Relationship brightness B^*_{LT} and luminance L_T as function of tristimulus value Y_T for the adaptation luminance $L_a = 1000$ cd/m^2

$B^*_{LT}(L_T, L_a, \varphi) = C_T(\varphi) L_T^n - B_a(L_a, \varphi)$ brightness B^*_{LT} [1]

$B_a(L_a, \varphi) = C_T(\varphi)[S_0(\varphi) + S_1(\varphi) L_a^n]$ (n=0,31) [2]

$L_{Lt}(L_a, \varphi) = [S_0(\varphi) + S_1(\varphi) L_a^n]^{1/n}$ (t=black threshold) [3]

L_T	φ	$C_T(\varphi)$	ΔL	B^*/B^*_u	$B_a(L_a,\varphi)$	B^*_{LT}	L_{Lt}	L_a/L_t
42,53	120’	22,969	0,513	2,99 P	49,51	218,98	11,91	22,96
26,54	120’	22,969	0,370	2,50	50,82	182,48	11,91	22,96
15,28	120’	22,969	0,253	2,00 D	52,89	145,98	11,91	22,96
7,84	120’	22,969	0,160	1,49	57,37	109,49	11,91	22,96
3,38	120’	22,969	0,089	1,00 U	75,92	72,99	11,91	22,96
1,08	120’	22,969	0,041	0,50	90,28	36,49	11,91	22,96
11,91	120’	22,969	0,194	0,00 N	112,66	0,00	11,91	22,96
3,38	120’	22,969	0,089	1,00 U	75,92	72,99	11,91	22,96

hes90−5a j=1, L_r=300, L_{aj}=1000, φ=120’,

Relationship brightness B^*_{LT} and luminance L_T as function of tristimulus value Y_T for the adaptation luminance $L_a = 1000$ cd/m^2

$B^*_{LT}(L_T, L_a, \varphi) = s_x(\varphi) L_T^n - d_{xa}(L_a, \varphi)$ brightness B^*_{LT} [1]

$B_a(L_a, \varphi) = C_T(\varphi)[S_0(\varphi) + S_1(\varphi) L_a^n]$ (n=0,31) [2]

$s_x(\varphi) = C_T(\varphi)$ [3] $d_{xa}(\varphi) = B_a(L_a, \varphi)$ [4] (s=scaling factor)

L_T	φ	$C_T(\varphi)$	ΔL	B^*/B^*_u	$B_a(L_a,\varphi)$	B^*_{LT}	$s_x(\varphi)$	$d_{xa}(\varphi)$
42,53	120’	22,969	0,513	2,99 P	49,51	218,98	11,91	22,96
26,54	120’	22,969	0,370	2,50	50,82	182,48	11,91	22,96
15,28	120’	22,969	0,253	2,00 D	52,89	145,98	11,91	22,96
7,84	120’	22,969	0,160	1,49	57,37	109,49	11,91	22,96
3,38	120’	22,969	0,089	1,00 U	75,92	72,99	11,91	22,96
1,08	120’	22,969	0,041	0,50	90,28	36,49	11,91	22,96
11,91	120’	22,969	0,194	0,00 N	112,66	0,00	11,91	22,96
3,38	120’	22,969	0,089	1,00 U	75,92	72,99	11,91	22,96

hes90−6a j=1, L_r=300, L_{aj}=1000, φ=120’,

Relationship brightness B^*_{YT} and luminance L_T as function of tristimulus value Y_T for the adaptation luminance $L_a = 1000$ cd/m^2

$B^*_{YT}(L_T, L_r, L_r, \varphi) = [C_T(\varphi) L_T^n - B_r(L_r, \varphi)] B^*_{ra}$ brightness B^*_{YT} [1]

$B_r(L_r, \varphi) = C_T(\varphi)[S_0(\varphi) + S_1(\varphi) L_r^n]$ (n=0,31, $B^*_{ra} = B^*_{LT,r}/B^*_{LT,a}$) [2]

$L_{Yt}(L_a, \varphi) = [S_0(\varphi) + S_1(\varphi) L_r^n]^{1/n} B^*_{ra}$ (t=black threshold) [3]

Y_T	φ	$C_T(\varphi)$	ΔY	B^*/B^*_u	$B_r(L_r,\varphi)$	B^*_{YT}	L_{Yt}	L_a/L_t
42,53	120’	22,969	0,513	2,99 P	49,51	218,98	11,91	22,96
26,54	120’	22,969	0,370	2,50	50,82	182,48	11,91	22,96
15,28	120’	22,969	0,253	2,00 D	52,89	145,98	11,91	22,96
7,84	120’	22,969	0,160	1,49	57,37	109,49	11,91	22,96
3,38	120’	22,969	0,089	1,00 U	75,92	72,99	11,91	22,96
1,08	120’	22,969	0,041	0,50	90,28	36,49	11,91	22,96
11,91	120’	22,969	0,194	0,00 N	112,66	0,00	11,91	22,96
3,38	120’	22,969	0,089	1,00 U	75,92	72,99	11,91	22,96

hes90−7a j=1, L_r=300, L_{aj}=1000, φ=120’,

Relationship brightness B^*_{YT} and luminance L_T as function of tristimulus value Y_T for the adaptation luminance $L_a = 1000$ cd/m^2

$B^*_{YT}(L_T, L_r, \varphi) = s_{yra}(\varphi) L_T^n - d_{yra}(\varphi)$ brightness B^*_{YT} [1]

$B_r(L_r, \varphi) = C_T(\varphi)[S_0(\varphi) + S_1(\varphi) L_r^n]$ (n=0,31, $B^*_{ra} = B^*_{LT,r}/B^*_{LT,a}$) [2]

$s_{yra}(\varphi) = C_T(\varphi) B^*_{ra}$ [3] $d_{yra}(\varphi) = B_r(L_r, \varphi) B^*_{ra}$ [4] (s=scaling factor)

Y_T	φ	$C_T(\varphi)$	ΔY	B^*/B^*_u	$B_r(L_r,\varphi)$	B^*_{YT}	$s_{yra}(\varphi)$	$d_{yra}(\varphi)$
42,53	120’	22,969	0,513	2,99 P	49,51	218,98	11,91	22,96
26,54	120’	22,969	0,370	2,50	50,82	182,48	11,91	22,96
15,28	120’	22,969	0,253	2,00 D	52,89	145,98	11,91	22,96
7,84	120’	22,969	0,160	1,49	57,37	109,49	11,91	22,96
3,38	120’	22,969	0,089	1,00 U	75,92	72,99	11,91	22,96
1,08	120’	22,969	0,041	0,50	90,28	36,49	11,91	22,96
11,91	120’	22,969	0,194	0,00 N	112,66	0,00	11,91	22,96
3,38	120’	22,969	0,089	1,00 U	75,92	72,99	11,91	22,96

hes90−8a j=1, L_r=300, L_{aj}=1000, φ=120’,