http://farbe.li.tu-berlin.de/hes9/hes9l0n1.txt /.ps; only vector graphic VG; start output
see separate images of this page: http://farbe.li.tu-berlin.de/hes9/hes9.htm

see similar files of the whole series: http://farbe.li.tu-berlin.de/hes.htm
technical information: http://farbe.li.tu-berlin.de or http://color.li.tu-berlin.de

TUB registration: 20241201-hes9/hes9l0n1.txt /.ps
application for evaluation and measurement of display or print output
TUB material: code=rha4da

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

$B^{T}_{T}(L_T, L_a, y) = C_T(y)L_T^{\frac{1}{3}} - B_d(L_a, y)$ brightness B^{T}_{T} [1]
$B_d(L_a, y) = C_T(y)[S_d(y) + S_T(y)]L_a^{\frac{1}{3}}$ (n=0.31) [2]
$L_T(L_a, y) = [S_d(y) + S_T(y)]L_a^{1.5n}$ (=black threshold) [3]

L_T	φ	$C_T(y)$	ΔL	B^{T}_{T}/B_d	$B_d(L_a,y)$	B^{T}_{T}	L_{T1}	L_d/L_a
14,84	120°	22,969	0,260	2,99 P	34,60	149,99	3,75	22,96
9,28	120°	22,969	0,188	2,49	35,53	124,99	3,75	22,96
5,35	120°	22,969	0,129	1,99 D	37,21	99,99	3,75	22,96
2,76	120°	22,969	0,082	1,49	40,48	74,99	3,75	22,96
1,19	120°	22,969	0,046	1,00 U	53,74	49,99	3,75	22,96
0,38	120°	22,969	0,021	0,50	63,91	24,99	3,75	22,96
3,75	120°	22,969	0,073	0,00 N	80,18	0,00	3,75	22,96
1,19	120°	22,969	0,046	1,00 U	53,74	49,99	3,75	22,96

hes9l0-1a f=0, L_a=300, L_d=300, φ=120°.

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

$B^{T}_{T}(L_T, L_a, y) = s_T(y)L_T^{\frac{1}{3}} - d_T(y)$ brightness B^{T}_{T} [1]
$B_d(L_a, y) = C_T(y)[S_d(y) + S_T(y)]L_a^{\frac{1}{3}}$ (n=0,31) [2]
$s_T(y) = C_T(y)$ [3] $d_T(y) = B_d(L_a, y)$ [4] (=scaling factor)

Y_T	φ	$C_T(y)$	ΔY	B^{T}_{T}/B_d	$B_d(L_a,y)$	B^{T}_{T}	$s_T(y)$	$d_T(y)$
14,84	120°	22,969	0,260	2,99 P	34,60	149,99	3,75	22,96
9,28	120°	22,969	0,188	2,49	35,53	124,99	3,75	22,96
5,35	120°	22,969	0,129	1,99 D	37,21	99,99	3,75	22,96
2,76	120°	22,969	0,082	1,49	40,48	74,99	3,75	22,96
1,19	120°	22,969	0,046	1,00 U	53,74	49,99	3,75	22,96
0,38	120°	22,969	0,021	0,50	63,91	24,99	3,75	22,96
3,75	120°	22,969	0,073	0,00 N	80,18	0,00	3,75	22,96
1,19	120°	22,969	0,046	1,00 U	53,74	49,99	3,75	22,96

hes9l0-1b s=0, L_a=300, L_d=300, φ=120°.

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

$B^{T}_{T}(L_T, L_a, y) = C_T(y)L_T^{\frac{1}{3}} - B_d(L_a, y)$ brightness B^{T}_{T} [1]
$B_d(L_a, y) = C_T(y)[S_d(y) + S_T(y)]L_a^{\frac{1}{3}}$ (n=0,31, $B^{T}_{T}=B^{T}_{T,Y}/B^{T}_{T,W}$) [2]
$L_T(L_a, y) = [S_d(y) + S_T(y)]L_a^{1.5n}$ (=black threshold) [3]

L_T	φ	$C_T(y)$	ΔL	B^{T}_{T}/B_d	$B_d(L_a,y)$	B^{T}_{T}	L_{T1}	L_d/L_a
10,55	120°	22,969	0,210	3,00 P	30,71	131,98	2,55	22,96
6,60	120°	22,969	0,152	2,50	31,54	109,99	2,55	22,96
3,81	120°	22,969	0,104	2,00 D	33,11	87,99	2,55	22,96
1,97	120°	22,969	0,066	1,50	36,07	65,99	2,55	22,96
0,85	120°	22,969	0,037	1,00 U	47,94	43,99	2,55	22,96
0,27	120°	22,969	0,017	0,50	57,02	21,99	2,55	22,96
2,55	120°	22,969	0,054	0,00 N	71,70	0,00	2,55	22,96
0,85	120°	22,969	0,037	1,00 U	47,94	43,99	2,55	22,96

hes9l0-1c f=2, L_a=200, L_d=200, φ=120°.

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

$B^{T}_{T}(L_T, L_a, y) = s_T(y)L_T^{\frac{1}{3}} - d_T(y)$ brightness B^{T}_{T} [1]
$B_d(L_a, y) = C_T(y)[S_d(y) + S_T(y)]L_a^{\frac{1}{3}}$ (n=0,31, $B^{T}_{T}=B^{T}_{T,Y}/B^{T}_{T,W}$) [2]
$s_T(y) = C_T(y)$ [3] $d_T(y) = B_d(L_a, y)$ [4] (=scaling factor)

Y_T	φ	$C_T(y)$	ΔY	B^{T}_{T}/B_d	$B_d(L_a,y)$	B^{T}_{T}	$s_{T1}(y)$	$d_{T1}(y)$
10,55	120°	22,969	0,210	3,00 P	30,71	131,98	2,55	22,96
6,60	120°	22,969	0,152	2,50	31,54	109,99	2,55	22,96
3,81	120°	22,969	0,104	2,00 D	33,11	87,99	2,55	22,96
1,97	120°	22,969	0,066	1,50	36,07	65,99	2,55	22,96
0,85	120°	22,969	0,037	1,00 U	47,94	43,99	2,55	22,96
0,27	120°	22,969	0,017	0,50	57,02	21,99	2,55	22,96
2,55	120°	22,969	0,054	0,00 N	71,70	0,00	2,55	22,96
0,85	120°	22,969	0,037	1,00 U	47,94	43,99	2,55	22,96

hes9l0-1d s=2, L_a=200, L_d=200, φ=120°.

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

$B^{T}_{T}(L_T, L_a, y) = C_T(y)L_T^{\frac{1}{3}} - B_d(L_a, y)$ brightness B^{T}_{T} [1]
$B_d(L_a, y) = C_T(y)[S_d(y) + S_T(y)]L_a^{\frac{1}{3}}$ (n=0,31) [2]
$L_T(L_a, y) = [S_d(y) + S_T(y)]L_a^{1.5n}$ (=black threshold) [3]

L_T	φ	$C_T(y)$	ΔL	B^{T}_{T}/B_d	$B_d(L_a,y)$	B^{T}_{T}	L_{T1}	L_d/L_a
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

hes9l0-5a f=3, L_a=1000, L_d=1000, φ=120°.

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

$B^{T}_{T}(L_T, L_a, y) = s_T(y)L_T^{\frac{1}{3}} - d_T(y)$ brightness B^{T}_{T} [1]
$B_d(L_a, y) = C_T(y)[S_d(y) + S_T(y)]L_a^{\frac{1}{3}}$ (n=0,31) [2]
$s_T(y) = C_T(y)$ [3] $d_T(y) = B_d(L_a, y)$ [4] (=scaling factor)

Y_T	φ	$C_T(y)$	ΔY	B^{T}_{T}/B_d	$B_d(L_a,y)$	B^{T}_{T}	$s_{T1}(y)$	$d_{T1}(y)$
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

hes9l0-5b s=3, L_a=1000, L_d=1000, φ=120°.

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

$B^{T}_{T}(L_T, L_a, y) = C_T(y)L_T^{\frac{1}{3}} - B_d(L_a, y)$ brightness B^{T}_{T} [1]
$B_d(L_a, y) = C_T(y)[S_d(y) + S_T(y)]L_a^{\frac{1}{3}}$ (n=0,31) [2]
$L_T(L_a, y) = [S_d(y) + S_T(y)]L_a^{1.5n}$ (=black threshold) [3]

L_T	φ	$C_T(y)$	ΔL	B^{T}_{T}/B_d	$B_d(L_a,y)$	B^{T}_{T}	L_{T1}	L_d/L_a
2,98	120°	22,969	0,098	3,00 P	19,29	79,16	0,56	22,96
1,87	120°	22,969	0,071	2,50	19,83	65,97	0,56	22,96
1,08	120°	22,969	0,049	2,00 D	21,10	52,77	0,56	22,96
0,56	120°	22,969	0,031	1,50	23,14	39,58	0,56	22,96
0,25	120°	22,969	0,018	1,00 U	30,96	26,38	0,56	22,96
0,08	120°	22,969	0,008	0,50	36,83	13,19	0,56	22,96
0,56	120°	22,969	0,031	0,00 N	46,83	0,00	0,56	22,96
0,25	120°	22,969	0,018	1,00 U	30,96	26,38	0,56	22,96

hes9l0-3a f=3, L_a=40, L_d=40, φ=120°.

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

$B^{T}_{T}(L_T, L_a, y) = s_T(y)L_T^{\frac{1}{3}} - d_T(y)$ brightness B^{T}_{T} [1]
$B_d(L_a, y) = C_T(y)[S_d(y) + S_T(y)]L_a^{\frac{1}{3}}$ (n=0,31, $B^{T}_{T}=B^{T}_{T,Y}/B^{T}_{T,W}$) [2]
$s_T(y) = C_T(y)$ [3] $d_T(y) = B_d(L_a, y)$ [4] (=scaling factor)

Y_T	φ	$C_T(y)$	ΔY	B^{T}_{T}/B_d	$B_d(L_a,y)$	B^{T}_{T}	$s_{T1}(y)$	$d_{T1}(y)$
2,98	120°	22,969	0,098	3,00 P	19,29	79,16	0,56	22,96
1,87	120°	22,969	0,071	2,50	19,83	65,97	0,56	22,96
1,08	120°	22,969	0,049	2,00 D	21,10	52,77	0,56	22,96
0,56	120°	22,969	0,031	1,50	23,14	39,58	0,56	22,96
0,25	120°	22,969	0,018	1,00 U	30,96	26,38	0,56	22,96
0,08	120°	22,969	0,008	0,50	36,83	13,19	0,56	22,96
0,56	120°	22,969	0,031	0,00 N	46,83	0,00	0,56	22,96
0,25	120°	22,969	0,018	1,00 U	30,96	26,38	0,56	22,96

hes9l0-3b f=3, L_a=40, L_d=40, φ=120°.

TUB-test chart hes9; HAULAB, scaling of achromatic colours in white surround of 180 degree, *Hauber* (1980), Adaptations L_{wa}=300, 1000, 200 & 40cd/m²; 7 test luminances for 120'