68.7	6.9
	● 4	49.9	0.375	18.4	0.171	57.6	6.9	0.294	25.5	0.372	61.8	6.8
50	● 3	40.7	0.25	11.7	0.094	51.3	6.3	0.178	19.5	0.249	55.1	6.7
	● 2	31.5	0.125	6.9	0.038	45.9	5.4	0.079	15.2	0.129	48.6	6.5
25	● 1	22.3	0.0	3.6	0.0	41.6	4.3	0.0	12.2	0.0	41.6	7.0

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

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

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