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Nata

LumCAT: LN01D04524DA-N

Luminaire: 97.70.234.00

Report No: 200708-B003

Test No: 200708-C003

LampCAT: LUMILEDS LUXEON 1202S

Lamp flux(lm): 695.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 35.1000

Current(A): 0.1510

Power (W): 3.5100

PF: 0.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 611.30

Efficiency(%): 87.96%

Lumens(lm)/Power(W): 174.16

Central intensity(cd): 2710.125

Maximum intensity(cd): 2710.125

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=25.6

[C90/270]Total=25.6

Field angle(10%Imax): [C0/180]Total=41.6

[C90/270]Total=41.6

Maximum s/h(1/2): C0_180=0.44 C90_270=0.44

Maximum s/h(1/4): C0_180=0.41 C90_270=0.41

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.96%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.621%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2710.125	0.000	0	.000%	.000%
1.0	2704.289	2.591	2.591	.373%	.424%
2.0	2688.398	7.740	10.331	1.114%	1.690%
3.0	2657.672	12.786	23.117	1.840%	3.782%
4.0	2609.438	17.631	40.748	2.537%	6.666%
5.0	2552.203	22.205	62.953	3.195%	10.298%
6.0	2463.469	26.359	89.311	3.793%	14.610%
7.0	2359.758	29.938	119.249	4.308%	19.507%
8.0	2245.078	32.956	152.205	4.742%	24.898%
9.0	2092.430	35.153	187.358	5.058%	30.649%
10.0	1910.391	36.224	223.582	5.212%	36.575%
11.0	1741.008	36.485	260.067	5.250%	42.543%
12.0	1542.516	35.894	295.961	5.165%	48.415%
13.0	1314.759	33.909	329.869	4.879%	53.962%
14.0	1147.444	31.516	361.385	4.535%	59.117%
15.0	975.973	29.151	390.537	4.194%	63.886%
16.0	810.323	26.174	416.711	3.766%	68.168%
17.0	649.828	22.738	439.449	3.272%	71.887%
18.0	522.000	19.321	458.77	2.780%	75.048%
19.0	416.447	16.327	475.097	2.349%	77.719%
20.0	331.179	13.684	488.781	1.969%	79.957%
21.0	253.631	11.230	500.01	1.616%	81.794%
22.0	209.911	9.315	509.326	1.340%	83.318%
23.0	158.520	7.731	517.056	1.112%	84.583%
24.0	124.882	6.196	523.252	.892%	85.596%
25.0	102.002	5.159	528.411	.742%	86.440%
26.0	86.787	4.456	532.868	.641%	87.169%
27.0	75.663	3.974	536.842	.572%	87.819%
28.0	65.665	3.578	540.42	.515%	88.405%
29.0	59.302	3.269	543.69	.470%	88.939%
30.0	54.049	3.060	546.75	.440%	89.440%
31.0	48.811	2.862	549.612	.412%	89.908%
32.0	44.388	2.670	552.283	.384%	90.345%
33.0	40.823	2.510	554.793	.361%	90.756%
34.0	37.364	2.366	557.159	.340%	91.143%
35.0	34.221	2.223	559.382	.320%	91.507%
36.0	31.725	2.100	561.482	.302%	91.850%
37.0	29.341	1.992	563.474	.287%	92.176%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	27.387	1.894	565.367	.272%	92.486%
39.0	25.439	1.803	567.17	.259%	92.781%
40.0	23.681	1.713	568.883	.246%	93.061%
41.0	22.198	1.634	570.517	.235%	93.328%
42.0	20.777	1.561	572.078	.225%	93.583%
43.0	19.301	1.485	573.563	.214%	93.826%
44.0	18.127	1.413	574.976	.203%	94.057%
45.0	17.009	1.350	576.326	.194%	94.278%
46.0	15.778	1.282	577.608	.184%	94.488%
47.0	14.822	1.217	578.825	.175%	94.687%
48.0	13.929	1.162	579.987	.167%	94.877%
49.0	12.994	1.106	581.093	.159%	95.058%
50.0	12.136	1.048	582.141	.151%	95.230%
51.0	11.433	0.997	583.138	.143%	95.393%
52.0	10.765	0.953	584.09	.137%	95.548%
53.0	10.188	0.911	585.002	.131%	95.698%
54.0	9.717	0.877	585.879	.126%	95.841%
55.0	9.295	0.849	586.728	.122%	95.980%
56.0	8.944	0.824	587.552	.119%	96.115%
57.0	8.599	0.802	588.354	.115%	96.246%
58.0	8.311	0.782	589.136	.113%	96.374%
59.0	8.058	0.765	589.901	.110%	96.499%
60.0	7.791	0.749	590.65	.108%	96.622%
61.0	7.530	0.731	591.381	.105%	96.741%
62.0	7.305	0.715	592.096	.103%	96.858%
63.0	7.102	0.701	592.797	.101%	96.973%
64.0	6.884	0.686	593.483	.099%	97.085%
65.0	6.694	0.672	594.155	.097%	97.195%
66.0	6.532	0.660	594.815	.095%	97.303%
67.0	6.370	0.649	595.464	.093%	97.409%
68.0	6.342	0.644	596.108	.093%	97.514%
69.0	6.497	0.655	596.763	.094%	97.621%
70.0	6.870	0.686	597.449	.099%	97.734%
71.0	7.418	0.738	598.188	.106%	97.855%
72.0	7.959	0.800	598.987	.115%	97.985%
73.0	8.571	0.864	599.852	.124%	98.127%
74.0	9.000	0.924	600.775	.133%	98.278%
75.0	9.373	0.971	601.746	.140%	98.437%

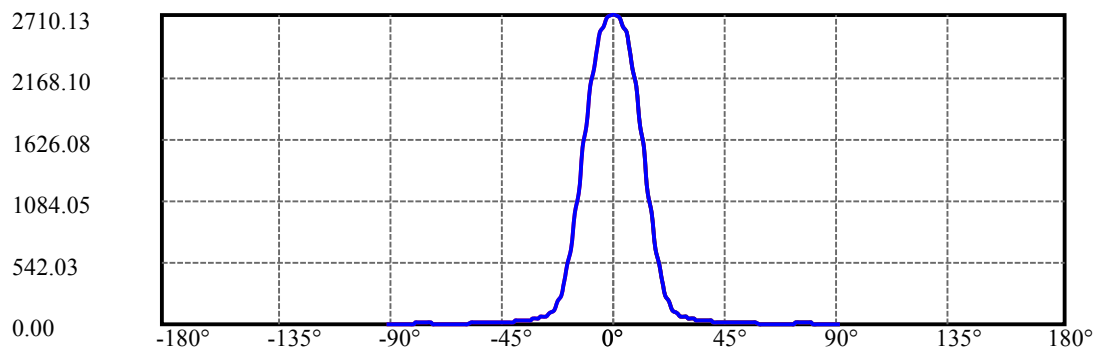
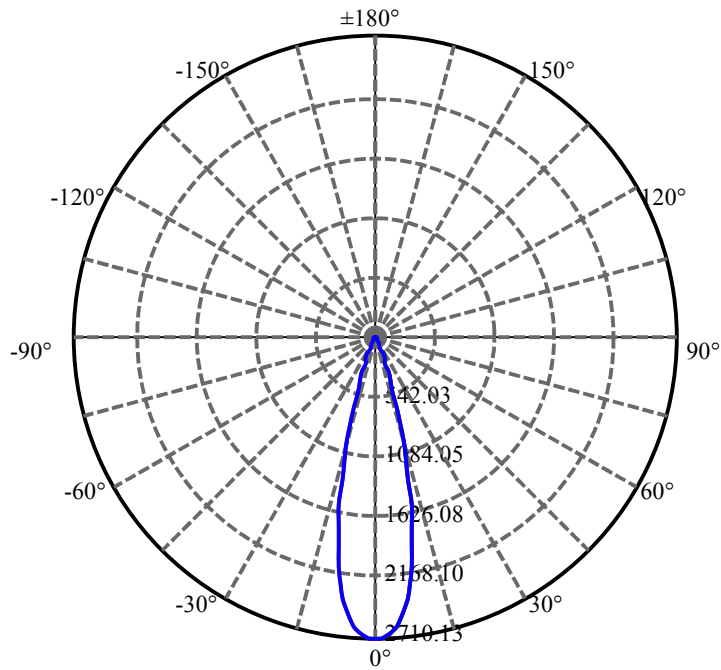
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.570	1.006	602.752	.145%	98.601%
77.0	9.443	1.014	603.765	.146%	98.767%
78.0	9.070	0.991	604.756	.143%	98.929%
79.0	8.459	0.942	605.698	.136%	99.083%
80.0	7.734	0.873	606.571	.126%	99.226%
81.0	6.933	0.793	607.364	.114%	99.356%
82.0	5.977	0.700	608.064	.101%	99.470%
83.0	4.999	0.597	608.661	.086%	99.568%
84.0	4.303	0.507	609.168	.073%	99.651%
85.0	3.691	0.436	609.604	.063%	99.722%
86.0	3.438	0.390	609.994	.056%	99.786%
87.0	3.136	0.360	610.354	.052%	99.845%
88.0	2.925	0.332	610.686	.048%	99.899%
89.0	2.791	0.313	610.999	.045%	99.950%
90.0	2.749	0.304	611.303	.044%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	546.75	78.67%	89.44%
0-40	568.88	81.85%	93.06%
0-60	590.65	84.99%	96.62%
0-90	611.00	87.91%	99.95%
0-120	611.00	87.91%	99.95%
0-180	611.30	87.96%	100.00%
60-90	21.10	3.04%	3.45%
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%
0-20.02	489.04	70.37%	80.00%

ZONAL LUMEN SUMMARY

0-10	223.58
10-20	265.20
20-30	57.97
30-40	22.13
40-50	13.26
50-60	8.51
60-70	6.80
70-80	9.12
80-90	4.43
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: —————

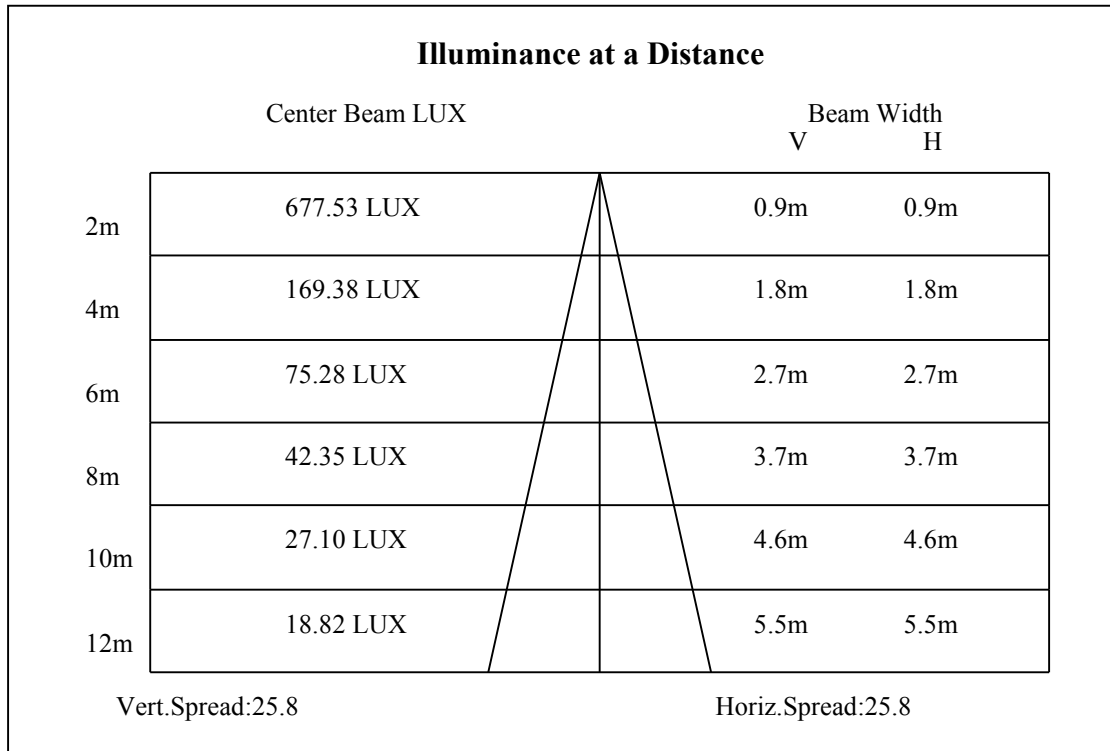
C90/C270: —————

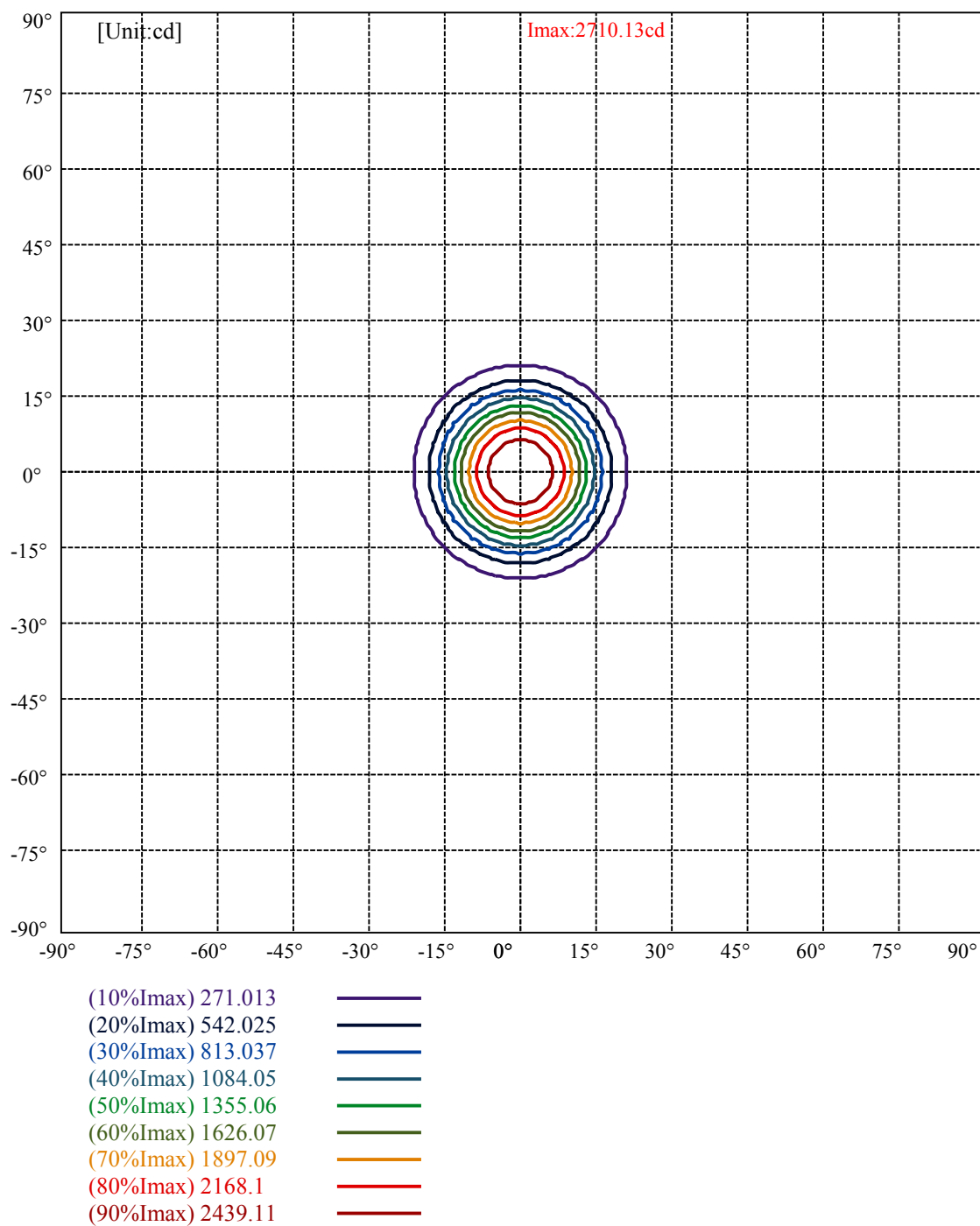
Field angle(10%Imax):C0/180Left:20.8 Right:20.8

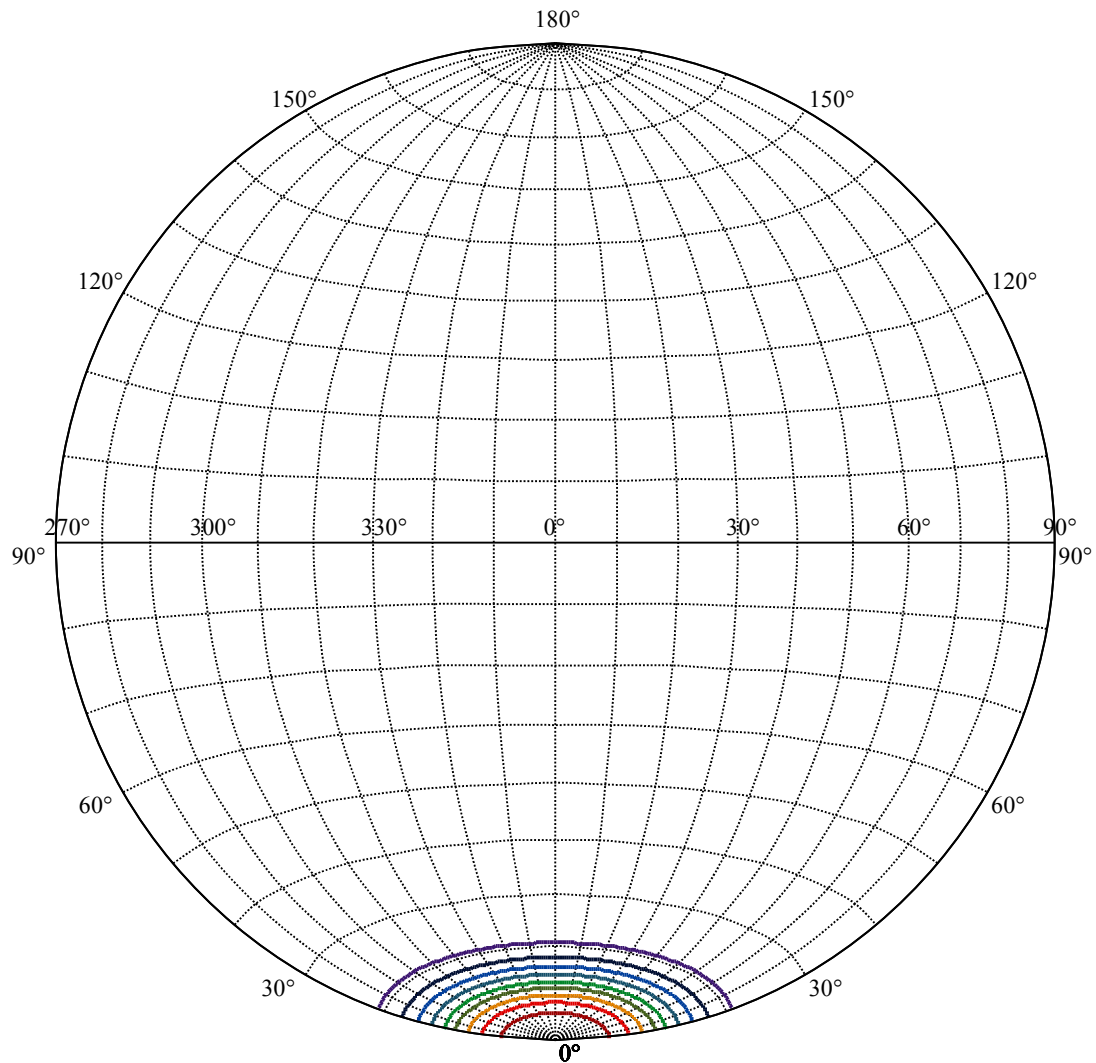
:C90/270Left:20.8 Right:20.8

Beam Angle(50%Imax):C0/180Left:12.8 Right:12.8

:C90/270Left:12.8 Right:12.8







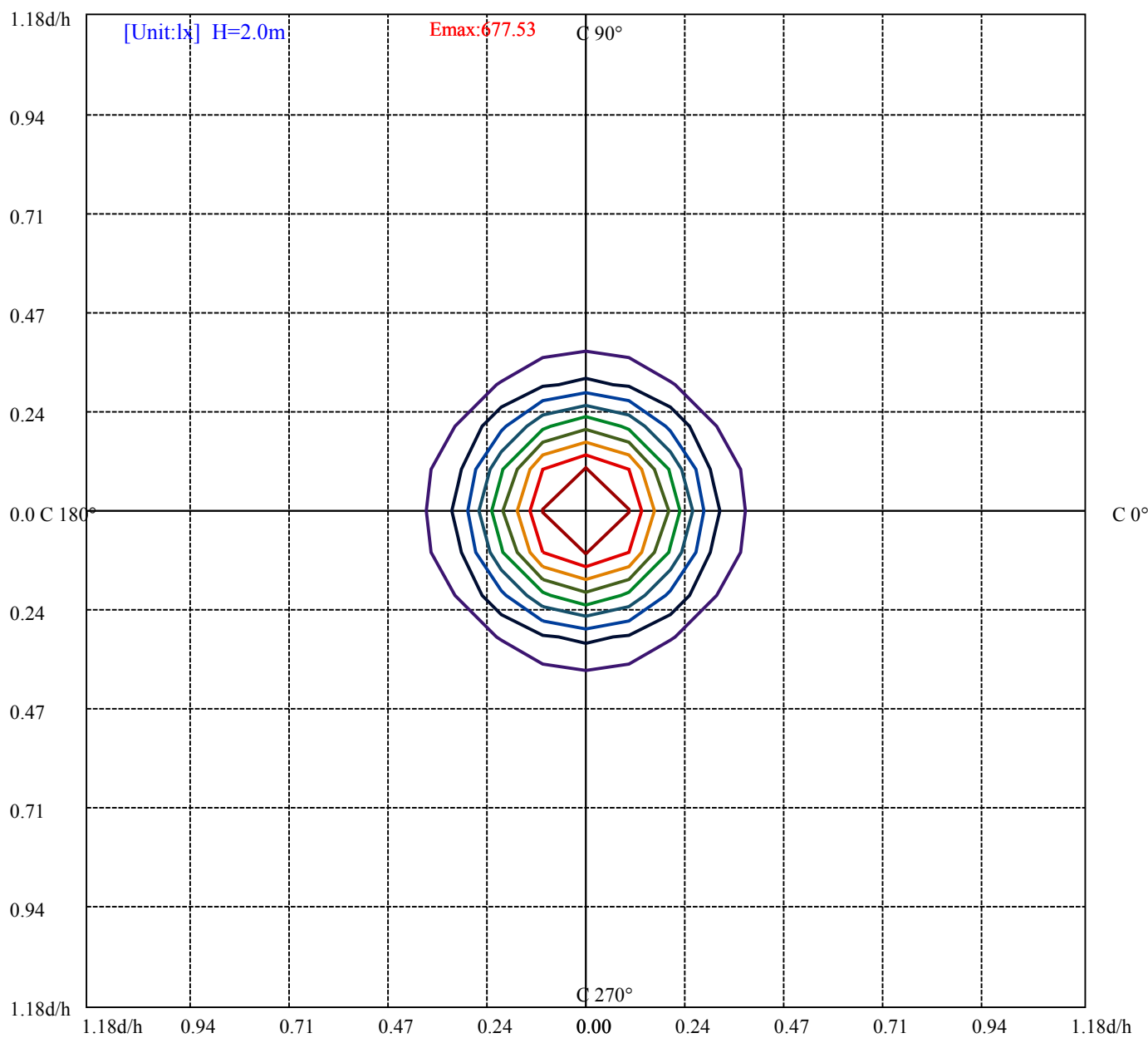
House

[Unit:cd]

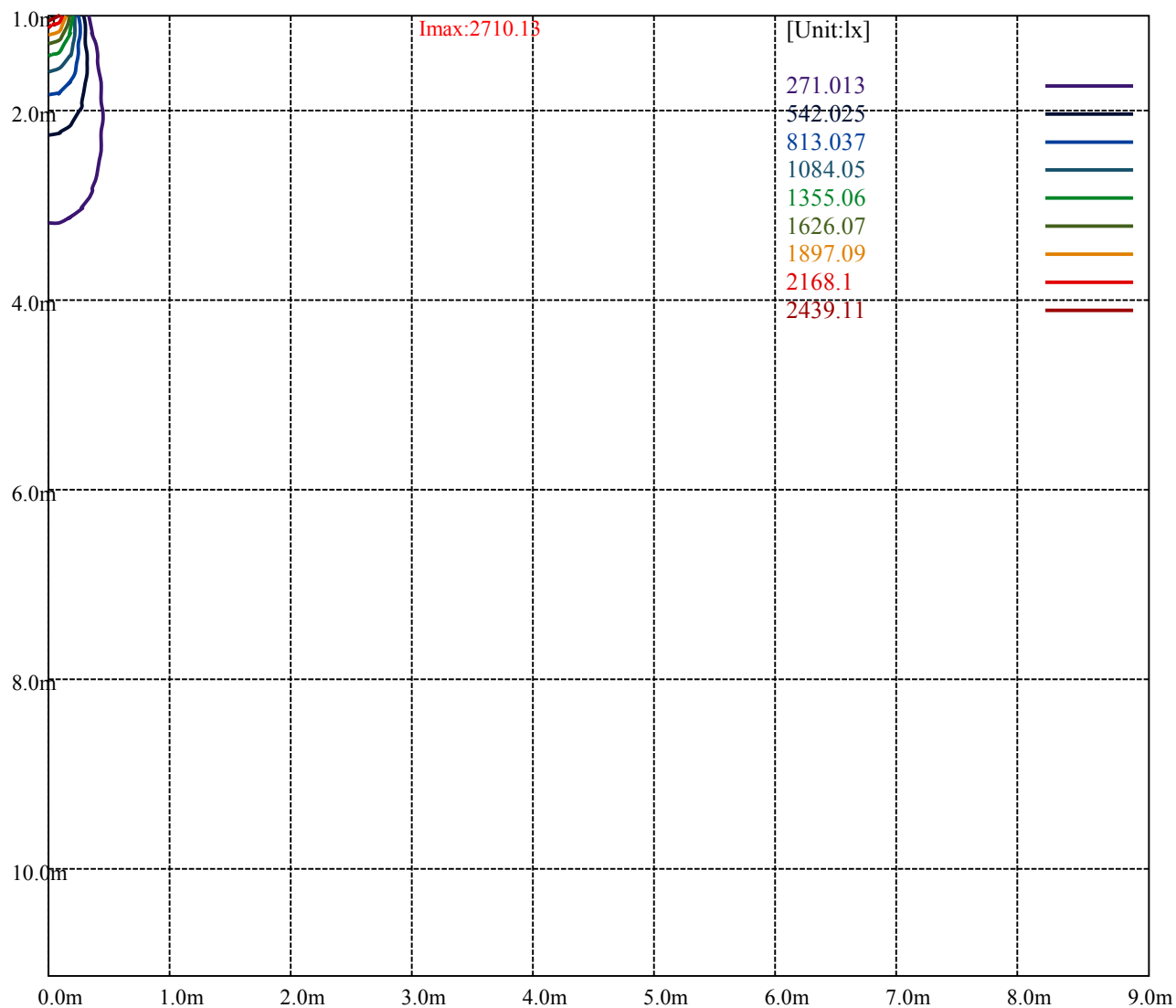
Road

Imax:2710.13

(10%Imax)	271.013	—
(20%Imax)	542.025	—
(30%Imax)	813.037	—
(40%Imax)	1084.05	—
(50%Imax)	1355.06	—
(60%Imax)	1626.07	—
(70%Imax)	1897.09	—
(80%Imax)	2168.1	—
(90%Imax)	2439.11	—



(10%Emax) 67.753	—
(20%Emax) 135.5063	—
(30%Emax) 203.2592	—
(40%Emax) 271.0125	—
(50%Emax) 338.765	—
(60%Emax) 406.5175	—
(70%Emax) 474.2725	—
(80%Emax) 542.025	—
(90%Emax) 609.7775	—



Luminance Table

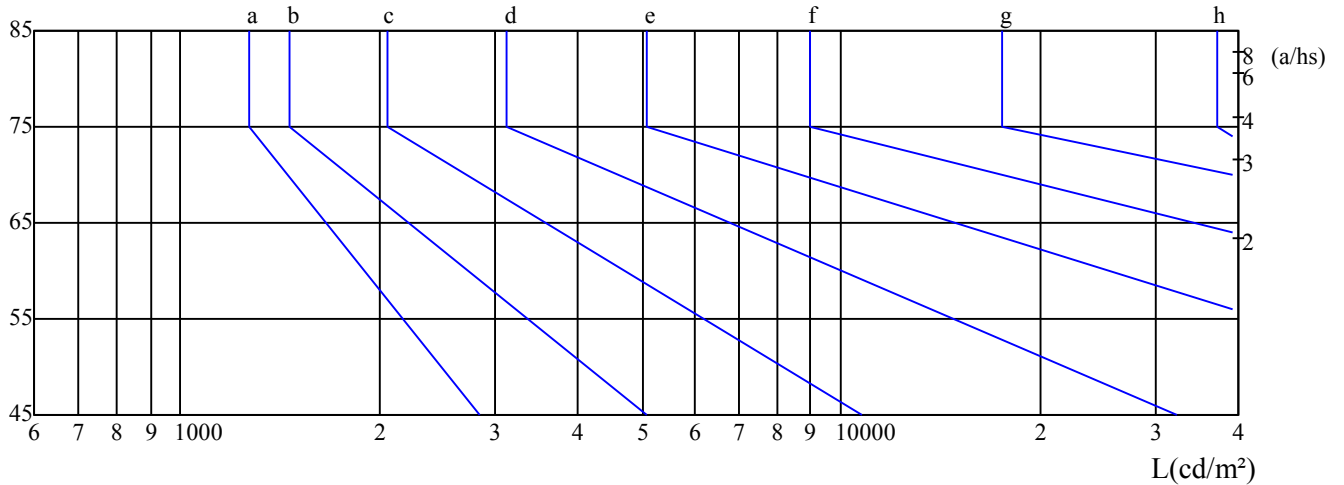
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

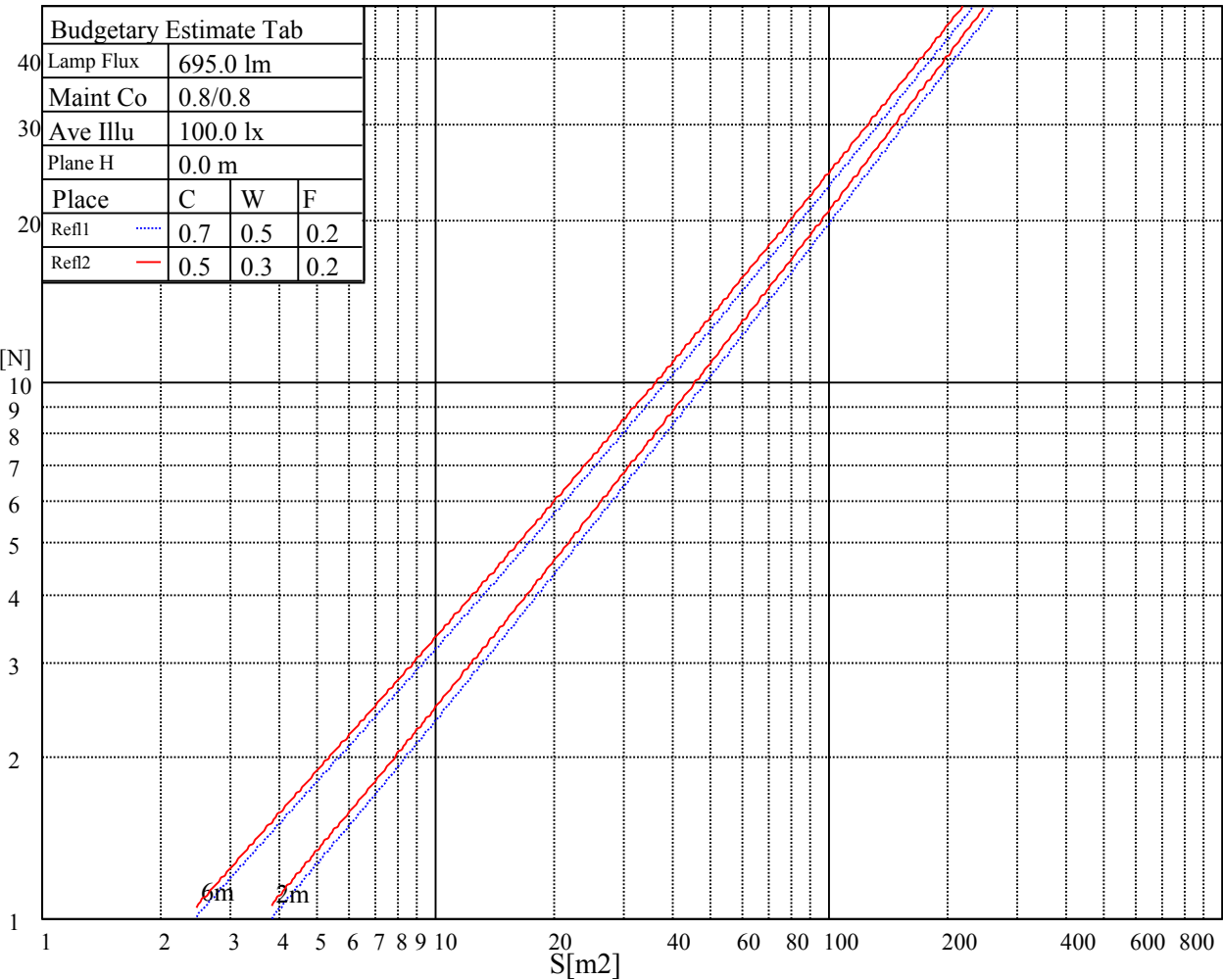
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

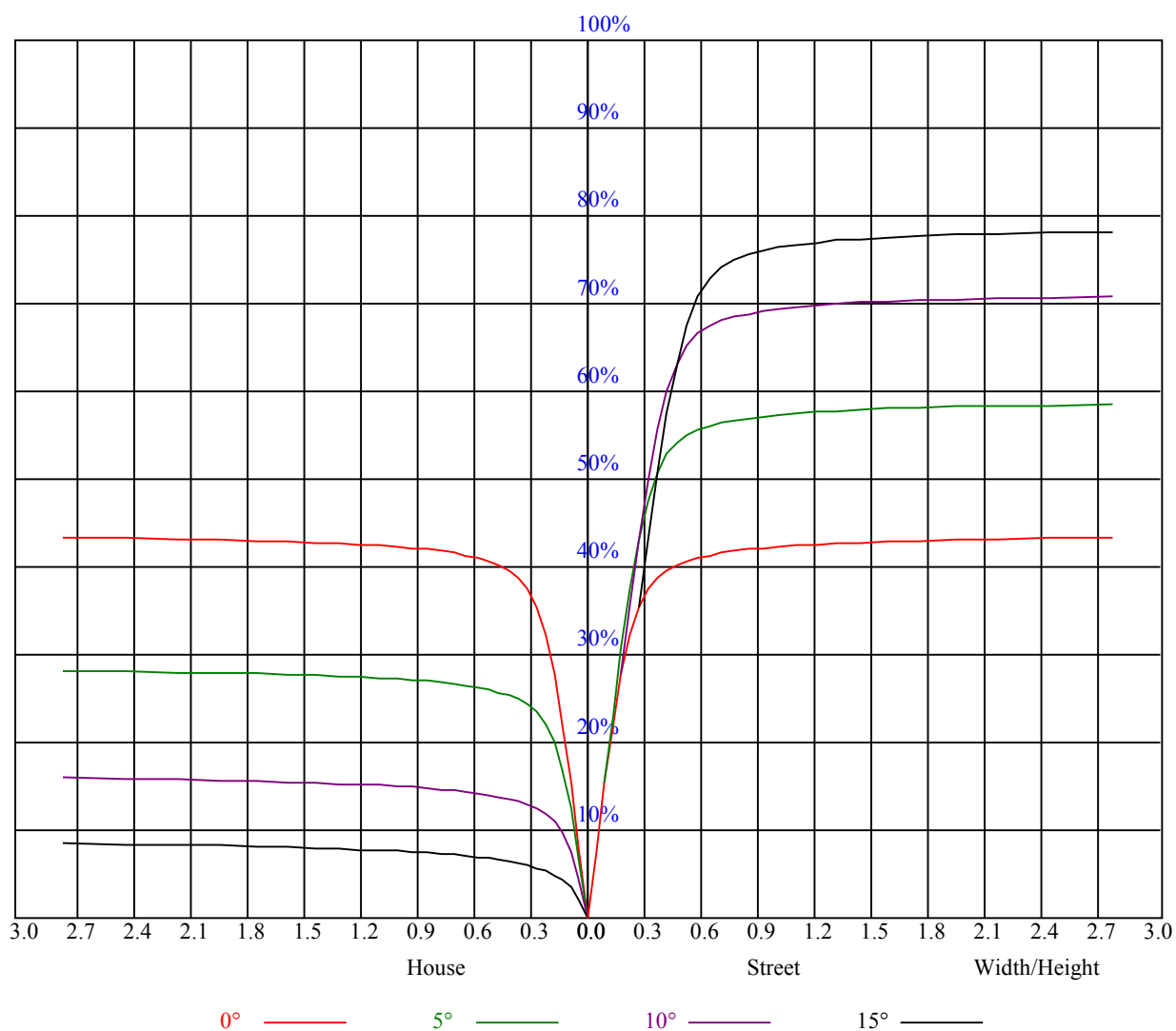
C0 ———

C45 ———

C90 ———



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	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.98	0.96	0.95	0.96	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.87	0.86	0.85	0.84
2	0.93	0.90	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.84	0.83	0.81	0.80
3	0.89	0.85	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.85	0.81	0.79	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.76	0.74
5	0.82	0.78	0.75	0.81	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.77	0.75	0.73	0.72
6	0.79	0.75	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.71	0.75	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.68
8	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.72	0.69	0.67	0.66
9	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
10	0.70	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63



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	2714.63	2728.69	2733.19	2726.44	2698.88	2661.75	2592.00	2516.06	2421.56
45.0	2701.13	2702.81	2697.19	2679.75	2643.19	2597.06	2525.63	2428.88	2319.75
90.0	2705.63	2684.25	2655.56	2611.13	2549.81	2480.06	2384.44	2262.94	2130.75
135.0	2719.13	2696.06	2658.94	2606.06	2540.81	2465.44	2351.81	2243.25	2116.13
180.0	2714.63	2680.31	2647.13	2586.38	2499.75	2426.63	2309.06	2156.63	2031.19
225.0	2701.13	2693.25	2667.38	2621.25	2568.94	2502.56	2400.19	2296.69	2173.50
270.0	2705.63	2711.81	2711.81	2700.56	2671.31	2629.69	2557.69	2478.38	2377.13
315.0	2719.13	2737.13	2736.00	2729.81	2702.81	2654.44	2586.94	2495.25	2390.63
360.0	2714.63	2728.69	2733.19	2726.44	2698.88	2661.75	2592.00	2516.06	2421.56

C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2270.81	2124.00	1960.31	1757.25	1548.56	1359.56	1151.44	970.31	789.75
45.0	2174.63	2006.44	1836.00	1655.44	1447.31	1245.94	1074.94	892.69	721.69
90.0	1984.50	1773.56	1603.13	1425.94	1115.55	1031.63	875.64	712.63	566.04
135.0	1933.31	1764.56	1594.13	1397.25	1197.56	1026.00	847.69	702.56	558.56
180.0	1870.31	1632.38	1476.00	1237.50	1100.70	918.17	766.41	631.46	484.71
225.0	2012.63	1825.88	1648.13	1443.38	1110.83	1068.69	888.24	738.06	590.40
270.0	2229.19	2083.50	1915.31	1710.56	1497.94	1308.38	1103.63	931.50	756.56
315.0	2264.06	2072.81	1895.06	1712.81	1499.63	1221.19	1099.80	903.38	730.91
360.0	2270.81	2124.00	1960.31	1757.25	1548.56	1359.56	1151.44	970.31	789.75

C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	630.00	511.88	401.63	311.63	286.31	194.79	147.66	119.81	99.62
45.0	598.50	461.25	369.56	284.06	212.63	171.00	140.06	109.46	92.98
90.0	455.96	354.99	282.49	217.91	169.03	136.74	109.97	90.62	78.47
135.0	434.25	354.94	290.81	209.87	164.93	134.66	103.56	87.64	75.49
180.0	388.07	309.04	238.78	184.16	147.43	117.00	95.51	81.90	71.10
225.0	465.47	372.77	297.51	224.49	179.21	144.90	114.02	96.30	83.08
270.0	605.25	493.31	386.44	299.81	291.38	188.44	147.38	117.56	98.44
315.0	598.50	473.40	382.22	297.11	228.38	180.62	140.91	112.73	95.12
360.0	630.00	511.88	401.63	311.63	286.31	194.79	147.66	119.81	99.62

C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	83.93	73.07	65.87	59.34	53.78	49.39	45.06	41.51	38.03
45.0	80.33	68.40	61.09	55.63	50.18	45.11	41.46	38.08	34.93
90.0	69.30	60.69	55.24	50.34	45.11	41.40	38.08	34.43	31.95
135.0	66.99	59.63	54.28	49.50	44.38	40.73	37.46	34.31	31.61
180.0	63.96	57.66	52.14	47.93	44.16	39.83	36.73	33.98	31.05
225.0	72.79	63.06	57.04	52.09	47.25	42.92	39.49	36.11	33.02
270.0	85.89	72.11	64.86	59.40	52.37	47.93	44.44	40.05	36.51
315.0	82.13	70.71	63.90	58.16	53.27	47.81	43.88	40.44	36.68
360.0	83.93	73.07	65.87	59.34	53.78	49.39	45.06	41.51	38.03

C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	34.82	32.34	30.15	27.73	26.04	24.47	22.67	21.32	20.03
45.0	32.34	29.76	27.84	25.82	23.96	22.44	21.04	19.52	18.28
90.0	29.70	27.23	25.71	23.91	21.99	20.76	19.52	17.89	16.93
135.0	29.42	27.34	25.71	23.91	22.33	20.98	19.46	18.28	17.21
180.0	28.91	27.17	25.20	23.51	22.05	20.48	19.29	18.00	16.88
225.0	30.60	28.24	26.33	24.30	22.56	21.21	19.86	18.28	17.21
270.0	34.09	31.05	28.86	27.00	24.86	23.29	21.83	20.14	18.90
315.0	33.92	31.61	29.31	27.34	25.65	23.96	22.56	20.98	19.58
360.0	34.82	32.34	30.15	27.73	26.04	24.47	22.67	21.32	20.03

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	18.73	17.44	16.43	15.41	14.29	13.44	12.54	11.81	11.08
45.0	17.16	15.92	14.96	14.01	13.05	12.21	11.48	10.80	10.18
90.0	15.92	14.57	13.78	12.94	12.09	11.31	10.63	10.01	9.51
135.0	16.14	15.02	14.18	13.33	12.43	11.64	11.03	10.41	9.84
180.0	15.86	14.85	13.89	13.11	12.38	11.53	10.91	10.46	9.84
225.0	16.14	14.91	14.01	13.22	12.26	11.48	10.86	10.18	9.79
270.0	17.72	16.31	15.30	14.40	13.33	12.43	11.70	10.91	10.35
315.0	18.39	17.21	16.03	15.02	14.12	13.05	12.32	11.53	10.91
360.0	18.73	17.44	16.43	15.41	14.29	13.44	12.54	11.81	11.08
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.46	10.01	9.56	9.17	8.89	8.61	8.27	7.99	7.71
45.0	9.73	9.23	8.89	8.49	8.21	7.99	7.71	7.43	7.20
90.0	9.06	8.66	8.33	8.04	7.76	7.59	7.37	7.09	6.92
135.0	9.45	9.00	8.72	8.38	8.04	7.82	7.54	7.31	7.09
180.0	9.51	9.17	8.83	8.49	8.27	7.99	7.76	7.54	7.31
225.0	9.28	8.94	8.61	8.33	8.10	7.82	7.59	7.31	7.14
270.0	9.84	9.39	9.11	8.78	8.44	8.21	7.93	7.71	7.48
315.0	10.41	9.96	9.51	9.11	8.78	8.44	8.16	7.88	7.59
360.0	10.46	10.01	9.56	9.17	8.89	8.61	8.27	7.99	7.71
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.48	7.20	7.03	6.81	6.64	6.41	6.24	6.08	5.91
45.0	7.03	6.81	6.64	6.47	6.30	6.13	6.02	5.85	5.74
90.0	6.75	6.64	6.41	6.30	6.19	7.26	9.11	11.25	13.95
135.0	6.92	6.64	6.47	6.36	6.19	6.02	5.91	5.68	5.57
180.0	7.09	6.86	6.64	6.53	6.36	6.19	5.96	5.85	5.63
225.0	6.92	6.75	6.58	6.41	6.24	6.08	5.96	5.79	5.63
270.0	7.26	7.03	6.86	6.69	6.53	6.36	6.58	8.44	11.14
315.0	7.37	7.14	6.92	6.69	6.53	6.30	6.19	6.02	5.79
360.0	7.48	7.20	7.03	6.81	6.64	6.41	6.24	6.08	5.91
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	5.74	5.57	5.46	5.29	5.12	5.01	4.84	4.73	4.56
45.0	5.57	5.46	5.40	5.46	5.63	5.79	5.91	5.91	5.57
90.0	16.59	19.07	20.70	21.66	21.49	20.08	18.34	16.09	13.73
135.0	5.40	5.18	5.06	4.89	4.73	4.61	4.44	4.28	4.16
180.0	5.46	5.34	5.18	5.01	4.89	4.73	4.56	4.39	4.22
225.0	5.57	5.40	5.23	5.18	5.18	5.23	5.29	5.29	5.01
270.0	13.73	17.10	19.69	22.33	24.47	25.20	24.47	22.44	20.25
315.0	5.63	5.46	5.29	5.18	5.06	4.89	4.73	4.56	4.39
360.0	5.74	5.57	5.46	5.29	5.12	5.01	4.84	4.73	4.56
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.44	4.22	4.05	3.88	3.77	3.54	3.43	3.21	3.04
45.0	4.95	4.39	3.94	3.77	3.54	3.43	3.15	2.93	2.70
90.0	11.31	8.44	4.95	4.11	3.83	3.54	2.87	2.70	2.64
135.0	3.99	3.77	3.60	3.43	3.21	3.04	2.87	2.76	2.70
180.0	4.11	3.94	3.77	3.60	3.38	3.26	3.04	2.93	2.87
225.0	4.56	4.11	3.99	3.77	3.54	3.38	3.04	2.87	2.70
270.0	17.83	14.85	11.81	8.16	4.73	3.94	3.54	3.04	2.81
315.0	4.28	4.11	3.88	3.71	3.54	3.38	3.15	2.98	2.87
360.0	4.44	4.22	4.05	3.88	3.77	3.54	3.43	3.21	3.04

Intensity data(cd)

Appendix Page: 18 Total:18

C/ γ (°)	90.0
0.0	2.93
45.0	2.64
90.0	2.64
135.0	2.70
180.0	2.87
225.0	2.70
270.0	2.76
315.0	2.76
360.0	2.93