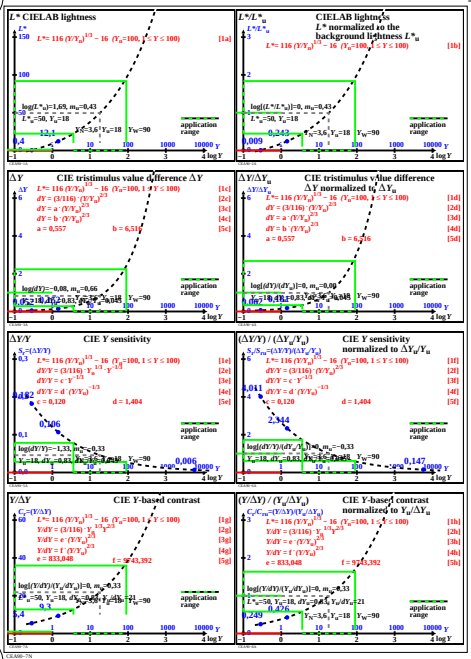
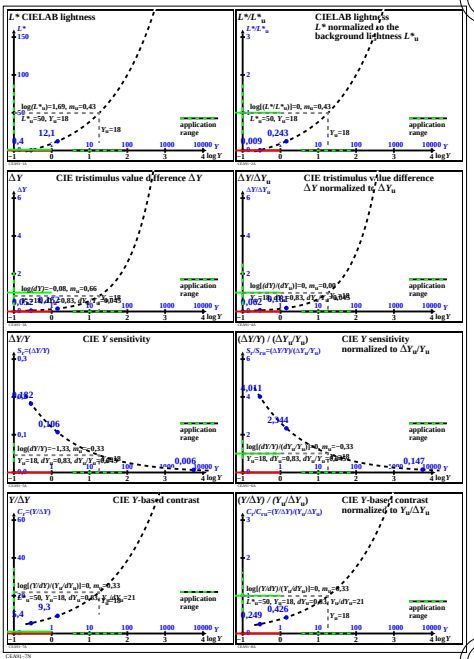

L* CIELAB lightness
L*=116 (Y/Yn)^1/3 − 16 (Yn=100, 1 ≤ Y ≤ 100) [1a]
L*/L*n CIELAB lightness L* normalized to the background lightness L*n
L*=116 (Y/Yn)^1/3 − 16 (Yn=100, 1 ≤ Y ≤ 100) [1b]
ΔY CIE tristimulus value difference ΔY
ΔY=116 (Y/Yn)^1/3 − 16 (Yn=100, 1 ≤ Y ≤ 100) [1c]
dY = a·(Y/Yn)^1/3 [3c]
dY = b·(Y/Yn)^1/3 [4c]
a = 0,557 b = 6,516 [5c]
ΔY/ΔYn CIE tristimulus value difference ΔY normalized to ΔYn
ΔY/ΔYn=116 (Y/Yn)^1/3 − 16 (Yn=100, 1 ≤ Y ≤ 100) [1d]
dY = (3/116)·(Y/Yn)^1/3 [2d]
dY = a·(Y/Yn)^1/3 [3d]
dY = b·(Y/Yn)^1/3 [4d]
a = 0,557 b = 6,516 [5d]
ΔY/Y CIE Y sensitivity
Sc=(ΔY/Y)
dY/Y = (3/116)·Yn^1/3·c·Y^-1/3 [2e]
dY/Y = c·Y^-1/3 [3e]
dY/Y = d·(Y/Yn)^-1/3 [4e]
c = 0,120 d = 1,404 [5e]
(ΔY/Y) / (ΔYn/Yn) CIE Y sensitivity normalized to ΔYn/Yn
Sc/Scn=(ΔY/Y)/(ΔYn/Yn) [1f]
dY/Y = (3/116)·(Y/Yn)^1/3 [2f]
dY/Y = c·Y^-1/3 [3f]
dY/Y = d·(Y/Yn)^-1/3 [4f]
c = 0,120 d = 1,404 [5f]
Y/ΔY CIE Y-based contrast
Cc=Y/(ΔY)
Y/dY = (3/116)·Yn^1/3·Y^2/3 [2g]
Y/dY = e·(Y/Yn)^2/3 [3g]
Y/dY = f·(Y/Yn)^2/3 [4g]
e = 833,048 f = 521,392 [5g]
(Y/ΔY) / (Yn/ΔYn) CIE Y-based contrast normalized to Yn/ΔYn
Cc/Ccn=(Y/ΔY)/(Yn/ΔYn) [1h]
Y/dY = (3/116)·Yn^1/3·Y^2/3 [2h]
Y/dY = e·(Y/Yn)^2/3 [3h]
Y/dY = f·(Y/Yn)^2/3 [4h]
e = 833,048 f = 521,392 [5h]
log(L*n)=1,69, mc=0,43
L*=50, Yn=18
Xn=3,6 Yn=18 Yw=90
12,1
0,4
0,243
0,009
0,476
0,249
application range
log(dY)=−0,08, mc=0,66
log(dY)=−1,33, mc=−0,33
Yn=18, dYn=0,83, dY/Yn=0,046
0,006
0,147
0,022
2,344
0,011
log(dY/Y)=−1,33, mc=−0,33
Yn=18, dYn/Yn=0,83, dY/Yn=0,046
9,3
0,107
0,4
0,6
0,8
1
2
3
4 log Y
10
100
1000
10000 Y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dY/Y = d·(Y/Yn)^-1/3 [4e]
c = 0,120 d = 1,404 [5e]
(ΔY/Y) / (ΔYn/Yn) CIE Y sensitivity normalized to ΔYn/Yn
Sc/Scn=(ΔY/Y)/(ΔYn/Yn) [1f]
dY/Y = (3/116)·(Y/Yn)^1/3 [2f]
dY/Y = c·Y^-1/3 [3f]
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Y/dY = (3/116)·Yn^1/3·Y^2/3 [2g]
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Y/dY = f·(Y/Yn)^2/3 [4g]
e = 833,048 f = 521,392 [5g]
(Y/ΔY) / (Yn/ΔYn) CIE Y-based contrast normalized to Yn/ΔYn
Cc/Ccn=(Y/ΔY)/(Yn/ΔYn) [1h]
Y/dY = (3/116)·Yn^1/3·Y^2/3 [2h]
Y/dY = e·(Y/Yn)^2/3 [3h]
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