

# Equal 9 step grey scaling between $L^*_{0aN}=-40.0$ and $L^*_{0aW}=40.0$ , $Y_{0ref}=0.9$ , normalisation white W

$L^*_{0aN}=-39.9$ ,  $L^*_{0aU}=0.0$ ,  $L^*_{0aW}=40.0$ ,  $Y_{0aN}=3.6$ ,  $Y_{0aU}=18.0$ ,  $Y_{0aW}=90.0$ ,  $C_{0aY}=Y_{0aW}:Y_{0aN}=25.0$

$L^*_{taN}=-34.6$ ,  $L^*_{taU}=1.0$ ,  $L^*_{taW}=40.0$ ,  $Y_{taN}=4.4$ ,  $Y_{taU}=18.7$ ,  $Y_{taW}=90.0$ ,  $C_{taY}=Y_{taW}:Y_{taN}=20.2$

**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  $Y_u=18$

$g^*_5=100$ ,  $g^*_9=100$

$g^*_5=86$ ,  $g^*_9=83$

$g^*_5=99$ ,  $g^*_9=97$

$L^*_{TUBJND1}$	n0. i	intended output				real output					linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/1.06}$	$L^*_{la}$	$\Delta L^*_{la}$
50	9	40.0	1.0	90.0	1.0	40.0		1.0	90.0	1.0	40.0	
	8	30.0	0.875	60.2	0.655	30.1	9.9	0.868	60.5	0.875	30.7	9.3
25	7	20.0	0.75	40.2	0.424	20.3	9.8	0.736	40.7	0.75	21.3	9.3
	6	10.0	0.625	26.9	0.27	10.6	9.7	0.606	27.5	0.624	11.9	9.4
0	5	0.0	0.5	18.0	0.167	1.0	9.6	0.477	18.7	0.499	2.6	9.4
	4	-9.9	0.375	12.0	0.098	-8.4	9.4	0.351	12.8	0.374	-6.7	9.3
	3	-19.9	0.25	8.0	0.051	-17.5	9.1	0.229	8.9	0.25	-15.9	9.3
-25	2	-29.9	0.125	5.4	0.021	-26.3	8.8	0.111	6.2	0.127	-25.1	9.2
	1	-39.9	0.0	3.6	0.0	-34.6	8.3	0.0	4.4	0.0	-34.6	9.5

$\Delta L^*_{0a}=10.0$  (i=1,2,...,8)

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