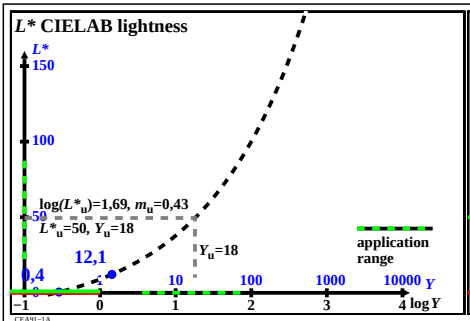
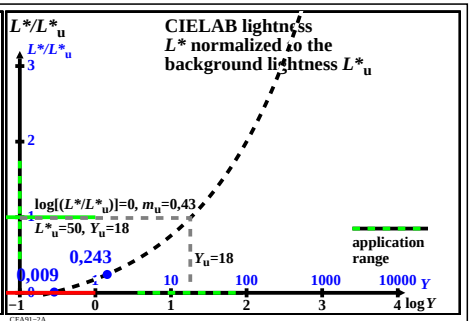
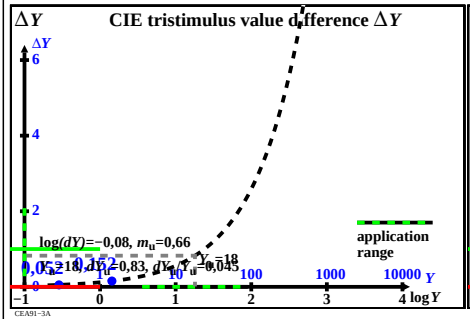
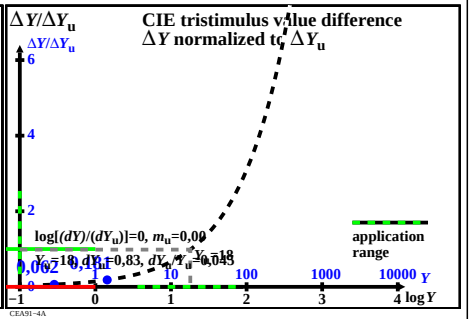
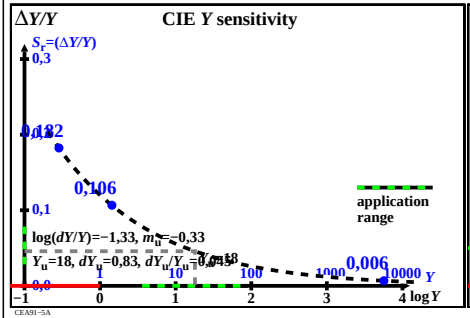
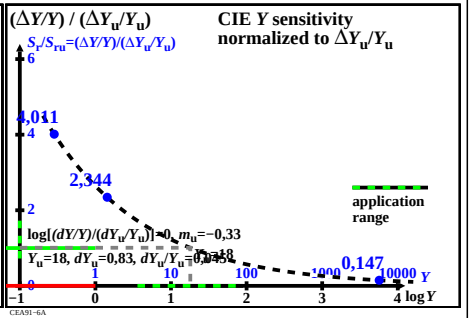

L* CIELAB lightness
L*
150
100
50
0
log(L*u)=1,69, mu=0,43
L*u=50, Yu=18
Yu=18
12,1
0,4
application range
10
100
1000
10000 Y
−1
0
1
2
3
4 log Y
CEA91−1A

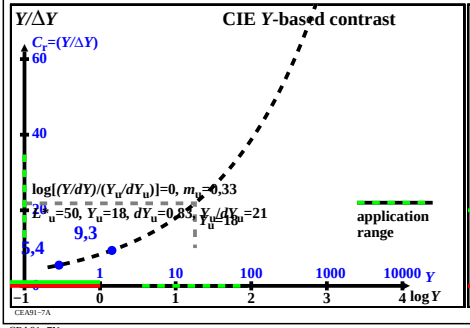

L*/L*u
CIELAB lightness
L* normalized to the
background lightness L*u
L*/L*u
3
2
1
0
log[(L*/L*u)]=0, mu=0,43
L*u=50, Yu=18
Yu=18
0,243
0,009
application range
10
100
1000
10000 Y
−1
0
1
2
3
4 log Y
CEA91−2A

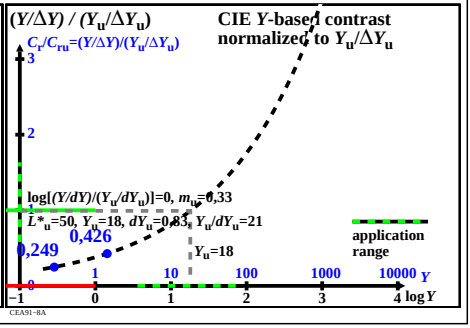

ΔY
CIE tristimulus value difference ΔY
ΔY
6
4
2
0
log(dY)=−0,08, mu=0,66
Yu=18, dYu=0,83, dYu/Yu=0,045
Yu=18
0,045
0,5
application range
10
100
1000
10000 Y
−1
0
1
2
3
4 log Y
CEA91−3A


ΔY/ΔYu
CIE tristimulus value difference
ΔY normalized to ΔYu
ΔY/ΔYu
6
4
2
0
log[(dY)/(dYu)]=0, mu=0,00
Yu=18, dYu=0,83, dYu/Yu=0,045
Yu=18
0,045
0,002
application range
10
100
1000
10000 Y
−1
0
1
2
3
4 log Y
CEA91−4A


ΔY/Y
CIE Y sensitivity
Sy=(ΔY/Y)
0,3
0,2
0,1
0,0
log(dY/Y)=−1,33, mu=−0,33
Yu=18, dYu=0,83, dYu/Yu=0,045
0,182
0,106
0,006
application range
1
10
100
1000
10000 Y
−1
0
1
2
3
4 log Y
CEA91−5A


(ΔY/Y) / (ΔYu/Yu)
CIE Y sensitivity
normalized to ΔYu/Yu
Sy/Sru=(ΔY/Y)/(ΔYu/Yu)
6
4
2
0
log[(dY/Y)/(dYu/Yu)]=0, mu=−0,33
Yu=18, dYu=0,83, dYu/Yu=0,045
4,011
2,344
0,147
application range
1
10
100
1000
10000 Y
−1
0
1
2
3
4 log Y
CEA91−6A


Y/ΔY
CIE Y-based contrast
Cy=(Y/ΔY)
60
40
20
0
log[(Y/dY)/(Yu/dYu)]=0, mu=0,33
L*u=50, Yu=18, dYu=0,83, Yu/dYu=21
Yu=18
9,3
5,4
application range
1
10
100
1000
10000 Y
−1
0
1
2
3
4 log Y
CEA91−7A


(Y/ΔY) / (Yu/ΔYu)
CIE Y-based contrast
normalized to Yu/ΔYu
Cy/Cru=(Y/ΔY)/(Yu/ΔYu)
3
2
1
0
log[(Y/dY)/(Yu/dYu)]=0, mu=0,33
L*u=50, Yu=18, dYu=0,83, Yu/dYu=21
Yu=18
0,426
0,249
application range
1
10
100
1000
10000 Y
−1
0
1
2
3
4 log Y
CEA91−8A