
HX-DA615R-30090

LumCAT: HX-DA615R-30090

Report No:

Test No:

LampCAT: 2835 12C10B 30090

Lamp flux(lm): 2220.0

Number of Lamps: 1

Length(mm): -135

Phm Type: C

Luminaire: HX-DA615R

Voltage(V): 230.600

Current(A): 0.084

Power (W): 18.800

PF: 0.971

Ballast type: OSRAM OTFIT 20/220-240/500CS

Width(mm): -135

Height(mm): 0

Photometric Results

Lumens(lm): 1436.25

Efficiency(%): 64.70%

Lumens(lm)/Power(W): 76.40

Central intensity(cd): 608.495

Maximum intensity(cd): 613.252

Angle of maximum intensity: C=30.0 $\gamma=1.0$

Beam Angle(50%Imax): [H]Left=51.1 Right=47.3

[V]Left=51.4 Right=47.0

Field angle(10%Imax): [H]Left=75.7 Right=71.9

[V]Left=75.9 Right=71.2

Maximum s/h: C0_180=1.21 C90_270=1.20

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 64.70%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 85.439%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	610.116	.000	.000	.000%	.000%
1.0	609.945	.584	.584	.026%	.026%
2.0	609.557	1.750	2.334	.079%	.105%
3.0	608.830	2.914	5.248	.131%	.236%
4.0	607.800	4.072	9.321	.183%	.420%
5.0	606.558	5.224	14.545	.235%	.655%
6.0	605.038	6.367	20.912	.287%	.942%
7.0	603.201	7.500	28.411	.338%	1.280%
8.0	601.061	8.619	37.030	.388%	1.668%
9.0	598.656	9.723	46.753	.438%	2.106%
10.0	596.053	10.812	57.565	.487%	2.593%
11.0	593.203	11.883	69.448	.535%	3.128%
12.0	589.953	12.934	82.382	.583%	3.711%
13.0	586.363	13.960	96.341	.629%	4.340%
14.0	582.752	14.965	111.306	.674%	5.014%
15.0	578.691	15.945	127.251	.718%	5.732%
16.0	574.445	16.897	144.148	.761%	6.493%
17.0	569.825	17.819	161.967	.803%	7.296%
18.0	565.121	18.713	180.680	.843%	8.139%
19.0	559.937	19.574	200.253	.882%	9.020%
20.0	554.616	20.399	220.653	.919%	9.939%
21.0	548.816	21.188	241.841	.954%	10.894%
22.0	542.883	21.938	263.779	.988%	11.882%
23.0	536.646	22.651	286.431	1.020%	12.902%
24.0	530.018	23.321	309.752	1.051%	13.953%
25.0	523.068	23.945	333.696	1.079%	15.031%
26.0	516.139	24.531	358.227	1.105%	16.136%
27.0	509.066	25.082	383.309	1.130%	17.266%
28.0	501.534	25.586	408.895	1.153%	18.419%
29.0	493.800	26.041	434.936	1.173%	19.592%
30.0	485.745	26.448	461.383	1.191%	20.783%
31.0	477.993	26.819	488.203	1.208%	21.991%
32.0	469.594	27.147	515.350	1.223%	23.214%
33.0	461.296	27.424	542.774	1.235%	24.449%
34.0	452.593	27.657	570.431	1.246%	25.695%
35.0	443.837	27.840	598.271	1.254%	26.949%
36.0	434.874	27.978	626.250	1.260%	28.209%
37.0	426.030	28.078	654.327	1.265%	29.474%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	416.926	28.137	682.464	1.267%	30.742%
39.0	407.558	28.142	710.606	1.268%	32.009%
40.0	398.035	28.096	738.702	1.266%	33.275%
41.0	388.257	28.000	766.702	1.261%	34.536%
42.0	378.621	27.862	794.564	1.255%	35.791%
43.0	368.755	27.685	822.249	1.247%	37.038%
44.0	359.030	27.469	849.717	1.237%	38.276%
45.0	348.975	27.209	876.927	1.226%	39.501%
46.0	339.025	26.906	903.833	1.212%	40.713%
47.0	328.939	26.567	930.400	1.197%	41.910%
48.0	318.690	26.181	956.580	1.179%	43.089%
49.0	308.665	25.763	982.343	1.160%	44.250%
50.0	297.954	25.292	1007.635	1.139%	45.389%
51.0	287.758	24.781	1032.415	1.116%	46.505%
52.0	277.046	24.236	1056.651	1.092%	47.597%
53.0	266.630	23.650	1080.301	1.065%	48.662%
54.0	256.077	23.039	1103.340	1.038%	49.700%
55.0	245.867	22.406	1125.746	1.009%	50.709%
56.0	235.394	21.747	1147.493	.980%	51.689%
57.0	224.726	21.038	1168.531	.948%	52.637%
58.0	214.164	20.296	1188.826	.914%	53.551%
59.0	203.739	19.537	1208.364	.880%	54.431%
60.0	193.292	18.757	1227.121	.845%	55.276%
61.0	182.748	17.945	1245.066	.808%	56.084%
62.0	172.494	17.118	1262.184	.771%	56.855%
63.0	162.280	16.282	1278.466	.733%	57.589%
64.0	152.093	15.426	1293.892	.695%	58.283%
65.0	141.826	14.546	1308.438	.655%	58.939%
66.0	131.798	13.652	1322.090	.615%	59.554%
67.0	121.866	12.755	1334.844	.575%	60.128%
68.0	112.163	11.855	1346.700	.534%	60.662%
69.0	102.491	10.951	1357.650	.493%	61.155%
70.0	93.127	10.047	1367.697	.453%	61.608%
71.0	83.930	9.151	1376.848	.412%	62.020%
72.0	74.871	8.257	1385.105	.372%	62.392%
73.0	66.317	7.383	1392.488	.333%	62.725%
74.0	57.839	6.527	1399.015	.294%	63.019%
75.0	50.272	5.712	1404.728	.257%	63.276%

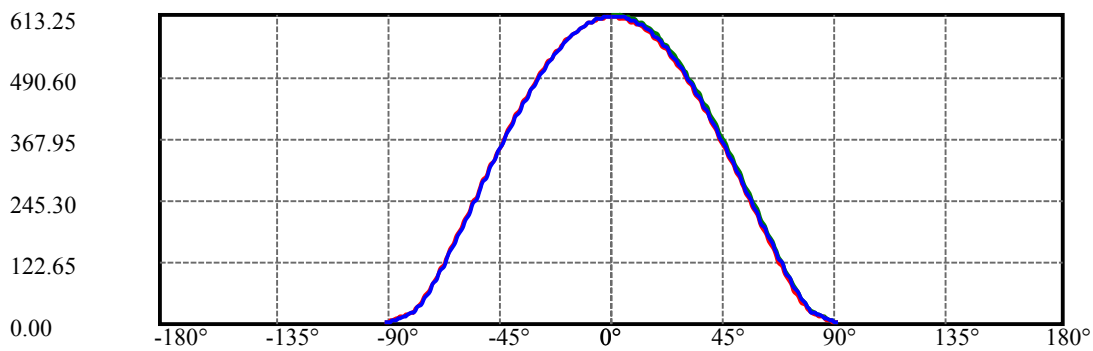
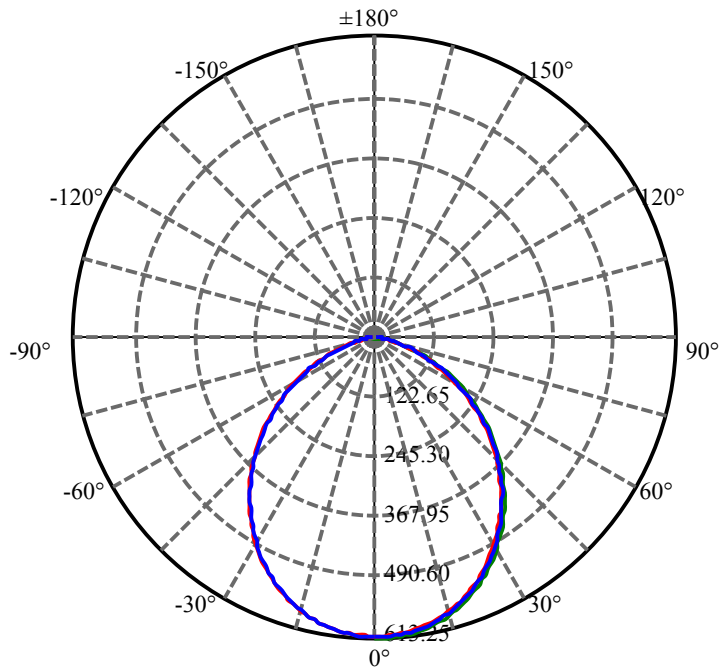
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	42.974	4.950	1409.677	.223%	63.499%
77.0	36.345	4.229	1413.906	.190%	63.689%
78.0	30.597	3.583	1417.490	.161%	63.851%
79.0	26.021	3.042	1420.532	.137%	63.988%
80.0	22.639	2.623	1423.155	.118%	64.106%
81.0	20.203	2.317	1425.472	.104%	64.210%
82.0	18.124	2.078	1427.550	.094%	64.304%
83.0	15.975	1.854	1429.404	.083%	64.388%
84.0	13.883	1.627	1431.031	.073%	64.461%
85.0	11.791	1.401	1432.432	.063%	64.524%
86.0	9.725	1.176	1433.608	.053%	64.577%
87.0	7.778	.958	1434.566	.043%	64.620%
88.0	5.920	.750	1435.316	.034%	64.654%
89.0	4.043	.546	1435.862	.025%	64.678%
90.0	3.039	.388	1436.250	.017%	64.696%

ZONAL LUMEN SUMMARY

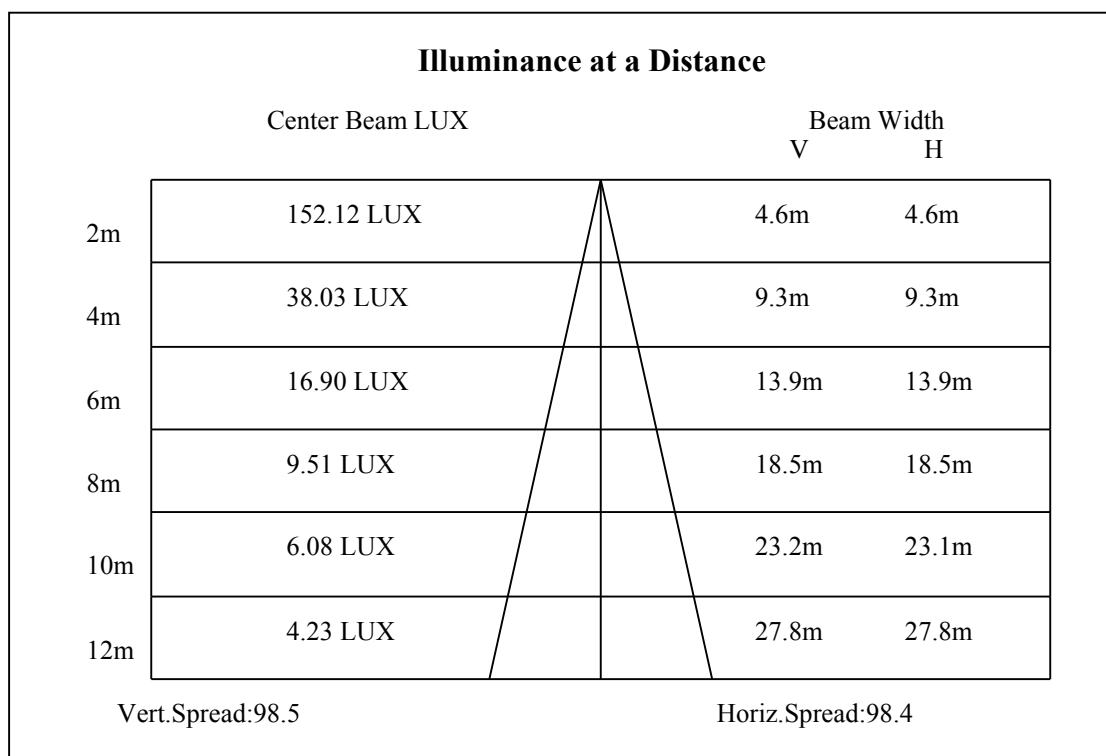
Zone	Lumens	%Lamp	%Fixt
0-30	461.38	20.78%	32.12%
0-40	738.70	33.27%	51.43%
0-60	1227.12	55.28%	85.44%
0-90	1435.86	64.68%	99.97%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-180	1436.25	64.70%	100.00%

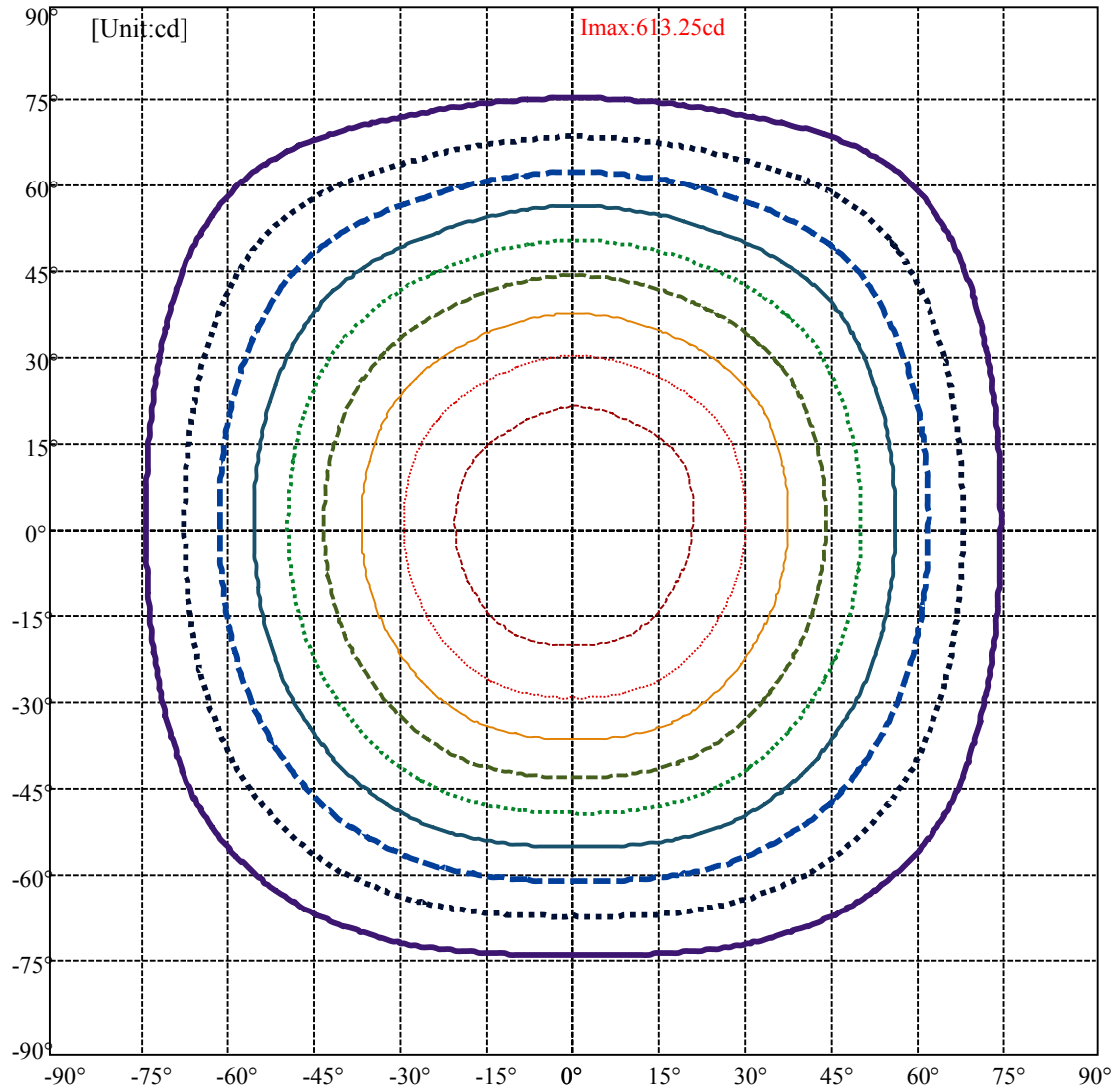
ZONAL LUMEN SUMMARY

0-10	57.56
10-20	163.09
20-30	240.73
30-40	277.32
40-50	268.93
50-60	219.49
60-70	140.58
70-80	55.46
80-90	12.71
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

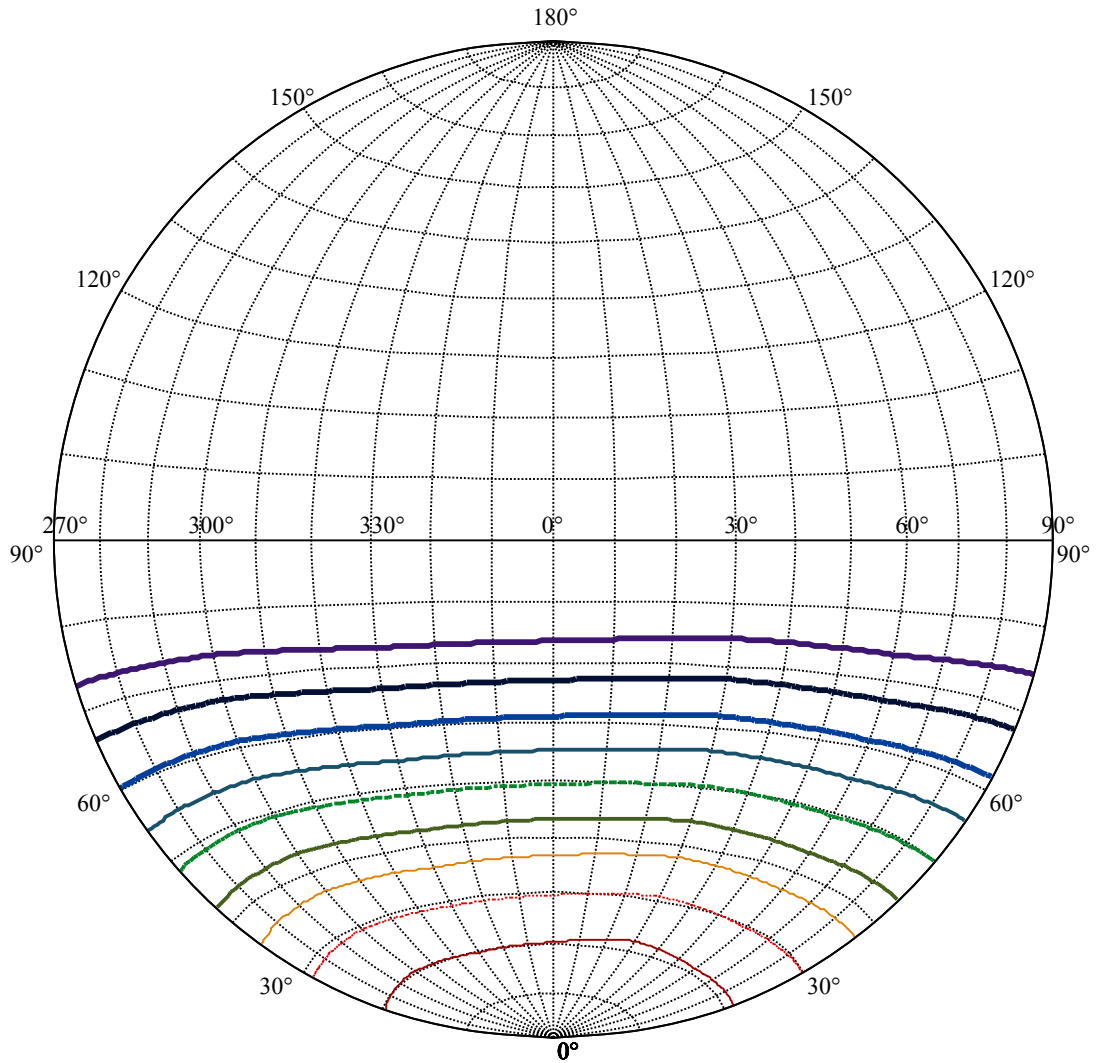


C30(Max): —
C0/C180: —
C90/C270: —





(10%Imax)	61.2477	———
(20%Imax)	122.495	·····
(30%Imax)	183.743	- - - - -
(40%Imax)	244.991	———
(50%Imax)	306.238	·····
(60%Imax)	367.486	- - - - -
(70%Imax)	428.734	———
(80%Imax)	489.982	·····
(90%Imax)	551.229	- - - - -

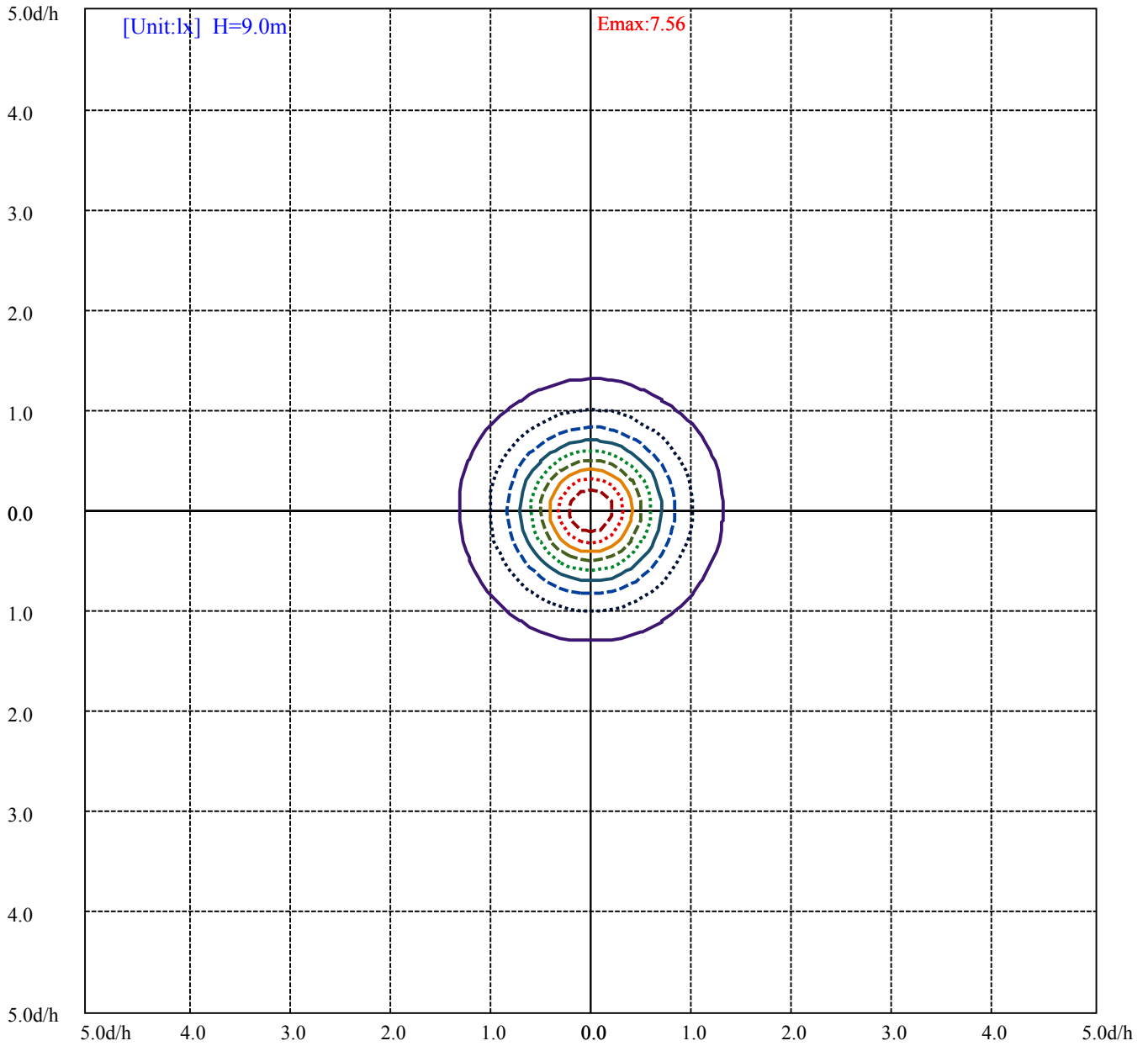


House

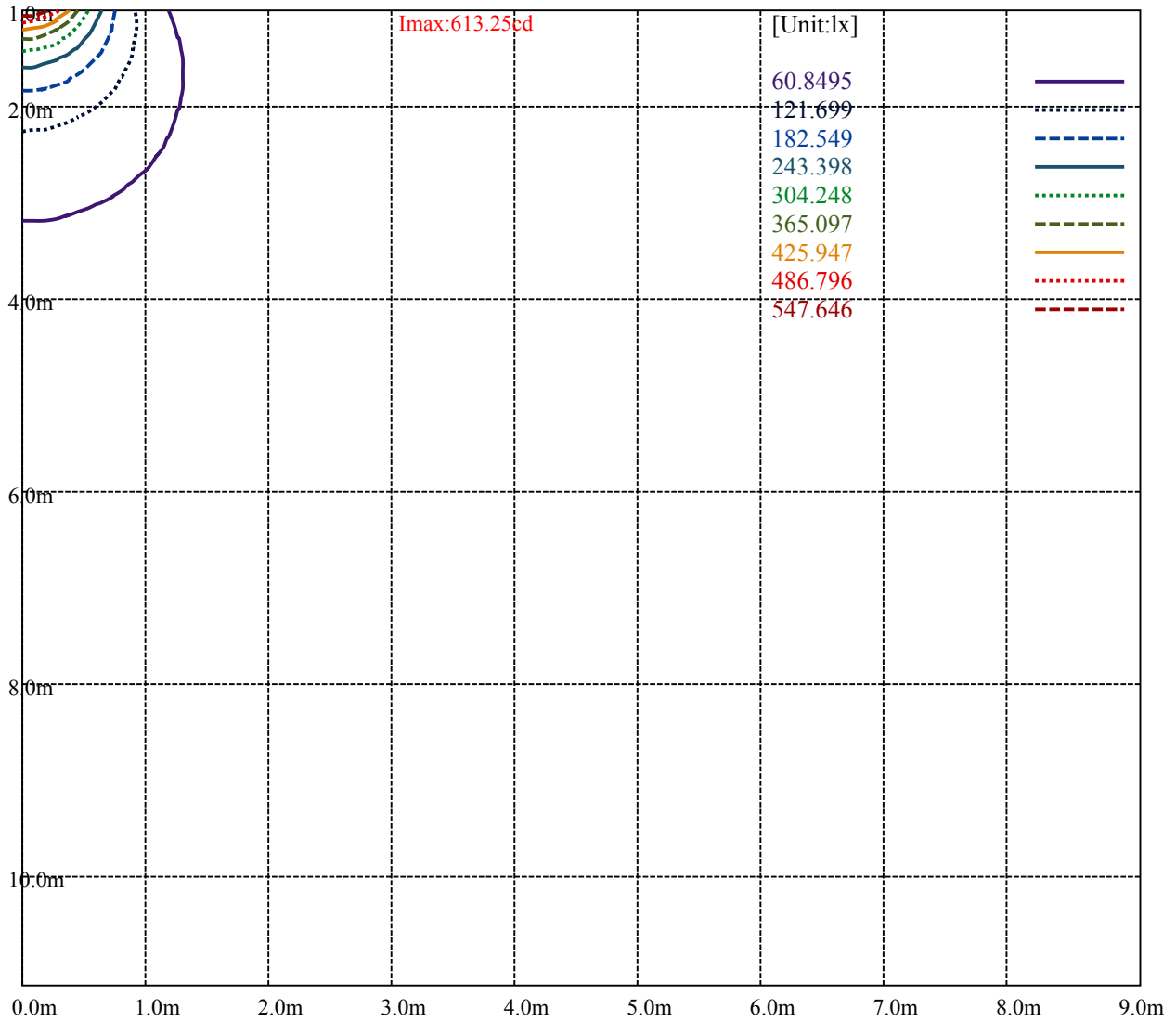
Road

I_{max}:613.25cd

(10%I _{max}) 61.3252	—
(20%I _{max}) 122.65	·····
(30%I _{max}) 183.976	- - - - -
(40%I _{max}) 245.301	—
(50%I _{max}) 306.626	·····
(60%I _{max}) 367.951	- - - - -
(70%I _{max}) 429.277	—
(80%I _{max}) 490.602	·····
(90%I _{max}) 551.927	- - - - -



- (10%Emax) 0.7557642 ————
- (20%Emax) 1.511531
- (30%Emax) 2.267296 - - - -
- (40%Emax) 3.023049 ————
- (50%Emax) 3.778815
- (60%Emax) 4.53458 - - - -
- (70%Emax) 5.290346 ————
- (80%Emax) 6.046111
- (90%Emax) 6.801877 - - - -

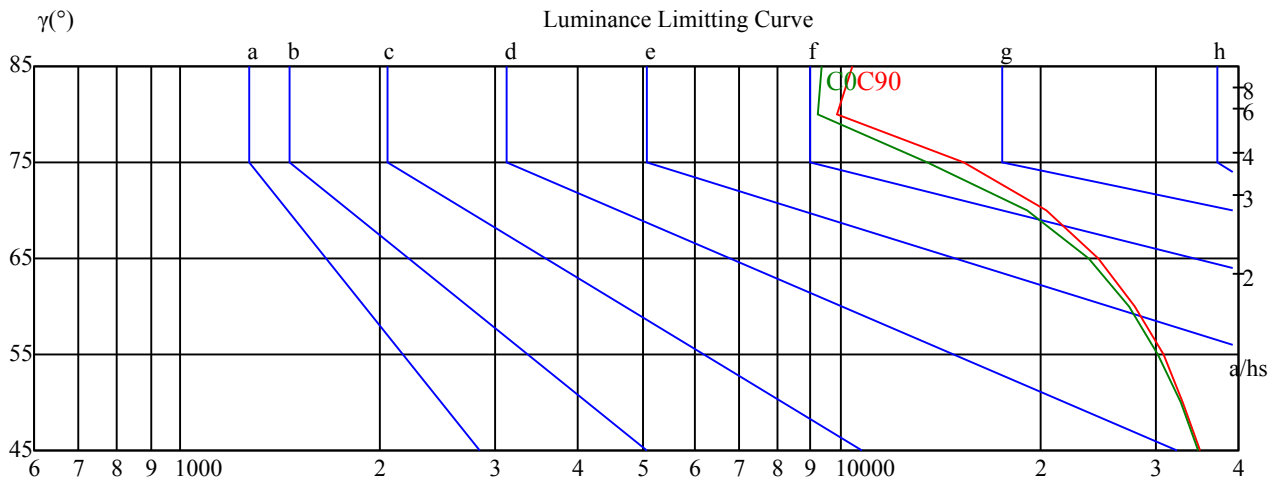


Luminance Table

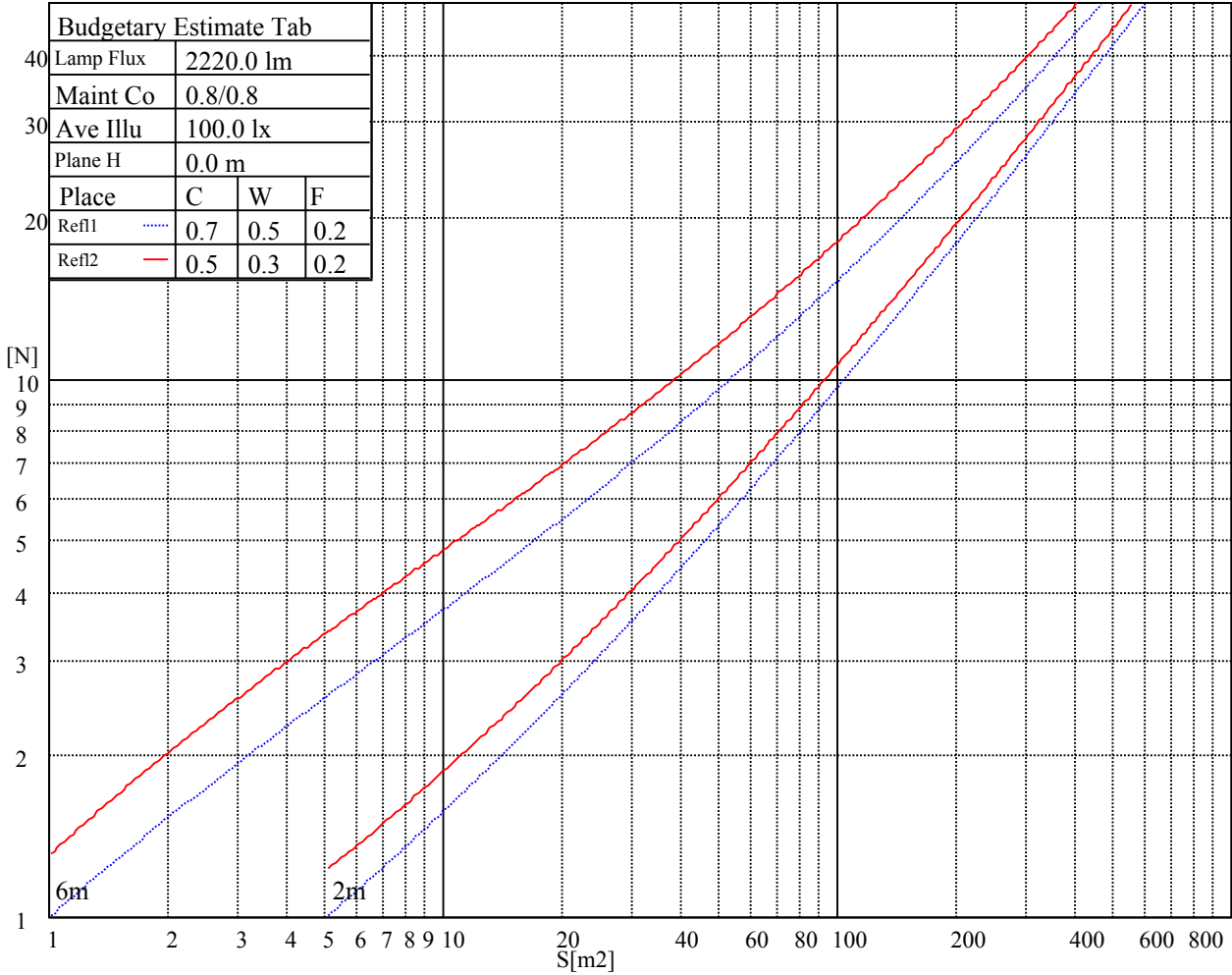
γ	45	50	55	60	65	70	75	80	85
C0	34767	32651	30276	27265	23686	19109	13510	9228	9320
C45	0	0	0	0	0	0	0	0	0
C90	35013	33030	30791	27922	24586	20447	15322	9845	10422

Glare Table

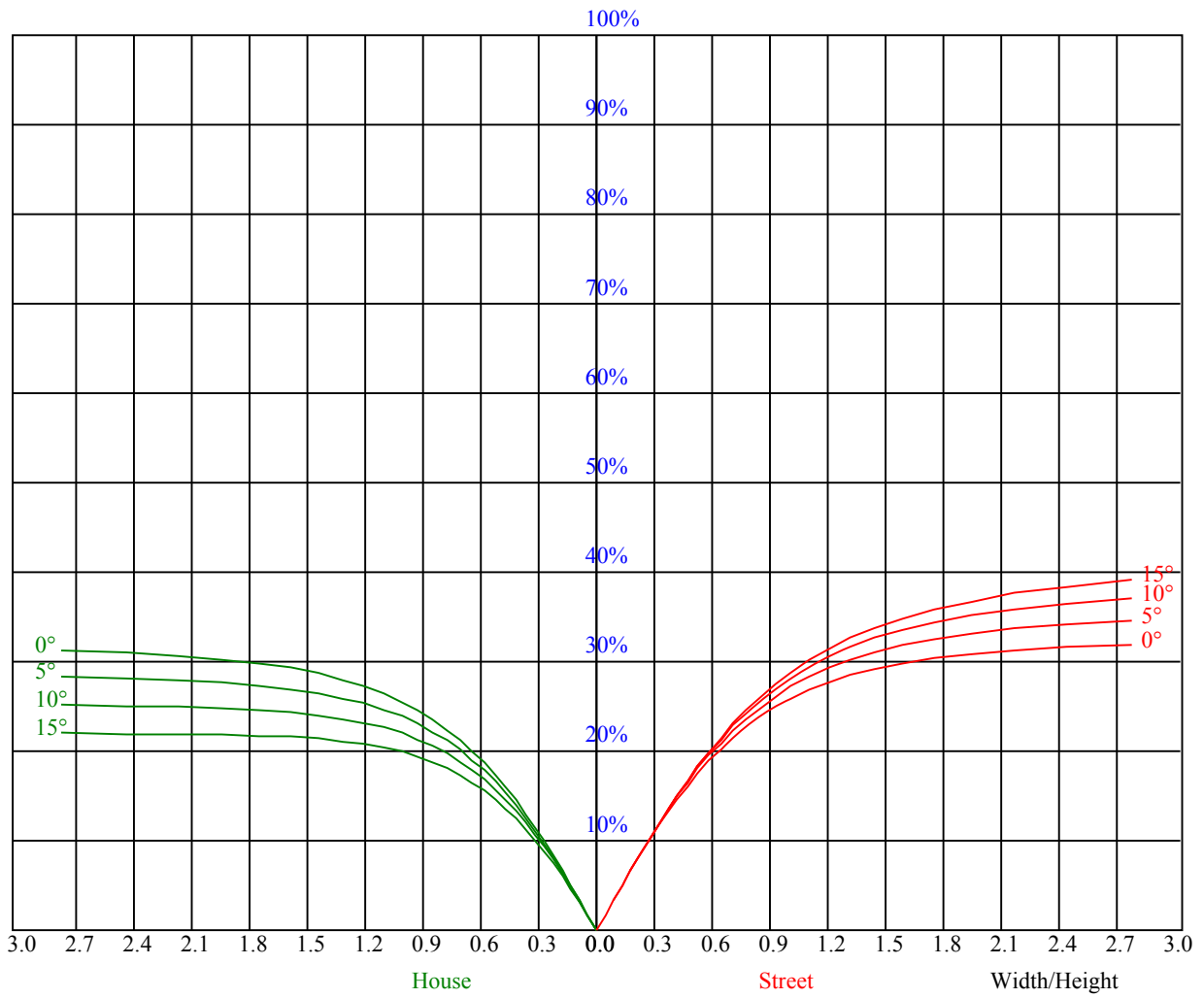
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h



Illuminatin assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	21.7	23.0	22.0	23.2	23.5	21.6	22.9	21.9	23.1	23.4
	3H	22.7	23.9	23.0	24.1	24.4	22.7	23.8	23.0	24.1	24.4
	4H	22.8	23.8	23.2	24.1	24.5	22.8	23.8	23.2	24.1	24.4
	6H	23.0	24.0	23.4	24.3	24.6	23.0	24.0	23.4	24.3	24.6
	8H	23.0	24.0	23.4	24.3	24.7	23.0	24.0	23.4	24.3	24.7
	12H	22.9	23.6	23.3	24.0	24.4	22.9	23.6	23.3	24.0	24.4
4H	2H	22.1	23.0	22.4	23.3	23.7	22.0	22.9	22.3	23.3	23.6
	3H	23.2	24.0	23.7	24.3	24.8	23.1	23.9	23.6	24.3	24.7
	4H	23.6	24.4	24.1	24.7	25.1	23.6	24.3	24.0	24.7	25.1
	6H	23.8	24.6	24.3	24.9	25.3	23.8	24.5	24.2	24.9	25.3
	8H	23.8	24.2	24.3	24.6	25.1	23.7	24.1	24.2	24.6	25.1
	12H	23.8	24.2	24.3	24.7	25.2	23.8	24.2	24.3	24.6	25.2
8H	4H	23.7	24.1	24.2	24.5	25.1	23.6	24.0	24.1	24.5	25.0
	6H	23.9	24.3	24.4	24.8	25.3	23.9	24.3	24.4	24.7	25.3
	8H	24.1	24.5	24.6	24.9	25.4	24.0	24.4	24.5	24.9	25.4
	12H	24.2	24.6	24.7	25.0	25.5	24.1	24.5	24.6	25.0	25.5
12H	4H	23.7	24.1	24.2	24.6	25.1	23.6	24.0	24.1	24.5	25.0
	6H	24.0	24.4	24.5	24.9	25.4	23.9	24.3	24.4	24.8	25.3
	8H	24.1	24.5	24.6	25.0	25.5	24.0	24.4	24.5	24.9	25.4
Variation with the observer position at spacings:											
S = 1.0H		0.5/-0.4					0.4/-0.4				
S = 1.5H		0.7/-1.1					0.7/-1.0				
S = 2.0H		1.6/-1.6					1.6/-1.4				
Standard tables:		BK3					BK3				
Uncorrected UGR		4.7					4.7				
According 1000lm											



RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOF=20 CU															
0	0.77	0.77	0.77	0.75	0.75	0.75	0.72	0.72	0.72	0.69	0.69	0.69	0.66	0.66	0.66	0.65
1	0.68	0.66	0.64	0.67	0.65	0.63	0.64	0.62	0.61	0.62	0.60	0.59	0.59	0.58	0.57	0.56
2	0.60	0.56	0.53	0.59	0.56	0.52	0.57	0.54	0.51	0.55	0.52	0.50	0.53	0.51	0.49	0.48
3	0.54	0.49	0.45	0.53	0.48	0.44	0.51	0.47	0.44	0.49	0.46	0.43	0.47	0.45	0.42	0.41
4	0.48	0.42	0.38	0.47	0.42	0.38	0.45	0.41	0.38	0.44	0.40	0.37	0.43	0.39	0.37	0.35
5	0.43	0.37	0.33	0.42	0.37	0.33	0.41	0.36	0.33	0.40	0.36	0.33	0.38	0.35	0.32	0.31
6	0.39	0.33	0.29	0.38	0.33	0.29	0.37	0.32	0.29	0.36	0.32	0.29	0.35	0.31	0.29	0.27
7	0.35	0.30	0.26	0.35	0.30	0.26	0.34	0.29	0.26	0.33	0.29	0.26	0.32	0.28	0.25	0.24
8	0.32	0.27	0.23	0.32	0.27	0.23	0.31	0.27	0.23	0.30	0.26	0.23	0.30	0.26	0.23	0.22
9	0.30	0.25	0.21	0.29	0.24	0.21	0.29	0.24	0.21	0.28	0.24	0.21	0.27	0.24	0.21	0.20
10	0.28	0.23	0.19	0.27	0.22	0.19	0.27	0.22	0.19	0.26	0.22	0.19	0.25	0.22	0.19	0.18



Intensity data(cd)

C/ γ (°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	608.50	608.28	608.02	607.39	606.54	605.38	604.00	602.05	599.88
30.0	613.04	613.25	613.20	612.67	611.98	611.09	609.92	608.28	606.49
60.0	611.30	611.24	610.98	610.29	609.24	608.18	606.75	604.85	602.95
90.0	610.03	609.98	609.82	609.34	608.50	607.65	606.06	604.48	602.52
120.0	609.24	609.02	608.60	607.97	606.65	605.38	603.90	601.94	599.88
150.0	608.60	608.39	608.13	607.54	606.59	605.43	604.00	602.42	600.25
180.0	608.50	608.28	607.70	607.02	605.91	604.74	603.00	601.36	598.98
210.0	613.04	612.51	611.83	610.77	609.29	607.81	605.96	604.00	601.41
240.0	611.30	611.14	610.61	609.71	608.71	607.23	605.75	603.69	601.62
270.0	610.03	609.76	609.13	608.23	607.02	605.38	603.79	601.78	599.25
300.0	609.24	609.24	608.81	607.97	607.12	605.91	604.48	602.58	600.73
330.0	608.60	608.23	607.86	607.07	606.06	604.53	602.84	600.99	598.77
360.0	608.50	608.28	608.02	607.39	606.54	605.38	604.00	602.05	599.88
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	597.71	595.49	592.53	589.31	585.66	582.12	577.89	573.98	569.12
30.0	604.37	602.36	599.83	596.71	593.43	590.16	586.19	582.02	578.05
60.0	600.51	597.71	595.12	591.85	588.41	584.82	581.22	576.89	572.19
90.0	600.20	597.92	595.07	592.38	588.73	585.08	581.17	577.26	572.61
120.0	597.24	594.86	591.85	588.73	585.03	581.12	577.47	573.08	568.75
150.0	597.98	595.65	592.75	589.94	586.46	583.18	579.21	574.83	570.23
180.0	596.34	593.75	591.05	587.41	584.02	580.22	576.63	572.13	567.53
210.0	598.88	595.65	592.38	588.83	585.29	581.54	576.94	572.08	567.75
240.0	598.98	596.23	593.54	590.00	586.24	582.49	578.26	574.19	569.28
270.0	596.92	593.91	591.05	587.46	583.71	580.01	575.52	571.23	566.37
300.0	598.35	595.55	592.59	589.52	585.93	582.49	578.26	574.19	569.33
330.0	596.39	593.54	590.68	587.30	583.44	579.80	575.52	571.45	566.69
360.0	597.71	595.49	592.53	589.31	585.66	582.12	577.89	573.98	569.12
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	564.73	559.45	554.06	548.98	542.80	537.20	530.43	523.35	516.11
30.0	573.56	568.91	563.73	557.86	552.47	546.23	540.42	533.66	527.31
60.0	567.27	562.51	557.49	551.26	545.71	539.10	532.28	525.15	518.80
90.0	568.33	563.36	558.50	552.79	547.29	540.90	534.13	527.21	520.81
120.0	563.83	558.34	552.68	547.13	540.74	534.82	527.95	521.66	514.36
150.0	565.90	560.93	556.12	550.15	544.12	538.41	531.65	525.52	518.12
180.0	563.09	557.70	552.74	546.39	539.95	534.13	527.10	520.02	513.52
210.0	562.46	556.70	551.36	545.23	539.10	532.23	525.15	517.75	510.98
240.0	564.20	559.34	553.74	548.45	542.11	536.30	529.22	521.98	514.52
270.0	561.72	556.07	550.15	543.96	538.36	531.54	525.31	518.12	511.40
300.0	564.26	559.55	554.06	548.88	542.80	536.25	530.11	523.03	515.79
330.0	562.09	556.38	550.78	544.70	539.15	532.65	526.47	519.39	511.93
360.0	564.73	559.45	554.06	548.98	542.80	537.20	530.43	523.35	516.11
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	509.34	501.68	494.70	486.78	479.53	471.13	462.57	454.59	445.34
30.0	519.97	512.25	504.38	497.13	488.94	481.49	472.98	465.11	456.28
60.0	512.20	504.38	496.13	487.99	480.54	471.82	463.94	454.96	445.81
90.0	513.31	506.44	498.51	490.21	482.92	474.41	466.64	457.81	449.88
120.0	506.65	499.72	491.58	484.24	475.68	467.85	458.92	449.73	440.48
150.0	511.46	503.79	495.97	487.73	480.33	471.66	464.00	455.01	446.98
180.0	506.75	499.09	490.79	482.34	474.88	466.11	458.13	449.14	440.95
210.0	503.79	495.76	488.36	480.06	471.40	462.41	454.32	445.02	436.72
240.0	507.55	500.46	492.54	484.50	477.10	468.49	460.67	451.52	442.11
270.0	503.69	495.65	488.41	480.01	472.40	463.73	454.80	446.71	437.30
300.0	509.03	502.00	494.12	486.09	477.90	470.34	461.72	453.69	444.49
330.0	505.06	497.19	490.10	481.86	474.30	465.69	456.86	447.82	439.68
360.0	509.34	501.68	494.70	486.78	479.53	471.13	462.57	454.59	445.34

Intensity data(cd)

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	436.99	427.79	419.23	409.56	399.78	389.90	381.12	371.34	361.09
30.0	446.98	438.68	429.17	420.71	410.88	400.89	390.69	381.60	371.50
60.0	437.57	428.27	419.86	410.14	401.05	390.85	380.59	370.50	361.25
90.0	440.63	431.23	421.71	413.10	404.27	394.23	385.09	374.99	364.79
120.0	432.23	423.93	414.42	404.59	394.34	385.14	374.99	365.79	355.54
150.0	437.78	428.64	419.97	410.40	401.47	391.38	381.07	372.03	361.94
180.0	431.81	422.40	413.94	404.06	395.02	384.77	374.62	364.42	355.17
210.0	427.32	418.81	408.92	398.93	390.11	379.91	370.92	360.46	349.89
240.0	432.65	424.30	414.58	405.91	395.92	387.09	377.21	367.17	357.97
270.0	427.95	419.39	410.72	400.94	391.11	381.07	372.03	361.62	352.37
300.0	436.20	426.89	417.17	408.55	398.67	389.90	380.22	370.39	361.30
330.0	430.38	422.03	413.42	403.80	393.81	383.98	374.89	364.74	355.54
360.0	436.99	427.79	419.23	409.56	399.78	389.90	381.12	371.34	361.09
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	351.89	341.38	331.81	320.98	311.41	300.42	290.64	279.75	269.02
30.0	362.41	353.11	342.59	332.02	321.45	311.73	300.68	290.74	279.54
60.0	350.73	341.38	331.02	321.72	311.15	300.20	290.27	279.06	269.23
90.0	354.38	345.18	334.77	325.31	314.69	303.90	294.18	283.08	273.14
120.0	346.13	335.62	324.99	314.47	305.01	295.29	284.14	274.10	263.21
150.0	352.90	342.54	333.24	322.56	311.83	301.05	291.27	280.23	270.34
180.0	344.71	335.30	324.73	315.48	304.96	294.23	284.19	272.99	263.37
210.0	339.32	329.75	319.18	309.51	299.83	288.79	277.90	267.01	257.18
240.0	347.51	336.88	327.27	316.48	306.76	295.82	285.99	275.31	264.63
270.0	341.80	332.39	321.87	311.15	301.47	290.48	280.86	269.92	259.03
300.0	350.94	340.27	330.70	320.13	310.56	299.68	288.74	279.17	268.55
330.0	344.97	334.51	325.10	314.47	304.86	293.86	284.24	273.20	262.31
360.0	351.89	341.38	331.81	320.98	311.41	300.42	290.64	279.75	269.02
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	258.35	248.57	237.36	227.43	217.38	206.23	195.13	183.98	174.10
30.0	269.81	259.03	248.14	238.37	227.32	217.49	206.34	195.13	184.14
60.0	258.40	247.46	237.68	226.74	215.85	206.34	195.50	185.88	174.89
90.0	262.31	252.80	242.07	231.23	220.29	210.72	199.84	190.11	179.38
120.0	252.32	241.27	231.50	220.56	210.99	200.37	189.53	179.96	169.18
150.0	259.72	250.21	239.32	228.38	218.71	207.92	198.20	187.31	176.63
180.0	252.53	242.81	231.87	220.93	210.30	200.84	191.27	180.55	169.76
210.0	246.08	236.20	225.10	214.16	204.44	193.34	182.34	172.62	163.00
240.0	255.07	244.07	234.24	223.15	212.05	200.89	191.12	180.18	170.56
270.0	248.04	238.26	228.48	217.54	206.65	195.66	185.99	175.05	165.54
300.0	259.03	248.25	238.53	227.58	216.38	205.33	195.61	184.67	174.94
330.0	251.26	241.48	230.44	220.66	209.61	199.73	188.63	177.53	167.81
360.0	258.35	248.57	237.36	227.43	217.38	206.23	195.13	183.98	174.10
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	163.26	153.85	143.28	132.66	123.25	112.74	103.59	93.55	84.83
30.0	174.41	163.42	153.70	142.86	132.13	122.72	112.21	103.17	93.07
60.0	163.95	154.28	143.60	134.04	123.36	114.06	103.80	94.03	84.41
90.0	169.92	159.35	148.73	139.43	129.07	120.03	109.88	100.10	91.44
120.0	159.67	148.99	139.58	129.17	118.87	108.72	100.05	91.70	82.45
150.0	167.12	156.44	145.72	136.41	126.05	116.86	106.87	97.04	88.42
180.0	158.98	149.36	138.79	129.38	119.08	109.88	99.94	90.27	80.81
210.0	152.48	141.86	131.29	121.93	111.68	102.80	93.02	84.41	74.95
240.0	161.04	150.47	140.27	130.07	120.87	110.67	101.90	92.02	83.51
270.0	155.12	145.72	135.41	125.16	116.12	106.23	97.57	87.95	79.49
300.0	164.21	153.80	144.61	134.19	124.94	114.53	104.44	95.51	85.67
330.0	157.18	147.57	136.94	126.27	116.96	106.71	96.62	87.79	78.12
360.0	163.26	153.85	143.28	132.66	123.25	112.74	103.59	93.55	84.83

Intensity data(cd)

C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0	
0.0	75.26	66.01	57.24	50.05	42.60	36.57	30.65	26.43	22.94	
30.0	83.24	74.79	65.59	57.72	49.42	41.81	35.68	29.76	25.69	
60.0	75.95	67.76	58.83	50.37	43.34	36.20	30.13	25.85	22.30	
90.0	81.82	72.51	64.53	56.76	48.52	40.96	34.88	29.02	24.47	
120.0	73.41	65.64	57.19	49.10	42.28	35.31	29.86	25.05	21.62	
150.0	78.80	70.66	61.89	54.39	46.62	39.48	33.14	28.17	23.89	
180.0	72.57	64.59	56.02	47.99	41.28	34.51	28.70	24.74	21.35	
210.0	65.85	58.14	50.16	43.39	36.68	30.71	26.48	22.78	20.40	
240.0	74.26	65.43	58.03	50.26	43.82	37.05	30.92	26.11	22.83	
270.0	70.29	61.47	53.01	46.03	38.69	32.98	27.69	23.78	21.41	
300.0	77.17	67.86	59.04	51.69	44.13	37.84	31.61	26.59	23.36	
330.0	69.82	60.94	52.54	45.51	38.32	32.72	27.43	24.00	21.41	
360.0	75.26	66.01	57.24	50.05	42.60	36.57	30.65	26.43	22.94	
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0	
0.0	20.51	18.34	16.17	13.74	11.63	9.46	7.56	5.66	3.65	
30.0	22.25	19.87	17.76	15.59	13.53	11.36	9.30	7.40	5.34	
60.0	20.03	18.13	16.01	14.01	11.89	9.72	7.77	5.92	4.07	
90.0	21.41	19.40	17.18	15.17	13.00	10.94	9.04	7.03	5.13	
120.0	19.50	17.60	15.59	13.58	11.63	9.62	7.77	5.92	4.18	
150.0	21.09	18.87	16.91	14.90	12.84	10.94	8.98	7.03	5.23	
180.0	19.40	17.60	15.54	13.74	11.68	9.62	7.72	6.18	4.23	
210.0	18.34	16.38	14.22	12.37	10.25	8.30	6.40	4.60	2.85	
240.0	20.51	18.34	16.17	13.85	11.79	9.72	7.82	6.03	4.07	
270.0	19.19	17.07	14.90	12.74	10.73	8.56	6.77	4.76	2.96	
300.0	20.93	18.82	16.38	14.11	12.05	9.99	7.82	5.97	4.02	
330.0	19.29	17.07	14.85	12.79	10.46	8.46	6.40	4.55	2.80	
360.0	20.51	18.34	16.17	13.74	11.63	9.46	7.56	5.66	3.65	
C/ γ (°)	90.0									
0.0	2.70									
30.0	3.49									
60.0	3.17									
90.0	3.33									
120.0	3.17									
150.0	3.44									
180.0	3.49									
210.0	2.75									
240.0	2.75									
270.0	2.75									
300.0	2.75									
330.0	2.70									
360.0	2.70									