

# Equal 9 step grey scaling between $L^*_{0aN}=-27.3$ and $L^*_{0aW}=27.3$ , $Y_{0ref}=54.0$ , normalisation white W

$L^*_{0aN}=-27.2$ ,  $L^*_{0aU}=0.0$ ,  $L^*_{0aW}=27.3$ ,  $Y_{0aN}=6.0$ ,  $Y_{0aU}=18.0$ ,  $Y_{0aW}=54.0$ ,  $C_{0aY}=Y_{0aW}:Y_{0aN}=9.0$

$L^*_{taN}=12.7$ ,  $L^*_{taU}=17.2$ ,  $L^*_{taW}=27.3$ ,  $Y_{taN}=30.0$ ,  $Y_{taU}=36.0$ ,  $Y_{taW}=54.0$ ,  $C_{taY}=Y_{taW}:Y_{taN}=1.8$

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

$g^* = 100 [\Delta L^*_{min}] / [\Delta L^*_{max}]$ ,  $L^*_{TUBJND1} = 40 / \log(5) [\log ( Y/Y_u )]$  with  $Y_u=18$

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

$g^*_5=29$ ,  $g^*_9=24$

$g^*_5=78$ ,  $g^*_9=64$

$L^*_{TUBJND1}$	n0. i	intended output				real output					linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/1.62}$	$L^*_{la}$	$\Delta L^*_{la}$
50	9	27.3	1.0	54.0	1.0	27.3		1.0	54.0	1.0	27.3	
25	8	20.5	0.875	41.0	0.73	24.1	3.2	0.782	47.5	0.859	25.2	2.0
	7	13.6	0.75	31.2	0.524	21.4	2.7	0.596	42.6	0.727	23.3	1.9
	6	6.8	0.625	23.7	0.368	19.1	2.3	0.439	38.8	0.602	21.5	1.8
0	5	0.0	0.5	18.0	0.25	17.2	1.9	0.31	36.0	0.485	19.8	1.7
	4	-6.7	0.375	13.7	0.16	15.7	1.5	0.205	33.8	0.376	18.2	1.6
	3	-13.6	0.25	10.4	0.091	14.4	1.2	0.12	32.2	0.27	16.6	1.5
-25	2	-20.4	0.125	7.9	0.039	13.5	1.0	0.053	30.9	0.163	15.1	1.6
	1	-27.2	0.0	6.0	0.0	12.7	0.8	0.0	30.0	0.0	12.7	2.4

$\Delta L^*_{0a}=6.8$

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

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