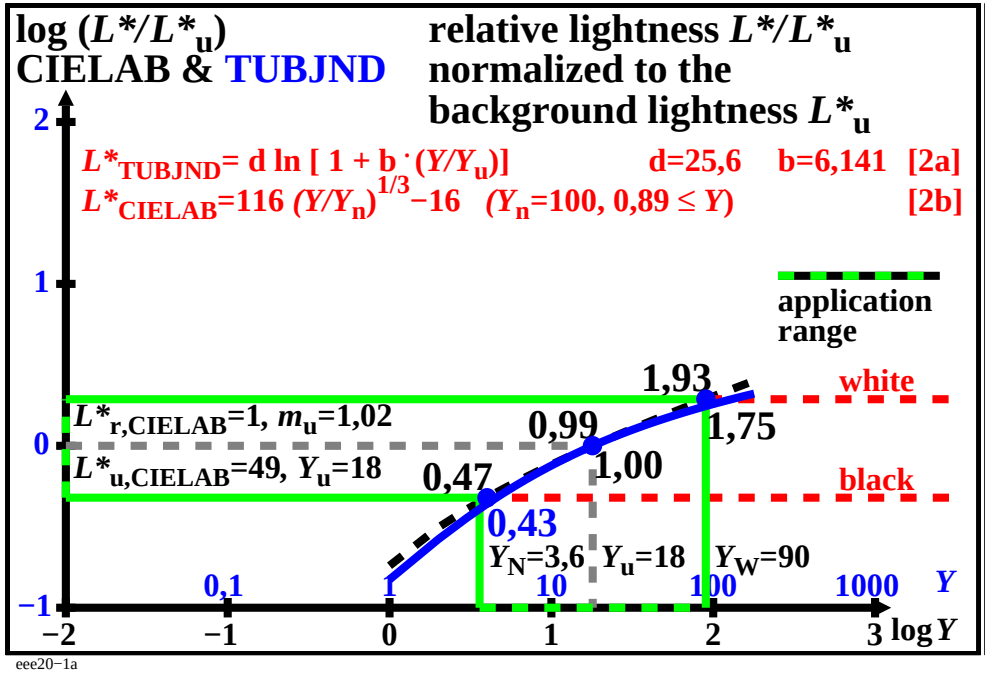
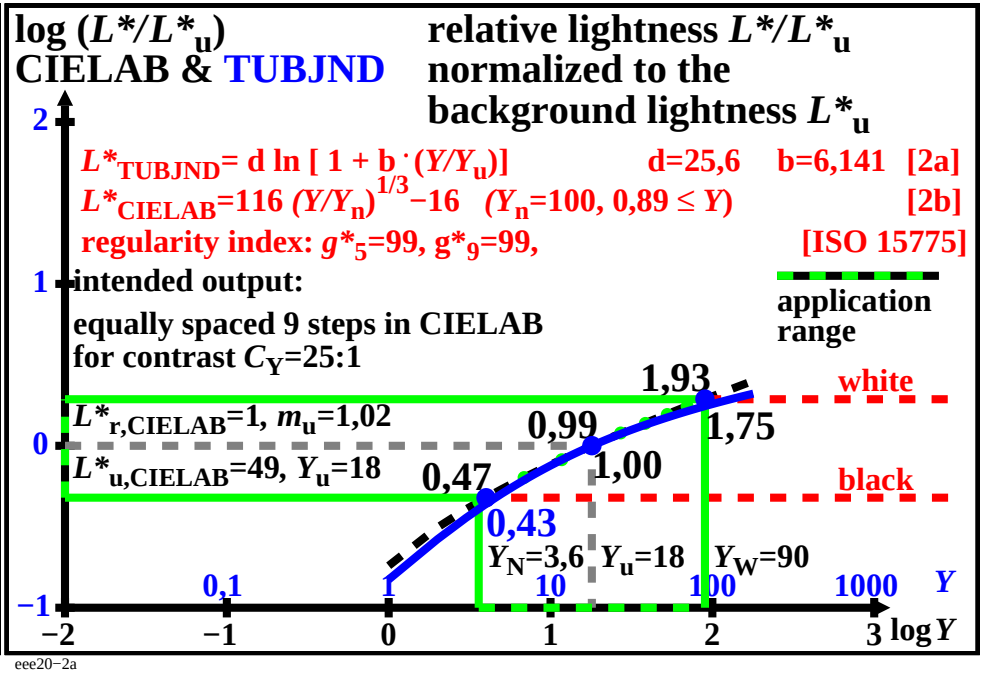
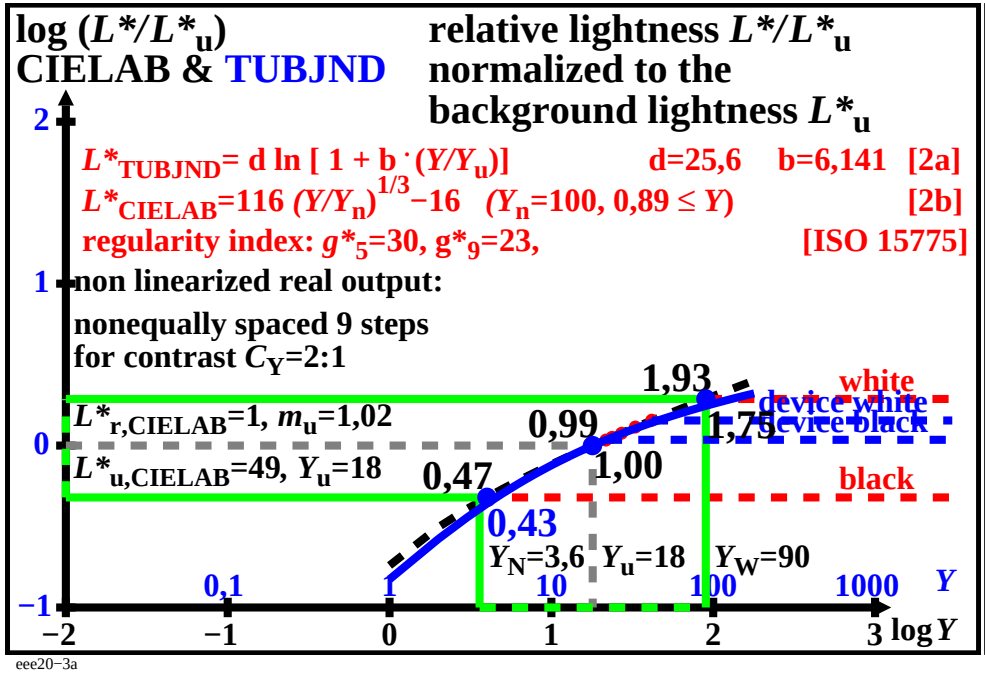
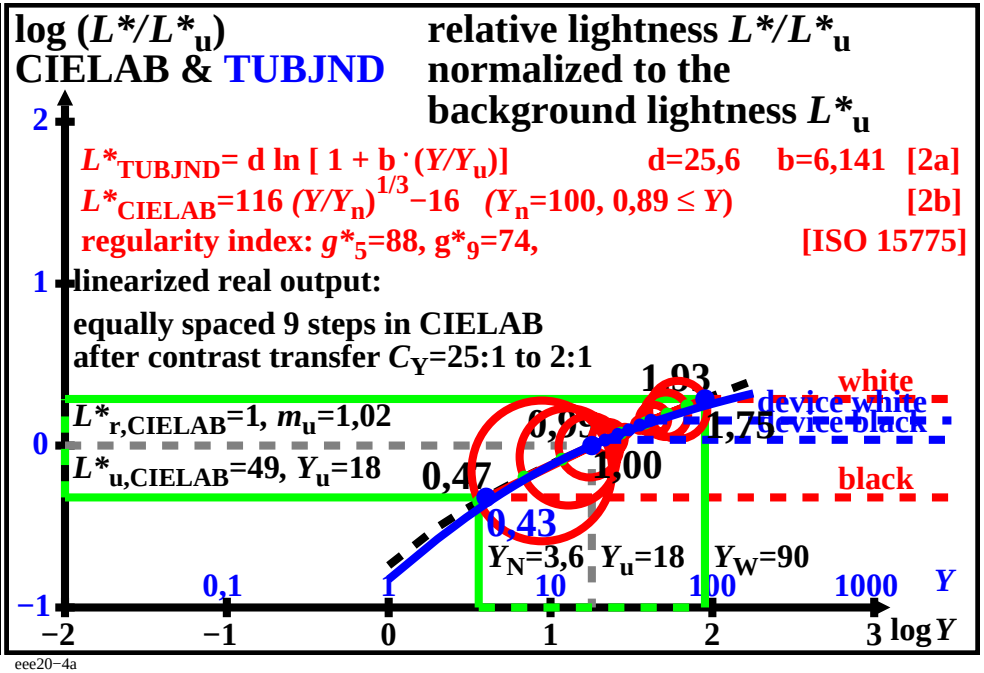

log (L*/L*u)
CIELAB & TUBJND
relative lightness L*/L*u
normalized to the
background lightness L*u
L*TUBJND= d ln [1 + b·(Y/Yu)] d=25,6 b=6,141 [2a]
L*CIELAB=116 (Y/Yn)1/3−16 (Yn=100, 0,89 ≤ Y) [2b]
application
range
white
black
L*r,CIELAB=1, mu=1,02
L*u,CIELAB=49, Yu=18
1,93
0,99
1,75
0,47
1,00
0,43
YN=3,6 Yu=18 YW=90
0,1
1
10
100
1000
Y
log Y
eee20−1a


log (L*/L*u)
CIELAB & TUBJND
relative lightness L*/L*u
normalized to the
background lightness L*u
L*TUBJND= d ln [1 + b·(Y/Yu)] d=25,6 b=6,141 [2a]
L*CIELAB=116 (Y/Yn)1/3−16 (Yn=100, 0,89 ≤ Y) [2b]
regularity index: g*5=99, g*9=99, [ISO 15775]
intended output:
equally spaced 9 steps in CIELAB
for contrast CY=25:1
application
range
white
black
L*r,CIELAB=1, mu=1,02
L*u,CIELAB=49, Yu=18
1,93
0,99
1,75
0,47
1,00
0,43
YN=3,6 Yu=18 YW=90
0,1
1
10
100
1000
Y
log Y
eee20−2a


log (L*/L*u)
CIELAB & TUBJND
relative lightness L*/L*u
normalized to the
background lightness L*u
L*TUBJND= d ln [1 + b·(Y/Yu)] d=25,6 b=6,141 [2a]
L*CIELAB=116 (Y/Yn)1/3−16 (Yn=100, 0,89 ≤ Y) [2b]
regularity index: g*5=30, g*9=23, [ISO 15775]
non linearized real output:
nonequally spaced 9 steps
for contrast CY=2:1
white
device white
device black
black
L*r,CIELAB=1, mu=1,02
L*u,CIELAB=49, Yu=18
1,93
0,99
1,75
0,47
1,00
0,43
YN=3,6 Yu=18 YW=90
0,1
1
10
100
1000
Y
log Y
eee20−3a


log (L*/L*u)
CIELAB & TUBJND
relative lightness L*/L*u
normalized to the
background lightness L*u
L*TUBJND= d ln [1 + b·(Y/Yu)] d=25,6 b=6,141 [2a]
L*CIELAB=116 (Y/Yn)1/3−16 (Yn=100, 0,89 ≤ Y) [2b]
regularity index: g*5=88, g*9=74, [ISO 15775]
linearized real output:
equally spaced 9 steps in CIELAB
after contrast transfer CY=25:1 to 2:1
white
device white
device black
black
L*r,CIELAB=1, mu=1,02
L*u,CIELAB=49, Yu=18
1,93
1,75
0,47
1,00
0,43
YN=3,6 Yu=18 YW=90
0,1
1
10
100
1000
Y
log Y
eee20−4a

eee20−3n