



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: 2-1674-M  
Luminaire: 92.70.135.00  
Report No: NATA0100  
Test No: GC2018102509  
LampCAT: LUMILEDS LUXEON CoB 1205  
Lamp flux(lm): 2979.0  
Number of Lamps: 1  
Length(mm): 71  
Phm Type: C

Voltage(V): 35.7000  
Current(A): 0.6000  
Power (W): 21.4200  
PF: 0.0000  
Ballast type: DC  
Width(mm): 71  
Height(mm): 0

---

## Photometric Results

---

Lumens(lm): 2658.66  
Efficiency(%): 89.25%  
Lumens(lm)/Power(W): 124.32  
Central intensity(cd): 18320.630  
Maximum intensity(cd): 18320.630  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=15.6  
                                  [C90/270]Total=15.6  
Field angle(10%Imax): [C0/180]Total=31.6  
                                  [C90/270]Total=31.6  
Maximum s/h(1/2): C0\_180=0.27 C90\_270=0.27  
Maximum s/h(1/4): C0\_180=0.26 C90\_270=0.26  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 89.39%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.586%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	18320.625	4.383	4.383	.147%	.165%
1.0	18203.906	34.839	39.223	1.170%	1.475%
2.0	17710.313	67.779	107.002	2.275%	4.025%
3.0	16879.922	96.877	203.879	3.252%	7.669%
4.0	15807.656	120.922	324.801	4.059%	12.217%
5.0	13938.820	133.221	458.022	4.472%	17.228%
6.0	12288.797	140.863	598.885	4.729%	22.526%
7.0	10684.477	142.791	741.675	4.793%	27.897%
8.0	8803.758	134.362	876.037	4.510%	32.950%
9.0	7022.109	120.462	996.499	4.044%	37.481%
10.0	5555.672	105.793	1102.293	3.551%	41.460%
11.0	4325.273	90.503	1192.796	3.038%	44.865%
12.0	3473.578	79.197	1271.993	2.659%	47.843%
13.0	2867.273	70.731	1342.724	2.374%	50.504%
14.0	2439.633	64.722	1407.446	2.173%	52.938%
15.0	2050.031	58.185	1465.63	1.953%	55.127%
16.0	1783.617	53.913	1519.543	1.810%	57.155%
17.0	1595.250	51.146	1570.689	1.717%	59.078%
18.0	1449.000	49.102	1619.792	1.648%	60.925%
19.0	1349.789	48.190	1667.982	1.618%	62.738%
20.0	1262.742	47.361	1715.343	1.590%	64.519%
21.0	1198.519	47.101	1762.443	1.581%	66.291%
22.0	1149.827	47.235	1809.678	1.586%	68.067%
23.0	1107.077	47.436	1857.114	1.592%	69.852%
24.0	1071.260	47.782	1904.895	1.604%	71.649%
25.0	1038.677	48.137	1953.033	1.616%	73.459%
26.0	1010.299	48.567	2001.6	1.630%	75.286%
27.0	984.825	49.030	2050.629	1.646%	77.130%
28.0	966.136	49.739	2100.369	1.670%	79.001%
29.0	947.088	50.352	2150.72	1.690%	80.895%
30.0	930.073	50.996	2201.716	1.712%	82.813%
31.0	913.444	51.591	2253.307	1.732%	84.754%
32.0	891.548	51.809	2305.116	1.739%	86.702%
33.0	851.723	50.870	2355.986	1.708%	88.616%
34.0	788.027	48.323	2404.309	1.622%	90.433%
35.0	705.157	44.354	2448.663	1.489%	92.101%
36.0	605.531	39.031	2487.694	1.310%	93.570%
37.0	511.812	33.777	2521.471	1.134%	94.840%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	405.141	27.353	2548.824	.918%	95.869%
39.0	301.177	20.785	2569.608	.698%	96.651%
40.0	224.585	15.831	2585.439	.531%	97.246%
41.0	137.159	9.868	2595.307	.331%	97.617%
42.0	67.064	4.921	2600.228	.165%	97.802%
43.0	38.616	2.888	2603.116	.097%	97.911%
44.0	29.285	2.231	2605.347	.075%	97.995%
45.0	23.716	1.839	2607.186	.062%	98.064%
46.0	20.215	1.595	2608.78	.054%	98.124%
47.0	17.445	1.399	2610.179	.047%	98.177%
48.0	15.553	1.267	2611.447	.043%	98.224%
49.0	14.632	1.211	2612.658	.041%	98.270%
50.0	14.189	1.192	2613.85	.040%	98.315%
51.0	13.830	1.179	2615.028	.040%	98.359%
52.0	13.521	1.168	2616.197	.039%	98.403%
53.0	13.247	1.160	2617.357	.039%	98.447%
54.0	12.952	1.149	2618.506	.039%	98.490%
55.0	12.748	1.145	2619.651	.038%	98.533%
56.0	12.537	1.140	2620.791	.038%	98.576%
57.0	12.305	1.132	2621.922	.038%	98.618%
58.0	12.108	1.126	2623.048	.038%	98.661%
59.0	11.939	1.122	2624.171	.038%	98.703%
60.0	11.728	1.114	2625.285	.037%	98.745%
61.0	11.573	1.110	2626.395	.037%	98.786%
62.0	11.447	1.108	2627.503	.037%	98.828%
63.0	11.334	1.107	2628.61	.037%	98.870%
64.0	11.250	1.109	2629.719	.037%	98.912%
65.0	11.180	1.111	2630.83	.037%	98.953%
66.0	11.102	1.112	2631.943	.037%	98.995%
67.0	11.046	1.115	2633.058	.037%	99.037%
68.0	10.990	1.117	2634.175	.038%	99.079%
69.0	10.934	1.119	2635.294	.038%	99.121%
70.0	10.891	1.122	2636.417	.038%	99.163%
71.0	10.863	1.126	2637.543	.038%	99.206%
72.0	10.800	1.126	2638.669	.038%	99.248%
73.0	10.786	1.131	2639.801	.038%	99.291%
74.0	10.758	1.134	2640.935	.038%	99.333%
75.0	10.709	1.134	2642.069	.038%	99.376%

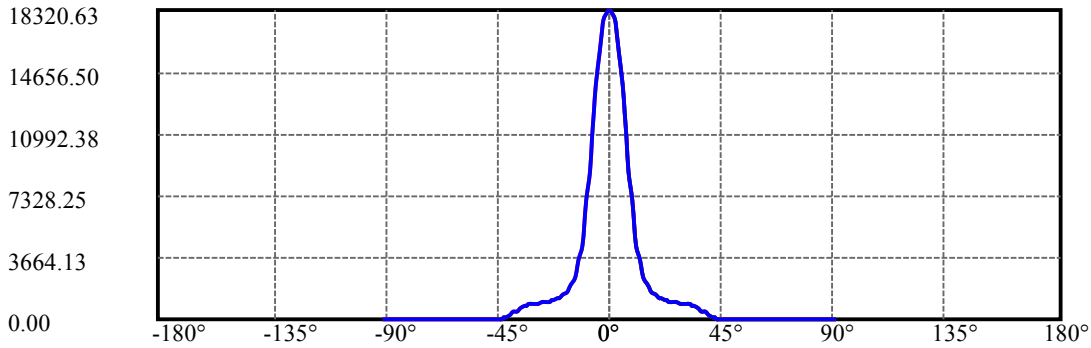
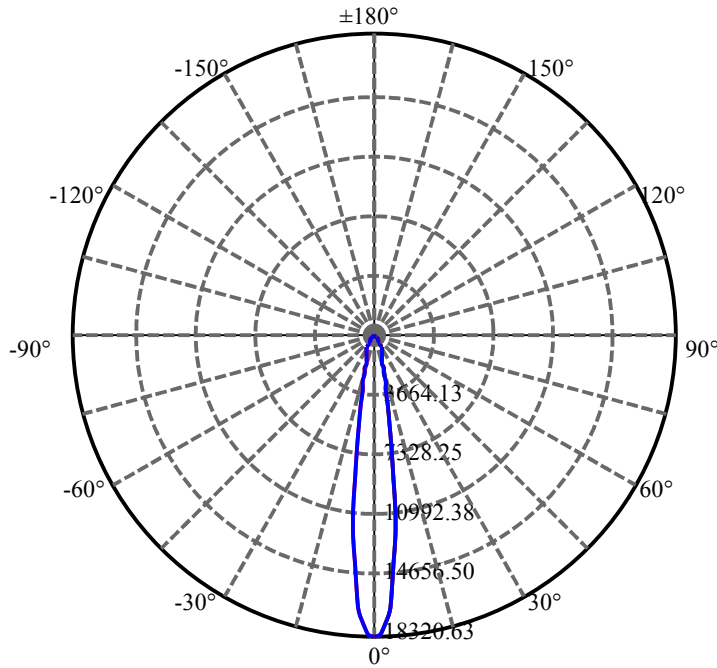
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.680	1.136	2643.205	.038%	99.419%
77.0	10.645	1.137	2644.343	.038%	99.462%
78.0	10.638	1.141	2645.484	.038%	99.504%
79.0	10.617	1.143	2646.627	.038%	99.547%
80.0	10.596	1.144	2647.771	.038%	99.591%
81.0	10.568	1.145	2648.916	.038%	99.634%
82.0	10.547	1.145	2650.061	.038%	99.677%
83.0	10.533	1.146	2651.207	.038%	99.720%
84.0	10.512	1.146	2652.354	.038%	99.763%
85.0	10.491	1.146	2653.5	.038%	99.806%
86.0	10.484	1.147	2654.647	.038%	99.849%
87.0	10.477	1.147	2655.794	.039%	99.892%
88.0	10.455	1.146	2656.94	.038%	99.935%
89.0	10.441	1.145	2658.085	.038%	99.978%
90.0	10.448	0.573	2658.658	.019%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2201.72	73.91%	82.81%
0-40	2585.44	86.79%	97.25%
0-60	2625.28	88.13%	98.74%
0-90	2658.08	89.23%	99.98%
0-120	2658.08	89.23%	99.98%
0-180	2658.66	89.25%	100.00%
60-90	33.91	1.14%	1.28%
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%
0-28.53	2126.93	71.40%	80.00%

ZONAL LUMEN SUMMARY

0-10	1102.29
10-20	613.05
20-30	486.37
30-40	383.72
40-50	28.41
50-60	11.43
60-70	11.13
70-80	11.35
80-90	10.31
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

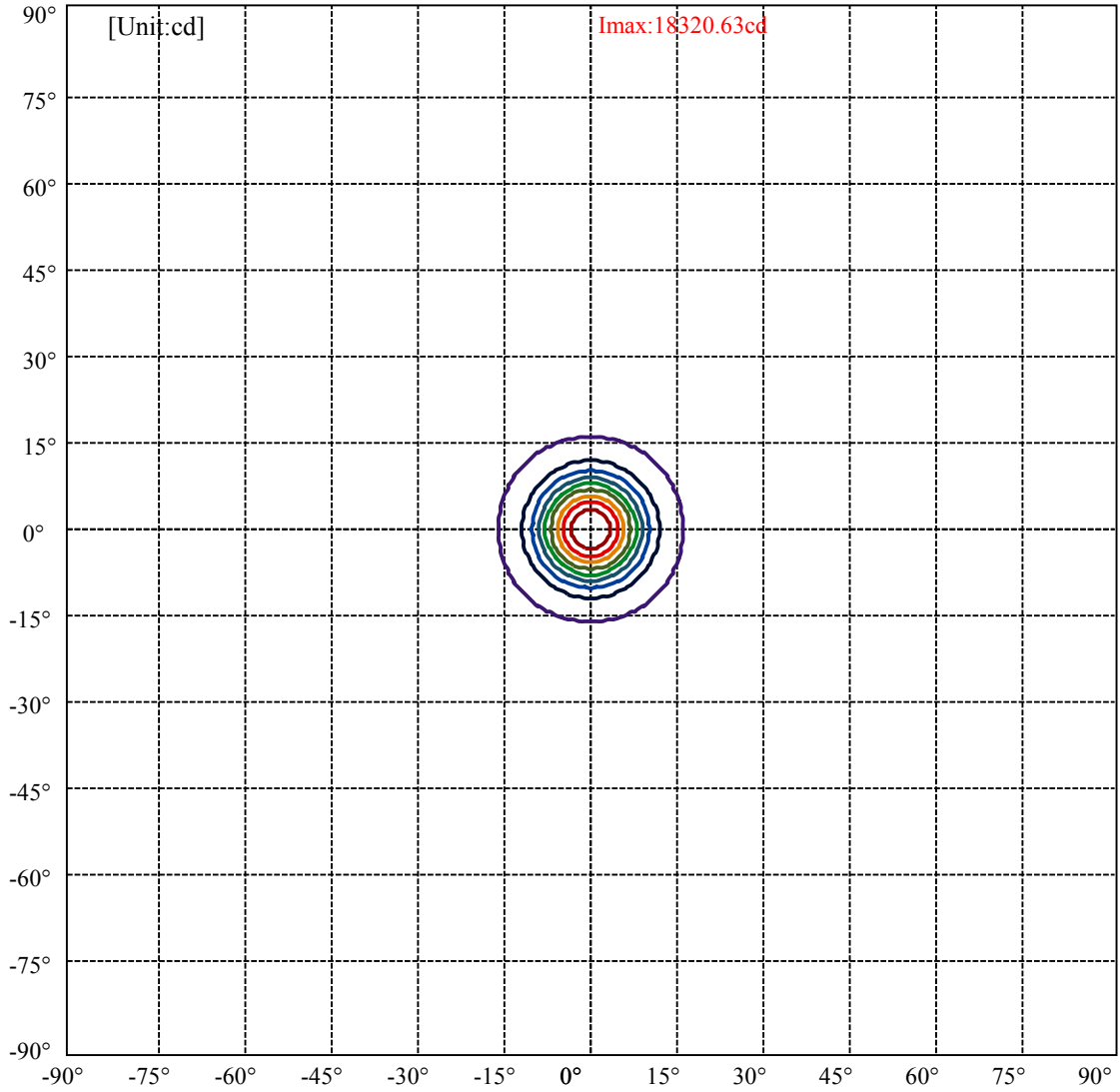


C0(Max): —————  
 C0/C180: —————  
 C90/C270: —————

Field angle(10%Imax):C0/180Left:15.8 Right:15.8  
 :C90/270Left:15.8 Right:15.8

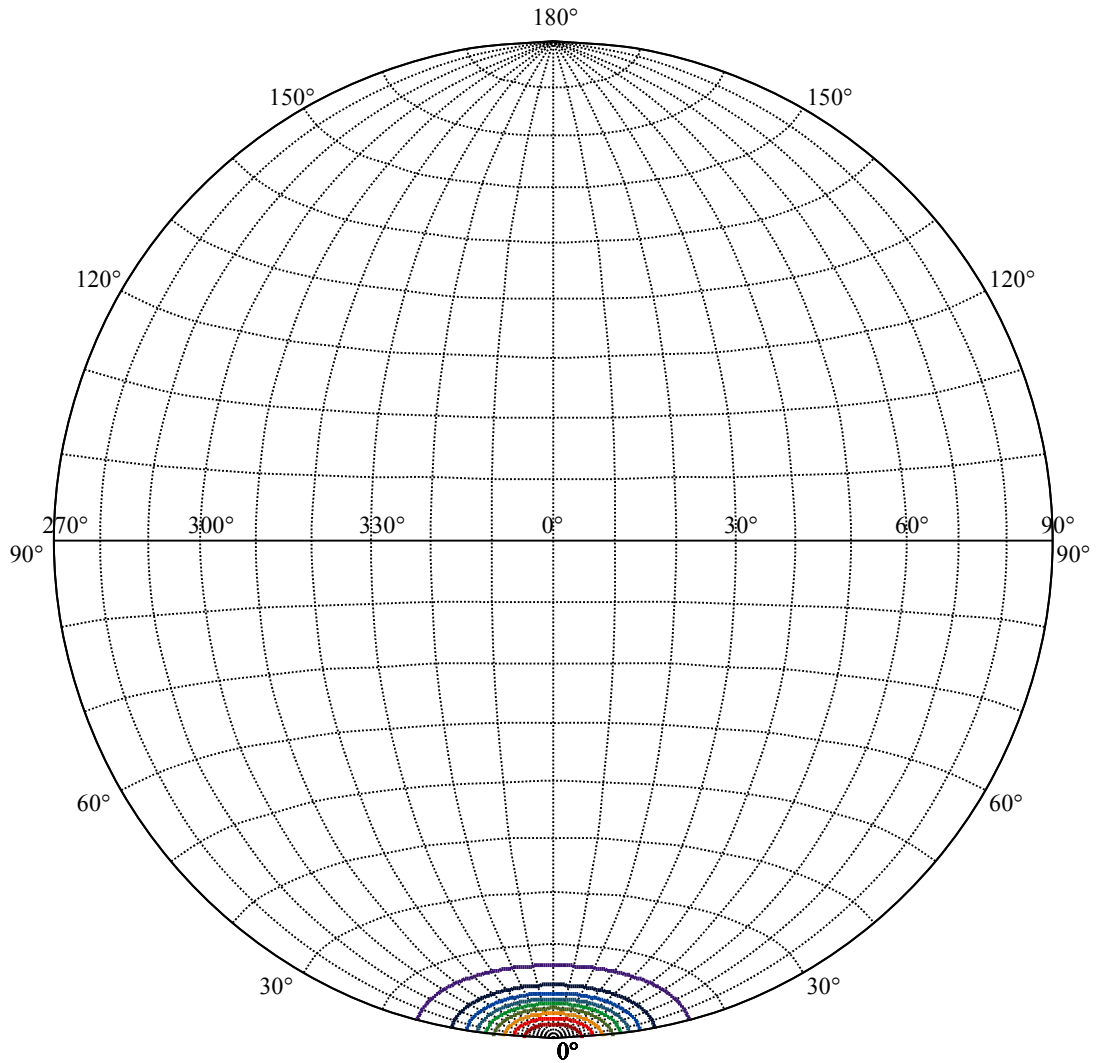
Beam Angle(50%Imax):C0/180Left:7.8 Right:7.8  
 :C90/270Left:7.8 Right:7.8





(10%I <sub>max</sub> ) 1832.06	—
(20%I <sub>max</sub> ) 3664.13	—
(30%I <sub>max</sub> ) 5496.19	—
(40%I <sub>max</sub> ) 7328.25	—
(50%I <sub>max</sub> ) 9160.31	—
(60%I <sub>max</sub> ) 10992.4	—
(70%I <sub>max</sub> ) 12824.4	—
(80%I <sub>max</sub> ) 14656.5	—
(90%I <sub>max</sub> ) 16488.6	—





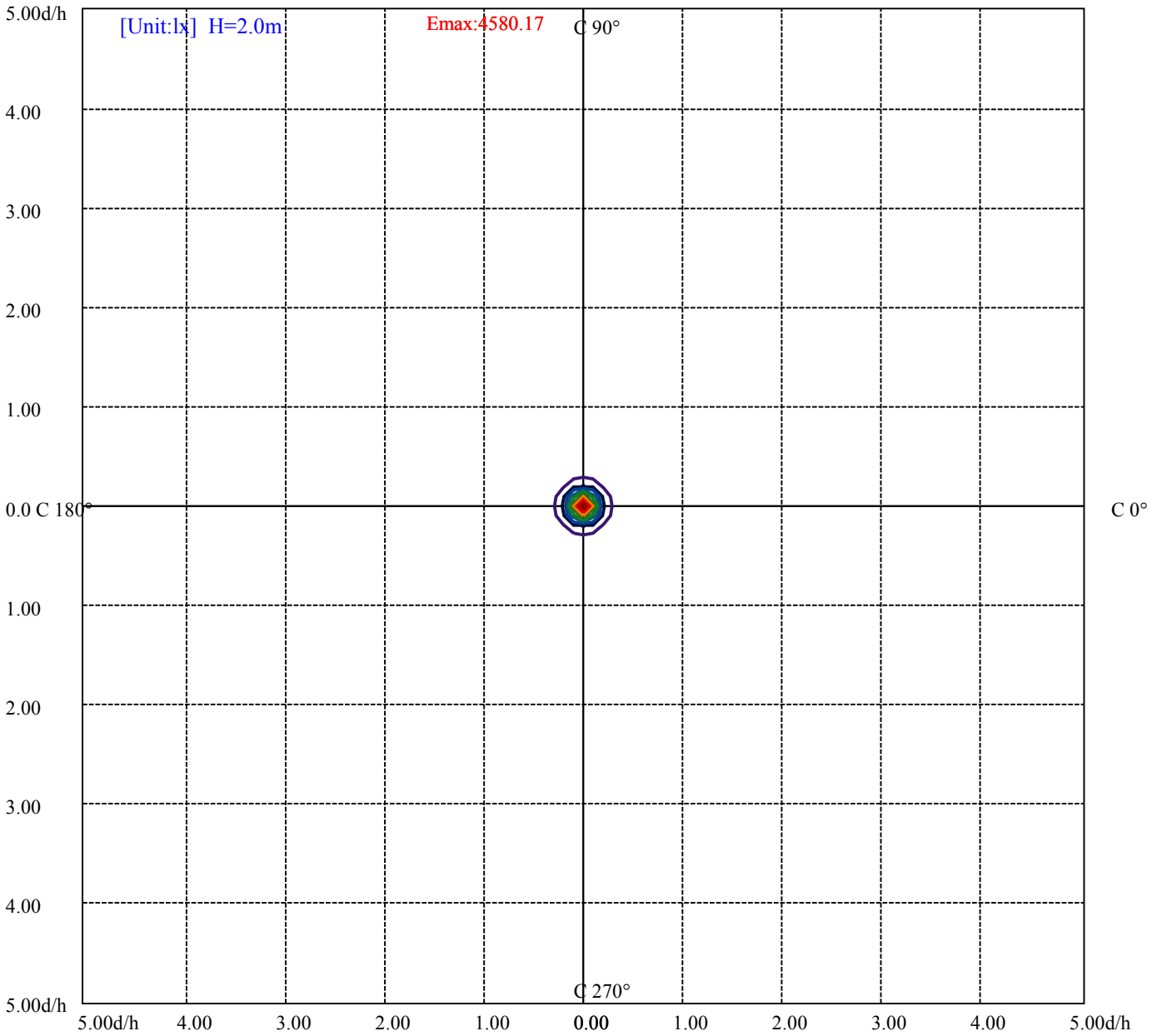
House

[Unit:cd]

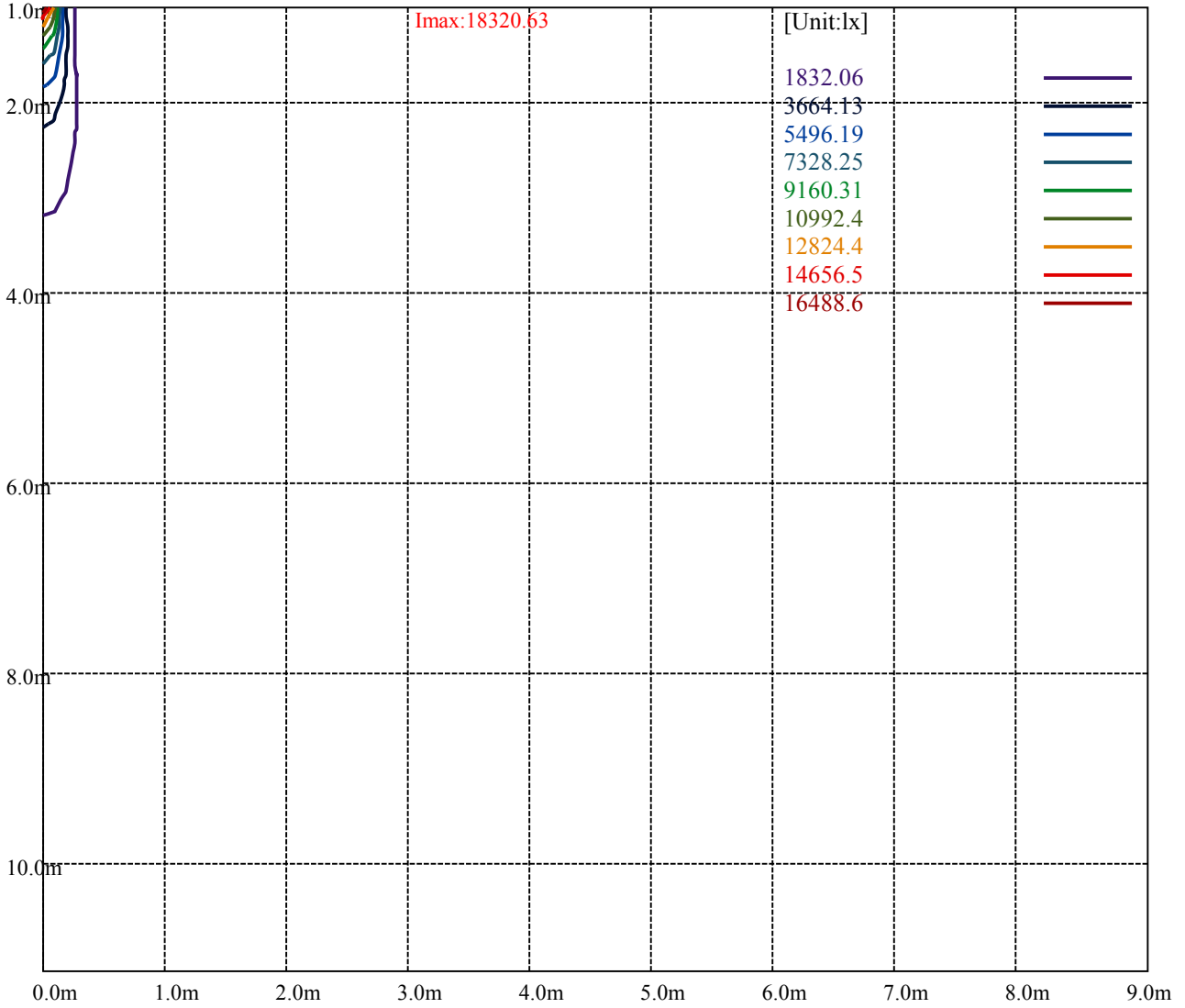
Road

Imax:18320.63

(10%Imax) 1832.06	—
(20%Imax) 3664.13	—
(30%Imax) 5496.19	—
(40%Imax) 7328.25	—
(50%Imax) 9160.31	—
(60%Imax) 10992.4	—
(70%Imax) 12824.4	—
(80%Imax) 14656.5	—
(90%Imax) 16488.6	—



- (10%Emax) 458.015
- (20%Emax) 916.03
- (30%Emax) 1374.045
- (40%Emax) 1832.06
- (50%Emax) 2290.075
- (60%Emax) 2748.1
- (70%Emax) 3206.1
- (80%Emax) 3664.125
- (90%Emax) 4122.125



Luminance Table

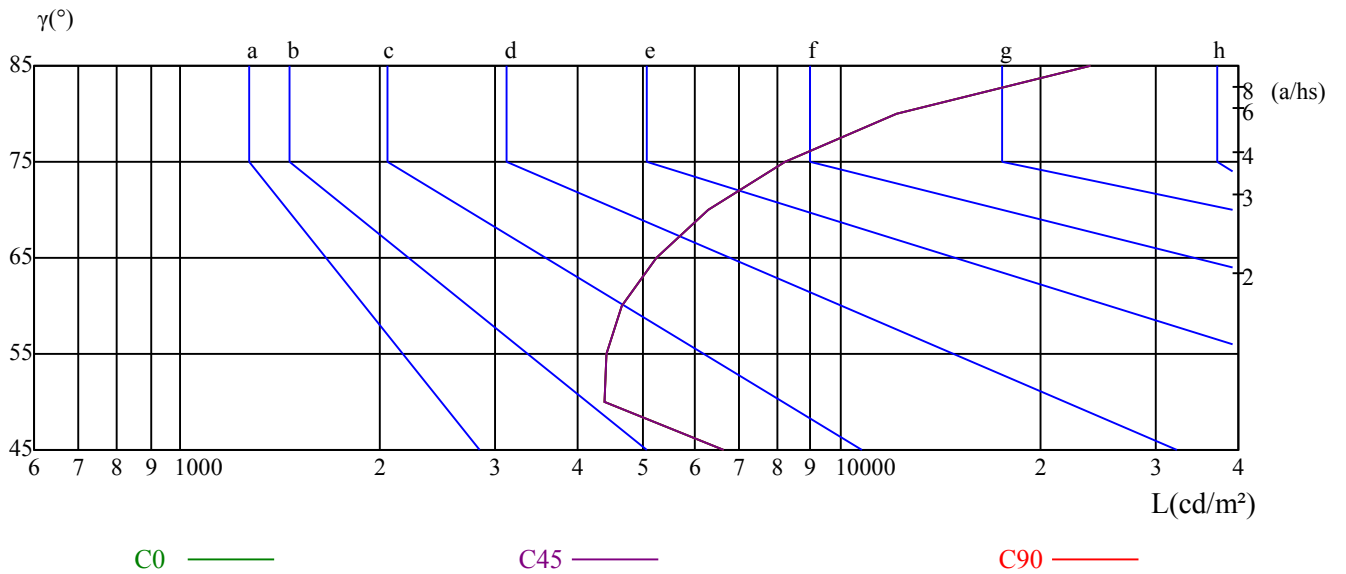
$\gamma$	45	50	55	60	65	70	75	80	85
C0	6653	4379	4409	4653	5248	6317	8208	12105	23877
C45	6653	4379	4409	4653	5248	6317	8208	12105	23877
C90	6653	4379	4409	4653	5248	6317	8208	12105	23877

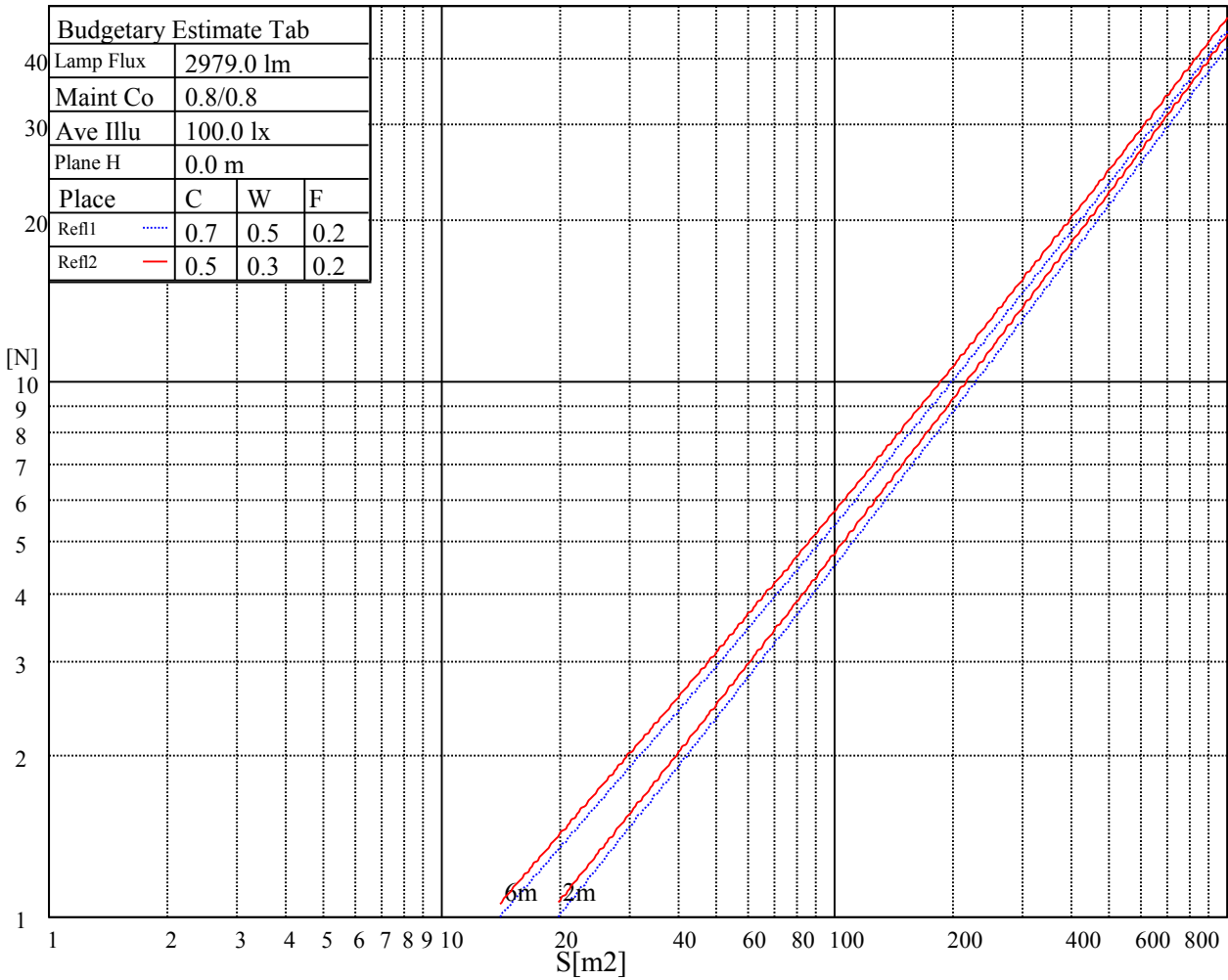
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5248	5248	5248	8208	8208	8208	23877	23877	23877

Glare Table

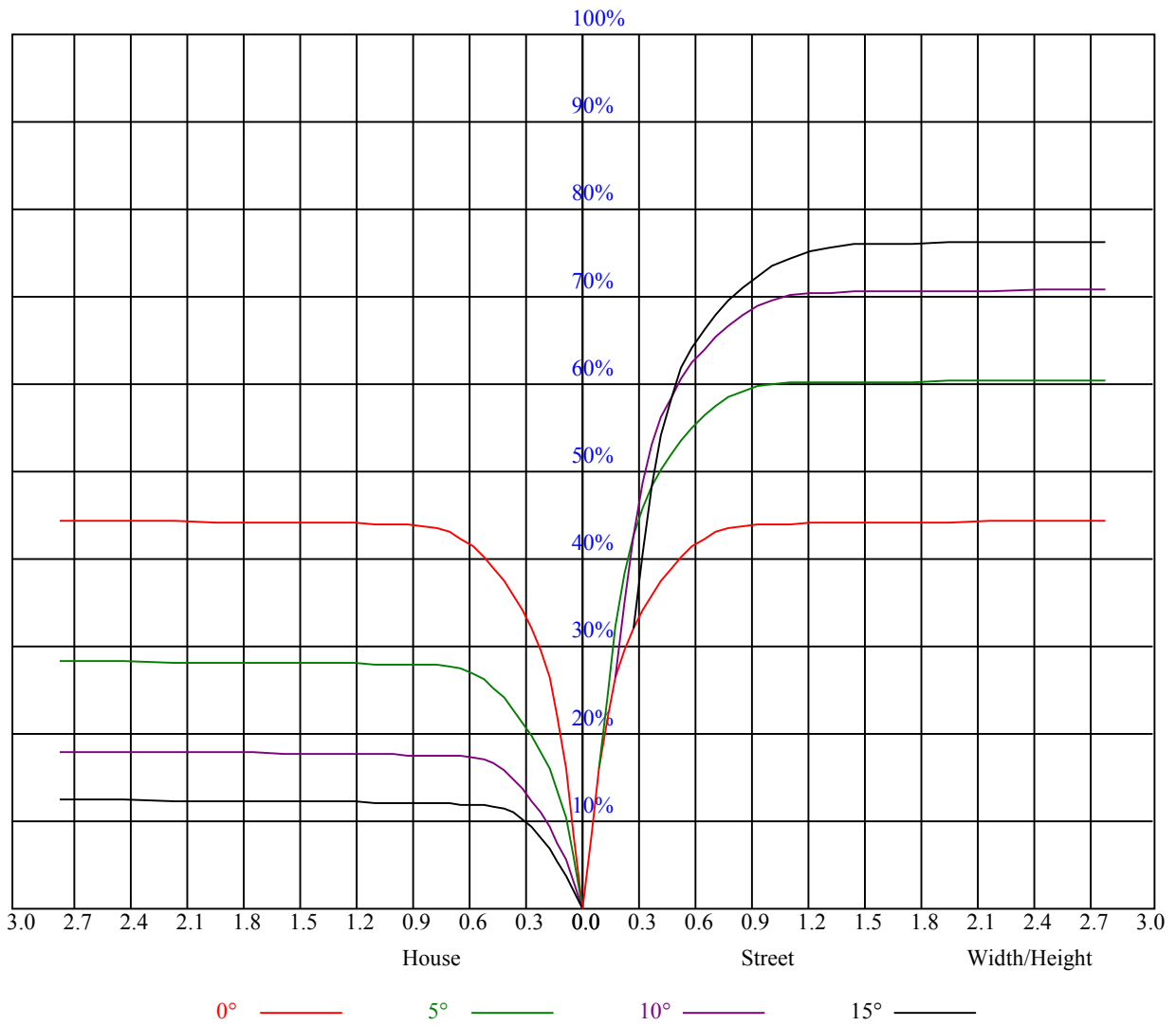
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	1.00	0.98	0.96	0.98	0.96	0.95	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.85
2	0.95	0.92	0.89	0.93	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.90	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.79	0.78
4	0.86	0.82	0.79	0.85	0.82	0.79	0.84	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
5	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.75	0.74	0.72
6	0.80	0.75	0.73	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.68
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.69	0.66	0.66
9	0.72	0.68	0.65	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.64	0.64
10	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62



NATA 2-1674-M

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	18213.75	18399.38	18286.88	17831.25	17088.75	15676.88	14281.88	12701.25	10777.50
45.0	18371.25	18388.13	18033.75	17398.13	16441.88	14850.00	13280.63	11565.00	9618.75
90.0	18348.75	18129.38	17544.38	16554.38	15322.50	13646.25	11055.94	9948.38	7992.00
135.0	18348.75	18174.38	17499.38	16605.00	15558.75	13539.38	11846.25	10113.75	8212.50
180.0	18213.75	17763.75	16914.38	15637.50	14214.38	11036.81	10598.63	8618.06	6769.69
225.0	18371.25	18123.75	17533.13	16554.38	15333.75	13410.00	11017.69	9910.69	8166.38
270.0	18348.75	18337.50	17955.00	17330.63	16363.13	14681.25	13100.63	11401.88	9427.50
315.0	18348.75	18315.00	17915.63	17128.13	16138.13	14670.00	13128.75	11216.81	9465.75
360.0	18213.75	18399.38	18286.88	17831.25	17088.75	15676.88	14281.88	12701.25	10777.50
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8836.88	7222.50	5641.88	4516.88	3555.00	2874.38	2621.81	2088.56	1823.06
45.0	7700.63	6136.88	4719.38	3774.38	3009.38	2868.75	2154.38	1875.94	1662.75
90.0	6388.31	4899.94	3800.81	3097.13	2579.06	2130.75	1878.19	1682.44	1528.31
135.0	6451.88	5270.63	3954.38	3200.63	2896.88	2154.38	1882.69	1658.81	1493.44
180.0	5364.00	4149.56	3278.25	2714.63	2293.88	1916.44	1702.13	1540.13	1397.81
225.0	6361.31	4878.00	3875.63	3070.13	2568.94	2127.94	1872.56	1676.25	1522.69
270.0	7509.38	5990.63	4623.75	3718.13	2986.88	2919.38	2142.00	1855.69	1641.94
315.0	7564.50	5897.25	4708.13	3696.75	3048.19	2525.06	2146.50	1891.13	1492.00
360.0	8836.88	7222.50	5641.88	4516.88	3555.00	2874.38	2621.81	2088.56	1823.06
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1644.75	1506.94	1377.56	1296.56	1230.19	1166.63	1126.13	1089.56	1052.44
45.0	1510.31	1401.75	1292.63	1224.56	1168.31	1119.38	1081.69	1048.50	1017.56
90.0	1383.19	1296.00	1229.63	1168.31	1120.11	1089.34	1050.75	1019.25	992.31
135.0	1379.25	1293.75	1213.88	1166.06	1125.56	1082.25	1053.56	1024.31	997.31
180.0	1294.88	1229.06	1173.94	1120.84	1091.48	1059.58	1026.00	996.64	975.21
225.0	1377.56	1292.63	1227.38	1168.88	1118.48	1093.61	1056.99	1026.51	1001.36
270.0	1497.94	1386.56	1281.38	1220.06	1170.56	1126.13	1086.75	1053.56	1022.06
315.0	1504.13	1391.63	1305.56	1222.88	1173.94	1119.71	1088.21	1051.09	1024.14
360.0	1644.75	1506.94	1377.56	1296.56	1230.19	1166.63	1126.13	1089.56	1052.44
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1020.94	996.19	973.69	957.38	939.94	921.94	907.31	885.94	821.81
45.0	989.44	971.44	951.19	935.44	916.88	898.88	877.50	804.38	718.88
90.0	969.53	949.95	934.59	916.20	900.73	876.60	812.59	737.27	652.22
135.0	973.13	956.25	937.69	921.38	902.81	884.25	839.25	750.94	659.81
180.0	955.91	940.50	923.29	905.29	890.27	847.58	770.12	689.79	600.53
225.0	978.86	961.37	943.31	925.54	910.80	890.33	832.67	760.78	675.62
270.0	995.06	978.19	957.38	941.63	924.19	907.31	887.63	836.44	745.31
315.0	995.74	975.21	955.58	937.74	921.94	905.51	886.73	838.69	767.08
360.0	1020.94	996.19	973.69	957.38	939.94	921.94	907.31	885.94	821.81
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	744.75	658.69	541.69	438.75	340.88	286.88	146.36	79.93	42.92
45.0	631.13	537.19	412.88	317.81	294.19	144.68	66.66	34.31	28.29
90.0	536.91	439.82	344.87	234.28	153.51	86.85	38.93	27.90	25.09
135.0	572.06	476.44	357.75	288.00	181.97	106.37	42.86	28.35	25.59
180.0	484.76	389.08	297.45	201.21	116.10	55.97	30.71	27.17	23.46
225.0	557.72	463.11	364.50	246.32	163.07	94.22	42.58	31.05	27.34
270.0	659.25	565.88	452.81	338.63	290.81	149.68	76.05	38.48	30.32
315.0	657.68	564.30	469.18	344.42	256.16	172.63	92.36	41.74	31.28
360.0	744.75	658.69	541.69	438.75	340.88	286.88	146.36	79.93	42.92



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	28.91	25.31	21.54	17.38	15.24	14.51	14.06	13.67	13.39
45.0	24.41	20.93	18.17	15.75	14.68	14.29	14.01	13.67	13.39
90.0	21.26	18.17	16.48	14.85	14.46	14.06	13.73	13.44	13.22
135.0	21.32	18.17	16.31	14.63	14.23	13.89	13.56	13.28	12.99
180.0	19.29	17.38	14.91	14.46	14.12	13.78	13.44	13.22	12.99
225.0	22.44	19.13	16.59	15.19	14.79	14.34	13.95	13.61	13.39
270.0	25.99	20.70	17.33	15.53	14.79	14.29	13.95	13.61	13.28
315.0	26.10	21.94	18.23	16.65	14.74	14.34	13.95	13.67	13.33
360.0	28.91	25.31	21.54	17.38	15.24	14.51	14.06	13.67	13.39
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	13.05	12.88	12.66	12.38	12.21	12.04	11.87	11.70	11.59
45.0	13.11	12.88	12.66	12.43	12.26	12.09	11.87	11.70	11.53
90.0	12.94	12.71	12.54	12.32	12.09	11.87	11.64	11.48	11.42
135.0	12.71	12.54	12.26	12.15	11.93	11.81	11.64	11.53	11.42
180.0	12.71	12.49	12.32	12.09	11.87	11.76	11.53	11.42	11.31
225.0	13.05	12.83	12.66	12.38	12.21	11.98	11.70	11.53	11.36
270.0	13.05	12.83	12.60	12.32	12.15	11.98	11.76	11.59	11.42
315.0	12.99	12.83	12.60	12.38	12.15	11.98	11.81	11.64	11.53
360.0	13.05	12.88	12.66	12.38	12.21	12.04	11.87	11.70	11.59
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.48	11.36	11.25	11.19	11.14	11.08	11.03	10.97	10.91
45.0	11.48	11.36	11.31	11.19	11.14	11.08	11.03	11.03	10.97
90.0	11.31	11.25	11.19	11.08	11.03	10.97	10.91	10.86	10.86
135.0	11.31	11.25	11.19	11.14	11.03	11.03	10.91	10.86	10.86
180.0	11.25	11.14	11.08	11.03	10.97	10.91	10.91	10.80	10.80
225.0	11.25	11.19	11.14	11.03	11.03	10.91	10.86	10.86	10.80
270.0	11.31	11.19	11.14	11.08	11.03	10.97	10.91	10.91	10.86
315.0	11.31	11.25	11.14	11.08	11.03	10.97	10.91	10.86	10.86
360.0	11.48	11.36	11.25	11.19	11.14	11.08	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	10.86	10.86	10.80	10.80	10.74	10.69	10.69	10.69	10.63
45.0	10.86	10.86	10.86	10.74	10.74	10.69	10.69	10.69	10.63
90.0	10.80	10.80	10.74	10.69	10.69	10.63	10.63	10.63	10.63
135.0	10.80	10.74	10.74	10.69	10.63	10.63	10.63	10.58	10.58
180.0	10.74	10.74	10.69	10.63	10.63	10.58	10.58	10.58	10.58
225.0	10.74	10.74	10.74	10.69	10.63	10.63	10.63	10.58	10.58
270.0	10.80	10.80	10.74	10.74	10.69	10.69	10.63	10.63	10.58
315.0	10.80	10.74	10.74	10.69	10.69	10.63	10.63	10.58	10.58
360.0	10.86	10.86	10.80	10.80	10.74	10.69	10.69	10.69	10.63
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.63	10.58	10.58	10.52	10.52	10.52	10.52	10.46	10.46
45.0	10.63	10.58	10.58	10.58	10.52	10.52	10.52	10.46	10.46
90.0	10.58	10.58	10.52	10.52	10.52	10.46	10.46	10.41	10.41
135.0	10.52	10.52	10.52	10.46	10.46	10.46	10.46	10.46	10.46
180.0	10.52	10.52	10.46	10.46	10.46	10.46	10.46	10.46	10.41
225.0	10.52	10.52	10.52	10.52	10.46	10.46	10.46	10.46	10.46
270.0	10.58	10.58	10.58	10.52	10.52	10.52	10.46	10.46	10.46
315.0	10.58	10.52	10.52	10.52	10.46	10.46	10.46	10.46	10.41
360.0	10.63	10.58	10.58	10.52	10.52	10.52	10.52	10.46	10.46

Intensity data(cd)

C/ $\gamma$ (°)	90.0
0.0	10.46
45.0	10.46
90.0	10.41
135.0	10.46
180.0	10.46
225.0	10.46
270.0	10.46
315.0	10.41
360.0	10.46