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Nata

LumCAT: 2-1588-E

Luminaire:

Report No: NATA0100

Test No: 2017022303

LampCAT: PL-CORE-MINI-3000-Z6

Lamp flux(lm): 2590.0

Number of Lamps: 1

Length(mm): 71

Phm Type: C

Voltage(V): 218.7000

Current(A): 0.1480

Power (W): 30.7000

PF: 0.9490

Ballast type:

Width(mm): 71

Height(mm): 0

Photometric Results

Lumens(lm): 2361.18

Efficiency(%): 91.17%

Lumens(lm)/Power(W): 80.45

Central intensity(cd): 18541.620

Maximum intensity(cd): 18541.620

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=13.5

[C90/270]Total=13.5

Field angle(10%Imax): [C0/180]Total=29.2

[C90/270]Total=29.2

Maximum s/h(1/2): C0_180=0.23 C90_270=0.23

Maximum s/h(1/4): C0_180=0.24 C90_270=0.24

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 95.36%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.864%

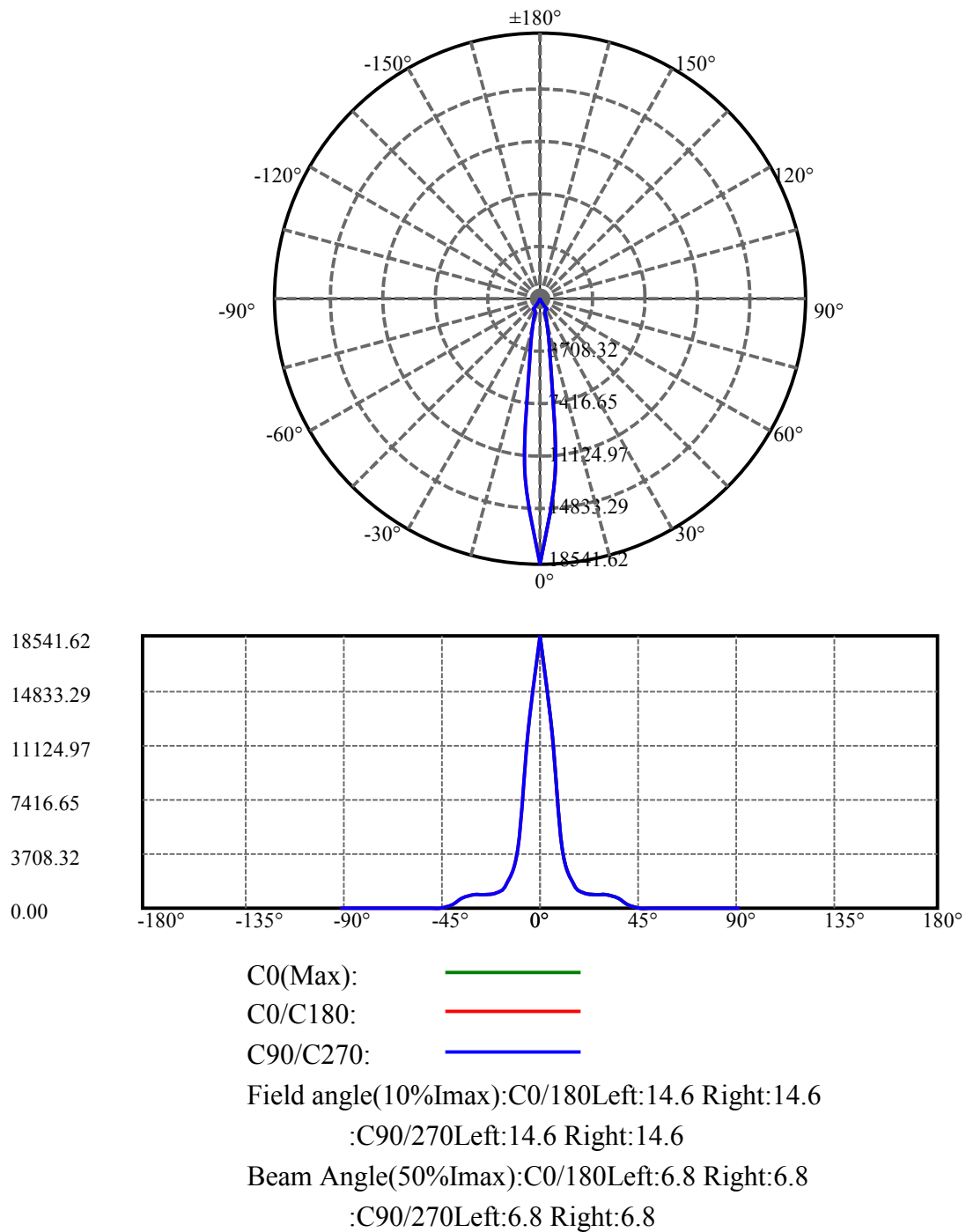
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	18541.619	110.883	110.883	4.281%	4.696%
5.0	12043.519	575.359	686.241	22.215%	29.063%
10.0	4160.887	396.046	1082.287	15.291%	45.837%
15.0	1665.250	236.246	1318.534	9.121%	55.842%
20.0	1092.463	204.809	1523.342	7.908%	64.516%
25.0	971.271	224.998	1748.34	8.687%	74.045%
30.0	880.792	241.398	1989.738	9.320%	84.269%
35.0	671.970	211.267	2201.004	8.157%	93.216%
40.0	259.281	91.354	2292.358	3.527%	97.085%
45.0	22.676	8.789	2301.147	.339%	97.457%
50.0	13.227	5.554	2306.701	.214%	97.693%
55.0	12.732	5.717	2312.418	.221%	97.935%
60.0	12.353	5.864	2318.282	.226%	98.183%
65.0	12.037	5.980	2324.262	.231%	98.436%
70.0	11.686	6.019	2330.281	.232%	98.691%
75.0	22.078	11.689	2341.97	.451%	99.186%
80.0	20.226	10.918	2352.889	.422%	99.649%
85.0	10.647	5.814	2358.702	.224%	99.895%
90.0	9.057	2.482	2361.184	.096%	100.000%

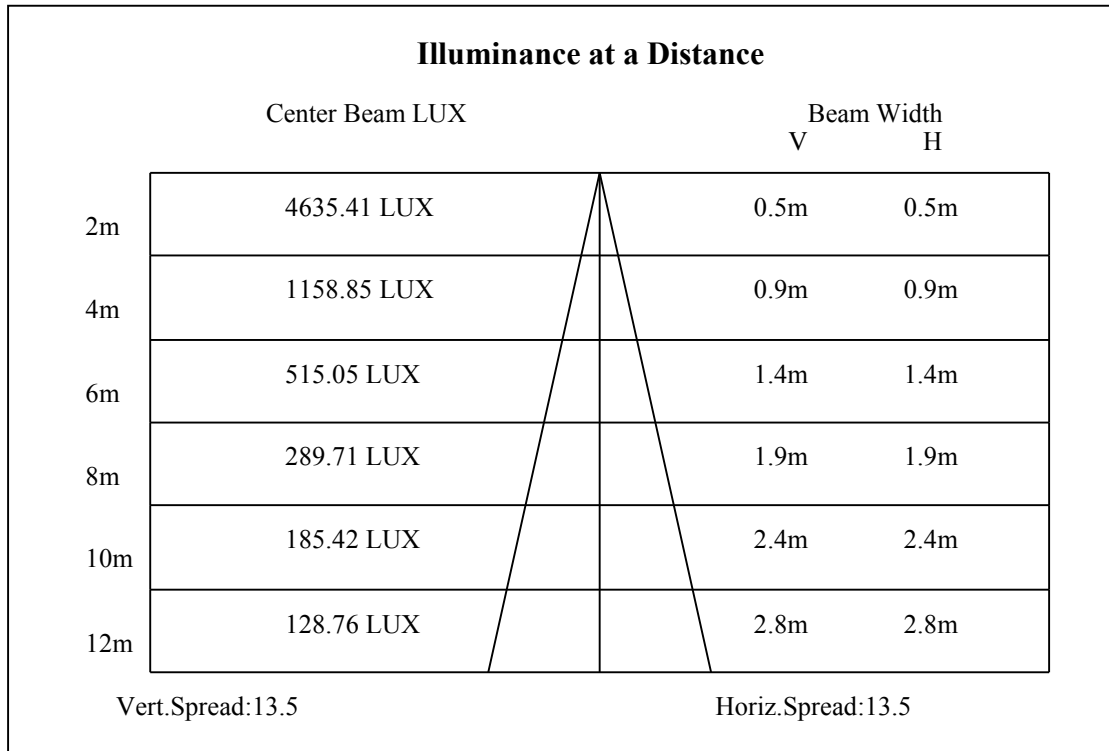
ZONAL LUMEN SUMMARY

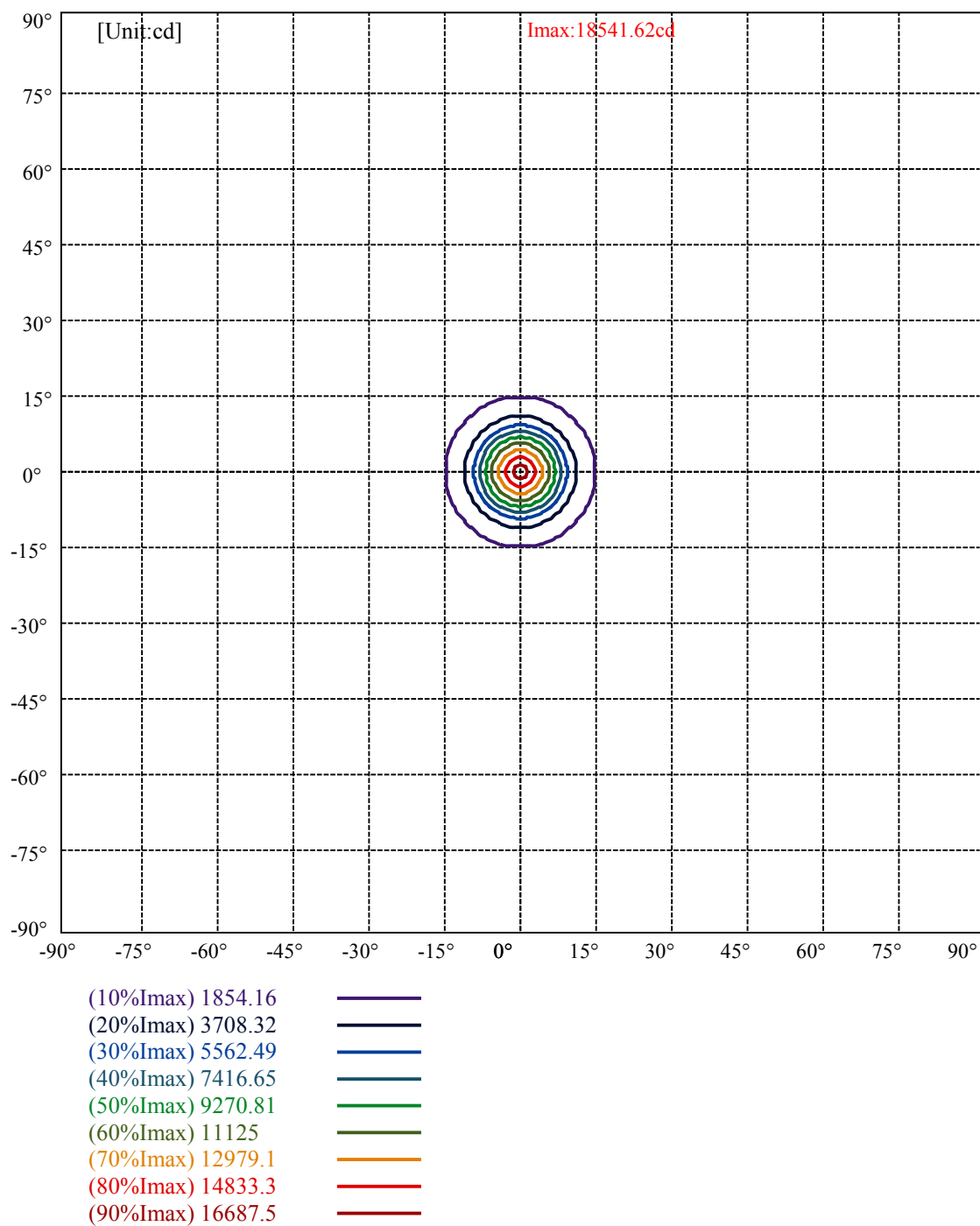
Zone	Lumens	%Lamp	%Fixt
0-30	1989.74	76.82%	84.27%
0-40	2292.36	88.51%	97.09%
0-60	2318.28	89.51%	98.18%
0-90	2358.70	91.07%	99.89%
0-120	2358.70	91.07%	99.89%
0-180	2361.18	91.17%	100.00%
60-90	46.28	1.79%	1.96%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.91	1888.95	72.93%	80.00%

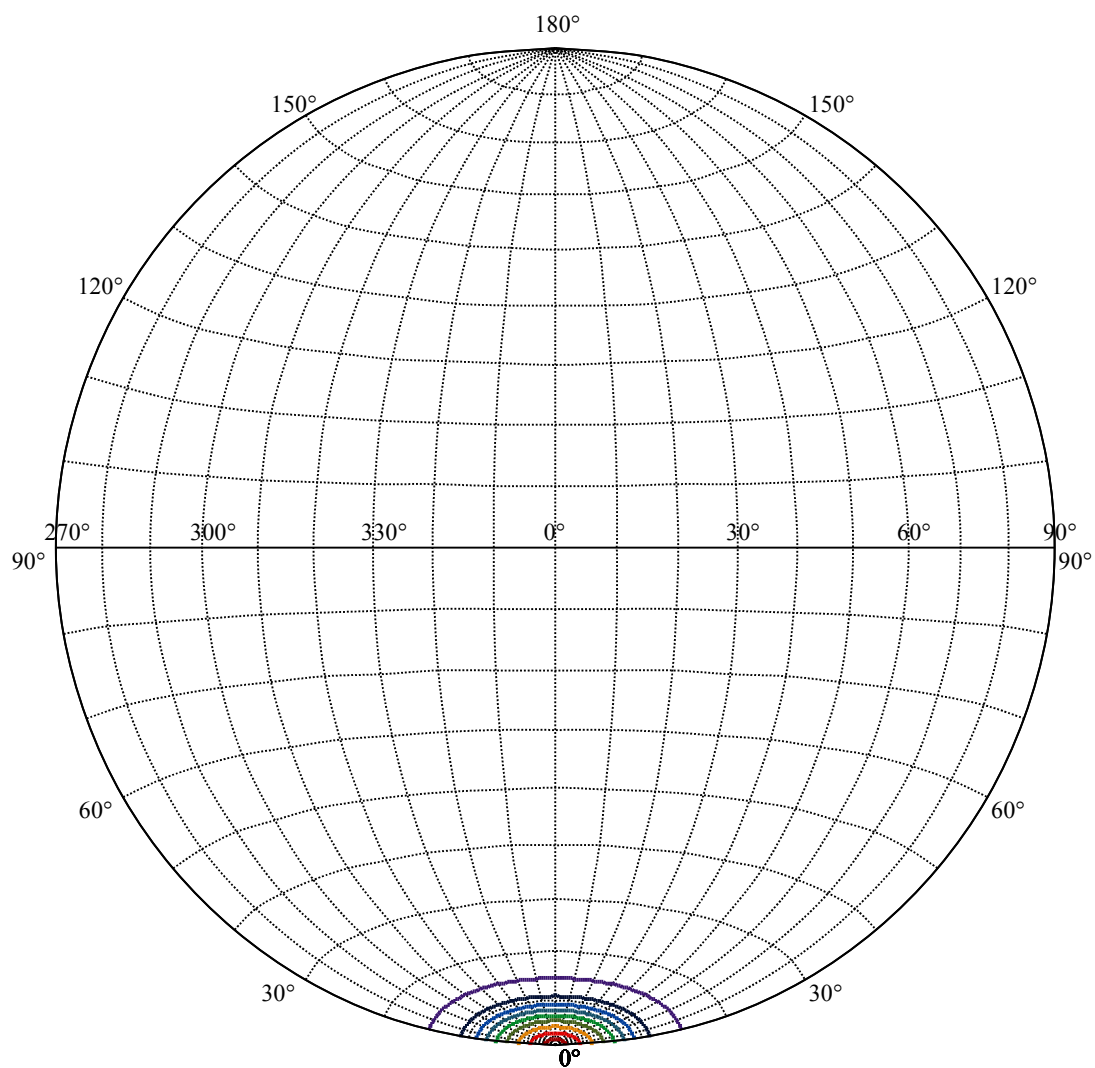
ZONAL LUMEN SUMMARY

0-10	1082.29
10-20	441.05
20-30	466.40
30-40	302.62
40-50	14.34
50-60	11.58
60-70	12.00
70-80	22.61
80-90	5.81
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









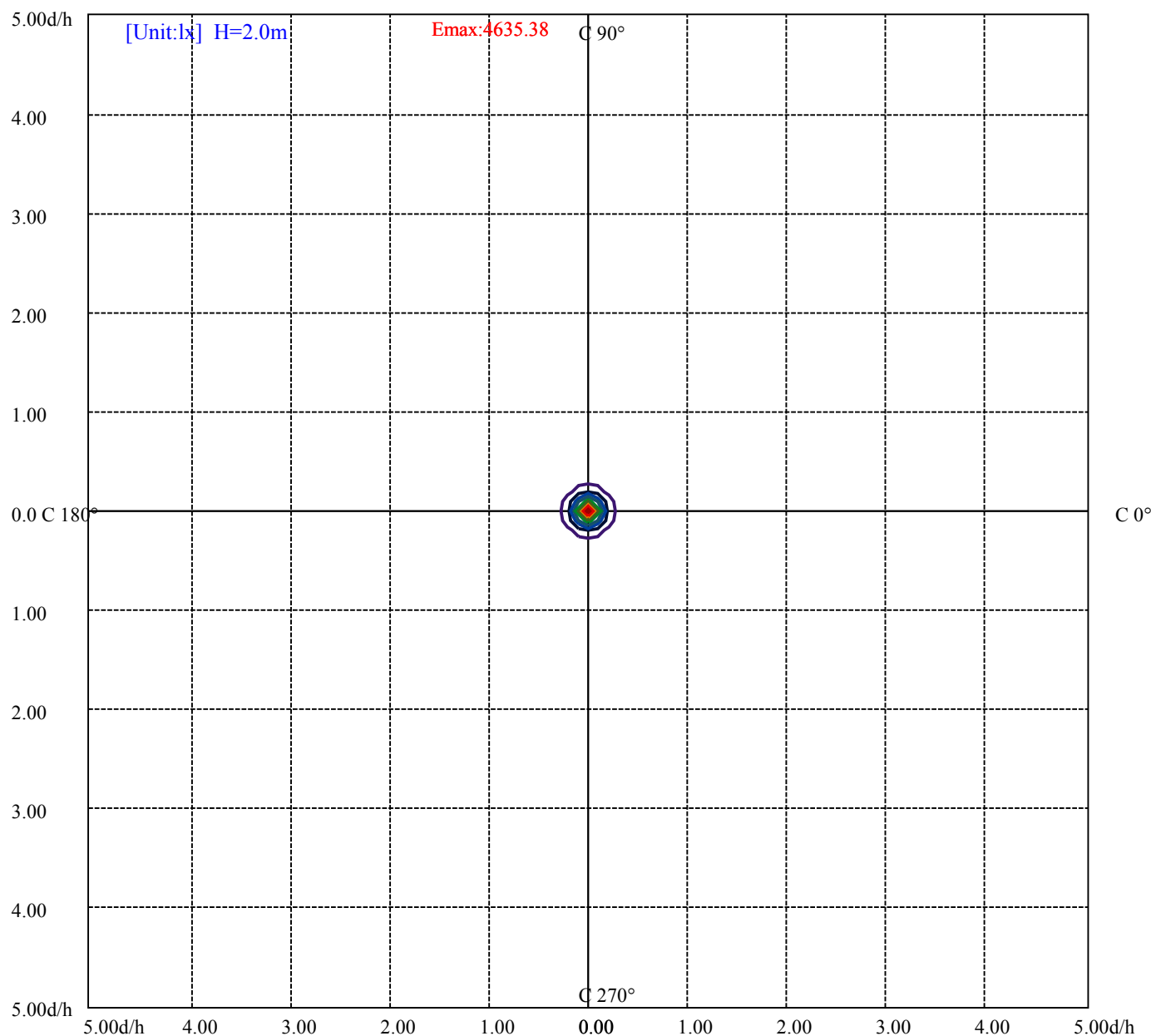
House

[Unit:cd]

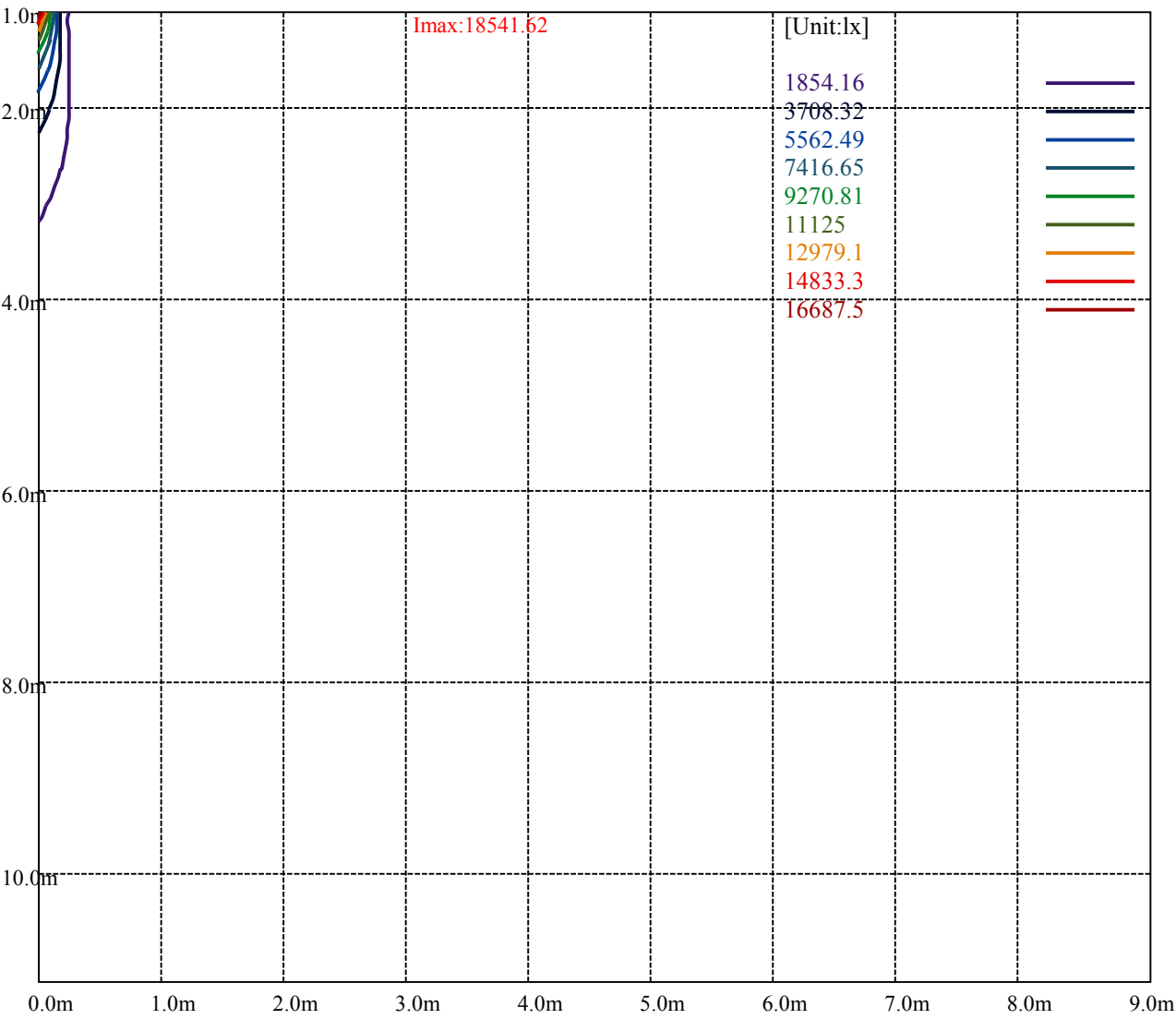
Road

Imax:18541.62

(10%Imax)	1854.16	—
(20%Imax)	3708.32	—
(30%Imax)	5562.49	—
(40%Imax)	7416.65	—
(50%Imax)	9270.81	—
(60%Imax)	11125	—
(70%Imax)	12979.1	—
(80%Imax)	14833.3	—
(90%Imax)	16687.5	—



(10%Emax)	463.535	—
(20%Emax)	927.07	—
(30%Emax)	1390.608	—
(40%Emax)	1854.142	—
(50%Emax)	2317.677	—
(60%Emax)	2781.225	—
(70%Emax)	3244.75	—
(80%Emax)	3708.275	—
(90%Emax)	4171.825	—



Luminance Table

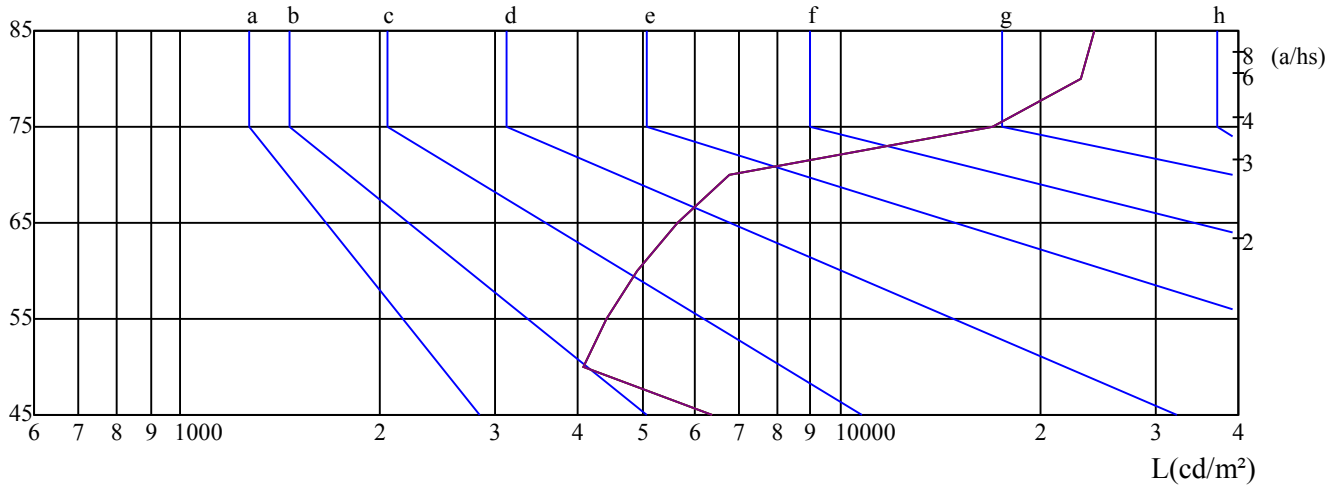
γ	45	50	55	60	65	70	75	80	85
C0	6362	4082	4403	4901	5650	6778	16922	23106	24232
C45	6362	4082	4403	4901	5650	6778	16922	23106	24232
C90	6362	4082	4403	4901	5650	6778	16922	23106	24232

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5650	5650	5650	16922	16922	16922	24232	24232	24232

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

Luminance Limiting Curve

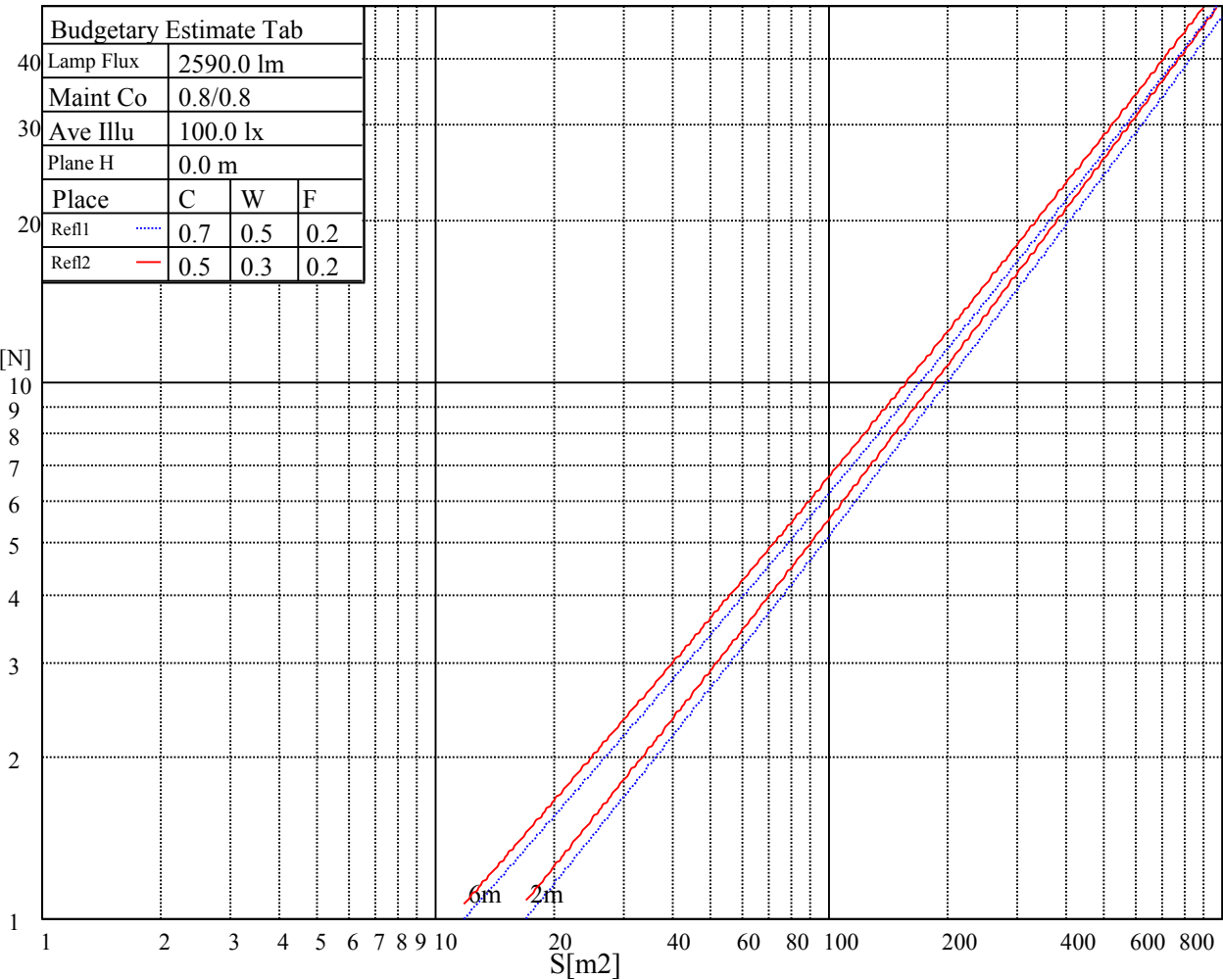
 $\gamma(^{\circ})$ 

C0 ———

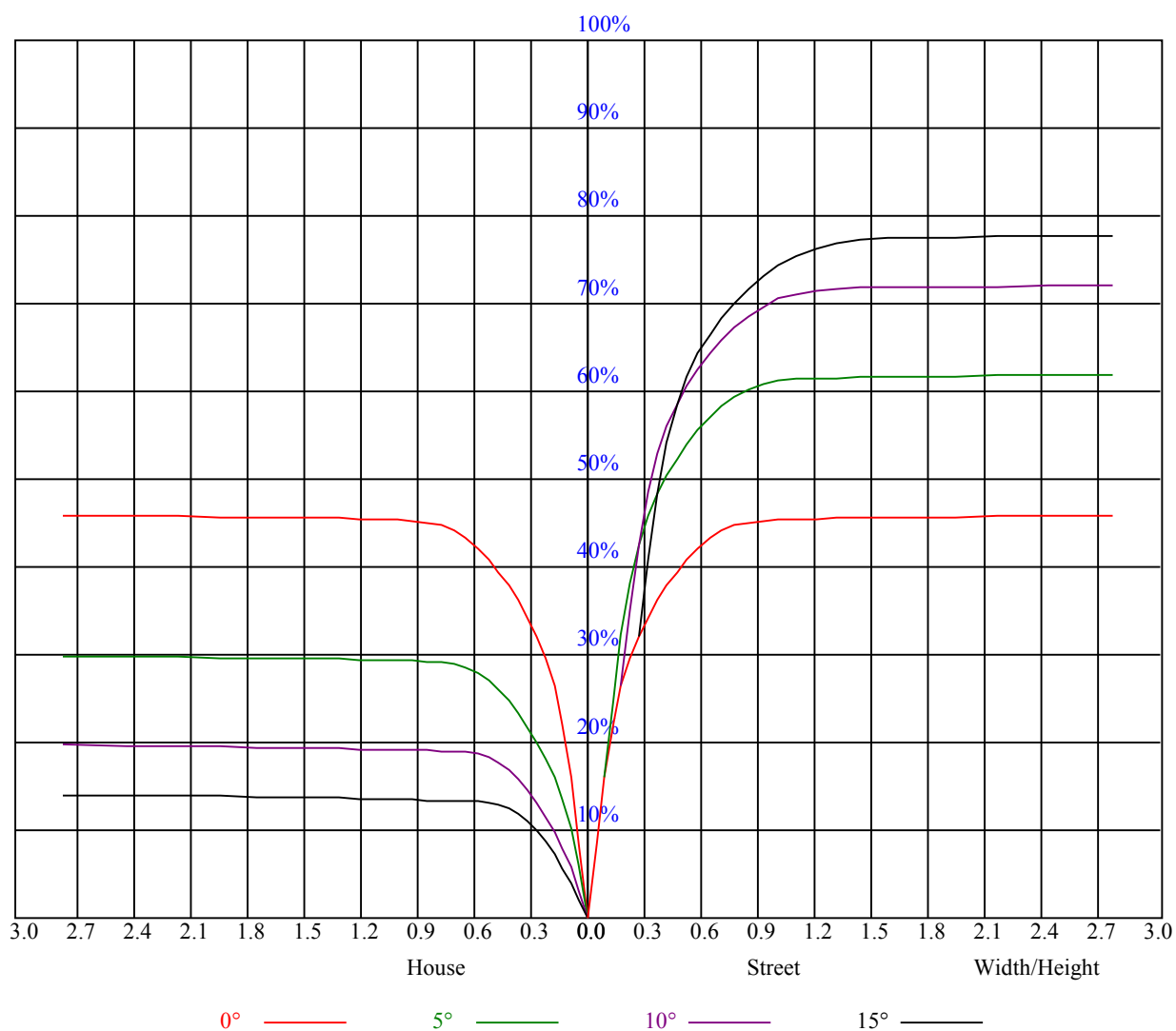
C45 ———

C90 ———

Illumination 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	3.56	4.48	3.92	4.79	5.11	3.50	4.42	3.86	4.73	5.05
	3H	6.59	7.41	6.97	7.74	8.11	6.82	7.64	7.21	7.98	8.35
	4H	9.90	10.65	10.31	11.01	11.40	11.18	11.94	11.59	12.30	12.69
	6H	12.23	12.93	12.65	13.30	13.70	14.64	15.33	15.06	15.71	16.11
	8H	13.07	13.72	13.51	14.11	14.52	15.68	16.33	16.12	16.73	17.14
	12H	14.21	14.83	14.64	15.21	15.64	16.68	17.30	17.12	17.69	18.12
4H	2H	4.48	5.24	4.89	5.59	5.98	4.44	5.19	4.85	5.55	5.94
	3H	8.12	8.74	8.53	9.15	9.56	8.38	9.00	8.80	9.41	9.82
	4H	11.76	12.32	12.20	12.75	13.20	12.88	13.44	13.32	13.86	14.31
	6H	13.87	14.35	14.34	14.80	15.27	15.82	16.30	16.30	16.75	17.23
	8H	14.79	15.23	15.27	15.69	16.16	17.00	17.44	17.48	17.89	18.37
	12H	15.81	16.19	16.30	16.68	17.16	17.94	18.32	18.43	18.81	19.29
8H	4H	13.16	13.60	13.64	14.06	14.53	13.93	14.38	14.41	14.83	15.30
	6H	15.44	15.79	15.95	16.29	16.78	16.97	17.32	17.48	17.82	18.31
	8H	16.40	16.72	16.94	17.24	17.74	18.17	18.48	18.70	19.00	19.50
	12H	17.41	17.68	17.93	18.18	18.76	19.13	19.39	19.65	19.89	20.48
12H	4H	13.54	13.92	14.03	14.41	14.89	14.13	14.51	14.62	15.00	15.48
	6H	16.08	16.17	16.40	16.65	17.20	17.41	17.50	17.72	17.97	18.52
	8H	16.90	17.17	17.43	17.67	18.25	18.45	18.72	18.98	19.22	19.80
Variation with the observer position at spacings:											
S = 1.0H		4.4/-6.3					4.4/-6.3				
S = 1.5H		5.8/-4.0					5.8/-4.0				
S = 2.0H		6.8/-2.3					6.8/-2.3				
Standard tables:		BK3					BK3				
Uncorrected UGR		3.4					3.4				



RHOC	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 RHOFC=20 CU															
0	1.14	1.14	1.14	1.11	1.11	1.11	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.95
1	1.01	0.98	0.95	0.99	0.96	0.93	0.95	0.93	0.90	0.91	0.89	0.87	0.88	0.86	0.85	0.83
2	0.96	0.91	0.87	0.94	0.90	0.86	0.91	0.87	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.79
3	0.91	0.86	0.82	0.89	0.85	0.81	0.87	0.83	0.80	0.85	0.81	0.79	0.82	0.80	0.78	0.76
4	0.87	0.82	0.78	0.86	0.81	0.77	0.84	0.80	0.76	0.82	0.78	0.75	0.80	0.77	0.75	0.73
5	0.83	0.78	0.74	0.82	0.77	0.74	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.71
6	0.80	0.75	0.71	0.79	0.74	0.71	0.78	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.69	0.68
7	0.77	0.72	0.68	0.76	0.72	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.66
8	0.74	0.69	0.66	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.64
9	0.72	0.67	0.64	0.71	0.67	0.64	0.71	0.66	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.62
10	0.70	0.65	0.62	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60



Intensity data(cd)

C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	18603.56	15415.79	5312.94	1687.48	1151.23	1004.78	910.08	757.58	282.99
45.0	18625.58	11528.81	3050.12	1282.26	1052.13	938.16	842.91	576.44	306.11
90.0	18190.63	9628.81	2294.75	1163.34	1021.13	911.18	803.11	477.56	47.13
135.0	18746.70	12272.07	3534.62	1375.31	1066.99	948.62	853.92	585.25	297.30
180.0	18603.56	10612.12	3159.69	1366.50	1045.14	943.06	852.38	599.56	122.39
225.0	18625.58	10542.20	4907.18	1840.54	1092.76	993.49	918.95	798.43	319.77
270.0	18190.63	15817.70	6182.83	2929.00	1216.75	1029.55	948.07	830.25	409.62
315.0	18746.70	10530.64	4844.96	1677.57	1093.59	1001.31	916.91	750.69	288.94
360.0	18603.56	15415.79	5312.94	1687.48	1151.23	1004.78	910.08	757.58	282.99
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	22.68	14.15	13.65	13.10	13.16	13.60	35.62	39.09	14.04
45.0	16.35	13.98	13.76	13.87	13.87	13.49	33.58	17.78	9.58
90.0	16.02	13.60	13.49	13.98	13.54	11.40	25.22	12.39	9.08
135.0	18.17	12.99	12.55	12.39	12.00	11.67	19.60	15.47	9.19
180.0	18.83	12.66	12.00	11.34	10.85	10.63	13.76	12.22	9.19
225.0	28.68	12.55	11.78	10.90	10.35	10.08	9.80	9.80	9.69
270.0	38.92	12.77	12.06	11.18	10.46	10.02	9.91	14.92	10.57
315.0	21.75	13.10	12.55	12.06	12.06	12.61	29.12	40.14	13.82
360.0	22.68	14.15	13.65	13.10	13.16	13.60	35.62	39.09	14.04
C/ γ (°)	90.0								
0.0	9.14								
45.0	9.03								
90.0	9.03								
135.0	9.08								
180.0	9.03								
225.0	8.97								
270.0	9.08								
315.0	9.08								
360.0	9.14								