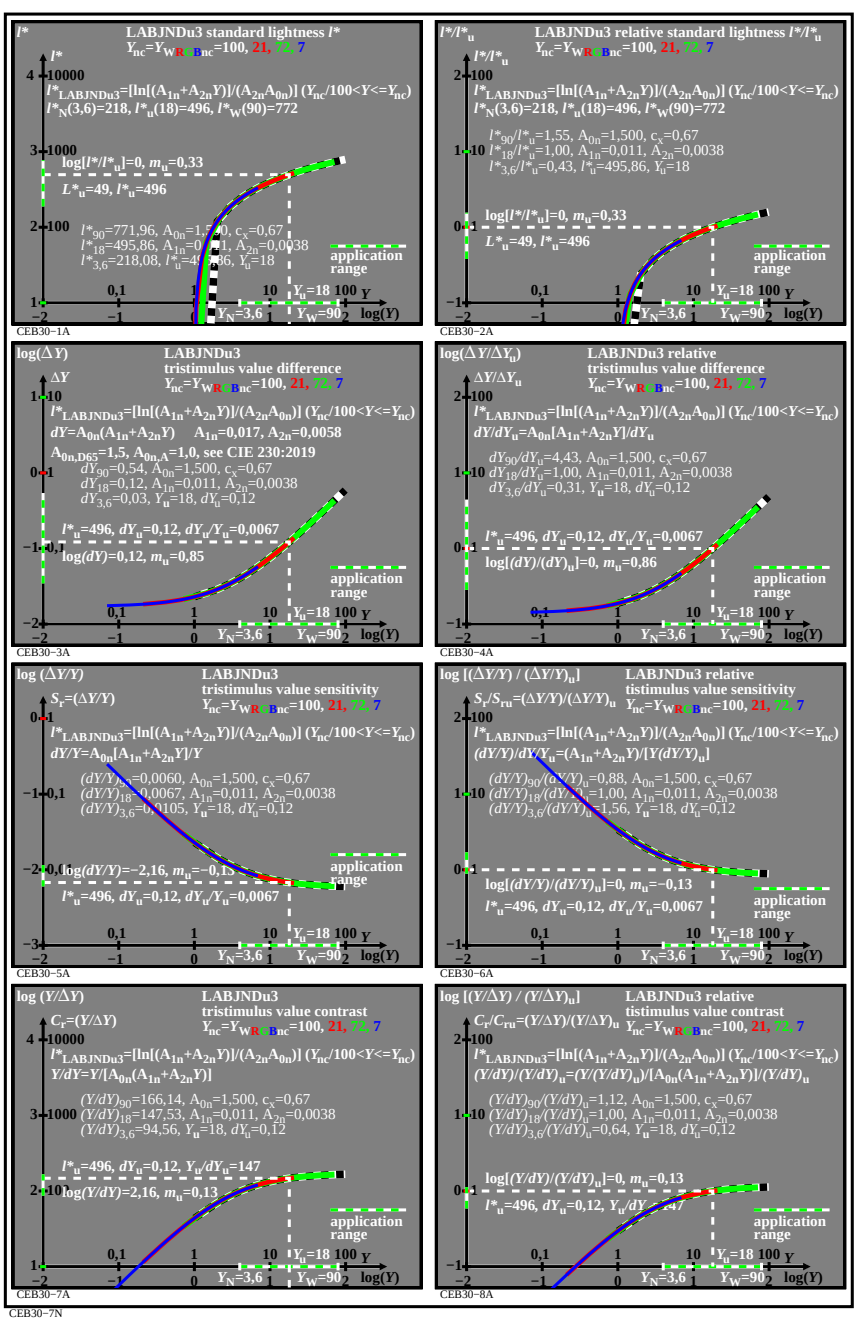
l*
LABJNDu3 standard lightness l*
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu3=[ln((A1n+A2nY)/(A2nA0n)] (Ync/100<Y<=Ync)
l*N(3,6)=218, l*u(18)=496, l*W(90)=772
log[l*/l*u]=0, mu=0,33
L*u=49, l*u=496
l*90=771,96, A0n=1,500, cx=0,67
l*18=495,86, A1n=0,011, A2n=0,0038
l*3,6=218,08, l*u=496, Yu=18
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB30–1A
l*/l*u
LABJNDu3 relative standard lightness l*/l*u
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu3=[ln((A1n+A2nY)/(A2nA0n)] (Ync/100<Y<=Ync)
l*N(3,6)=218, l*u(18)=496, l*W(90)=772
l*90/l*u=1,55, A0n=1,500, cx=0,67
l*18/l*u=1,00, A1n=0,011, A2n=0,0038
l*3,6/l*u=0,43, l*u=495,86, Yu=18
log[l*/l*u]=0, mu=0,33
L*u=49, l*u=496
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB30–2A
log(ΔY)
LABJNDu3
tristimulus value difference
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu3=[ln((A1n+A2nY)/(A2nA0n)] (Ync/100<Y<=Ync)
dY=A0n(A1n+A2nY) A1n=0,017, A2n=0,0058
A0n,D65=1,5, A0n,A=1,0, see CIE 230:2019
dY90=0,54, A0n=1,500, cx=0,67
dY18=0,12, A1n=0,011, A2n=0,0038
dY3,6=0,03, Yu=18, dYu=0,12
l*u=496, dYu=0,12, dYu/Yu=0,0067
log(dY)=0,12, mu=0,85
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB30–3A
log(ΔY/ΔYu)
LABJNDu3 relative
tristimulus value difference
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu3=[ln((A1n+A2nY)/(A2nA0n)] (Ync/100<Y<=Ync)
dY/dYu=A0n[A1n+A2nY]/dYu
dY90/dYu=4,43, A0n=1,500, cx=0,67
dY18/dYu=1,00, A1n=0,011, A2n=0,0038
dY3,6/dYu=0,31, Yu=18, dYu=0,12
l*u=496, dYu=0,12, dYu/Yu=0,0067
log[(dY)/(dY)u]=0, mu=0,86
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB30–4A
log (ΔY/Y)
LABJNDu3
tristimulus value sensitivity
Ync=YWRGBnc=100, 21, 72, 7
Sr=(ΔY/Y)
l*LABJNDu3=[ln((A1n+A2nY)/(A2nA0n)] (Ync/100<Y<=Ync)
dY/Y=A0n[A1n+A2nY]/Y
(dY/Y)90=0,0060, A0n=1,500, cx=0,67
(dY/Y)18=0,0067, A1n=0,011, A2n=0,0038
(dY/Y)3,6=0,0105, Yu=18, dYu=0,12
log(dY/Y)=−2,16, mu=−0,13
l*u=496, dYu=0,12, dYu/Yu=0,0067
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB30–5A
log [(ΔY/Y) / (ΔY/Y)u]
LABJNDu3 relative
tristimulus value sensitivity
Ync=YWRGBnc=100, 21, 72, 7
Sr/Sru=(ΔY/Y)/(ΔY/Y)u
l*LABJNDu3=[ln((A1n+A2nY)/(A2nA0n)] (Ync/100<Y<=Ync)
(dY/Y)/dY/Yu=(A1n+A2nY)/[Y(dY/Y)u]
(dY/Y)90/(dY/Y)u=0,88, A0n=1,500, cx=0,67
(dY/Y)18/(dY/Y)u=1,00, A1n=0,011, A2n=0,0038
(dY/Y)3,6/(dY/Y)u=1,56, Yu=18, dYu=0,12
log[(dY/Y)/(dY/Y)u]=0, mu=−0,13
l*u=496, dYu=0,12, dYu/Yu=0,0067
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB30–6A
log (Y/ΔY)
LABJNDu3
tristimulus value contrast
Ync=YWRGBnc=100, 21, 72, 7
Cr=(Y/ΔY)
l*LABJNDu3=[ln((A1n+A2nY)/(A2nA0n)] (Ync/100<Y<=Ync)
Y/dY=Y/[A0n(A1n+A2nY)]
(Y/dY)90=166,14, A0n=1,500, cx=0,67
(Y/dY)18=147,53, A1n=0,011, A2n=0,0038
(Y/dY)3,6=94,56, Yu=18, dYu=0,12
l*u=496, dYu=0,12, Yu/dYu=147
log(Y/dY)=2,16, mu=0,13
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB30–7A
log [(Y/ΔY) / (Y/ΔY)u]
LABJNDu3 relative
tristimulus value contrast
Cr/Cru=(Y/ΔY)/(Y/ΔY)u
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu3=[ln((A1n+A2nY)/(A2nA0n)] (Ync/100<Y<=Ync)
(Y/dY)/(Y/dY)u=(Y/(Y/dY)u)/[A0n(A1n+A2nY)]/(Y/dY)u
(Y/dY)90/(Y/dY)u=1,12, A0n=1,500, cx=0,67
(Y/dY)18/(Y/dY)u=1,00, A1n=0,011, A2n=0,0038
(Y/dY)3,6/(Y/dY)u=0,64, Yu=18, dYu=0,12
log[(Y/dY)/(Y/dY)u]=0, mu=0,13
l*u=496, dYu=0,12, Yu/dYu=147
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB30–8A
CEB30–7N