



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 2-2180-M	
Luminaire: BJB 47.360.1010	
Report No: NATA0100	Voltage(V): 34.7500
Test No: GC2020021303	Current(A): 0.5970
LampCAT: BRIDGELUX V13B	Power (W): 20.7400
Lamp flux(lm): 2986.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2355.16
Efficiency(%): 78.87%
Lumens(lm)/Power(W): 113.56
Central intensity(cd): 16118.440
Maximum intensity(cd): 16118.440
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=17.4
 [C90/270]Total=17.4
Field angle(10%Imax): [C0/180]Total=41.2
 [C90/270]Total=41.2
Maximum s/h(1/2): C0_180=0.30 C90_270=0.30
Maximum s/h(1/4): C0_180=0.34 C90_270=0.34
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 78.87%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.424%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	16118.438	0.000	0	.000%	.000%
1.0	15953.906	15.346	15.346	.514%	.652%
2.0	15474.375	45.109	60.455	1.511%	2.567%
3.0	14620.781	71.978	132.433	2.411%	5.623%
4.0	13357.125	93.651	226.084	3.136%	9.599%
5.0	12475.969	111.133	337.216	3.722%	14.318%
6.0	11095.102	123.872	461.088	4.148%	19.578%
7.0	9876.445	130.170	591.258	4.359%	25.105%
8.0	8816.906	133.785	725.043	4.480%	30.785%
9.0	7730.508	134.108	859.151	4.491%	36.480%
10.0	6737.414	130.929	990.08	4.385%	42.039%
11.0	5987.250	127.146	1117.226	4.258%	47.437%
12.0	5307.188	123.464	1240.69	4.135%	52.680%
13.0	4605.469	117.638	1358.329	3.940%	57.675%
14.0	4080.023	111.174	1469.502	3.723%	62.395%
15.0	3620.320	105.714	1575.216	3.540%	66.884%
16.0	3166.594	99.447	1674.663	3.330%	71.106%
17.0	2806.031	93.010	1767.673	3.115%	75.055%
18.0	2446.945	86.610	1854.283	2.901%	78.733%
19.0	2088.563	78.909	1933.192	2.643%	82.083%
20.0	1788.047	70.953	2004.144	2.376%	85.096%
21.0	1485.070	62.850	2066.995	2.105%	87.764%
22.0	1194.623	53.850	2120.845	1.803%	90.051%
23.0	991.547	45.872	2166.716	1.536%	91.999%
24.0	750.234	38.082	2204.798	1.275%	93.616%
25.0	531.689	29.148	2233.946	.976%	94.853%
26.0	364.163	21.147	2255.093	.708%	95.751%
27.0	230.070	14.538	2269.631	.487%	96.368%
28.0	128.208	9.071	2278.702	.304%	96.754%
29.0	51.026	4.689	2283.391	.157%	96.953%
30.0	27.246	2.113	2285.504	.071%	97.042%
31.0	19.666	1.306	2286.81	.044%	97.098%
32.0	18.359	1.089	2287.899	.036%	97.144%
33.0	17.452	1.055	2288.954	.035%	97.189%
34.0	16.594	1.030	2289.984	.035%	97.233%
35.0	15.961	1.011	2290.995	.034%	97.276%
36.0	15.490	1.001	2291.997	.034%	97.318%
37.0	15.054	0.996	2292.993	.033%	97.360%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	14.759	0.995	2293.988	.033%	97.403%
39.0	14.463	0.997	2294.985	.033%	97.445%
40.0	14.252	1.001	2295.987	.034%	97.487%
41.0	14.070	1.009	2296.995	.034%	97.530%
42.0	13.908	1.016	2298.012	.034%	97.573%
43.0	13.774	1.025	2299.037	.034%	97.617%
44.0	13.662	1.036	2300.073	.035%	97.661%
45.0	13.563	1.046	2301.119	.035%	97.705%
46.0	13.465	1.057	2302.176	.035%	97.750%
47.0	13.373	1.067	2303.244	.036%	97.796%
48.0	13.296	1.078	2304.322	.036%	97.841%
49.0	13.205	1.088	2305.41	.036%	97.888%
50.0	13.127	1.098	2306.508	.037%	97.934%
51.0	13.071	1.108	2307.616	.037%	97.981%
52.0	12.994	1.118	2308.735	.037%	98.029%
53.0	12.923	1.127	2309.862	.038%	98.077%
54.0	12.860	1.136	2310.999	.038%	98.125%
55.0	12.797	1.145	2312.144	.038%	98.174%
56.0	12.769	1.155	2313.299	.039%	98.223%
57.0	12.755	1.167	2314.466	.039%	98.272%
58.0	12.734	1.179	2315.645	.039%	98.322%
59.0	12.762	1.192	2316.837	.040%	98.373%
60.0	12.790	1.207	2318.044	.040%	98.424%
61.0	12.874	1.225	2319.269	.041%	98.476%
62.0	13.001	1.247	2320.515	.042%	98.529%
63.0	13.134	1.271	2321.786	.043%	98.583%
64.0	13.331	1.299	2323.085	.043%	98.638%
65.0	13.549	1.330	2324.415	.045%	98.695%
66.0	13.739	1.362	2325.777	.046%	98.752%
67.0	13.943	1.392	2327.169	.047%	98.811%
68.0	14.070	1.419	2328.588	.048%	98.872%
69.0	14.105	1.437	2330.025	.048%	98.933%
70.0	14.063	1.447	2331.472	.048%	98.994%
71.0	13.964	1.449	2332.92	.049%	99.056%
72.0	13.697	1.438	2334.359	.048%	99.117%
73.0	13.289	1.411	2335.77	.047%	99.177%
74.0	12.881	1.376	2337.146	.046%	99.235%
75.0	12.291	1.330	2338.476	.045%	99.292%

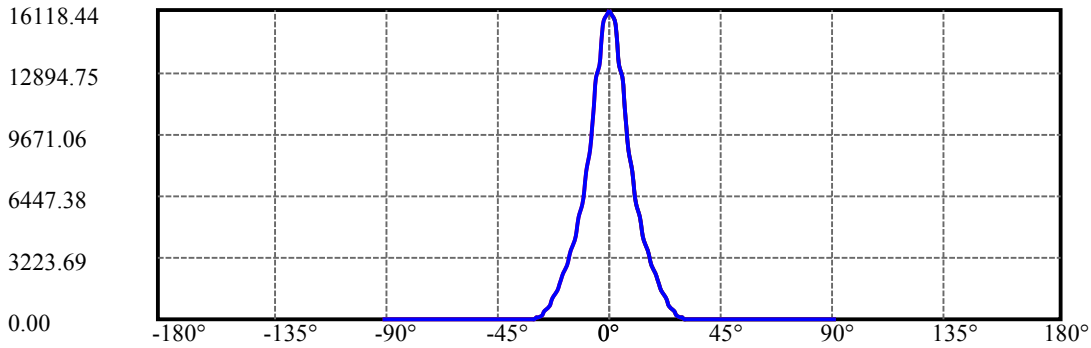
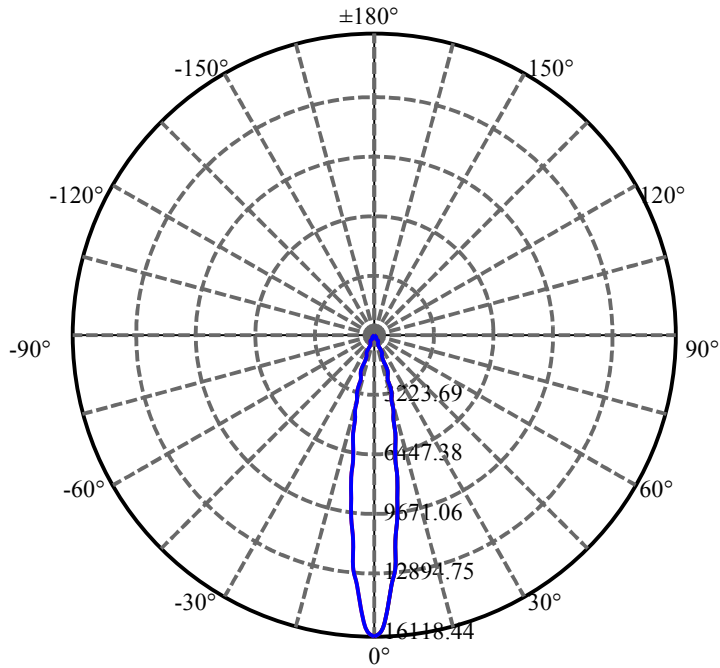
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.665	1.272	2339.747	.043%	99.346%
77.0	11.159	1.217	2340.964	.041%	99.397%
78.0	10.842	1.178	2342.142	.039%	99.447%
79.0	10.547	1.149	2343.291	.038%	99.496%
80.0	10.350	1.127	2344.418	.038%	99.544%
81.0	10.216	1.112	2345.53	.037%	99.591%
82.0	10.083	1.101	2346.631	.037%	99.638%
83.0	10.005	1.092	2347.723	.037%	99.684%
84.0	9.935	1.086	2348.809	.036%	99.730%
85.0	9.865	1.081	2349.89	.036%	99.776%
86.0	9.851	1.078	2350.967	.036%	99.822%
87.0	9.668	1.068	2352.036	.036%	99.867%
88.0	9.541	1.052	2353.088	.035%	99.912%
89.0	9.429	1.040	2354.128	.035%	99.956%
90.0	9.415	1.033	2355.161	.035%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2285.50	76.54%	97.04%
0-40	2295.99	76.89%	97.49%
0-60	2318.04	77.63%	98.42%
0-90	2354.13	78.84%	99.96%
0-120	2354.13	78.84%	99.96%
0-180	2355.16	78.87%	100.00%
60-90	37.29	1.25%	1.58%
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%
0-18.38	1884.13	63.10%	80.00%

ZONAL LUMEN SUMMARY

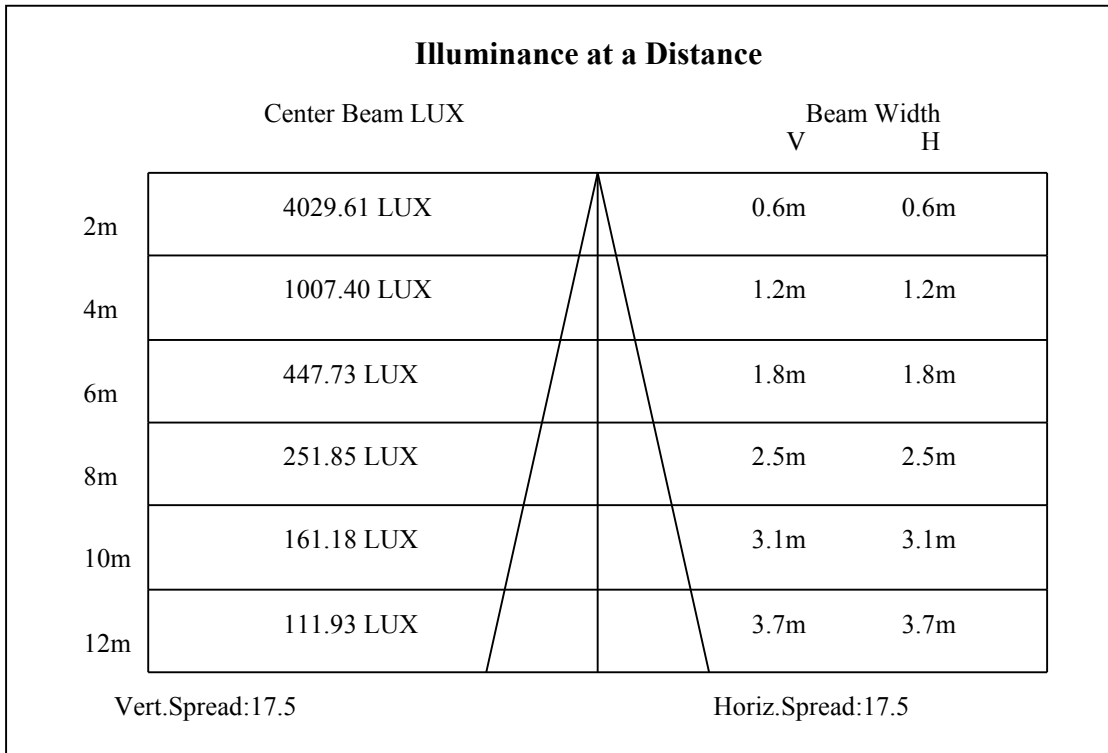
0-10	990.08
10-20	1014.06
20-30	281.36
30-40	10.48
40-50	10.52
50-60	11.54
60-70	13.43
70-80	12.95
80-90	9.71
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

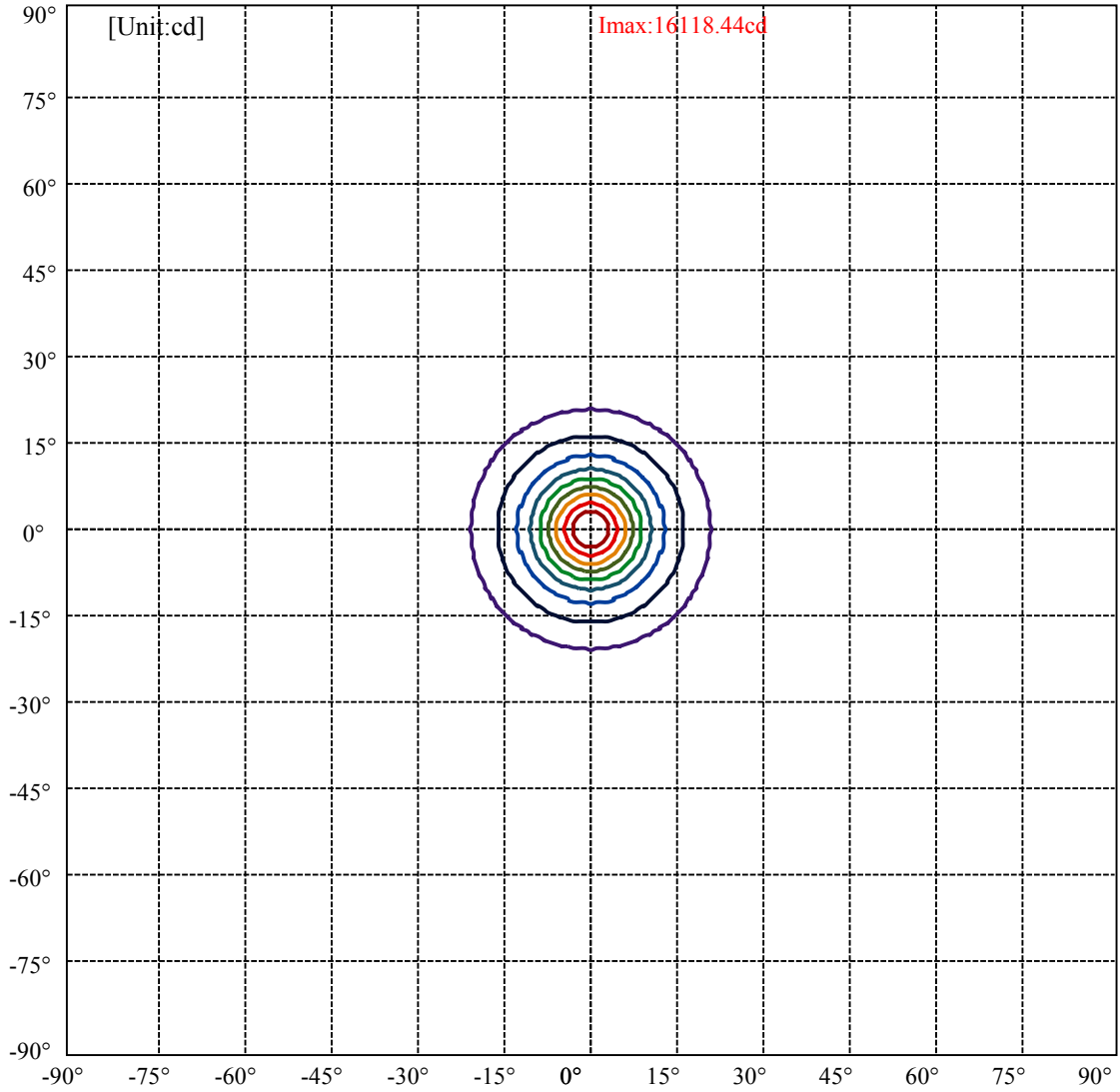


C0(Max): ———
C0/C180: ———
C90/C270: ———

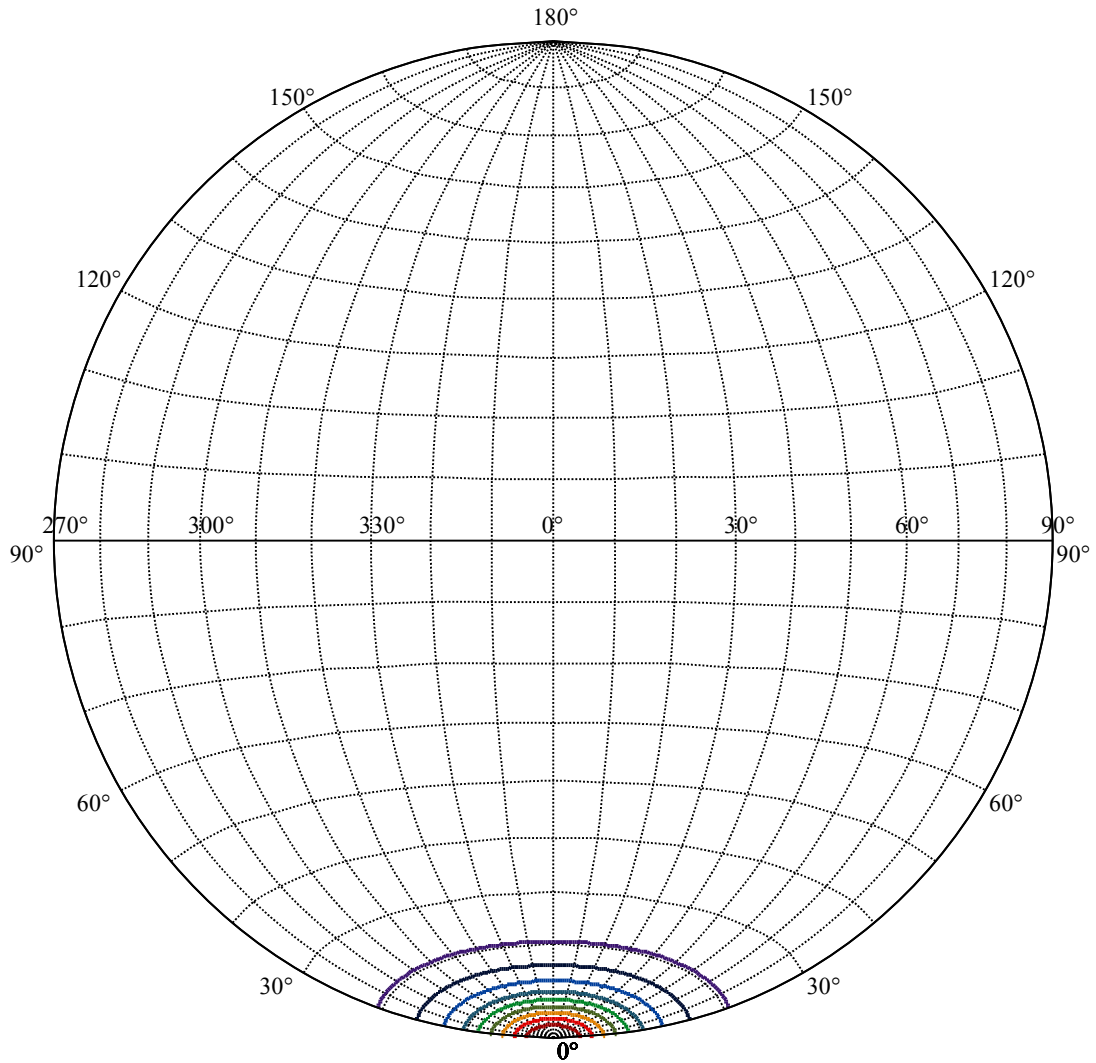
Field angle(10%Imax):C0/180Left:20.6 Right:20.6
:C90/270Left:20.6 Right:20.6

Beam Angle(50%Imax):C0/180Left:8.7 Right:8.7
:C90/270Left:8.7 Right:8.7





(10%Imax) 1611.84	—
(20%Imax) 3223.69	—
(30%Imax) 4835.53	—
(40%Imax) 6447.38	—
(50%Imax) 8059.22	—
(60%Imax) 9671.06	—
(70%Imax) 11282.9	—
(80%Imax) 12894.8	—
(90%Imax) 14506.6	—



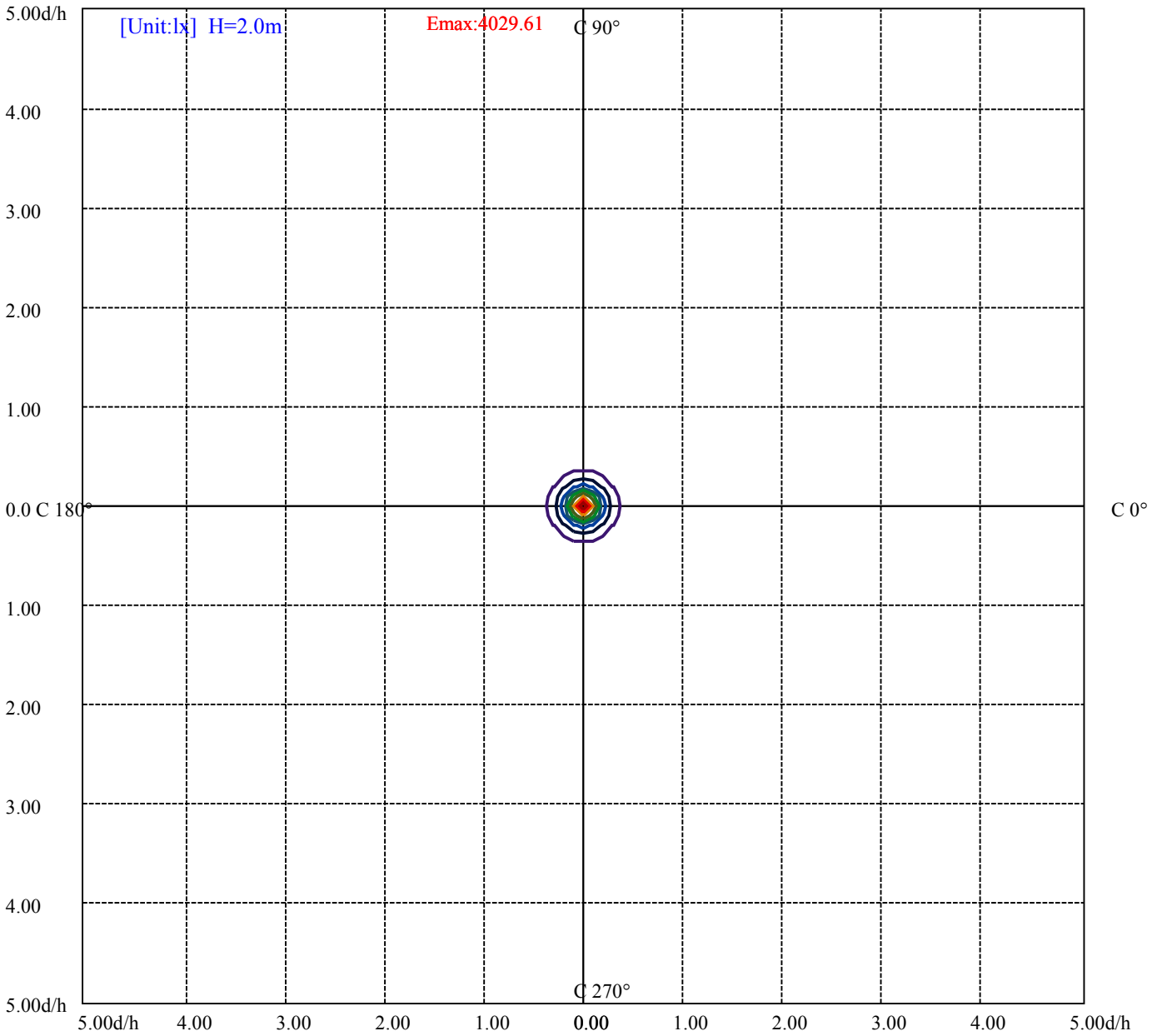
House

[Unit:cd]

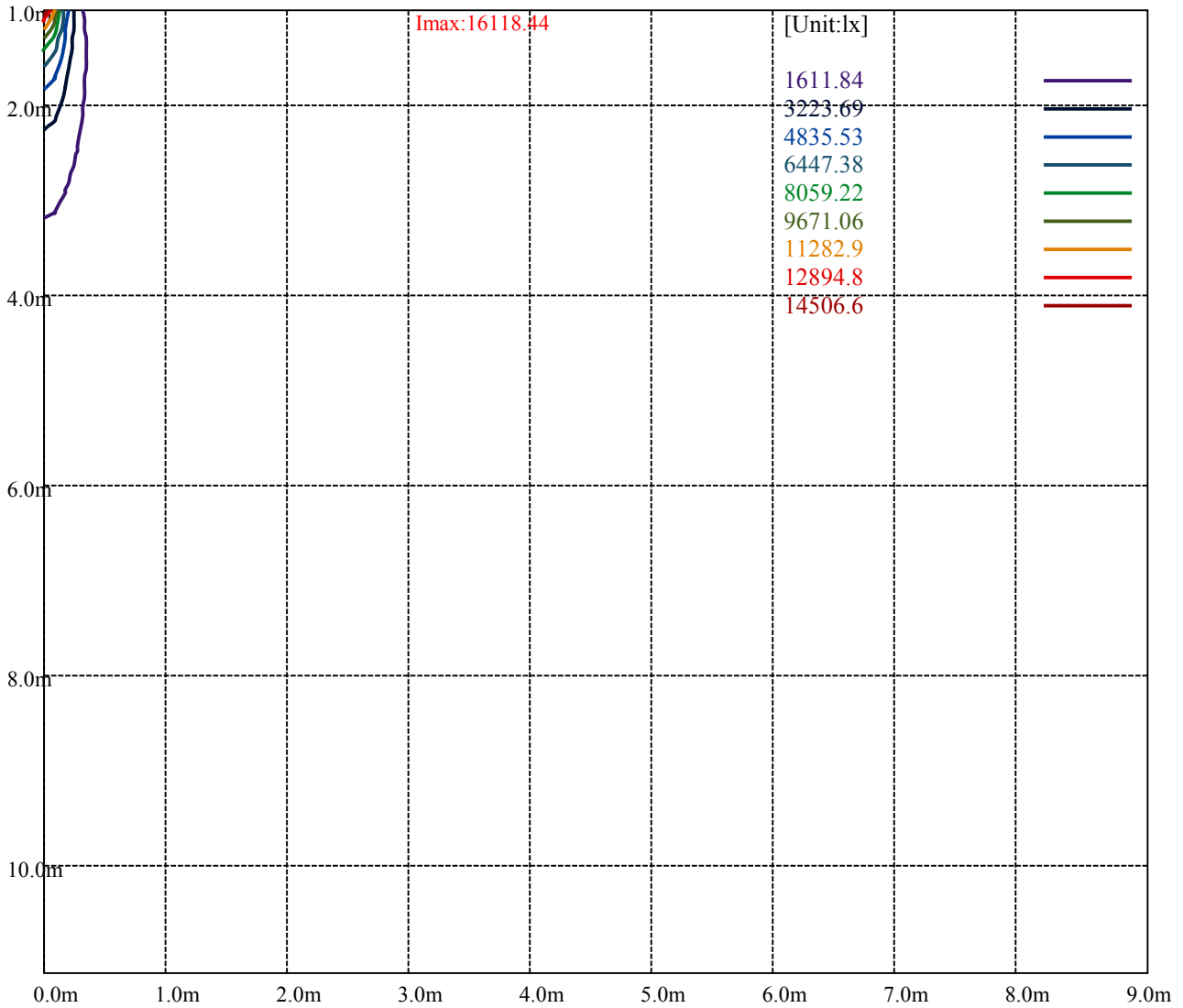
Road

Imax:16118.44

(10%Imax)	1611.84	—
(20%Imax)	3223.69	—
(30%Imax)	4835.53	—
(40%Imax)	6447.38	—
(50%Imax)	8059.22	—
(60%Imax)	9671.06	—
(70%Imax)	11282.9	—
(80%Imax)	12894.8	—
(90%Imax)	14506.6	—



(10%Emax) 402.96	—
(20%Emax) 805.92	—
(30%Emax) 1208.88	—
(40%Emax) 1611.843	—
(50%Emax) 2014.802	—
(60%Emax) 2417.762	—
(70%Emax) 2820.725	—
(80%Emax) 3223.675	—
(90%Emax) 3626.65	—



Luminance Table

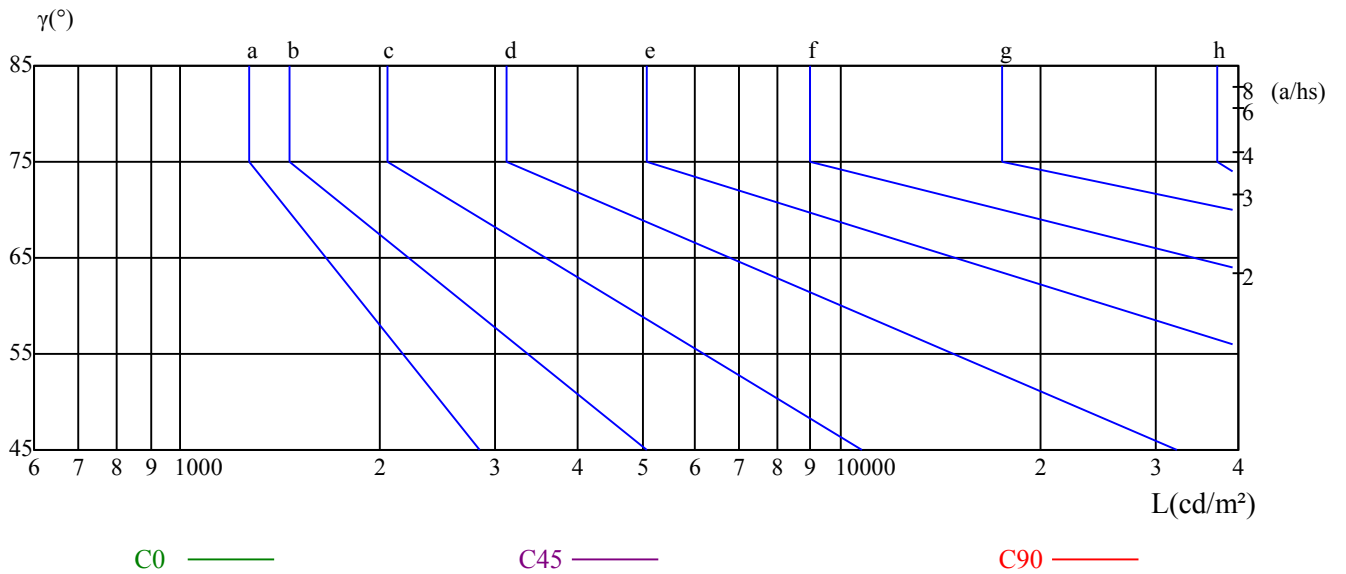
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

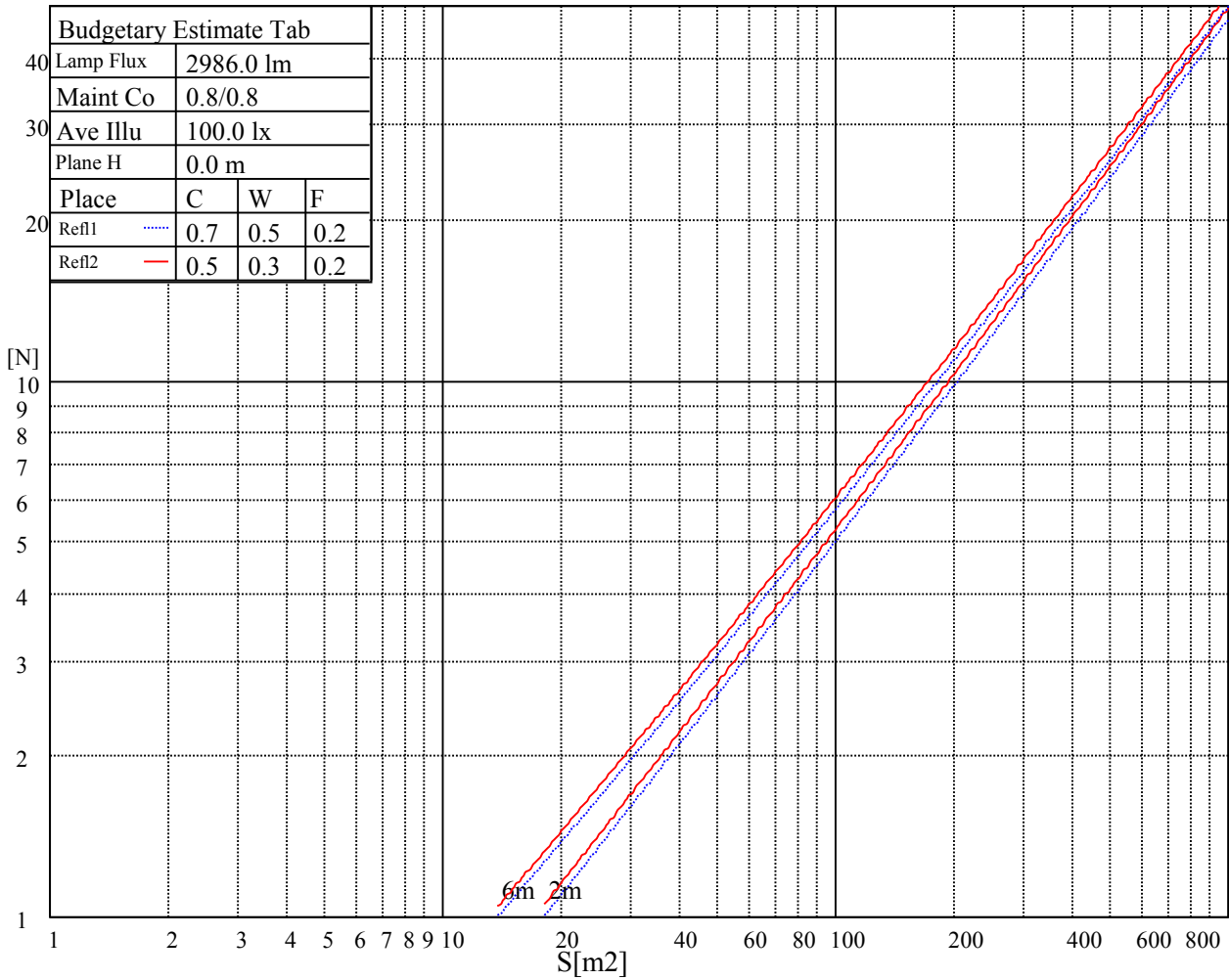
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

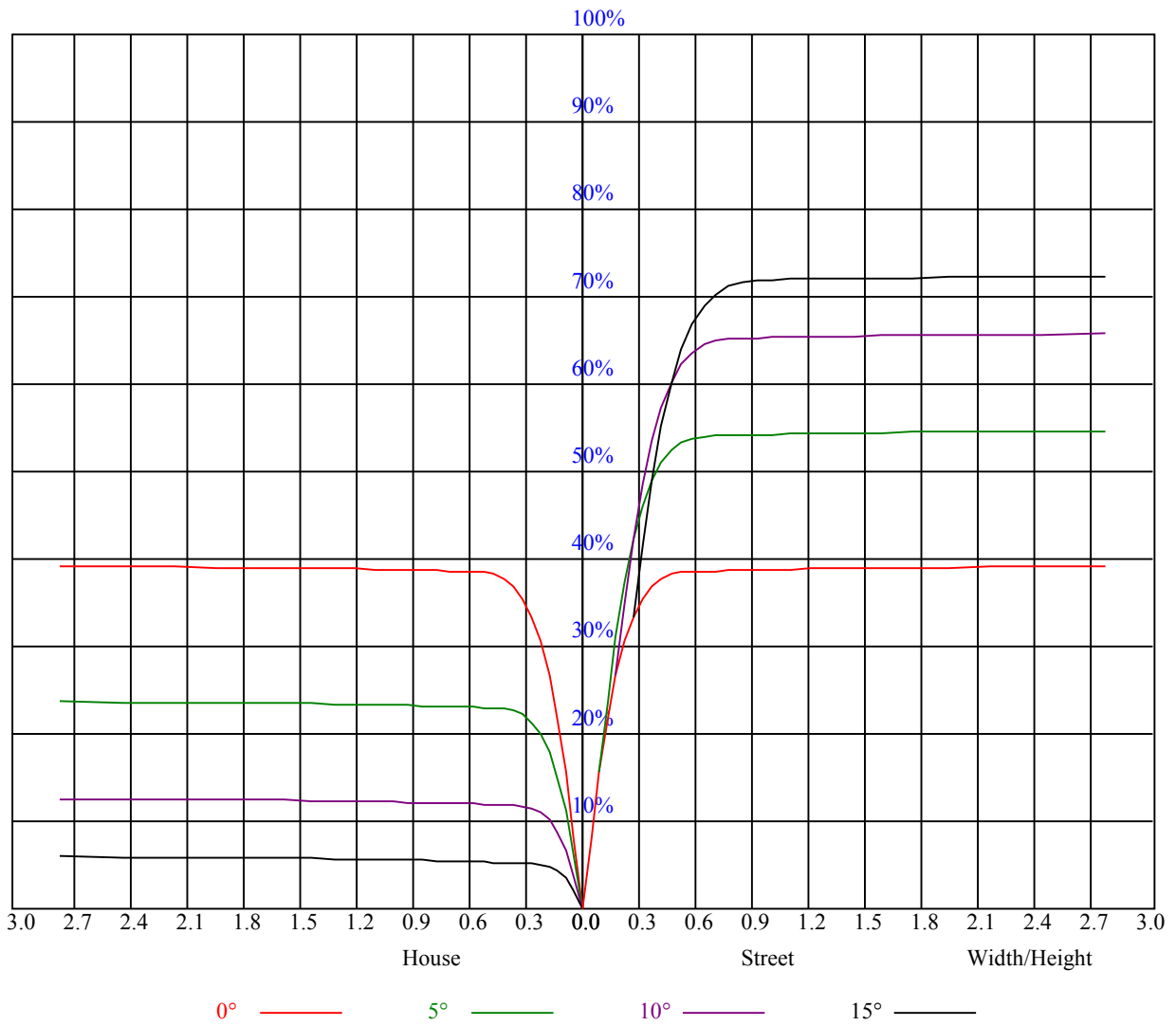
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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 RHOFC=20 CU															
0	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.80	0.80	0.80	0.79
1	0.89	0.87	0.86	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.80	0.80	0.79	0.78	0.77	0.76
2	0.85	0.83	0.81	0.84	0.82	0.80	0.81	0.80	0.78	0.79	0.78	0.76	0.77	0.76	0.75	0.74
3	0.82	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.77	0.75	0.74	0.75	0.74	0.73	0.72
4	0.79	0.76	0.73	0.78	0.75	0.73	0.76	0.74	0.72	0.75	0.73	0.71	0.74	0.72	0.71	0.70
5	0.76	0.73	0.71	0.76	0.73	0.70	0.74	0.72	0.70	0.73	0.71	0.69	0.72	0.70	0.69	0.68
6	0.74	0.71	0.69	0.73	0.70	0.68	0.72	0.70	0.68	0.71	0.69	0.67	0.70	0.69	0.67	0.66
7	0.72	0.69	0.67	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.66	0.69	0.67	0.65	0.65
8	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.68	0.66	0.64	0.63
9	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.67	0.64	0.63	0.66	0.64	0.63	0.62
10	0.67	0.64	0.62	0.66	0.64	0.62	0.66	0.63	0.62	0.65	0.63	0.61	0.65	0.63	0.61	0.61



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	15991.88	16357.50	16357.50	15986.25	15204.38	14231.25	12948.75	11598.75	10423.13
45.0	16081.88	16351.88	16290.00	15817.50	15086.25	14107.50	12667.50	11446.88	10237.50
90.0	16194.38	16065.00	15637.50	14793.75	13691.25	12571.88	11210.63	9860.06	8729.44
135.0	16205.63	15935.63	15283.13	14321.25	13269.38	11975.63	10665.00	9489.38	8426.25
180.0	15991.88	15378.75	14506.88	13168.13	11124.00	10832.63	9536.06	8329.50	7390.13
225.0	16081.88	15435.00	14580.00	13410.00	11088.00	10939.50	9663.75	8370.56	7566.19
270.0	16194.38	15969.38	15395.63	14478.75	13449.38	12318.75	10861.88	9725.63	8679.38
315.0	16205.63	16138.13	15744.38	14990.63	13944.38	12830.63	11207.25	10190.81	9083.25
360.0	15991.88	16357.50	16357.50	15986.25	15204.38	14231.25	12948.75	11598.75	10423.13
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	9140.63	7993.13	7076.25	6361.88	5394.38	4775.63	4297.50	3706.88	3240.00
45.0	8831.25	7801.88	6885.00	5985.00	5225.63	4635.00	4050.00	3600.00	3155.63
90.0	7724.81	6616.69	5855.63	5193.00	4479.75	3980.25	3538.13	3095.44	2695.50
135.0	7267.50	6435.00	5703.75	5056.88	4365.00	3881.25	3453.75	2975.63	2840.63
180.0	6558.19	5656.50	5034.94	4483.69	3883.50	3457.69	3069.56	2675.81	2314.13
225.0	6738.75	5748.75	5196.94	4635.56	4072.50	3580.31	3188.25	2781.00	2409.75
270.0	7515.00	6693.75	5968.13	5248.13	4612.50	4106.25	3600.00	3200.63	2874.38
315.0	8067.94	6953.63	6177.38	5493.38	4810.50	4223.81	3765.38	3297.38	2918.25
360.0	9140.63	7993.13	7076.25	6361.88	5394.38	4775.63	4297.50	3706.88	3240.00
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2908.13	2502.00	2163.38	1878.75	1584.56	1339.31	1070.44	815.06	604.13
45.0	2868.75	2412.00	2071.13	1758.38	1487.81	1248.19	965.81	749.81	545.06
90.0	2367.00	2027.81	1750.50	1468.13	1101.60	959.06	718.76	504.45	340.43
135.0	2315.25	1974.94	1654.31	1419.75	1128.38	873.00	659.81	455.63	293.63
180.0	2010.38	1690.31	1434.38	1092.88	891.79	677.98	466.26	291.77	171.28
225.0	2106.00	1787.63	1528.88	1119.99	1001.70	744.08	511.82	339.69	193.67
270.0	2462.06	2123.44	1802.25	1545.75	1262.81	1022.06	770.06	543.94	365.06
315.0	2538.00	2190.38	1899.56	1596.94	1098.34	1068.69	838.91	553.16	400.05
360.0	2908.13	2502.00	2163.38	1878.75	1584.56	1339.31	1070.44	815.06	604.13
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	419.06	300.94	122.51	49.44	21.43	19.24	17.83	16.54	15.53
45.0	333.56	298.69	105.08	44.44	21.83	20.42	19.46	18.34	17.66
90.0	207.73	86.68	32.51	21.94	20.48	19.13	18.28	17.66	17.04
135.0	153.34	63.34	23.51	18.84	17.27	16.37	15.69	15.02	14.57
180.0	82.18	24.02	18.90	17.49	16.20	15.36	14.68	14.06	13.61
225.0	99.34	34.82	22.56	21.04	19.80	18.62	17.89	17.27	16.71
270.0	291.38	90.68	36.68	22.89	20.98	19.86	18.90	18.06	17.33
315.0	253.97	126.51	46.46	21.88	19.35	17.89	16.88	15.81	15.24
360.0	419.06	300.94	122.51	49.44	21.43	19.24	17.83	16.54	15.53
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	14.79	14.18	13.67	13.22	12.83	12.60	12.43	12.26	12.21
45.0	17.16	16.59	16.31	15.98	15.69	15.53	15.30	15.13	15.02
90.0	16.71	16.37	16.09	15.81	15.69	15.53	15.36	15.24	15.13
135.0	14.18	13.89	13.67	13.50	13.39	13.22	13.11	12.99	12.88
180.0	13.28	12.88	12.77	12.54	12.43	12.32	12.21	12.15	12.04
225.0	16.31	15.98	15.69	15.41	15.24	15.02	14.91	14.74	14.57
270.0	16.88	16.37	16.03	15.69	15.41	15.19	14.96	14.79	14.68
315.0	14.63	14.18	13.84	13.56	13.33	13.16	12.99	12.88	12.77
360.0	14.79	14.18	13.67	13.22	12.83	12.60	12.43	12.26	12.21

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	12.09	11.98	11.93	11.87	11.81	11.76	11.70	11.64	11.59
45.0	14.91	14.79	14.68	14.57	14.46	14.40	14.34	14.23	14.12
90.0	14.96	14.91	14.79	14.74	14.63	14.51	14.51	14.46	14.40
135.0	12.77	12.66	12.60	12.49	12.43	12.38	12.32	12.26	12.21
180.0	12.04	11.98	11.93	11.93	11.81	11.76	11.76	11.70	11.64
225.0	14.51	14.40	14.29	14.18	14.06	13.95	13.84	13.73	13.61
270.0	14.57	14.46	14.34	14.29	14.18	14.06	13.95	13.84	13.78
315.0	12.66	12.54	12.43	12.32	12.26	12.21	12.15	12.09	12.04
360.0	12.09	11.98	11.93	11.87	11.81	11.76	11.70	11.64	11.59
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.53	11.48	11.48	11.42	11.31	11.31	11.25	11.19	11.19
45.0	14.06	14.01	13.95	13.89	13.89	14.01	14.01	14.12	14.18
90.0	14.34	14.34	14.63	14.91	15.13	15.36	15.58	15.86	16.31
135.0	12.21	12.15	12.09	12.09	12.04	11.98	11.93	11.87	11.87
180.0	11.59	11.53	11.48	11.48	11.42	11.36	11.31	11.31	11.25
225.0	13.50	13.39	13.22	13.11	12.94	12.88	12.88	12.94	13.05
270.0	13.67	13.50	13.39	13.28	13.28	13.39	13.61	13.95	14.40
315.0	11.98	11.98	11.93	11.87	11.87	11.81	11.76	11.76	11.76
360.0	11.53	11.48	11.48	11.42	11.31	11.31	11.25	11.19	11.19
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.19	11.08	11.08	11.08	11.03	11.03	11.03	10.97	10.91
45.0	14.23	14.34	14.51	14.68	14.91	14.96	15.02	14.96	14.85
90.0	16.76	17.33	17.94	18.51	18.96	19.13	18.73	17.89	16.48
135.0	11.81	11.76	11.76	11.70	11.70	11.76	12.21	13.11	14.34
180.0	11.19	11.19	11.14	11.08	11.08	11.03	11.03	10.97	10.97
225.0	13.28	13.56	13.84	14.06	14.23	14.46	14.63	14.51	14.12
270.0	14.91	15.69	16.43	17.16	18.00	18.62	18.56	17.94	16.93
315.0	11.70	11.70	11.70	11.64	11.64	11.59	11.64	12.15	13.11
360.0	11.19	11.08	11.08	11.08	11.03	11.03	11.03	10.97	10.91
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.91	10.91	10.97	10.97	10.97	10.91	10.80	10.69	10.52
45.0	14.57	14.01	13.50	12.21	11.59	11.14	10.97	10.63	10.46
90.0	14.79	13.05	11.93	11.42	11.19	10.97	10.74	10.58	10.35
135.0	15.02	15.86	15.98	14.29	12.38	10.86	10.58	10.35	10.24
180.0	10.91	10.91	10.91	10.91	10.86	10.74	10.63	10.41	10.24
225.0	13.73	13.16	11.98	11.48	11.19	10.91	10.69	10.46	10.24
270.0	15.75	14.12	12.54	11.53	11.19	11.03	10.86	10.63	10.41
315.0	13.89	14.29	15.24	15.53	13.95	12.71	11.48	10.63	10.35
360.0	10.91	10.91	10.97	10.97	10.97	10.91	10.80	10.69	10.52
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.35	10.24	10.13	10.01	9.90	9.84	9.79	9.73	9.56
45.0	10.29	10.18	10.07	10.01	9.90	9.90	9.84	9.79	9.45
90.0	10.24	10.07	10.01	10.01	10.01	10.13	9.73	9.39	9.34
135.0	10.07	10.01	9.96	9.90	9.84	9.90	9.56	9.45	9.34
180.0	10.13	9.96	9.90	9.84	9.73	9.68	9.56	9.56	9.56
225.0	10.18	10.01	9.96	9.90	9.84	9.84	9.45	9.39	9.45
270.0	10.29	10.13	10.01	9.90	9.84	9.79	9.73	9.45	9.34
315.0	10.18	10.07	10.01	9.90	9.84	9.73	9.68	9.56	9.39
360.0	10.35	10.24	10.13	10.01	9.90	9.84	9.79	9.73	9.56

Intensity data(cd)

C/γ(°)	90.0
0.0	9.56
45.0	9.45
90.0	9.34
135.0	9.39
180.0	9.45
225.0	9.39
270.0	9.34
315.0	9.39
360.0	9.56