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## Nata

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LumCAT: 1-1060-N	
Luminaire: 92.361.000	
Report No: 220519-B010	Voltage(V): 38.2000
Test No: 220519-C010	Current(A): 0.3610
LampCAT: CREE CXA1507	Power (W): 13.7900
Lamp flux(lm): 1272.8	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 1087.10  
Efficiency(%): 85.41%  
Lumens(lm)/Power(W): 78.83  
Central intensity(cd): 6496.783  
Maximum intensity(cd): 6496.783  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=17.0  
                                  [C90/270]Total=17.0  
Field angle(10%Imax): [C0/180]Total=44.4  
                                  [C90/270]Total=44.4  
Maximum s/h(1/2): C0\_180=0.29 C90\_270=0.29  
Maximum s/h(1/4): C0\_180=0.32 C90\_270=0.32  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 85.41%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.246%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6496.783	0.000	0	.000%	.000%
1.0	6459.811	6.199	6.199	.487%	.570%
2.0	6289.366	18.299	24.498	1.438%	2.254%
3.0	5986.419	29.360	53.858	2.307%	4.954%
4.0	5613.187	38.828	92.686	3.051%	8.526%
5.0	5143.978	46.277	138.962	3.636%	12.783%
6.0	4576.773	51.085	190.047	4.014%	17.482%
7.0	4009.420	53.294	243.342	4.187%	22.384%
8.0	3503.761	53.770	297.112	4.225%	27.331%
9.0	2998.401	52.696	349.809	4.140%	32.178%
10.0	2552.046	50.230	400.038	3.946%	36.799%
11.0	2217.729	47.660	447.698	3.745%	41.183%
12.0	1940.924	45.460	493.158	3.572%	45.364%
13.0	1698.401	43.190	536.348	3.393%	49.337%
14.0	1500.522	40.946	577.294	3.217%	53.104%
15.0	1364.764	39.336	616.63	3.091%	56.722%
16.0	1229.468	38.013	654.642	2.987%	60.219%
17.0	1099.543	36.269	690.911	2.850%	63.555%
18.0	1004.147	34.685	725.597	2.725%	66.746%
19.0	912.979	33.354	758.951	2.621%	69.814%
20.0	822.177	31.758	790.709	2.495%	72.735%
21.0	736.014	29.920	820.629	2.351%	75.488%
22.0	663.459	28.123	848.752	2.210%	78.075%
23.0	594.019	26.385	875.138	2.073%	80.502%
24.0	520.493	24.367	899.505	1.915%	82.743%
25.0	460.038	22.295	921.8	1.752%	84.794%
26.0	405.207	20.424	942.224	1.605%	86.673%
27.0	353.364	18.559	960.783	1.458%	88.380%
28.0	288.099	16.240	977.023	1.276%	89.874%
29.0	238.227	13.770	990.793	1.082%	91.141%
30.0	200.658	11.850	1002.643	.931%	92.231%
31.0	147.366	9.685	1012.328	.761%	93.122%
32.0	112.096	7.433	1019.761	.584%	93.805%
33.0	87.023	5.866	1025.628	.461%	94.345%
34.0	67.409	4.674	1030.301	.367%	94.775%
35.0	53.240	3.747	1034.048	.294%	95.120%
36.0	45.928	3.158	1037.205	.248%	95.410%
37.0	40.535	2.820	1040.025	.222%	95.669%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	35.508	2.538	1042.564	.199%	95.903%
39.0	31.027	2.271	1044.835	.178%	96.112%
40.0	27.374	2.037	1046.871	.160%	96.299%
41.0	24.260	1.839	1048.71	.144%	96.468%
42.0	21.511	1.663	1050.373	.131%	96.621%
43.0	19.300	1.512	1051.885	.119%	96.760%
44.0	17.425	1.386	1053.271	.109%	96.888%
45.0	15.924	1.282	1054.553	.101%	97.006%
46.0	14.580	1.193	1055.746	.094%	97.115%
47.0	13.512	1.117	1056.863	.088%	97.218%
48.0	12.653	1.058	1057.92	.083%	97.316%
49.0	11.861	1.007	1058.927	.079%	97.408%
50.0	11.166	0.960	1059.887	.075%	97.496%
51.0	10.591	0.921	1060.808	.072%	97.581%
52.0	10.106	0.888	1061.696	.070%	97.663%
53.0	9.665	0.860	1062.556	.068%	97.742%
54.0	9.262	0.834	1063.39	.066%	97.819%
55.0	8.926	0.812	1064.202	.064%	97.893%
56.0	8.634	0.793	1064.995	.062%	97.966%
57.0	8.388	0.778	1065.774	.061%	98.038%
58.0	8.164	0.765	1066.539	.060%	98.108%
59.0	7.977	0.755	1067.294	.059%	98.178%
60.0	7.805	0.746	1068.039	.059%	98.246%
61.0	7.663	0.738	1068.778	.058%	98.314%
62.0	7.536	0.732	1069.51	.058%	98.382%
63.0	7.447	0.729	1070.239	.057%	98.449%
64.0	7.357	0.726	1070.965	.057%	98.515%
65.0	7.253	0.723	1071.688	.057%	98.582%
66.0	7.163	0.719	1072.407	.057%	98.648%
67.0	7.051	0.715	1073.122	.056%	98.714%
68.0	6.931	0.708	1073.83	.056%	98.779%
69.0	6.827	0.702	1074.532	.055%	98.844%
70.0	6.692	0.694	1075.226	.055%	98.907%
71.0	6.543	0.684	1075.911	.054%	98.970%
72.0	6.379	0.672	1076.582	.053%	99.032%
73.0	6.252	0.660	1077.243	.052%	99.093%
74.0	6.132	0.651	1077.894	.051%	99.153%
75.0	5.990	0.641	1078.534	.050%	99.212%

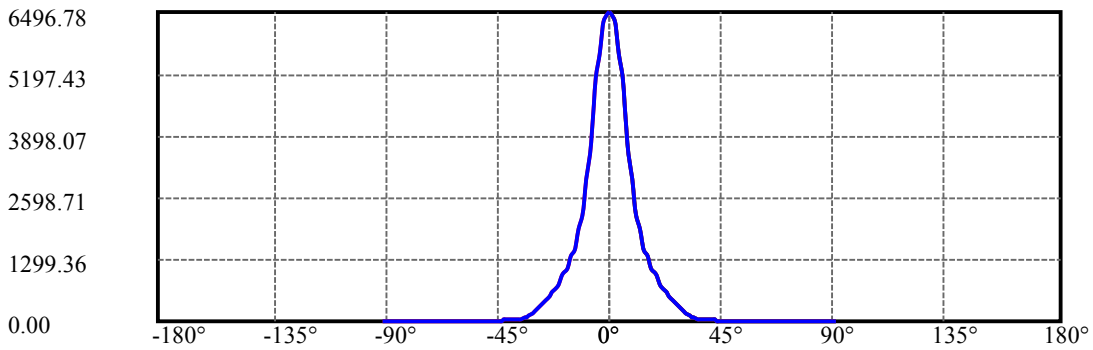
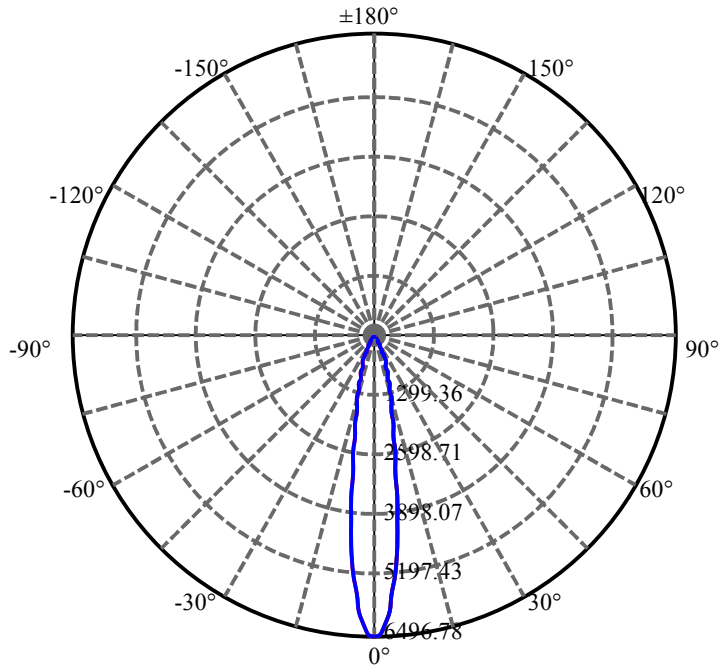
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.886	0.630	1079.165	.050%	99.270%
77.0	5.789	0.622	1079.787	.049%	99.327%
78.0	5.706	0.615	1080.403	.048%	99.384%
79.0	5.617	0.608	1081.011	.048%	99.440%
80.0	5.497	0.599	1081.61	.047%	99.495%
81.0	5.423	0.591	1082.201	.046%	99.549%
82.0	5.325	0.583	1082.784	.046%	99.603%
83.0	5.236	0.574	1083.358	.045%	99.655%
84.0	5.184	0.568	1083.925	.045%	99.708%
85.0	5.019	0.557	1084.482	.044%	99.759%
86.0	4.915	0.543	1085.025	.043%	99.809%
87.0	4.818	0.533	1085.558	.042%	99.858%
88.0	4.713	0.522	1086.08	.041%	99.906%
89.0	4.661	0.514	1086.594	.040%	99.953%
90.0	4.631	0.509	1087.103	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1002.64	78.78%	92.23%
0-40	1046.87	82.25%	96.30%
0-60	1068.04	83.91%	98.25%
0-90	1086.59	85.37%	99.95%
0-120	1086.59	85.37%	99.95%
0-180	1087.10	85.41%	100.00%
60-90	19.30	1.52%	1.78%
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%
0-22.79	869.68	68.33%	80.00%

ZONAL LUMEN SUMMARY

0-10	400.04
10-20	390.67
20-30	211.93
30-40	44.23
40-50	13.02
50-60	8.15
60-70	7.19
70-80	6.38
80-90	4.98
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): ———

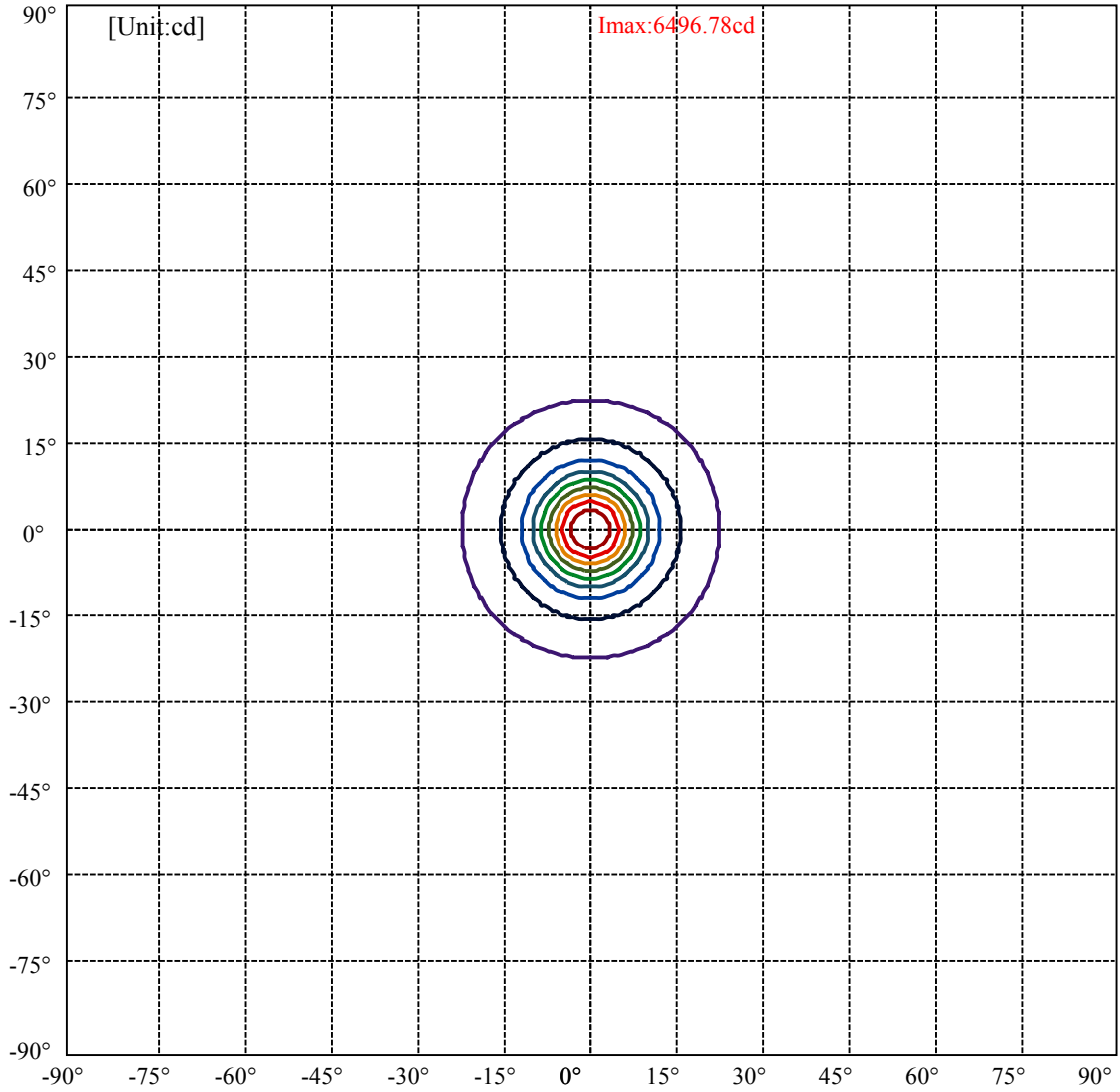
C0/C180: ———

C90/C270: ———

Field angle(10%Imax):C0/180Left:22.2 Right:22.2  
:C90/270Left:22.2 Right:22.2

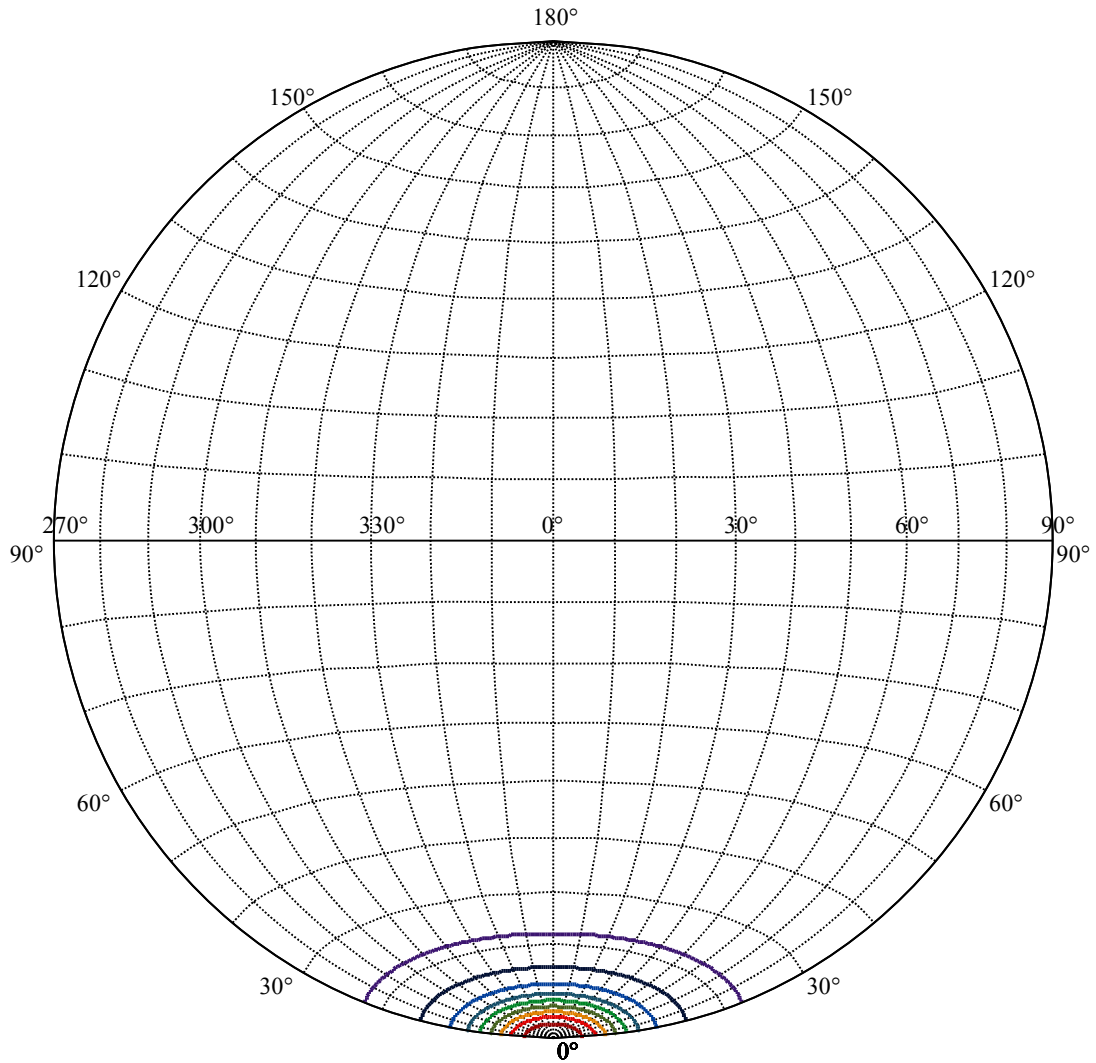
Beam Angle(50%Imax):C0/180Left:8.5 Right:8.5  
:C90/270Left:8.5 Right:8.5





(10%Imax) 649.678	—
(20%Imax) 1299.36	—
(30%Imax) 1949.03	—
(40%Imax) 2598.71	—
(50%Imax) 3248.39	—
(60%Imax) 3898.07	—
(70%Imax) 4547.75	—
(80%Imax) 5197.43	—
(90%Imax) 5847.1	—





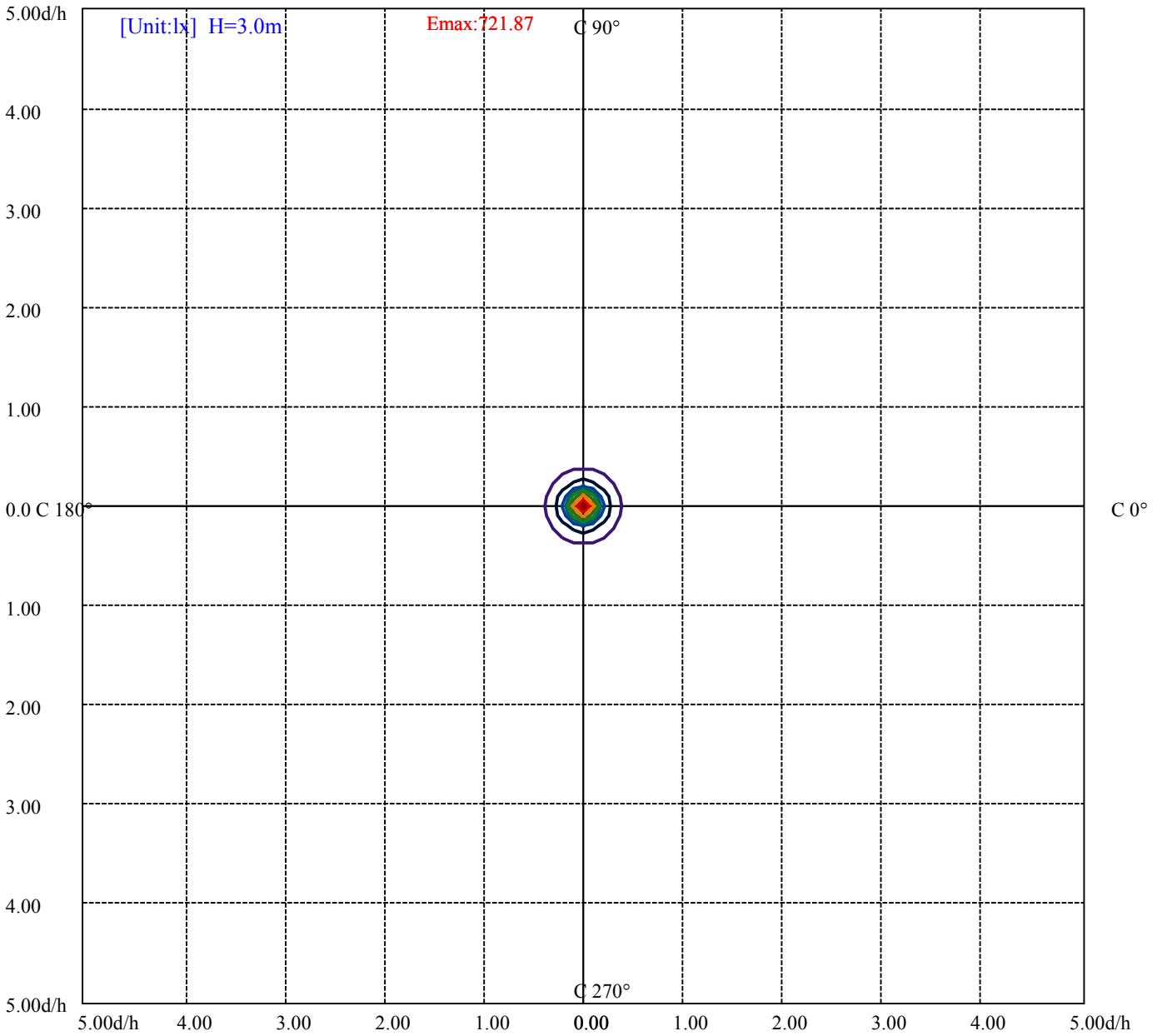
House

[Unit:cd]

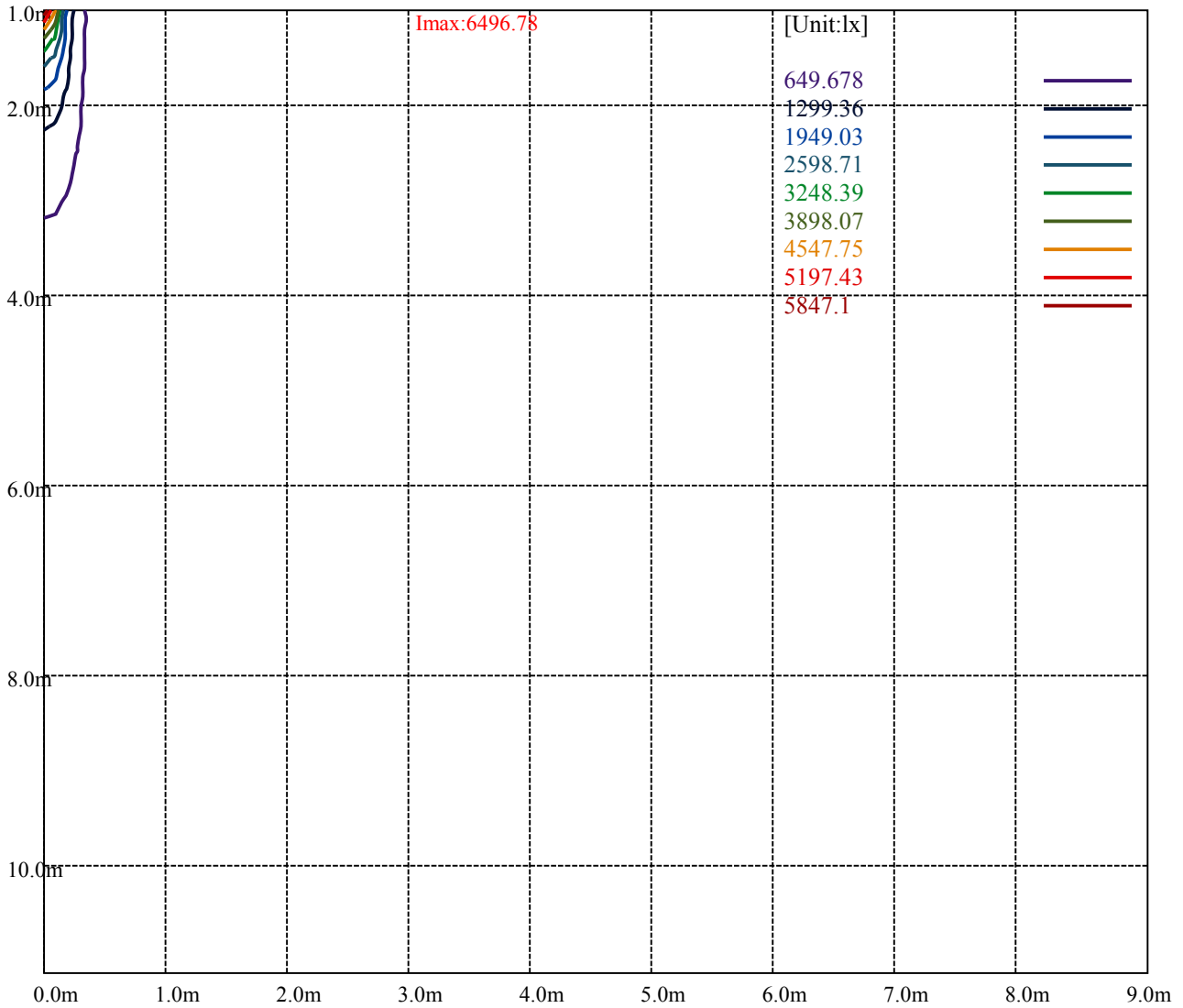
Road

**Imax:6496.78**

(10%Imax) 649.678	—
(20%Imax) 1299.36	—
(30%Imax) 1949.03	—
(40%Imax) 2598.71	—
(50%Imax) 3248.39	—
(60%Imax) 3898.07	—
(70%Imax) 4547.75	—
(80%Imax) 5197.43	—
(90%Imax) 5847.1	—



- (10%Emax) 72.18644
- (20%Emax) 144.3733
- (30%Emax) 216.5589
- (40%Emax) 288.7455
- (50%Emax) 360.9322
- (60%Emax) 433.1189
- (70%Emax) 505.3045
- (80%Emax) 577.4911
- (90%Emax) 649.6778



Luminance Table

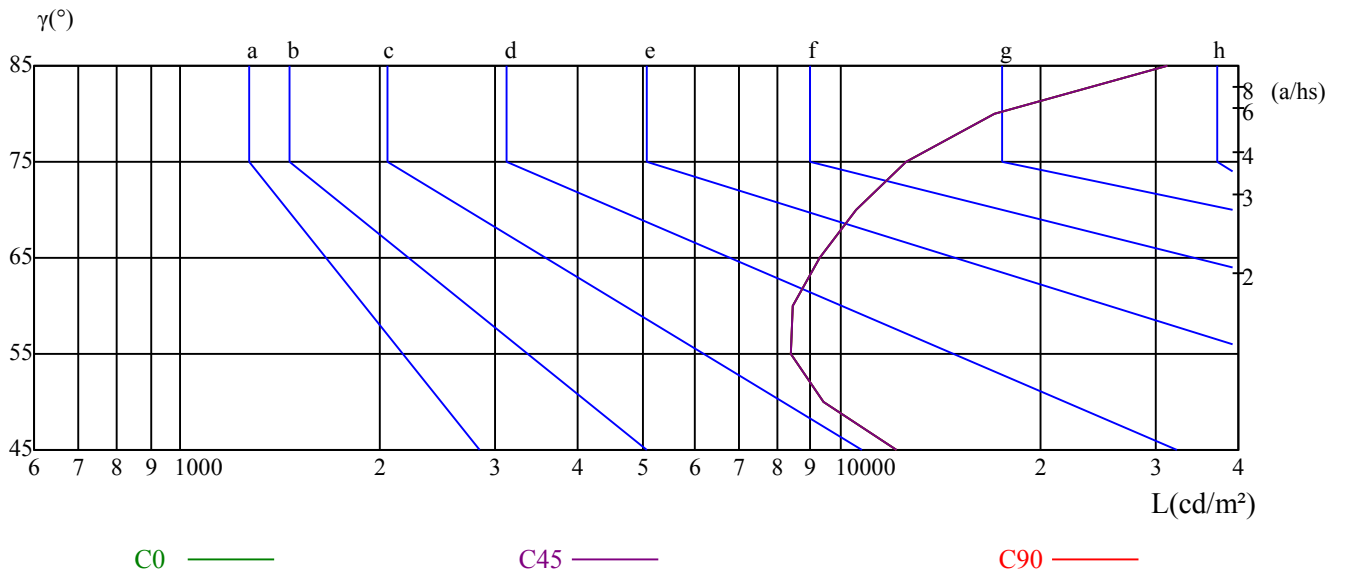
$\gamma$	45	50	55	60	65	70	75	80	85
C0	12180	9395	8416	8443	9281	10583	12517	17121	31146
C45	12180	9395	8416	8443	9281	10583	12517	17121	31146
C90	12180	9395	8416	8443	9281	10583	12517	17121	31146

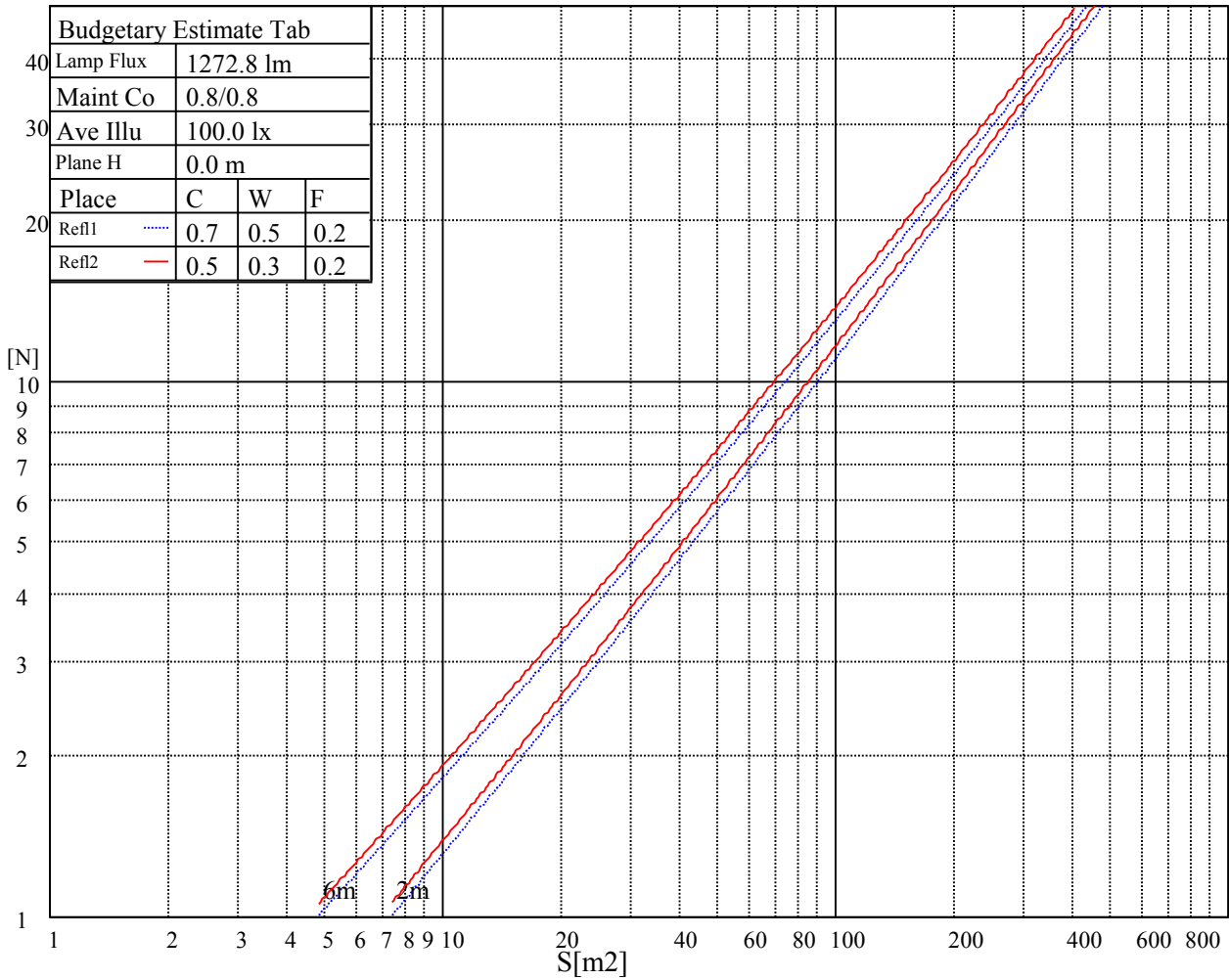
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9281	9281	9281	12517	12517	12517	31146	31146	31146

Glare Table

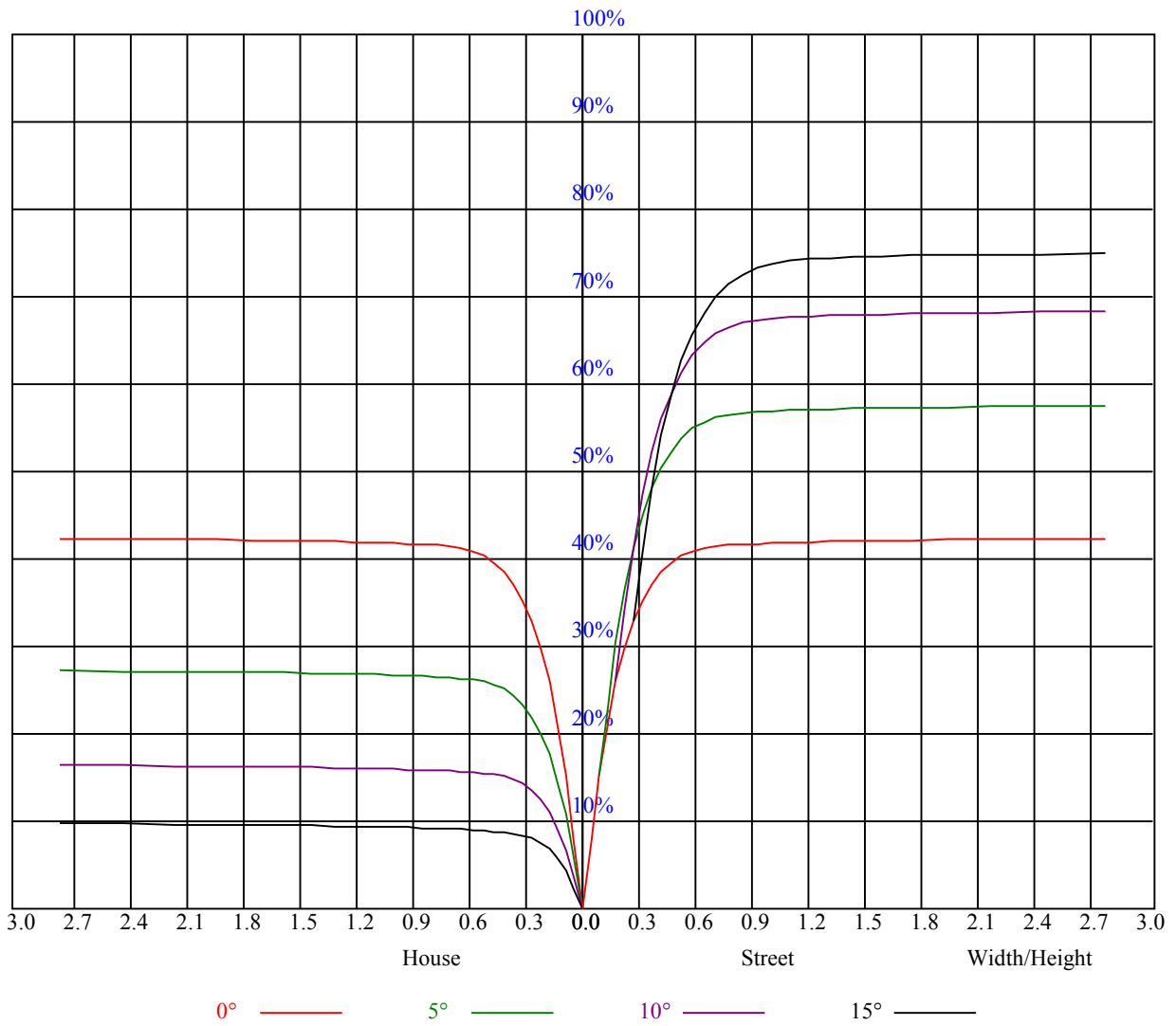
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.02	1.02	1.02	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.85
1	0.96	0.94	0.93	0.94	0.92	0.91	0.91	0.89	0.88	0.87	0.87	0.86	0.85	0.84	0.83	0.82
2	0.91	0.88	0.86	0.90	0.87	0.85	0.87	0.85	0.83	0.84	0.83	0.81	0.82	0.81	0.80	0.78
3	0.87	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.77	0.76
4	0.83	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.78	0.76	0.74	0.73
5	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.72	0.71
6	0.77	0.73	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.73	0.71	0.69	0.68
7	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.67	0.71	0.69	0.67	0.66
8	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.70	0.67	0.65	0.64
9	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.68	0.65	0.63	0.63
10	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.66	0.64	0.62	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	6421.05	6611.06	6642.13	6563.86	6321.26	5931.67	5534.31	4856.72	4290.86
45.0	6587.16	6460.48	6149.77	5800.81	5340.71	4647.58	4070.37	3523.03	2980.47
90.0	6433.59	6192.19	5846.82	5288.13	4765.29	4198.84	3499.13	3018.12	2597.46
135.0	6545.33	6312.89	5966.33	5567.78	5012.67	4473.70	3842.11	3264.90	2819.74
180.0	6421.05	6226.25	5902.39	5328.17	4872.85	4338.66	3717.23	3150.17	2713.38
225.0	6587.16	6612.85	6509.48	6283.02	5988.44	5617.37	5080.19	4498.20	3954.45
270.0	6433.59	6602.10	6642.13	6556.09	6335.60	6030.86	5557.62	4991.76	4462.94
315.0	6545.33	6660.66	6655.88	6503.51	6268.68	5913.15	5313.23	4772.46	4210.79
360.0	6421.05	6611.06	6642.13	6563.86	6321.26	5931.67	5534.31	4856.72	4290.86
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3730.37	3096.99	2667.97	2314.23	1970.65	1756.74	1579.27	1392.24	1263.77
45.0	2523.36	2190.54	1898.35	1693.99	1503.98	1345.04	1223.74	1104.83	999.67
90.0	2212.65	1919.26	1717.30	1527.88	1370.13	1186.15	1108.30	1025.72	925.87
135.0	2392.51	2057.29	1823.66	1635.44	1437.65	1306.20	1191.47	1077.34	973.97
180.0	2316.62	2005.90	1787.81	1607.95	1429.89	1190.64	1162.97	1050.52	956.58
225.0	3373.05	2856.79	2433.14	2126.61	1881.62	1662.33	1477.69	1338.46	1183.17
270.0	3847.49	3260.72	2810.18	2436.72	2067.45	1835.01	1643.20	1461.56	1308.59
315.0	3591.15	3028.87	2603.43	2184.57	1925.84	1722.08	1531.47	1385.07	1184.72
360.0	3730.37	3096.99	2667.97	2314.23	1970.65	1756.74	1579.27	1392.24	1263.77
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1153.83	1042.69	946.49	865.82	773.80	695.52	614.86	550.92	492.96
45.0	912.43	842.52	724.21	653.10	594.54	515.07	460.10	406.32	338.80
90.0	820.59	750.50	672.04	579.54	532.10	475.21	395.98	350.51	300.38
135.0	889.72	798.30	708.07	632.19	565.86	514.47	447.55	380.63	331.63
180.0	860.02	765.55	689.67	610.20	548.41	494.63	437.93	369.39	318.06
225.0	1083.50	993.09	911.23	809.47	730.12	654.41	580.86	520.93	465.95
270.0	1192.67	1082.72	983.53	898.68	805.47	724.21	637.56	568.25	514.47
315.0	1120.43	1028.47	942.18	839.11	757.37	678.61	589.10	533.35	479.40
360.0	1153.83	1042.69	946.49	865.82	773.80	695.52	614.86	550.92	492.96
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	424.84	360.31	308.92	302.95	200.47	157.87	118.73	80.37	62.56
45.0	303.54	233.10	181.77	138.87	98.47	69.55	56.71	50.31	44.34
90.0	245.05	191.33	148.19	107.02	76.66	58.80	51.69	46.25	40.33
135.0	306.53	221.92	174.72	132.95	90.41	68.24	56.29	50.01	42.84
180.0	269.96	217.08	165.16	124.35	86.82	63.34	54.02	47.20	41.83
225.0	401.78	346.69	292.07	240.45	195.63	147.77	106.54	78.58	62.08
270.0	454.12	383.02	331.63	302.35	226.64	175.14	135.34	105.40	70.09
315.0	421.08	351.35	303.37	256.34	203.82	156.07	116.88	81.14	61.84
360.0	424.84	360.31	308.92	302.95	200.47	157.87	118.73	80.37	62.56
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	54.49	47.98	41.95	36.99	32.33	28.80	25.16	22.65	20.20
45.0	39.26	34.66	29.94	26.77	23.84	21.03	18.70	17.09	15.54
90.0	35.13	31.25	27.79	24.26	21.69	19.54	17.63	15.95	14.76
135.0	37.76	32.86	29.10	25.63	22.89	20.26	18.11	16.55	15.06
180.0	36.57	31.85	28.26	24.98	21.87	19.78	17.99	16.19	14.94
225.0	52.40	46.19	40.69	34.54	30.35	27.01	23.60	20.79	18.70
270.0	57.60	51.87	44.34	38.66	34.48	29.52	25.93	23.48	20.55
315.0	54.20	47.62	42.01	36.39	31.55	28.14	24.98	21.69	19.66
360.0	54.49	47.98	41.95	36.99	32.33	28.80	25.16	22.65	20.20



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	18.11	16.43	15.18	14.10	12.97	12.19	11.47	10.88	10.34
45.0	14.28	13.32	12.43	11.77	11.05	10.46	10.04	9.62	9.20
90.0	13.74	12.73	12.01	11.29	10.76	10.22	9.68	9.32	9.02
135.0	13.98	12.91	12.19	11.53	10.93	10.40	9.92	9.50	9.08
180.0	13.98	12.97	12.19	11.59	10.93	10.40	9.98	9.56	9.20
225.0	16.85	15.48	14.16	13.09	12.31	11.53	10.88	10.34	9.92
270.0	18.58	16.91	15.24	14.16	13.21	12.25	11.53	10.99	10.34
315.0	17.87	15.89	14.70	13.68	12.73	11.89	11.23	10.64	10.22
360.0	18.11	16.43	15.18	14.10	12.97	12.19	11.47	10.88	10.34
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.86	9.44	9.02	8.78	8.48	8.25	8.07	7.89	7.77
45.0	8.90	8.60	8.25	8.13	7.89	7.77	7.59	7.47	7.35
90.0	8.66	8.37	8.19	7.95	7.83	7.71	7.59	7.41	7.29
135.0	8.78	8.48	8.31	8.13	7.95	7.77	7.59	7.53	7.41
180.0	8.84	8.60	8.37	8.19	7.95	7.83	7.71	7.53	7.41
225.0	9.44	9.08	8.84	8.48	8.31	8.07	7.89	7.77	7.65
270.0	9.92	9.56	9.14	8.84	8.54	8.31	8.07	7.95	7.77
315.0	9.68	9.26	8.96	8.60	8.37	8.13	7.95	7.77	7.65
360.0	9.86	9.44	9.02	8.78	8.48	8.25	8.07	7.89	7.77
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.59	7.53	7.41	7.35	7.23	7.11	7.05	6.93	6.81
45.0	7.29	7.23	7.11	7.05	6.87	6.75	6.69	6.51	6.39
90.0	7.23	7.17	7.05	6.99	6.81	6.69	6.51	6.39	6.21
135.0	7.35	7.23	7.17	7.05	6.99	6.81	6.69	6.57	6.39
180.0	7.35	7.29	7.17	7.05	6.93	6.81	6.63	6.45	6.33
225.0	7.53	7.47	7.35	7.17	7.11	7.05	6.93	6.81	6.63
270.0	7.65	7.47	7.41	7.35	7.23	7.11	7.05	6.99	6.81
315.0	7.59	7.47	7.35	7.29	7.23	7.11	7.05	6.87	6.75
360.0	7.59	7.53	7.41	7.35	7.23	7.11	7.05	6.93	6.81
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	6.63	6.51	6.33	6.15	6.09	5.98	5.92	5.80	5.68
45.0	6.15	6.09	5.92	5.86	5.74	5.62	5.56	5.44	5.32
90.0	6.09	5.98	5.92	5.74	5.68	5.56	5.50	5.38	5.26
135.0	6.27	6.15	6.04	5.98	5.92	5.86	5.86	5.74	5.56
180.0	6.21	6.09	5.98	5.86	5.68	5.62	5.50	5.44	5.38
225.0	6.45	6.33	6.21	6.04	5.92	5.80	5.68	5.62	5.50
270.0	6.63	6.45	6.33	6.15	6.04	5.92	5.80	5.74	5.62
315.0	6.57	6.39	6.33	6.15	6.04	5.98	5.86	5.80	5.68
360.0	6.63	6.51	6.33	6.15	6.09	5.98	5.92	5.80	5.68
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.56	5.44	5.38	5.26	5.20	5.08	5.02	4.90	4.78
45.0	5.26	5.14	5.08	4.96	4.90	4.78	4.66	4.60	4.54
90.0	5.20	5.14	5.02	4.90	4.84	4.78	4.66	4.54	4.54
135.0	5.56	5.44	5.38	5.74	4.90	4.84	4.72	4.60	4.60
180.0	5.26	5.14	5.08	4.96	4.90	4.78	4.72	4.60	4.60
225.0	5.44	5.32	5.20	5.08	5.02	4.96	4.84	4.78	4.66
270.0	5.50	5.44	5.32	5.20	5.14	5.02	4.96	4.84	4.78
315.0	5.62	5.56	5.44	5.38	5.26	5.08	4.96	4.84	4.78
360.0	5.56	5.44	5.38	5.26	5.20	5.08	5.02	4.90	4.78

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>4.72</b>
<b>45.0</b>	<b>4.54</b>
<b>90.0</b>	<b>4.54</b>
<b>135.0</b>	<b>4.60</b>
<b>180.0</b>	<b>4.60</b>
<b>225.0</b>	<b>4.60</b>
<b>270.0</b>	<b>4.72</b>
<b>315.0</b>	<b>4.72</b>
<b>360.0</b>	<b>4.72</b>