



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

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## Nata

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LumCAT: 3-2500-L	
Luminaire: 92.70.135.00	
Report No: 200521-B001	Voltage(V): 34.5400
Test No: 200521-C001	Current(A): 0.5970
LampCAT: LUMILEDS LUXEON 1208	Power (W): 20.6200
Lamp flux(lm): 2604.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 2522.62  
Efficiency(%): 96.87%  
Lumens(lm)/Power(W): 122.34  
Central intensity(cd): 17382.660  
Maximum intensity(cd): 17382.660  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=16.5  
                                  [C90/270]Total=16.5  
Field angle(10%Imax): [C0/180]Total=34.7  
                                  [C90/270]Total=34.7  
Maximum s/h(1/2): C0\_180=0.28 C90\_270=0.28  
Maximum s/h(1/4): C0\_180=0.28 C90\_270=0.28  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 96.87%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.551%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	17382.656	0.000	0	.000%	.000%
1.0	17251.172	16.572	16.572	.636%	.657%
2.0	16759.688	48.816	65.387	1.875%	2.592%
3.0	16024.922	78.410	143.797	3.011%	5.700%
4.0	15089.766	104.151	247.948	4.000%	9.829%
5.0	13547.109	123.194	371.142	4.731%	14.713%
6.0	12259.266	135.619	506.762	5.208%	20.089%
7.0	10763.789	142.904	649.665	5.488%	25.754%
8.0	9086.273	142.063	791.729	5.456%	31.385%
9.0	7580.883	135.078	926.807	5.187%	36.740%
10.0	6182.367	124.552	1051.359	4.783%	41.677%
11.0	4911.328	110.849	1162.208	4.257%	46.071%
12.0	4011.398	97.538	1259.746	3.746%	49.938%
13.0	3366.563	87.558	1347.304	3.362%	53.409%
14.0	2783.180	78.716	1426.02	3.023%	56.529%
15.0	2437.313	71.669	1497.689	2.752%	59.370%
16.0	2074.641	66.113	1563.802	2.539%	61.991%
17.0	1805.766	60.428	1624.231	2.321%	64.387%
18.0	1598.484	56.129	1680.359	2.155%	66.612%
19.0	1444.641	52.944	1733.303	2.033%	68.710%
20.0	1302.820	50.286	1783.59	1.931%	70.704%
21.0	1191.945	47.905	1831.494	1.840%	72.603%
22.0	1115.993	46.379	1877.873	1.781%	74.441%
23.0	1043.023	45.302	1923.175	1.740%	76.237%
24.0	991.273	44.477	1967.652	1.708%	78.000%
25.0	946.772	44.067	2011.719	1.692%	79.747%
26.0	909.105	43.808	2055.527	1.682%	81.484%
27.0	876.171	43.677	2099.204	1.677%	83.215%
28.0	849.720	43.696	2142.9	1.678%	84.947%
29.0	811.680	43.467	2186.367	1.669%	86.671%
30.0	764.550	42.558	2228.925	1.634%	88.358%
31.0	702.401	40.823	2269.748	1.568%	89.976%
32.0	621.288	37.922	2307.67	1.456%	91.479%
33.0	537.286	34.132	2341.802	1.311%	92.832%
34.0	451.385	29.920	2371.722	1.149%	94.018%
35.0	367.235	25.423	2397.146	.976%	95.026%
36.0	271.835	20.348	2417.494	.781%	95.833%
37.0	202.781	15.479	2432.973	.594%	96.446%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	123.891	10.904	2443.877	.419%	96.879%
39.0	70.706	6.642	2450.519	.255%	97.142%
40.0	42.448	3.946	2454.466	.152%	97.298%
41.0	28.659	2.532	2456.998	.097%	97.399%
42.0	24.609	1.935	2458.933	.074%	97.475%
43.0	22.690	1.752	2460.685	.067%	97.545%
44.0	21.614	1.672	2462.357	.064%	97.611%
45.0	20.876	1.633	2463.99	.063%	97.676%
46.0	20.095	1.602	2465.592	.062%	97.739%
47.0	19.343	1.569	2467.161	.060%	97.802%
48.0	18.563	1.532	2468.693	.059%	97.862%
49.0	17.979	1.501	2470.194	.058%	97.922%
50.0	17.627	1.485	2471.679	.057%	97.981%
51.0	17.283	1.477	2473.156	.057%	98.039%
52.0	17.065	1.474	2474.629	.057%	98.098%
53.0	16.706	1.469	2476.098	.056%	98.156%
54.0	16.130	1.447	2477.546	.056%	98.213%
55.0	15.771	1.424	2478.97	.055%	98.270%
56.0	15.532	1.415	2480.384	.054%	98.326%
57.0	15.300	1.410	2481.794	.054%	98.382%
58.0	15.180	1.410	2483.203	.054%	98.438%
59.0	15.209	1.421	2484.624	.055%	98.494%
60.0	15.082	1.431	2486.055	.055%	98.551%
61.0	14.970	1.434	2487.489	.055%	98.607%
62.0	14.688	1.429	2488.918	.055%	98.664%
63.0	14.252	1.408	2490.326	.054%	98.720%
64.0	13.774	1.375	2491.701	.053%	98.774%
65.0	13.275	1.339	2493.04	.051%	98.827%
66.0	13.001	1.311	2494.351	.050%	98.879%
67.0	12.797	1.297	2495.648	.050%	98.931%
68.0	12.558	1.284	2496.932	.049%	98.982%
69.0	12.333	1.270	2498.202	.049%	99.032%
70.0	12.164	1.258	2499.46	.048%	99.082%
71.0	11.960	1.247	2500.707	.048%	99.131%
72.0	11.714	1.231	2501.938	.047%	99.180%
73.0	11.468	1.212	2503.15	.047%	99.228%
74.0	11.222	1.193	2504.343	.046%	99.276%
75.0	11.018	1.175	2505.518	.045%	99.322%

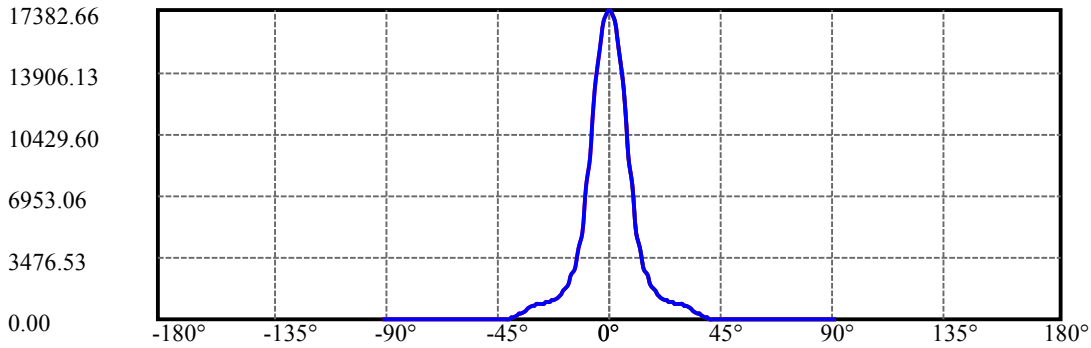
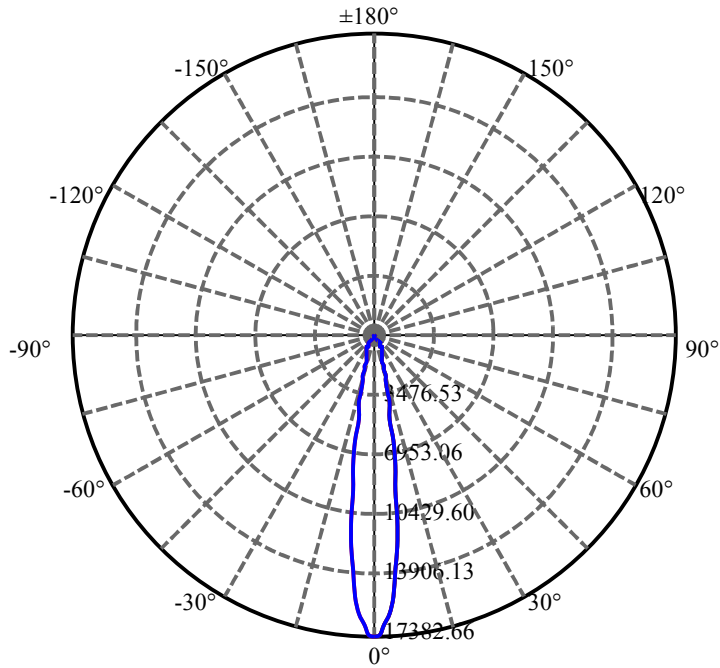
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.898	1.163	2506.682	.045%	99.368%
77.0	10.842	1.159	2507.841	.045%	99.414%
78.0	10.800	1.159	2508.999	.044%	99.460%
79.0	10.744	1.158	2510.157	.044%	99.506%
80.0	10.695	1.156	2511.313	.044%	99.552%
81.0	10.617	1.153	2512.465	.044%	99.597%
82.0	10.561	1.148	2513.614	.044%	99.643%
83.0	10.512	1.146	2514.759	.044%	99.688%
84.0	10.434	1.141	2515.9	.044%	99.734%
85.0	10.413	1.138	2517.038	.044%	99.779%
86.0	10.322	1.133	2518.172	.044%	99.824%
87.0	10.273	1.127	2519.299	.043%	99.868%
88.0	10.146	1.119	2520.417	.043%	99.913%
89.0	10.034	1.106	2521.523	.042%	99.957%
90.0	9.956	1.096	2522.619	.042%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2228.93	85.60%	88.36%
0-40	2454.47	94.26%	97.30%
0-60	2486.06	95.47%	98.55%
0-90	2521.52	96.83%	99.96%
0-120	2521.52	96.83%	99.96%
0-180	2522.62	96.87%	100.00%
60-90	36.90	1.42%	1.46%
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%
0-25.15	2018.10	77.50%	80.00%

ZONAL LUMEN SUMMARY

0-10	1051.36
10-20	732.23
20-30	445.34
30-40	225.54
40-50	17.21
50-60	14.38
60-70	13.41
70-80	11.85
80-90	10.21
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

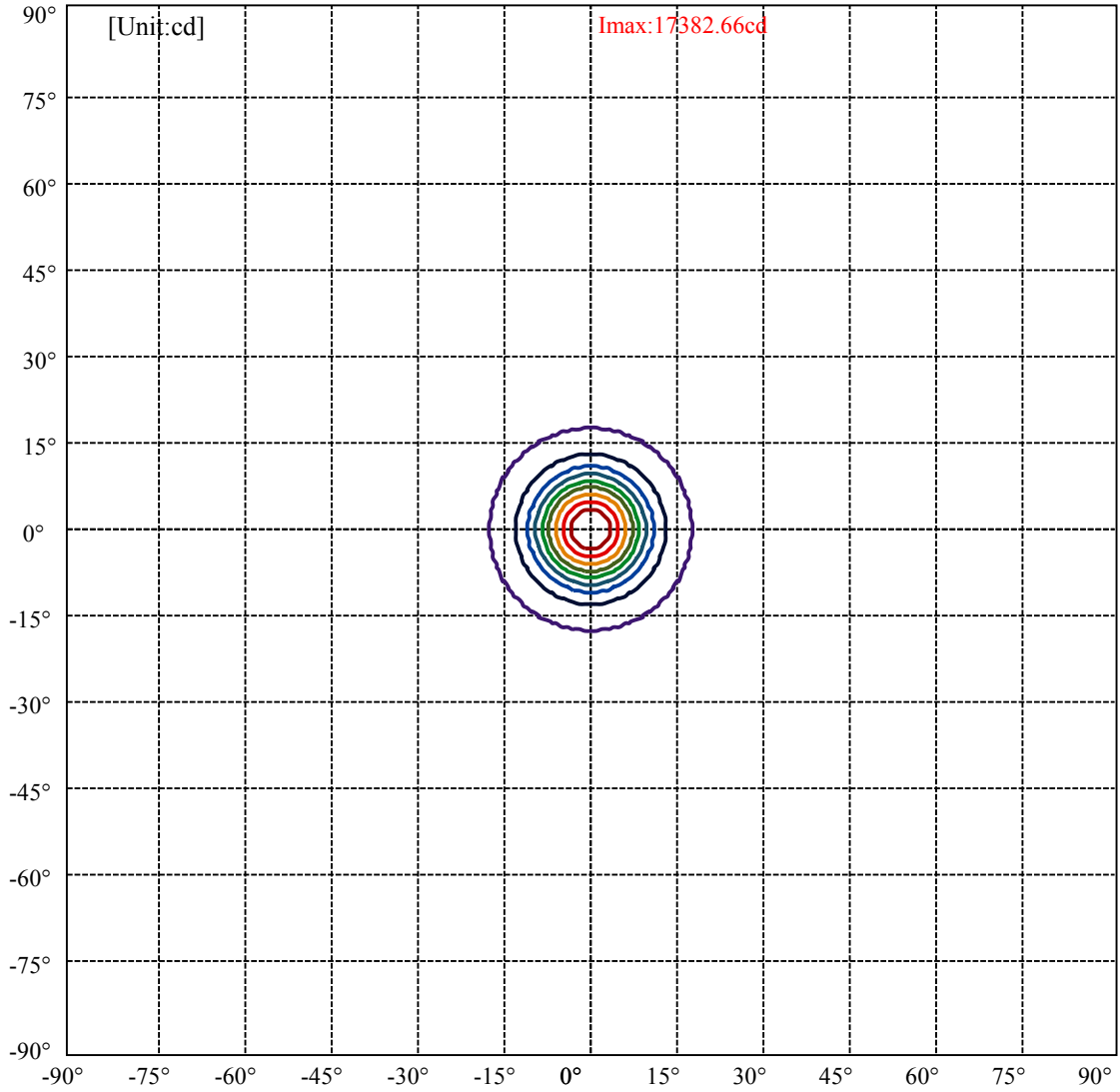


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

Field angle(10%Imax):C0/180Left:17.3 Right:17.3  
:C90/270Left:17.3 Right:17.3

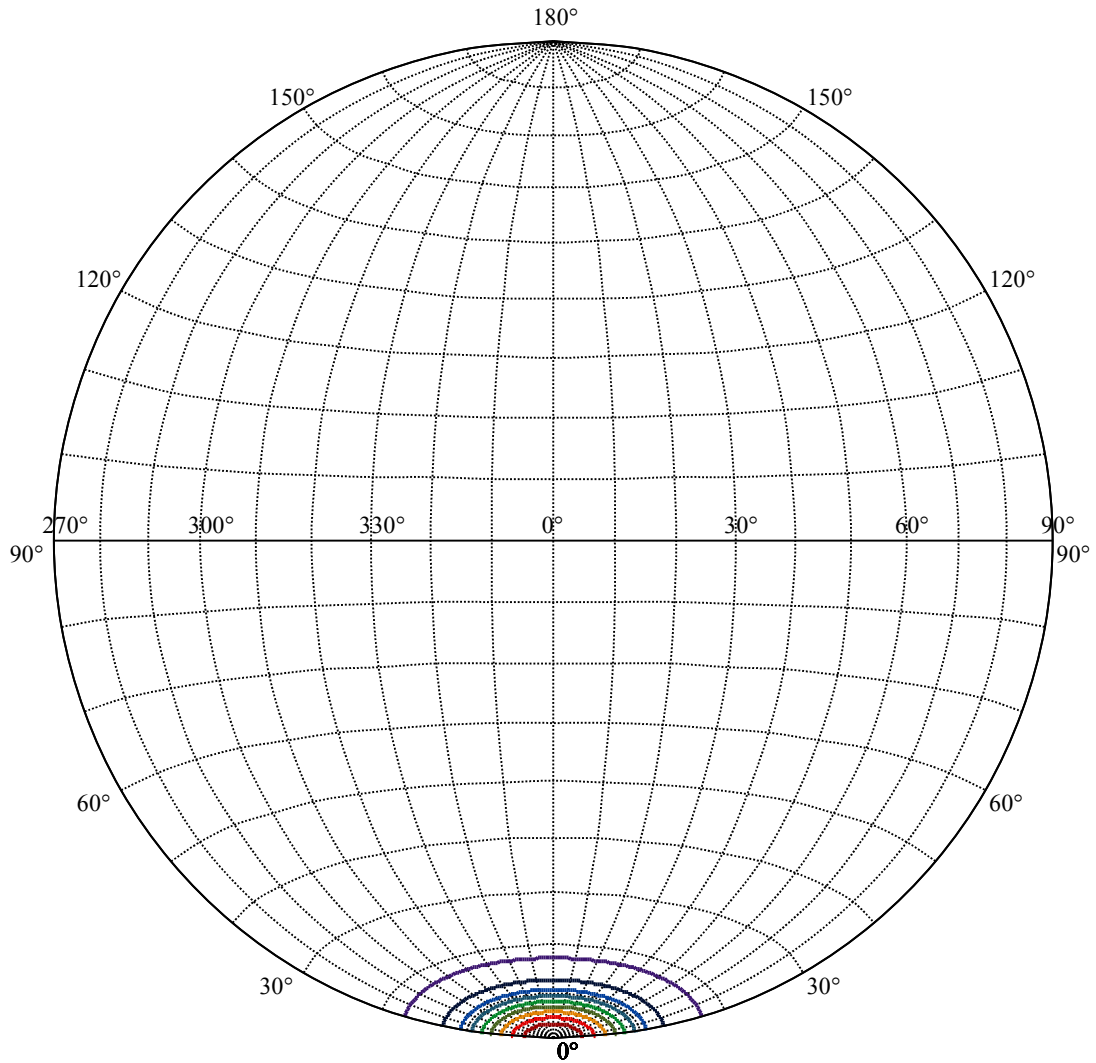
Beam Angle(50%Imax):C0/180Left:8.3 Right:8.3  
:C90/270Left:8.3 Right:8.3





(10%Imax) 1738.27	—
(20%Imax) 3476.53	—
(30%Imax) 5214.8	—
(40%Imax) 6953.06	—
(50%Imax) 8691.33	—
(60%Imax) 10429.6	—
(70%Imax) 12167.9	—
(80%Imax) 13906.1	—
(90%Imax) 15644.4	—





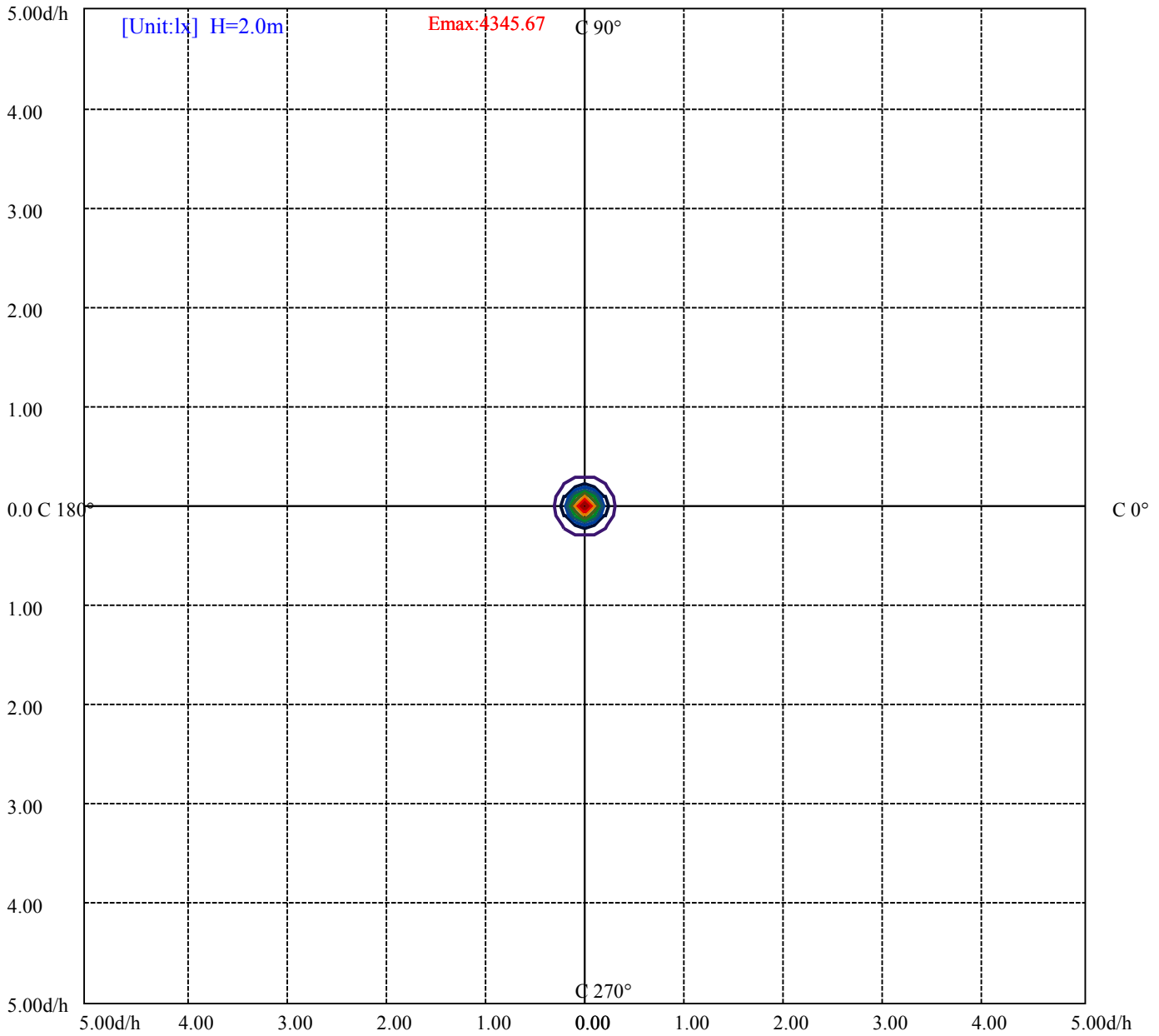
House

[Unit:cd]

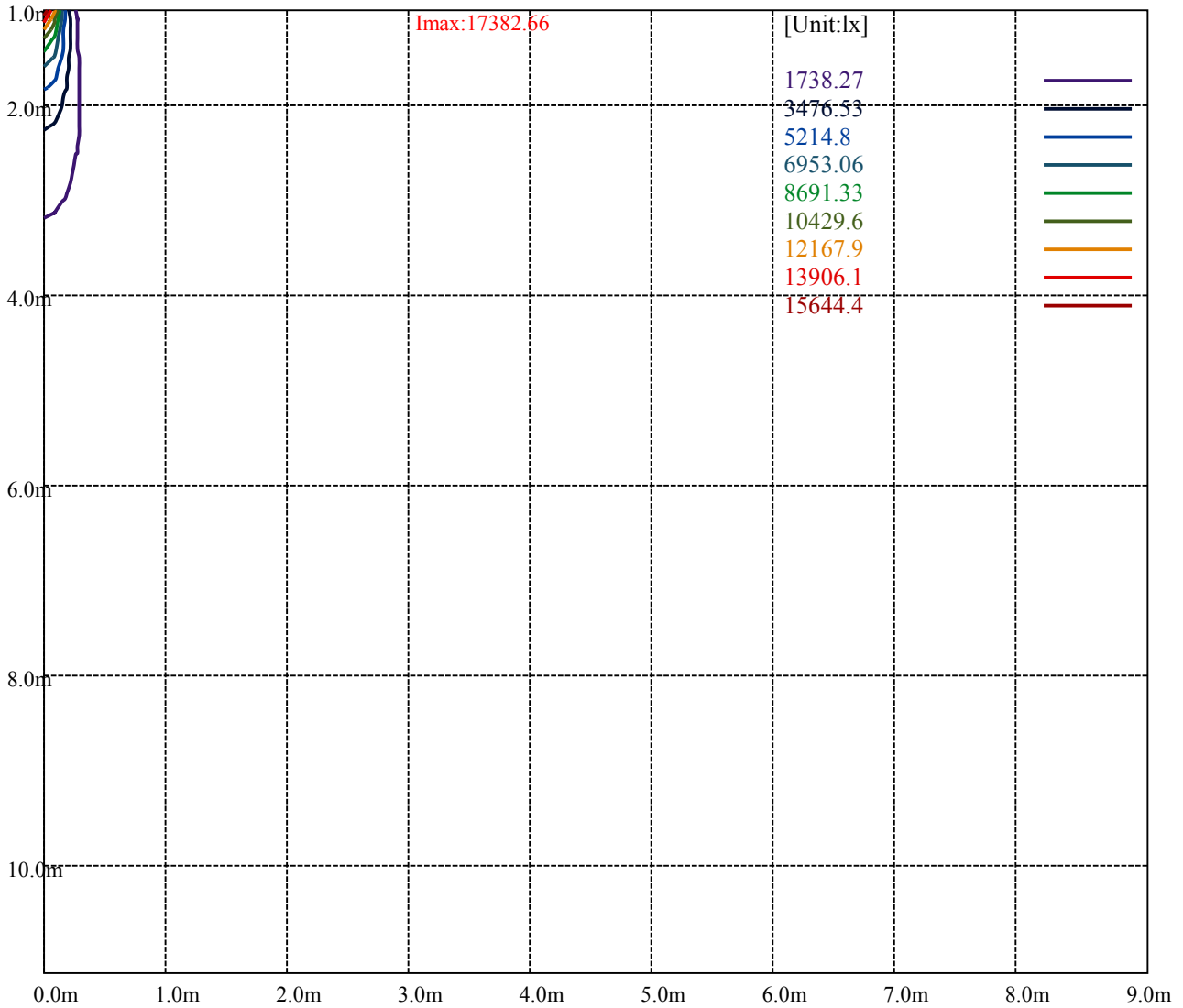
Road

**Imax:17382.66**

(10%Imax) 1738.27	—
(20%Imax) 3476.53	—
(30%Imax) 5214.8	—
(40%Imax) 6953.06	—
(50%Imax) 8691.33	—
(60%Imax) 10429.6	—
(70%Imax) 12167.9	—
(80%Imax) 13906.1	—
(90%Imax) 15644.4	—



(10%Emax) 434.565	—
(20%Emax) 869.1325	—
(30%Emax) 1303.698	—
(40%Emax) 1738.265	—
(50%Emax) 2172.83	—
(60%Emax) 2607.4	—
(70%Emax) 3041.95	—
(80%Emax) 3476.525	—
(90%Emax) 3911.1	—



Luminance Table

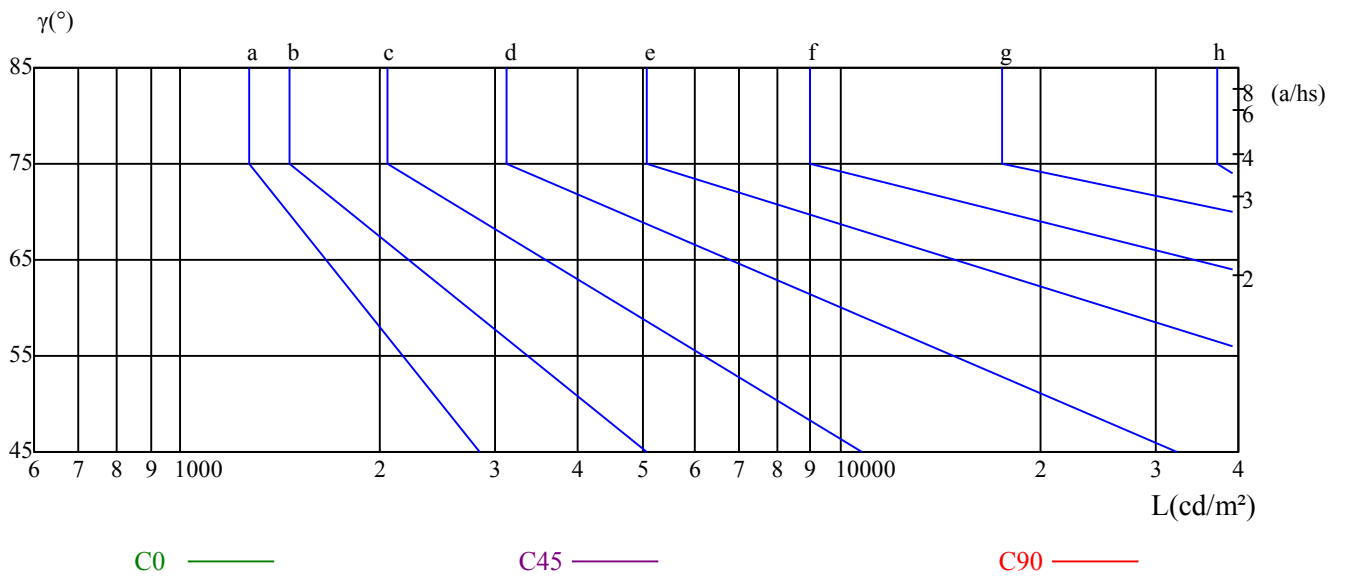
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

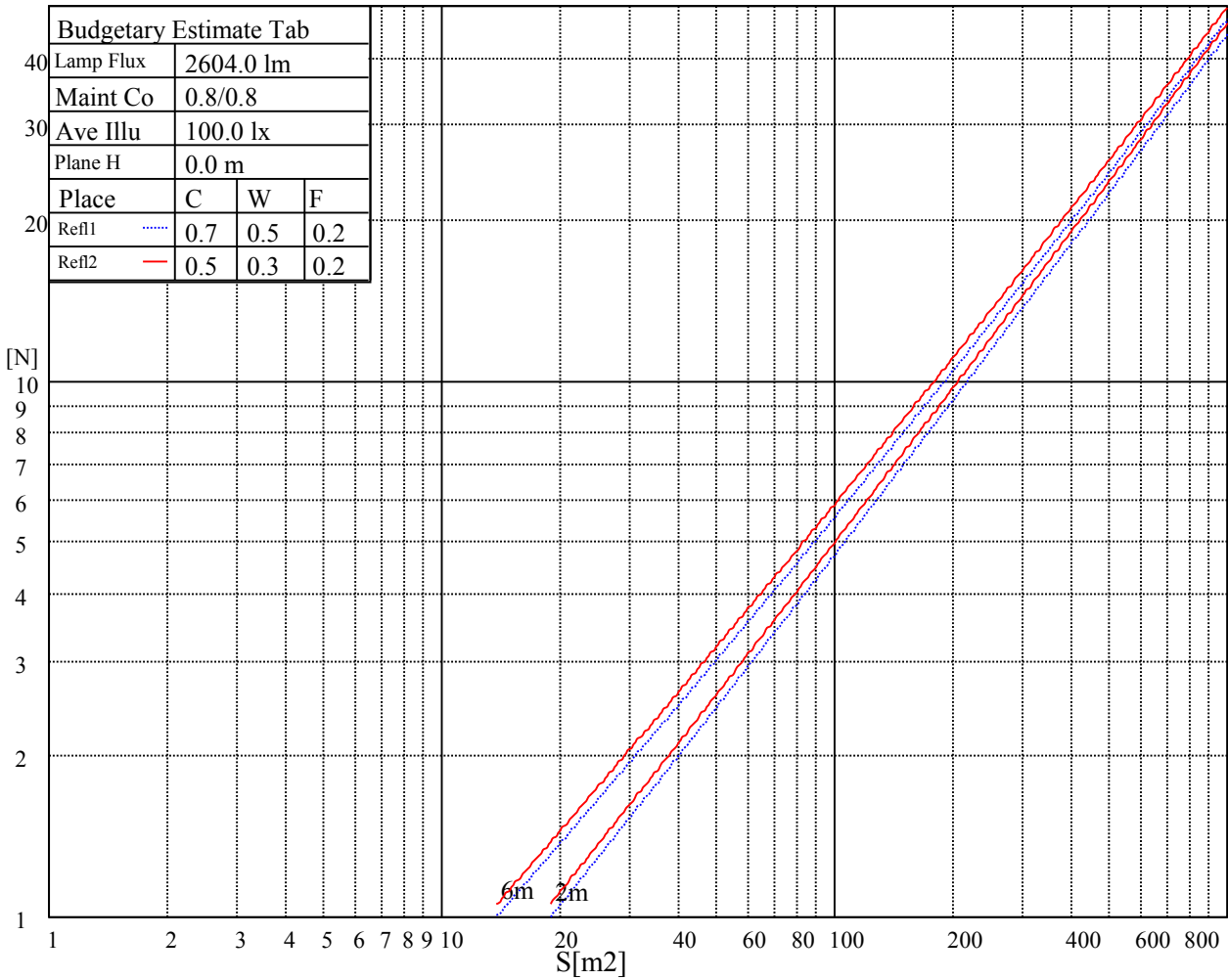
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

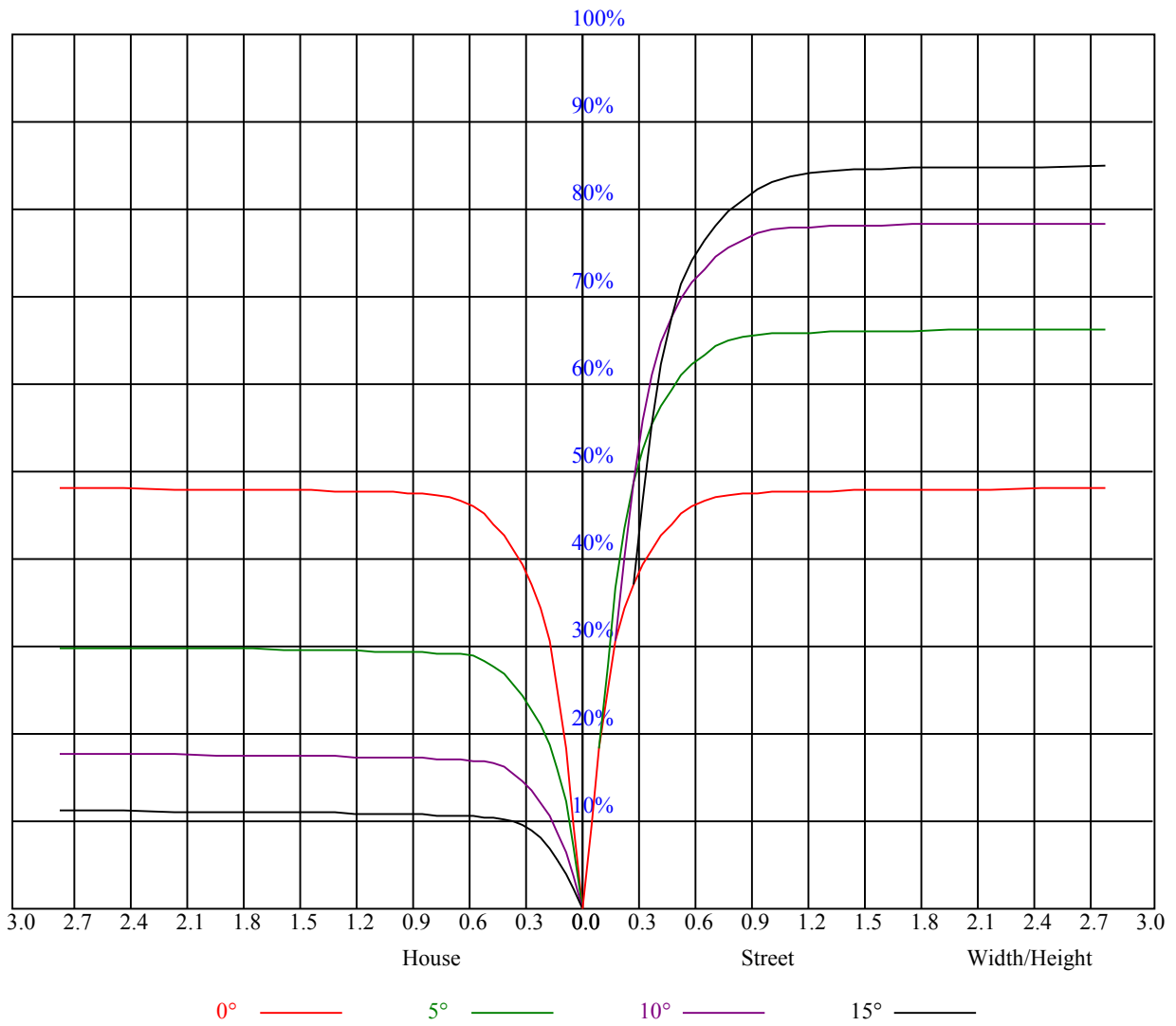
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.15	1.15	1.15	1.13	1.13	1.13	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.97
1	1.09	1.07	1.05	1.07	1.05	1.03	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.93
2	1.03	1.00	0.98	1.02	0.99	0.97	0.99	0.97	0.95	0.96	0.94	0.93	0.93	0.92	0.91	0.89
3	0.99	0.95	0.92	0.97	0.94	0.91	0.95	0.92	0.90	0.93	0.91	0.89	0.91	0.89	0.87	0.86
4	0.95	0.91	0.88	0.94	0.90	0.87	0.92	0.89	0.86	0.90	0.87	0.85	0.88	0.86	0.84	0.83
5	0.91	0.87	0.84	0.90	0.86	0.83	0.89	0.85	0.83	0.87	0.84	0.82	0.86	0.83	0.81	0.80
6	0.88	0.84	0.81	0.87	0.83	0.80	0.86	0.82	0.80	0.85	0.82	0.79	0.84	0.81	0.79	0.78
7	0.85	0.81	0.78	0.84	0.80	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.81	0.79	0.77	0.76
8	0.82	0.78	0.75	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
9	0.80	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
10	0.78	0.74	0.71	0.77	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.75	0.73	0.71	0.70



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	17465.63	17218.13	16486.88	15553.13	14405.63	12898.13	11261.25	9736.88	8021.25
45.0	17420.63	16880.63	15935.63	14850.00	13612.50	11874.38	10350.00	8955.00	7076.25
90.0	17274.38	16863.75	16036.88	14923.13	13719.38	11103.75	10718.44	8962.31	7438.50
135.0	17370.00	17364.38	17043.75	16436.25	15603.75	14253.75	12976.88	11548.13	9877.50
180.0	17465.63	17505.00	17280.00	16745.63	15941.25	14765.63	13376.25	11224.13	10074.38
225.0	17420.63	17600.63	17544.38	17212.50	16599.38	15575.63	14461.88	13033.13	11053.13
270.0	17274.38	17431.88	17308.13	16891.88	16312.50	14985.00	13798.13	12645.00	10856.25
315.0	17370.00	17145.00	16441.88	15586.88	14523.75	12920.63	11131.31	10005.75	8292.94
360.0	17465.63	17218.13	16486.88	15553.13	14405.63	12898.13	11261.25	9736.88	8021.25
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6429.38	5220.00	4173.75	3504.38	2930.63	2666.81	2199.38	1940.63	1678.50
45.0	5574.38	4618.13	3622.50	3003.75	2891.25	2222.44	1959.19	1725.75	1534.50
90.0	5860.69	4590.56	3772.13	3121.88	2673.56	2278.13	1965.94	1739.81	1554.75
135.0	8184.38	6688.13	5248.13	4258.13	3476.25	2896.88	2840.63	2169.56	1890.56
180.0	8701.31	6998.63	5382.00	4518.00	3684.38	3004.31	2643.19	2311.31	1941.19
225.0	9891.56	8126.44	6635.25	5217.19	4254.19	3456.00	2876.06	2478.94	2164.50
270.0	9174.38	7846.88	6086.25	4927.50	4027.50	3211.88	2840.63	2316.38	1980.00
315.0	6831.00	5370.19	4370.63	3540.38	2994.75	2529.00	2173.50	1914.75	1702.13
360.0	6429.38	5220.00	4173.75	3504.38	2930.63	2666.81	2199.38	1940.63	1678.50
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1517.63	1380.94	1248.19	1163.81	1095.75	1032.19	981.56	945.00	909.00
45.0	1384.31	1272.94	1162.13	1096.31	1036.69	981.56	941.06	909.56	880.88
90.0	1358.44	1233.56	1112.06	1040.18	978.98	927.56	878.06	841.67	813.66
135.0	1682.44	1509.19	1347.75	1238.06	1158.19	1076.63	1025.44	978.75	938.25
180.0	1752.75	1574.44	1412.44	1283.06	1175.63	1119.94	1046.76	998.27	957.94
225.0	1854.00	1663.31	1505.81	1347.19	1245.94	1119.32	1087.31	1025.27	977.46
270.0	1739.81	1553.06	1371.38	1249.88	1150.88	1058.06	995.06	941.63	891.56
315.0	1498.50	1369.69	1262.81	1117.07	1085.91	1028.93	974.93	934.03	904.11
360.0	1517.63	1380.94	1248.19	1163.81	1095.75	1032.19	981.56	945.00	909.00
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	882.00	857.25	812.81	750.38	666.56	573.19	487.13	398.81	291.94
45.0	853.31	828.56	759.38	682.88	592.88	496.13	411.75	321.19	295.88
90.0	786.77	764.94	713.53	641.48	570.66	482.96	393.53	315.73	241.88
135.0	905.06	880.88	853.88	825.75	758.81	673.88	592.88	497.81	395.44
180.0	920.42	889.76	863.55	835.09	786.94	711.17	624.38	539.21	441.62
225.0	936.84	902.76	877.28	850.67	822.04	762.02	680.29	599.29	511.76
270.0	851.06	821.81	793.13	770.06	731.25	670.50	603.56	522.56	432.00
315.0	873.90	851.79	819.90	760.11	690.08	600.47	504.79	416.48	327.38
360.0	882.00	857.25	812.81	750.38	666.56	573.19	487.13	398.81	291.94
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	241.26	136.01	76.73	34.82	29.64	26.38	23.34	22.61	22.11
45.0	148.73	85.78	37.35	26.61	24.02	20.98	20.03	19.91	19.52
90.0	157.95	101.19	57.60	33.02	29.76	26.94	25.88	25.26	24.47
135.0	307.13	286.31	143.61	74.36	37.80	25.76	21.88	19.52	18.96
180.0	344.08	260.21	182.81	100.18	52.03	31.95	28.35	24.58	22.89
225.0	400.33	311.91	229.22	144.28	75.94	36.68	26.16	22.95	20.08
270.0	351.56	291.94	178.26	114.30	63.62	36.62	30.49	26.83	25.14
315.0	223.65	148.89	85.56	38.08	26.78	23.96	20.76	19.86	19.74
360.0	241.26	136.01	76.73	34.82	29.64	26.38	23.34	22.61	22.11



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	21.60	20.81	19.97	19.18	18.73	18.28	17.83	17.33	16.65
45.0	18.84	17.72	16.59	16.09	15.81	15.86	15.64	15.41	14.85
90.0	23.34	22.61	21.94	21.21	20.76	20.64	19.74	19.63	19.63
135.0	18.45	17.89	17.44	16.59	15.92	15.64	15.58	15.47	15.30
180.0	22.11	21.49	20.93	19.91	19.13	18.51	18.06	17.72	17.38
225.0	19.01	18.51	17.83	16.99	16.43	15.75	15.30	15.19	15.13
270.0	24.53	23.57	22.73	21.99	20.81	20.19	20.25	20.19	19.46
315.0	19.13	18.17	17.33	16.54	16.26	16.14	15.86	15.58	15.24
360.0	21.60	20.81	19.97	19.18	18.73	18.28	17.83	17.33	16.65
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	15.92	15.47	15.08	14.74	14.51	14.34	14.06	13.67	13.22
45.0	14.40	14.12	14.06	14.12	14.18	14.06	14.34	14.46	14.12
90.0	18.79	18.06	18.17	18.23	18.00	17.83	17.27	16.71	15.58
135.0	14.96	14.63	14.46	14.29	14.18	14.18	14.12	14.12	14.18
180.0	16.82	16.37	15.92	15.69	15.47	15.36	15.24	15.13	14.91
225.0	14.91	14.63	14.23	14.01	13.89	13.95	13.89	13.89	13.78
270.0	18.51	18.45	18.23	17.33	17.16	17.83	17.66	17.78	17.83
315.0	14.74	14.46	14.12	14.01	14.06	14.12	14.06	14.01	13.89
360.0	15.92	15.47	15.08	14.74	14.51	14.34	14.06	13.67	13.22
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	12.71	12.32	12.09	11.93	11.76	11.59	11.53	11.53	11.59
45.0	13.61	12.94	12.32	11.76	11.70	11.59	10.91	10.86	10.80
90.0	15.02	14.79	13.89	13.28	13.05	12.83	12.60	12.32	11.93
135.0	13.95	13.28	13.05	12.99	12.71	12.54	12.38	12.21	11.93
180.0	14.57	14.29	14.01	13.78	13.61	13.39	13.22	13.05	12.83
225.0	13.67	13.44	13.05	12.88	12.77	12.66	12.43	12.32	12.26
270.0	17.21	16.20	15.02	14.74	14.23	13.44	13.33	13.05	12.60
315.0	13.28	12.94	12.77	12.66	12.54	12.43	12.26	11.98	11.76
360.0	12.71	12.32	12.09	11.93	11.76	11.59	11.53	11.53	11.59
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	11.64	11.48	11.19	11.08	11.03	10.97	10.97	10.91	10.86
45.0	10.74	10.63	10.63	10.52	10.52	10.46	10.41	10.41	10.41
90.0	11.53	11.42	11.31	11.25	11.19	11.14	11.08	10.97	10.86
135.0	11.64	11.36	11.08	10.74	10.63	10.58	10.52	10.46	10.41
180.0	12.43	12.09	11.70	11.36	11.14	11.08	11.03	10.97	10.91
225.0	12.04	11.70	11.42	11.14	10.86	10.74	10.69	10.63	10.58
270.0	12.32	12.04	11.64	11.42	11.25	11.19	11.19	11.14	11.14
315.0	11.36	11.03	10.80	10.63	10.58	10.58	10.52	10.46	10.41
360.0	11.64	11.48	11.19	11.08	11.03	10.97	10.97	10.91	10.86
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.80	10.69	10.69	10.58	10.52	10.46	10.35	10.13	9.84
45.0	10.35	10.29	10.29	10.24	10.29	10.18	10.18	10.01	10.01
90.0	10.86	10.74	10.63	10.52	10.46	10.18	10.13	10.01	9.96
135.0	10.29	10.35	10.29	10.29	10.29	10.29	10.24	10.07	10.01
180.0	10.80	10.74	10.69	10.63	10.63	10.58	10.58	10.29	10.13
225.0	10.52	10.46	10.41	10.35	10.41	10.35	10.35	10.29	10.18
270.0	10.97	10.86	10.74	10.58	10.46	10.35	10.24	10.24	10.18
315.0	10.35	10.35	10.35	10.29	10.24	10.18	10.13	10.13	9.96
360.0	10.80	10.69	10.69	10.58	10.52	10.46	10.35	10.13	9.84

Intensity data(cd)

C/ $\gamma$ (°)	90.0
0.0	9.84
45.0	9.96
90.0	9.96
135.0	9.90
180.0	9.84
225.0	10.18
270.0	10.07
315.0	9.90
360.0	9.84