

<http://farbe.li.tu-berlin.de/eep2/eep210np.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 white W

$L^*_{0aN}=3.6$, $L^*_{0aU}=49.8$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.4$, $Y_{0aU}=18.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$
 $L^*_{taN}=23.2$, $L^*_{taU}=53.0$, $L^*_{taW}=96.0$, $Y_{taN}=3.8$, $Y_{taU}=21.0$, $Y_{taW}=90.0$, $C_{taY}=Y_{taW}:Y_{taN}=23.4$

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 $Y \geq 0.882$, $Y_N=100$
 $g^*_5 = 99$, $g^*_9 = 99$ $g^*_5 = 51$, $g^*_9 = 40$ $g^*_5 = 91$, $g^*_9 = 89$

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	96.0	11.0	1.0	90.0	1.0	96.0	8.6	
84.4	0.875	64.9	0.72	84.9	10.9	0.848	65.9	0.881	87.3	8.9		
72.9	0.75	45.0	0.498	74.0	10.7	0.698	46.7	0.759	78.5	9.2		
61.3	0.625	29.6	0.326	63.3	10.3	0.551	32.0	0.633	69.3	9.4		
49.8	0.5	18.2	0.199	53.0	9.7	0.409	21.0	0.504	59.9	9.6		
38.2	0.375	10.2	0.11	43.2	8.7	0.275	13.3	0.372	50.2	9.6		
26.7	0.25	5.0	0.051	34.5	6.9	0.156	8.3	0.24	40.7	8.9		
15.2	0.125	1.9	0.017	27.6	4.5	0.061	5.3	0.118	31.7	8.6		
3.6	0.0	0.4	0.0	23.2	0.0	0.0	3.8	0.0	23.2	0.0		

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

eep20-3n

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

$L^*_{0aN}=3.6$, $L^*_{0aU}=49.8$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.4$, $Y_{0aU}=18.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$
 $L^*_{taN}=7.2$, $L^*_{taU}=50.2$, $L^*_{taW}=96.0$, $Y_{taN}=0.8$, $Y_{taU}=18.6$, $Y_{taW}=90.0$, $C_{taY}=Y_{taW}:Y_{taN}=113.0$

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 $Y \geq 0.882$, $Y_N=100$
 $g^*_5 = 99$, $g^*_9 = 99$ $g^*_5 = 89$, $g^*_9 = 86$ $g^*_5 = 97$, $g^*_9 = 97$

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	96.0	11.5	1.0	90.0	1.0	96.0	11.0	
84.4	0.875	64.9	0.72	84.5	11.5	0.871	65.0	0.876	85.0	11.0		
72.9	0.75	45.0	0.498	73.0	11.4	0.741	45.2	0.752	73.9	11.1		
61.3	0.625	29.6	0.326	61.6	11.4	0.612	29.9	0.626	62.8	11.2		
49.8	0.5	18.2	0.199	50.2	11.3	0.484	18.6	0.501	51.6	11.2		
38.2	0.375	10.2	0.11	38.9	11.1	0.357	10.6	0.374	40.4	11.2		
26.7	0.25	5.0	0.051	27.8	10.6	0.231	5.4	0.248	29.2	11.0		
15.2	0.125	1.9	0.017	17.1	9.9	0.112	2.3	0.124	18.2	11.0		
3.6	0.0	0.4	0.0	7.2	0.0	0.0	0.8	0.0	7.2	0.0		

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

eep20-7n

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

$L^*_{0aN}=3.6$, $L^*_{0aU}=49.8$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.4$, $Y_{0aU}=18.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$
 $L^*_{taN}=11.2$, $L^*_{taU}=50.6$, $L^*_{taW}=96.0$, $Y_{taN}=1.3$, $Y_{taU}=19.0$, $Y_{taW}=90.0$, $C_{taY}=Y_{taW}:Y_{taN}=69.9$

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 $Y \geq 0.882$, $Y_N=100$
 $g^*_5 = 99$, $g^*_9 = 99$ $g^*_5 = 78$, $g^*_9 = 70$ $g^*_5 = 95$, $g^*_9 = 93$

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	96.0	11.4	1.0	90.0	1.0	96.0	10.4	
84.4	0.875	64.9	0.72	84.6	11.4	0.865	65.2	0.878	85.6	10.5		
72.9	0.75	45.0	0.498	73.2	11.3	0.731	45.4	0.754	75.1	10.6		
61.3	0.625	29.6	0.326	61.9	11.2	0.598	30.2	0.629	64.5	10.8		
49.8	0.5	18.2	0.199	50.6	11.0	0.465	19.0	0.502	53.7	10.9		
38.2	0.375	10.2	0.11	39.6	10.6	0.335	11.0	0.373	42.9	10.9		
26.7	0.25	5.0	0.051	29.0	9.7	0.21	5.8	0.245	32.0	10.6		
15.2	0.125	1.9	0.017	19.3	8.1	0.095	2.8	0.12	21.4	10.2		
3.6	0.0	0.4	0.0	11.2	0.0	0.0	1.3	0.0	11.2	0.0		

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

eep21-3n

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

$L^*_{0aN}=3.6$, $L^*_{0aU}=49.8$, $L^*_{0aW}=96.0$, $Y_{0aN}=0.4$, $Y_{0aU}=18.2$, $Y_{0aW}=90.0$, $C_{0aY}=Y_{0aW}:Y_{0aN}=225.0$
 $L^*_{taN}=16.3$, $L^*_{taU}=51.4$, $L^*_{taW}=96.0$, $Y_{taN}=2.1$, $Y_{taU}=19.7$, $Y_{taW}=90.0$, $C_{taY}=Y_{taW}:Y_{taN}=41.7$

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 $Y \geq 0.882$, $Y_N=100$
 $g^*_5 = 99$, $g^*_9 = 99$ $g^*_5 = 65$, $g^*_9 = 55$ $g^*_5 = 92$, $g^*_9 = 90$

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	96.0	11.3	1.0	90.0	1.0	96.0	9.6	
84.4	0.875	64.9	0.72	84.7	11.2	0.858	65.4	0.879	86.4	9.8		
72.9	0.75	45.0	0.498	73.5	11.1	0.717	45.9	0.757	76.6	10.0		
61.3	0.625	29.6	0.326	62.4	10.9	0.578	30.8	0.631	66.6	10.2		
49.8	0.5	18.2	0.199	51.4	10.6	0.441	19.7	0.503	56.4	10.4		
38.2	0.375	10.2	0.11	40.9	9.9	0.309	11.8	0.373	46.0	10.4		
26.7	0.25	5.0	0.051	31.0	8.5	0.185	6.6	0.242	35.6	9.9		
15.2	0.125	1.9	0.017	22.5	6.2	0.078	3.7	0.118	25.7	9.4		
3.6	0.0	0.4	0.0	16.3	0.0	0.0	2.1	0.0	16.3	0.0		

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

eep21-7n

Test chart eep2; 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: white W

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-eep2/eep210np.pdf /.ps
 application for evaluation and measurement of display or print output
 TUB material: code=rh4ta