**Relationship brightness $B^*_{LT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=300 cd/m²**

$B^*_{LT}(L_T, L_a, \varphi) = C_T(\varphi) L_T^n - B_a(L_a, \varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_a(L_a,\varphi)$ | $B^*_{LT}$ | $L_{Lt}$ | $L_a/L_t$ |
|---|---|---|---|---|---|---|---|---|
| 300 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 99,99 | 3,75 | 79,99 |
| 300 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 99,99 | 3,75 | 79,99 |
| 300 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 99,99 | 3,99 | 75,07 |
| 300 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 100,00 | 4,45 | 67,31 |
| 300 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 99,99 | 5,42 | 55,33 |
| 300 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 100,00 | 10,10 | 29,68 |
| 300 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 99,99 | 14,37 | 20,86 |
| 300 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 99,99 | 3,75 | 79,99 |

hes30−1a j=0, $L_t$=300, $L_{aj}$=300, φ=120’, $B_a$=34,60, $B^*_{LT}$=99,99

**Relationship brightness $B^*_{LT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=300 cd/m²**

$B^*_{LT}(L_T, L_a, \varphi) = s_x(\varphi) L_T^n - d_{xa}(L_a, \varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_a(L_a,\varphi)$ | $B^*_{LT}$ | $s_x(\varphi)$ | $d_{xa}(\varphi)$ |
|---|---|---|---|---|---|---|---|---|
| 300 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 99,99 | 22,96 | 34,60 |
| 300 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 99,99 | 22,96 | 34,60 |
| 300 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 99,99 | 23,12 | 35,53 |
| 300 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 100,00 | 23,41 | 37,21 |
| 300 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 99,99 | 23,97 | 40,48 |
| 300 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 100,00 | 26,23 | 53,74 |
| 300 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 99,99 | 27,97 | 63,91 |
| 300 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 99,99 | 22,96 | 34,60 |

hes30−2a j=0, $L_t$=300, $L_{aj}$=300, φ=120’, $B_a$=34,60, $B^*_{YT}$=99,99, $s_x$=22,96, $d_{xa}$=34,60

**Relationship brightness $B^*_{YT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=300 cd/m²**

$B^*_{YT}(L_T, L_r, L_r, \varphi) = [C_T(\varphi) L_T^n - B_r(L_r, \varphi)] B^*_{ra}$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_r(L_r,\varphi)$ | $B^*_{YT}$ | $L_{Yt}$ | $L_a/L_t$ |
|---|---|---|---|---|---|---|---|---|
| 300 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 99,99 | 3,75 | 79,99 |
| 300 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 99,99 | 3,75 | 79,99 |
| 300 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 99,99 | 3,99 | 75,07 |
| 300 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 100,00 | 4,45 | 67,31 |
| 300 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 99,99 | 5,42 | 55,33 |
| 300 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 100,00 | 10,10 | 29,68 |
| 300 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 99,99 | 14,37 | 20,86 |
| 300 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 99,99 | 3,75 | 79,99 |

hes30−3a j=0, $L_t$=300, $L_{aj}$=300, φ=120’, $B_r$=34,60, $B^*_{YT}$=99,99

**Relationship brightness $B^*_{YT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=300 cd/m²**

$B^*_{YT}(L_T, L_r, \varphi) = s_{yra}(\varphi) L_T^n - d_{yra}(\varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_r(L_r,\varphi)$ | $B^*_{YT}$ | $s_{yra}(\varphi)$ | $d_{yra}(\varphi)$ |
|---|---|---|---|---|---|---|---|---|
| 300 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 99,99 | 22,96 | 34,60 |
| 300 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 99,99 | 22,96 | 34,60 |
| 300 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 99,99 | 23,12 | 35,53 |
| 300 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 100,00 | 23,41 | 37,21 |
| 300 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 99,99 | 23,97 | 40,48 |
| 300 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 100,00 | 26,23 | 53,74 |
| 300 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 99,99 | 27,97 | 63,91 |
| 300 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 99,99 | 22,96 | 34,60 |

hes30−4a j=0, $L_t$=300, $L_{aj}$=300, φ=120’, $B_t$=34,60, $B^*_{YT}$=99,99, $s_{yra}$=22,96, $d_{yra}$=34,60

hes30−3R_R

**Relationship brightness $B^*_{LT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=1000 cd/m²**

$B^*_{LT}(L_T, L_a, \varphi) = C_T(\varphi) L_T^n - B_a(L_a, \varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_a(L_a,\varphi)$ | $B^*_{LT}$ | $L_{Lt}$ | $L_a/L_t$ |
|---|---|---|---|---|---|---|---|---|
| 1000 | 120’ | 22,969 | 0,0718 | 0,2448 | 49,51 | 145,98 | 11,91 | 83,94 |
| 1000 | 100’ | 23,128 | 0,0747 | 0,2494 | 49,51 | 146,02 | 12,68 | 78,86 |
| 1000 | 90’ | 23,415 | 0,1086 | 0,2526 | 49,51 | 146,39 | 13,85 | 72,15 |
| 1000 | 60’ | 23,973 | 0,1313 | 0,2657 | 49,51 | 146,66 | 16,69 | 59,88 |
| 1000 | 30’ | 26,235 | 0,1797 | 0,3188 | 49,51 | 147,37 | 30,80 | 32,46 |
| 1000 | 20’ | 27,971 | 0,2013 | 0,3555 | 49,51 | 147,78 | 43,81 | 22,82 |
| 1000 | 10’ | 30,747 | 0,2730 | 0,3984 | 49,51 | 149,03 | 65,96 | 15,16 |
| 1000 | 120’ | 22,969 | 0,0718 | 0,2448 | 49,51 | 145,98 | 11,91 | 83,94 |

hes30−5a j=1, $L_t$=300, $L_{aj}$=1000, φ=120’, $B_a$=49,51, $B^*_{LT}$=145,98

**Relationship brightness $B^*_{LT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=1000 cd/m²**

$B^*_{LT}(L_T, L_a, \varphi) = s_x(\varphi) L_T^n - d_{xa}(L_a, \varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_a(L_a,\varphi)$ | $B^*_{LT}$ | $s_x(\varphi)$ | $d_{xa}(\varphi)$ |
|---|---|---|---|---|---|---|---|---|
| 1000 | 120’ | 22,969 | 0,0718 | 0,2448 | 49,51 | 145,98 | 22,96 | 49,51 |
| 1000 | 100’ | 23,128 | 0,0747 | 0,2494 | 49,51 | 146,02 | 23,12 | 50,82 |
| 1000 | 90’ | 23,415 | 0,1086 | 0,2526 | 49,51 | 146,39 | 23,41 | 52,89 |
| 1000 | 60’ | 23,973 | 0,1313 | 0,2657 | 49,51 | 146,66 | 23,97 | 57,37 |
| 1000 | 30’ | 26,235 | 0,1797 | 0,3188 | 49,51 | 147,37 | 26,23 | 75,92 |
| 1000 | 20’ | 27,971 | 0,2013 | 0,3555 | 49,51 | 147,78 | 27,97 | 90,28 |
| 1000 | 10’ | 30,747 | 0,2730 | 0,3984 | 49,51 | 149,03 | 30,74 | 112,66 |
| 1000 | 120’ | 22,969 | 0,0718 | 0,2448 | 49,51 | 145,98 | 22,96 | 49,51 |

hes30−6a j=1, $L_t$=300, $L_{aj}$=1000, φ=120’, $B_a$=49,51, $B^*_{YT}$=145,98, $s_x$=22,96, $d_{xa}$=49,51

**Relationship brightness $B^*_{YT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=1000 cd/m²**

$B^*_{YT}(L_T, L_r, L_r, \varphi) = [C_T(\varphi) L_T^n - B_r(L_r, \varphi)] B^*_{ra}$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_r(L_r,\varphi)$ | $B^*_{YT}$ | $L_{Yt}$ | $L_a/L_t$ |
|---|---|---|---|---|---|---|---|---|
| 1000 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 110,21 | 8,15 | 83,94 |
| 1000 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 110,49 | 8,68 | 78,86 |
| 1000 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 111,02 | 9,49 | 72,15 |
| 1000 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 112,03 | 11,43 | 59,88 |
| 1000 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 116,14 | 21,10 | 32,46 |
| 1000 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 119,29 | 30,01 | 22,82 |
| 1000 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 124,33 | 45,18 | 15,16 |
| 1000 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 110,21 | 8,15 | 83,94 |

hes30−7a j=1, $L_t$=300, $L_{aj}$=1000, φ=120’, $B_t$=34,60, $B^*_{YT}$=110,21

**Relationship brightness $B^*_{YT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=1000 cd/m²**

$B^*_{YT}(L_T, L_r, \varphi) = s_{yra}(\varphi) L_T^n - d_{yra}(\varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_r(L_r,\varphi)$ | $B^*_{YT}$ | $s_{yra}(\varphi)$ | $d_{yra}(\varphi)$ |
|---|---|---|---|---|---|---|---|---|
| 1000 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 110,21 | 15,73 | 33,91 |
| 1000 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 110,49 | 15,84 | 34,81 |
| 1000 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 111,02 | 16,03 | 36,23 |
| 1000 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 112,03 | 16,42 | 39,30 |
| 1000 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 116,14 | 17,97 | 52,00 |
| 1000 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 119,29 | 19,15 | 61,84 |
| 1000 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 124,33 | 21,06 | 77,17 |
| 1000 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 110,21 | 15,73 | 33,91 |

hes30−8a j=1, $L_t$=300, $L_{aj}$=1000, φ=120’, $B_t$=34,60, $B^*_{YT}$=110,21, $s_{yra}$=15,73, $d_{yra}$=33,9

hes30−3R_R

**Relationship brightness $B^*_{LT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=200 cd/m²**

$B^*_{LT}(L_T, L_a, \varphi) = C_T(\varphi) L_T^n - B_a(L_a, \varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_a(L_a,\varphi)$ | $B^*_{LT}$ | $L_{Lt}$ | $L_a/L_t$ |
|---|---|---|---|---|---|---|---|---|
| 200 | 120’ | 22,969 | 0,0718 | 0,2448 | 30,71 | 87,99 | 2,55 | 78,36 |
| 200 | 100’ | 23,128 | 0,0747 | 0,2494 | 30,71 | 87,98 | 2,72 | 73,51 |
| 200 | 90’ | 23,415 | 0,1086 | 0,2526 | 30,71 | 87,89 | 3,05 | 65,36 |
| 200 | 60’ | 23,973 | 0,1313 | 0,2657 | 30,71 | 87,81 | 3,73 | 53,51 |
| 200 | 30’ | 26,235 | 0,1797 | 0,3188 | 30,71 | 87,63 | 6,99 | 28,58 |
| 200 | 20’ | 27,971 | 0,2013 | 0,3555 | 30,71 | 87,52 | 9,95 | 20,09 |
| 200 | 10’ | 30,747 | 0,2730 | 0,3984 | 30,71 | 87,19 | 15,35 | 13,02 |
| 200 | 120’ | 22,969 | 0,0718 | 0,2448 | 30,71 | 87,99 | 2,55 | 78,36 |

hes31−1a j=2, $L_t$=300, $L_{aj}$=200, φ=120’, $B_a$=30,71, $B^*_{LT}$=87,99

**Relationship brightness $B^*_{LT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=200 cd/m²**

$B^*_{LT}(L_T, L_a, \varphi) = s_x(\varphi) L_T^n - d_{xa}(L_a, \varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_a(L_a,\varphi)$ | $B^*_{LT}$ | $s_x(\varphi)$ | $d_{xa}(\varphi)$ |
|---|---|---|---|---|---|---|---|---|
| 200 | 120’ | 22,969 | 0,0718 | 0,2448 | 30,71 | 87,99 | 22,96 | 30,71 |
| 200 | 100’ | 23,128 | 0,0747 | 0,2494 | 30,71 | 87,98 | 23,12 | 31,54 |
| 200 | 90’ | 23,415 | 0,1086 | 0,2526 | 30,71 | 87,89 | 23,41 | 33,11 |
| 200 | 60’ | 23,973 | 0,1313 | 0,2657 | 30,71 | 87,81 | 23,97 | 36,07 |
| 200 | 30’ | 26,235 | 0,1797 | 0,3188 | 30,71 | 87,63 | 26,23 | 47,94 |
| 200 | 20’ | 27,971 | 0,2013 | 0,3555 | 30,71 | 87,52 | 27,97 | 57,02 |
| 200 | 10’ | 30,747 | 0,2730 | 0,3984 | 30,71 | 87,19 | 30,74 | 71,70 |
| 200 | 120’ | 22,969 | 0,0718 | 0,2448 | 30,71 | 87,99 | 22,96 | 30,71 |

hes31−2a j=2, $L_t$=300, $L_{aj}$=200, φ=120’, $B_a$=30,71, $B^*_{YT}$=87,99, $s_x$=22,96, $d_{xa}$=30,71

**Relationship brightness $B^*_{YT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=200 cd/m²**

$B^*_{YT}(L_T, L_r, L_r, \varphi) = [C_T(\varphi) L_T^n - B_r(L_r, \varphi)] B^*_{ra}$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_r(L_r,\varphi)$ | $B^*_{YT}$ | $L_{Yt}$ | $L_a/L_t$ |
|---|---|---|---|---|---|---|---|---|
| 200 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 95,57 | 2,90 | 78,36 |
| 200 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 95,45 | 3,09 | 73,51 |
| 200 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 95,22 | 3,47 | 65,36 |
| 200 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 94,78 | 4,24 | 53,51 |
| 200 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 93,00 | 7,95 | 28,58 |
| 200 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 91,64 | 11,31 | 20,09 |
| 200 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 89,45 | 17,45 | 13,02 |
| 200 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 95,57 | 2,90 | 78,36 |

hes31−3a j=2, $L_t$=300, $L_{aj}$=200, φ=120’, $B_t$=34,60, $B^*_{YT}$=95,57

**Relationship brightness $B^*_{YT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=200 cd/m²**

$B^*_{YT}(L_T, L_r, \varphi) = s_{yra}(\varphi) L_T^n - d_{yra}(\varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_r(L_r,\varphi)$ | $B^*_{YT}$ | $s_{yra}(\varphi)$ | $d_{yra}(\varphi)$ |
|---|---|---|---|---|---|---|---|---|
| 200 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 95,57 | 26,10 | 34,90 |
| 200 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 95,45 | 26,28 | 35,84 |
| 200 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 95,22 | 26,60 | 37,63 |
| 200 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 94,78 | 27,24 | 40,99 |
| 200 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 93,00 | 29,81 | 54,49 |
| 200 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 91,64 | 31,78 | 64,81 |
| 200 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 89,45 | 34,94 | 81,48 |
| 200 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 95,57 | 26,10 | 34,90 |

hes31−4a j=2, $L_t$=300, $L_{aj}$=200, φ=120’, $B_t$=34,60, $B^*_{YT}$=95,57, $s_{yra}$=26,10, $d_{yra}$=34,90

hes30−3R_R

**Relationship brightness $B^*_{LT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=40 cd/m²**

$B^*_{LT}(L_T, L_a, \varphi) = C_T(\varphi) L_T^n - B_a(L_a, \varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_a(L_a,\varphi)$ | $B^*_{LT}$ | $L_{Lt}$ | $L_a/L_t$ |
|---|---|---|---|---|---|---|---|---|
| 40 | 120’ | 22,969 | 0,0718 | 0,2448 | 19,29 | 52,77 | 0,56 | 70,18 |
| 40 | 100’ | 23,128 | 0,0747 | 0,2494 | 19,29 | 52,74 | 0,60 | 65,70 |
| 40 | 90’ | 23,415 | 0,1086 | 0,2526 | 19,29 | 52,36 | 0,71 | 55,89 |
| 40 | 60’ | 23,973 | 0,1313 | 0,2657 | 19,29 | 52,08 | 0,89 | 44,82 |
| 40 | 30’ | 26,235 | 0,1797 | 0,3188 | 19,29 | 51,35 | 1,70 | 23,42 |
| 40 | 20’ | 27,971 | 0,2013 | 0,3555 | 19,29 | 50,93 | 2,43 | 16,45 |
| 40 | 10’ | 30,747 | 0,2730 | 0,3984 | 19,29 | 49,64 | 3,88 | 10,29 |
| 40 | 120’ | 22,969 | 0,0718 | 0,2448 | 19,29 | 52,77 | 0,56 | 70,18 |

hes31−5a j=3, $L_t$=300, $L_{aj}$=40, φ=120’, $B_a$=19,29, $B^*_{LT}$=52,77

**Relationship brightness $B^*_{LT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=40 cd/m²**

$B^*_{LT}(L_T, L_a, \varphi) = s_x(\varphi) L_T^n - d_{xa}(L_a, \varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_a(L_a,\varphi)$ | $B^*_{LT}$ | $s_x(\varphi)$ | $d_{xa}(\varphi)$ |
|---|---|---|---|---|---|---|---|---|
| 40 | 120’ | 22,969 | 0,0718 | 0,2448 | 19,29 | 52,77 | 22,96 | 19,29 |
| 40 | 100’ | 23,128 | 0,0747 | 0,2494 | 19,29 | 52,74 | 23,12 | 19,83 |
| 40 | 90’ | 23,415 | 0,1086 | 0,2526 | 19,29 | 52,36 | 23,41 | 21,10 |
| 40 | 60’ | 23,973 | 0,1313 | 0,2657 | 19,29 | 52,08 | 23,97 | 23,14 |
| 40 | 30’ | 26,235 | 0,1797 | 0,3188 | 19,29 | 51,35 | 26,23 | 30,96 |
| 40 | 20’ | 27,971 | 0,2013 | 0,3555 | 19,29 | 50,93 | 27,97 | 36,83 |
| 40 | 10’ | 30,747 | 0,2730 | 0,3984 | 19,29 | 49,64 | 30,74 | 46,83 |
| 40 | 120’ | 22,969 | 0,0718 | 0,2448 | 19,29 | 52,77 | 22,96 | 19,29 |

hes31−6a j=3, $L_t$=300, $L_{aj}$=40, φ=120’, $B_a$=19,29, $B^*_{YT}$=52,77, $s_x$=22,96, $d_{xa}$=19,29

**Relationship brightness $B^*_{YT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=40 cd/m²**

$B^*_{YT}(L_T, L_r, L_r, \varphi) = [C_T(\varphi) L_T^n - B_r(L_r, \varphi)] B^*_{ra}$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_r(L_r,\varphi)$ | $B^*_{YT}$ | $L_{Yt}$ | $L_a/L_t$ |
|---|---|---|---|---|---|---|---|---|
| 40 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 70,99 | 1,07 | 70,18 |
| 40 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 70,17 | 1,15 | 65,70 |
| 40 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 68,70 | 1,35 | 55,89 |
| 40 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 65,81 | 1,69 | 44,82 |
| 40 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 54,15 | 3,23 | 23,42 |
| 40 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 45,19 | 4,60 | 16,45 |
| 40 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 30,87 | 7,36 | 10,29 |
| 40 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 70,99 | 1,07 | 70,18 |

hes31−7a j=3, $L_t$=300, $L_{aj}$=40, φ=120’, $B_t$=34,60, $B^*_{YT}$=70,99

**Relationship brightness $B^*_{YT}$ and luminance $L_T$ as function of tristimulus value $Y_T$ for the adaptation luminance $L_a$=40 cd/m²**

$B^*_{YT}(L_T, L_r, \varphi) = s_{yra}(\varphi) L_T^n - d_{yra}(\varphi)$ 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 | $C_T(\varphi)$ | $S_0(\varphi)$ | $S_1(\varphi)$ | $B_r(L_r,\varphi)$ | $B^*_{YT}$ | $s_{yra}(\varphi)$ | $d_{yra}(\varphi)$ |
|---|---|---|---|---|---|---|---|---|
| 40 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 70,99 | 43,51 | 36,55 |
| 40 | 100’ | 23,128 | 0,0747 | 0,2494 | 34,60 | 70,17 | 43,81 | 37,57 |
| 40 | 90’ | 23,415 | 0,1086 | 0,2526 | 34,60 | 68,70 | 44,36 | 39,99 |
| 40 | 60’ | 23,973 | 0,1313 | 0,2657 | 34,60 | 65,81 | 45,42 | 43,84 |
| 40 | 30’ | 26,235 | 0,1797 | 0,3188 | 34,60 | 54,15 | 49,70 | 58,67 |
| 40 | 20’ | 27,971 | 0,2013 | 0,3555 | 34,60 | 45,19 | 52,99 | 69,79 |
| 40 | 10’ | 30,747 | 0,2730 | 0,3984 | 34,60 | 30,87 | 58,25 | 88,73 |
| 40 | 120’ | 22,969 | 0,0718 | 0,2448 | 34,60 | 70,99 | 43,51 | 36,55 |

hes31−8a j=3, $L_t$=300, $L_{aj}$=40, φ=120’, $B_t$=34,60, $B^*_{YT}$=70,99, $s_{yra}$=43,51, $d_{yra}$=36,55