

**Equal 9 step grey scaling between  $L^*_{0aN}=8.1$  and  $L^*_{0aW}=95.9$ ,  $Y_{0ref}=0.9$ , normalisation white W**

$L^*_{0aN}=8.1$ ,  $L^*_{0aU}=52.1$ ,  $L^*_{0aW}=96.0$ ,  $Y_{0aN}=0.9$ ,  $Y_{0aU}=20.2$ ,  $Y_{0aW}=90.0$ ,  $C_{0aY}=Y_{0aW}:Y_{0aN}=99.9$

$L^*_{taN}=14.3$ ,  $L^*_{taU}=52.8$ ,  $L^*_{taW}=96.0$ ,  $Y_{taN}=1.8$ ,  $Y_{taU}=20.9$ ,  $Y_{taW}=90.0$ ,  $C_{taY}=Y_{taW}:Y_{taN}=50.5$

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

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

$g^*_5=81$ ,  $g^*_9=74$

$g^*_5=96$ ,  $g^*_9=94$

$L^*_{CIE LAB}$	n0. i	intended output				real output					linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/1.09}$	$L^*_{la}$	$\Delta L^*_{la}$
100	9	96.0	1.0	90.0	1.0	96.0		1.0	90.0	1.0	96.0	
	8	85.0	0.875	66.0	0.731	85.1	10.9	0.867	66.3	0.877	86.0	10.0
75	7	74.0	0.75	46.7	0.515	74.3	10.8	0.734	47.2	0.753	75.8	10.1
	6	63.0	0.625	31.6	0.345	63.5	10.8	0.602	32.2	0.628	65.6	10.2
	5	52.1	0.5	20.2	0.217	52.8	10.7	0.472	20.9	0.502	55.3	10.3
50	4	41.1	0.375	11.9	0.124	42.3	10.5	0.343	12.7	0.374	44.9	10.4
	3	30.1	0.25	6.3	0.06	32.0	10.2	0.217	7.1	0.246	34.4	10.4
25	2	19.1	0.125	2.8	0.021	22.4	9.6	0.099	3.6	0.12	24.1	10.3
	1	8.1	0.0	0.9	0.0	14.3	8.1	0.0	1.8	0.0	14.3	9.8

$\Delta L^*_{0a}=11.0$  (i=1,2,...,8)

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