



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: 2-2076-M
Luminaire: 92.70.135.00
Report No: NATA0100
Test No: GC2019092303
LampCAT: LUMILEDS LUXEON CoB 1208
Lamp flux(lm): 1809.9
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 32.9700
Current(A): 0.4470
Power (W): 14.9000
PF: 1.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1412.91
Efficiency(%): 78.07%
Lumens(lm)/Power(W): 94.83
Central intensity(cd): 9987.048
Maximum intensity(cd): 9987.048
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=18.7
 [C90/270]Total=18.7
Field angle(10%Imax): [C0/180]Total=38.9
 [C90/270]Total=38.9
Maximum s/h(1/2): C0_180=0.32 C90_270=0.32
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(%): 78.07%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.559%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9987.047	0.000	0	.000%	.000%
1.0	9940.781	9.535	9.535	.527%	.675%
2.0	9764.367	28.283	37.818	1.563%	2.677%
3.0	9435.023	45.919	83.736	2.537%	5.927%
4.0	8969.625	61.606	145.343	3.404%	10.287%
5.0	8308.547	74.330	219.672	4.107%	15.548%
6.0	7581.656	83.507	303.18	4.614%	21.458%
7.0	6793.313	89.225	392.405	4.930%	27.773%
8.0	5989.852	91.487	483.892	5.055%	34.248%
9.0	5224.570	90.887	574.778	5.022%	40.681%
10.0	4545.352	88.414	663.193	4.885%	46.938%
11.0	3921.680	84.603	747.796	4.674%	52.926%
12.0	3377.391	79.789	827.585	4.408%	58.573%
13.0	2886.328	74.335	901.919	4.107%	63.834%
14.0	2448.563	68.286	970.206	3.773%	68.667%
15.0	2107.055	62.542	1032.747	3.456%	73.094%
16.0	1813.500	57.447	1090.194	3.174%	77.160%
17.0	1517.442	51.872	1142.066	2.866%	80.831%
18.0	1278.998	46.107	1188.173	2.548%	84.094%
19.0	1086.497	41.155	1229.328	2.274%	87.007%
20.0	880.980	36.010	1265.338	1.990%	89.556%
21.0	695.496	30.272	1295.61	1.673%	91.698%
22.0	538.903	24.806	1320.416	1.371%	93.454%
23.0	378.584	19.251	1339.667	1.064%	94.816%
24.0	263.630	14.041	1353.708	.776%	95.810%
25.0	167.020	9.792	1363.5	.541%	96.503%
26.0	80.276	5.837	1369.338	.323%	96.916%
27.0	34.833	2.816	1372.154	.156%	97.116%
28.0	17.571	1.327	1373.48	.073%	97.210%
29.0	13.542	0.814	1374.294	.045%	97.267%
30.0	12.424	0.701	1374.996	.039%	97.317%
31.0	11.496	0.666	1375.661	.037%	97.364%
32.0	10.680	0.635	1376.297	.035%	97.409%
33.0	10.055	0.611	1376.907	.034%	97.452%
34.0	9.577	0.594	1377.502	.033%	97.494%
35.0	9.127	0.581	1378.082	.032%	97.535%
36.0	8.747	0.569	1378.651	.031%	97.576%
37.0	8.480	0.562	1379.213	.031%	97.615%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	8.198	0.557	1379.77	.031%	97.655%
39.0	7.980	0.552	1380.322	.031%	97.694%
40.0	7.805	0.551	1380.873	.030%	97.733%
41.0	7.657	0.551	1381.423	.030%	97.772%
42.0	7.516	0.551	1381.975	.030%	97.811%
43.0	7.404	0.553	1382.527	.031%	97.850%
44.0	7.320	0.556	1383.083	.031%	97.889%
45.0	7.228	0.559	1383.642	.031%	97.929%
46.0	7.151	0.562	1384.204	.031%	97.969%
47.0	7.088	0.566	1384.771	.031%	98.009%
48.0	7.024	0.570	1385.341	.032%	98.049%
49.0	6.968	0.575	1385.916	.032%	98.090%
50.0	6.926	0.579	1386.495	.032%	98.131%
51.0	6.884	0.584	1387.079	.032%	98.172%
52.0	6.848	0.589	1387.669	.033%	98.214%
53.0	6.806	0.594	1388.263	.033%	98.256%
54.0	6.771	0.598	1388.861	.033%	98.298%
55.0	6.743	0.603	1389.464	.033%	98.341%
56.0	6.708	0.608	1390.072	.034%	98.384%
57.0	6.687	0.612	1390.684	.034%	98.427%
58.0	6.659	0.617	1391.302	.034%	98.471%
59.0	6.645	0.622	1391.923	.034%	98.515%
60.0	6.638	0.627	1392.551	.035%	98.559%
61.0	6.595	0.631	1393.182	.035%	98.604%
62.0	6.581	0.635	1393.817	.035%	98.649%
63.0	6.581	0.640	1394.458	.035%	98.694%
64.0	6.567	0.645	1395.103	.036%	98.740%
65.0	6.539	0.649	1395.751	.036%	98.786%
66.0	6.539	0.653	1396.404	.036%	98.832%
67.0	6.518	0.657	1397.06	.036%	98.879%
68.0	6.511	0.660	1397.72	.036%	98.925%
69.0	6.511	0.664	1398.385	.037%	98.972%
70.0	6.504	0.668	1399.053	.037%	99.020%
71.0	6.483	0.671	1399.724	.037%	99.067%
72.0	6.483	0.674	1400.399	.037%	99.115%
73.0	6.476	0.678	1401.076	.037%	99.163%
74.0	6.483	0.681	1401.757	.038%	99.211%
75.0	6.462	0.684	1402.441	.038%	99.259%

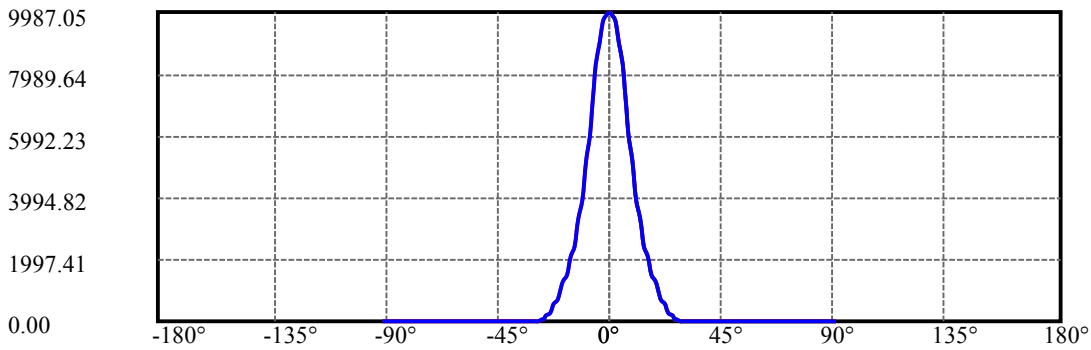
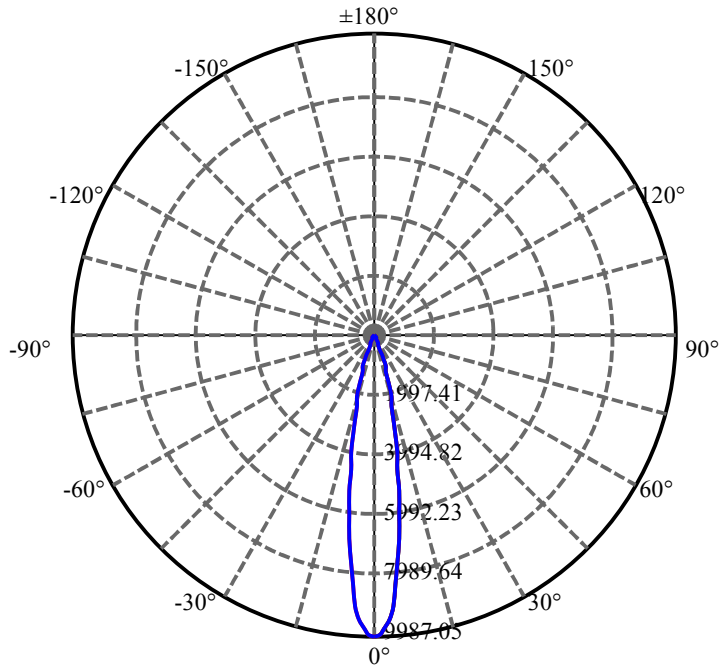
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	6.462	0.686	1403.127	.038%	99.308%
77.0	6.462	0.689	1403.816	.038%	99.357%
78.0	6.455	0.691	1404.508	.038%	99.406%
79.0	6.448	0.693	1405.201	.038%	99.455%
80.0	6.448	0.695	1405.896	.038%	99.504%
81.0	6.434	0.697	1406.593	.038%	99.553%
82.0	6.448	0.699	1407.291	.039%	99.603%
83.0	6.427	0.700	1407.991	.039%	99.652%
84.0	6.427	0.700	1408.692	.039%	99.702%
85.0	6.427	0.701	1409.393	.039%	99.751%
86.0	6.420	0.702	1410.095	.039%	99.801%
87.0	6.413	0.702	1410.797	.039%	99.851%
88.0	6.405	0.702	1411.5	.039%	99.901%
89.0	6.405	0.702	1412.202	.039%	99.950%
90.0	6.427	0.704	1412.905	.039%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1375.00	75.97%	97.32%
0-40	1380.87	76.30%	97.73%
0-60	1392.55	76.94%	98.56%
0-90	1412.20	78.03%	99.95%
0-120	1412.20	78.03%	99.95%
0-180	1412.91	78.07%	100.00%
60-90	20.28	1.12%	1.44%
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%
0-16.77	1130.32	62.45%	80.00%

ZONAL LUMEN SUMMARY

0-10	663.19
10-20	602.15
20-30	109.66
30-40	5.88
40-50	5.62
50-60	6.06
60-70	6.50
70-80	6.84
80-90	6.31
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: —————

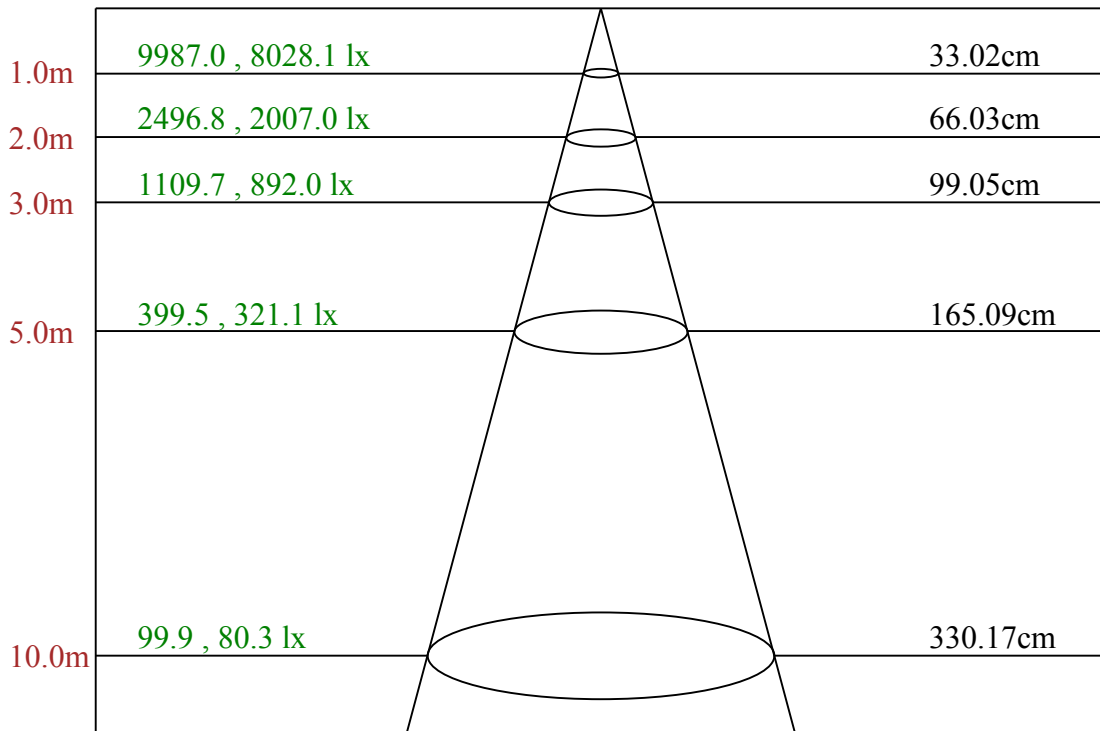
C90/C270: —————

Field angle(10%Imax):C0/180Left:19.4 Right:19.4

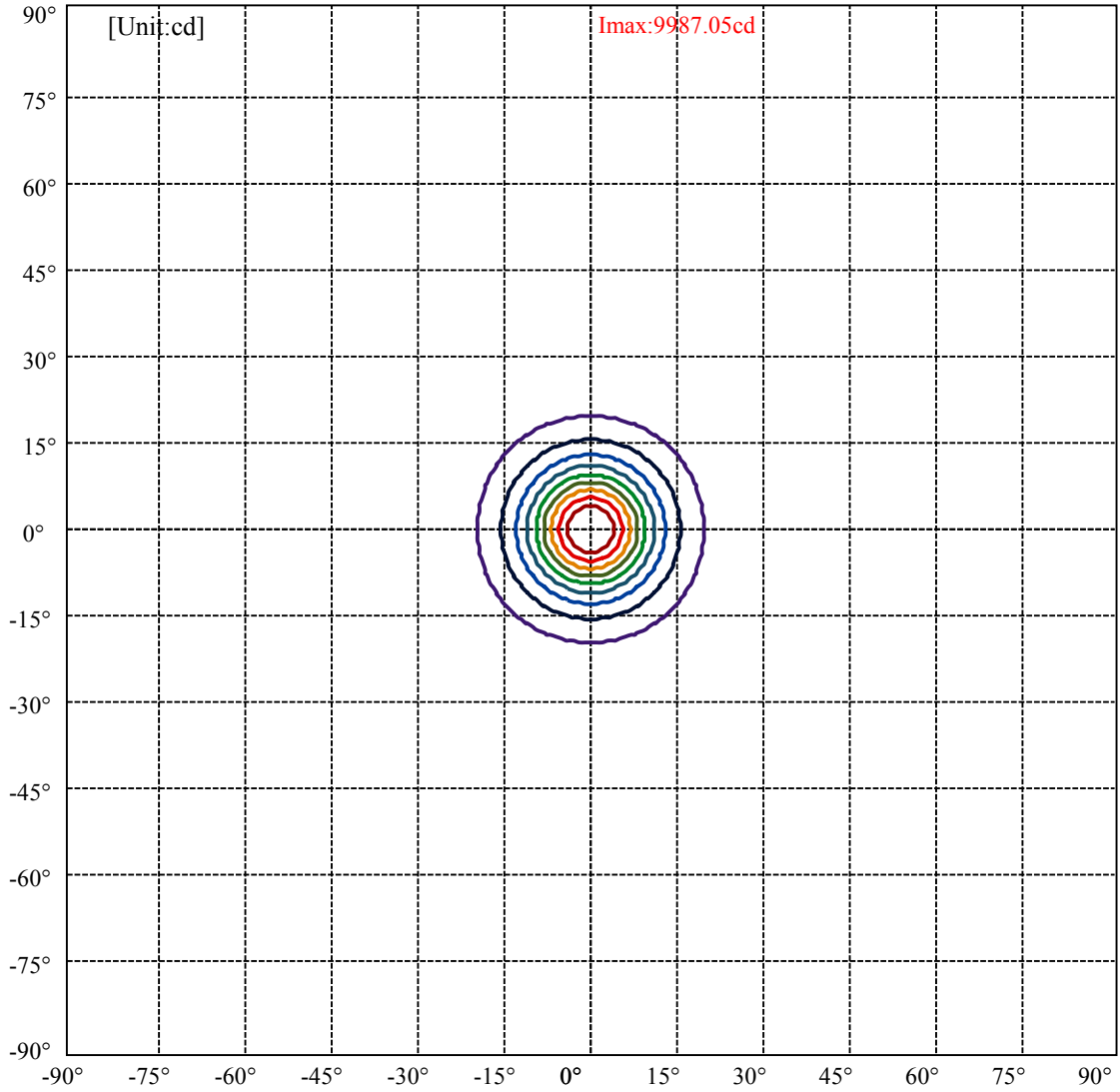
:C90/270Left:19.4 Right:19.4

Beam Angle(50%Imax):C0/180Left:9.3 Right:9.3

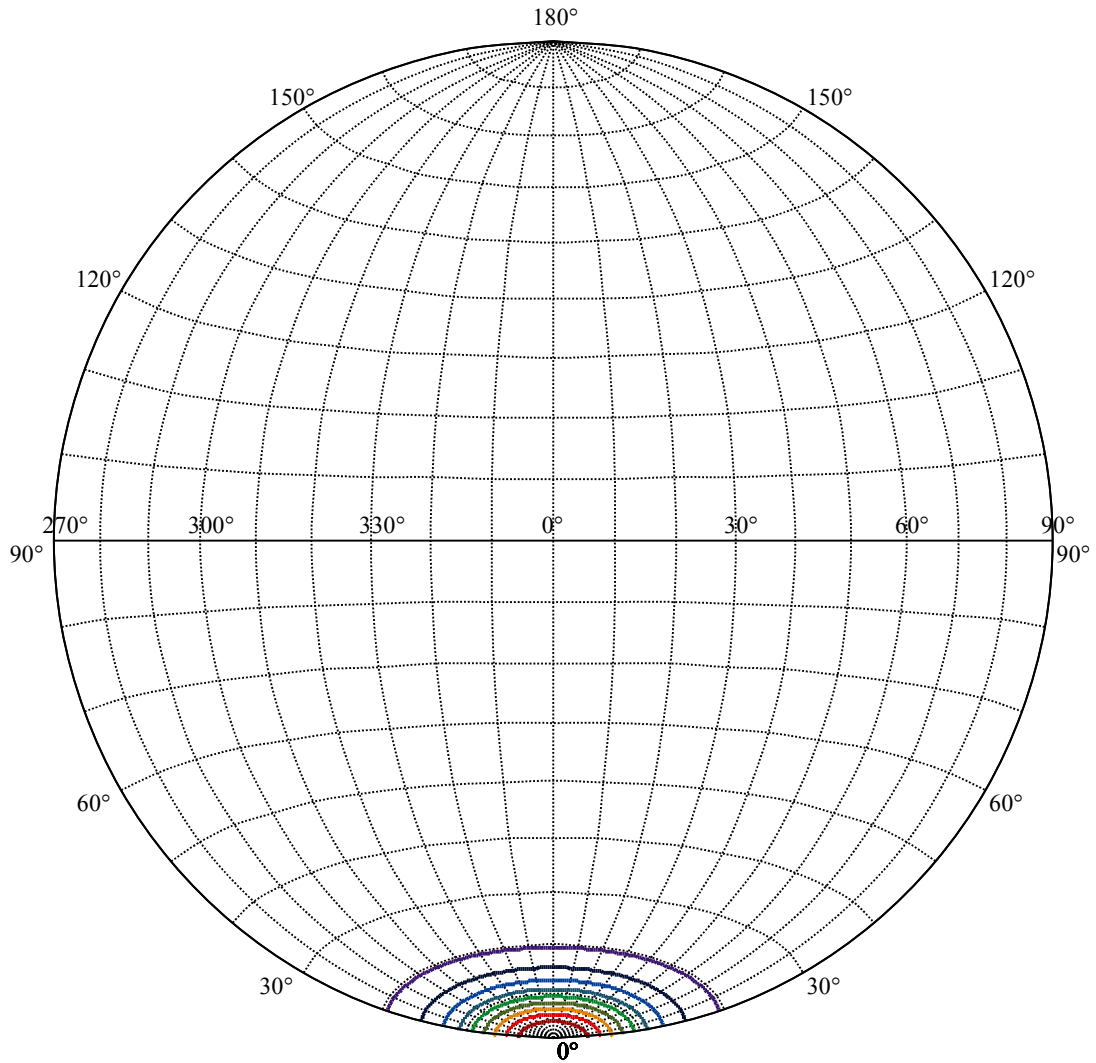
:C90/270Left:9.3 Right:9.3



Max , Ave Beam angle of C0 plane 18.75



(10%Imax) 998.705	—
(20%Imax) 1997.41	—
(30%Imax) 2996.11	—
(40%Imax) 3994.82	—
(50%Imax) 4993.52	—
(60%Imax) 5992.23	—
(70%Imax) 6990.93	—
(80%Imax) 7989.64	—
(90%Imax) 8988.34	—



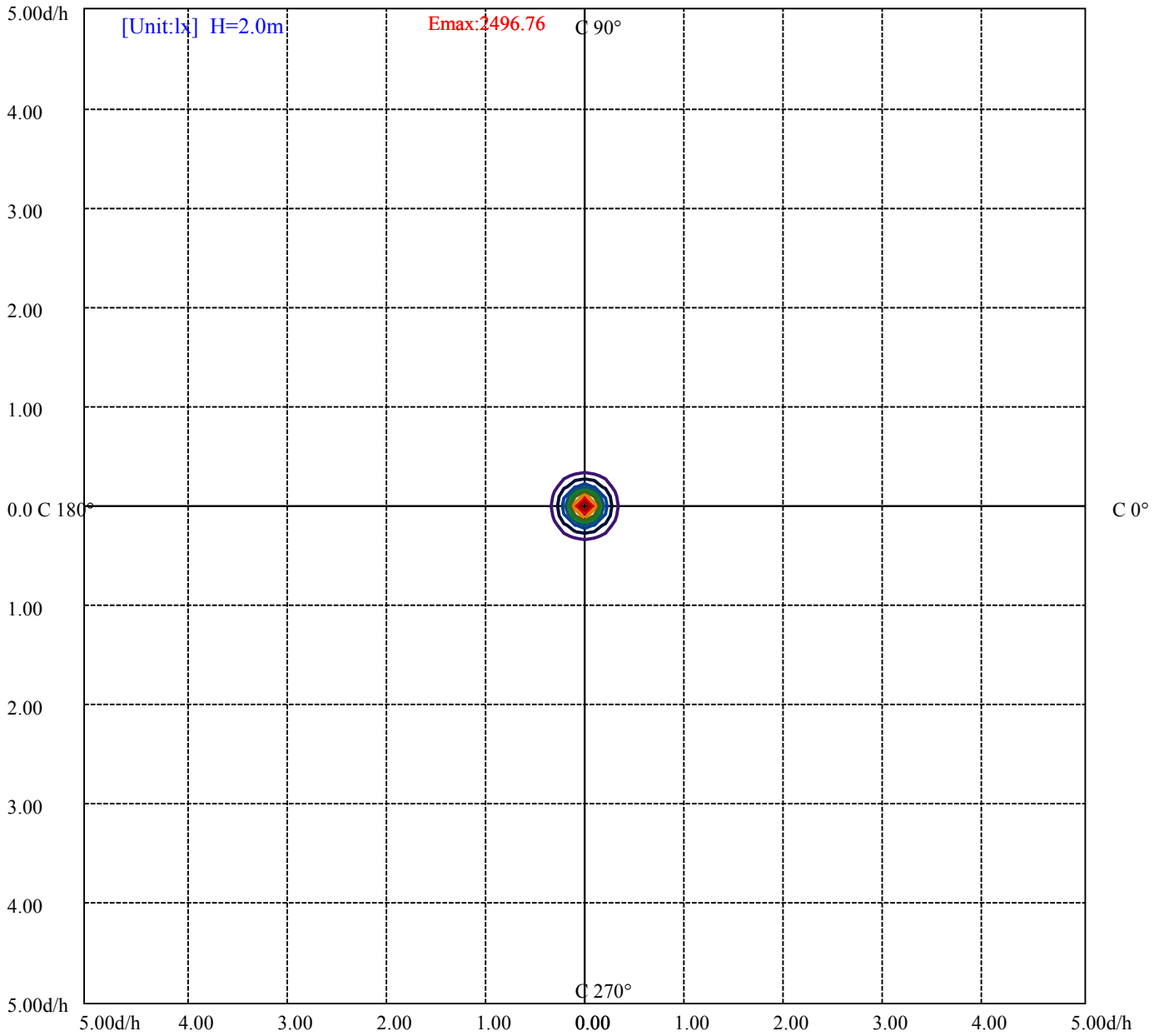
House

[Unit:cd]

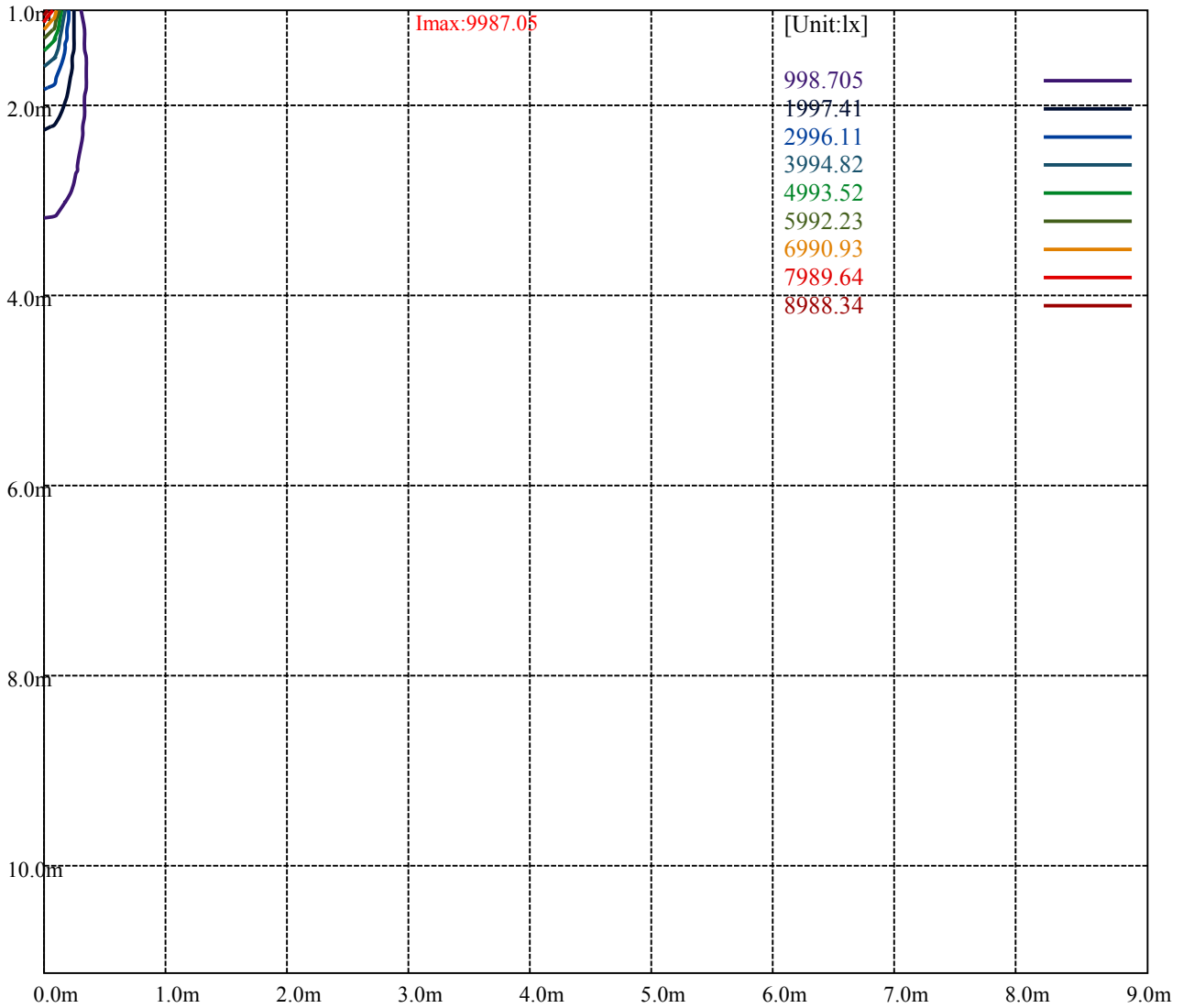
Road

Imax:9987.05

(10%Imax) 998.705	—
(20%Imax) 1997.41	—
(30%Imax) 2996.11	—
(40%Imax) 3994.82	—
(50%Imax) 4993.52	—
(60%Imax) 5992.23	—
(70%Imax) 6990.93	—
(80%Imax) 7989.64	—
(90%Imax) 8988.34	—



(10%Emax) 249.676	—
(20%Emax) 499.3525	—
(30%Emax) 749.0275	—
(40%Emax) 998.705	—
(50%Emax) 1248.38	—
(60%Emax) 1498.055	—
(70%Emax) 1747.733	—
(80%Emax) 1997.407	—
(90%Emax) 2247.085	—



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

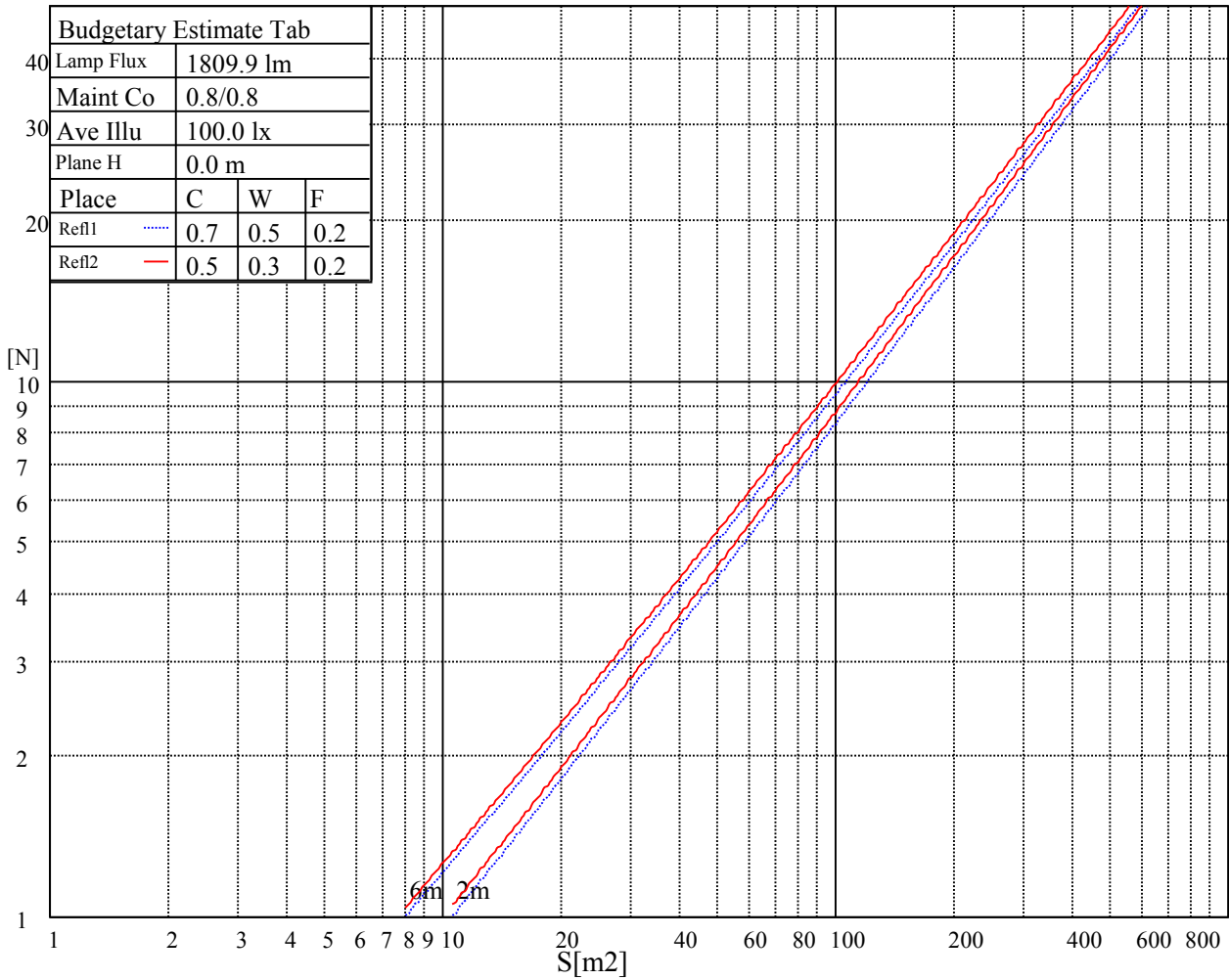
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

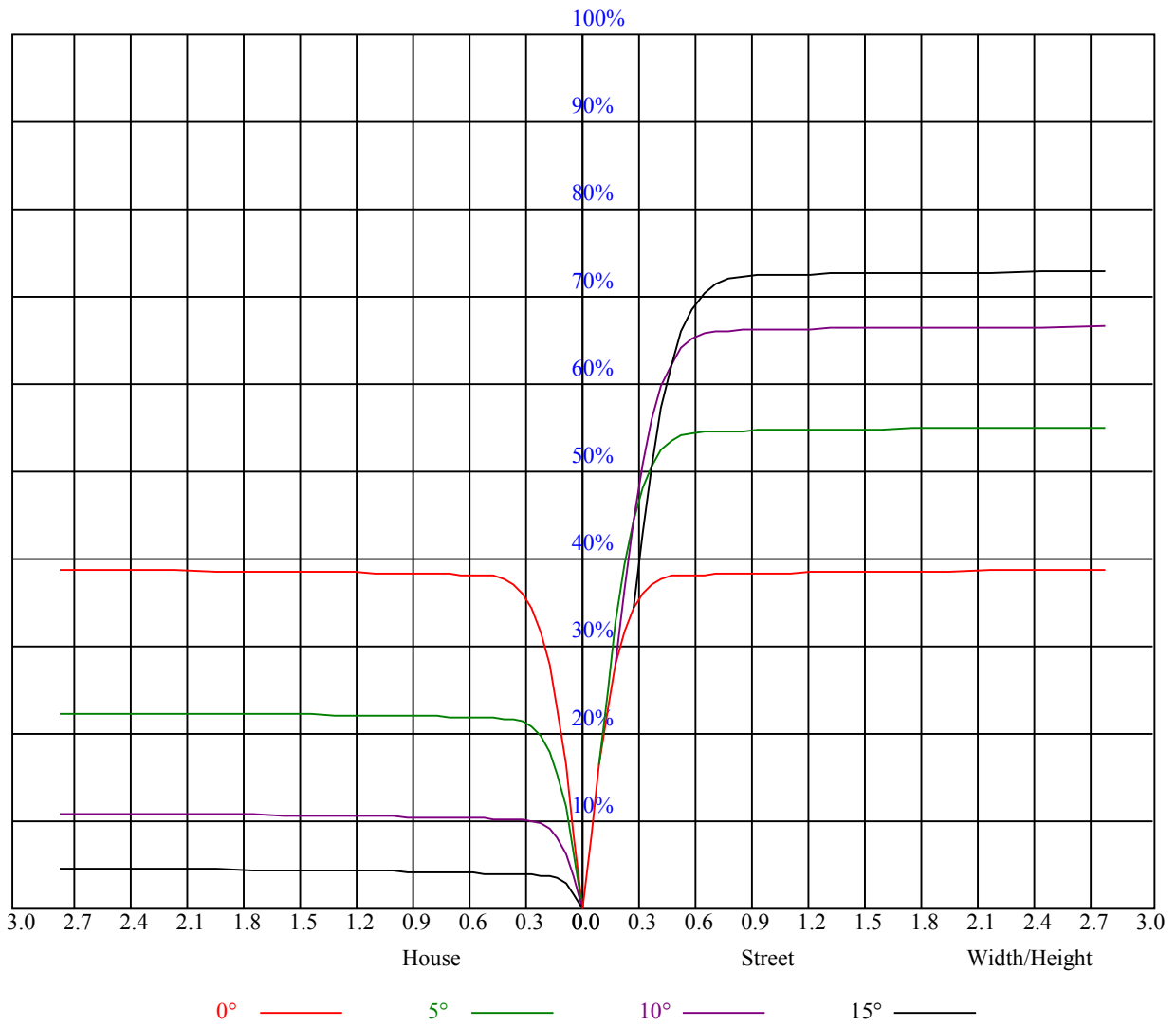
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.93	0.93	0.93	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.78
1	0.88	0.87	0.85	0.87	0.85	0.84	0.83	0.82	0.82	0.81	0.80	0.79	0.78	0.77	0.77	0.76
2	0.85	0.82	0.80	0.83	0.81	0.80	0.81	0.79	0.78	0.79	0.77	0.76	0.77	0.76	0.75	0.74
3	0.81	0.79	0.77	0.80	0.78	0.76	0.78	0.77	0.75	0.77	0.75	0.74	0.75	0.74	0.73	0.72
4	0.79	0.76	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.75	0.73	0.72	0.74	0.72	0.71	0.70
5	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.73	0.71	0.70	0.72	0.71	0.69	0.68
6	0.74	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.69	0.72	0.70	0.68	0.71	0.69	0.68	0.67
7	0.72	0.70	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.70	0.68	0.67	0.70	0.68	0.66	0.66
8	0.71	0.68	0.66	0.70	0.68	0.66	0.70	0.67	0.66	0.69	0.67	0.65	0.68	0.67	0.65	0.64
9	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.64	0.63
10	0.68	0.65	0.63	0.67	0.65	0.63	0.67	0.65	0.63	0.66	0.64	0.63	0.66	0.64	0.63	0.62



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	9982.13	9996.75	9909.56	9713.25	9359.44	8699.63	8048.25	7331.06	6483.38
45.0	9970.31	10028.81	10000.69	9855.56	9597.38	9122.63	8467.31	7770.94	7019.44
90.0	10002.94	9994.50	9877.50	9609.75	9217.69	8597.81	7844.06	7095.94	6221.25
135.0	9992.81	9982.13	9837.00	9582.19	9177.19	8471.81	7798.50	7049.25	6183.56
180.0	9982.13	9881.44	9625.50	9175.50	8623.69	7880.63	7144.31	6277.50	5446.13
225.0	9970.31	9781.31	9457.88	8906.06	8200.13	7484.63	6743.25	5812.31	5126.06
270.0	10002.94	9933.75	9685.69	9307.69	8769.38	8121.94	7223.63	6473.81	5738.06
315.0	9992.81	9927.56	9721.13	9330.19	8812.13	8089.31	7383.94	6535.69	5700.94
360.0	9982.13	9996.75	9909.56	9713.25	9359.44	8699.63	8048.25	7331.06	6483.38
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5668.88	4993.88	4301.44	3740.06	3179.81	2697.75	2331.56	1978.31	1680.19
45.0	6071.06	5353.88	4773.94	4023.00	3421.69	2955.94	2493.00	2138.63	1856.81
90.0	5481.56	4730.06	4062.94	3534.75	3007.69	2558.25	2221.88	1932.19	1612.13
135.0	5374.69	4716.56	4044.38	3508.31	2978.44	2526.75	2180.81	1874.25	1591.31
180.0	4776.75	4168.69	3493.13	3023.44	2612.81	2181.38	1892.81	1636.31	1377.56
225.0	4498.31	3782.81	3268.69	2821.50	2434.50	2033.44	1759.50	1512.56	1118.48
270.0	4906.13	4296.38	3741.19	3178.69	2697.75	2331.00	1980.56	1709.44	1442.81
315.0	5019.19	4320.56	3687.75	3189.38	2757.94	2304.00	1996.31	1726.31	1460.25
360.0	5668.88	4993.88	4301.44	3740.06	3179.81	2697.75	2331.56	1978.31	1680.19
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1446.19	1236.38	997.88	817.31	650.25	461.25	328.50	296.44	120.04
45.0	1566.00	1333.69	1119.94	905.63	728.44	544.50	385.88	296.44	163.91
90.0	1383.19	1101.83	959.91	760.39	598.16	436.05	293.57	186.19	98.44
135.0	1363.50	1158.19	924.19	746.44	585.00	405.00	290.81	166.50	92.70
180.0	1119.54	952.26	753.75	569.81	425.03	282.15	177.92	93.21	38.70
225.0	1047.15	863.16	672.36	499.28	361.86	226.41	134.55	65.48	24.08
270.0	1208.25	1019.25	817.88	629.44	479.81	360.00	284.06	114.24	56.31
315.0	1098.17	1027.24	801.96	635.68	482.68	313.31	213.75	117.68	48.04
360.0	1446.19	1236.38	997.88	817.31	650.25	461.25	328.50	296.44	120.04
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	48.38	18.51	14.63	13.11	12.09	11.31	10.52	9.90	9.45
45.0	78.58	33.69	14.96	13.56	12.38	11.48	10.69	10.13	9.62
90.0	46.74	15.98	13.67	12.54	11.64	10.74	10.13	9.68	9.17
135.0	34.14	14.96	13.33	12.26	11.25	10.58	9.90	9.45	9.00
180.0	15.69	13.67	12.32	11.48	10.74	9.96	9.51	9.11	8.78
225.0	15.53	14.12	12.77	11.87	11.08	10.29	9.79	9.34	8.94
270.0	19.41	14.91	13.61	12.43	11.48	10.74	10.07	9.62	9.11
315.0	20.19	14.74	13.05	12.15	11.31	10.35	9.84	9.39	8.94
360.0	48.38	18.51	14.63	13.11	12.09	11.31	10.52	9.90	9.45
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	9.00	8.66	8.33	8.10	7.93	7.76	7.54	7.43	7.37
45.0	9.23	8.89	8.55	8.33	8.04	7.93	7.76	7.65	7.54
90.0	8.78	8.55	8.27	8.04	7.88	7.65	7.59	7.43	7.31
135.0	8.66	8.38	8.16	7.93	7.76	7.65	7.48	7.37	7.31
180.0	8.44	8.21	7.99	7.82	7.65	7.54	7.43	7.31	7.26
225.0	8.61	8.33	8.04	7.88	7.71	7.59	7.48	7.37	7.26
270.0	8.72	8.49	8.21	7.93	7.82	7.65	7.48	7.37	7.31
315.0	8.55	8.33	8.04	7.82	7.65	7.48	7.37	7.31	7.20
360.0	9.00	8.66	8.33	8.10	7.93	7.76	7.54	7.43	7.37

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	7.26	7.20	7.14	7.03	6.98	6.98	6.92	6.86	6.81
45.0	7.43	7.31	7.26	7.20	7.09	7.09	7.03	6.98	6.92
90.0	7.26	7.14	7.09	7.03	6.98	6.92	6.86	6.86	6.81
135.0	7.20	7.14	7.09	7.03	6.98	6.92	6.86	6.81	6.81
180.0	7.14	7.09	7.09	6.98	6.92	6.86	6.86	6.86	6.81
225.0	7.20	7.14	7.03	6.98	6.98	6.92	6.86	6.86	6.81
270.0	7.20	7.14	7.03	7.03	6.98	6.92	6.86	6.81	6.81
315.0	7.14	7.03	6.98	6.92	6.86	6.81	6.81	6.75	6.69
360.0	7.26	7.20	7.14	7.03	6.98	6.98	6.92	6.86	6.81
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	6.75	6.75	6.75	6.69	6.69	6.64	6.64	6.58	6.58
45.0	6.86	6.81	6.81	6.81	6.75	6.75	6.69	6.69	6.64
90.0	6.75	6.75	6.69	6.69	6.64	6.64	6.64	6.58	6.58
135.0	6.81	6.75	6.69	6.64	6.64	6.64	6.64	6.58	6.58
180.0	6.75	6.69	6.69	6.69	6.64	6.64	6.64	6.58	6.58
225.0	6.75	6.75	6.69	6.69	6.69	6.64	6.64	6.64	6.58
270.0	6.81	6.75	6.69	6.64	6.64	6.64	6.64	6.58	6.58
315.0	6.69	6.69	6.64	6.64	6.58	6.58	6.58	6.53	6.53
360.0	6.75	6.75	6.75	6.69	6.69	6.64	6.64	6.58	6.58
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.58	6.53	6.58	6.58	6.53	6.53	6.53	6.53	6.53
45.0	6.64	6.58	6.58	6.58	6.58	6.58	6.58	6.53	6.53
90.0	6.58	6.58	6.53	6.53	6.47	6.53	6.47	6.53	6.47
135.0	6.58	6.58	6.58	6.53	6.53	6.47	6.47	6.47	6.47
180.0	6.58	6.58	6.53	6.53	6.53	6.53	6.53	6.53	6.47
225.0	6.58	6.58	6.53	6.53	6.53	6.53	6.53	6.53	6.53
270.0	6.58	6.58	6.53	6.53	6.53	6.47	6.53	6.47	6.47
315.0	6.53	6.53	6.47	6.53	6.47	6.47	6.47	6.47	6.41
360.0	6.58	6.53	6.58	6.58	6.53	6.53	6.53	6.53	6.53
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	6.53	6.47	6.53	6.47	6.47	6.47	6.47	6.47	6.47
45.0	6.53	6.53	6.53	6.47	6.53	6.47	6.47	6.47	6.47
90.0	6.47	6.47	6.47	6.47	6.41	6.47	6.47	6.41	6.41
135.0	6.47	6.47	6.47	6.47	6.47	6.47	6.41	6.41	6.41
180.0	6.47	6.47	6.47	6.47	6.47	6.47	6.47	6.47	6.47
225.0	6.47	6.47	6.47	6.47	6.47	6.47	6.47	6.47	6.47
270.0	6.47	6.47	6.47	6.47	6.47	6.47	6.47	6.47	6.47
315.0	6.47	6.47	6.47	6.41	6.41	6.41	6.41	6.41	6.41
360.0	6.53	6.47	6.53	6.47	6.47	6.47	6.47	6.47	6.47
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.47	6.47	6.47	6.47	6.47	6.41	6.47	6.41	6.41
45.0	6.47	6.47	6.47	6.47	6.41	6.41	6.41	6.41	6.41
90.0	6.41	6.41	6.41	6.41	6.41	6.41	6.36	6.41	6.36
135.0	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41
180.0	6.41	6.47	6.41	6.41	6.41	6.41	6.41	6.41	6.41
225.0	6.47	6.47	6.41	6.47	6.47	6.47	6.41	6.47	6.41
270.0	6.41	6.47	6.41	6.41	6.41	6.41	6.41	6.36	6.41
315.0	6.41	6.41	6.41	6.36	6.41	6.41	6.41	6.36	6.41
360.0	6.47	6.47	6.47	6.47	6.47	6.41	6.47	6.41	6.41

Intensity data(cd)

C/ γ ($^{\circ}$)	90.0
0.0	6.41
45.0	6.47
90.0	6.41
135.0	6.41
180.0	6.41
225.0	6.47
270.0	6.41
315.0	6.41
360.0	6.41