Contrast step C_{Yi} (i=1 to 8), CIE tristimulues value Y_N, grey steps according to ISO 9241-306[1)]

Contrast step C_{Yi} and Y-ratio (i=1 .. 8)	**CIE tristimulus value Y_N and CIE lightness L^*_N of black**	**total viewing display illuminance E_{P+R} [lux][2)]**	**measured projector (P) display illuminance E_P [lux][2)]**	**room light (R) display illuminance E_R [lux][2)]**	**grey steps without output linearisation delta L^*=1 amount a_n[3)]**	**grey steps with output linearisation delta L^*=1 amount a_l[3)]**
The following example assumes that a projector produces the contrast step C_{Y3} for the illuminances measured for 5 times the horizontal A4 direction (149 cm):						
C_{Y4} 36:1	10 / 38	2400+2000	4275	125	38	77
C_{Y3} 9:1	20 / 52	1200+1000	2075	125	34	68
C_{Y2} 4,5:1	40 / 70	600+500	975	125	28	57
The illuminances E_p are by the factor 4 less for 10 times the A4-direction (298 cm):						
C_{Yx1} 4:1[4)]	30 / 61	1069+125	1069	125		34
C_{Yx2} 2:1[5)]	45 / 74	518+125	518	125		21

1) The example is intended for data projectors (P). The standard contrast step (bold) C_{Y5} = 36:1 is not reached.

2) 125 lux corresponds to the viewing luminance L_v=35 cd/m^2 for a standard white paper with the tristimulues value Y_W=88,9.

3) For the amount of discriminable colour steps use the equations: $c_n = a_n^3$ or $c_l = a_l^3$, for example c_n = 4096 for a_n = 16.

4) The viewing contrast C_{Yx1} = 1194:125 = 8,5:1 is larger compared to the contrast C_{Y2} = 4,5:1. The contrast step is C_{Y2} = 4,5:1.

5) The viewing contrast C_{Yx2} = 643:125 = 5,1:1 is larger compared to the contrast C_{Y2} = 4,5:1. The contrast step is C_{Y2} = 4,5:1.