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Nata

LumCAT: 1-1060-N	
Luminaire: 92.361.000	
Report No: 220518-B011	Voltage(V): 36.4700
Test No: 220518-C011	Current(A): 0.3610
LampCAT: CREE CXA1520	Power (W): 13.1650
Lamp flux(lm): 1029.7	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 900.06
Efficiency(%): 87.41%
Lumens(lm)/Power(W): 68.37
Central intensity(cd): 5583.759
Maximum intensity(cd): 5583.759
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=16.6
 [C90/270]Total=16.6
Field angle(10%Imax): [C0/180]Total=43.4
 [C90/270]Total=43.4
Maximum s/h(1/2): C0_180=0.28 C90_270=0.28
Maximum s/h(1/4): C0_180=0.31 C90_270=0.31
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.41%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.263%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5583.759	0.000	0	.000%	.000%
1.0	5533.417	5.319	5.319	.517%	.591%
2.0	5348.930	15.619	20.939	1.517%	2.326%
3.0	5067.942	24.914	45.852	2.419%	5.094%
4.0	4725.259	32.781	78.633	3.183%	8.736%
5.0	4281.893	38.748	117.382	3.763%	13.042%
6.0	3828.368	42.622	160.003	4.139%	17.777%
7.0	3352.735	44.573	204.576	4.329%	22.729%
8.0	2920.050	44.893	249.469	4.360%	27.717%
9.0	2501.256	43.937	293.406	4.267%	32.599%
10.0	2144.756	42.045	335.451	4.083%	37.270%
11.0	1824.054	39.657	375.107	3.851%	41.676%
12.0	1600.429	37.435	412.542	3.635%	45.835%
13.0	1394.073	35.537	448.079	3.451%	49.783%
14.0	1235.122	33.653	481.733	3.268%	53.522%
15.0	1108.902	32.180	513.912	3.125%	57.098%
16.0	991.271	30.773	544.686	2.989%	60.517%
17.0	901.193	29.471	574.157	2.862%	63.791%
18.0	811.990	28.247	602.403	2.743%	66.929%
19.0	737.276	26.954	629.357	2.618%	69.924%
20.0	664.915	25.664	655.021	2.492%	72.776%
21.0	598.941	24.269	679.29	2.357%	75.472%
22.0	541.638	22.920	702.21	2.226%	78.018%
23.0	485.761	21.558	723.768	2.094%	80.414%
24.0	428.316	19.985	743.753	1.941%	82.634%
25.0	380.350	18.387	762.14	1.786%	84.677%
26.0	331.195	16.796	778.936	1.631%	86.543%
27.0	290.459	15.209	794.145	1.477%	88.233%
28.0	239.542	13.418	807.564	1.303%	89.724%
29.0	200.717	11.518	819.082	1.119%	91.003%
30.0	164.858	9.870	828.953	.959%	92.100%
31.0	125.772	8.088	837.04	.785%	92.999%
32.0	100.026	6.469	843.509	.628%	93.717%
33.0	77.910	5.242	848.751	.509%	94.300%
34.0	59.036	4.144	852.896	.402%	94.760%
35.0	46.421	3.275	856.171	.318%	95.124%
36.0	37.906	2.685	858.856	.261%	95.422%
37.0	32.999	2.313	861.168	.225%	95.679%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	29.264	2.078	863.247	.202%	95.910%
39.0	25.709	1.876	865.123	.182%	96.119%
40.0	22.579	1.684	866.807	.164%	96.306%
41.0	20.129	1.521	868.328	.148%	96.475%
42.0	17.948	1.383	869.711	.134%	96.628%
43.0	15.999	1.257	870.969	.122%	96.768%
44.0	14.580	1.154	872.123	.112%	96.896%
45.0	13.243	1.069	873.192	.104%	97.015%
46.0	12.152	0.993	874.185	.096%	97.126%
47.0	11.271	0.932	875.117	.090%	97.229%
48.0	10.539	0.882	875.999	.086%	97.327%
49.0	9.859	0.838	876.836	.081%	97.420%
50.0	9.307	0.799	877.635	.078%	97.509%
51.0	8.806	0.766	878.402	.074%	97.594%
52.0	8.403	0.738	879.14	.072%	97.676%
53.0	8.022	0.714	879.855	.069%	97.755%
54.0	7.708	0.693	880.548	.067%	97.832%
55.0	7.447	0.676	881.224	.066%	97.908%
56.0	7.193	0.662	881.886	.064%	97.981%
57.0	6.999	0.649	882.535	.063%	98.053%
58.0	6.797	0.638	883.173	.062%	98.124%
59.0	6.640	0.628	883.801	.061%	98.194%
60.0	6.491	0.620	884.421	.060%	98.263%
61.0	6.371	0.614	885.035	.060%	98.331%
62.0	6.289	0.610	885.645	.059%	98.399%
63.0	6.184	0.607	886.252	.059%	98.466%
64.0	6.087	0.602	886.854	.058%	98.533%
65.0	5.998	0.598	887.452	.058%	98.600%
66.0	5.893	0.593	888.045	.058%	98.665%
67.0	5.826	0.589	888.634	.057%	98.731%
68.0	5.706	0.584	889.219	.057%	98.796%
69.0	5.602	0.577	889.796	.056%	98.860%
70.0	5.497	0.570	890.366	.055%	98.923%
71.0	5.378	0.562	890.928	.055%	98.986%
72.0	5.251	0.553	891.48	.054%	99.047%
73.0	5.124	0.543	892.023	.053%	99.107%
74.0	5.012	0.533	892.556	.052%	99.167%
75.0	4.922	0.525	893.081	.051%	99.225%

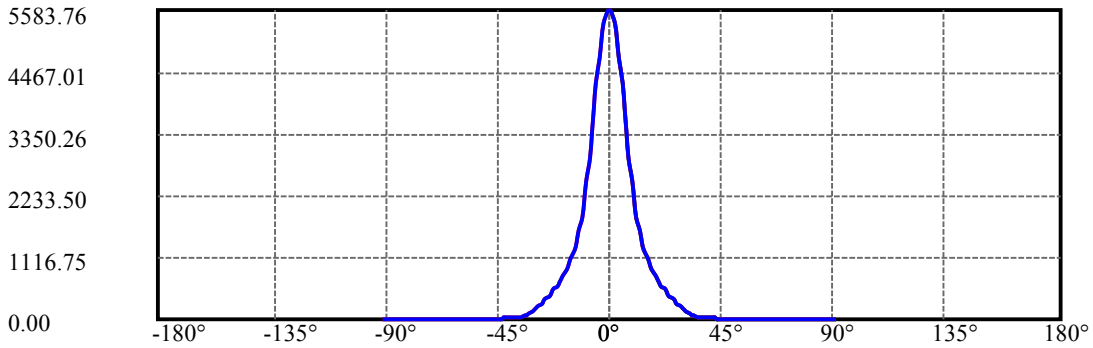
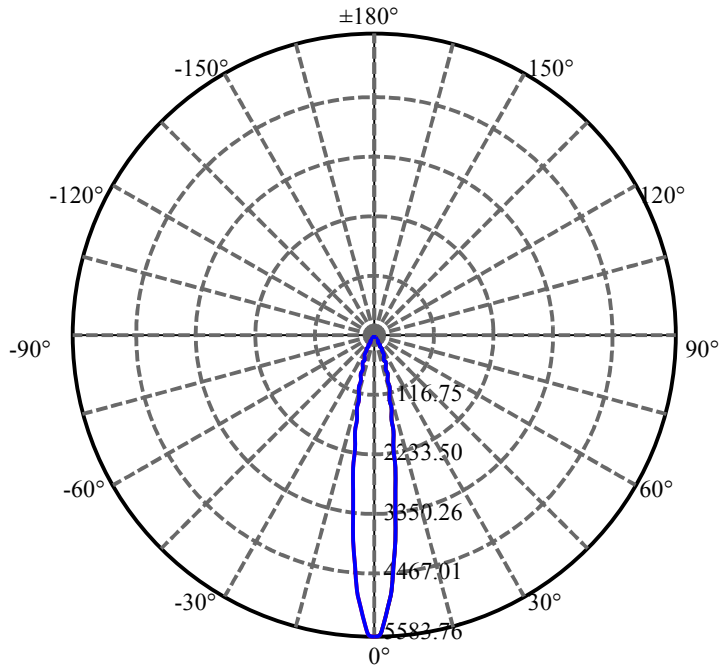
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.810	0.517	893.597	.050%	99.282%
77.0	4.720	0.508	894.105	.049%	99.339%
78.0	4.646	0.501	894.607	.049%	99.394%
79.0	4.571	0.495	895.102	.048%	99.449%
80.0	4.467	0.487	895.589	.047%	99.504%
81.0	4.392	0.479	896.068	.047%	99.557%
82.0	4.325	0.473	896.541	.046%	99.609%
83.0	4.272	0.467	897.008	.045%	99.661%
84.0	4.160	0.459	897.468	.045%	99.712%
85.0	4.086	0.450	897.918	.044%	99.762%
86.0	3.996	0.442	898.359	.043%	99.811%
87.0	3.914	0.433	898.792	.042%	99.859%
88.0	3.862	0.426	899.218	.041%	99.907%
89.0	3.824	0.421	899.639	.041%	99.954%
90.0	3.794	0.418	900.057	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	828.95	80.50%	92.10%
0-40	866.81	84.18%	96.31%
0-60	884.42	85.89%	98.26%
0-90	899.64	87.37%	99.95%
0-120	899.64	87.37%	99.95%
0-180	900.06	87.41%	100.00%
60-90	15.84	1.54%	1.76%
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%
0-22.83	720.05	69.93%	80.00%

ZONAL LUMEN SUMMARY

0-10	335.45
10-20	319.57
20-30	173.93
30-40	37.85
40-50	10.83
50-60	6.79
60-70	5.94
70-80	5.22
80-90	4.05
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



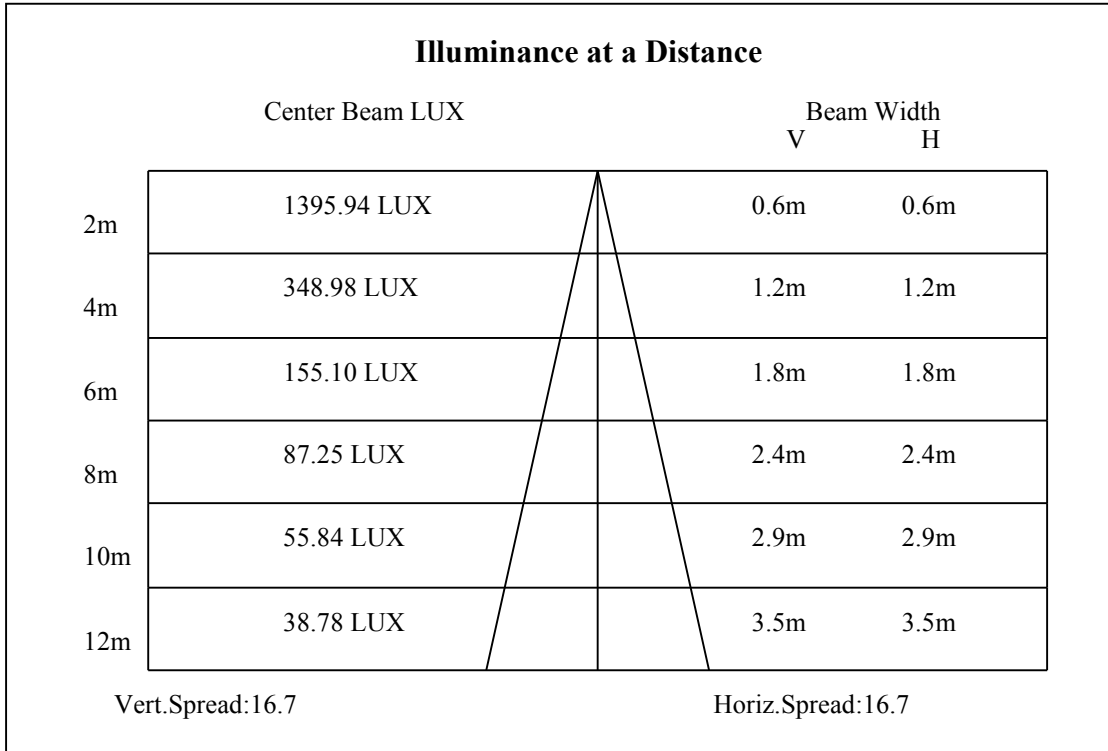
C0(Max): —————

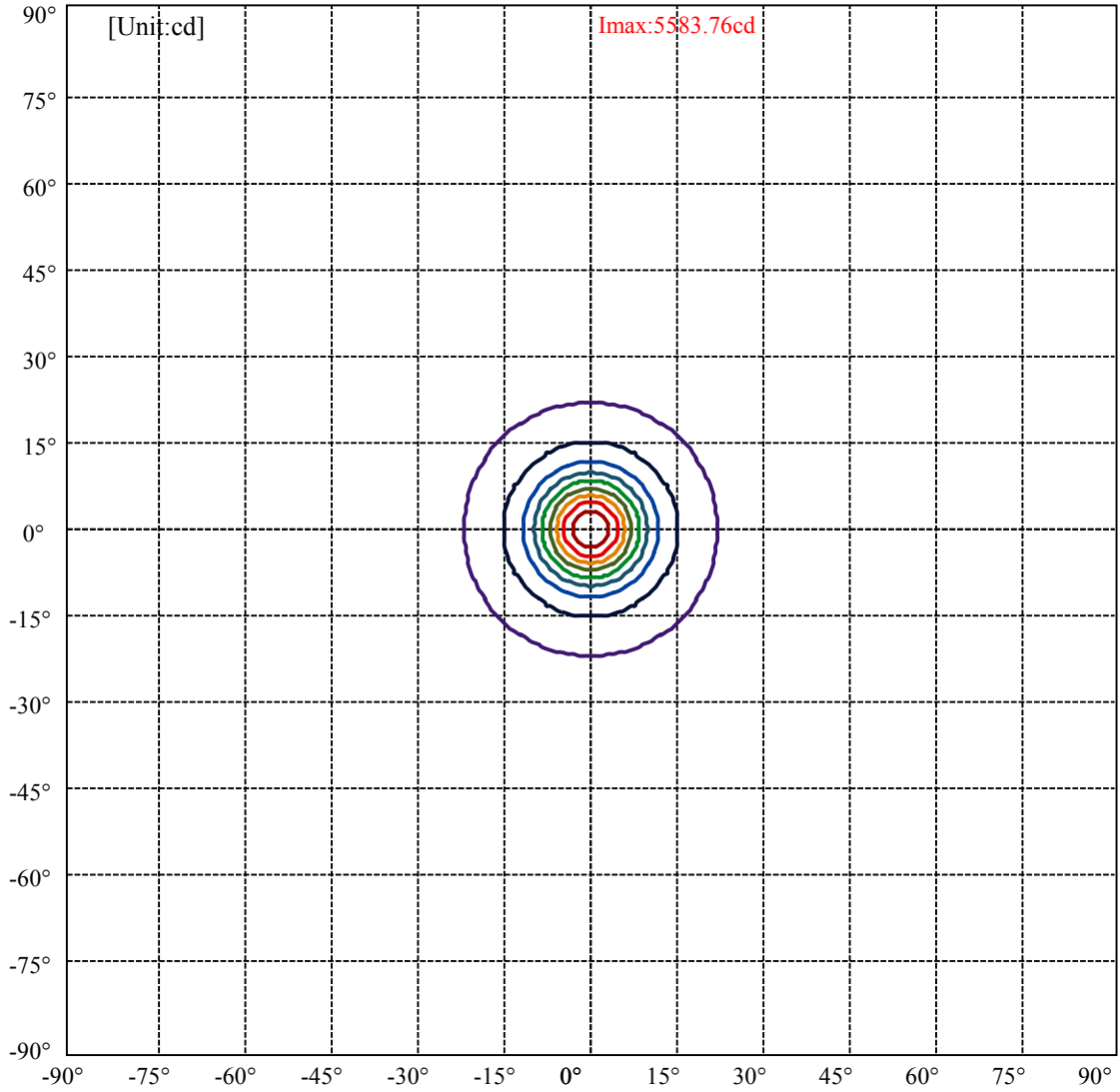
C0/C180: —————

C90/C270: —————

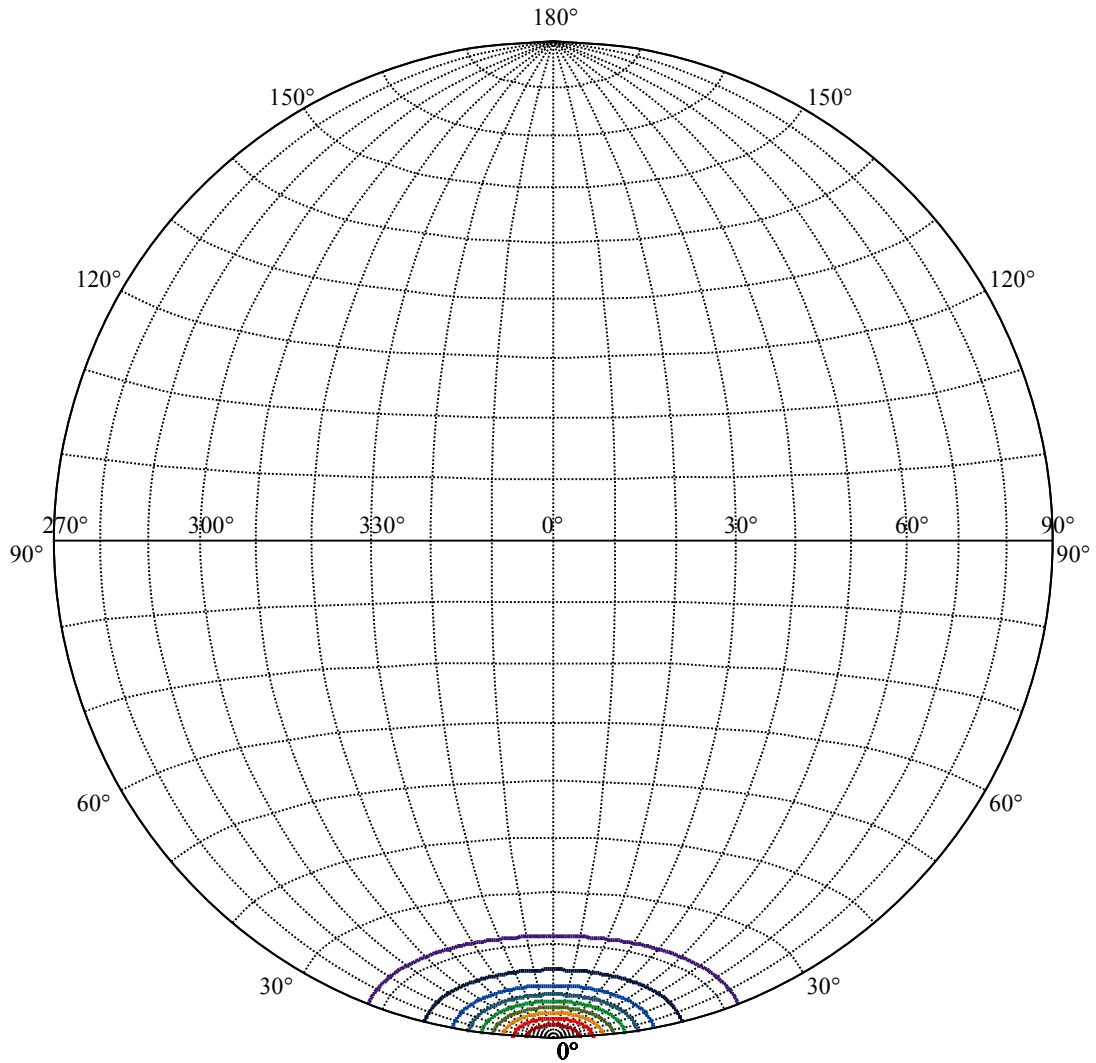
Field angle(10%Imax):C0/180Left:21.7 Right:21.7
:C90/270Left:21.7 Right:21.7

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





(10%Imax) 558.376	—
(20%Imax) 1116.75	—
(30%Imax) 1675.13	—
(40%Imax) 2233.5	—
(50%Imax) 2791.88	—
(60%Imax) 3350.26	—
(70%Imax) 3908.63	—
(80%Imax) 4467.01	—
(90%Imax) 5025.38	—



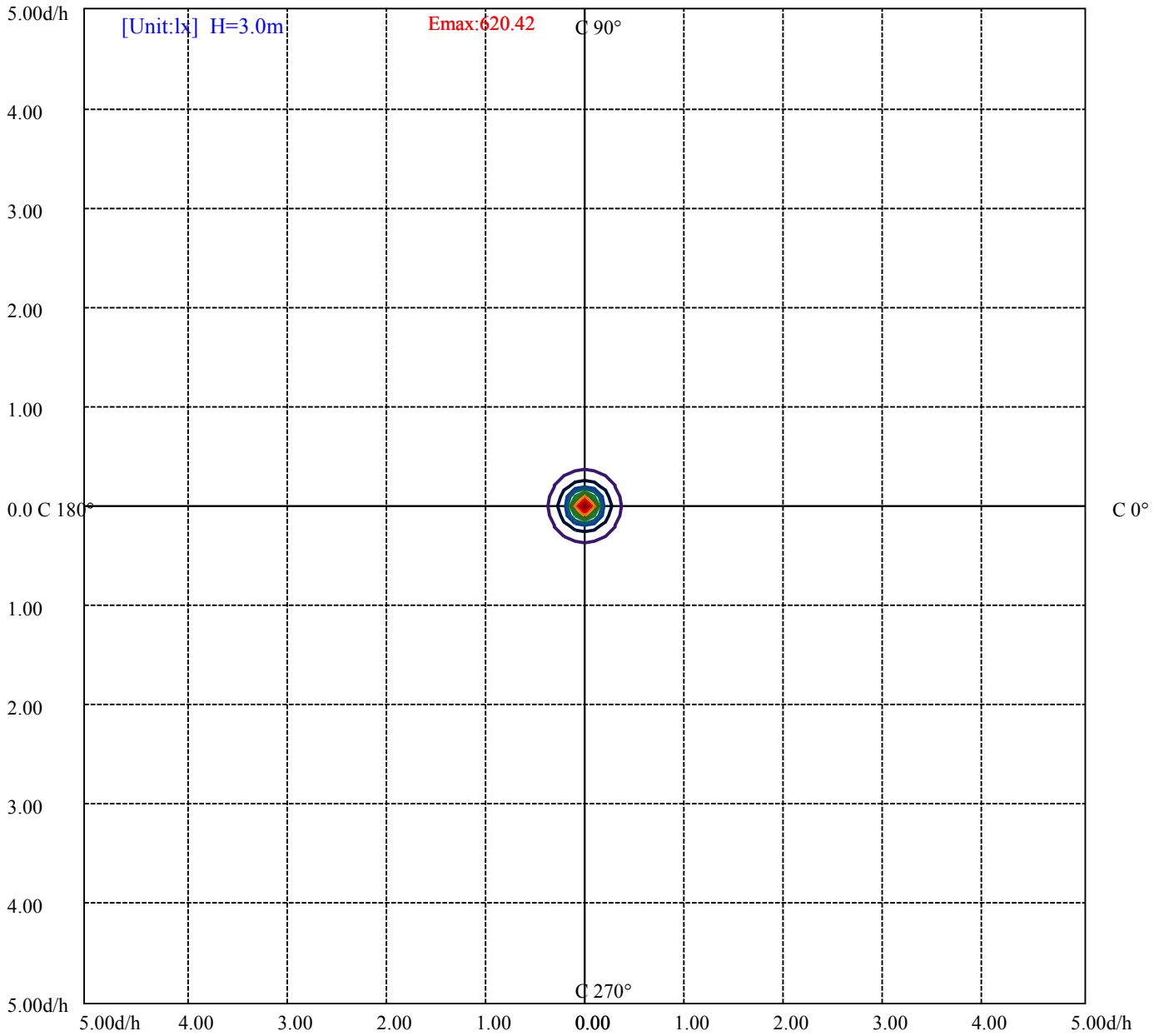
House

[Unit:cd]

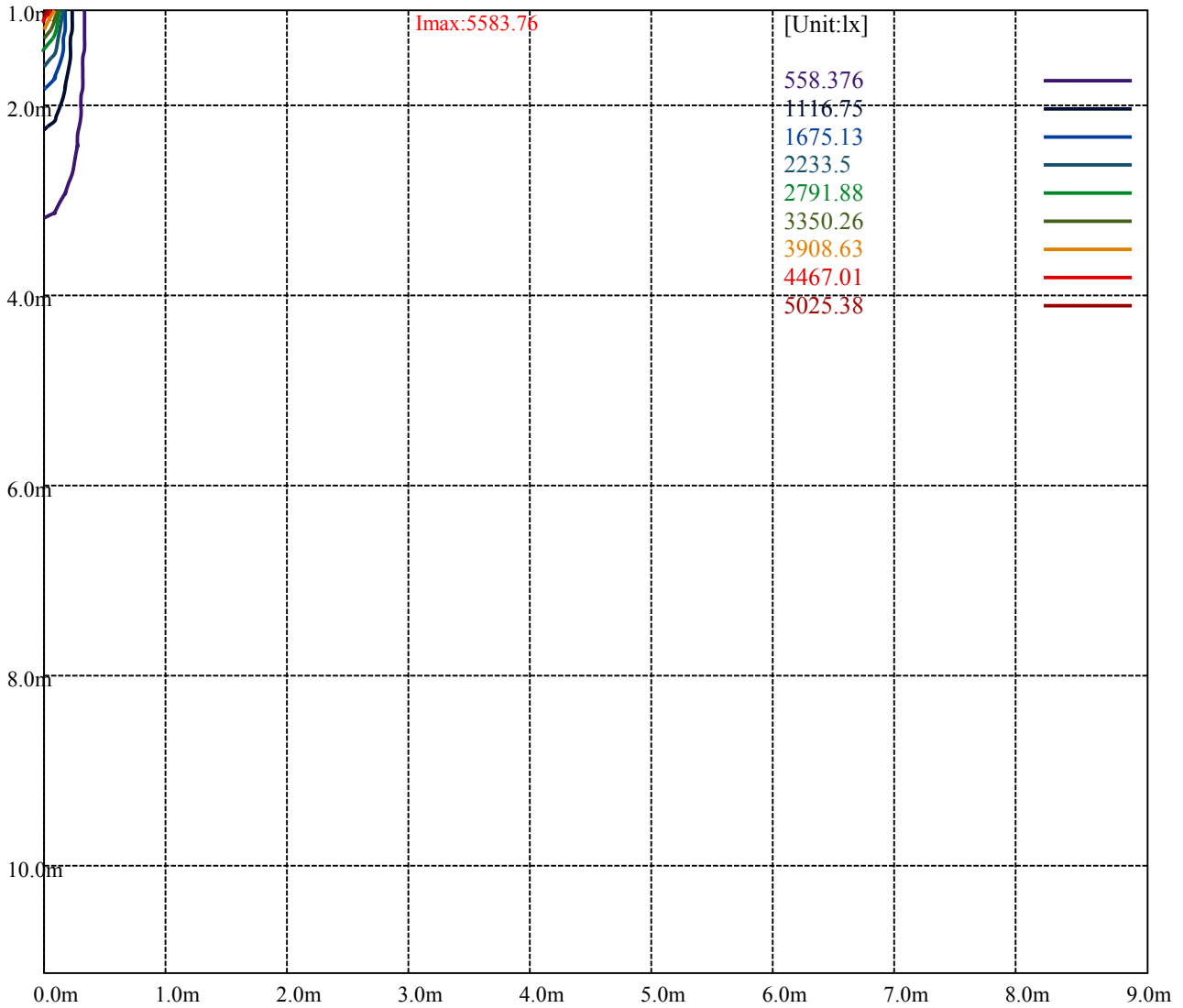
Road

Imax:5583.76

(10%Imax)	558.376	—
(20%Imax)	1116.75	—
(30%Imax)	1675.13	—
(40%Imax)	2233.5	—
(50%Imax)	2791.88	—
(60%Imax)	3350.26	—
(70%Imax)	3908.63	—
(80%Imax)	4467.01	—
(90%Imax)	5025.38	—



(10%Emax) 62.04167	—
(20%Emax) 124.0833	—
(30%Emax) 186.1255	—
(40%Emax) 248.1667	—
(50%Emax) 310.2089	—
(60%Emax) 372.25	—
(70%Emax) 434.2922	—
(80%Emax) 496.3333	—
(90%Emax) 558.3755	—



Luminance Table

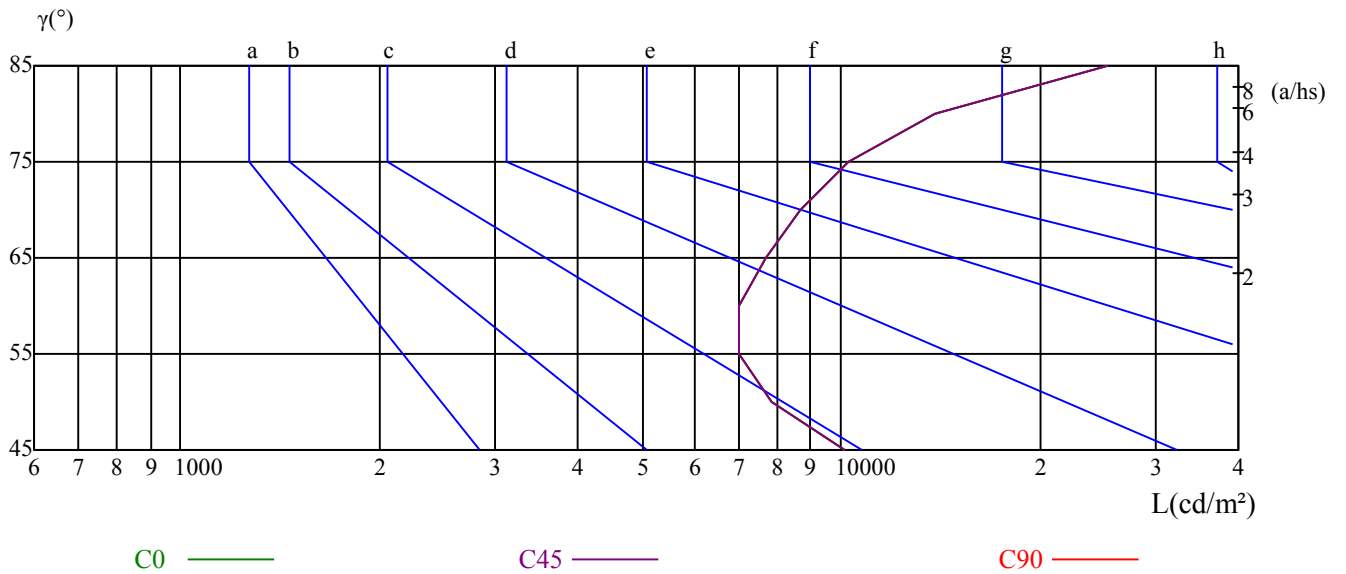
γ	45	50	55	60	65	70	75	80	85
C0	10129	7830	7022	7021	7675	8693	10285	13911	25353
C45	10129	7830	7022	7021	7675	8693	10285	13911	25353
C90	10129	7830	7022	7021	7675	8693	10285	13911	25353

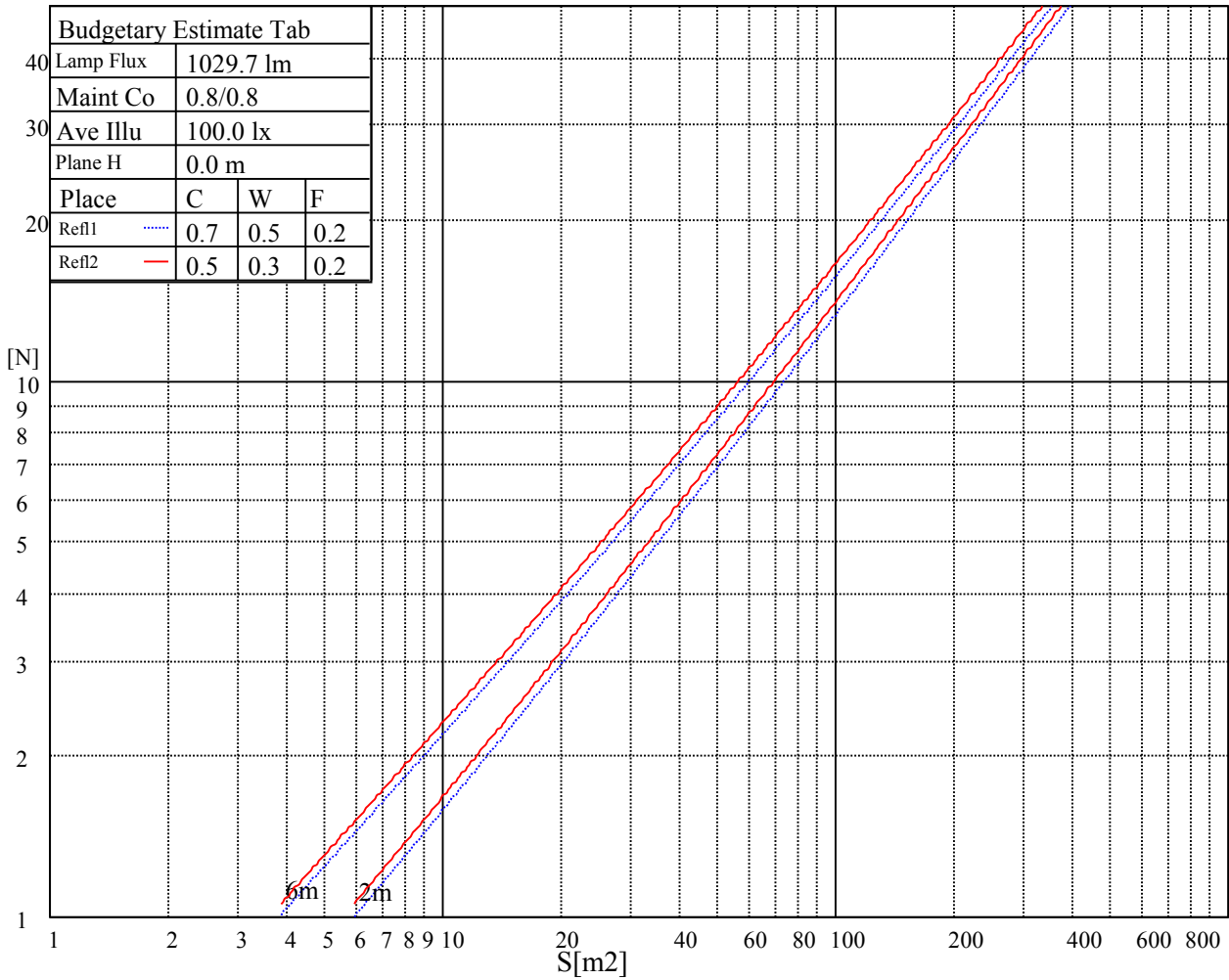
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7675	7675	7675	10285	10285	10285	25353	25353	25353

Glare Table

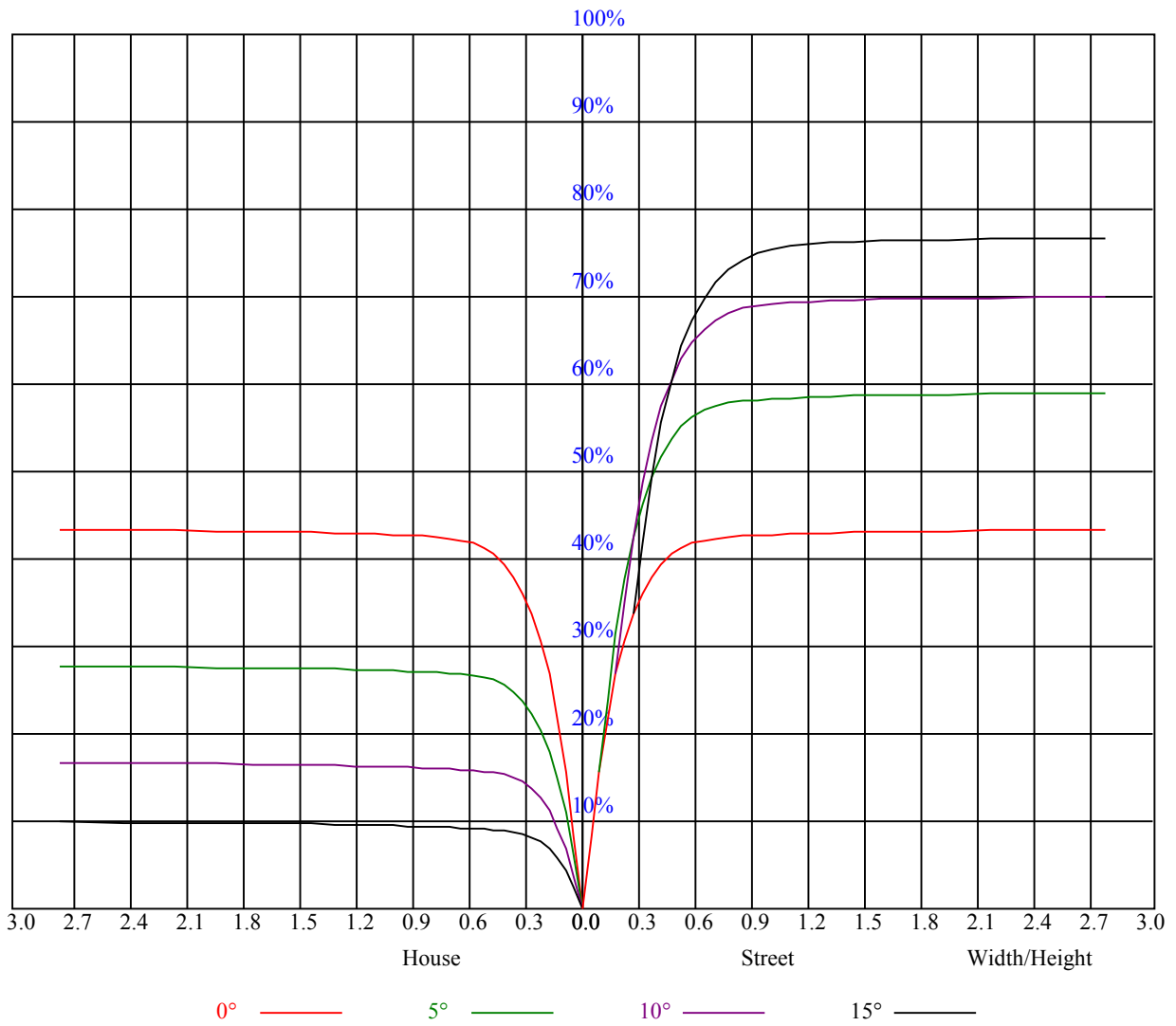
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.98	0.96	0.95	0.96	0.95	0.93	0.93	0.91	0.90	0.90	0.89	0.88	0.87	0.86	0.85	0.84
2	0.93	0.90	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.84	0.83	0.82	0.80
3	0.89	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.77
4	0.85	0.82	0.79	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.77	0.79	0.77	0.76	0.75
5	0.82	0.78	0.75	0.81	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.77	0.75	0.73	0.72
6	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.75	0.73	0.71	0.70
7	0.76	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	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.66
9	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.64
10	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.68	0.65	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	5452.45	5733.89	5926.89	5978.88	5896.42	5693.85	5281.56	4837.00	4324.32
45.0	5776.91	5693.26	5472.17	5122.62	4712.11	4170.15	3591.75	3095.20	2653.03
90.0	5518.78	5200.89	4678.05	4190.47	3682.57	3063.53	2670.36	2243.12	1869.67
135.0	5586.90	5215.83	4697.77	4112.79	3588.16	3027.08	2528.74	2166.04	1879.23
180.0	5452.45	5070.03	4541.82	3963.41	3443.56	2890.85	2411.63	2029.81	1765.10
225.0	5776.91	5735.08	5578.53	5273.19	4842.97	4370.92	3865.42	3240.40	2774.92
270.0	5518.78	5737.47	5862.95	5834.27	5687.88	5329.96	4924.83	4443.23	3863.62
315.0	5586.90	5880.88	6033.25	6067.91	5948.40	5708.79	5352.66	4767.09	4230.51
360.0	5452.45	5733.89	5926.89	5978.88	5896.42	5693.85	5281.56	4837.00	4324.32
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3664.65	3153.16	2684.10	2244.32	1898.35	1661.13	1451.40	1300.22	1158.01
45.0	2187.55	1887.59	1655.75	1450.20	1286.48	1165.18	1047.47	946.49	867.01
90.0	1667.11	1462.15	1187.77	1173.37	1066.53	962.44	872.69	800.51	730.78
135.0	1603.17	1430.48	1288.27	1153.83	1038.51	949.47	872.39	785.75	718.23
180.0	1557.16	1374.32	1178.63	1109.97	998.83	904.66	829.79	760.06	674.91
225.0	2367.41	1962.88	1711.32	1509.96	1330.10	1179.94	1071.55	965.85	884.04
270.0	3281.63	2800.02	2331.56	1996.34	1707.14	1485.46	1327.71	1183.70	1061.21
315.0	3681.38	3087.43	2555.03	2165.45	1826.65	1572.70	1398.22	1187.59	1115.35
360.0	3664.65	3153.16	2684.10	2244.32	1898.35	1661.13	1451.40	1300.22	1158.01
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1037.91	948.88	859.25	781.57	715.84	658.48	571.84	511.48	467.27
45.0	785.75	717.63	645.33	572.43	510.89	460.10	411.10	367.48	322.07
90.0	646.47	581.69	520.27	459.26	417.55	373.04	320.87	272.11	230.94
135.0	642.34	577.81	511.48	456.51	414.09	368.68	308.92	302.95	221.15
180.0	609.00	546.56	482.56	431.77	387.32	336.53	292.13	244.45	198.50
225.0	803.98	731.26	668.81	599.56	532.82	476.65	431.83	380.51	337.19
270.0	967.40	886.73	797.70	731.97	669.23	592.15	531.80	476.83	429.03
315.0	1003.07	907.65	833.91	758.44	685.37	620.47	558.03	486.99	443.43
360.0	1037.91	948.88	859.25	781.57	715.84	658.48	571.84	511.48	467.27
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	416.48	367.48	328.64	301.75	226.10	185.47	141.14	105.94	73.38
45.0	301.75	226.10	182.31	141.97	96.98	69.73	52.28	43.74	39.62
90.0	185.11	144.06	102.66	70.69	53.12	44.64	39.74	35.31	31.19
135.0	181.11	132.77	96.80	70.57	51.27	44.99	39.91	34.12	30.41
180.0	158.88	115.62	80.73	58.50	46.91	40.33	36.03	32.03	27.73
225.0	295.30	242.84	202.98	164.14	118.19	87.30	63.94	48.52	43.08
270.0	380.63	337.01	303.54	243.43	197.36	152.91	116.34	82.40	59.10
315.0	404.41	350.45	308.09	267.81	216.25	174.84	133.91	90.23	66.86
360.0	416.48	367.48	328.64	301.75	226.10	185.47	141.14	105.94	73.38
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	52.94	45.47	40.81	35.25	31.31	27.73	24.20	21.57	19.30
45.0	35.31	30.71	26.89	23.90	20.85	18.58	16.49	14.82	13.56
90.0	26.95	23.96	21.39	18.88	16.73	15.18	13.74	12.55	11.71
135.0	26.89	23.48	20.67	18.76	16.43	14.70	13.38	12.37	11.41
180.0	24.62	21.99	19.48	17.33	15.66	14.16	13.15	12.13	11.29
225.0	37.52	32.09	28.62	24.80	21.39	19.30	17.27	15.00	13.80
270.0	48.70	43.56	37.64	33.10	29.16	25.39	22.35	19.84	17.75
315.0	50.31	42.72	38.60	33.64	29.10	25.99	23.00	19.72	17.81
360.0	52.94	45.47	40.81	35.25	31.31	27.73	24.20	21.57	19.30

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	17.15	15.42	14.10	12.91	11.89	11.05	10.34	9.74	9.20
45.0	12.37	11.41	10.70	10.04	9.44	8.96	8.54	8.13	7.77
90.0	10.82	10.22	9.62	9.08	8.66	8.25	7.83	7.59	7.29
135.0	10.64	9.98	9.50	9.02	8.54	8.19	7.83	7.53	7.23
180.0	10.64	10.04	9.44	9.08	8.72	8.25	7.89	7.65	7.41
225.0	12.67	11.65	10.82	10.22	9.56	9.08	8.66	8.25	7.89
270.0	15.66	14.16	13.03	11.95	10.99	10.34	9.68	9.20	8.66
315.0	16.01	14.34	12.97	12.01	11.05	10.34	9.68	9.14	8.72
360.0	17.15	15.42	14.10	12.91	11.89	11.05	10.34	9.74	9.20
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.72	8.37	8.01	7.65	7.41	7.17	6.93	6.75	6.63
45.0	7.47	7.23	6.93	6.75	6.57	6.45	6.33	6.21	6.09
90.0	7.05	6.87	6.63	6.57	6.39	6.27	6.15	6.09	6.04
135.0	7.05	6.87	6.75	6.63	6.51	6.39	6.27	6.15	6.09
180.0	7.17	6.99	6.81	6.69	6.57	6.51	6.39	6.33	6.27
225.0	7.59	7.35	7.11	6.93	6.69	6.57	6.45	6.39	6.27
270.0	8.31	7.95	7.65	7.35	7.11	6.87	6.69	6.51	6.45
315.0	8.31	7.95	7.65	7.41	7.11	6.87	6.69	6.51	6.45
360.0	8.72	8.37	8.01	7.65	7.41	7.17	6.93	6.75	6.63
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.51	6.33	6.27	6.15	6.09	6.04	5.98	5.86	5.80
45.0	5.98	5.92	5.86	5.80	5.74	5.56	5.44	5.38	5.26
90.0	5.98	5.92	5.80	5.62	5.56	5.50	5.32	5.20	5.02
135.0	6.04	5.92	5.86	5.74	5.68	5.50	5.38	5.20	5.08
180.0	6.15	6.09	5.98	5.86	5.74	5.56	5.44	5.38	5.26
225.0	6.15	6.09	5.98	5.86	5.86	5.74	5.62	5.50	5.38
270.0	6.33	6.21	6.09	6.04	5.98	5.86	5.86	5.74	5.62
315.0	6.33	6.21	6.15	6.09	5.98	5.92	5.80	5.74	5.62
360.0	6.51	6.33	6.27	6.15	6.09	6.04	5.98	5.86	5.80
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	5.62	5.44	5.32	5.26	5.14	5.02	4.96	4.84	4.78
45.0	5.08	4.96	4.84	4.72	4.66	4.60	4.54	4.42	4.30
90.0	4.96	4.84	4.72	4.72	4.66	4.54	4.42	4.42	4.30
135.0	5.02	4.90	4.84	4.72	4.60	4.54	4.48	4.42	4.36
180.0	5.08	5.02	4.96	4.84	4.72	4.66	4.54	4.48	4.36
225.0	5.20	5.08	4.96	4.84	4.72	4.66	4.60	4.54	4.36
270.0	5.50	5.38	5.20	5.08	4.96	4.84	4.78	4.66	4.60
315.0	5.56	5.38	5.26	5.20	5.02	4.90	4.84	4.78	4.66
360.0	5.62	5.44	5.32	5.26	5.14	5.02	4.96	4.84	4.78
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.66	4.60	4.54	4.42	4.30	4.30	4.24	4.18	4.12
45.0	4.24	4.18	4.12	4.06	4.06	3.88	3.82	3.70	3.70
90.0	4.30	4.24	4.12	4.00	3.88	3.82	3.70	3.64	3.70
135.0	4.24	4.18	4.18	4.06	3.94	3.88	3.76	3.76	3.76
180.0	4.30	4.24	4.24	4.06	4.00	3.88	3.82	3.82	3.76
225.0	4.30	4.24	4.18	4.12	4.00	3.94	3.82	3.76	3.70
270.0	4.48	4.42	4.36	4.24	4.18	4.06	4.00	3.94	3.88
315.0	4.60	4.48	4.42	4.30	4.30	4.18	4.12	4.06	3.94
360.0	4.66	4.60	4.54	4.42	4.30	4.30	4.24	4.18	4.12

Intensity data(cd)

C/γ(°)	90.0
0.0	4.00
45.0	3.64
90.0	3.70
135.0	3.76
180.0	3.82
225.0	3.64
270.0	3.82
315.0	3.94
360.0	4.00