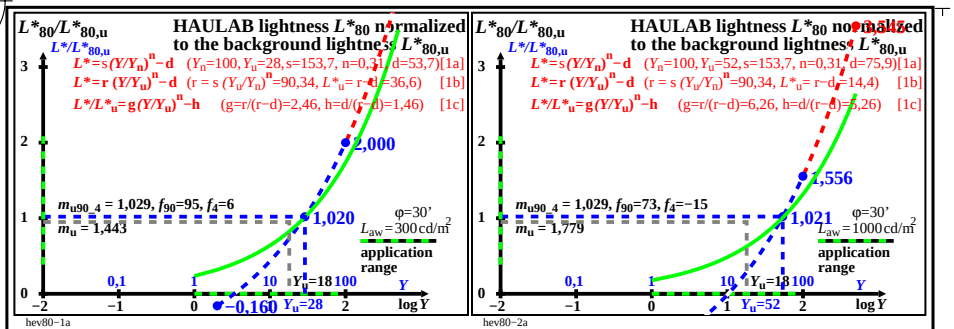
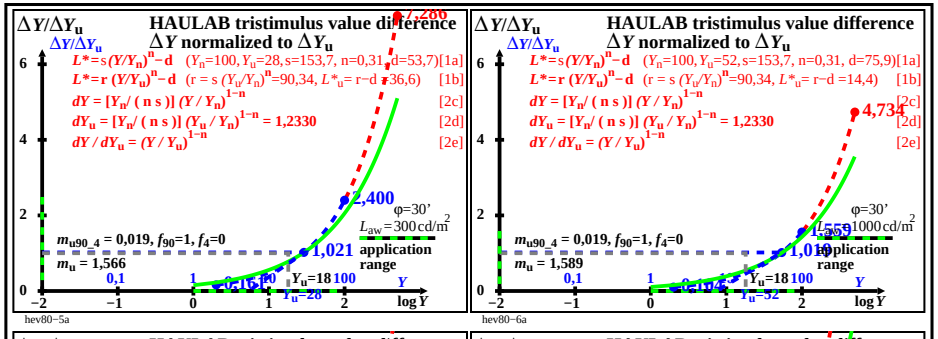
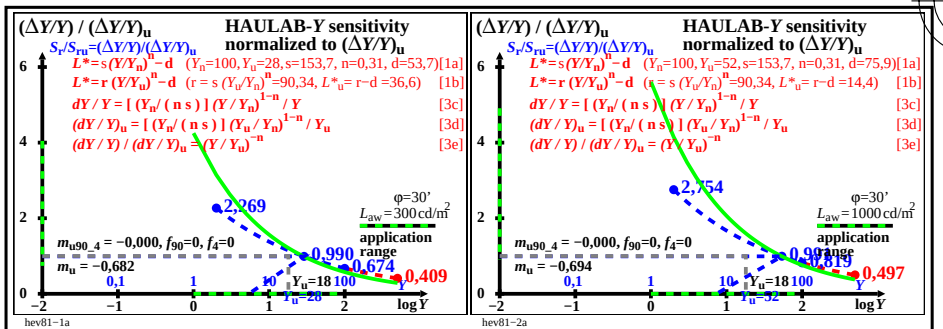
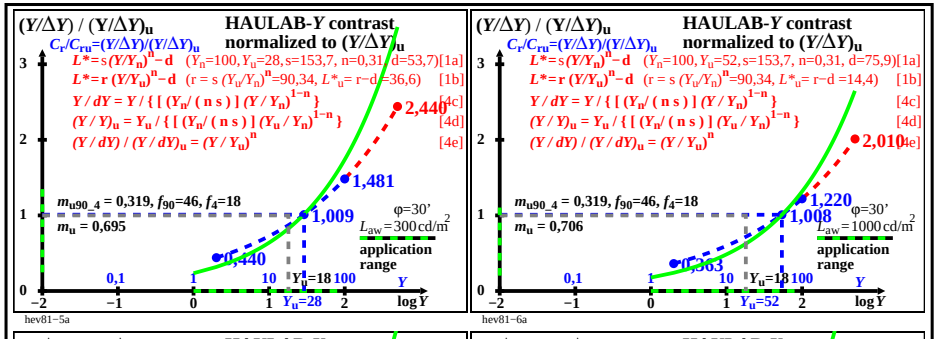

L*80/L*80,u
HAUBLAB lightness L*80 normalized to the background lightness L*80,u
L*/L*80,u
L*=s(Y/Yn)^n−d (Yn=100, Yu=28,s=153,7, n=0,31, d=53,7)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =36,6) [1b]
L*/L*u=g(Y/Yu)^n−h (g=r/(r−d)=2,46, h=d/(r−d)=1,46) [1c]
mu90_4 = 1,029, f90=95, f4=6
mu = 1,443
2,000
1,020
−0,160
φ=30’
Law=300cd/m2
application range
Yu=18
Yu=28
hev80−1a
L*80/L*80,u
HAUBLAB lightness L*80 normalized to the background lightness L*80,u
L*/L*80,u
L*=s(Y/Yn)^n−d (Yn=100, Yu=52,s=153,7, n=0,31, d=75,9)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =14,4) [1b]
L*/L*u=g(Y/Yu)^n−h (g=r/(r−d)=6,26, h=d/(r−d)=3,26) [1c]
mu90_4 = 1,029, f90=73, f4=−15
mu = 1,779
1,556
1,021
φ=30’
Law=1000cd/m2
application range
Yu=18
Yu=52
hev80−2a
L*80/L*80,u
HAUBLAB lightness L*80 normalized to the background lightness L*80,u
L*/L*80,u
L*=s(Y/Yn)^n−d (Yn=100, Yu=23,s=153,7, n=0,31, d=47,9)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =42,3) [1b]
L*/L*u=g(Y/Yu)^n−h (g=r/(r−d)=2,13, h=d/(r−d)=1,13) [1c]
mu90_4 = 1,029, f90=101, f4=12
mu = 1,350
2,115
1,016
−0,041
φ=30’
Law=200cd/m2
application range
Yu=18
Yu=23
hev80−3a
hev80−3n
L*80/L*80,u
HAUBLAB lightness L*80 normalized to the background lightness L*80,u
L*/L*80,u
L*=s(Y/Yn)^n−d (Yn=100, Yu=12,s=163,9, n=0,31, d=36,8)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=96,32, L*u= r−d =59,4) [1b]
L*/L*u=g(Y/Yu)^n−h (g=r/(r−d)=1,61, h=d/(r−d)=0,61) [1c]
mu90_4 = 1,098, f90=122, f4=27
mu = 1,180
2,541
1,045
0,238
φ=30’
Law=40cd/m2
application range
Yu=18
Yu=12
hev80−4a


ΔY/ΔYu
HAUBLAB tristimulus value difference ΔY normalized to ΔYu
ΔY/ΔYu
L*=s(Y/Yn)^n−d (Yn=100, Yu=28,s=153,7, n=0,31, d=53,7)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =36,6) [1b]
dY = [Yn/ (n s)] (Y / Yn)^1−n [2c]
dYu = [Yn/ (n s)] (Yu / Yn)^1−n = 1,2330 [2d]
dY / dYu = (Y / Yu)^1−n [2e]
mu90_4 = 0,019, f90=1, f4=0
mu = 1,566
7,286
2,400
1,021
0,015
φ=30’
Law=300cd/m2
application range
Yu=18
Yu=26
hev80−5a
ΔY/ΔYu
HAUBLAB tristimulus value difference ΔY normalized to ΔYu
ΔY/ΔYu
L*=s(Y/Yn)^n−d (Yn=100, Yu=52,s=153,7, n=0,31, d=75,9)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =14,4) [1b]
dY = [Yn/ (n s)] (Y / Yn)^1−n [2c]
dYu = [Yn/ (n s)] (Yu / Yn)^1−n = 1,2330 [2d]
dY / dYu = (Y / Yu)^1−n [2e]
mu90_4 = 0,019, f90=1, f4=0
mu = 1,589
4,734
1,019
0,014
φ=30’
Law=1000cd/m2
application range
Yu=18
Yu=32
hev80−6a
ΔY/ΔYu
HAUBLAB tristimulus value difference ΔY normalized to ΔYu
ΔY/ΔYu
L*=s(Y/Yn)^n−d (Yn=100, Yu=23,s=153,7, n=0,31, d=47,9)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =42,3) [1b]
dY = [Yn/ (n s)] (Y / Yn)^1−n [2c]
dYu = [Yn/ (n s)] (Yu / Yn)^1−n = 1,2330 [2d]
dY / dYu = (Y / Yu)^1−n [2e]
mu90_4 = 0,019, f90=1, f4=0
mu = 1,550
2,727
1,018
0,018
φ=30’
Law=200cd/m2
application range
Yu=18
Yu=23
hev80−7a
hev80−7n
ΔY/ΔYu
HAUBLAB tristimulus value difference ΔY normalized to ΔYu
ΔY/ΔYu
L*=s(Y/Yn)^n−d (Yn=100, Yu=12,s=163,9, n=0,31, d=36,8)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=96,32, L*u= r−d =59,4) [1b]
dY = [Yn/ (n s)] (Y / Yn)^1−n [2c]
dYu = [Yn/ (n s)] (Yu / Yn)^1−n = 1,1565 [2d]
dY / dYu = (Y / Yu)^1−n [2e]
mu90_4 = 0,018, f90=1, f4=0
mu = 1,559
4,112
1,059
0,270
φ=30’
Law=40cd/m2
application range
Yu=18
Yu=12
hev80−8a


(ΔY/Y) / (ΔY/Y)u
HAUBLAB-Y sensitivity normalized to (ΔY/Y)u
St/Sru=(ΔY/Y)/(ΔY/Y)u
L*=s(Y/Yn)^n−d (Yn=100, Yu=28,s=153,7, n=0,31, d=53,7)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =36,6) [1b]
dY / Y = [(Yn/ (n s)] (Y / Yn)^1−n / Y [3c]
(dY / Y)u = [(Yn/ (n s)] (Yu / Yn)^1−n / Yu [3d]
(dY / Y) / (dY / Y)u = (Y / Yu)^−n [3e]
mu90_4 = −0,000, f90=0, f4=0
mu = −0,682
2,269
0,990
0,674
0,409
φ=30’
Law=300cd/m2
application range
Yu=18
Yu=26
hev81−1a
(ΔY/Y) / (ΔY/Y)u
HAUBLAB-Y sensitivity normalized to (ΔY/Y)u
St/Sru=(ΔY/Y)/(ΔY/Y)u
L*=s(Y/Yn)^n−d (Yn=100, Yu=52,s=153,7, n=0,31, d=75,9)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =14,4) [1b]
dY / Y = [(Yn/ (n s)] (Y / Yn)^1−n / Y [3c]
(dY / Y)u = [(Yn/ (n s)] (Yu / Yn)^1−n / Yu [3d]
(dY / Y) / (dY / Y)u = (Y / Yu)^−n [3e]
mu90_4 = −0,000, f90=0, f4=0
mu = −0,694
2,754
0,990
0,819
0,497
φ=30’
Law=1000cd/m2
application range
Yu=18
Yu=52
hev81−2a
hev81−2n
(ΔY/Y) / (ΔY/Y)u
HAUBLAB-Y sensitivity normalized to (ΔY/Y)u
St/Sru=(ΔY/Y)/(ΔY/Y)u
L*=s(Y/Yn)^n−d (Yn=100, Yu=23,s=153,7, n=0,31, d=47,9)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =42,3) [1b]
dY / Y = [(Yn/ (n s)] (Y / Yn)^1−n / Y [3c]
(dY / Y)u = [(Yn/ (n s)] (Yu / Yn)^1−n / Yu [3d]
(dY / Y) / (dY / Y)u = (Y / Yu)^−n [3e]
mu90_4 = −0,000, f90=0, f4=0
mu = −0,678
2,142
0,991
0,637
0,386
φ=30’
Law=200cd/m2
application range
Yu=18
Yu=23
hev81−3a
hev81−3n
(ΔY/Y) / (ΔY/Y)u
HAUBLAB-Y sensitivity normalized to (ΔY/Y)u
St/Sru=(ΔY/Y)/(ΔY/Y)u
L*=s(Y/Yn)^n−d (Yn=100, Yu=12,s=163,9, n=0,31, d=36,8)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=96,32, L*u= r−d =59,4) [1b]
dY / Y = [(Yn/ (n s)] (Y / Yn)^1−n / Y [3c]
(dY / Y)u = [(Yn/ (n s)] (Yu / Yn)^1−n / Yu [3d]
(dY / Y) / (dY / Y)u = (Y / Yu)^−n [3e]
mu90_4 = −0,000, f90=0, f4=0
mu = −0,646
1,781
0,974
0,529
0,321
φ=30’
Law=40cd/m2
application range
Yu=18
Yu=12
hev81−4a


(Y/ΔY) / (Y/ΔY)u
HAUBLAB-Y contrast normalized to (Y/ΔY)u
Cr/Cru=(Y/ΔY)/(Y/ΔY)u
L*=s(Y/Yn)^n−d (Yn=100, Yu=28,s=153,7, n=0,31, d=53,7)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =36,6) [1b]
Y / dY = Y / { [(Yn/ (n s)] (Y / Yn)^1−n } [4c]
(Y / Y)u = Yu / { [(Yn/ (n s)] (Yu / Yn)^1−n } [4d]
(Y / dY) / (Y / dY)u = (Y / Yu)^n [4e]
mu90_4 = 0,319, f90=46, f4=18
mu = 0,695
2,446
1,481
1,009
0,440
φ=30’
Law=300cd/m2
application range
Yu=18
Yu=28
hev81−5a
(Y/ΔY) / (Y/ΔY)u
HAUBLAB-Y contrast normalized to (Y/ΔY)u
Cr/Cru=(Y/ΔY)/(Y/ΔY)u
L*=s(Y/Yn)^n−d (Yn=100, Yu=52,s=153,7, n=0,31, d=75,9)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =14,4) [1b]
Y / dY = Y / { [(Yn/ (n s)] (Y / Yn)^1−n } [4c]
(Y / Y)u = Yu / { [(Yn/ (n s)] (Yu / Yn)^1−n } [4d]
(Y / dY) / (Y / dY)u = (Y / Yu)^n [4e]
mu90_4 = 0,319, f90=46, f4=18
mu = 0,706
2,010
1,220
1,008
0,363
φ=30’
Law=1000cd/m2
application range
Yu=18
Yu=52
hev81−6a
(Y/ΔY) / (Y/ΔY)u
HAUBLAB-Y contrast normalized to (Y/ΔY)u
Cr/Cru=(Y/ΔY)/(Y/ΔY)u
L*=s(Y/Yn)^n−d (Yn=100, Yu=23,s=153,7, n=0,31, d=47,9)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=90,34, L*u= r−d =42,3) [1b]
Y / dY = Y / { [(Yn/ (n s)] (Y / Yn)^1−n } [4c]
(Y / Y)u = Yu / { [(Yn/ (n s)] (Yu / Yn)^1−n } [4d]
(Y / dY) / (Y / dY)u = (Y / Yu)^n [4e]
mu90_4 = 0,319, f90=46, f4=18
mu = 0,689
2,585
1,569
1,008
0,466
φ=30’
Law=200cd/m2
application range
Yu=18
Yu=23
hev81−7a
hev81−7n
(Y/ΔY) / (Y/ΔY)u
HAUBLAB-Y contrast normalized to (Y/ΔY)u
Cr/Cru=(Y/ΔY)/(Y/ΔY)u
L*=s(Y/Yn)^n−d (Yn=100, Yu=12,s=163,9, n=0,31, d=36,8)[1a]
L*=r (Y/Yu)^n−d (r = s (Yu/Yn)^n=96,32, L*u= r−d =59,4) [1b]
Y / dY = Y / { [(Yn/ (n s)] (Y / Yn)^1−n } [4c]
(Y / Y)u = Yu / { [(Yn/ (n s)] (Yu / Yn)^1−n } [4d]
(Y / dY) / (Y / dY)u = (Y / Yu)^n [4e]
mu90_4 = 0,340, f90=49, f4=20
mu = 0,679
3,108
1,887
1,026
0,561
φ=30’
Law=40cd/m2
application range
Yu=18
Yu=12
hev81−8a