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Nata

LumCAT: 1-0927-M
Luminaire: 99.02.73.179+92.76.853.00
Report No: 220609-B003
Test No: 220609-C003
LampCAT: CREE CXA1516
Lamp flux(lm): 1492.4
Number of Lamps: 1
Length(mm): 43
Phm Type: C

Voltage(V): 35.2300
Current(A): 0.3610
Power (W): 12.7180
PF: 0.0000
Ballast type: DC
Width(mm): 43
Height(mm): 0

Photometric Results

Lumens(lm): 1092.94
Efficiency(%): 73.23%
Lumens(lm)/Power(W): 85.94
Central intensity(cd): 6289.889
Maximum intensity(cd): 6289.889
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=23.3
 [C90/270]Total=23.3
Field angle(10%Imax): [C0/180]Total=40.1
 [C90/270]Total=40.1
Maximum s/h(1/2): C0_180=0.39 C90_270=0.39
Maximum s/h(1/4): C0_180=0.39 C90_270=0.39
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 73.23%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.490%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6289.889	0.000	0	.000%	.000%
1.0	6261.208	6.005	6.005	.402%	.549%
2.0	6169.263	17.841	23.847	1.195%	2.182%
3.0	6006.735	29.121	52.968	1.951%	4.846%
4.0	5809.252	39.552	92.52	2.650%	8.465%
5.0	5532.894	48.793	141.313	3.269%	12.930%
6.0	5228.304	56.553	197.866	3.789%	18.104%
7.0	4900.709	62.871	260.737	4.213%	23.856%
8.0	4544.955	67.601	328.337	4.530%	30.042%
9.0	4158.578	70.537	398.875	4.726%	36.496%
10.0	3776.234	71.807	470.682	4.812%	43.066%
11.0	3385.002	71.555	542.237	4.795%	49.613%
12.0	3004.899	69.851	612.088	4.680%	56.004%
13.0	2632.115	66.897	678.985	4.483%	62.125%
14.0	2243.273	62.405	741.39	4.182%	67.834%
15.0	1921.205	57.172	798.562	3.831%	73.065%
16.0	1583.467	51.353	849.915	3.441%	77.764%
17.0	1313.212	45.109	895.024	3.023%	81.891%
18.0	1078.256	39.430	934.454	2.642%	85.499%
19.0	864.789	33.805	968.259	2.265%	88.592%
20.0	640.066	27.543	995.802	1.846%	91.112%
21.0	456.833	21.063	1016.865	1.411%	93.039%
22.0	331.883	15.850	1032.714	1.062%	94.489%
23.0	192.053	10.994	1043.708	.737%	95.495%
24.0	113.755	6.686	1050.394	.448%	96.107%
25.0	52.172	3.773	1054.167	.253%	96.452%
26.0	29.062	1.918	1056.084	.128%	96.628%
27.0	20.831	1.221	1057.305	.082%	96.739%
28.0	17.358	0.967	1058.272	.065%	96.828%
29.0	15.409	0.857	1059.129	.057%	96.906%
30.0	14.057	0.796	1059.925	.053%	96.979%
31.0	12.951	0.752	1060.676	.050%	97.048%
32.0	11.951	0.713	1061.39	.048%	97.113%
33.0	11.144	0.680	1062.07	.046%	97.175%
34.0	10.442	0.653	1062.723	.044%	97.235%
35.0	9.799	0.629	1063.352	.042%	97.293%
36.0	9.239	0.606	1063.958	.041%	97.348%
37.0	8.814	0.589	1064.547	.039%	97.402%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	8.365	0.573	1065.12	.038%	97.455%
39.0	8.007	0.559	1065.679	.037%	97.506%
40.0	7.701	0.548	1066.227	.037%	97.556%
41.0	7.424	0.539	1066.766	.036%	97.605%
42.0	7.170	0.530	1067.296	.036%	97.654%
43.0	6.961	0.523	1067.819	.035%	97.701%
44.0	6.782	0.519	1068.338	.035%	97.749%
45.0	6.618	0.515	1068.853	.035%	97.796%
46.0	6.461	0.511	1069.365	.034%	97.843%
47.0	6.326	0.509	1069.873	.034%	97.889%
48.0	6.207	0.507	1070.38	.034%	97.936%
49.0	6.095	0.505	1070.885	.034%	97.982%
50.0	5.990	0.504	1071.389	.034%	98.028%
51.0	5.901	0.503	1071.892	.034%	98.074%
52.0	5.826	0.503	1072.395	.034%	98.120%
53.0	5.751	0.504	1072.899	.034%	98.166%
54.0	5.684	0.504	1073.403	.034%	98.212%
55.0	5.609	0.504	1073.907	.034%	98.258%
56.0	5.542	0.504	1074.411	.034%	98.305%
57.0	5.482	0.504	1074.915	.034%	98.351%
58.0	5.430	0.505	1075.419	.034%	98.397%
59.0	5.408	0.507	1075.926	.034%	98.443%
60.0	5.355	0.508	1076.435	.034%	98.490%
61.0	5.325	0.510	1076.944	.034%	98.536%
62.0	5.281	0.511	1077.455	.034%	98.583%
63.0	5.243	0.512	1077.967	.034%	98.630%
64.0	5.221	0.513	1078.481	.034%	98.677%
65.0	5.191	0.515	1078.996	.035%	98.724%
66.0	5.154	0.516	1079.512	.035%	98.771%
67.0	5.161	0.519	1080.031	.035%	98.819%
68.0	5.124	0.521	1080.552	.035%	98.866%
69.0	5.109	0.522	1081.074	.035%	98.914%
70.0	5.124	0.526	1081.599	.035%	98.962%
71.0	5.131	0.530	1082.129	.036%	99.011%
72.0	5.184	0.536	1082.666	.036%	99.060%
73.0	5.251	0.546	1083.211	.037%	99.110%
74.0	5.363	0.558	1083.769	.037%	99.161%
75.0	5.542	0.576	1084.345	.039%	99.214%

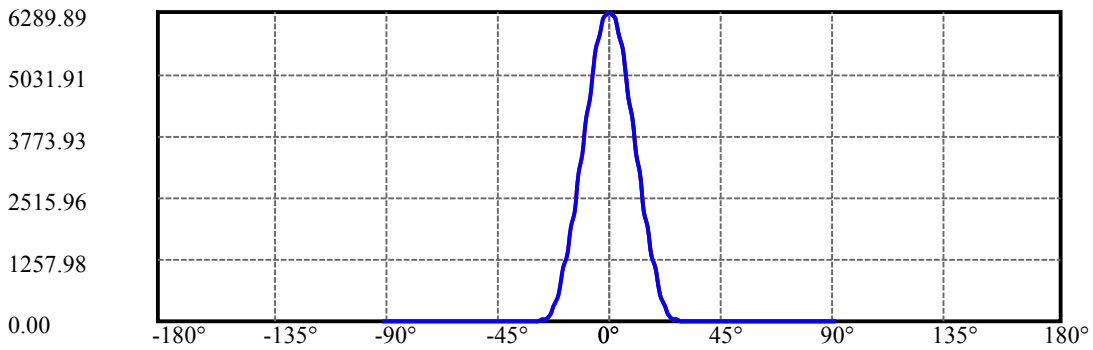
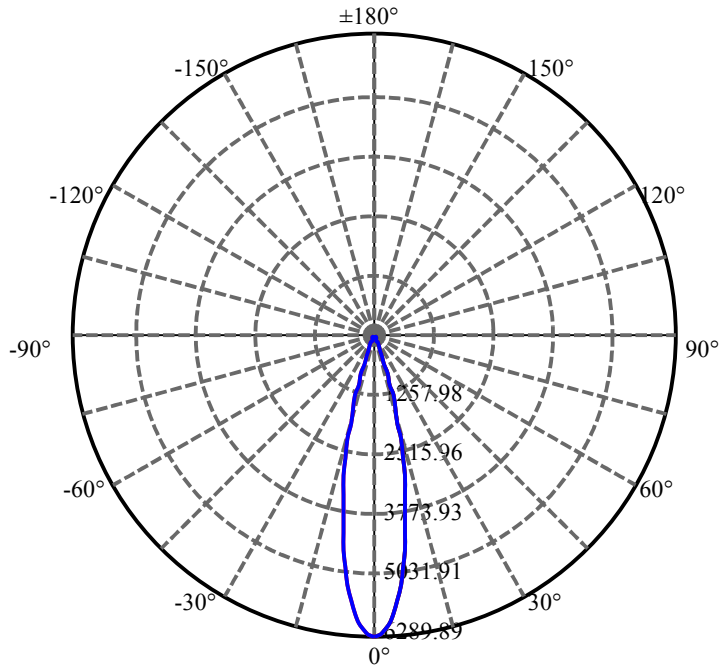
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.736	0.599	1084.944	.040%	99.268%
77.0	5.781	0.614	1085.558	.041%	99.324%
78.0	5.617	0.610	1086.168	.041%	99.380%
79.0	5.587	0.602	1086.77	.040%	99.435%
80.0	5.520	0.599	1087.369	.040%	99.490%
81.0	5.497	0.596	1087.965	.040%	99.545%
82.0	5.482	0.595	1088.56	.040%	99.599%
83.0	5.460	0.595	1089.155	.040%	99.654%
84.0	5.460	0.595	1089.75	.040%	99.708%
85.0	5.385	0.592	1090.342	.040%	99.762%
86.0	4.892	0.562	1090.904	.038%	99.814%
87.0	4.646	0.522	1091.426	.035%	99.861%
88.0	4.601	0.507	1091.932	.034%	99.908%
89.0	4.608	0.505	1092.437	.034%	99.954%
90.0	4.586	0.504	1092.941	.034%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1059.92	71.02%	96.98%
0-40	1066.23	71.44%	97.56%
0-60	1076.43	72.13%	98.49%
0-90	1092.44	73.20%	99.95%
0-120	1092.44	73.20%	99.95%
0-180	1092.94	73.23%	100.00%
60-90	16.51	1.11%	1.51%
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%
0-16.54	874.35	58.59%	80.00%

ZONAL LUMEN SUMMARY

0-10	470.68
10-20	525.12
20-30	64.12
30-40	6.30
40-50	5.16
50-60	5.05
60-70	5.16
70-80	5.77
80-90	5.07
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



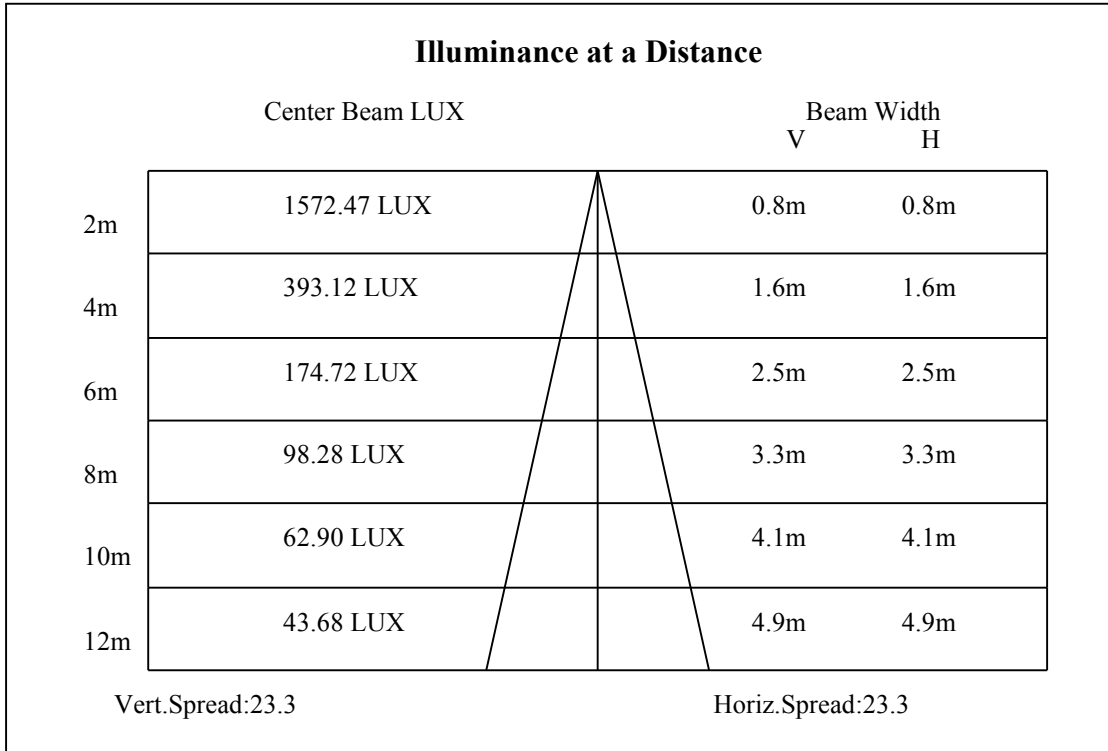
C0(Max): —————

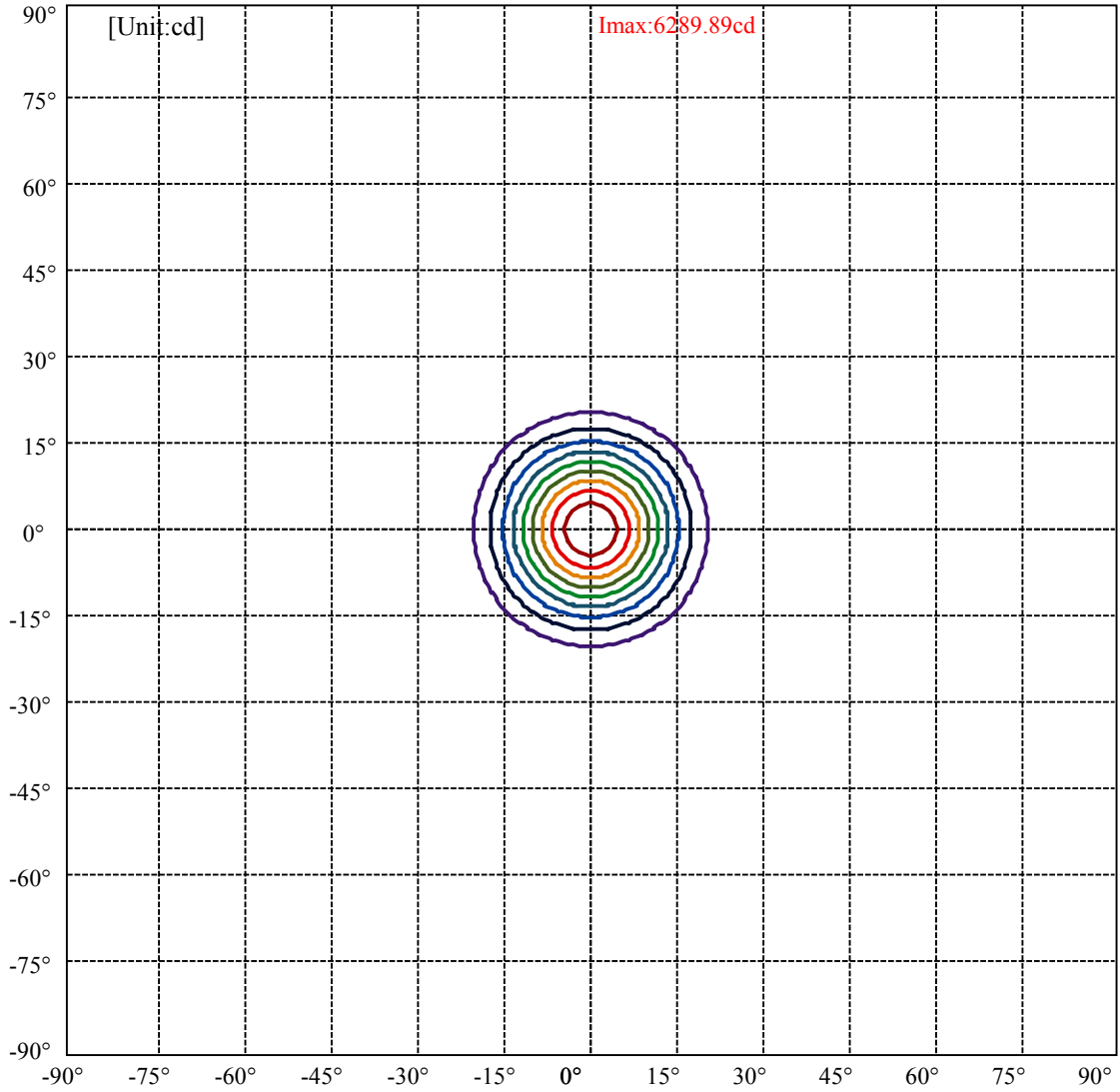
C0/C180: —————

C90/C270: —————

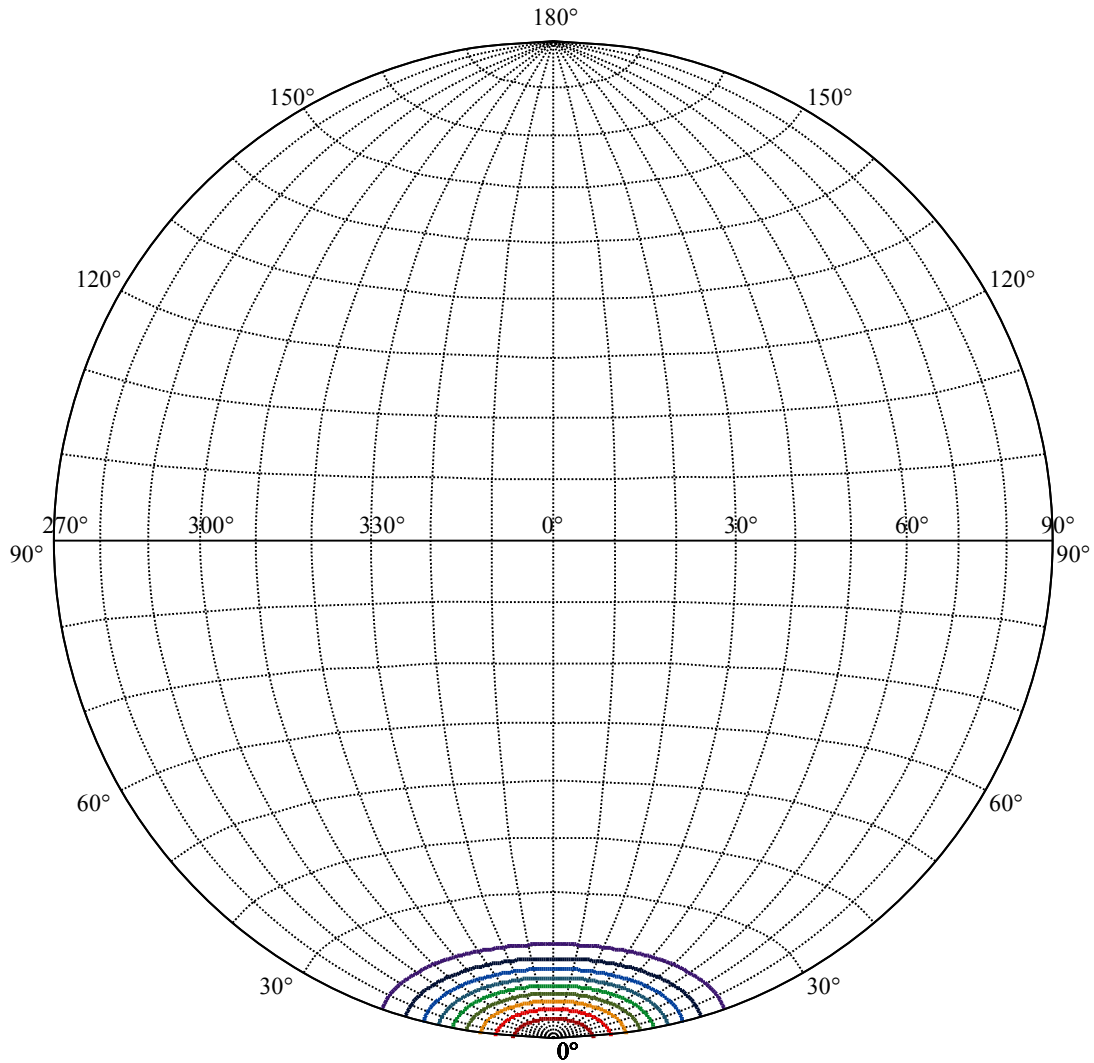
Field angle(10%Imax):C0/180Left:20.1 Right:20.1
:C90/270Left:20.1 Right:20.1

Beam Angle(50%Imax):C0/180Left:11.6 Right:11.6
:C90/270Left:11.6 Right:11.6





(10%Imax) 628.989	—
(20%Imax) 1257.98	—
(30%Imax) 1886.97	—
(40%Imax) 2515.96	—
(50%Imax) 3144.94	—
(60%Imax) 3773.93	—
(70%Imax) 4402.92	—
(80%Imax) 5031.91	—
(90%Imax) 5660.9	—



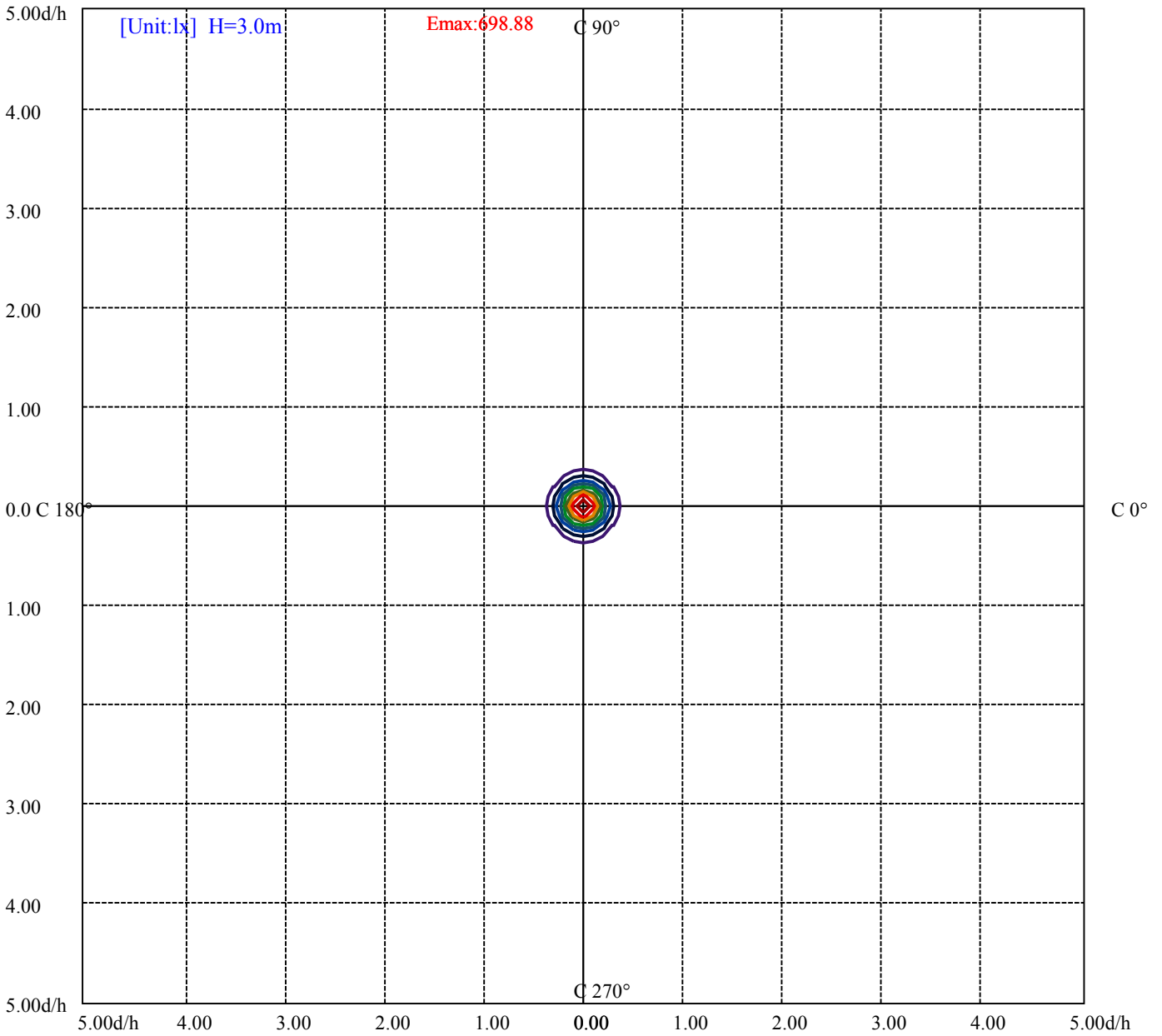
House

[Unit:cd]

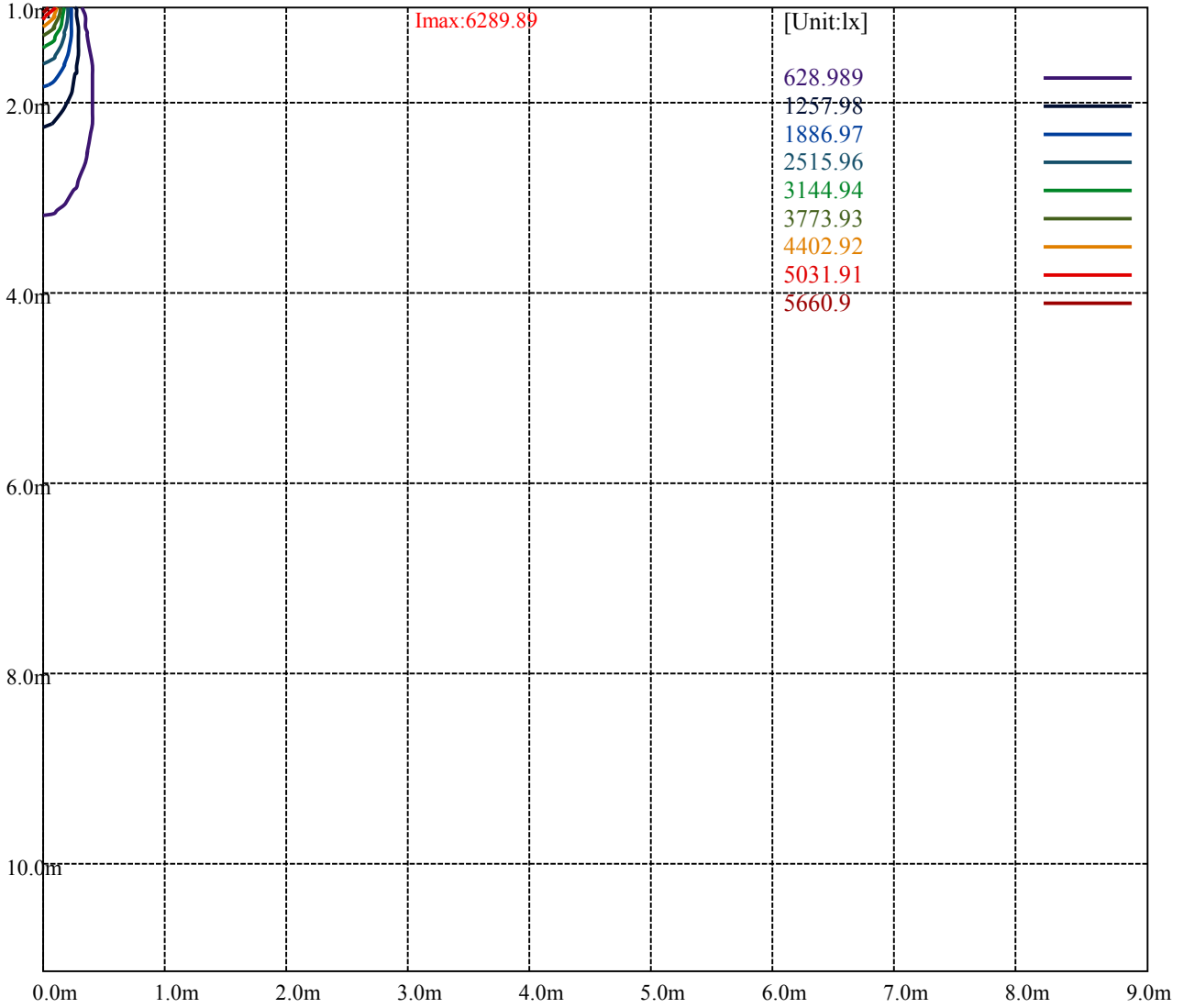
Road

Imax:6289.89

(10%Imax) 628.989	—
(20%Imax) 1257.98	—
(30%Imax) 1886.97	—
(40%Imax) 2515.96	—
(50%Imax) 3144.94	—
(60%Imax) 3773.93	—
(70%Imax) 4402.92	—
(80%Imax) 5031.91	—
(90%Imax) 5660.9	—



(10%Emax) 69.88755	—
(20%Emax) 139.7756	—
(30%Emax) 209.6633	—
(40%Emax) 279.55	—
(50%Emax) 349.4378	—
(60%Emax) 419.3256	—
(70%Emax) 489.2133	—
(80%Emax) 559.1011	—
(90%Emax) 628.9889	—



Luminance Table

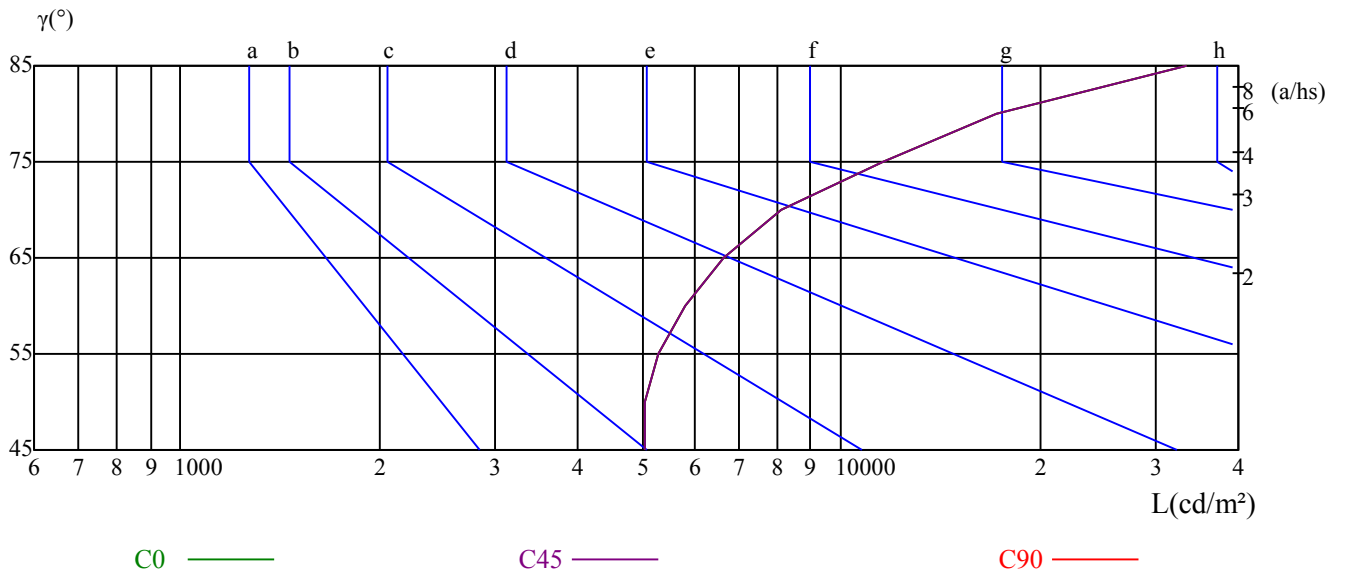
γ	45	50	55	60	65	70	75	80	85
C0	5062	5040	5289	5793	6643	8102	11581	17191	33417
C45	5062	5040	5289	5793	6643	8102	11581	17191	33417
C90	5062	5040	5289	5793	6643	8102	11581	17191	33417

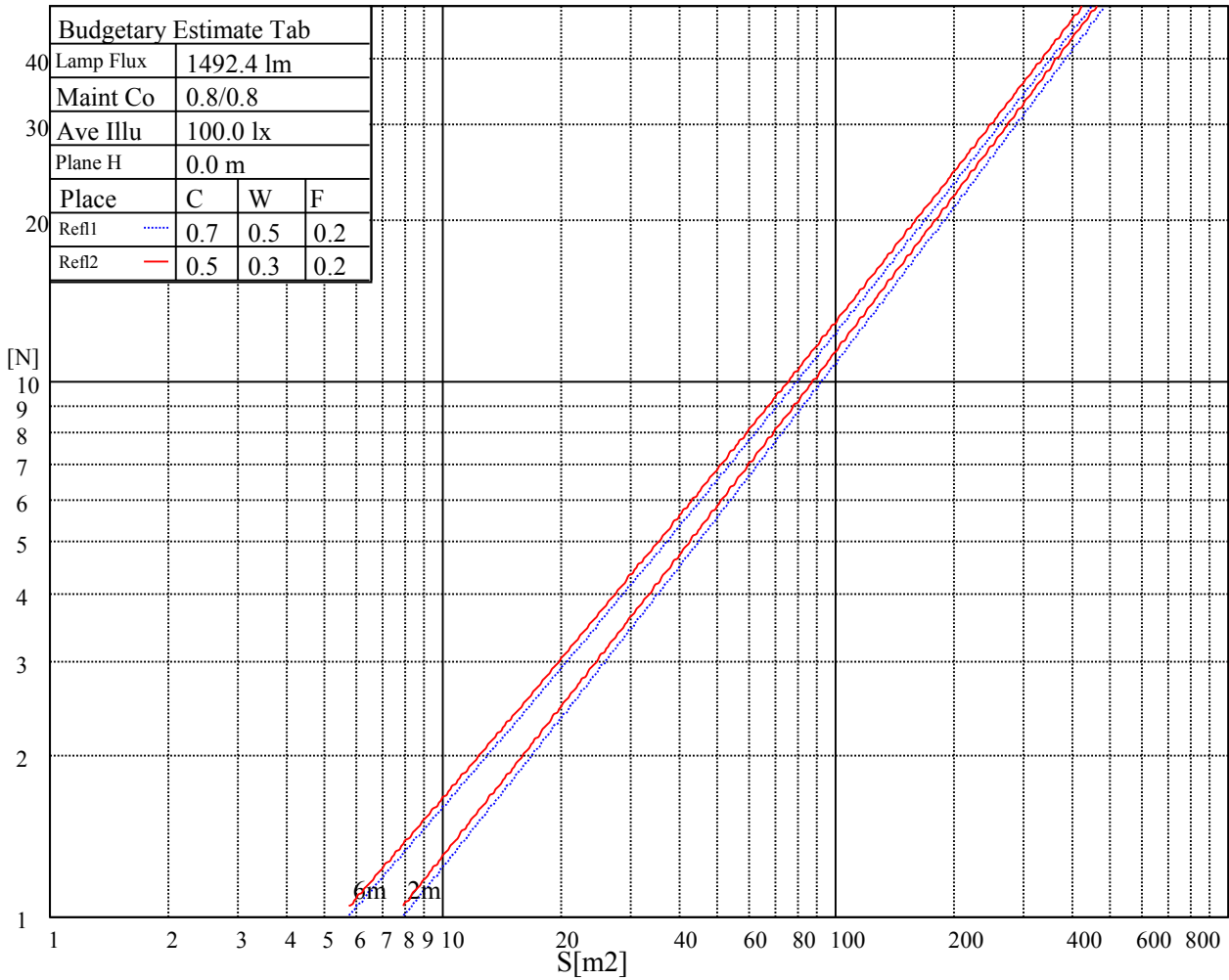
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6643	6643	6643	11581	11581	11581	33417	33417	33417

Glare Table

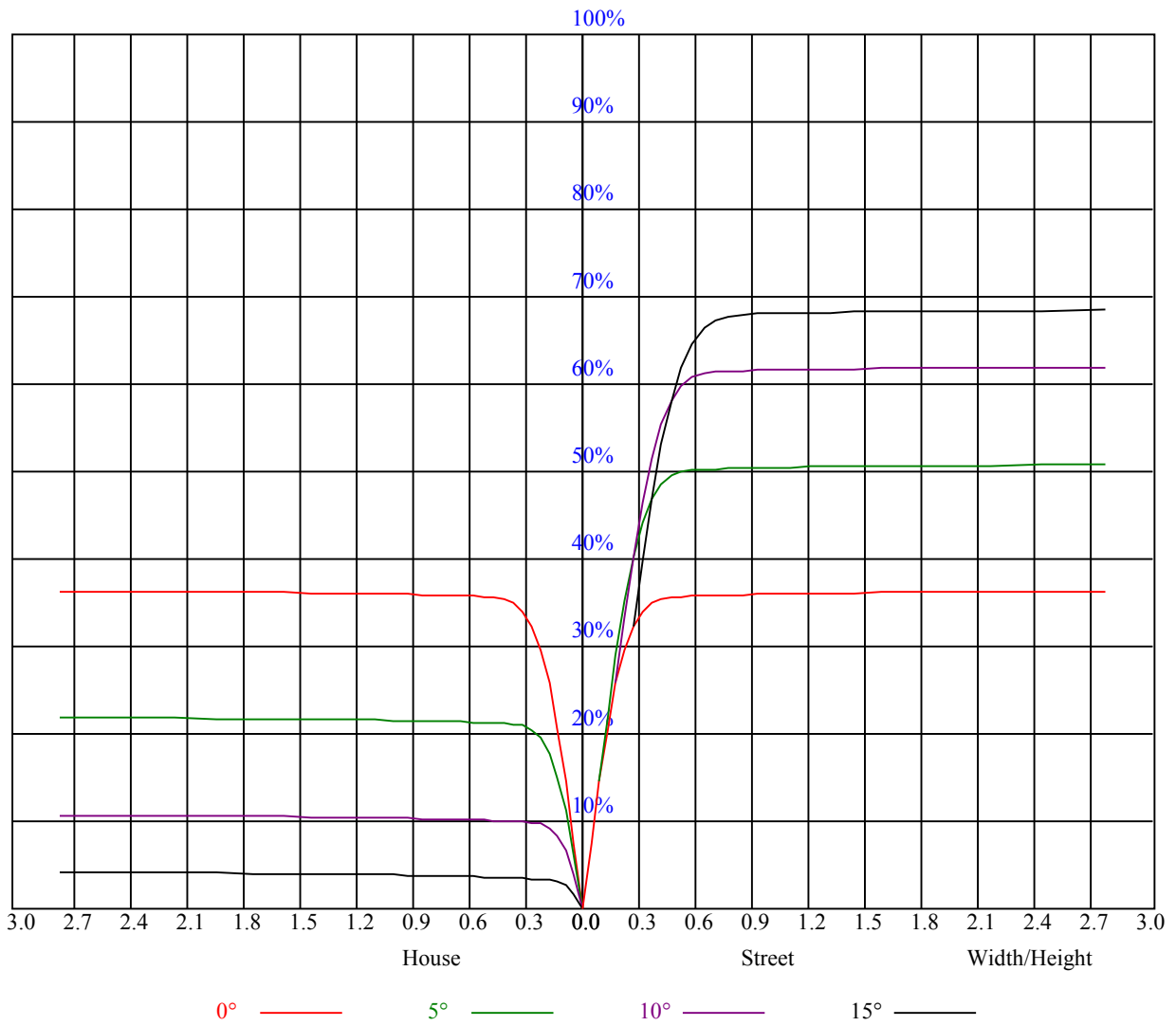
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.87	0.87	0.87	0.85	0.85	0.85	0.81	0.81	0.81	0.78	0.78	0.78	0.75	0.75	0.75	0.73
1	0.83	0.81	0.80	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74	0.73	0.73	0.72	0.71
2	0.79	0.77	0.75	0.78	0.76	0.74	0.76	0.74	0.73	0.74	0.72	0.71	0.72	0.71	0.70	0.69
3	0.76	0.74	0.72	0.75	0.73	0.71	0.73	0.72	0.70	0.72	0.70	0.69	0.70	0.69	0.68	0.67
4	0.74	0.71	0.69	0.73	0.70	0.68	0.71	0.69	0.68	0.70	0.68	0.67	0.69	0.67	0.66	0.65
5	0.71	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.66	0.68	0.67	0.65	0.67	0.66	0.65	0.64
6	0.69	0.67	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.64	0.66	0.64	0.63	0.62
7	0.67	0.65	0.63	0.67	0.64	0.63	0.66	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.62	0.61
8	0.66	0.63	0.61	0.65	0.63	0.61	0.65	0.63	0.61	0.64	0.62	0.61	0.64	0.62	0.60	0.60
9	0.64	0.62	0.60	0.64	0.61	0.60	0.63	0.61	0.60	0.63	0.61	0.59	0.62	0.61	0.59	0.59
10	0.63	0.60	0.59	0.63	0.60	0.58	0.62	0.60	0.58	0.62	0.60	0.58	0.61	0.59	0.58	0.57



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	6272.26	6307.52	6284.21	6200.56	6081.05	5815.75	5571.36	5332.35	4952.32
45.0	6299.75	6244.78	6158.73	5935.26	5719.55	5497.86	5094.53	4772.46	4483.26
90.0	6280.03	6197.57	6047.59	5829.49	5596.46	5283.35	4970.84	4597.39	4204.81
135.0	6307.52	6253.14	6112.72	5935.26	5719.55	5401.06	5089.75	4767.09	4382.28
180.0	6272.26	6179.05	6014.73	5780.50	5524.16	5192.53	4869.26	4482.07	4078.73
225.0	6299.75	6300.94	6230.43	6101.37	5896.42	5664.57	5353.86	5006.10	4681.64
270.0	6280.03	6308.11	6275.25	6172.47	6018.31	5748.83	5485.91	5192.53	4878.23
315.0	6307.52	6298.55	6230.43	6098.98	5918.52	5659.20	5390.91	5055.69	4698.37
360.0	6272.26	6307.52	6284.21	6200.56	6081.05	5815.75	5571.36	5332.35	4952.32
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4585.44	4289.06	3845.10	3483.00	3117.31	2672.15	2329.17	2011.28	1650.97
45.0	4045.87	3636.56	3315.09	2864.55	2510.82	2180.98	1812.31	1544.61	1290.66
90.0	3834.94	3421.45	3013.94	2653.63	2311.84	1924.04	1641.41	1163.99	1106.21
135.0	3977.75	3606.09	3190.80	2822.13	2418.80	2047.73	1754.35	1453.79	1174.74
180.0	3711.85	3300.15	2896.22	2542.49	2204.28	1861.30	1553.58	1177.85	1065.16
225.0	4291.45	3883.34	3514.67	3145.99	2739.07	2347.09	2024.43	1699.97	1314.56
270.0	4464.14	4119.96	3757.86	3349.75	2939.84	2537.71	2196.52	1852.34	1571.50
315.0	4357.18	3953.25	3546.33	3177.66	2814.96	2375.18	2057.89	1763.91	1331.89
360.0	4585.44	4289.06	3845.10	3483.00	3117.31	2672.15	2329.17	2011.28	1650.97
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1388.66	1156.22	885.54	684.77	507.90	320.87	304.14	108.51	46.31
45.0	1008.63	799.49	610.08	400.34	305.93	148.67	69.13	30.35	22.17
90.0	855.36	654.23	455.97	296.25	183.50	88.73	40.69	25.45	19.12
135.0	944.69	737.95	512.08	354.33	316.69	103.73	50.13	29.70	22.23
180.0	795.91	605.95	438.53	269.66	164.44	87.18	38.78	25.99	19.84
225.0	1164.82	946.55	697.26	522.96	371.01	230.41	122.49	60.47	31.91
270.0	1286.48	1060.61	794.71	605.30	439.18	332.82	158.52	81.86	40.63
315.0	1181.49	957.30	726.36	521.05	366.40	224.01	126.14	55.03	30.29
360.0	1388.66	1156.22	885.54	684.77	507.90	320.87	304.14	108.51	46.31
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	26.71	20.20	17.27	15.54	14.16	13.03	12.13	11.23	10.46
45.0	17.51	15.42	14.10	12.91	12.01	11.11	10.40	9.86	9.26
90.0	16.37	14.76	13.21	12.25	11.41	10.52	9.92	9.38	8.78
135.0	17.39	15.48	14.16	12.91	11.95	11.17	10.46	9.80	9.32
180.0	16.79	15.30	13.98	12.91	12.01	11.23	10.52	10.04	9.56
225.0	24.08	19.06	16.79	15.42	14.04	12.85	11.95	11.17	10.34
270.0	25.22	20.02	17.63	15.83	14.46	13.38	12.31	11.29	10.58
315.0	22.59	18.64	16.13	14.70	13.56	12.31	11.47	10.76	10.10
360.0	26.71	20.20	17.27	15.54	14.16	13.03	12.13	11.23	10.46
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	9.86	9.32	8.78	8.37	8.01	7.71	7.35	7.11	6.93
45.0	8.78	8.43	8.07	7.71	7.41	7.17	6.93	6.75	6.57
90.0	8.43	8.07	7.65	7.41	7.11	6.87	6.69	6.51	6.33
135.0	8.84	8.48	8.07	7.71	7.47	7.23	6.99	6.81	6.69
180.0	9.02	8.66	8.37	8.07	7.77	7.53	7.29	7.11	6.93
225.0	9.80	9.32	8.78	8.43	8.13	7.77	7.53	7.29	7.05
270.0	9.80	9.26	8.72	8.31	8.01	7.71	7.41	7.17	6.99
315.0	9.38	8.96	8.48	8.07	7.71	7.41	7.17	6.93	6.75
360.0	9.86	9.32	8.78	8.37	8.01	7.71	7.35	7.11	6.93

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	6.75	6.57	6.45	6.33	6.15	6.04	5.92	5.86	5.80
45.0	6.39	6.27	6.15	6.04	5.92	5.80	5.74	5.68	5.56
90.0	6.21	6.09	5.98	5.86	5.80	5.68	5.62	5.50	5.44
135.0	6.45	6.33	6.21	6.09	6.04	5.98	5.86	5.80	5.74
180.0	6.81	6.69	6.57	6.45	6.39	6.27	6.21	6.15	6.09
225.0	6.93	6.69	6.51	6.39	6.27	6.21	6.09	6.04	5.92
270.0	6.75	6.57	6.45	6.33	6.15	6.04	5.92	5.86	5.80
315.0	6.63	6.45	6.27	6.15	6.04	5.92	5.86	5.74	5.68
360.0	6.75	6.57	6.45	6.33	6.15	6.04	5.92	5.86	5.80
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.68	5.62	5.50	5.44	5.38	5.38	5.32	5.26	5.20
45.0	5.56	5.50	5.38	5.32	5.26	5.26	5.20	5.20	5.14
90.0	5.38	5.32	5.26	5.20	5.20	5.14	5.08	5.08	5.02
135.0	5.68	5.62	5.56	5.50	5.44	5.44	5.38	5.38	5.32
180.0	6.04	5.98	5.92	5.92	5.86	5.86	5.80	5.80	5.80
225.0	5.86	5.74	5.74	5.62	5.56	5.50	5.44	5.44	5.38
270.0	5.68	5.62	5.56	5.50	5.38	5.38	5.32	5.26	5.20
315.0	5.62	5.50	5.44	5.38	5.38	5.32	5.32	5.20	5.20
360.0	5.68	5.62	5.50	5.44	5.38	5.38	5.32	5.26	5.20
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	5.20	5.14	5.08	5.08	5.08	5.02	5.02	4.96	4.96
45.0	5.08	5.08	5.08	5.02	5.02	4.96	4.90	4.96	4.90
90.0	5.02	4.96	4.96	4.90	4.90	4.84	4.84	4.84	4.84
135.0	5.32	5.26	5.26	5.20	5.26	5.20	5.20	5.26	5.26
180.0	5.74	5.74	5.68	5.68	5.74	5.74	5.74	5.86	5.98
225.0	5.32	5.32	5.26	5.26	5.20	5.20	5.14	5.14	5.14
270.0	5.14	5.14	5.14	5.02	5.02	5.02	5.02	4.96	4.96
315.0	5.14	5.14	5.08	5.08	5.08	5.02	5.02	5.02	5.02
360.0	5.20	5.14	5.08	5.08	5.08	5.02	5.02	4.96	4.96
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.96	4.96	4.96	4.96	4.90	4.90	4.96	4.96	5.02
45.0	4.96	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.96
90.0	4.84	4.84	4.78	4.78	4.78	4.78	4.84	4.84	4.84
135.0	5.32	5.44	5.74	6.15	6.63	6.99	7.35	7.35	7.23
180.0	6.27	6.81	7.53	8.43	9.68	9.68	7.83	7.53	6.99
225.0	5.14	5.08	5.08	5.08	5.02	5.02	5.08	5.08	5.02
270.0	4.96	4.96	4.90	4.96	4.90	4.90	4.90	4.90	4.90
315.0	5.02	5.02	5.02	5.08	5.08	5.08	5.08	5.14	5.20
360.0	4.96	4.96	4.96	4.96	4.90	4.90	4.96	4.96	5.02
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.08	5.20	5.32	5.32	5.26	5.08	4.84	4.60	4.60
45.0	4.96	4.96	5.02	5.14	5.20	4.60	4.60	4.60	4.60
90.0	4.84	4.84	4.90	4.96	4.78	4.54	4.60	4.54	4.54
135.0	6.99	6.75	6.39	6.21	6.27	4.60	4.60	4.60	4.60
180.0	6.93	6.87	6.81	6.75	6.09	4.60	4.60	4.66	4.72
225.0	5.02	5.02	5.08	5.14	5.20	5.32	4.66	4.60	4.60
270.0	4.90	4.90	4.90	4.96	5.02	5.08	4.66	4.60	4.60
315.0	5.26	5.32	5.26	5.20	5.26	5.32	4.60	4.60	4.60
360.0	5.08	5.20	5.32	5.32	5.26	5.08	4.84	4.60	4.60

Intensity data(cd)

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