

<http://farbe.li.tu-berlin.de/eep3/eep310np.pdf> /.ps; only vector graphic VG; start output
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Equal 9 step grey scaling between $L^*_{0aN}=3.6$ and $L^*_{0aW}=95.9$, $Y_{0ref}=3.6$, normalisation grey U

$L^*_{0aN}=3.6$, $L^*_{0aU}=49.8$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.4$, $Y_{0aU}=18.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$

$L^*_{taN}=21.4$, $L^*_{taU}=49.8$, $L^*_{taW}=90.9$, $Y_{taN}=3.3$, $Y_{taU}=18.2$, $Y_{taW}=78.2$, $C_{taY}=Y_{taW}:Y_{taN}=23.4$

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

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

L* _{CIELAB} 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}) ^{1/1.3}	L* _{la}	ΔL^*_{la}	
100	96.0	1.0	90.0	1.0	90.9		1.0	78.2	1.0	90.9	8.2	
8	84.4	0.875	64.9	0.72	80.3	10.5	0.848	57.2	0.881	82.6	8.5	
75	72.9	0.75	45.0	0.498	69.9	10.4	0.698	40.6	0.759	74.1	8.7	
6	61.3	0.625	29.6	0.326	59.7	10.2	0.551	27.8	0.633	65.4	9.0	
50	49.8	0.5	18.2	0.199	49.8	9.9	0.409	18.2	0.504	56.4	9.2	
4	38.2	0.375	10.2	0.11	40.5	9.3	0.275	11.5	0.372	47.2	9.1	
25	26.7	0.25	5.0	0.051	32.2	8.3	0.156	7.2	0.24	38.1	8.5	
2	15.2	0.125	1.9	0.017	25.6	6.6	0.061	4.6	0.118	29.5	8.2	
0	3.6	0.0	0.4	0.0	21.4	4.3	0.0	3.3	0.0	21.4	8.2	

$\Delta L^*_{0a}=11.5$ (i=1,2,...,8) normalisation: $Y_{taiU}=Y_{0aU} \frac{Y_{0ai}+Y_{0ref}}{Y_{0aU}+Y_{0ref}}$

eep30-3n

Equal 9 step grey scaling between $L^*_{0aN}=3.6$ and $L^*_{0aW}=95.9$, $Y_{0ref}=0.4$, normalisation grey U

$L^*_{0aN}=3.6$, $L^*_{0aU}=49.8$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.4$, $Y_{0aU}=18.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$

$L^*_{taN}=7.1$, $L^*_{taU}=49.8$, $L^*_{taW}=95.3$, $Y_{taN}=0.8$, $Y_{taU}=18.2$, $Y_{taW}=88.5$, $C_{taY}=Y_{taW}:Y_{taN}=113.0$

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

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

L* _{CIELAB} 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}) ^{1/1.05}	L* _{la}	ΔL^*_{la}	
100	96.0	1.0	90.0	1.0	95.3		1.0	88.5	1.0	95.3	10.9	
8	84.4	0.875	64.9	0.72	83.9	11.4	0.871	63.9	0.876	84.4	11.0	
75	72.9	0.75	45.0	0.498	72.5	11.4	0.741	44.4	0.752	73.4	11.0	
6	61.3	0.625	29.6	0.326	61.1	11.4	0.612	29.4	0.626	62.4	11.1	
50	49.8	0.5	18.2	0.199	49.8	11.3	0.484	18.2	0.5	51.3	11.2	
4	38.2	0.375	10.2	0.11	38.6	11.2	0.357	10.4	0.374	40.1	11.2	
25	26.7	0.25	5.0	0.051	27.5	10.6	0.231	5.3	0.248	28.9	10.9	
2	15.2	0.125	1.9	0.017	16.9	10.6	0.112	2.3	0.124	18.0	10.9	
0	3.6	0.0	0.4	0.0	7.1	9.9	0.0	0.8	0.0	7.1	10.9	

$\Delta L^*_{0a}=11.5$ (i=1,2,...,8) normalisation: $Y_{taiU}=Y_{0aU} \frac{Y_{0ai}+Y_{0ref}}{Y_{0aU}+Y_{0ref}}$

eep30-7n

Equal 9 step grey scaling between $L^*_{0aN}=3.6$ and $L^*_{0aW}=95.9$, $Y_{0ref}=0.9$, normalisation grey U

$L^*_{0aN}=3.6$, $L^*_{0aU}=49.8$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.4$, $Y_{0aU}=18.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$

$L^*_{taN}=10.8$, $L^*_{taU}=49.8$, $L^*_{taW}=94.6$, $Y_{taN}=1.2$, $Y_{taU}=18.2$, $Y_{taW}=86.6$, $C_{taY}=Y_{taW}:Y_{taN}=69.9$

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

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

L* _{CIELAB} 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}) ^{1/1.11}	L* _{la}	ΔL^*_{la}	
100	96.0	1.0	90.0	1.0	94.6		1.0	86.6	1.0	94.6		
8	84.4	0.875	64.9	0.72	83.3	11.3	0.865	62.7	0.878	84.3	10.2	
75	72.9	0.75	45.0	0.498	72.1	11.2	0.731	43.7	0.754	74.0	10.3	
6	61.3	0.625	29.6	0.326	60.9	11.1	0.598	29.1	0.629	63.5	10.6	
50	49.8	0.5	18.2	0.199	49.8	11.1	0.465	18.2	0.502	52.9	10.7	
4	38.2	0.375	10.2	0.11	38.9	10.9	0.335	10.6	0.373	42.1	10.8	
25	26.7	0.25	5.0	0.051	28.4	10.5	0.21	5.6	0.245	31.4	10.4	
2	15.2	0.125	1.9	0.017	18.8	9.6	0.095	2.7	0.12	20.9	10.1	
0	3.6	0.0	0.4	0.0	10.8	8.0	0.0	1.2	0.0	10.8		

$\Delta L^*_{0a}=11.5$ (i=1,2,...,8) normalisation: $Y_{taiU}=Y_{0aU} \frac{Y_{0ai}+Y_{0ref}}{Y_{0aU}+Y_{0ref}}$

eep31-3n

Equal 9 step grey scaling between $L^*_{0aN}=3.6$ and $L^*_{0aW}=95.9$, $Y_{0ref}=1.8$, normalisation grey U

$L^*_{0aN}=3.6$, $L^*_{0aU}=49.8$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.4$, $Y_{0aU}=18.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$

$L^*_{taN}=15.5$, $L^*_{taU}=49.8$, $L^*_{taW}=93.3$, $Y_{taN}=2.0$, $Y_{taU}=18.2$, $Y_{taW}=83.6$, $C_{taY}=Y_{taW}:Y_{taN}=41.7$

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

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

L* _{CIELAB} 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}) ^{1/1.19}	L* _{la}	ΔL^*_{la}	
100	96.0	1.0	90.0	1.0	93.3		1.0	83.6	1.0	93.3		
8	84.4	0.875	64.9	0.72	82.2	11.0	0.858	60.7	0.879	83.9	9.4	
75	72.9	0.75	45.0	0.498	71.3	10.9	0.717	42.6	0.757	74.3	9.5	
6	61.3	0.625	29.6	0.326	60.4	10.8	0.578	28.6	0.631	64.6	9.7	
50	49.8	0.5	18.2	0.199	49.8	10.6	0.441	18.2	0.503	54.6	10.0	
4	38.2	0.375	10.2	0.11	39.5	10.3	0.309	10.9	0.373	44.5	10.1	
25	26.7	0.25	5.0	0.051	29.9	10.3	0.185	6.2	0.242	34.3	10.1	
2	15.2	0.125	1.9	0.017	21.6	9.6	0.078	3.4	0.118	24.7	9.7	
0	3.6	0.0	0.4	0.0	15.5	6.1	0.0	2.0	0.0	15.5	9.2	

$\Delta L^*_{0a}=11.5$ (i=1,2,...,8) normalisation: $Y_{taiU}=Y_{0aU} \frac{Y_{0ai}+Y_{0ref}}{Y_{0aU}+Y_{0ref}}$

eep31-7n

Test chart eep3; Equal 9 step grey scaling for four display reflections $Y_{ref} = 3,6, 0,4, 0,9, 1,8$, and black $L^*_{N,CIELAB}=3.61$, $Y_N=0.4$ and white $L^*_{W,CIELAB}=95.99$, $Y_W=90$, normalisation: grey U

see similar files of the whole serie: <http://farbe.li.tu-berlin.de/eeps.htm>
 technical information: <http://farbe.li.tu-berlin.de> or <http://color.li.tu-berlin.de>

TUB registration: 20230701-eep3/eep310np.pdf /.ps
 application for evaluation and measurement of display or print output
 TUB material: code=rh4ta