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Nata

LumCAT: LN01D05015DA-N

Luminaire: 97.70.234.00

Report No: 210106-B009

Test No: 210107-C009

LampCAT: XICATO XOB LES 9.8MM

Lamp flux(lm): 1260.0

Number of Lamps: 1

Length(mm): 92

Phm Type: C

Voltage(V): 34.6600

Current(A): 0.3810

Power (W): 13.2050

PF: 0.0000

Ballast type: DC

Width(mm): 92

Height(mm): 50

Photometric Results

Lumens(lm): 1115.08

Efficiency(%): 88.50%

Lumens(lm)/Power(W): 84.44

Central intensity(cd): 7182.422

Maximum intensity(cd): 7182.422

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=18.8

[C90/270]Total=18.8

Field angle(10%Imax): [C0/180]Total=37.1

[C90/270]Total=37.1

Maximum s/h(1/2): C0_180=0.32 C90_270=0.32

Maximum s/h(1/4): C0_180=0.33 C90_270=0.33

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.50%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.675%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7182.422	0.000	0	.000%	.000%
1.0	7130.391	6.848	6.848	.544%	.614%
2.0	6964.594	20.230	27.079	1.606%	2.428%
3.0	6677.789	32.628	59.707	2.590%	5.354%
4.0	6314.625	43.490	103.197	3.452%	9.255%
5.0	5885.719	52.485	155.682	4.165%	13.961%
6.0	5370.961	59.157	214.839	4.695%	19.267%
7.0	4831.875	63.329	278.168	5.026%	24.946%
8.0	4342.148	65.657	343.824	5.211%	30.834%
9.0	3809.039	66.061	409.885	5.243%	36.758%
10.0	3285.492	64.203	474.088	5.095%	42.516%
11.0	2854.195	61.348	535.436	4.869%	48.018%
12.0	2442.797	57.904	593.34	4.596%	53.210%
13.0	2017.617	52.934	646.274	4.201%	57.958%
14.0	1696.289	47.538	693.812	3.773%	62.221%
15.0	1379.939	42.232	736.043	3.352%	66.008%
16.0	1128.066	36.749	772.793	2.917%	69.304%
17.0	960.546	32.525	805.318	2.581%	72.221%
18.0	793.828	28.926	834.244	2.296%	74.815%
19.0	651.298	25.142	859.386	1.995%	77.069%
20.0	540.014	21.804	881.19	1.731%	79.025%
21.0	447.110	18.955	900.145	1.504%	80.725%
22.0	372.923	16.479	916.624	1.308%	82.202%
23.0	319.887	14.537	931.161	1.154%	83.506%
24.0	265.760	12.804	943.965	1.016%	84.654%
25.0	231.778	11.313	955.278	.898%	85.669%
26.0	191.046	9.981	965.259	.792%	86.564%
27.0	164.855	8.707	973.966	.691%	87.345%
28.0	141.757	7.763	981.729	.616%	88.041%
29.0	123.940	6.951	988.681	.552%	88.664%
30.0	110.060	6.318	994.998	.501%	89.231%
31.0	97.123	5.766	1000.764	.458%	89.748%
32.0	86.941	5.273	1006.037	.419%	90.221%
33.0	79.137	4.893	1010.93	.388%	90.660%
34.0	71.831	4.569	1015.499	.363%	91.069%
35.0	65.714	4.272	1019.77	.339%	91.453%
36.0	60.518	4.019	1023.79	.319%	91.813%
37.0	55.856	3.795	1027.585	.301%	92.153%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	51.750	3.592	1031.177	.285%	92.475%
39.0	47.813	3.398	1034.575	.270%	92.780%
40.0	44.325	3.213	1037.789	.255%	93.068%
41.0	41.323	3.050	1040.839	.242%	93.342%
42.0	38.447	2.898	1043.737	.230%	93.602%
43.0	35.543	2.741	1046.478	.218%	93.848%
44.0	33.110	2.591	1049.069	.206%	94.080%
45.0	30.839	2.458	1051.526	.195%	94.300%
46.0	28.575	2.324	1053.85	.184%	94.509%
47.0	26.677	2.197	1056.047	.174%	94.706%
48.0	25.038	2.091	1058.138	.166%	94.893%
49.0	23.548	1.995	1060.133	.158%	95.072%
50.0	22.170	1.906	1062.039	.151%	95.243%
51.0	21.059	1.829	1063.868	.145%	95.407%
52.0	20.067	1.765	1065.633	.140%	95.565%
53.0	19.167	1.707	1067.34	.135%	95.719%
54.0	18.373	1.655	1068.994	.131%	95.867%
55.0	17.641	1.608	1070.602	.128%	96.011%
56.0	16.938	1.563	1072.164	.124%	96.151%
57.0	16.298	1.520	1073.684	.121%	96.287%
58.0	15.666	1.478	1075.162	.117%	96.420%
59.0	15.124	1.439	1076.602	.114%	96.549%
60.0	14.597	1.404	1078.006	.111%	96.675%
61.0	14.084	1.369	1079.374	.109%	96.798%
62.0	13.648	1.336	1080.711	.106%	96.918%
63.0	13.219	1.307	1082.017	.104%	97.035%
64.0	12.804	1.277	1083.294	.101%	97.149%
65.0	12.445	1.250	1084.544	.099%	97.261%
66.0	12.129	1.226	1085.77	.097%	97.371%
67.0	11.974	1.212	1086.982	.096%	97.480%
68.0	12.108	1.220	1088.202	.097%	97.589%
69.0	12.340	1.247	1089.449	.099%	97.701%
70.0	12.720	1.287	1090.736	.102%	97.817%
71.0	13.184	1.339	1092.075	.106%	97.937%
72.0	13.676	1.397	1093.471	.111%	98.062%
73.0	14.175	1.456	1094.928	.116%	98.193%
74.0	14.688	1.517	1096.445	.120%	98.329%
75.0	15.223	1.580	1098.026	.125%	98.470%

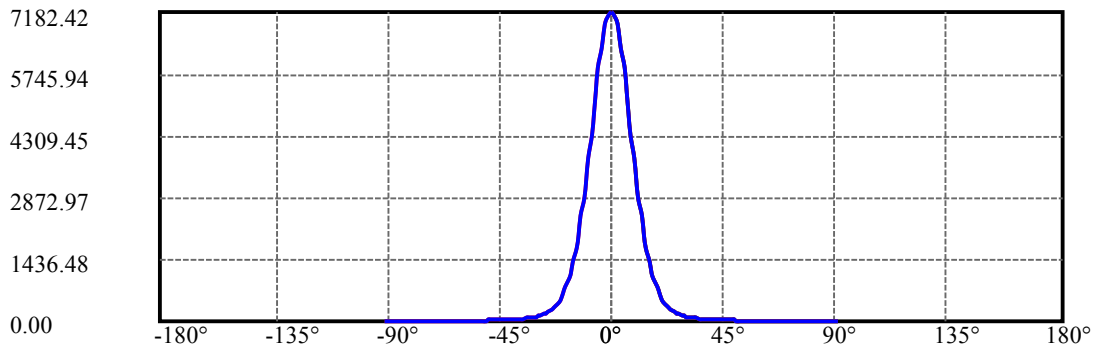
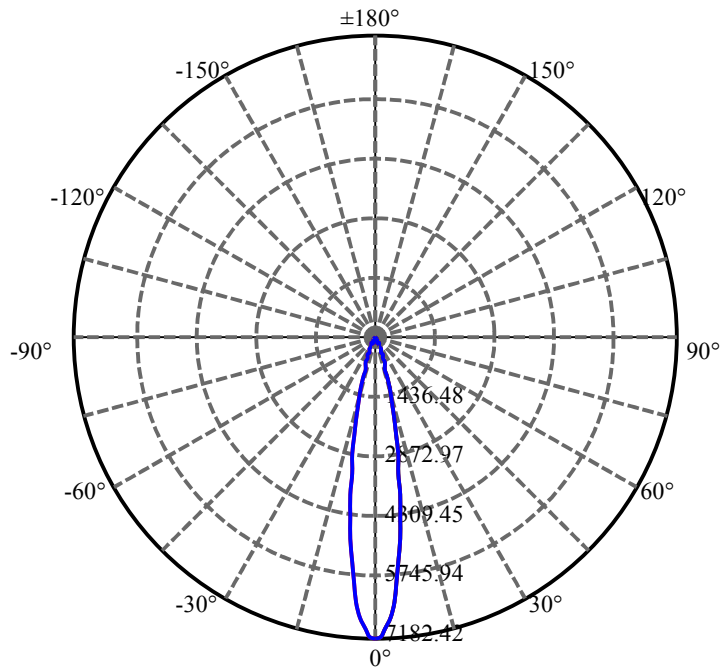
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	15.645	1.639	1099.664	.130%	98.617%
77.0	16.024	1.688	1101.353	.134%	98.769%
78.0	16.052	1.717	1103.07	.136%	98.923%
79.0	15.462	1.693	1104.763	.134%	99.075%
80.0	14.288	1.604	1106.367	.127%	99.218%
81.0	12.895	1.470	1107.837	.117%	99.350%
82.0	11.180	1.306	1109.142	.104%	99.467%
83.0	9.302	1.113	1110.256	.088%	99.567%
84.0	7.812	0.932	1111.188	.074%	99.651%
85.0	6.743	0.794	1111.982	.063%	99.722%
86.0	5.984	0.696	1112.678	.055%	99.784%
87.0	5.625	0.635	1113.313	.050%	99.841%
88.0	5.428	0.605	1113.919	.048%	99.896%
89.0	5.288	0.587	1114.506	.047%	99.948%
90.0	5.210	0.576	1115.082	.046%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	995.00	78.97%	89.23%
0-40	1037.79	82.36%	93.07%
0-60	1078.01	85.56%	96.68%
0-90	1114.51	88.45%	99.95%
0-120	1114.51	88.45%	99.95%
0-180	1115.08	88.50%	100.00%
60-90	37.90	3.01%	3.40%
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%
0-20.57	892.07	70.80%	80.00%

ZONAL LUMEN SUMMARY

0-10	474.09
10-20	407.10
20-30	113.81
30-40	42.79
40-50	24.25
50-60	15.97
60-70	12.73
70-80	15.63
80-90	8.14
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



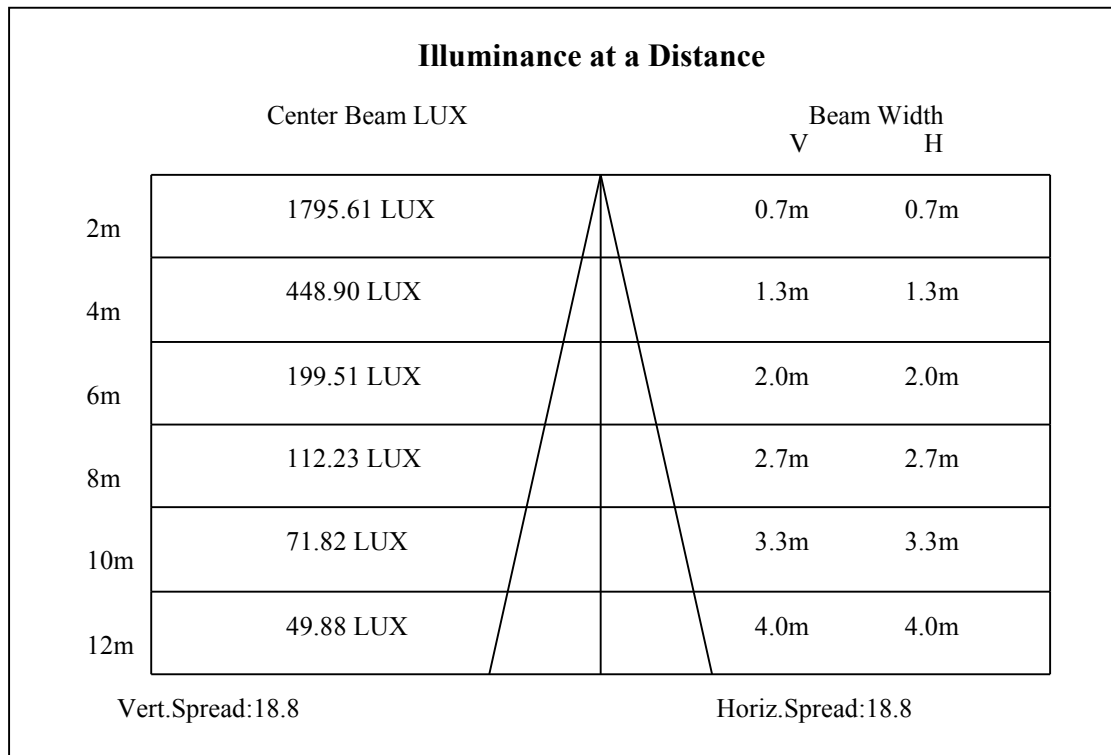
C0(Max): —————

C0/C180: —————

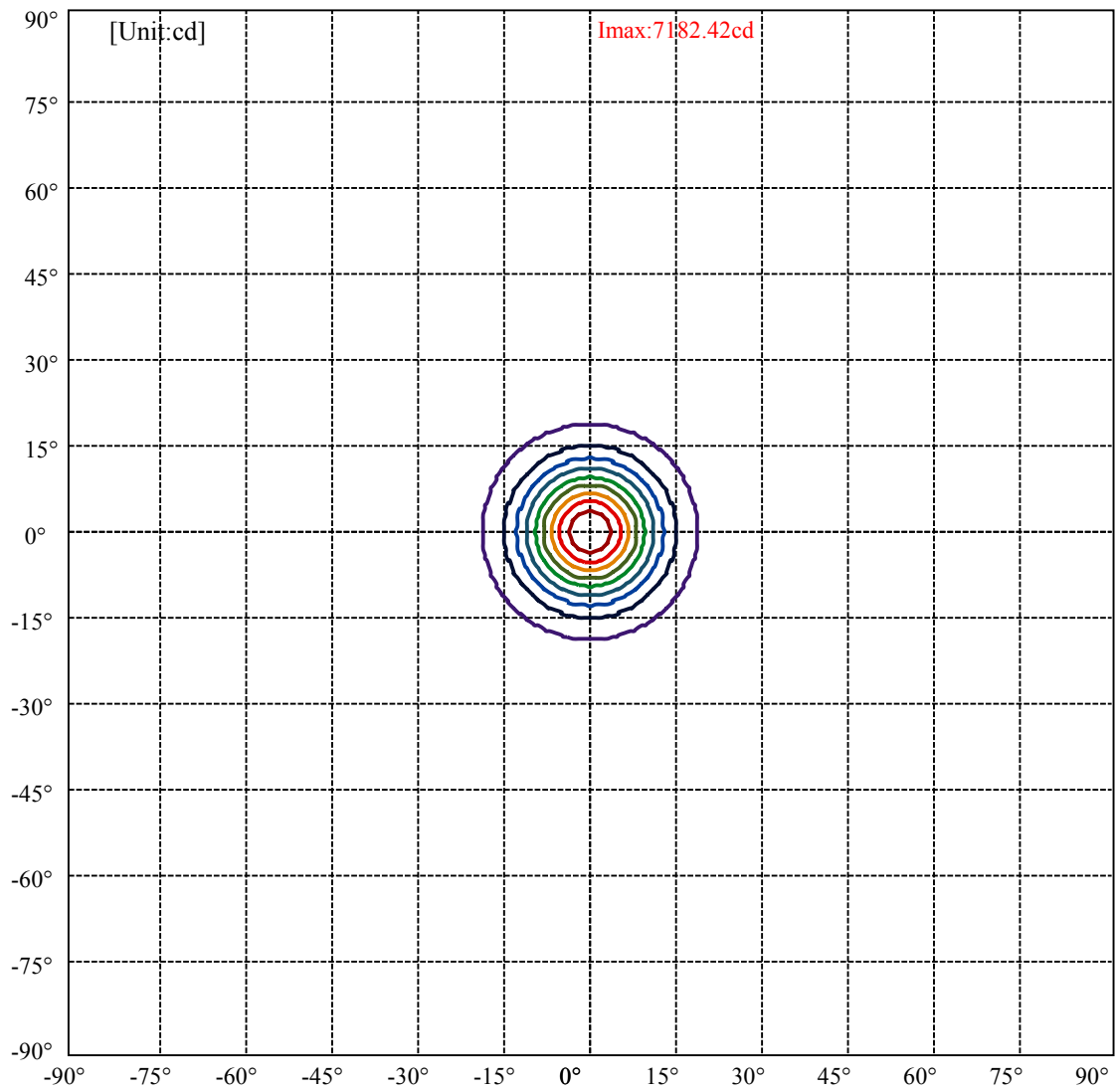
C90/C270: —————

Field angle(10%Imax):C0/180Left:18.5 Right:18.5
:C90/270Left:18.5 Right:18.5

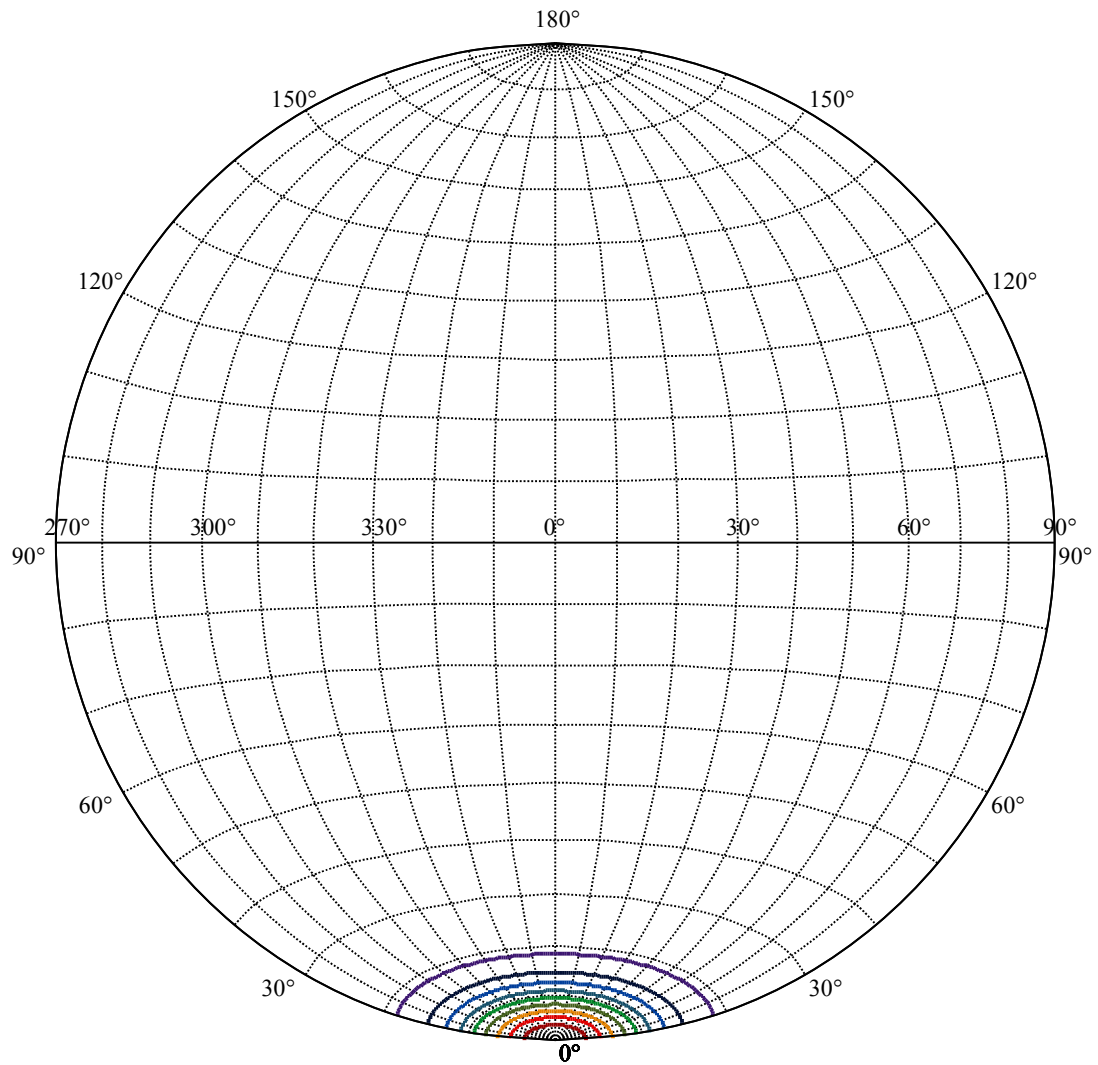
Beam Angle(50%Imax):C0/180Left:9.4 Right:9.4
:C90/270Left:9.4 Right:9.4



ISO-Intensity(V-H)



(10%Imax) 718.242	—
(20%Imax) 1436.48	—
(30%Imax) 2154.73	—
(40%Imax) 2872.97	—
(50%Imax) 3591.21	—
(60%Imax) 4309.45	—
(70%Imax) 5027.7	—
(80%Imax) 5745.94	—
(90%Imax) 6464.18	—



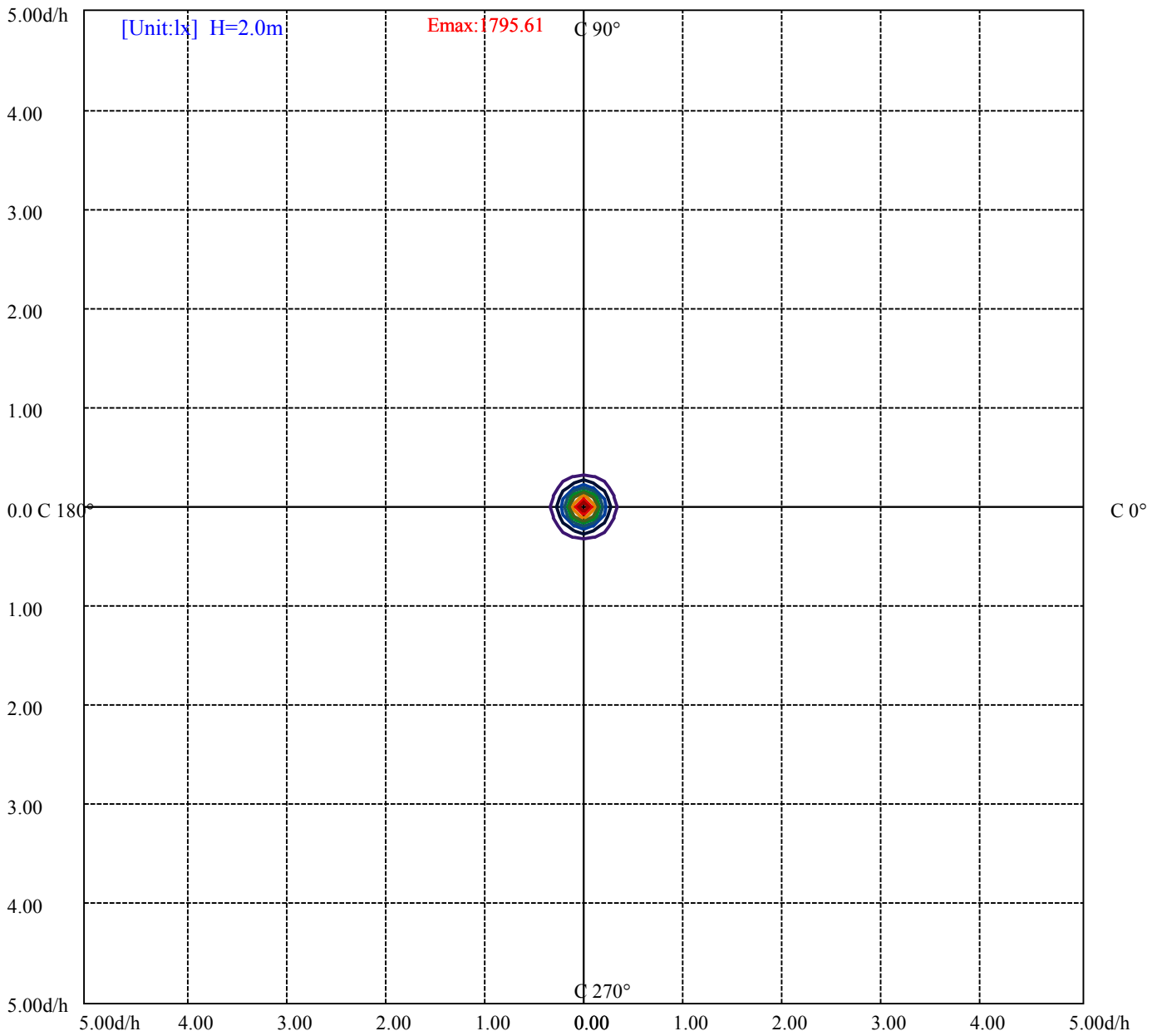
House

[Unit:cd]

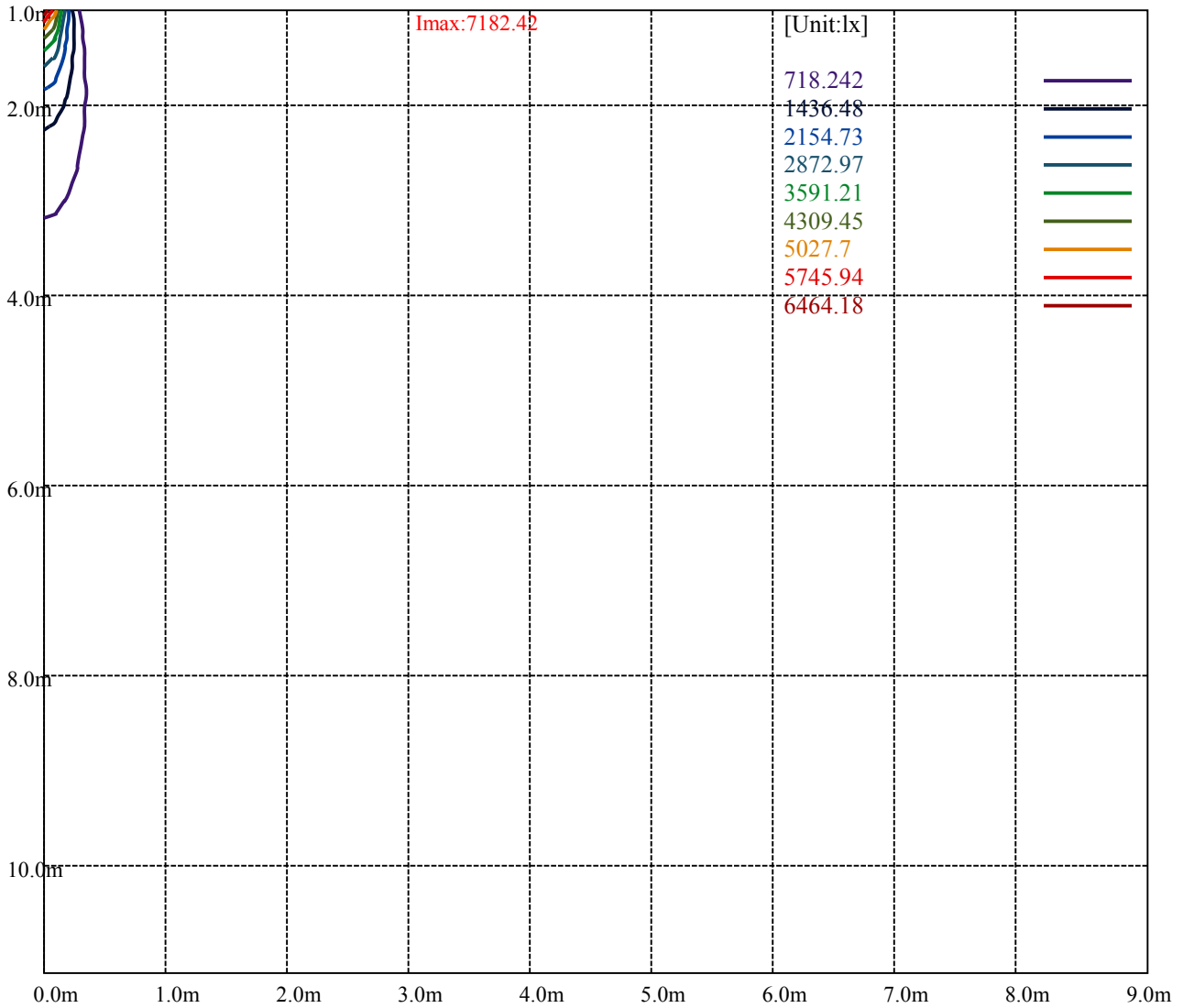
Road

Imax:7182.42

(10%Imax) 718.242	—
(20%Imax) 1436.48	—
(30%Imax) 2154.73	—
(40%Imax) 2872.97	—
(50%Imax) 3591.21	—
(60%Imax) 4309.45	—
(70%Imax) 5027.7	—
(80%Imax) 5745.94	—
(90%Imax) 6464.18	—



(10%Emax) 179.5603	—
(20%Emax) 359.12	—
(30%Emax) 538.68	—
(40%Emax) 718.2425	—
(50%Emax) 897.8025	—
(60%Emax) 1077.363	—
(70%Emax) 1256.922	—
(80%Emax) 1436.483	—
(90%Emax) 1616.042	—



Luminance Table

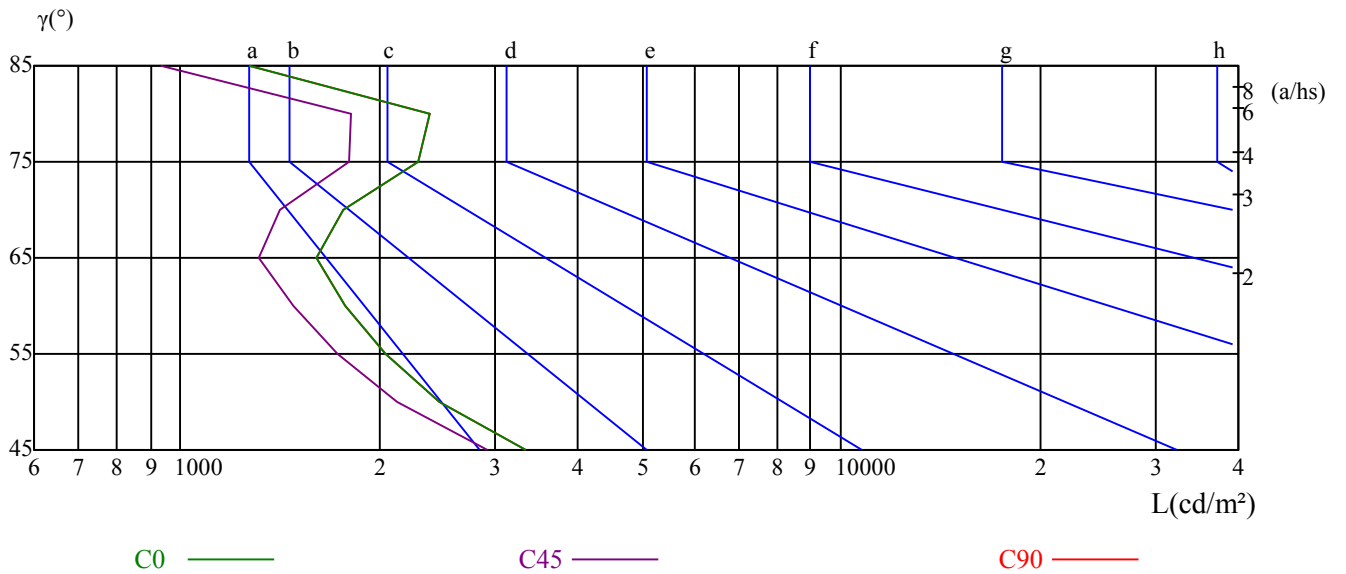
γ	45	50	55	60	65	70	75	80	85
C0	3338	2473	2046	1777	1607	1762	2295	2381	1267
C45	2913	2127	1732	1480	1314	1412	1796	1814	934
C90	3338	2473	2046	1777	1607	1762	2295	2381	1267

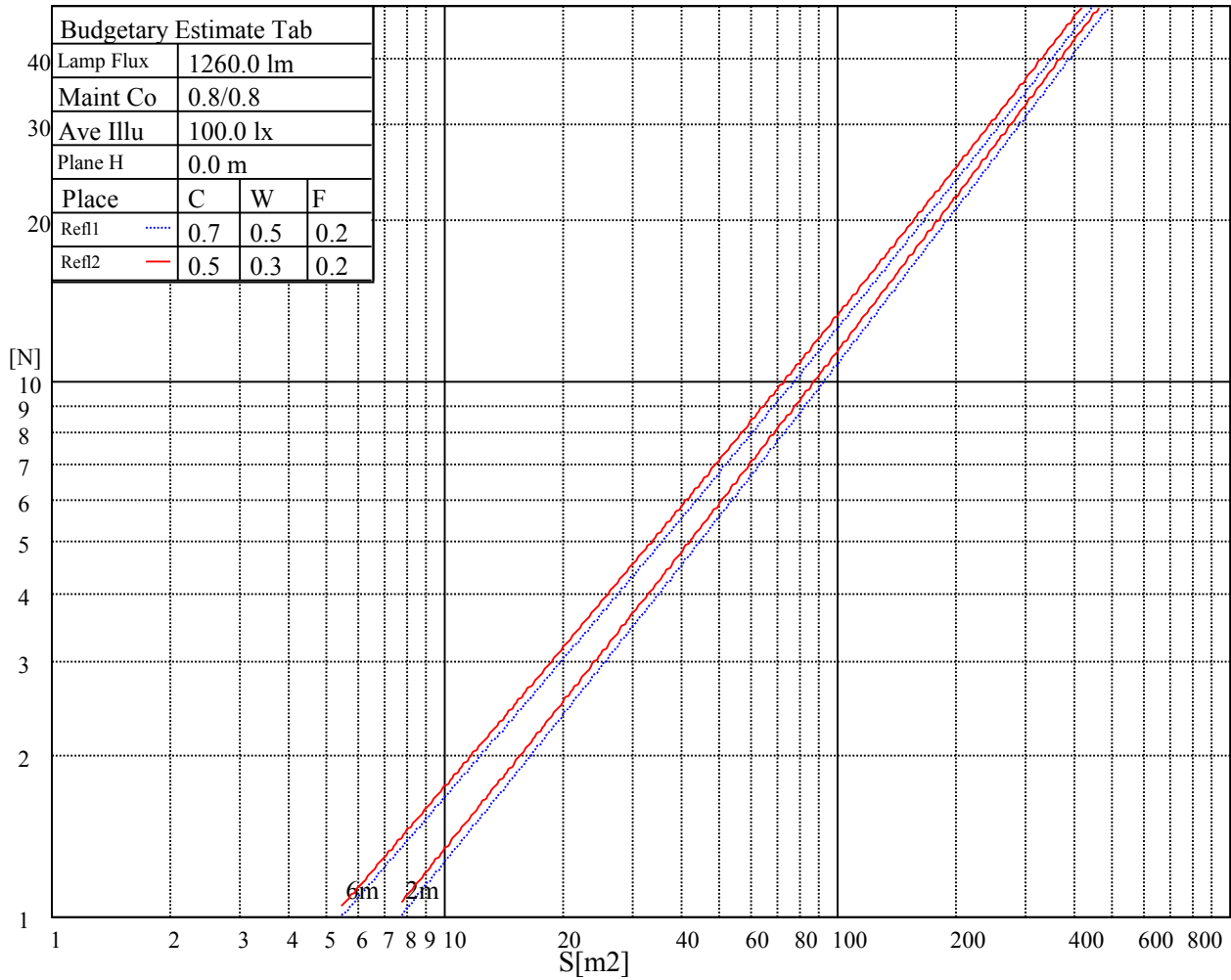
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3479	3479	3479	6949	6949	6949	9141	9141	9141

Glare Table

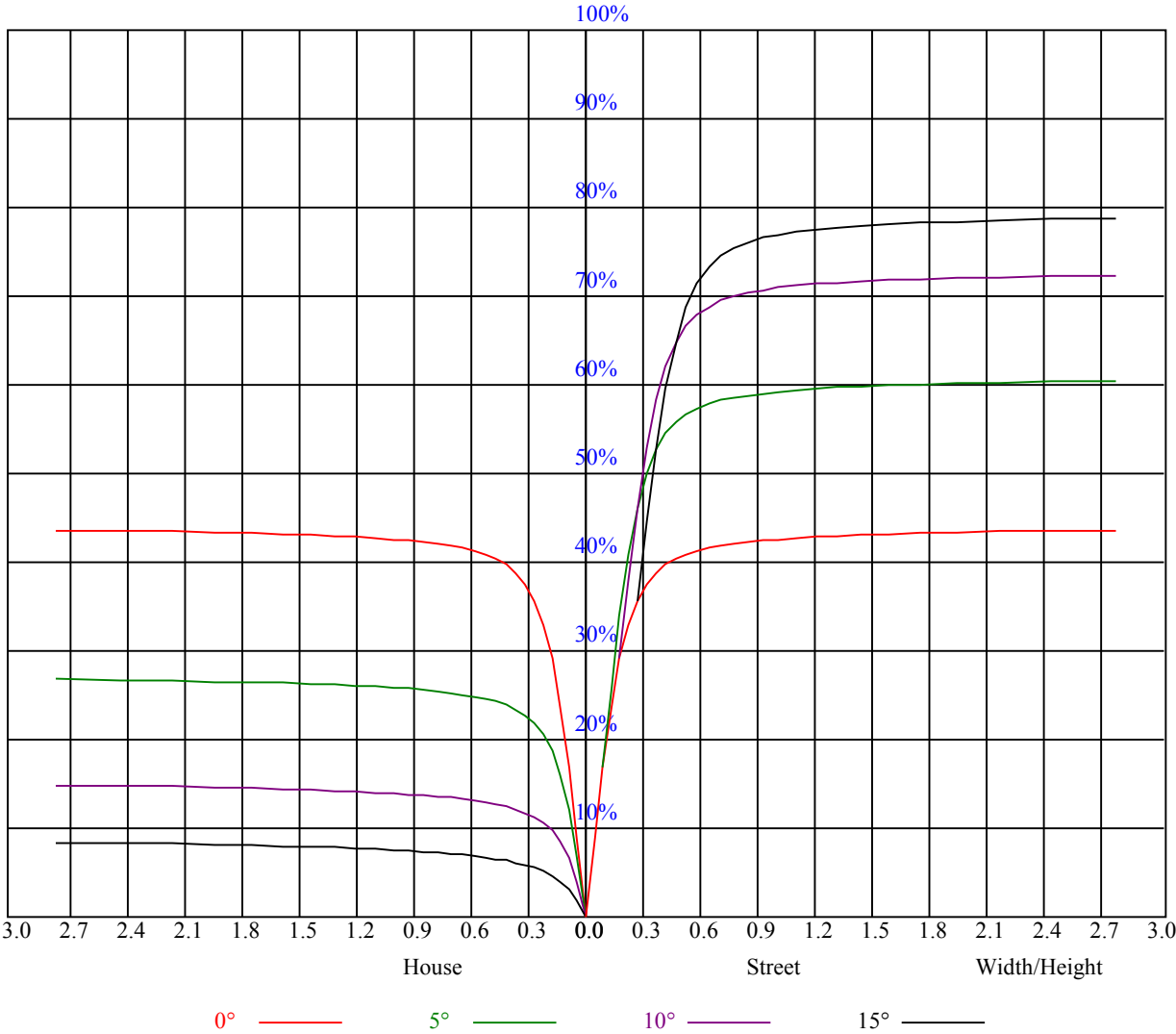
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.99	0.97	0.95	0.97	0.96	0.94	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.84
2	0.94	0.91	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.85	0.84	0.82	0.81
3	0.90	0.86	0.84	0.89	0.86	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.83	0.81	0.79	0.78
4	0.86	0.83	0.80	0.85	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.78	0.80	0.78	0.77	0.76
5	0.83	0.79	0.77	0.82	0.79	0.76	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
6	0.80	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
7	0.78	0.74	0.72	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.70
8	0.76	0.72	0.70	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.68
9	0.74	0.70	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.72	0.69	0.67	0.66
10	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.66	0.65



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	7218.56	7128.00	6921.00	6635.25	6214.50	5715.00	5234.63	4682.25	4194.00
45.0	7180.31	7055.44	6813.56	6505.31	6070.50	5625.00	5079.94	4522.50	4039.31
90.0	7166.25	7071.19	6882.75	6524.44	6152.63	5717.25	5180.63	4623.75	4128.19
135.0	7164.56	7208.44	7114.50	6955.88	6615.56	6253.31	5823.56	5231.81	4743.56
180.0	7218.56	7192.69	7067.25	6783.19	6459.75	6060.38	5604.75	4992.75	4491.00
225.0	7180.31	7185.38	7069.50	6835.50	6533.44	6150.38	5592.38	5118.19	4627.13
270.0	7166.25	7157.25	7025.06	6805.69	6445.69	5991.19	5539.50	4998.38	4511.25
315.0	7164.56	7044.75	6823.13	6377.06	6024.94	5573.25	4912.31	4485.38	4002.75
360.0	7218.56	7128.00	6921.00	6635.25	6214.50	5715.00	5234.63	4682.25	4194.00
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3666.94	3169.69	2756.25	2420.44	1947.38	1649.25	1419.75	1117.69	939.94
45.0	3508.88	3002.06	2584.69	2201.63	1779.75	1491.75	1246.50	1014.75	824.63
90.0	3585.94	3079.69	2663.44	2234.25	1895.06	1566.00	1101.04	1076.79	899.16
135.0	4188.38	3645.56	3184.88	2753.44	2262.94	1919.81	1621.69	1334.25	1096.31
180.0	3995.44	3408.19	2970.00	2561.63	2145.94	1781.44	1501.31	1100.59	1029.32
225.0	4075.31	3538.69	3081.94	2604.38	2172.94	1832.63	1501.31	1107.39	1008.28
270.0	3971.25	3452.63	3014.44	2606.63	2143.69	1814.06	1526.63	1222.88	1024.88
315.0	3480.19	2987.44	2577.94	2160.00	1793.25	1515.38	1121.29	1050.19	861.86
360.0	3666.94	3169.69	2756.25	2420.44	1947.38	1649.25	1419.75	1117.69	939.94
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	809.44	653.06	540.00	466.88	381.94	320.06	285.19	229.22	198.06
45.0	680.63	542.25	439.88	365.63	300.38	285.19	206.55	178.54	148.33
90.0	715.28	597.66	501.36	404.61	343.63	293.18	250.99	208.35	180.79
135.0	916.88	741.38	609.19	514.69	429.75	363.94	304.88	286.88	218.48
180.0	841.73	689.51	577.97	476.38	395.89	337.73	289.13	239.18	206.83
225.0	800.21	678.94	561.83	434.31	369.90	308.42	242.27	209.14	178.43
270.0	860.06	707.06	581.63	491.63	408.38	348.19	291.94	285.75	208.58
315.0	726.41	600.53	508.28	422.78	353.53	302.40	255.15	217.18	188.89
360.0	809.44	653.06	540.00	466.88	381.94	320.06	285.19	229.22	198.06
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	169.03	145.58	128.59	114.58	99.79	90.11	82.01	73.24	67.28
45.0	129.38	114.02	98.38	88.59	80.61	72.79	67.50	63.06	58.11
90.0	158.01	136.41	118.86	106.09	93.88	83.98	76.61	69.53	64.18
135.0	190.07	160.54	141.36	125.33	108.68	97.65	88.54	79.76	72.17
180.0	179.94	154.52	133.54	118.18	103.89	92.08	83.36	75.15	68.91
225.0	150.69	128.81	113.46	99.45	89.38	80.33	73.01	67.56	62.16
270.0	176.85	154.29	133.48	118.41	104.06	92.19	83.48	75.21	68.18
315.0	164.87	139.89	123.86	109.86	96.69	86.40	78.58	71.16	64.74
360.0	169.03	145.58	128.59	114.58	99.79	90.11	82.01	73.24	67.28
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	61.82	56.53	51.81	48.04	44.21	41.23	38.03	35.10	32.74
45.0	54.56	51.36	48.04	45.00	42.36	39.49	36.79	34.54	32.06
90.0	58.78	54.23	50.57	46.63	43.14	40.33	37.74	34.71	32.46
135.0	66.32	60.64	56.25	51.69	47.59	44.27	40.84	37.69	35.04
180.0	62.66	57.32	53.10	48.83	44.94	41.79	38.98	35.72	33.24
225.0	57.49	54.00	50.68	46.91	44.10	41.57	39.21	36.34	34.03
270.0	62.83	57.99	52.82	48.94	45.62	42.36	39.26	36.73	34.14
315.0	59.68	54.79	50.74	46.46	42.64	39.54	36.73	33.53	31.16
360.0	61.82	56.53	51.81	48.04	44.21	41.23	38.03	35.10	32.74

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	30.21	27.90	26.16	24.47	22.89	21.66	20.64	19.63	18.73
45.0	30.09	28.13	26.27	24.75	23.51	21.94	20.93	20.03	19.01
90.0	30.43	28.29	26.33	24.92	23.51	22.28	21.26	20.19	19.46
135.0	32.68	29.98	28.07	26.27	24.64	23.12	21.83	20.70	19.74
180.0	30.94	28.63	26.61	24.92	23.29	21.88	20.81	19.80	18.96
225.0	31.61	29.42	27.62	25.76	24.30	22.95	21.54	20.59	19.74
270.0	31.67	29.64	27.51	25.88	24.30	22.84	21.77	20.87	19.74
315.0	29.08	26.61	24.86	23.34	21.94	20.70	19.69	18.73	17.94
360.0	30.21	27.90	26.16	24.47	22.89	21.66	20.64	19.63	18.73
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	18.06	17.33	16.59	15.98	15.41	14.85	14.29	13.78	13.33
45.0	18.23	17.55	16.82	16.09	15.53	14.91	14.34	13.95	13.50
90.0	18.62	17.83	17.16	16.59	15.86	15.36	14.91	14.29	13.84
135.0	19.01	18.28	17.55	16.82	16.20	15.69	15.13	14.57	14.18
180.0	18.11	17.38	16.76	16.14	15.41	14.96	14.46	13.89	13.44
225.0	18.79	18.00	17.33	16.65	15.92	15.41	14.79	14.29	13.84
270.0	19.01	18.34	17.49	16.88	16.37	15.64	15.08	14.57	13.95
315.0	17.16	16.43	15.81	15.24	14.63	14.18	13.78	13.33	13.11
360.0	18.06	17.33	16.59	15.98	15.41	14.85	14.29	13.78	13.33
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	12.94	12.49	12.15	11.81	11.42	11.14	10.86	10.58	10.24
45.0	13.05	12.66	12.15	11.87	11.53	11.14	10.80	10.52	10.07
90.0	13.33	12.88	12.49	12.09	11.76	11.48	11.03	10.63	10.29
135.0	13.73	13.33	12.99	12.66	12.77	13.84	15.47	17.61	20.64
180.0	12.99	12.54	12.26	11.98	11.53	11.25	10.97	10.63	10.35
225.0	13.39	12.99	12.60	12.21	11.87	11.59	11.19	10.86	10.58
270.0	13.50	13.05	12.60	12.21	11.81	11.42	11.14	10.86	10.41
315.0	12.83	12.49	12.32	12.21	13.11	15.02	17.27	20.08	22.89
360.0	12.94	12.49	12.15	11.81	11.42	11.14	10.86	10.58	10.24
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.96	9.73	9.45	9.34	9.23	9.23	9.11	8.89	8.44
45.0	9.84	9.56	9.34	9.06	8.83	8.61	8.33	8.10	7.88
90.0	9.90	9.56	9.23	9.00	8.72	8.55	8.33	8.04	7.76
135.0	23.23	25.88	28.91	31.84	34.43	37.01	38.64	39.21	36.45
180.0	10.13	9.68	9.51	9.28	9.06	9.00	8.83	8.66	8.33
225.0	10.18	9.90	9.62	9.28	9.00	8.83	8.55	8.38	8.10
270.0	10.07	9.73	9.39	9.11	8.83	8.61	8.38	8.16	7.88
315.0	26.10	29.36	32.06	34.88	37.07	38.36	38.25	34.26	29.48
360.0	9.96	9.73	9.45	9.34	9.23	9.23	9.11	8.89	8.44
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.88	7.48	7.09	6.86	6.47	5.68	5.34	5.12	5.01
45.0	7.65	7.43	7.20	7.14	6.58	6.02	5.74	5.63	5.63
90.0	7.48	7.26	6.92	6.64	6.30	5.85	5.51	5.34	5.23
135.0	32.63	27.62	20.14	13.44	7.93	6.08	5.68	5.46	5.23
180.0	7.93	7.54	7.26	6.98	6.58	5.79	5.51	5.29	5.06
225.0	7.82	7.59	7.43	7.14	7.09	6.58	6.08	5.85	5.68
270.0	7.59	7.31	7.03	6.75	6.47	6.13	5.74	5.51	5.34
315.0	24.19	17.21	11.36	7.54	6.53	5.74	5.40	5.23	5.12
360.0	7.88	7.48	7.09	6.86	6.47	5.68	5.34	5.12	5.01

Intensity data(cd)

C/γ(°)	90.0
0.0	4.95
45.0	5.68
90.0	5.18
135.0	5.12
180.0	5.01
225.0	5.40
270.0	5.23
315.0	5.12
360.0	4.95