

# Equal 9 step grey scaling between $L^*_{0aN}=-50$ & $L^*_{0aW}=50.0$ , $Y_{0ref}=1$ , normalisation white W

$L^*_{0aN}=-49.9$ ,  $L^*_{0aU}=0.0$ ,  $L^*_{0aW}=50.0$ ,  $Y_{0aN}=4.0$ ,  $Y_{0aU}=20.0$ ,  $Y_{0aW}=100.0$ ,  $C_{0aY}=Y_{0aW}:Y_{0aN}=25.0$   
 $L^*_{taN}=-43.3$ ,  $L^*_{taU}=1.2$ ,  $L^*_{taW}=50.0$ ,  $Y_{taN}=4.9$ ,  $Y_{taU}=20.8$ ,  $Y_{taW}=100.0$ ,  $C_{taY}=Y_{taW}:Y_{taN}=20.2$

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

$g^* = 100 [\Delta L^*_{min}] / [\Delta L^*_{max}]$ ,  $L^*_{TUBLOG,Ua} = 50 / \log(5)$  [  $\log ( Y/Y_u )$  ] with  $Y_u=20$

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

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

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

$L^*_{TUBLOG,Ua}$  intended output

real output

linearized output

50 25 0 -25 -50	n0. i	intended output				real output					linearized output	
		$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$Y_{0r}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/1.06}$	$L^*_{la}$	$\Delta L^*_{la}$
	9	50.0	1.0	100.0	1.0	50.0		1.0	100.0	1.0	50.0	
	8						12.3					11.6
	7						12.3	0.868	67.2	0.875	38.3	11.7
	6						12.2	0.736	45.3	0.75	26.6	11.7
	5						12.0	0.606	30.6	0.624	14.9	11.7
	4						11.8	0.477	20.8	0.499	3.2	11.7
	3						11.4	0.351	14.2	0.374	-8.4	11.6
	2						11.0	0.229	9.8	0.25	-20.0	11.5
	1						10.4	0.111	6.9	0.127	-31.5	11.8
	1	-49.9	0.0	4.0	0.0	-43.3		0.0	4.9	0.0	-43.3	

$\Delta L^*_{0a}=12.5$  (i=1,2,...,8)

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