

# Equal 9 step grey scaling between $L^*_{0aN}=29.4$ and $L^*_{0aW}=78.4$ , $Y_{0ref}=1.8$ , normalisation white W

$L^*_{0aN}=29.4, L^*_{0aU}=53.9, L^*_{0aW}=78.5, Y_{0aN}=6.0, Y_{0aU}=21.9, Y_{0aW}=54.0, C_{0aY}=Y_{0aW}:Y_{0aN}=9.0$

$L^*_{taN}=33.0, L^*_{taU}=55.0, L^*_{taW}=78.5, Y_{taN}=7.5, Y_{taU}=22.9, Y_{taW}=54.0, C_{taY}=Y_{taW}:Y_{taN}=7.1$

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

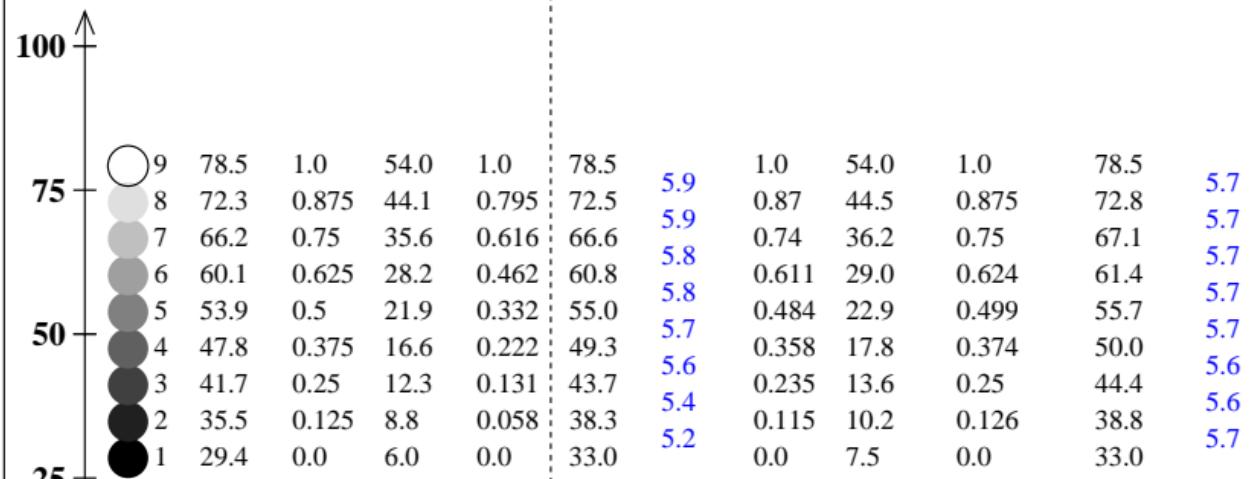
$g^* = 100 [\Delta L^*_{min}] / [\Delta L^*_{max}], L^*_{CIELAB} = 116 [Y/Y_n]^{1/3} - 16 \text{ with } Y \geq 0.882, Y_n=100$

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

$g^*_5=90, g^*_9=88$

$g^*_5=99, g^*_9=98$

$L^*_{CIELAB}$	intended output			$Y_{0r}$	real output			linearized output			
	n0. i	$L^*_{0a}$	$L^*_{0r}$	$Y_{0a}$	$L^*_{ta}$	$\Delta L^*_{ta}$	$L^*_{tr}$	$Y_{ta}$	$(L^*_{tr})^{1/1.04}$	$L^*_{la}$	$\Delta L^*_{la}$
9	78.5	1.0	54.0	1.0	78.5	5.9	1.0	54.0	1.0	78.5	5.7
8	72.3	0.875	44.1	0.795	72.5	5.9	0.87	44.5	0.875	72.8	5.7
7	66.2	0.75	35.6	0.616	66.6	5.8	0.74	36.2	0.75	67.1	5.7
6	60.1	0.625	28.2	0.462	60.8	5.8	0.611	29.0	0.624	61.4	5.7
5	53.9	0.5	21.9	0.332	55.0	5.7	0.484	22.9	0.499	55.7	5.7
4	47.8	0.375	16.6	0.222	49.3	5.6	0.358	17.8	0.374	50.0	5.6
3	41.7	0.25	12.3	0.131	43.7	5.4	0.235	13.6	0.25	44.4	5.6
2	35.5	0.125	8.8	0.058	38.3	5.2	0.115	10.2	0.126	38.8	5.7
1	29.4	0.0	6.0	0.0	33.0	5.2	0.0	7.5	0.0	33.0	5.7



$\Delta L^*_{0a}=6.1$

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

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