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Nata

LumCAT: 1-1061-N	
Luminaire: 92.70.361.000	
Report No: 220518-B020	Voltage(V): 37.6700
Test No: 220518-C020	Current(A): 0.3610
LampCAT: CREE CXA1512	Power (W): 13.5980
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): 1402.47
Efficiency(%): 86.37%
Lumens(lm)/Power(W): 103.14
Central intensity(cd): 6545.631
Maximum intensity(cd): 6545.631
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=21.8
 [C90/270]Total=21.8
Field angle(10%Imax): [C0/180]Total=48.7
 [C90/270]Total=48.7
Maximum s/h(1/2): C0_180=0.37 C90_270=0.37
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(%): 86.37%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.214%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6545.631	0.000	0	.000%	.000%
1.0	6507.464	6.246	6.246	.385%	.445%
2.0	6397.145	18.522	24.768	1.141%	1.766%
3.0	6200.783	30.130	54.898	1.856%	3.914%
4.0	5955.497	40.691	95.589	2.506%	6.816%
5.0	5650.160	49.927	145.516	3.075%	10.376%
6.0	5269.832	57.387	202.903	3.534%	14.468%
7.0	4873.745	62.961	265.864	3.878%	18.957%
8.0	4488.638	67.005	332.869	4.127%	23.734%
9.0	4046.541	69.173	402.042	4.260%	28.667%
10.0	3615.499	69.339	471.38	4.270%	33.611%
11.0	3234.424	68.445	539.825	4.215%	38.491%
12.0	2856.189	66.579	606.404	4.100%	43.238%
13.0	2487.961	63.422	669.826	3.906%	47.760%
14.0	2181.952	59.774	729.6	3.681%	52.022%
15.0	1915.977	56.258	785.859	3.465%	56.034%
16.0	1681.223	52.709	838.568	3.246%	59.792%
17.0	1478.578	49.207	887.774	3.030%	63.301%
18.0	1308.021	45.945	933.719	2.830%	66.577%
19.0	1191.525	43.487	977.206	2.678%	69.677%
20.0	1067.276	41.342	1018.549	2.546%	72.625%
21.0	955.598	38.843	1057.392	2.392%	75.395%
22.0	855.213	36.389	1093.781	2.241%	77.989%
23.0	765.943	34.016	1127.797	2.095%	80.415%
24.0	684.074	31.703	1159.5	1.952%	82.675%
25.0	602.040	29.243	1188.743	1.801%	84.761%
26.0	527.222	26.656	1215.399	1.642%	86.661%
27.0	448.371	23.868	1239.268	1.470%	88.363%
28.0	373.964	20.820	1260.087	1.282%	89.848%
29.0	305.173	17.768	1277.855	1.094%	91.115%
30.0	245.375	14.865	1292.72	.915%	92.174%
31.0	185.159	11.981	1304.701	.738%	93.029%
32.0	132.248	9.093	1313.795	.560%	93.677%
33.0	99.780	6.836	1320.63	.421%	94.164%
34.0	78.015	5.381	1326.011	.331%	94.548%
35.0	65.788	4.466	1330.477	.275%	94.867%
36.0	58.117	3.945	1334.422	.243%	95.148%
37.0	52.105	3.595	1338.017	.221%	95.404%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	46.540	3.293	1341.309	.203%	95.639%
39.0	41.483	3.004	1344.314	.185%	95.853%
40.0	37.555	2.757	1347.071	.170%	96.050%
41.0	34.089	2.551	1349.622	.157%	96.232%
42.0	30.855	2.360	1351.981	.145%	96.400%
43.0	28.084	2.183	1354.165	.134%	96.556%
44.0	25.724	2.031	1356.195	.125%	96.700%
45.0	23.528	1.893	1358.088	.117%	96.835%
46.0	21.660	1.767	1359.855	.109%	96.961%
47.0	19.957	1.655	1361.511	.102%	97.079%
48.0	18.546	1.557	1363.067	.096%	97.190%
49.0	17.269	1.471	1364.538	.091%	97.295%
50.0	16.088	1.391	1365.929	.086%	97.394%
51.0	15.147	1.322	1367.25	.081%	97.489%
52.0	14.356	1.266	1368.516	.078%	97.579%
53.0	13.624	1.217	1369.733	.075%	97.666%
54.0	13.019	1.174	1370.908	.072%	97.749%
55.0	12.518	1.140	1372.047	.070%	97.831%
56.0	12.085	1.112	1373.159	.068%	97.910%
57.0	11.771	1.091	1374.25	.067%	97.988%
58.0	11.450	1.074	1375.324	.066%	98.064%
59.0	11.204	1.059	1376.383	.065%	98.140%
60.0	10.972	1.048	1377.431	.065%	98.214%
61.0	10.741	1.036	1378.467	.064%	98.288%
62.0	10.539	1.025	1379.492	.063%	98.361%
63.0	10.300	1.014	1380.506	.062%	98.434%
64.0	10.061	0.999	1381.505	.062%	98.505%
65.0	9.822	0.984	1382.489	.061%	98.575%
66.0	9.560	0.967	1383.456	.060%	98.644%
67.0	9.292	0.948	1384.404	.058%	98.712%
68.0	9.082	0.931	1385.334	.057%	98.778%
69.0	8.851	0.915	1386.249	.056%	98.843%
70.0	8.657	0.899	1387.148	.055%	98.907%
71.0	8.440	0.884	1388.032	.054%	98.970%
72.0	8.253	0.868	1388.9	.053%	99.032%
73.0	8.082	0.854	1389.754	.053%	99.093%
74.0	7.932	0.842	1390.596	.052%	99.153%
75.0	7.753	0.829	1391.425	.051%	99.212%

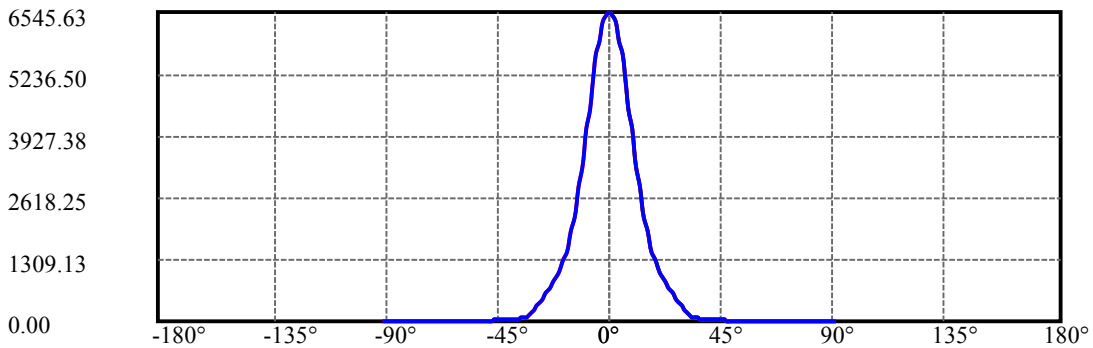
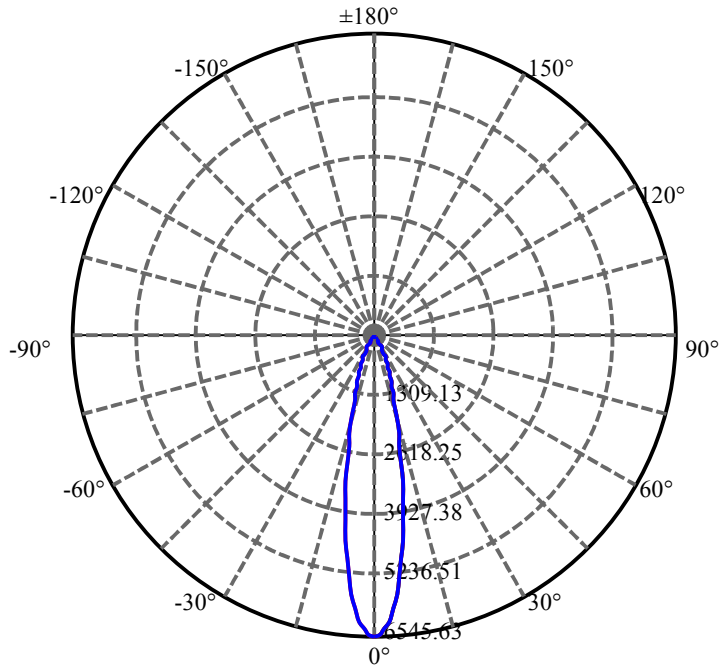
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.611	0.816	1392.241	.050%	99.270%
77.0	7.469	0.804	1393.045	.050%	99.328%
78.0	7.335	0.792	1393.837	.049%	99.384%
79.0	7.208	0.781	1394.618	.048%	99.440%
80.0	7.058	0.769	1395.387	.047%	99.495%
81.0	6.969	0.759	1396.146	.047%	99.549%
82.0	6.849	0.749	1396.895	.046%	99.602%
83.0	6.745	0.739	1397.634	.046%	99.655%
84.0	6.603	0.727	1398.361	.045%	99.707%
85.0	6.491	0.715	1399.076	.044%	99.758%
86.0	6.364	0.703	1399.779	.043%	99.808%
87.0	6.214	0.688	1400.467	.042%	99.857%
88.0	6.140	0.677	1401.144	.042%	99.905%
89.0	6.043	0.668	1401.812	.041%	99.953%
90.0	6.005	0.661	1402.472	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1292.72	79.61%	92.17%
0-40	1347.07	82.96%	96.05%
0-60	1377.43	84.83%	98.21%
0-90	1401.81	86.33%	99.95%
0-120	1401.81	86.33%	99.95%
0-180	1402.47	86.37%	100.00%
60-90	25.43	1.57%	1.81%
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	1121.98	69.10%	80.00%

ZONAL LUMEN SUMMARY

0-10	471.38
10-20	547.17
20-30	274.17
30-40	54.35
40-50	18.86
50-60	11.50
60-70	9.72
70-80	8.24
80-90	6.42
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: —————

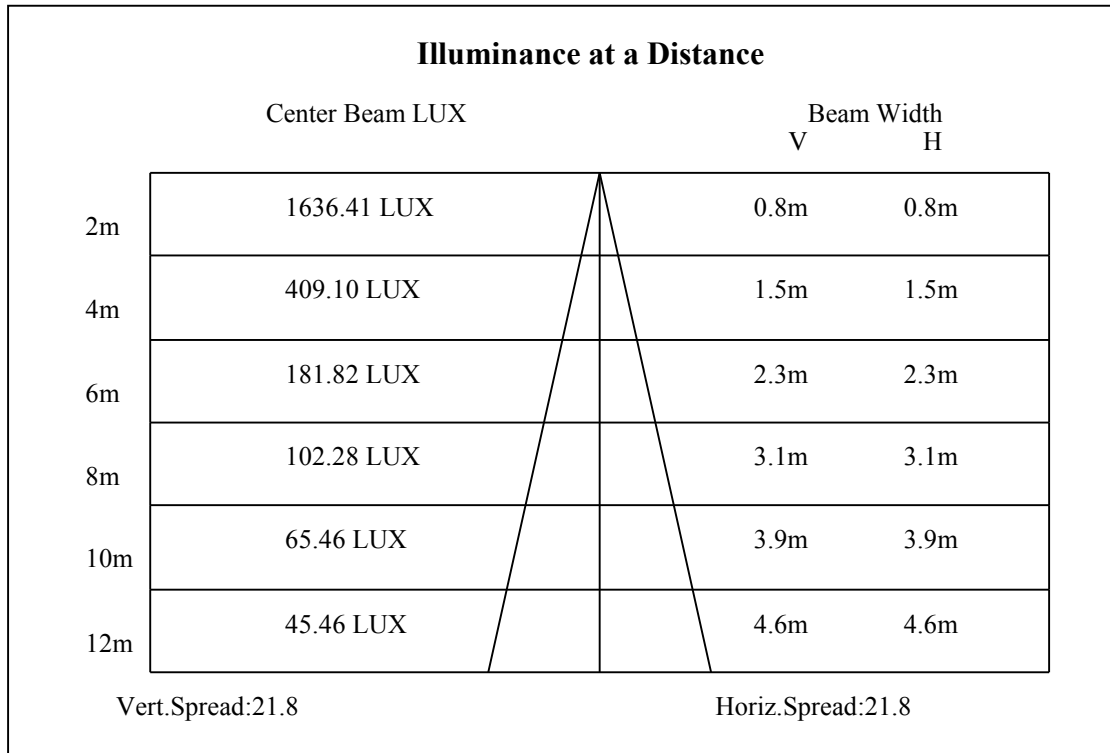
C90/C270: —————

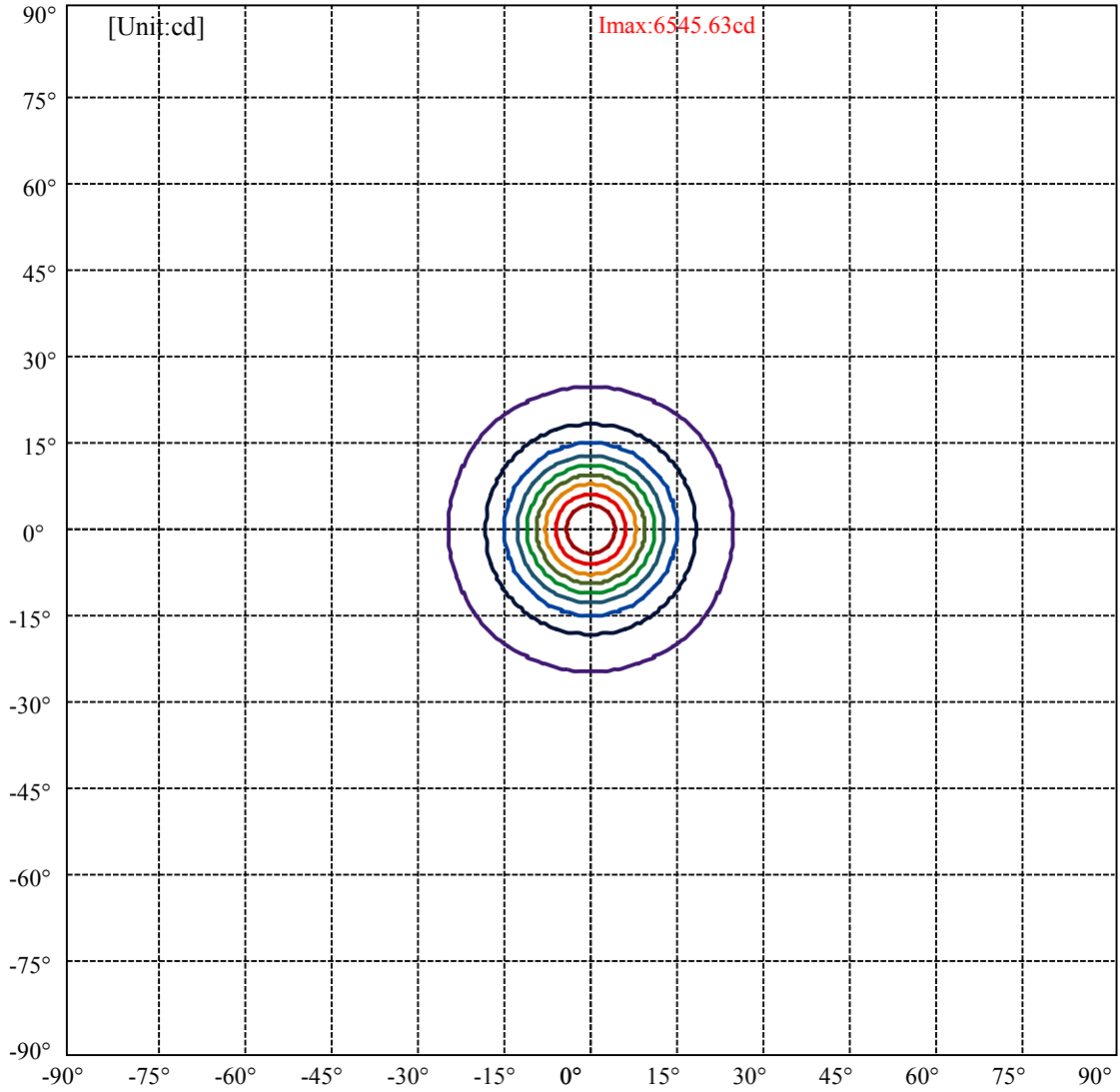
Field angle(10%Imax):C0/180Left:24.4 Right:24.4

:C90/270Left:24.4 Right:24.4

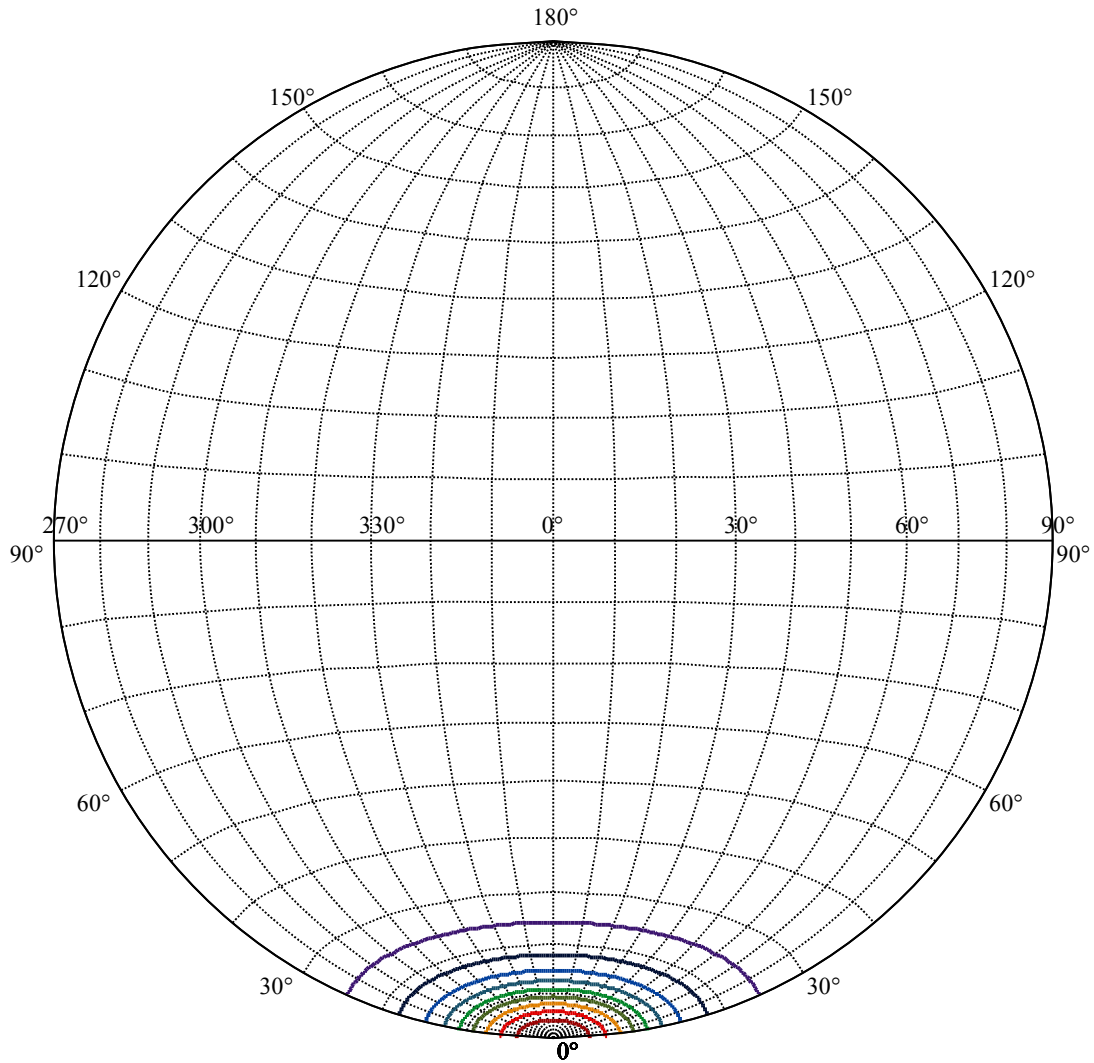
Beam Angle(50%Imax):C0/180Left:10.9 Right:10.9

:C90/270Left:10.9 Right:10.9





(10%Imax) 654.563	—
(20%Imax) 1309.13	—
(30%Imax) 1963.69	—
(40%Imax) 2618.25	—
(50%Imax) 3272.82	—
(60%Imax) 3927.38	—
(70%Imax) 4581.94	—
(80%Imax) 5236.5	—
(90%Imax) 5891.07	—



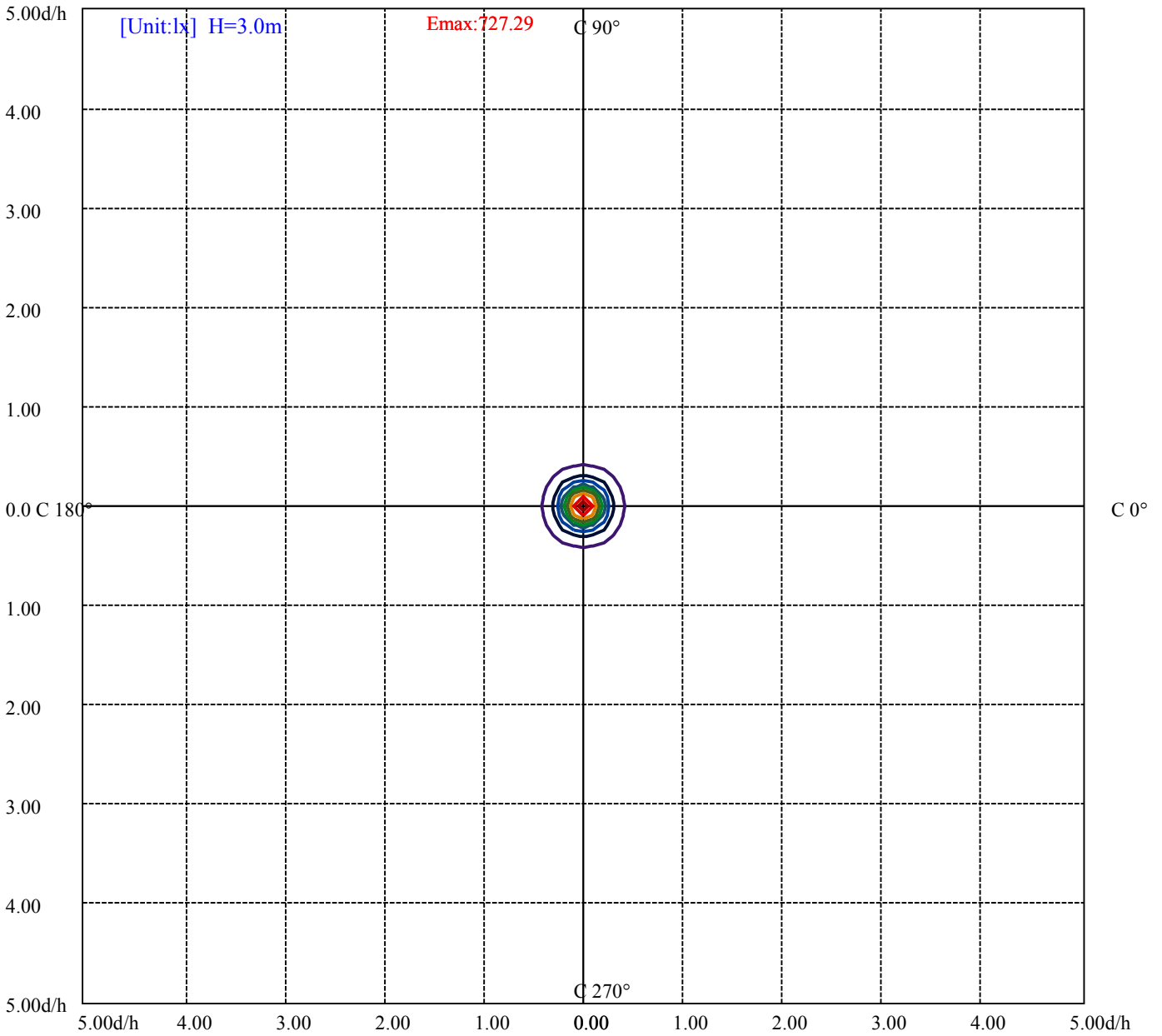
House

[Unit:cd]

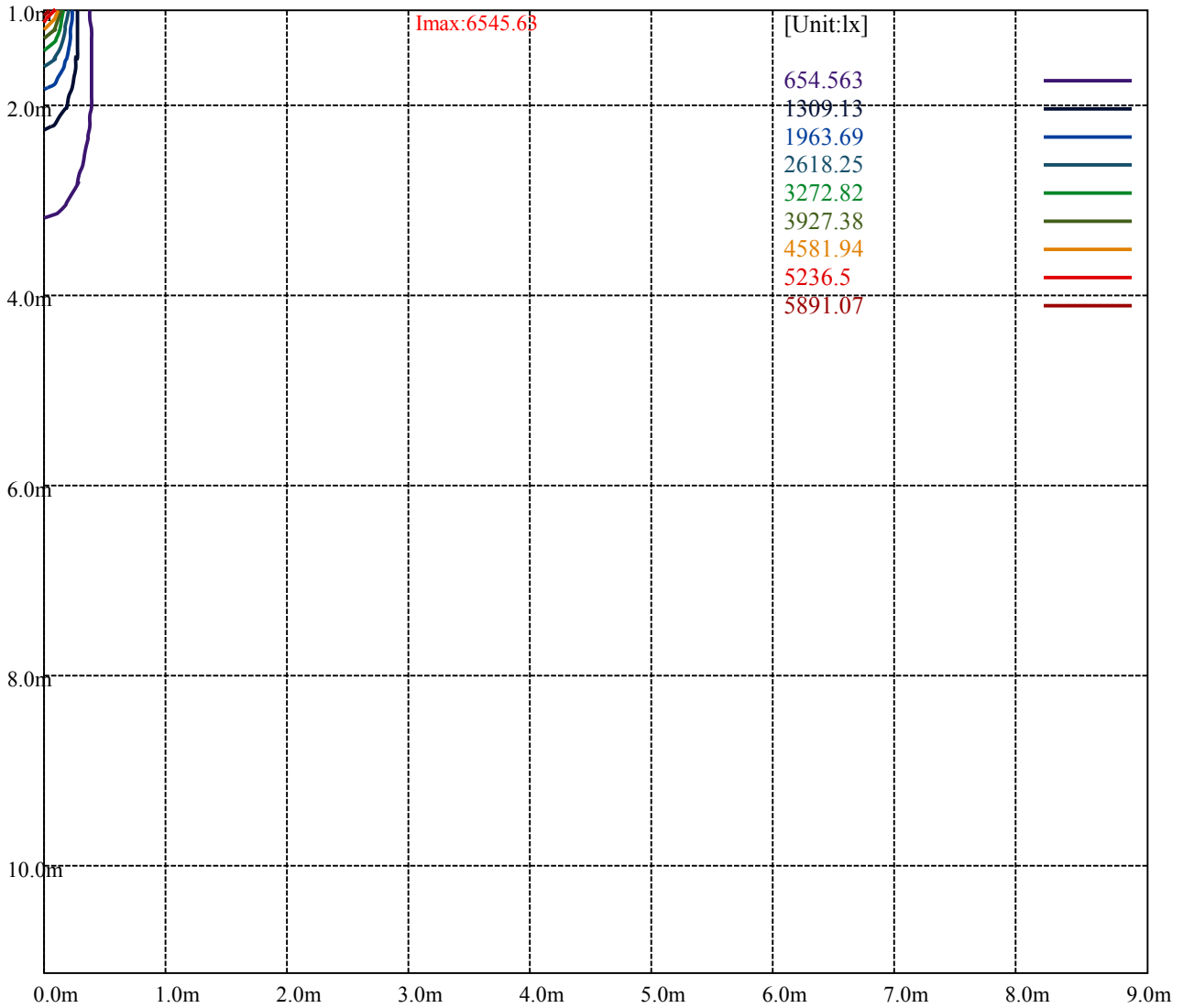
Road

Imax:6545.63

(10%Imax) 654.563	—
(20%Imax) 1309.13	—
(30%Imax) 1963.69	—
(40%Imax) 2618.25	—
(50%Imax) 3272.82	—
(60%Imax) 3927.38	—
(70%Imax) 4581.94	—
(80%Imax) 5236.5	—
(90%Imax) 5891.07	—



(10%Emax) 72.72922	—
(20%Emax) 145.4589	—
(30%Emax) 218.1878	—
(40%Emax) 290.9167	—
(50%Emax) 363.6456	—
(60%Emax) 436.3755	—
(70%Emax) 509.1044	—
(80%Emax) 581.8333	—
(90%Emax) 654.5623	—



Luminance Table

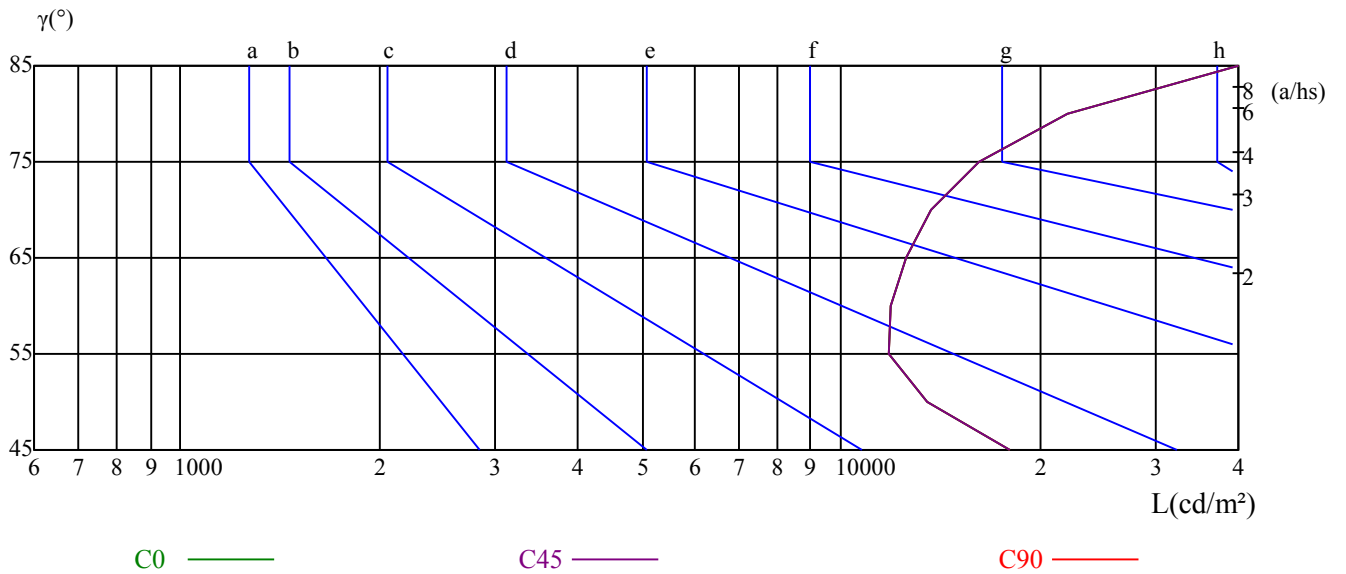
γ	45	50	55	60	65	70	75	80	85
C0	17995	13537	11804	11868	12569	13689	16201	21983	40277
C45	17995	13537	11804	11868	12569	13689	16201	21983	40277
C90	17995	13537	11804	11868	12569	13689	16201	21983	40277

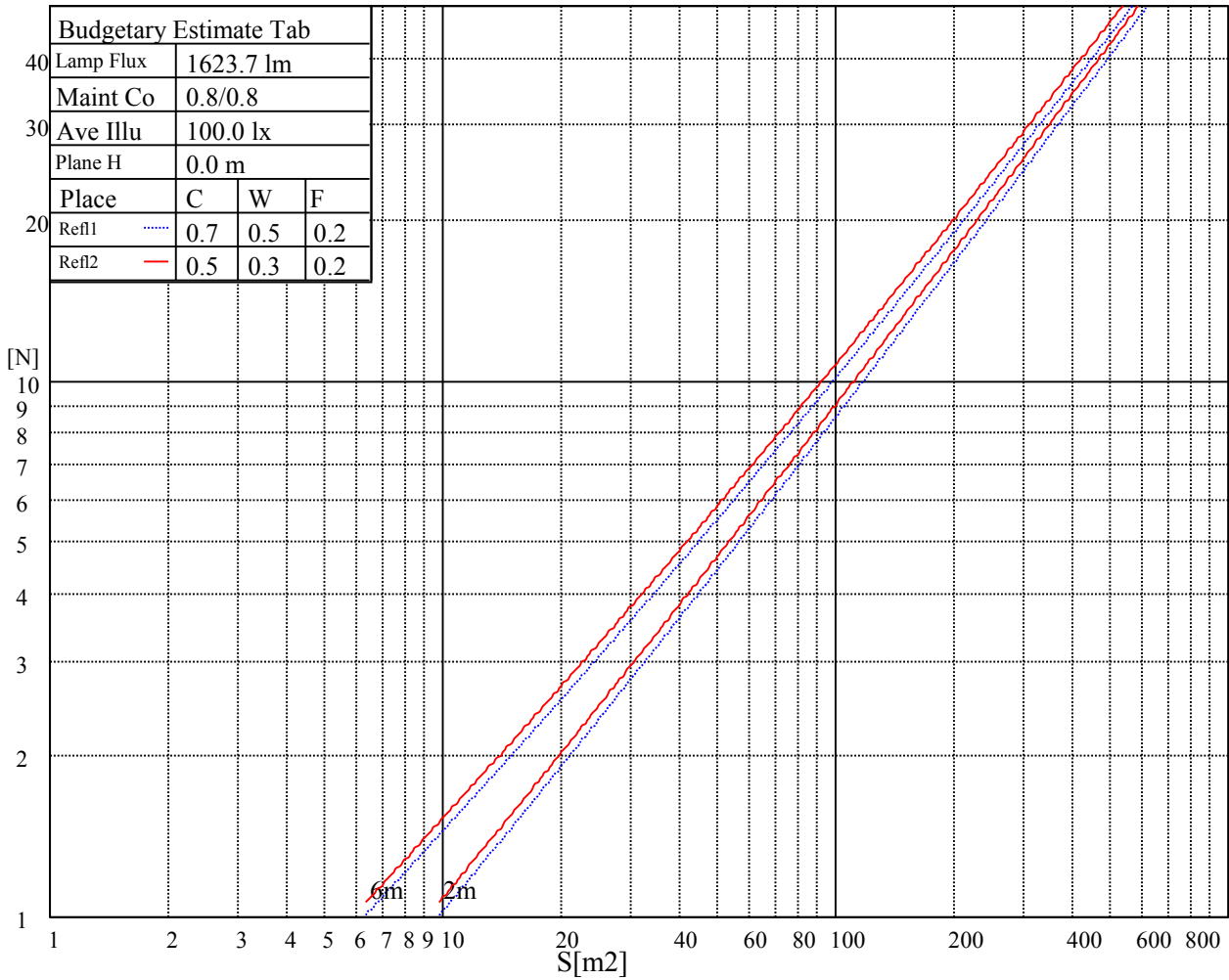
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
12569	12569	12569	16201	16201	16201	40277	40277	40277

Glare Table

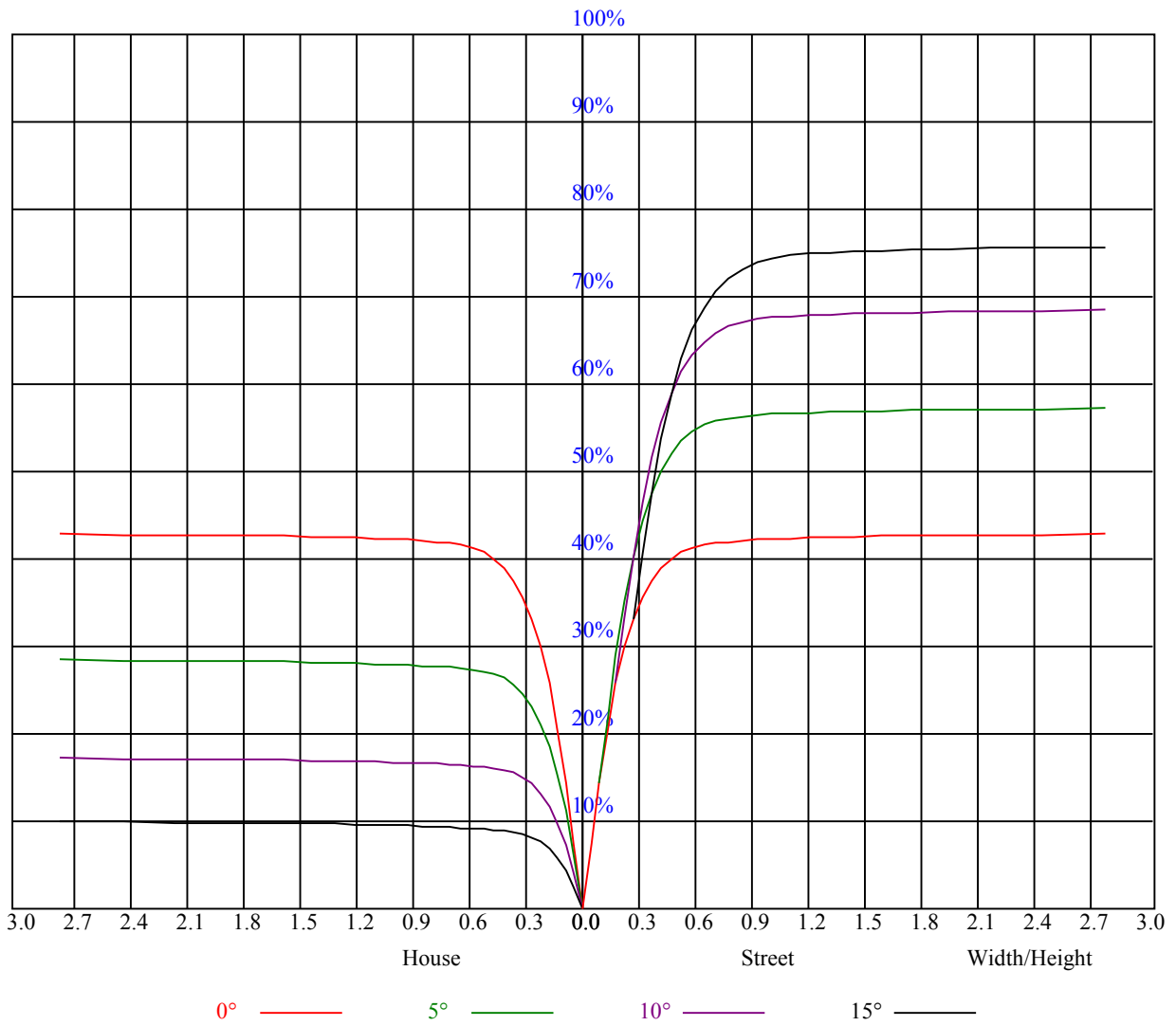
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.97	0.95	0.93	0.95	0.93	0.92	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.84	0.83
2	0.92	0.89	0.87	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.83	0.82	0.80	0.79
3	0.88	0.84	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.78	0.80	0.79	0.77	0.76
4	0.84	0.80	0.77	0.83	0.80	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.76	0.74	0.72	0.71
6	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	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	0.72	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	0.65	0.63	0.68	0.65	0.63	0.62
10	0.68	0.64	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.61	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	6584.77	6581.78	6496.34	6326.64	6109.14	5834.87	5427.36	5059.88	4667.90
45.0	6532.19	6388.78	6168.29	5916.13	5574.35	5174.00	4785.61	4337.46	3949.07
90.0	6492.75	6361.29	6168.29	5846.82	5533.12	5179.38	4745.58	4301.01	3909.03
135.0	6572.82	6512.47	6373.84	6181.44	5901.20	5552.24	5198.50	4772.46	4382.28
180.0	6584.77	6508.88	6375.04	6121.09	5859.97	5540.89	5089.15	4698.37	4293.84
225.0	6532.19	6588.35	6572.82	6462.28	6305.13	6088.22	5772.13	5406.44	5041.95
270.0	6492.75	6564.45	6554.30	6473.03	6305.72	6057.75	5779.30	5414.81	5058.68
315.0	6572.82	6553.70	6468.25	6278.83	6055.36	5773.92	5361.03	4999.53	4606.35
360.0	6584.77	6581.78	6496.34	6326.64	6109.14	5834.87	5427.36	5059.88	4667.90
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4224.53	3787.14	3405.92	3037.84	2610.60	2308.25	2036.98	1774.66	1557.76
45.0	3518.25	3140.61	2746.24	2427.76	2106.29	1834.41	1635.44	1448.41	1291.86
90.0	3471.64	3058.75	2716.96	2362.63	2084.78	1819.48	1600.18	1435.26	1184.24
135.0	3938.91	3499.13	3125.08	2773.13	2372.19	2091.35	1851.14	1601.38	1433.47
180.0	3888.12	3399.94	3032.46	2686.49	2301.08	2032.79	1801.55	1578.67	1393.44
225.0	4597.99	4146.85	3745.91	3301.95	2931.48	2549.06	2213.25	1949.14	1721.48
270.0	4624.28	4179.12	3781.16	3395.76	2930.88	2593.28	2283.76	1947.35	1721.48
315.0	4108.91	3712.45	3321.66	2863.96	2566.39	2226.99	1905.52	1714.91	1524.89
360.0	4224.53	3787.14	3405.92	3037.84	2610.60	2308.25	2036.98	1774.66	1557.76
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1398.22	1248.24	1120.96	1029.54	905.26	810.25	733.17	645.93	572.43
45.0	1171.16	1076.75	935.73	827.58	752.89	662.66	589.76	521.64	432.61
90.0	1128.31	1035.70	932.68	799.37	734.90	666.78	583.07	498.04	425.26
135.0	1293.65	1162.19	1042.09	934.54	828.77	740.94	667.44	584.98	509.69
180.0	1178.39	1122.28	1015.56	902.03	797.10	725.34	647.18	565.50	490.09
225.0	1492.03	1340.86	1184.48	1074.60	972.06	871.62	766.63	683.93	613.01
270.0	1532.06	1356.99	1214.18	1102.44	987.12	877.17	784.56	702.69	634.58
315.0	1270.35	1189.20	1092.52	974.69	863.61	772.78	700.78	613.60	540.11
360.0	1398.22	1248.24	1120.96	1029.54	905.26	810.25	733.17	645.93	572.43
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	485.79	405.12	339.99	308.92	204.00	153.21	112.51	83.42	68.95
45.0	356.72	302.35	220.43	165.28	116.70	86.10	71.52	63.70	56.59
90.0	351.17	287.05	218.46	158.82	114.43	83.59	69.49	62.80	56.77
135.0	429.03	353.74	302.95	222.82	154.40	110.78	83.47	68.18	61.55
180.0	419.76	336.23	271.94	212.84	152.25	106.18	81.44	68.72	61.31
225.0	528.81	453.46	378.24	309.52	250.78	190.13	137.13	101.40	79.59
270.0	550.92	467.87	397.36	332.82	301.75	197.01	148.43	105.28	79.65
315.0	464.76	385.88	312.03	251.98	186.97	130.98	94.23	70.63	61.90
360.0	485.79	405.12	339.99	308.92	204.00	153.21	112.51	83.42	68.95
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	61.43	54.08	48.46	42.78	38.12	34.60	31.19	28.20	25.87
45.0	51.15	46.25	40.93	37.23	33.94	30.77	27.67	25.51	23.18
90.0	50.25	45.59	41.53	36.81	33.58	30.65	28.08	25.34	23.30
135.0	55.57	49.65	44.46	40.39	36.45	33.28	30.06	27.19	25.10
180.0	55.33	49.36	44.81	39.74	36.21	33.16	30.35	27.37	25.22
225.0	67.46	60.59	54.49	47.86	43.26	39.38	35.13	32.21	29.52
270.0	68.84	62.56	53.54	47.74	43.38	38.24	34.36	31.67	28.38
315.0	54.91	48.76	44.10	39.32	35.49	32.63	30.00	27.19	25.22
360.0	61.43	54.08	48.46	42.78	38.12	34.60	31.19	28.20	25.87

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	23.84	21.69	20.08	18.70	17.39	16.13	15.24	14.34	13.62
45.0	21.21	19.66	18.22	17.03	15.89	14.88	14.16	13.50	12.85
90.0	21.33	19.72	18.28	17.09	15.95	14.94	14.10	13.44	12.91
135.0	22.83	20.97	19.42	18.11	16.67	15.72	14.82	14.04	13.27
180.0	23.24	21.09	19.60	18.28	16.97	15.89	15.00	14.16	13.38
225.0	26.59	24.68	22.47	20.50	19.24	17.81	16.43	15.60	14.82
270.0	25.93	24.08	21.81	20.26	18.88	17.27	16.25	15.36	14.40
315.0	23.24	21.39	19.78	18.40	17.15	16.07	15.18	14.40	13.74
360.0	23.84	21.69	20.08	18.70	17.39	16.13	15.24	14.34	13.62
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	13.03	12.49	12.07	11.71	11.47	11.23	10.93	10.76	10.58
45.0	12.43	12.01	11.65	11.47	11.17	10.93	10.76	10.58	10.40
90.0	12.37	12.01	11.71	11.47	11.17	10.99	10.82	10.58	10.46
135.0	12.73	12.31	11.89	11.59	11.35	11.05	10.88	10.70	10.40
180.0	12.85	12.31	11.89	11.59	11.29	11.05	10.82	10.52	10.28
225.0	13.86	13.32	12.79	12.37	11.89	11.59	11.29	10.99	10.82
270.0	13.74	13.15	12.49	12.13	11.77	11.47	11.23	10.99	10.82
315.0	13.15	12.55	12.19	11.83	11.47	11.29	11.05	10.82	10.58
360.0	13.03	12.49	12.07	11.71	11.47	11.23	10.93	10.76	10.58
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.34	10.16	9.92	9.62	9.38	9.14	8.90	8.72	8.48
45.0	10.10	9.86	9.62	9.32	9.08	8.84	8.60	8.43	8.19
90.0	10.10	9.92	9.62	9.32	9.08	8.90	8.60	8.43	8.25
135.0	10.28	9.98	9.74	9.56	9.20	8.96	8.78	8.60	8.37
180.0	10.10	9.80	9.56	9.32	9.02	8.84	8.66	8.43	8.25
225.0	10.58	10.28	10.10	9.80	9.56	9.38	9.08	8.90	8.72
270.0	10.58	10.34	10.16	9.92	9.62	9.38	9.26	9.02	8.72
315.0	10.34	10.16	9.86	9.62	9.38	9.20	8.90	8.72	8.54
360.0	10.34	10.16	9.92	9.62	9.38	9.14	8.90	8.72	8.48
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.31	8.13	7.95	7.77	7.59	7.47	7.35	7.17	7.05
45.0	8.01	7.89	7.77	7.53	7.41	7.29	7.17	7.05	6.87
90.0	8.07	7.89	7.83	7.65	7.53	7.41	7.35	7.23	7.11
135.0	8.19	8.07	7.89	7.71	7.59	7.47	7.29	7.23	7.05
180.0	8.13	7.89	7.77	7.59	7.47	7.35	7.17	7.05	6.93
225.0	8.48	8.31	8.13	7.95	7.83	7.65	7.47	7.35	7.17
270.0	8.54	8.37	8.19	8.01	7.83	7.65	7.53	7.41	7.29
315.0	8.31	8.13	7.95	7.83	7.65	7.47	7.35	7.17	6.99
360.0	8.31	8.13	7.95	7.77	7.59	7.47	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	6.45	6.33	6.21	6.15	6.04
45.0	6.81	6.69	6.57	6.51	6.39	6.21	6.09	6.04	5.98
90.0	7.05	6.99	6.87	6.51	6.39	6.27	6.09	6.04	6.04
135.0	6.93	6.87	6.81	6.69	6.51	6.39	6.21	6.15	6.04
180.0	6.81	6.69	6.57	6.51	6.39	6.27	6.15	6.04	5.92
225.0	7.11	6.93	6.81	6.69	6.63	6.51	6.39	6.27	6.15
270.0	7.17	6.99	6.93	6.75	6.69	6.57	6.33	6.27	6.15
315.0	6.93	6.81	6.69	6.57	6.45	6.33	6.21	6.15	6.04
360.0	6.93	6.81	6.69	6.57	6.45	6.33	6.21	6.15	6.04

Intensity data(cd)

C/γ(°)	90.0
0.0	5.92
45.0	5.98
90.0	5.98
135.0	6.04
180.0	5.98
225.0	6.09
270.0	6.09
315.0	5.98
360.0	5.92