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Nata

LumCAT: 1-0936-N	
Luminaire: 92.70.361.000	
Report No: 220518-B018	Voltage(V): 37.6500
Test No: 220518-C018	Current(A): 0.3610
LampCAT: CREE CXA1512	Power (W): 13.5910
Lamp flux(lm): 1623.7	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): 1335.81
Efficiency(%): 82.27%
Lumens(lm)/Power(W): 98.29
Central intensity(cd): 6132.739
Maximum intensity(cd): 6132.739
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=22.3
 [C90/270]Total=22.3
Field angle(10%Imax): [C0/180]Total=48.7
 [C90/270]Total=48.7
Maximum s/h(1/2): C0_180=0.38 C90_270=0.38
Maximum s/h(1/4): C0_180=0.40 C90_270=0.40
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.27%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.095%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6132.739	0.000	0	.000%	.000%
1.0	6099.501	5.853	5.853	.360%	.438%
2.0	5975.888	17.332	23.185	1.067%	1.736%
3.0	5794.687	28.151	51.336	1.734%	3.843%
4.0	5570.464	38.043	89.379	2.343%	6.691%
5.0	5264.604	46.612	135.991	2.871%	10.180%
6.0	4945.225	53.655	189.646	3.304%	14.197%
7.0	4599.629	59.245	248.891	3.649%	18.632%
8.0	4235.734	63.233	312.124	3.894%	23.366%
9.0	3859.216	65.605	377.729	4.040%	28.277%
10.0	3489.644	66.504	444.233	4.096%	33.256%
11.0	3122.985	66.074	510.307	4.069%	38.202%
12.0	2784.186	64.574	574.881	3.977%	43.036%
13.0	2466.898	62.317	637.198	3.838%	47.701%
14.0	2151.926	59.121	696.319	3.641%	52.127%
15.0	1907.462	55.729	752.048	3.432%	56.299%
16.0	1684.434	52.631	804.679	3.241%	60.239%
17.0	1454.826	48.887	853.566	3.011%	63.899%
18.0	1306.535	45.529	899.095	2.804%	67.307%
19.0	1158.728	42.891	941.985	2.641%	70.518%
20.0	1039.110	40.227	982.212	2.477%	73.529%
21.0	921.547	37.649	1019.86	2.319%	76.348%
22.0	831.738	35.233	1055.093	2.170%	78.985%
23.0	739.823	32.976	1088.069	2.031%	81.454%
24.0	646.048	30.300	1118.369	1.866%	83.722%
25.0	556.195	27.336	1145.705	1.684%	85.769%
26.0	464.422	24.092	1169.797	1.484%	87.572%
27.0	376.817	20.581	1190.378	1.268%	89.113%
28.0	308.049	17.339	1207.718	1.068%	90.411%
29.0	227.561	14.013	1221.731	.863%	91.460%
30.0	165.082	10.601	1232.332	.653%	92.254%
31.0	119.932	7.932	1240.264	.488%	92.847%
32.0	87.321	5.938	1246.201	.366%	93.292%
33.0	70.001	4.635	1250.836	.285%	93.639%
34.0	60.993	3.964	1254.8	.244%	93.936%
35.0	56.407	3.646	1258.446	.225%	94.209%
36.0	52.896	3.480	1261.926	.214%	94.469%
37.0	49.991	3.356	1265.282	.207%	94.720%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	46.913	3.235	1268.517	.199%	94.962%
39.0	43.881	3.099	1271.616	.191%	95.194%
40.0	41.155	2.966	1274.581	.183%	95.416%
41.0	38.354	2.831	1277.413	.174%	95.628%
42.0	35.590	2.687	1280.099	.165%	95.829%
43.0	33.140	2.546	1282.645	.157%	96.020%
44.0	30.952	2.419	1285.064	.149%	96.201%
45.0	28.681	2.292	1287.356	.141%	96.373%
46.0	26.710	2.166	1289.522	.133%	96.535%
47.0	24.641	2.042	1291.564	.126%	96.688%
48.0	22.982	1.925	1293.49	.119%	96.832%
49.0	21.421	1.823	1295.313	.112%	96.968%
50.0	19.823	1.720	1297.033	.106%	97.097%
51.0	18.434	1.619	1298.651	.100%	97.218%
52.0	17.246	1.531	1300.182	.094%	97.333%
53.0	16.096	1.450	1301.633	.089%	97.442%
54.0	15.155	1.377	1303.01	.085%	97.545%
55.0	14.490	1.323	1304.333	.081%	97.644%
56.0	13.803	1.278	1305.612	.079%	97.739%
57.0	13.220	1.236	1306.848	.076%	97.832%
58.0	12.720	1.200	1308.047	.074%	97.922%
59.0	12.287	1.169	1309.216	.072%	98.009%
60.0	11.831	1.139	1310.356	.070%	98.095%
61.0	11.473	1.112	1311.468	.068%	98.178%
62.0	11.159	1.091	1312.558	.067%	98.259%
63.0	10.845	1.070	1313.628	.066%	98.340%
64.0	10.584	1.052	1314.68	.065%	98.418%
65.0	10.330	1.035	1315.715	.064%	98.496%
66.0	10.038	1.016	1316.731	.063%	98.572%
67.0	9.740	0.995	1317.726	.061%	98.646%
68.0	9.516	0.975	1318.701	.060%	98.719%
69.0	9.254	0.958	1319.659	.059%	98.791%
70.0	9.038	0.939	1320.598	.058%	98.861%
71.0	8.791	0.921	1321.519	.057%	98.930%
72.0	8.545	0.901	1322.421	.056%	98.998%
73.0	8.321	0.882	1323.303	.054%	99.064%
74.0	8.089	0.863	1324.166	.053%	99.128%
75.0	7.880	0.844	1325.009	.052%	99.191%

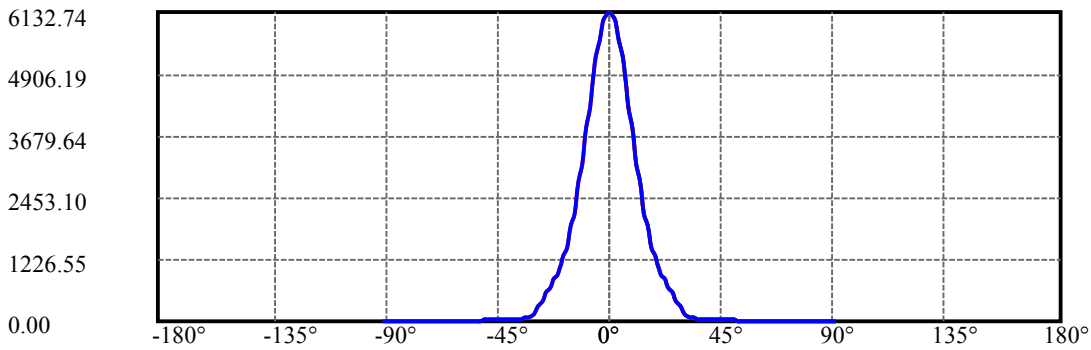
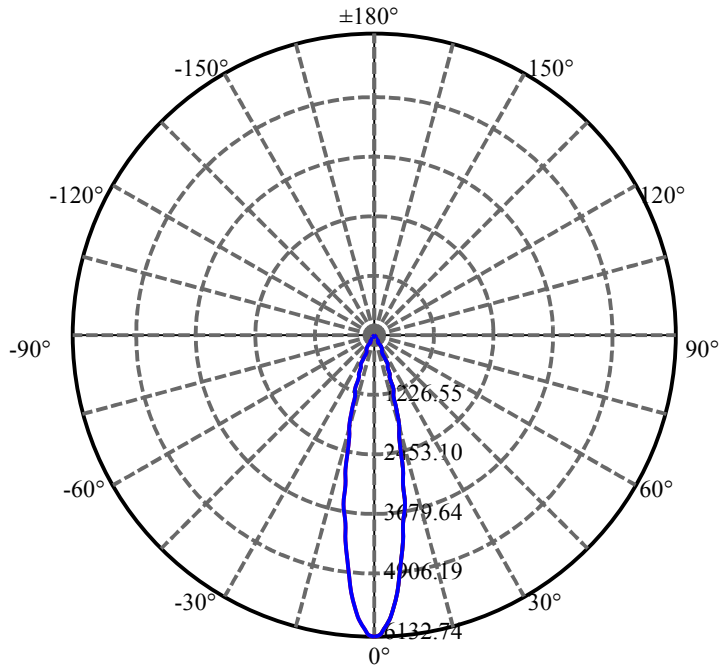
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.686	0.826	1325.836	.051%	99.253%
77.0	7.506	0.810	1326.646	.050%	99.314%
78.0	7.282	0.792	1327.437	.049%	99.373%
79.0	7.126	0.774	1328.211	.048%	99.431%
80.0	6.969	0.760	1328.971	.047%	99.488%
81.0	6.819	0.746	1329.717	.046%	99.544%
82.0	6.692	0.733	1330.449	.045%	99.599%
83.0	6.573	0.721	1331.171	.044%	99.653%
84.0	6.416	0.708	1331.878	.044%	99.706%
85.0	6.289	0.693	1332.572	.043%	99.758%
86.0	6.125	0.679	1333.25	.042%	99.808%
87.0	5.945	0.661	1333.911	.041%	99.858%
88.0	5.804	0.644	1334.554	.040%	99.906%
89.0	5.714	0.631	1335.186	.039%	99.953%
90.0	5.662	0.624	1335.809	.038%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1232.33	75.90%	92.25%
0-40	1274.58	78.50%	95.42%
0-60	1310.36	80.70%	98.09%
0-90	1335.19	82.23%	99.95%
0-120	1335.19	82.23%	99.95%
0-180	1335.81	82.27%	100.00%
60-90	25.97	1.60%	1.94%
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%
0-22.41	1068.65	65.81%	80.00%

ZONAL LUMEN SUMMARY

0-10	444.23
10-20	537.98
20-30	250.12
30-40	42.25
40-50	22.45
50-60	13.32
60-70	10.24
70-80	8.37
80-90	6.21
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: —————

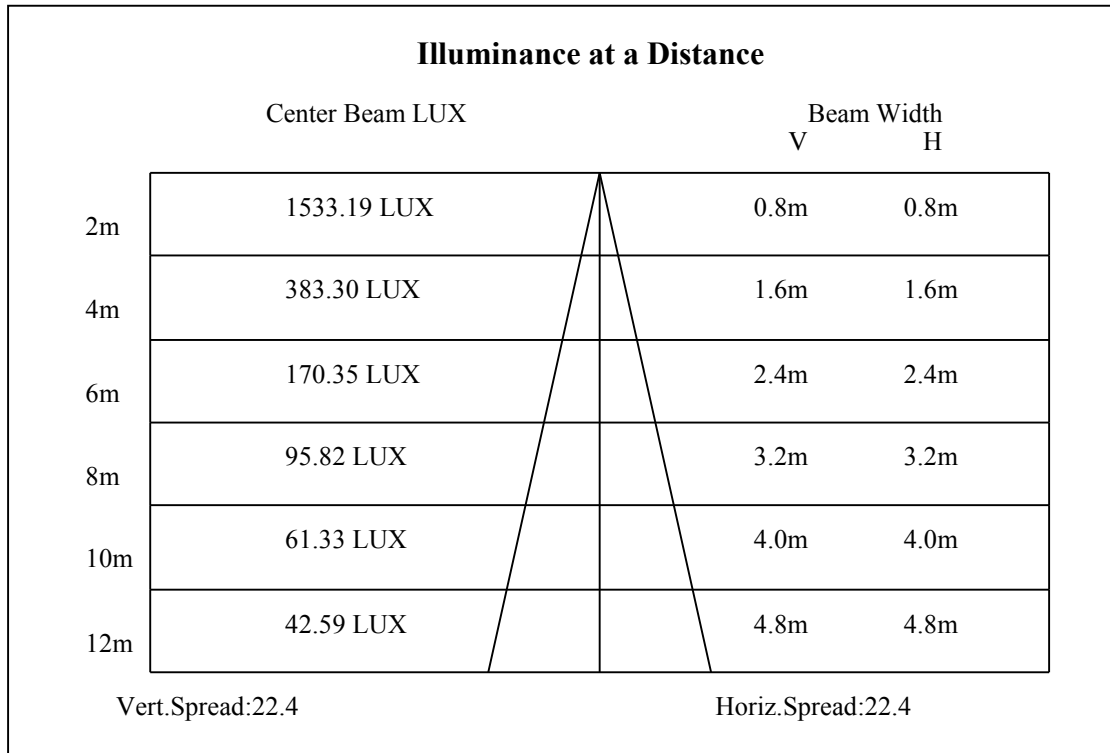
C90/C270: —————

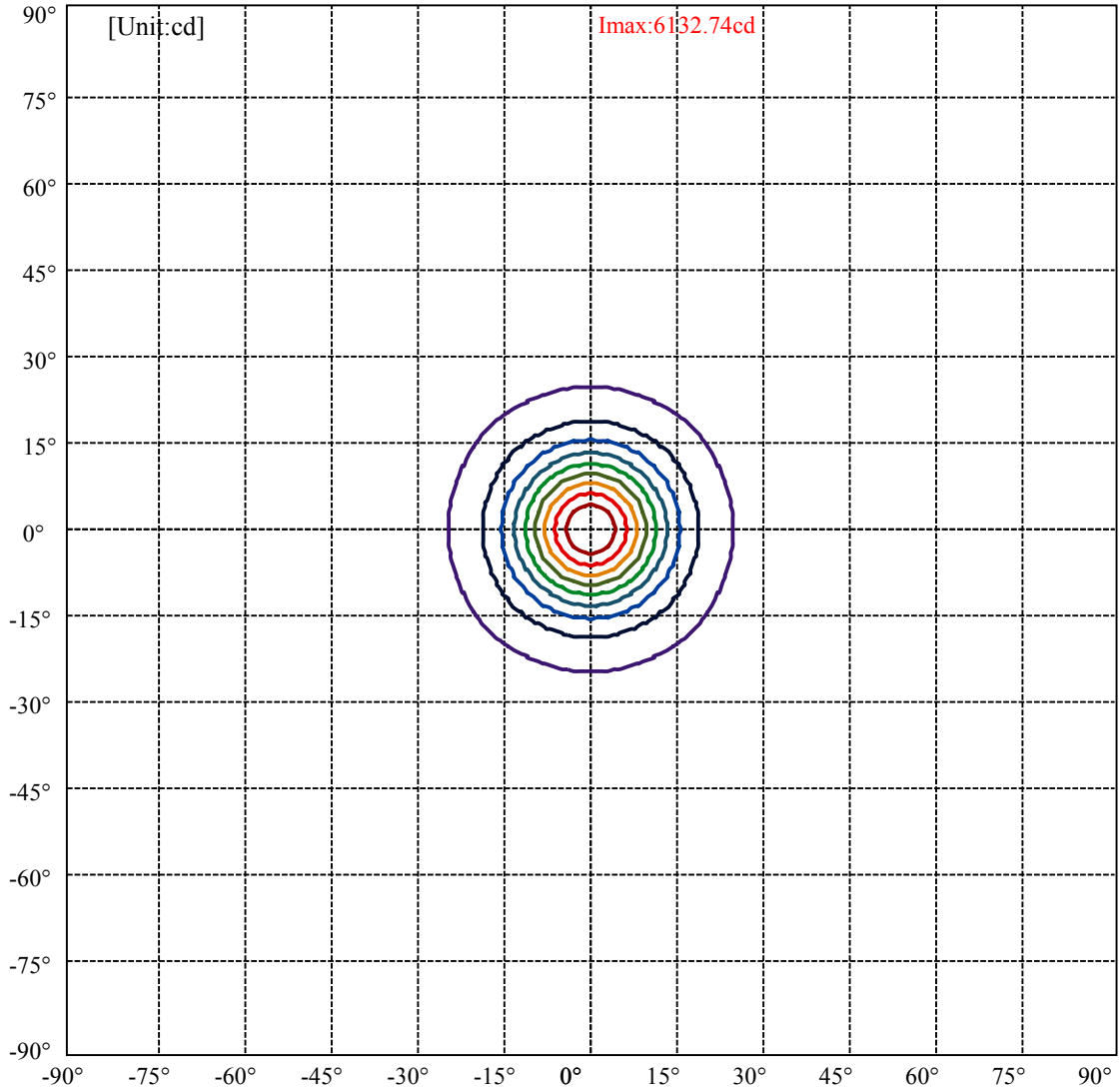
Field angle(10%Imax):C0/180Left:24.4 Right:24.4

:C90/270Left:24.4 Right:24.4

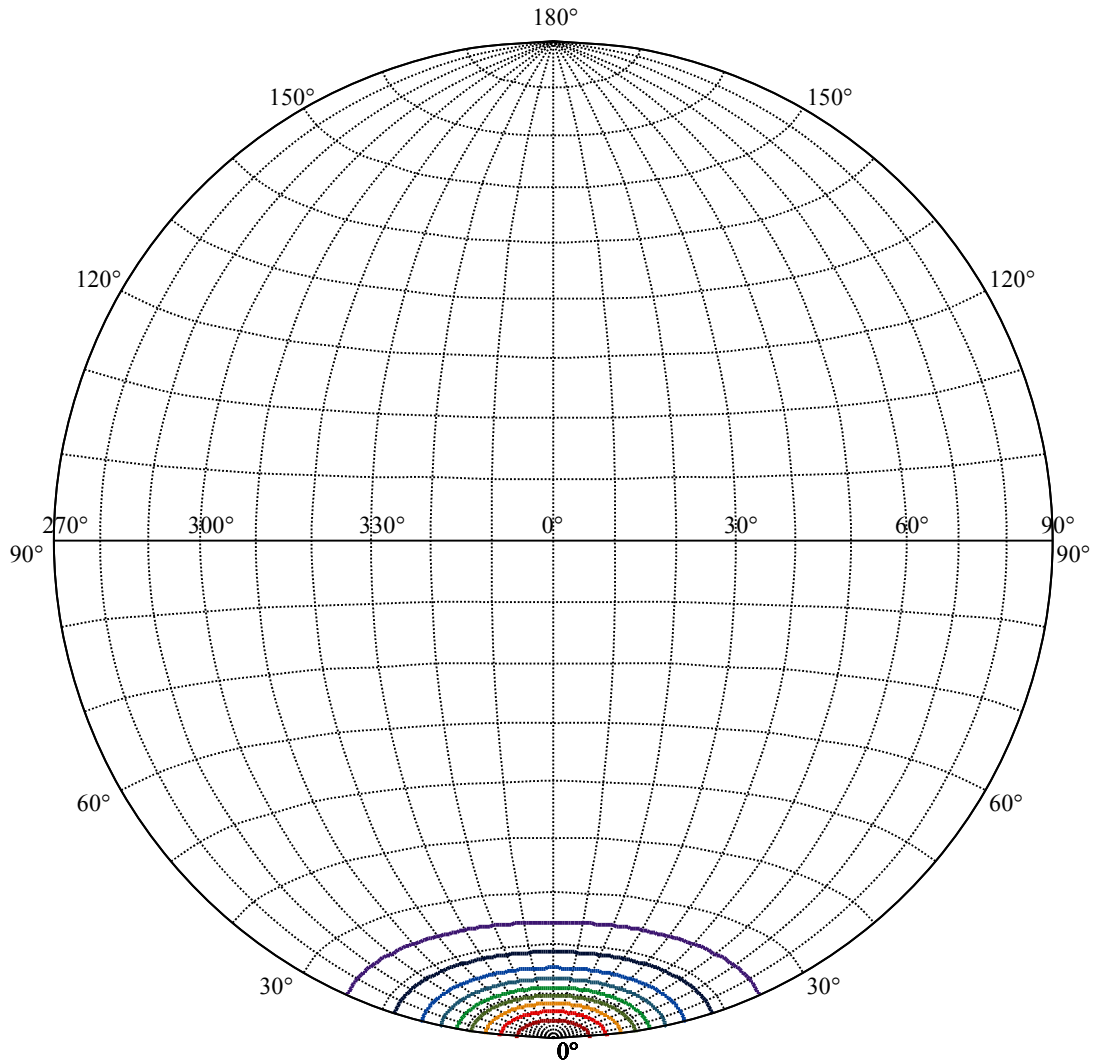
Beam Angle(50%Imax):C0/180Left:11.2 Right:11.2

:C90/270Left:11.2 Right:11.2





(10%Imax) 613.274	—
(20%Imax) 1226.55	—
(30%Imax) 1839.82	—
(40%Imax) 2453.1	—
(50%Imax) 3066.37	—
(60%Imax) 3679.64	—
(70%Imax) 4292.92	—
(80%Imax) 4906.19	—
(90%Imax) 5519.46	—



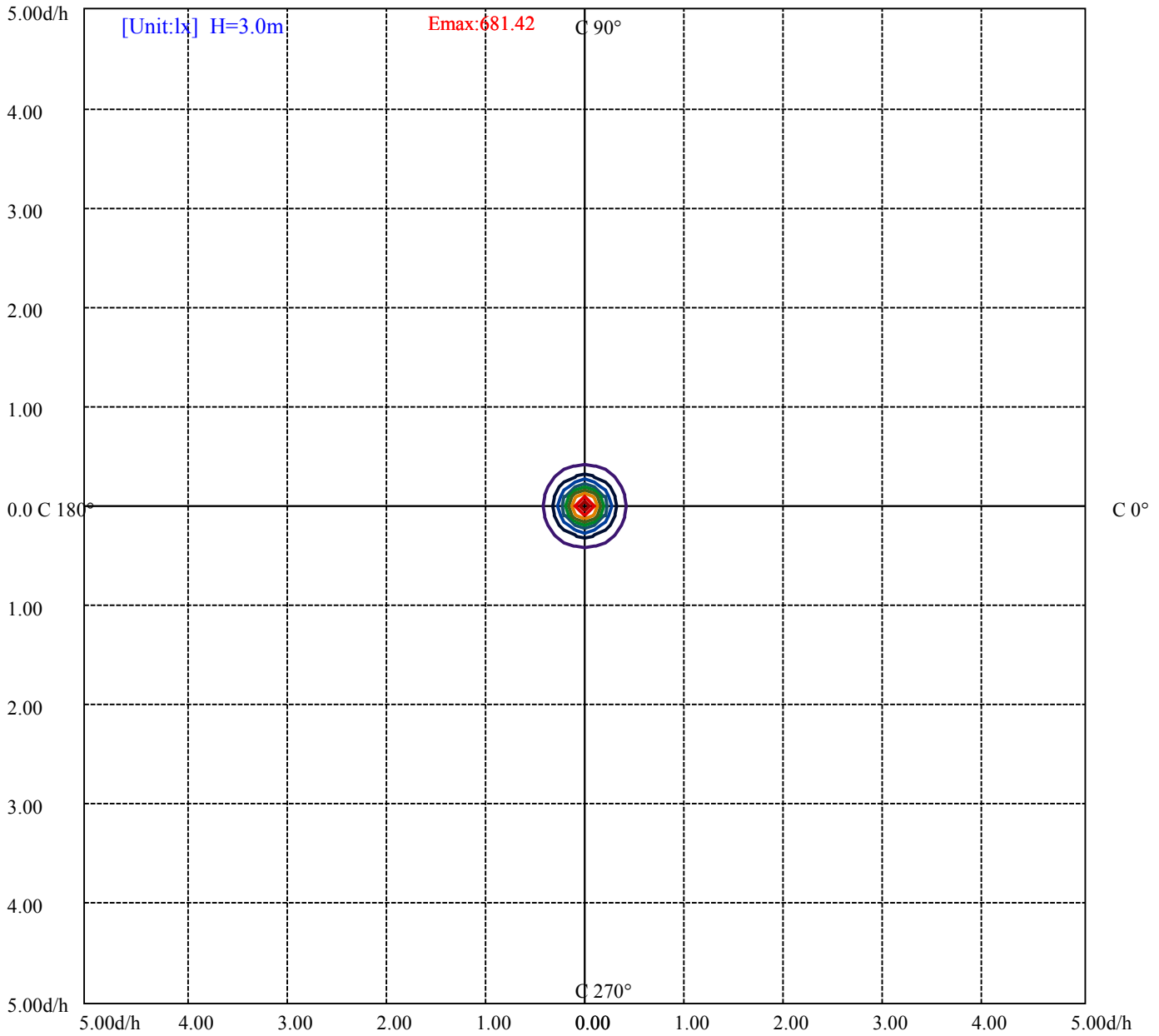
House

[Unit:cd]

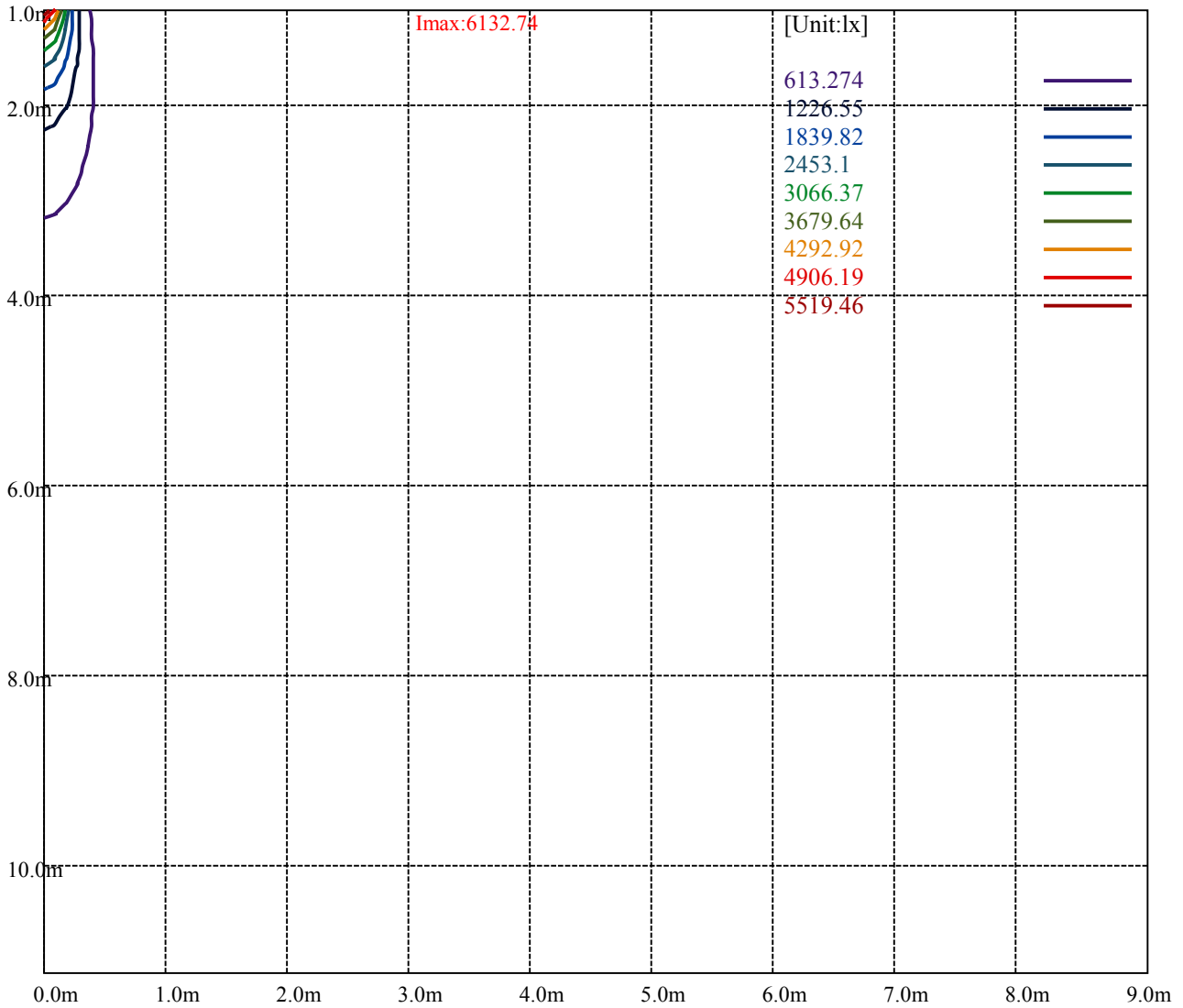
Road

Imax:6132.74

(10%Imax) 613.274	—
(20%Imax) 1226.55	—
(30%Imax) 1839.82	—
(40%Imax) 2453.1	—
(50%Imax) 3066.37	—
(60%Imax) 3679.64	—
(70%Imax) 4292.92	—
(80%Imax) 4906.19	—
(90%Imax) 5519.46	—



(10%Emax) 68.14145	—
(20%Emax) 136.2833	—
(30%Emax) 204.4244	—
(40%Emax) 272.5656	—
(50%Emax) 340.7078	—
(60%Emax) 408.8489	—
(70%Emax) 476.99	—
(80%Emax) 545.1322	—
(90%Emax) 613.2733	—



Luminance Table

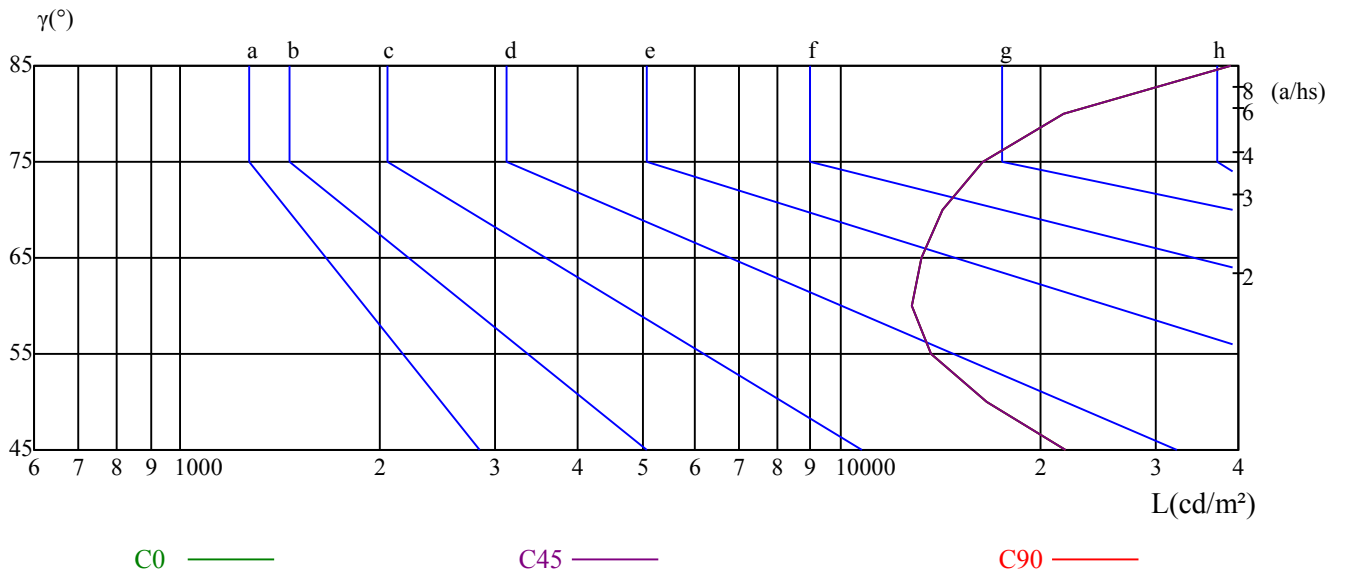
γ	45	50	55	60	65	70	75	80	85
C0	21937	16679	13663	12797	13219	14291	16466	21704	39025
C45	21937	16679	13663	12797	13219	14291	16466	21704	39025
C90	21937	16679	13663	12797	13219	14291	16466	21704	39025

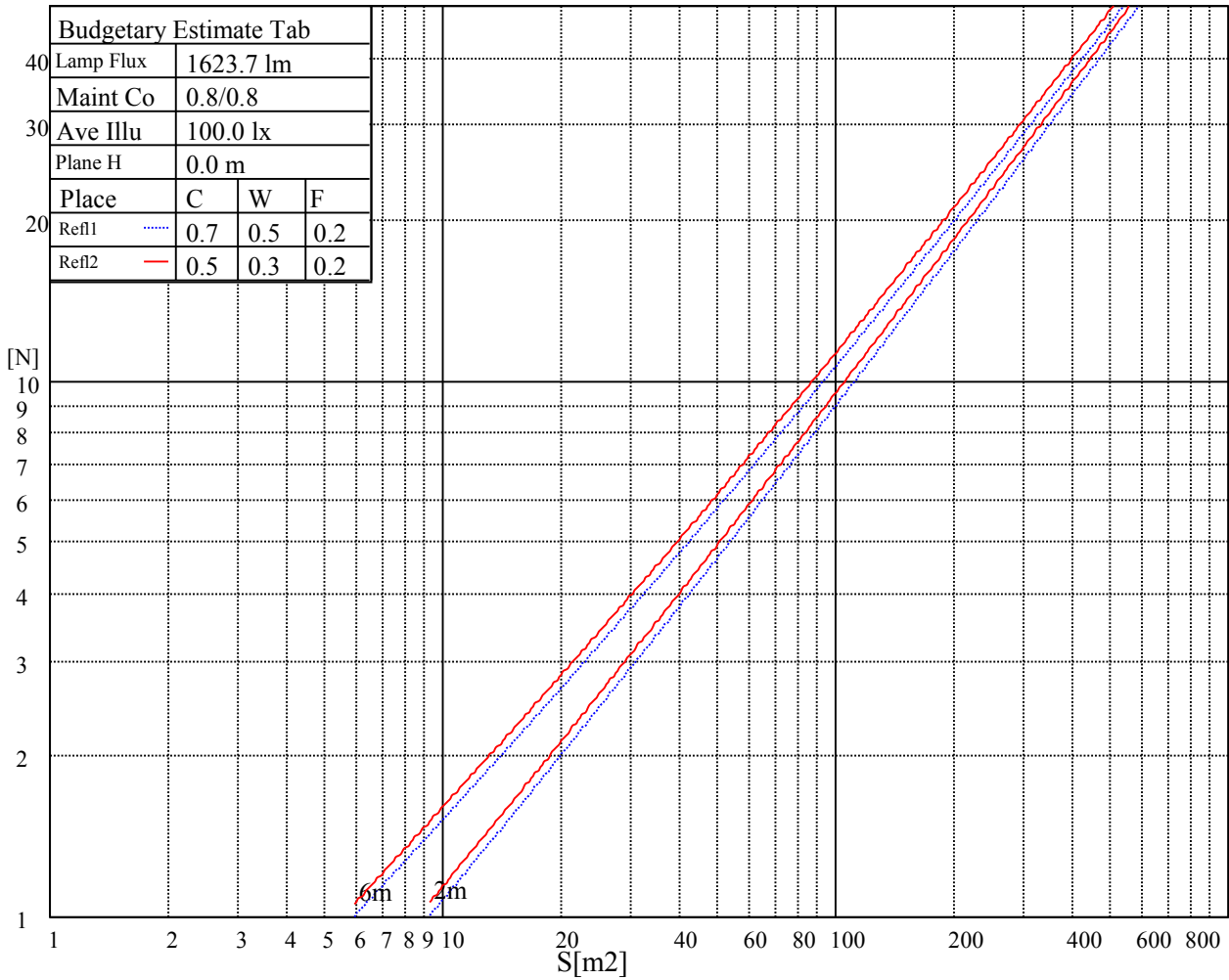
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
13219	13219	13219	16466	16466	16466	39025	39025	39025

Glare Table

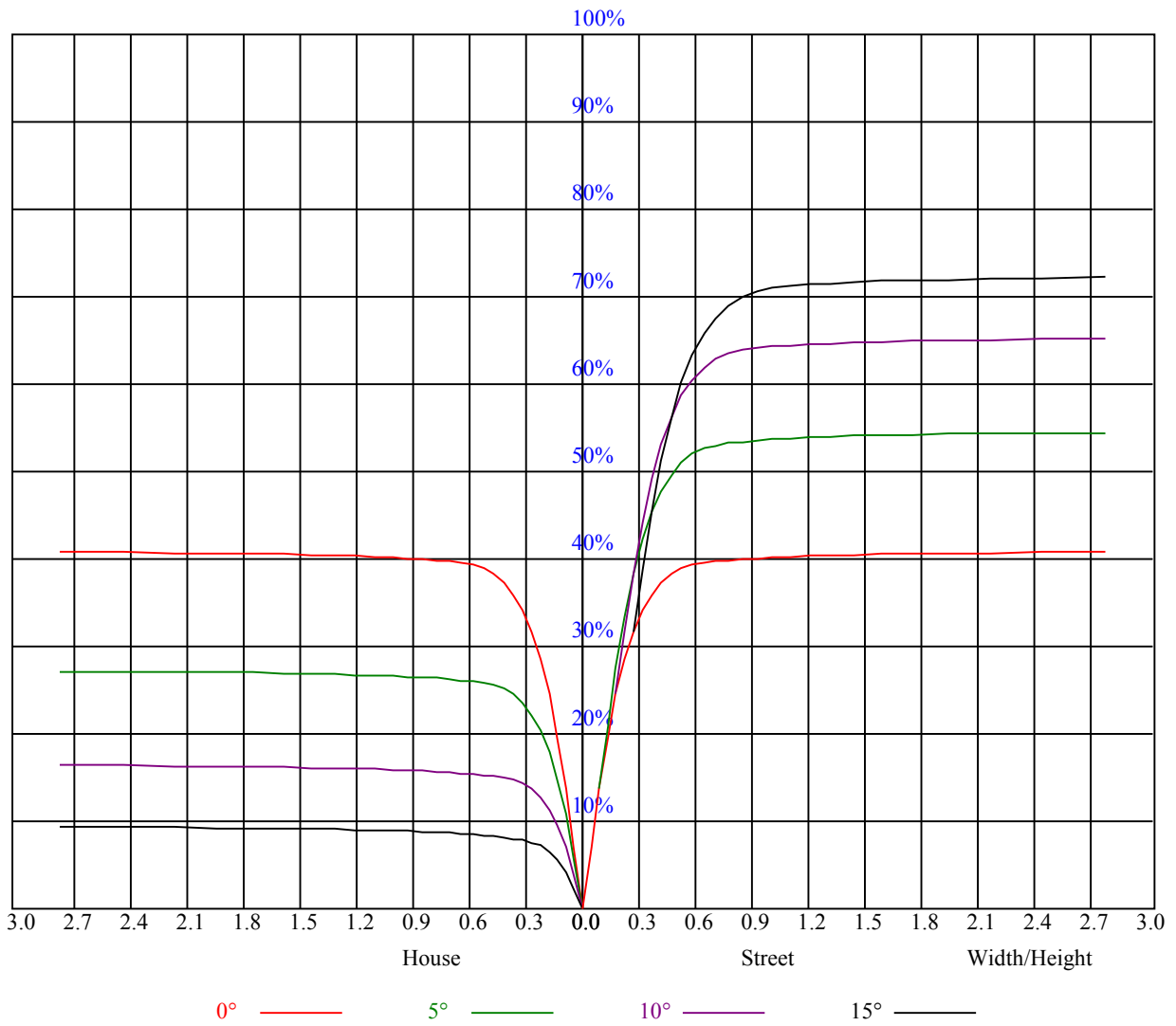
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.98	0.98	0.98	0.96	0.96	0.96	0.91	0.91	0.91	0.88	0.88	0.88	0.84	0.84	0.84	0.82
1	0.92	0.90	0.89	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.79
2	0.87	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.81	0.80	0.78	0.79	0.78	0.77	0.75
3	0.83	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.78	0.76	0.75	0.77	0.75	0.74	0.72
4	0.80	0.76	0.74	0.79	0.76	0.73	0.77	0.75	0.72	0.76	0.73	0.72	0.74	0.72	0.71	0.70
5	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.69	0.73	0.71	0.69	0.72	0.70	0.68	0.67
6	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.68	0.66	0.65
7	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.63
8	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.61
9	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.65	0.62	0.60	0.59
10	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.63	0.60	0.58	0.58



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	6120.49	6159.93	6103.16	5987.24	5813.96	5518.78	5240.33	4928.42	4557.35
45.0	6142.00	6058.35	5896.42	5664.57	5413.02	5081.98	4712.11	4371.52	4067.38
90.0	6113.92	6009.95	5827.70	5582.71	5316.22	4970.84	4638.62	4250.82	3848.09
135.0	6154.55	6090.61	5930.48	5741.06	5508.02	5199.10	4838.79	4504.77	4119.36
180.0	6120.49	6020.10	5809.18	5584.51	5321.59	4984.59	4658.93	4276.52	3845.70
225.0	6142.00	6156.94	6085.83	5932.87	5712.38	5465.00	5187.15	4803.54	4478.48
270.0	6113.92	6156.34	6107.94	5986.64	5811.57	5516.39	5241.52	4937.98	4618.90
315.0	6154.55	6143.79	6046.40	5877.89	5666.97	5380.15	5044.34	4723.47	4350.61
360.0	6120.49	6159.93	6103.16	5987.24	5813.96	5518.78	5240.33	4928.42	4557.35
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4176.73	3828.37	3440.57	3105.96	2744.45	2405.05	2130.79	1861.90	1628.27
45.0	3581.59	3236.22	2946.42	2515.00	2228.78	2010.69	1737.61	1525.49	1383.28
90.0	3491.96	3111.93	2752.22	2449.87	2175.60	1875.64	1665.91	1483.66	1181.26
135.0	3723.80	3378.43	3000.19	2677.53	2341.72	2045.34	1818.88	1616.91	1400.01
180.0	3542.15	3158.54	2750.43	2487.51	2213.25	1876.84	1693.99	1505.77	1275.13
225.0	4143.86	3713.05	3367.08	3025.29	2702.62	2333.95	2070.44	1836.80	1606.16
270.0	4207.80	3869.60	3487.78	3107.75	2777.91	2437.92	2162.46	1886.40	1646.79
315.0	4005.83	3621.03	3239.20	2904.59	2550.85	2229.98	1979.61	1758.53	1517.72
360.0	4176.73	3828.37	3440.57	3105.96	2744.45	2405.05	2130.79	1861.90	1628.27
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1453.79	1303.81	1145.46	1033.13	929.76	827.58	746.31	662.66	561.68
45.0	1205.81	1087.50	978.75	857.45	783.36	694.33	592.15	504.91	418.87
90.0	1149.29	1031.63	913.02	817.78	738.61	647.00	561.02	466.25	374.47
135.0	1249.43	1122.76	981.74	878.37	793.52	700.90	604.70	519.85	428.43
180.0	1161.66	1041.07	930.47	818.20	734.06	649.39	552.83	458.48	378.06
225.0	1410.17	1190.76	1111.34	981.74	883.21	787.54	699.71	604.04	506.41
270.0	1466.34	1309.78	1158.01	1025.36	920.79	834.15	730.78	641.75	554.51
315.0	1355.79	1182.51	1094.08	960.35	870.60	777.68	680.88	591.61	492.96
360.0	1453.79	1303.81	1145.46	1033.13	929.76	827.58	746.31	662.66	561.68
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	463.68	375.85	308.32	218.93	156.25	108.57	80.25	63.22	56.29
45.0	323.86	304.14	183.74	127.69	88.55	68.30	56.94	52.52	50.01
90.0	299.90	223.89	161.93	119.86	87.18	65.01	57.12	53.54	50.31
135.0	352.54	306.53	197.07	146.28	103.01	76.84	64.06	58.92	55.15
180.0	294.70	228.08	165.04	116.34	88.08	70.09	63.16	59.10	55.99
225.0	424.01	342.68	255.86	195.69	146.22	101.58	79.47	67.28	62.20
270.0	445.76	363.30	305.93	213.02	155.18	115.68	85.86	70.15	63.94
315.0	410.08	319.92	242.60	182.84	134.98	92.50	73.14	63.22	57.36
360.0	463.68	375.85	308.32	218.93	156.25	108.57	80.25	63.22	56.29
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	52.82	50.25	46.85	44.22	42.13	39.26	36.39	34.12	31.91
45.0	47.03	44.46	42.01	39.20	36.63	34.60	31.85	29.94	28.26
90.0	47.56	44.81	42.07	39.20	36.87	34.12	32.27	30.06	27.79
135.0	51.99	49.00	46.43	43.32	40.39	37.76	34.78	32.33	30.29
180.0	52.28	49.12	46.49	43.68	40.15	37.58	34.78	32.09	30.18
225.0	58.08	54.67	51.09	47.92	44.87	41.47	38.78	35.85	33.22
270.0	59.04	56.05	52.10	48.40	45.71	42.60	39.14	36.57	34.24
315.0	54.38	51.57	48.28	45.11	42.48	39.44	36.75	34.18	31.73
360.0	52.82	50.25	46.85	44.22	42.13	39.26	36.39	34.12	31.91

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	29.58	27.73	25.34	23.78	22.17	20.38	19.12	17.93	16.49
45.0	25.63	24.08	22.65	20.97	19.54	18.46	17.15	16.07	15.24
90.0	26.11	24.32	22.29	20.97	19.78	18.16	17.09	16.07	15.30
135.0	28.26	25.93	24.26	22.59	20.91	19.54	18.11	16.85	15.72
180.0	27.79	25.69	24.08	22.29	20.61	19.30	17.69	16.55	15.66
225.0	31.13	29.16	26.23	24.68	23.06	21.09	19.60	18.34	16.91
270.0	31.31	29.46	27.19	25.04	23.42	21.57	19.96	18.70	17.15
315.0	29.64	27.31	25.10	23.54	21.87	20.08	18.76	17.45	16.31
360.0	29.58	27.73	25.34	23.78	22.17	20.38	19.12	17.93	16.49
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	15.54	14.82	13.98	13.44	12.91	12.43	11.89	11.53	11.23
45.0	14.52	13.92	13.27	12.79	12.37	12.01	11.59	11.29	10.99
90.0	14.52	13.92	13.32	12.85	12.43	12.01	11.65	11.35	11.05
135.0	14.94	14.28	13.68	13.03	12.55	12.25	11.71	11.41	11.05
180.0	14.76	14.10	13.50	12.97	12.43	12.01	11.59	11.17	10.88
225.0	15.77	15.12	14.28	13.74	13.15	12.55	12.19	11.77	11.41
270.0	16.01	15.24	14.46	13.80	13.27	12.79	12.25	11.83	11.53
315.0	15.18	14.52	13.92	13.15	12.67	12.25	11.77	11.41	11.11
360.0	15.54	14.82	13.98	13.44	12.91	12.43	11.89	11.53	11.23
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.93	10.64	10.46	10.22	9.86	9.62	9.38	9.14	8.96
45.0	10.70	10.46	10.22	9.92	9.62	9.44	9.20	8.96	8.66
90.0	10.76	10.52	10.22	9.98	9.68	9.50	9.20	8.96	8.72
135.0	10.76	10.46	10.28	9.92	9.68	9.44	9.08	8.90	8.66
180.0	10.58	10.34	9.98	9.68	9.44	9.26	8.96	8.78	8.48
225.0	11.11	10.82	10.52	10.22	9.92	9.62	9.38	9.20	8.90
270.0	11.11	10.88	10.64	10.34	9.98	9.74	9.56	9.32	9.08
315.0	10.82	10.58	10.34	10.04	9.74	9.50	9.26	9.02	8.84
360.0	10.93	10.64	10.46	10.22	9.86	9.62	9.38	9.14	8.96
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.72	8.48	8.19	7.95	7.77	7.59	7.35	7.17	7.05
45.0	8.43	8.19	7.95	7.71	7.53	7.35	7.17	7.05	6.87
90.0	8.48	8.25	8.07	7.89	7.71	7.53	7.35	7.17	7.05
135.0	8.43	8.25	8.01	7.71	7.53	7.35	7.11	6.93	6.81
180.0	8.25	8.01	7.83	7.65	7.47	7.29	7.05	6.87	6.69
225.0	8.66	8.48	8.19	8.07	7.83	7.65	7.41	7.29	7.05
270.0	8.84	8.60	8.37	8.13	7.95	7.83	7.59	7.47	7.29
315.0	8.54	8.31	8.13	7.95	7.71	7.47	7.23	7.05	6.93
360.0	8.72	8.48	8.19	7.95	7.77	7.59	7.35	7.17	7.05
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.93	6.81	6.69	6.57	6.51	6.33	6.15	5.98	5.80
45.0	6.81	6.69	6.57	6.45	6.33	6.09	5.86	5.74	5.74
90.0	6.93	6.81	6.75	6.27	6.15	5.92	5.80	5.68	5.68
135.0	6.63	6.51	6.39	6.27	6.09	5.92	5.80	5.68	5.62
180.0	6.51	6.39	6.27	6.15	5.98	5.86	5.74	5.68	5.56
225.0	6.87	6.69	6.51	6.39	6.27	6.15	6.09	5.92	5.80
270.0	7.05	6.93	6.81	6.69	6.57	6.51	6.09	5.92	5.80
315.0	6.81	6.69	6.57	6.51	6.39	6.21	6.04	5.86	5.74
360.0	6.93	6.81	6.69	6.57	6.51	6.33	6.15	5.98	5.80

Intensity data(cd)

C/γ(°)	90.0
0.0	5.62
45.0	5.74
90.0	5.68
135.0	5.62
180.0	5.62
225.0	5.74
270.0	5.68
315.0	5.62
360.0	5.62