

Equal 9 step grey scaling between $L^*_{0aN}=-71$ & $L^*_{0aW}=71.5$, $Y_{0ref}=200$, normalisation white W

$L^*_{0aN}=-71.4$, $L^*_{0aU}=0.0$, $L^*_{0aW}=71.5$, $Y_{0aN}=2.0$, $Y_{0aU}=20.0$, $Y_{0aW}=200.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=100.0$
 $L^*_{taN}=50.3$, $L^*_{taU}=53.0$, $L^*_{taW}=71.5$, $Y_{taN}=101.0$, $Y_{taU}=110.0$, $Y_{taW}=200.0$, $C_{taY}=Y_{taW}:Y_{taN}=2.0$

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 $Y_u=20$

$g^*_5 = 100$, $g^*_9 = 99$

$g^*_5 = 5$, $g^*_9 = 3$

$g^*_5 = 64$, $g^*_9 = 44$

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

real output

linearized output

70	n0. i	intended output				real output					linearized output	
		L^*_{0a}	L^*_{0r}	Y_{0a}	Y_{0r}	L^*_{ta}	ΔL^*_{ta}	L^*_{tr}	Y_{ta}	$(L^*_{tr})^{1/2.75}$	L^*_{la}	ΔL^*_{la}
	9	71.5	1.0	200.0	1.0	71.5			200.0	1.0	71.5	
	8						7.7					3.2
	7	53.6	0.875	112.5	0.558	63.9		0.638	156.2	0.849	68.3	
35	6						5.3					3.0
	5	35.8	0.75	63.2	0.309	58.5		0.388	131.6	0.708	65.3	
	4						3.4					2.7
	3	17.9	0.625	35.6	0.169	55.1		0.225	117.8	0.581	62.6	
0	2						2.1					2.4
	1	0.0	0.5	20.0	0.091	53.0		0.125	110.0	0.469	60.3	
	0						1.3					2.1
	-1	-17.8	0.375	11.2	0.047	51.7		0.065	105.6	0.371	58.2	
	-2						0.7					1.9
-35	-3						0.4					1.8
	-4	-35.7	0.25	6.3	0.022	51.0		0.031	103.2	0.283	56.3	
	-5						0.2					4.1
	-6	-53.6	0.125	3.5	0.008	50.5		0.011	101.8	0.196	54.5	
-70	-7											
	-8	-71.4	0.0	2.0	0.0	50.3		0.0	101.0	0.0	50.3	

$\Delta L^*_{0a} = 17.9$ (i=1,2,...,8)

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