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Nata

LumCAT: 2-2211-L	
Luminaire: 92.70.131.00	
Report No: 200416-B009	Voltage(V): 34.4000
Test No: 200416-C009	Current(A): 0.6010
LampCAT: LUMINUS CXM-14-AC40	Power (W): 20.6700
Lamp flux(lm): 2591.0	PF: 1.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2474.29
Efficiency(%): 95.50%
Lumens(lm)/Power(W): 119.70
Central intensity(cd): 13255.310
Maximum intensity(cd): 13255.310
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=19.1
[C90/270]Total=19.1
Field angle(10%Imax): [C0/180]Total=40.9
[C90/270]Total=40.9
Maximum s/h(1/2): C0_180=0.33 C90_270=0.33
Maximum s/h(1/4): C0_180=0.32 C90_270=0.32
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 95.50%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.236%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	13255.313	0.000	0	.000%	.000%
1.0	13218.750	12.667	12.667	.489%	.512%
2.0	13097.109	37.771	50.438	1.458%	2.039%
3.0	12808.828	61.958	112.397	2.391%	4.543%
4.0	12224.039	83.793	196.19	3.234%	7.929%
5.0	11506.711	102.088	298.278	3.940%	12.055%
6.0	10787.977	117.165	415.443	4.522%	16.790%
7.0	9719.156	127.287	542.73	4.913%	21.935%
8.0	8620.734	131.255	673.985	5.066%	27.240%
9.0	7323.961	129.223	803.208	4.987%	32.462%
10.0	6104.039	121.518	924.727	4.690%	37.373%
11.0	5059.125	111.543	1036.27	4.305%	41.882%
12.0	4136.906	100.526	1136.796	3.880%	45.944%
13.0	3417.891	89.656	1226.452	3.460%	49.568%
14.0	2898.492	80.849	1307.301	3.120%	52.835%
15.0	2511.633	74.273	1381.574	2.867%	55.837%
16.0	2176.242	68.690	1450.264	2.651%	58.613%
17.0	1909.406	63.625	1513.889	2.456%	61.185%
18.0	1689.680	59.341	1573.23	2.290%	63.583%
19.0	1527.258	55.968	1629.198	2.160%	65.845%
20.0	1381.570	53.240	1682.438	2.055%	67.997%
21.0	1252.688	50.583	1733.021	1.952%	70.041%
22.0	1172.384	48.733	1781.754	1.881%	72.011%
23.0	1097.958	47.638	1829.392	1.839%	73.936%
24.0	1038.663	46.714	1876.106	1.803%	75.824%
25.0	988.545	46.094	1922.2	1.779%	77.687%
26.0	945.394	45.651	1967.851	1.762%	79.532%
27.0	906.813	45.315	2013.165	1.749%	81.363%
28.0	873.246	45.067	2058.233	1.739%	83.185%
29.0	827.473	44.496	2102.728	1.717%	84.983%
30.0	774.534	43.254	2145.982	1.669%	86.731%
31.0	708.026	41.258	2187.24	1.592%	88.399%
32.0	628.755	38.297	2225.537	1.478%	89.947%
33.0	551.658	34.775	2260.312	1.342%	91.352%
34.0	471.277	30.957	2291.269	1.195%	92.603%
35.0	387.858	26.682	2317.951	1.030%	93.682%
36.0	306.429	22.106	2340.057	.853%	94.575%
37.0	251.339	18.191	2358.248	.702%	95.310%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	176.210	14.271	2372.519	.551%	95.887%
39.0	102.305	9.506	2382.026	.367%	96.271%
40.0	63.246	5.774	2387.8	.223%	96.505%
41.0	42.743	3.774	2391.574	.146%	96.657%
42.0	35.761	2.852	2394.426	.110%	96.772%
43.0	32.562	2.531	2396.957	.098%	96.875%
44.0	29.890	2.357	2399.314	.091%	96.970%
45.0	28.160	2.231	2401.545	.086%	97.060%
46.0	26.888	2.153	2403.698	.083%	97.147%
47.0	25.755	2.094	2405.792	.081%	97.232%
48.0	24.905	2.048	2407.84	.079%	97.314%
49.0	24.188	2.016	2409.856	.078%	97.396%
50.0	23.351	1.982	2411.838	.076%	97.476%
51.0	22.739	1.950	2413.788	.075%	97.555%
52.0	22.155	1.926	2415.714	.074%	97.633%
53.0	21.663	1.906	2417.62	.074%	97.710%
54.0	21.213	1.890	2419.51	.073%	97.786%
55.0	20.700	1.871	2421.381	.072%	97.862%
56.0	20.285	1.852	2423.233	.071%	97.937%
57.0	20.130	1.848	2425.081	.071%	98.011%
58.0	19.983	1.855	2426.936	.072%	98.086%
59.0	19.786	1.859	2428.795	.072%	98.161%
60.0	19.441	1.853	2430.648	.072%	98.236%
61.0	19.132	1.841	2432.489	.071%	98.311%
62.0	18.745	1.825	2434.314	.070%	98.384%
63.0	18.253	1.799	2436.114	.069%	98.457%
64.0	17.698	1.764	2437.878	.068%	98.528%
65.0	17.163	1.725	2439.603	.067%	98.598%
66.0	16.650	1.687	2441.29	.065%	98.666%
67.0	16.073	1.645	2442.935	.064%	98.733%
68.0	15.652	1.607	2444.543	.062%	98.798%
69.0	15.223	1.575	2446.118	.061%	98.861%
70.0	14.723	1.538	2447.656	.059%	98.924%
71.0	14.273	1.499	2449.154	.058%	98.984%
72.0	13.830	1.461	2450.616	.056%	99.043%
73.0	13.458	1.427	2452.043	.055%	99.101%
74.0	13.170	1.400	2453.442	.054%	99.158%
75.0	12.980	1.382	2454.824	.053%	99.213%

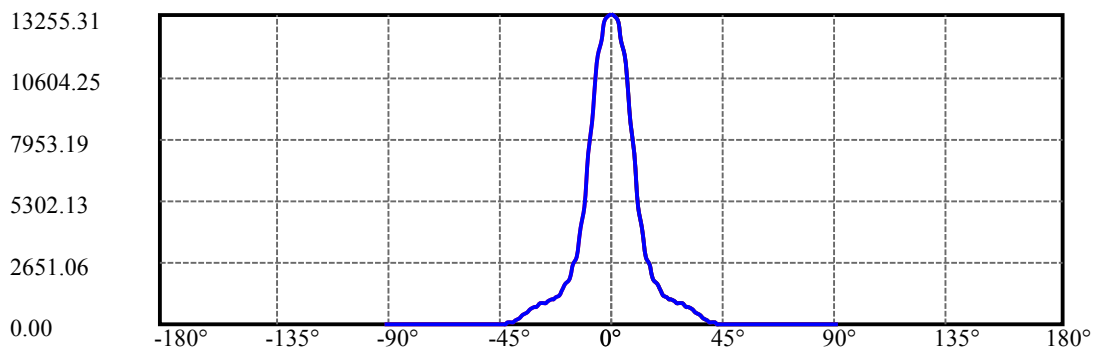
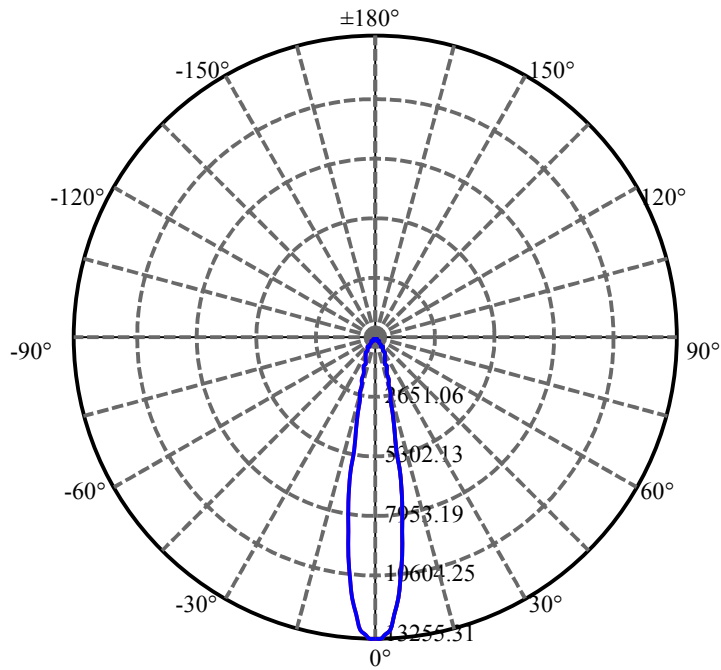
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	12.832	1.370	2456.194	.053%	99.269%
77.0	12.677	1.360	2457.554	.052%	99.324%
78.0	12.523	1.349	2458.903	.052%	99.378%
79.0	12.396	1.339	2460.242	.052%	99.432%
80.0	12.263	1.329	2461.572	.051%	99.486%
81.0	12.157	1.321	2462.892	.051%	99.539%
82.0	12.052	1.313	2464.205	.051%	99.593%
83.0	11.862	1.300	2465.505	.050%	99.645%
84.0	11.742	1.286	2466.791	.050%	99.697%
85.0	11.658	1.277	2468.068	.049%	99.749%
86.0	11.573	1.270	2469.338	.049%	99.800%
87.0	11.545	1.265	2470.603	.049%	99.851%
88.0	11.327	1.253	2471.856	.048%	99.902%
89.0	11.067	1.227	2473.083	.047%	99.951%
90.0	10.891	1.204	2474.287	.046%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2145.98	82.82%	86.73%
0-40	2387.80	92.16%	96.50%
0-60	2430.65	93.81%	98.24%
0-90	2473.08	95.45%	99.95%
0-120	2473.08	95.45%	99.95%
0-180	2474.29	95.50%	100.00%
60-90	44.29	1.71%	1.79%
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%
0-26.26	1979.43	76.40%	80.00%

ZONAL LUMEN SUMMARY

0-10	924.73
10-20	757.71
20-30	463.54
30-40	241.82
40-50	24.04
50-60	18.81
60-70	17.01
70-80	13.92
80-90	11.51
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: —————

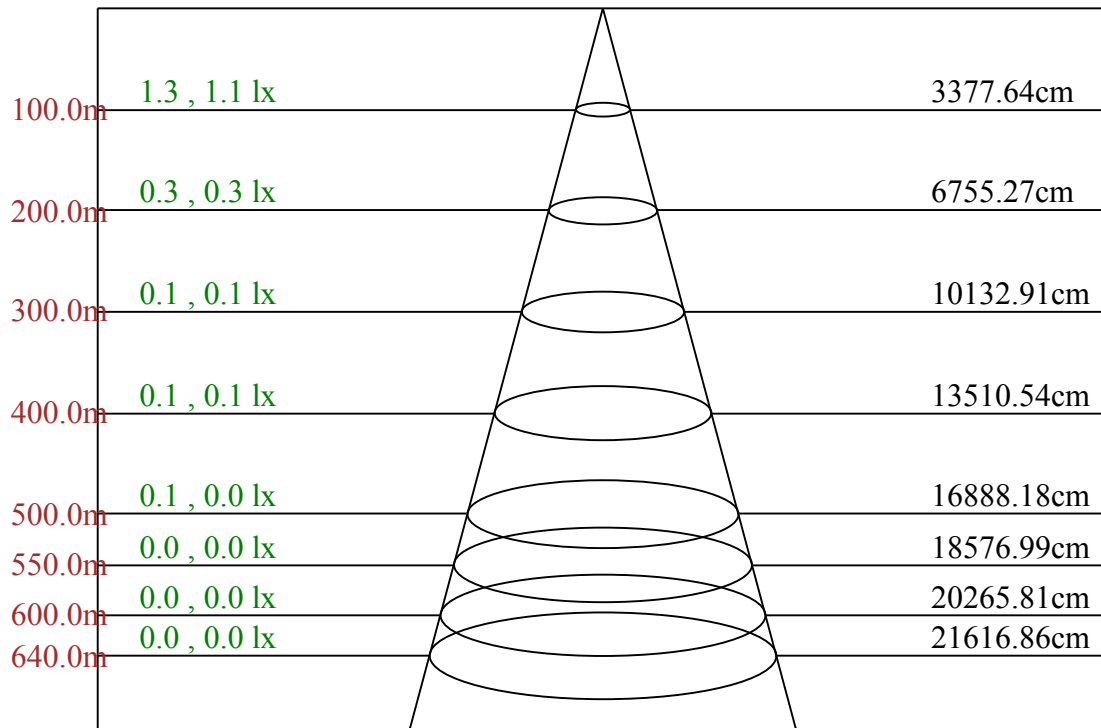
C90/C270: —————

Field angle(10%Imax):C0/180Left:20.4 Right:20.4

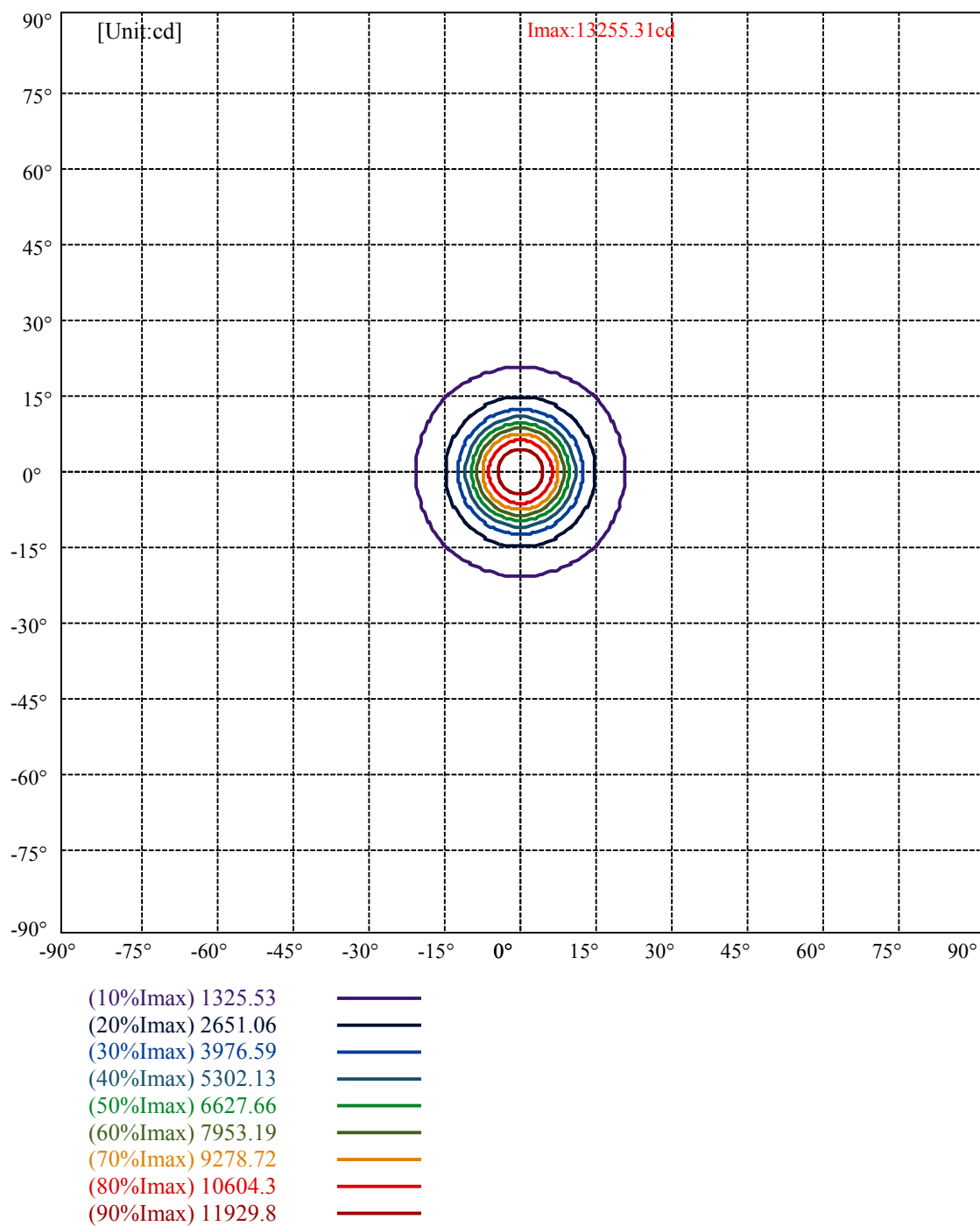
:C90/270Left:20.4 Right:20.4

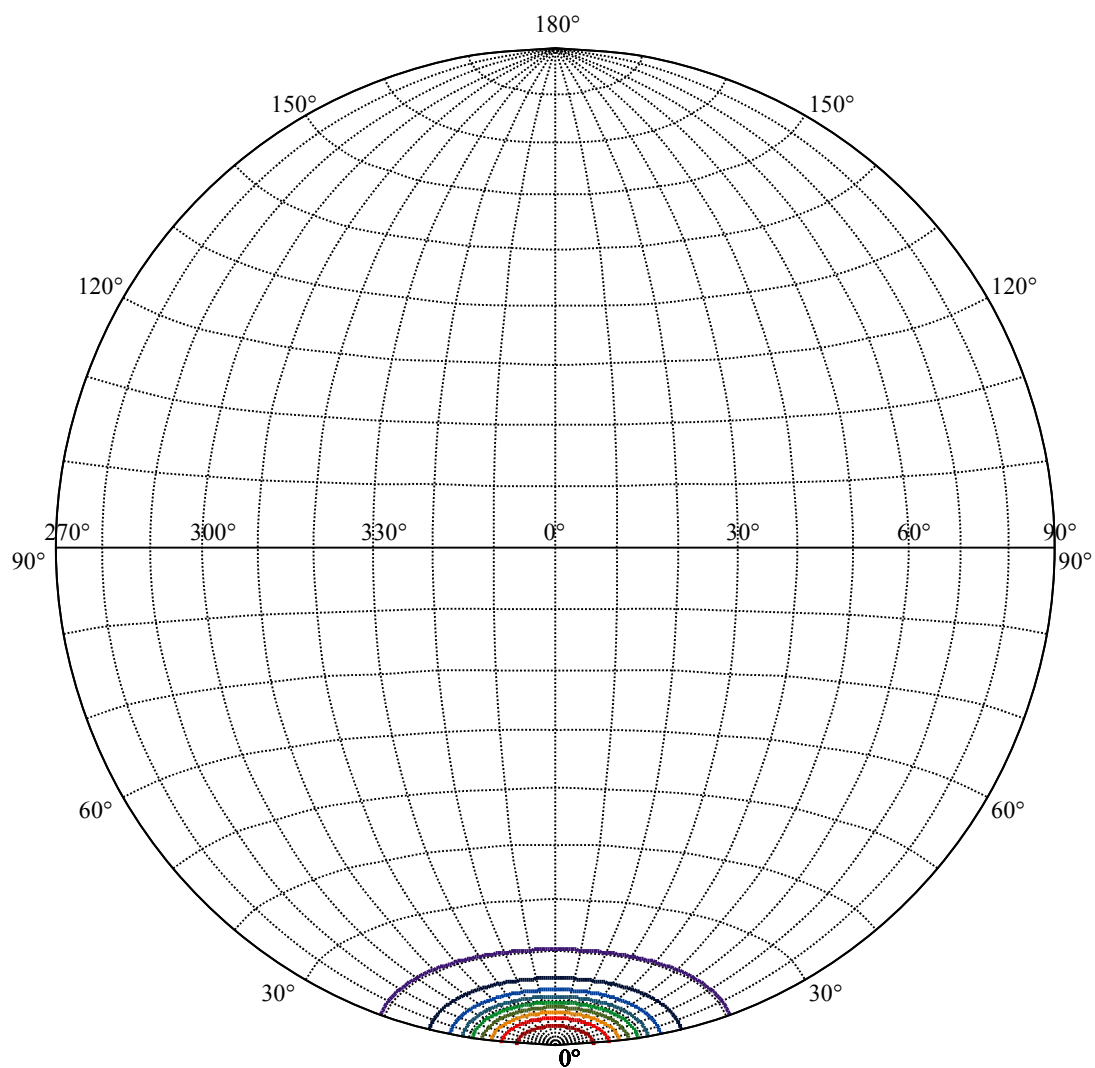
Beam Angle(50%Imax):C0/180Left:9.6 Right:9.6

:C90/270Left:9.6 Right:9.6



Max , Ave Beam angle of C0 plane 19.17





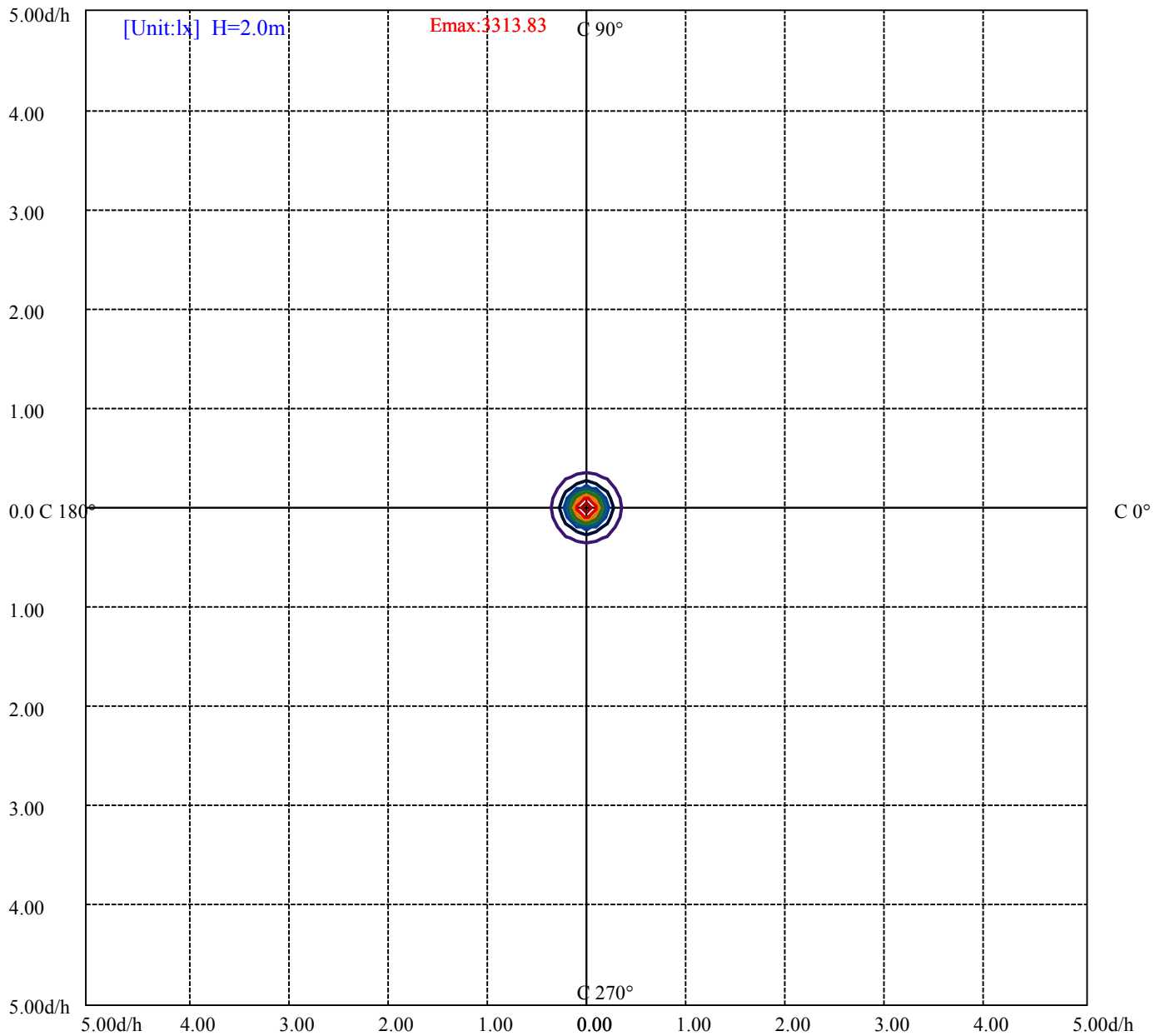
House

[Unit:cd]

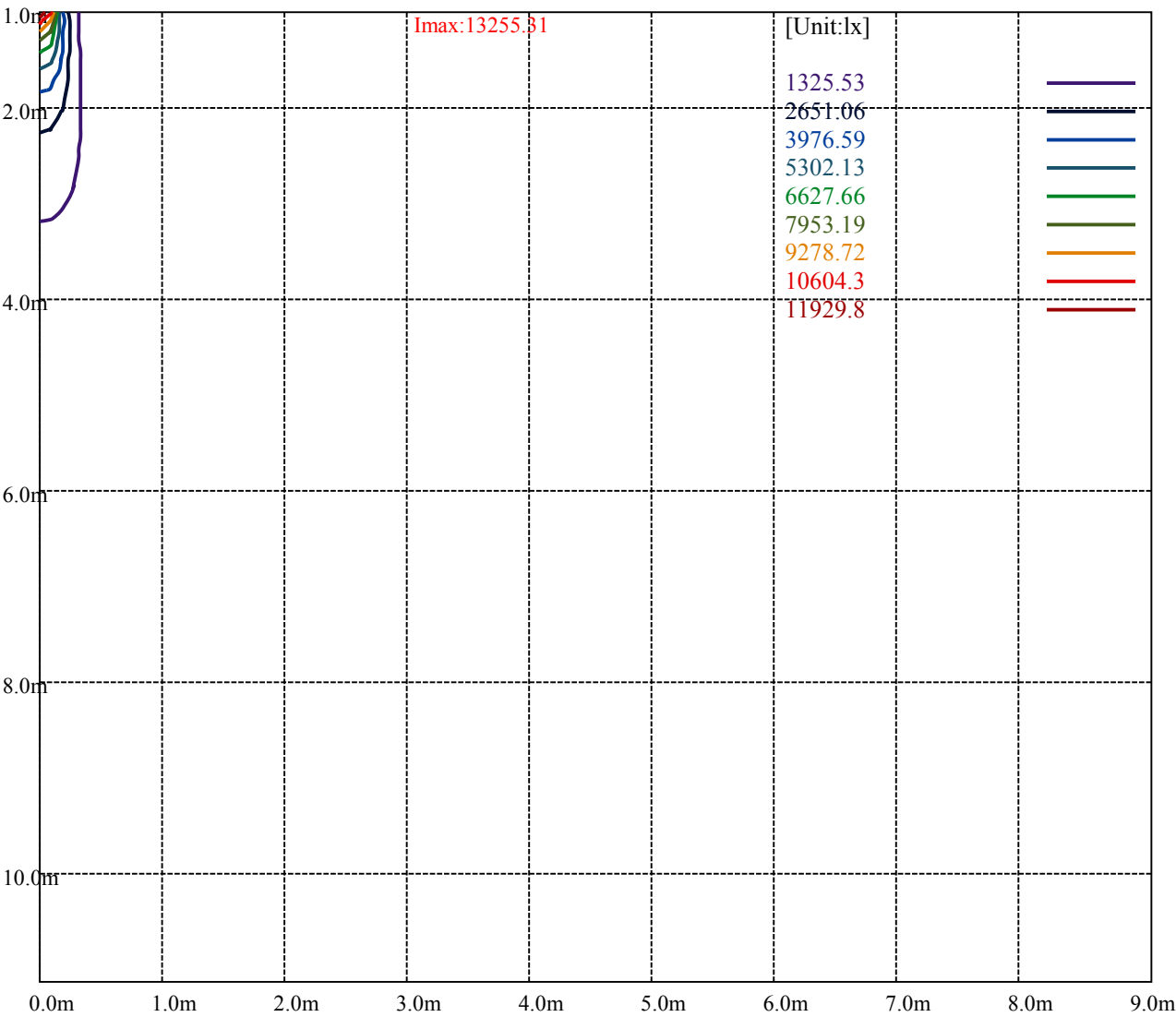
Road

Imax:13255.31

(10%Imax)	1325.53	
(20%Imax)	2651.06	
(30%Imax)	3976.59	
(40%Imax)	5302.13	
(50%Imax)	6627.66	
(60%Imax)	7953.19	
(70%Imax)	9278.72	
(80%Imax)	10604.3	
(90%Imax)	11929.8	



(10%Emax) 331.3825	—
(20%Emax) 662.765	—
(30%Emax) 994.1475	—
(40%Emax) 1325.53	—
(50%Emax) 1656.912	—
(60%Emax) 1988.295	—
(70%Emax) 2319.677	—
(80%Emax) 2651.05	—
(90%Emax) 2982.45	—



Luminance Table

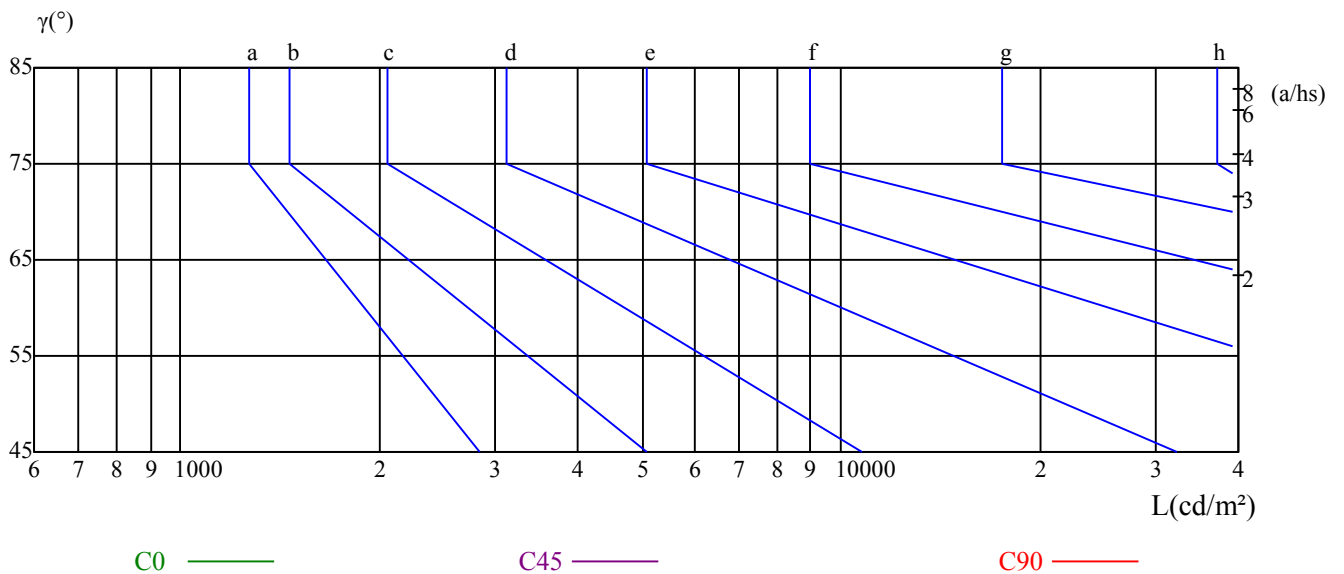
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

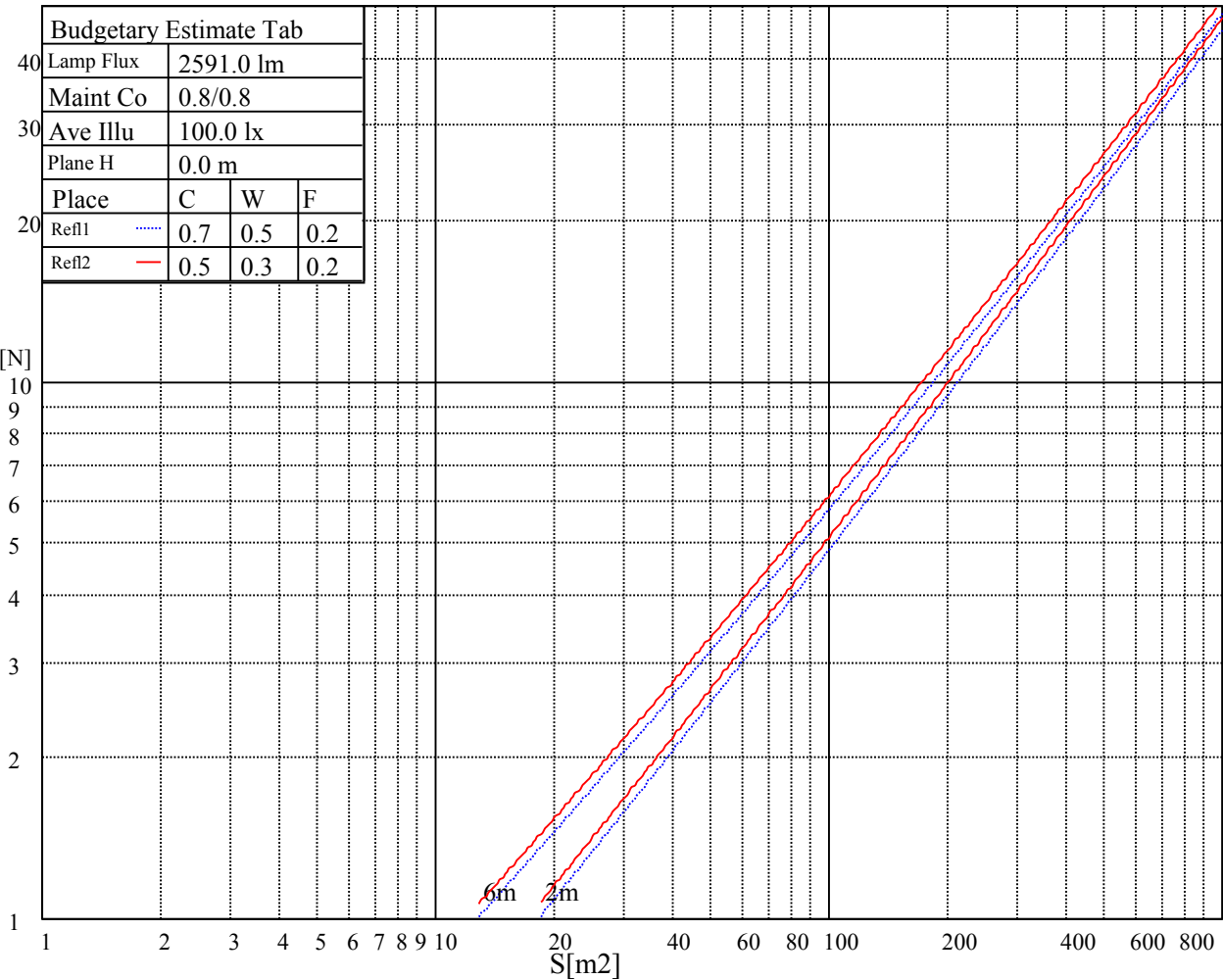
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

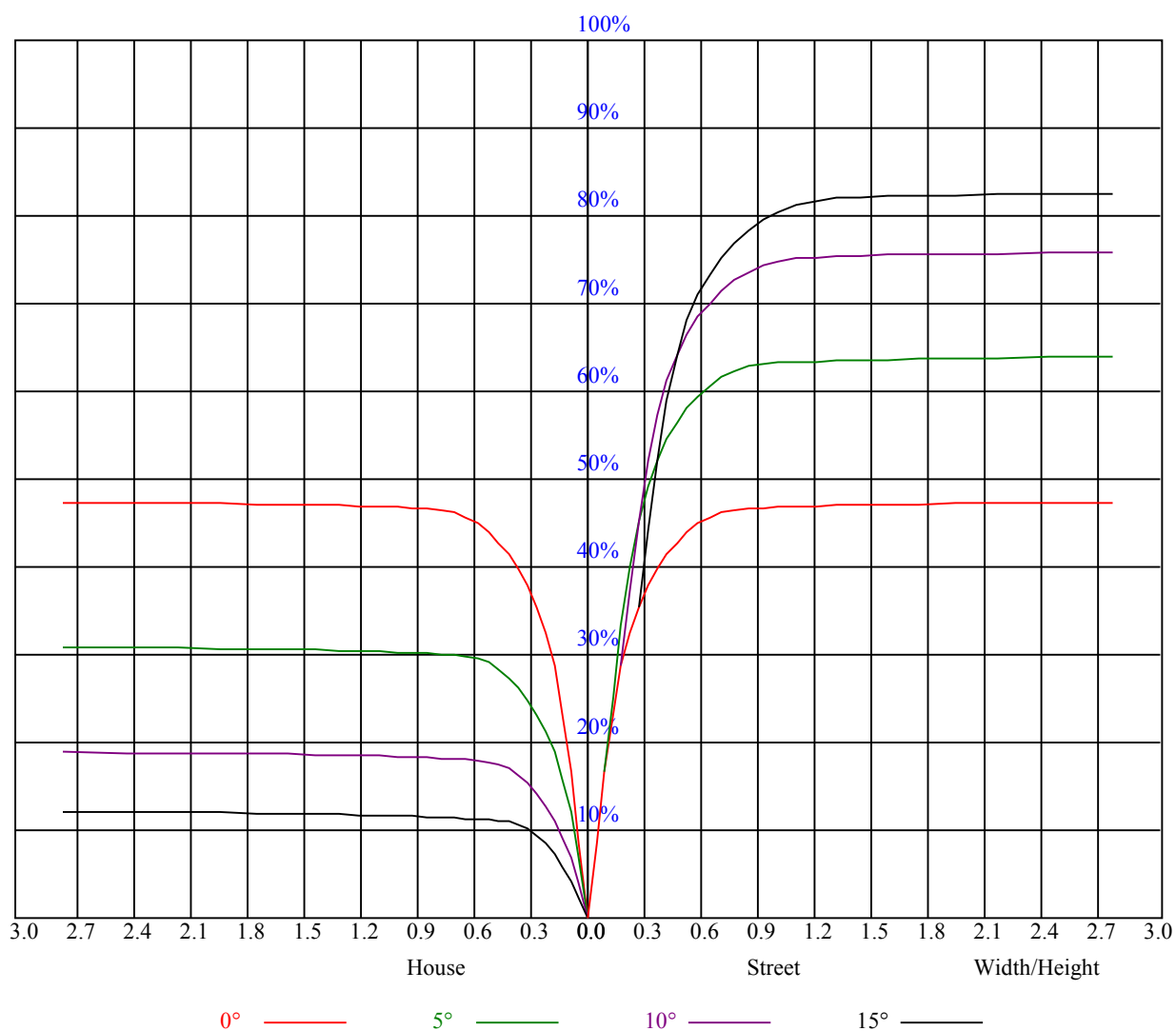
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.14	1.14	1.14	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.95
1	1.07	1.05	1.03	1.05	1.03	1.02	1.01	1.00	0.98	0.98	0.97	0.96	0.94	0.94	0.93	0.91
2	1.01	0.98	0.96	1.00	0.97	0.95	0.97	0.94	0.92	0.94	0.92	0.91	0.91	0.90	0.89	0.87
3	0.97	0.93	0.90	0.95	0.92	0.89	0.93	0.90	0.88	0.91	0.88	0.86	0.89	0.87	0.85	0.84
4	0.92	0.88	0.85	0.91	0.88	0.85	0.89	0.86	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.81
5	0.89	0.84	0.81	0.88	0.84	0.81	0.86	0.83	0.80	0.85	0.82	0.79	0.83	0.81	0.79	0.78
6	0.85	0.81	0.78	0.85	0.80	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.75
7	0.82	0.78	0.75	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.74	0.73
8	0.79	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
9	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
10	0.75	0.70	0.68	0.74	0.70	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66



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	13241.25	13263.75	13275.00	13207.50	12982.50	12515.63	11784.38	10974.38	10023.75
45.0	13263.75	13280.63	13258.13	13140.00	12920.63	12346.88	11649.38	10805.63	9815.63
90.0	13263.75	13224.38	13078.13	12802.50	12279.38	11137.50	10797.75	9669.38	8403.19
135.0	13252.50	13207.50	13066.88	12712.50	12251.25	11587.50	10535.63	9489.38	8347.50
180.0	13241.25	13106.25	12836.25	12324.38	11204.44	10641.38	9663.75	8278.31	7117.88
225.0	13263.75	13185.00	12943.13	12470.63	11224.13	10893.38	9942.19	8741.25	7454.81
270.0	13263.75	13241.25	13140.00	12875.63	12431.25	11711.25	10816.88	9849.38	8921.25
315.0	13252.50	13241.25	13179.38	12937.50	12498.75	11220.19	11113.88	9945.56	8881.88
360.0	13241.25	13263.75	13275.00	13207.50	12982.50	12515.63	11784.38	10974.38	10023.75
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8701.88	7571.25	6423.75	5191.88	4134.38	3436.88	2896.88	2649.38	2206.69
45.0	8448.75	7261.88	6086.25	4888.13	3903.75	3251.25	2885.63	2352.94	2079.56
90.0	7216.88	5898.38	4768.31	3954.38	3326.06	2734.31	2371.50	2082.94	1825.88
135.0	6901.88	5754.38	4736.25	3830.63	3161.25	2863.13	2323.69	2026.69	1812.38
180.0	5984.44	4702.50	3919.50	3345.75	2860.31	2480.06	2203.88	1941.75	1743.19
225.0	6295.50	5087.25	4118.63	3477.38	3006.00	2546.44	2248.31	2005.31	1781.44
270.0	7340.63	6170.63	5253.75	4162.50	3425.63	2981.25	2651.63	2152.69	1910.81
315.0	7701.75	6386.06	5166.56	4244.63	3525.75	2894.63	2511.56	2198.25	1915.31
360.0	8701.88	7571.25	6423.75	5191.88	4134.38	3436.88	2896.88	2649.38	2206.69
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1936.13	1734.19	1548.56	1400.63	1297.13	1200.38	1122.19	1063.69	1011.94
45.0	1823.06	1649.81	1484.44	1347.19	1248.75	1155.38	1083.38	1029.94	984.94
90.0	1617.19	1460.25	1316.81	1183.50	1121.29	1043.55	987.69	935.72	891.34
135.0	1603.69	1455.75	1324.69	1226.81	1151.44	1085.06	1031.06	990.56	955.69
180.0	1551.38	1396.69	1288.69	1122.19	1114.03	1047.09	997.14	951.64	912.21
225.0	1598.63	1458.00	1327.50	1222.88	1118.81	1066.22	1021.89	972.79	928.29
270.0	1689.19	1522.69	1368.00	1243.13	1154.81	1077.19	1013.06	964.13	920.81
315.0	1698.19	1540.69	1393.88	1275.19	1172.81	1108.80	1052.89	999.90	957.94
360.0	1936.13	1734.19	1548.56	1400.63	1297.13	1200.38	1122.19	1063.69	1011.94
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	959.06	924.75	893.81	856.69	799.31	735.75	654.19	576.56	488.81
45.0	938.81	907.31	877.50	837.00	774.00	707.63	633.38	542.25	463.50
90.0	857.98	823.33	782.61	730.07	671.79	588.04	518.91	447.41	358.37
135.0	915.19	886.50	845.44	783.56	704.25	630.56	550.13	457.88	377.44
180.0	881.61	842.40	769.84	701.72	629.55	534.66	458.33	383.18	299.70
225.0	901.13	863.04	784.80	727.99	656.44	560.25	480.99	403.99	317.14
270.0	873.00	840.94	805.50	747.56	678.38	610.88	530.44	449.44	376.88
315.0	927.73	897.69	860.29	811.69	750.49	662.29	586.91	509.51	421.03
360.0	959.06	924.75	893.81	856.69	799.31	735.75	654.19	576.56	488.81
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	400.50	321.75	293.06	172.24	98.49	55.69	36.79	33.58	30.49
45.0	378.00	304.88	286.88	141.86	88.65	47.31	32.91	29.87	26.38
90.0	291.54	226.63	152.89	102.54	64.80	46.69	43.03	39.32	35.33
135.0	294.75	286.31	144.34	84.04	48.66	37.74	34.65	31.22	28.97
180.0	220.05	154.29	92.25	48.60	35.89	33.36	30.49	28.01	27.17
225.0	234.62	168.86	103.78	55.35	35.89	32.18	28.86	25.88	24.81
270.0	297.56	288.56	156.32	103.28	67.05	49.39	43.26	39.60	36.23
315.0	334.41	259.43	180.17	110.53	66.54	39.60	36.11	33.02	29.76
360.0	400.50	321.75	293.06	172.24	98.49	55.69	36.79	33.58	30.49

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	27.79	25.82	24.47	23.85	23.23	22.73	22.22	21.83	21.32
45.0	23.34	22.22	21.04	20.03	19.24	18.79	18.34	18.06	17.78
90.0	34.14	32.68	30.83	29.59	28.69	26.94	25.93	25.20	24.41
135.0	28.24	27.28	26.44	25.93	25.26	24.36	23.51	22.33	21.77
180.0	25.65	25.03	24.58	24.24	23.79	23.18	22.84	22.44	22.11
225.0	24.30	23.23	21.99	21.21	20.76	20.53	20.31	20.19	19.86
270.0	33.75	32.29	31.11	29.70	28.80	27.51	26.33	25.03	24.13
315.0	28.07	26.55	25.59	24.69	23.74	22.78	22.44	22.16	21.94
360.0	27.79	25.82	24.47	23.85	23.23	22.73	22.22	21.83	21.32
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	20.98	20.76	20.53	20.31	20.08	19.80	19.52	19.18	18.90
45.0	17.72	17.61	17.49	17.55	17.61	17.83	17.27	17.21	17.38
90.0	23.46	22.44	21.66	21.60	21.88	21.88	21.77	21.26	20.53
135.0	21.54	20.87	20.14	19.91	19.29	18.90	18.73	18.62	18.11
180.0	21.66	21.43	21.15	20.87	20.59	20.42	20.14	19.69	19.24
225.0	19.24	18.90	18.84	18.90	18.84	18.45	18.28	18.17	17.61
270.0	23.51	22.95	22.56	22.22	22.16	21.71	20.93	20.48	20.36
315.0	21.60	20.64	19.91	19.69	19.41	19.29	18.90	18.45	17.83
360.0	20.98	20.76	20.53	20.31	20.08	19.80	19.52	19.18	18.90
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	18.62	18.11	17.66	17.21	16.65	16.14	15.64	14.96	14.46
45.0	17.49	17.38	16.54	16.20	15.98	15.75	15.47	14.96	14.23
90.0	19.63	18.84	18.39	17.61	16.48	16.03	15.58	15.19	14.85
135.0	17.04	16.14	15.86	15.53	15.13	14.91	14.63	14.23	14.01
180.0	18.79	18.34	17.78	16.93	16.20	15.47	14.91	14.29	13.73
225.0	17.10	16.88	16.31	15.98	15.58	15.13	14.57	14.06	13.73
270.0	19.86	18.68	18.23	17.78	17.10	16.59	16.09	15.53	15.02
315.0	17.49	17.21	16.54	15.98	15.47	15.19	14.91	14.57	14.18
360.0	18.62	18.11	17.66	17.21	16.65	16.14	15.64	14.96	14.46
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.95	13.44	13.05	12.66	12.54	12.38	12.21	12.09	11.98
45.0	13.78	13.33	12.94	12.77	12.66	12.54	12.32	12.21	12.04
90.0	14.40	14.06	13.84	13.73	13.56	13.44	13.33	13.16	12.94
135.0	13.73	13.39	13.11	12.88	12.71	12.54	12.32	12.21	12.15
180.0	13.22	12.88	12.60	12.49	12.32	12.15	12.04	11.93	11.81
225.0	13.28	12.94	12.71	12.54	12.43	12.26	12.15	11.98	11.93
270.0	14.51	14.12	13.84	13.67	13.56	13.39	13.22	13.11	12.94
315.0	13.78	13.50	13.28	13.11	12.88	12.71	12.60	12.49	12.32
360.0	13.95	13.44	13.05	12.66	12.54	12.38	12.21	12.09	11.98
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	11.81	11.70	11.64	11.59	11.48	11.48	11.42	11.36	11.25
45.0	11.93	11.81	11.70	11.59	11.59	11.48	11.42	11.31	11.19
90.0	12.66	12.38	12.04	11.81	11.59	11.36	11.25	11.03	10.86
135.0	12.38	12.32	11.87	11.76	11.76	11.70	11.81	11.25	11.03
180.0	11.76	11.59	11.59	11.59	11.59	11.64	11.64	10.97	10.86
225.0	11.76	11.76	11.64	11.59	11.59	11.48	11.53	11.42	10.97
270.0	12.77	12.77	12.43	12.09	11.87	11.70	11.59	11.59	11.19
315.0	12.21	12.09	11.98	11.93	11.81	11.76	11.70	11.70	11.19
360.0	11.81	11.70	11.64	11.59	11.48	11.48	11.42	11.36	11.25

Intensity data(cd)

Appendix Page: 18 Total:18

C/γ(°)	90.0
0.0	11.08
45.0	10.86
90.0	10.74
135.0	10.80
180.0	10.69
225.0	10.91
270.0	10.97
315.0	11.08
360.0	11.08