

**Equal 9 step grey scaling between  $L^*_{0aN}=17.9$  and  $L^*_{0aW}=95.9$ ,  $Y_{0ref}=0.9$ , normalisation white W**

$L^*_{0aN}=17.9$ ,  $L^*_{0aU}=56.9$ ,  $L^*_{0aW}=96.0$ ,  $Y_{0aN}=2.5$ ,  $Y_{0aU}=24.9$ ,  $Y_{0aW}=90.0$ ,  $C_{0aY}=Y_{0aW}:Y_{0aN}=36.0$

$L^*_{taN}=21.5$ ,  $L^*_{taU}=57.6$ ,  $L^*_{taW}=96.0$ ,  $Y_{taN}=3.4$ ,  $Y_{taU}=25.5$ ,  $Y_{taW}=90.0$ ,  $C_{taY}=Y_{taW}:Y_{taN}=26.7$

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

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

$g^*_5=90$ ,  $g^*_9=87$

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

$L^*_{CIE LAB}$	n0. i	intended output				real output					linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/1.05}$	$L^*_{la}$	$\Delta L^*_{la}$
100	○ 9	96.0	1.0	90.0	1.0	96.0		1.0	90.0	1.0	96.0	
	● 8	86.2	0.875	68.5	0.754	86.3	9.6	0.87	68.7	0.876	86.7	9.2
75	● 7	76.5	0.75	50.7	0.55	76.7	9.6	0.741	51.0	0.751	77.4	9.3
	● 6	66.7	0.625	36.3	0.386	67.1	9.6	0.613	36.8	0.626	68.1	9.3
	● 5	56.9	0.5	24.9	0.256	57.6	9.5	0.485	25.5	0.5	58.8	9.4
50	● 4	47.2	0.375	16.2	0.156	48.1	9.4	0.358	16.9	0.375	49.4	9.4
	● 3	37.4	0.25	9.8	0.083	38.8	9.3	0.233	10.6	0.249	40.0	9.4
25	● 2	27.7	0.125	5.3	0.032	29.9	9.0	0.113	6.2	0.124	30.7	9.3
	● 1	17.9	0.0	2.5	0.0	21.5	8.4	0.0	3.4	0.0	21.5	9.2

$\Delta L^*_{0a}=9.7$

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

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