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Nata

Client:

LumCAT: LN01D06324BF

Luminaire: 92.70.129.00

Report No:

Voltage(V): 32.8100

Test No: GC2019072211

Current(A): 0.1970

LampCAT: CREE CXA1830

Power (W): 6.4600

Lamp flux(lm): 953.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 63

Width(mm): 63

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 875.88, Efficiency(%): 91.91% , Luminous Efficacy(lm/W): 135.58

Central intensity(cd): 3390.469, Maximum intensity(cd): 3390.469

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=26.0

[C90/270]Total=26.0

Field angle(10%Imax): [C0/180]Total=45.4

[C90/270]Total=45.4

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

Maximum s/h(1/4): C0_180=0.42 C90_270=0.42

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.91%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.387%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3390.469	0.000	0	.000%	.000%
1.0	3379.781	3.239	3.239	.340%	.370%
2.0	3343.992	9.651	12.89	1.013%	1.472%
3.0	3287.531	15.860	28.75	1.664%	3.282%
4.0	3217.148	21.773	50.524	2.285%	5.768%
5.0	3114.563	27.239	77.762	2.858%	8.878%
6.0	3003.680	32.153	109.915	3.374%	12.549%
7.0	2873.391	36.479	146.394	3.828%	16.714%
8.0	2719.898	40.030	186.424	4.200%	21.284%
9.0	2545.453	42.673	229.097	4.478%	26.156%
10.0	2357.016	44.366	273.463	4.655%	31.222%
11.0	2151.141	45.046	318.508	4.727%	36.364%
12.0	1939.500	44.717	363.225	4.692%	41.470%
13.0	1697.681	43.164	406.389	4.529%	46.398%
14.0	1482.356	40.704	447.093	4.271%	51.045%
15.0	1259.184	37.637	484.73	3.949%	55.342%
16.0	1081.343	34.295	519.026	3.599%	59.258%
17.0	898.826	30.837	549.862	3.236%	62.778%
18.0	759.459	27.342	577.204	2.869%	65.900%
19.0	635.702	24.273	601.477	2.547%	68.671%
20.0	525.502	21.253	622.73	2.230%	71.098%
21.0	443.883	18.614	641.344	1.953%	73.223%
22.0	377.670	16.509	657.854	1.732%	75.108%
23.0	321.145	14.663	672.517	1.539%	76.782%
24.0	281.327	13.172	685.689	1.382%	78.286%
25.0	242.086	11.901	697.59	1.249%	79.645%
26.0	212.231	10.724	708.314	1.125%	80.869%
27.0	183.776	9.688	718.003	1.017%	81.975%
28.0	162.548	8.768	726.771	.920%	82.976%
29.0	142.819	7.989	734.76	.838%	83.888%
30.0	126.935	7.283	742.044	.764%	84.720%
31.0	113.259	6.684	748.728	.701%	85.483%
32.0	101.363	6.149	754.876	.645%	86.185%
33.0	92.313	5.706	760.582	.599%	86.837%
34.0	84.839	5.361	765.943	.563%	87.449%
35.0	78.230	5.064	771.008	.531%	88.027%
36.0	72.204	4.790	775.798	.503%	88.574%
37.0	67.472	4.555	780.353	.478%	89.094%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	62.845	4.350	784.703	.456%	89.590%
39.0	58.683	4.148	788.851	.435%	90.064%
40.0	54.998	3.965	792.816	.416%	90.517%
41.0	51.750	3.801	796.617	.399%	90.951%
42.0	48.459	3.641	800.258	.382%	91.366%
43.0	45.443	3.478	803.736	.365%	91.763%
44.0	42.785	3.330	807.066	.349%	92.144%
45.0	40.163	3.188	810.254	.334%	92.508%
46.0	37.870	3.052	813.306	.320%	92.856%
47.0	35.494	2.918	816.223	.306%	93.189%
48.0	33.377	2.784	819.008	.292%	93.507%
49.0	31.366	2.659	821.666	.279%	93.811%
50.0	29.384	2.533	824.199	.266%	94.100%
51.0	27.696	2.415	826.614	.253%	94.376%
52.0	26.198	2.313	828.927	.243%	94.640%
53.0	24.736	2.216	831.142	.232%	94.893%
54.0	23.337	2.119	833.261	.222%	95.134%
55.0	22.120	2.029	835.29	.213%	95.366%
56.0	20.967	1.947	837.237	.204%	95.588%
57.0	19.814	1.865	839.102	.196%	95.801%
58.0	18.759	1.784	840.886	.187%	96.005%
59.0	17.803	1.709	842.595	.179%	96.200%
60.0	16.805	1.635	844.23	.172%	96.387%
61.0	15.813	1.557	845.787	.163%	96.564%
62.0	14.948	1.482	847.269	.156%	96.734%
63.0	14.140	1.415	848.684	.148%	96.895%
64.0	13.359	1.349	850.033	.142%	97.049%
65.0	12.713	1.290	851.323	.135%	97.197%
66.0	12.143	1.240	852.563	.130%	97.338%
67.0	11.637	1.196	853.759	.125%	97.475%
68.0	11.243	1.159	854.918	.122%	97.607%
69.0	10.856	1.127	856.046	.118%	97.736%
70.0	10.547	1.099	857.145	.115%	97.861%
71.0	10.209	1.073	858.218	.113%	97.984%
72.0	9.893	1.045	859.263	.110%	98.103%
73.0	9.640	1.021	860.284	.107%	98.220%
74.0	9.394	1.001	861.285	.105%	98.334%
75.0	9.148	0.980	862.265	.103%	98.446%

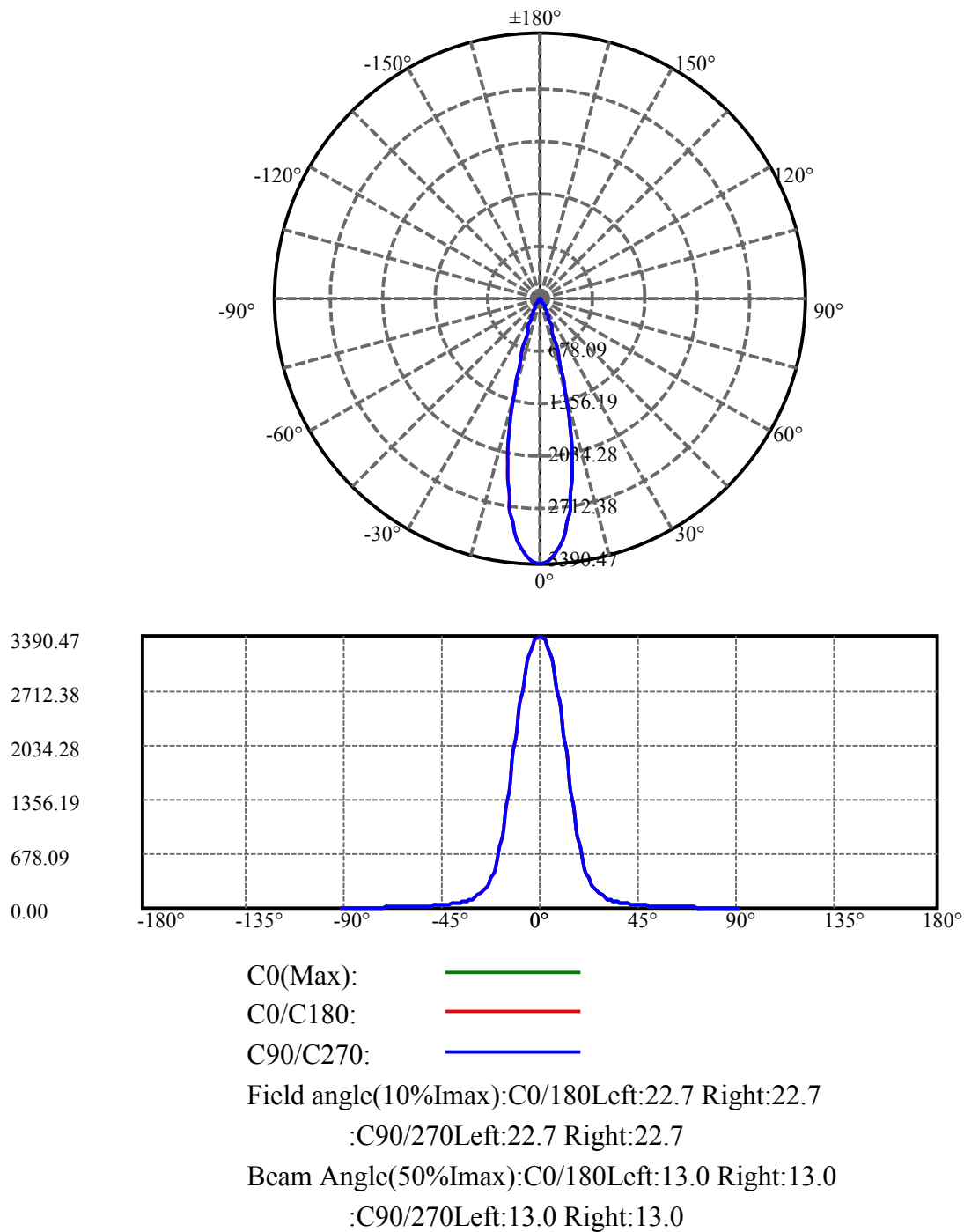
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.007	0.964	863.228	.101%	98.556%
77.0	8.937	0.957	864.185	.100%	98.665%
78.0	8.951	0.958	865.143	.100%	98.774%
79.0	8.972	0.963	866.106	.101%	98.884%
80.0	9.056	0.972	867.077	.102%	98.995%
81.0	8.958	0.974	868.052	.102%	99.106%
82.0	8.873	0.967	869.019	.101%	99.217%
83.0	8.782	0.960	869.978	.101%	99.326%
84.0	8.360	0.934	870.912	.098%	99.433%
85.0	8.163	0.902	871.814	.095%	99.536%
86.0	8.093	0.889	872.703	.093%	99.637%
87.0	7.587	0.858	873.561	.090%	99.735%
88.0	7.172	0.808	874.369	.085%	99.828%
89.0	6.870	0.770	875.139	.081%	99.916%
90.0	6.609	0.739	875.878	.078%	100.000%

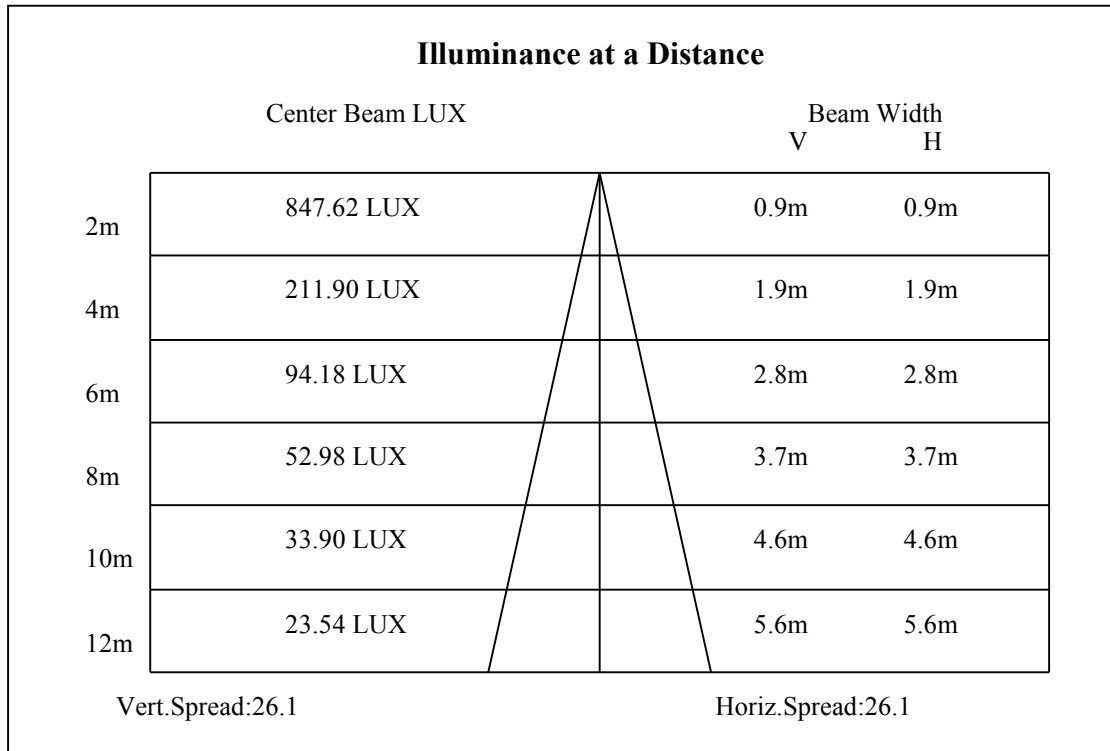
ZONAL LUMEN SUMMARY

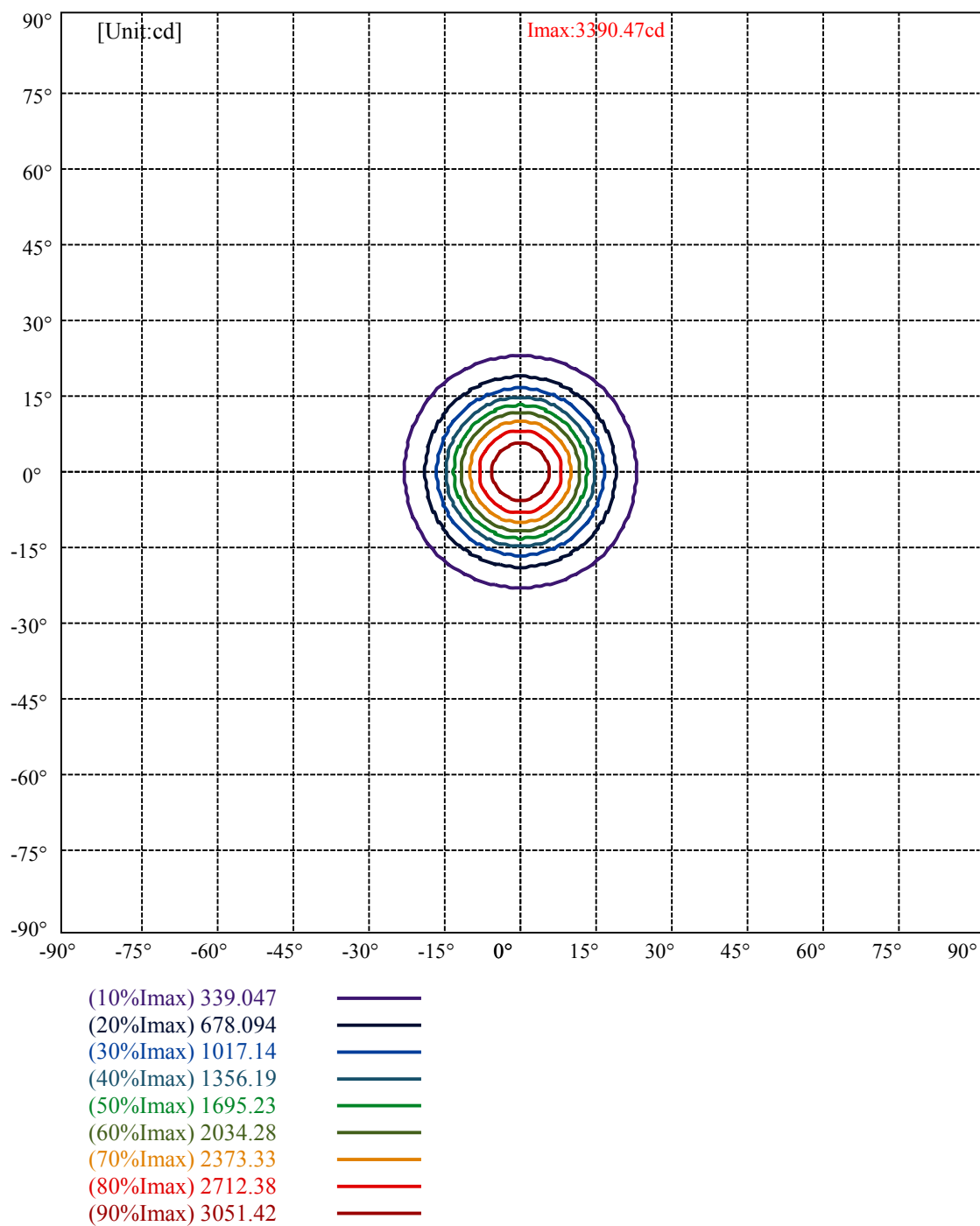
Zone	Lumens	%Lamp	%Fixt
0-30	742.04	77.86%	84.72%
0-40	792.82	83.19%	90.52%
0-60	844.23	88.59%	96.39%
0-90	875.14	91.83%	99.92%
0-120	875.14	91.83%	99.92%
0-180	875.88	91.91%	100.00%
60-90	32.54	3.41%	3.72%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.29	700.70	73.53%	80.00%

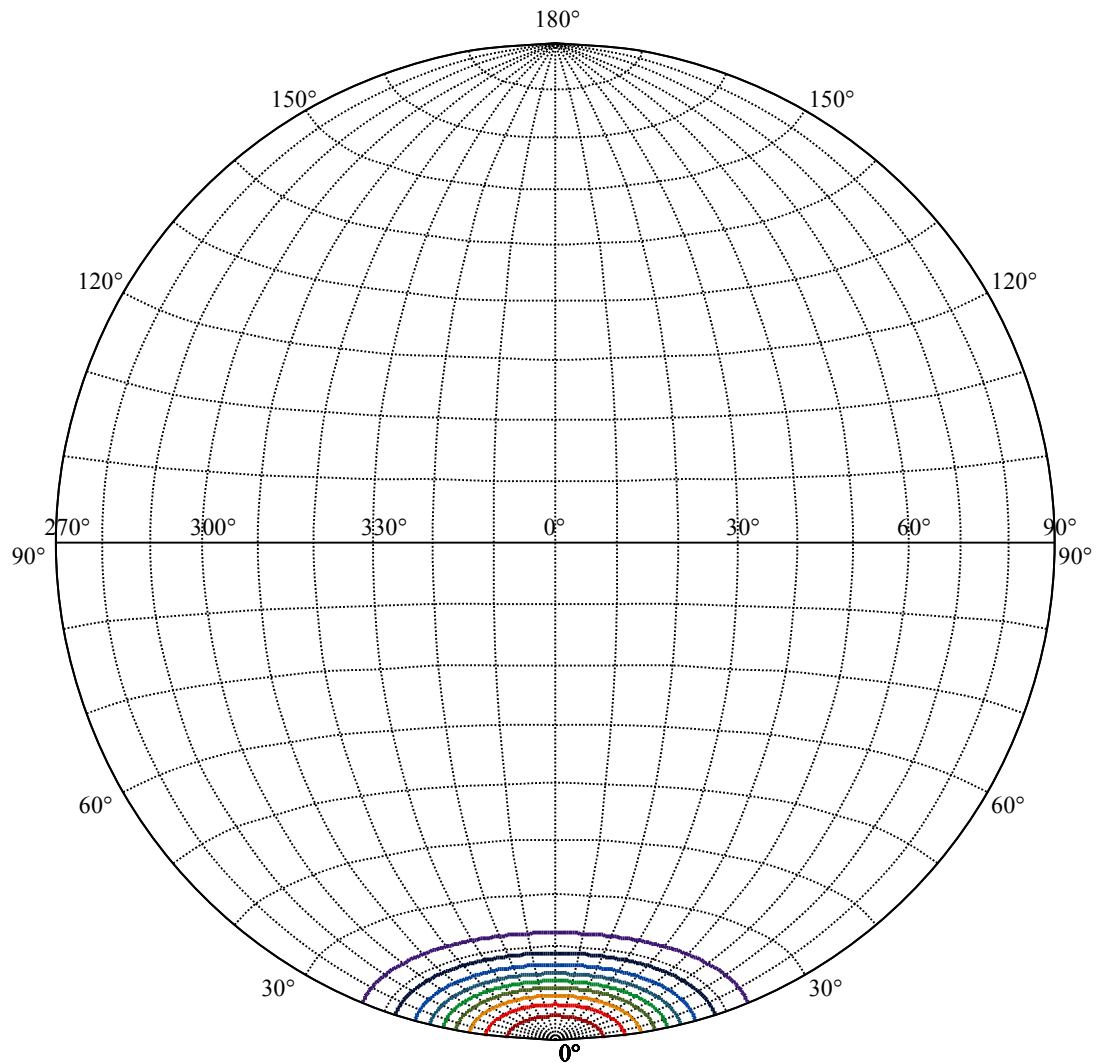
ZONAL LUMEN SUMMARY

0-10	273.46
10-20	349.27
20-30	119.31
30-40	50.77
40-50	31.38
50-60	20.03
60-70	12.91
70-80	9.93
80-90	8.06
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









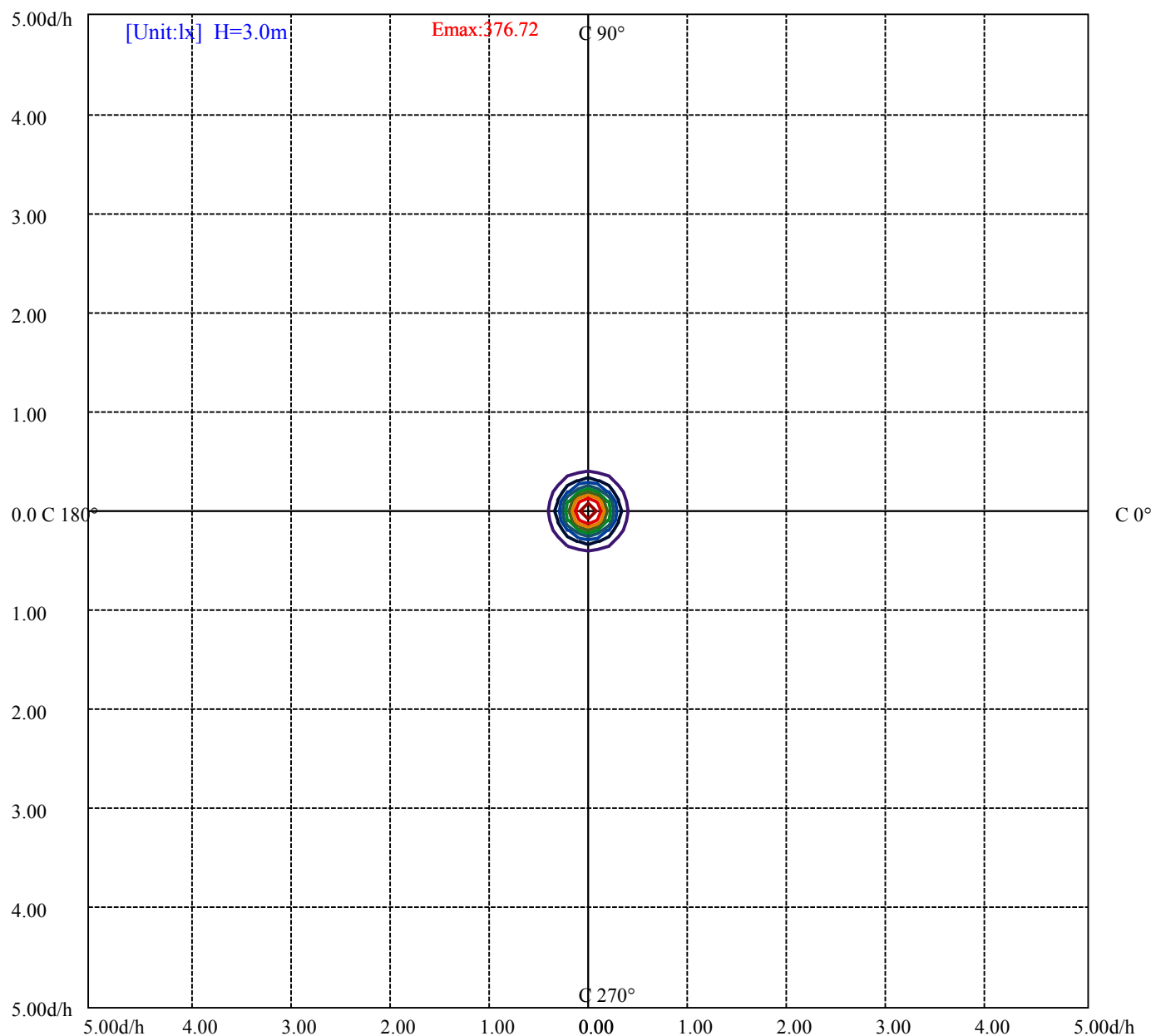
House

[Unit:cd]

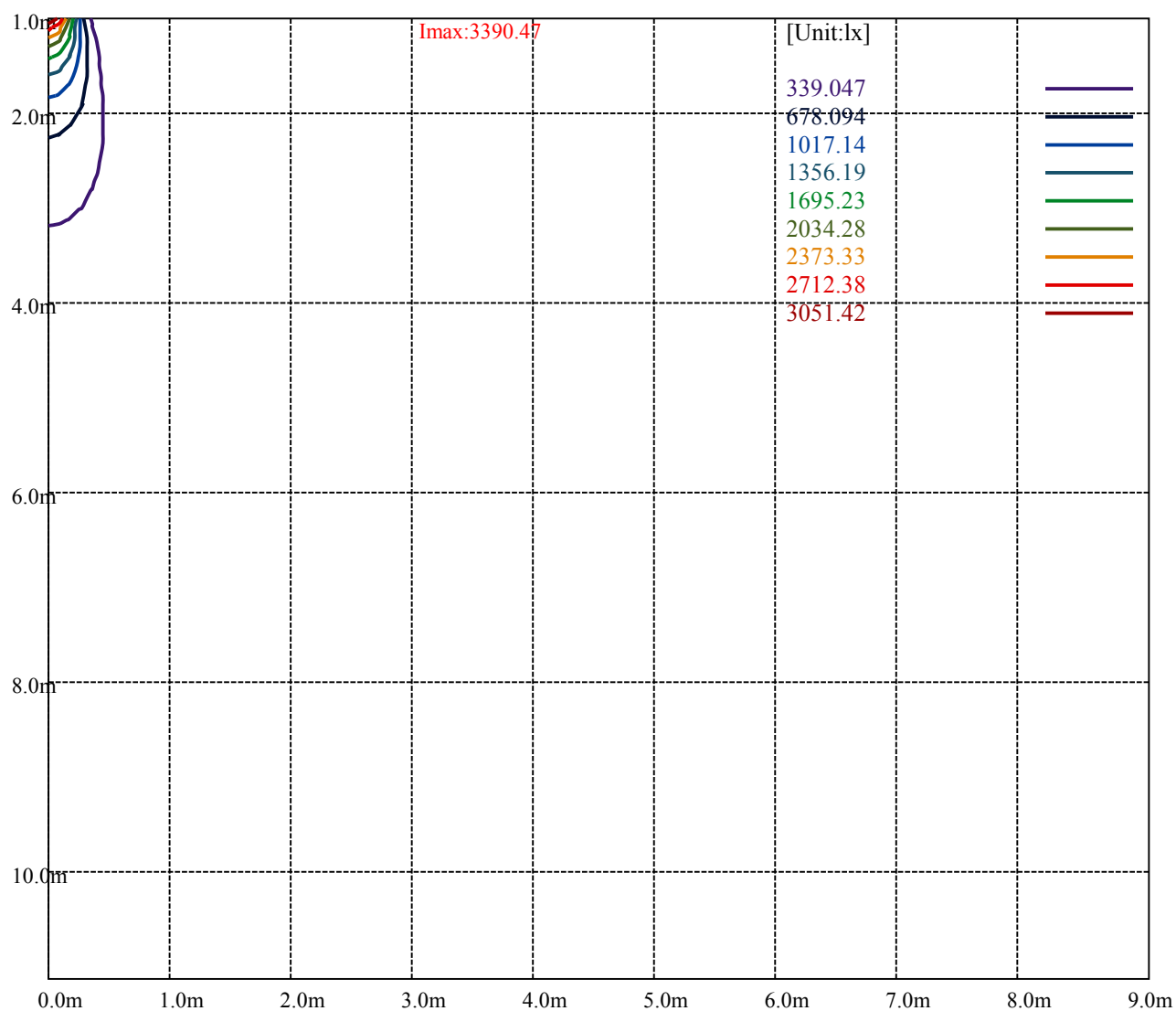
Road

Imax:3390.47

(10%Imax)	339.047	
(20%Imax)	678.094	
(30%Imax)	1017.14	
(40%Imax)	1356.19	
(50%Imax)	1695.23	
(60%Imax)	2034.28	
(70%Imax)	2373.33	
(80%Imax)	2712.38	
(90%Imax)	3051.42	



(10%Emax)	37.67189	—
(20%Emax)	75.34367	—
(30%Emax)	113.0156	—
(40%Emax)	150.6878	—
(50%Emax)	188.3589	—
(60%Emax)	226.0311	—
(70%Emax)	263.7033	—
(80%Emax)	301.3745	—
(90%Emax)	339.0467	—



Luminance Table

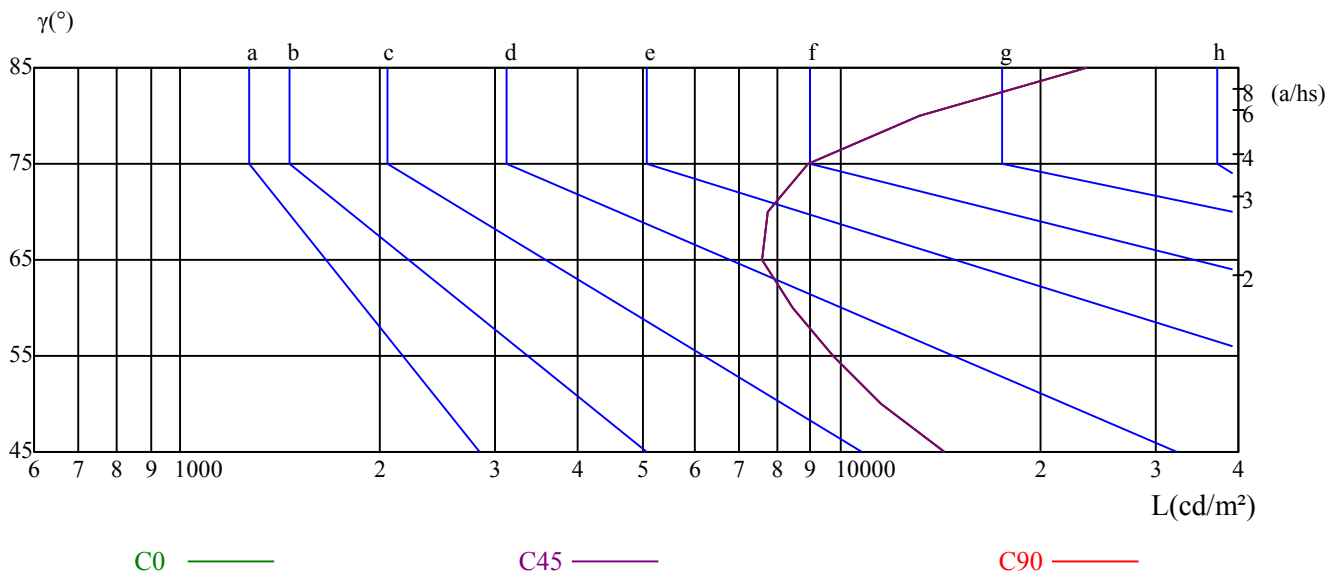
γ	45	50	55	60	65	70	75	80	85
C0	14311	11517	9717	8468	7579	7769	8905	13140	23599
C45	14311	11517	9717	8468	7579	7769	8905	13140	23599
C90	14311	11517	9717	8468	7579	7769	8905	13140	23599

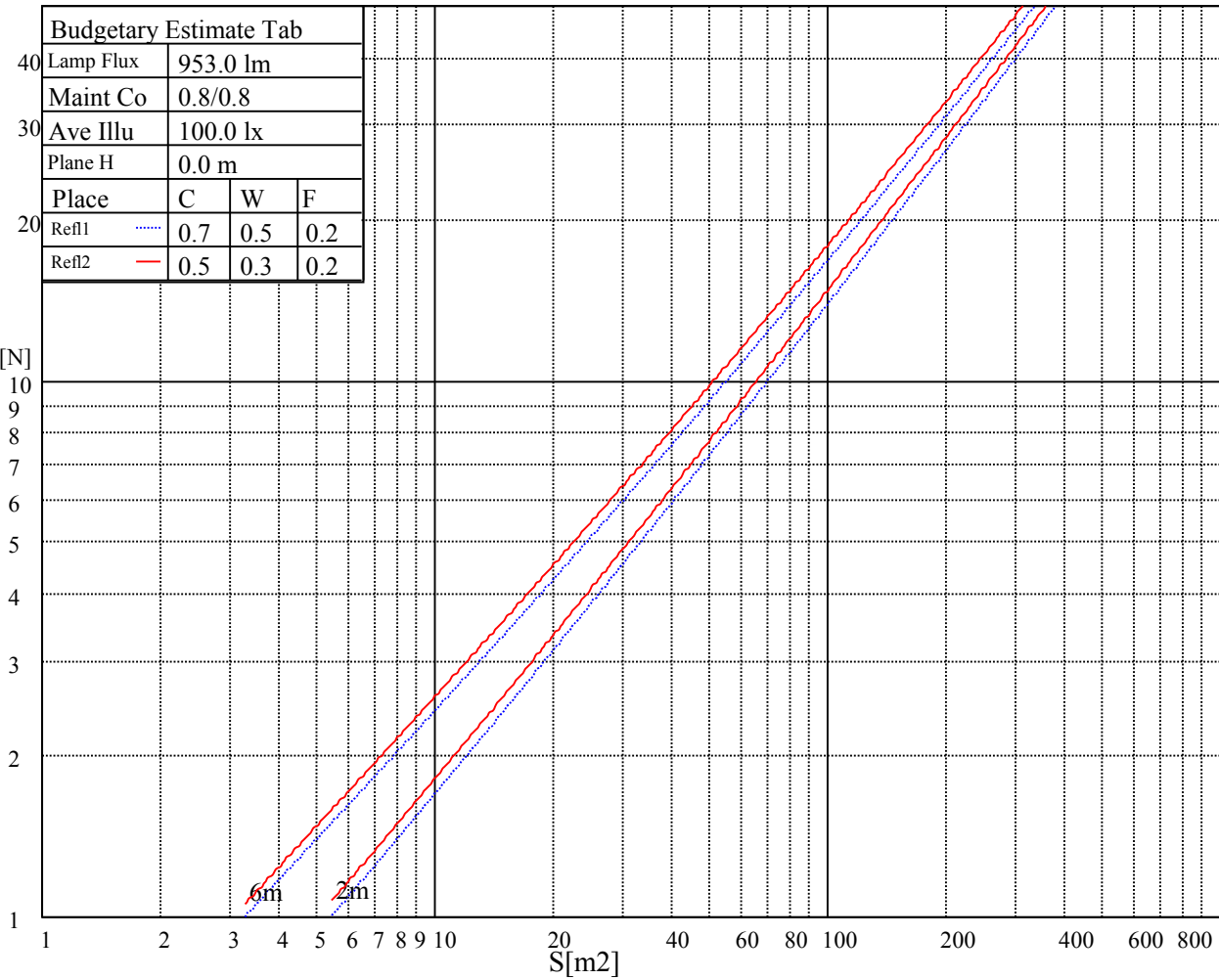
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7579	7579	7579	8905	8905	8905	23599	23599	23599

Glare Table

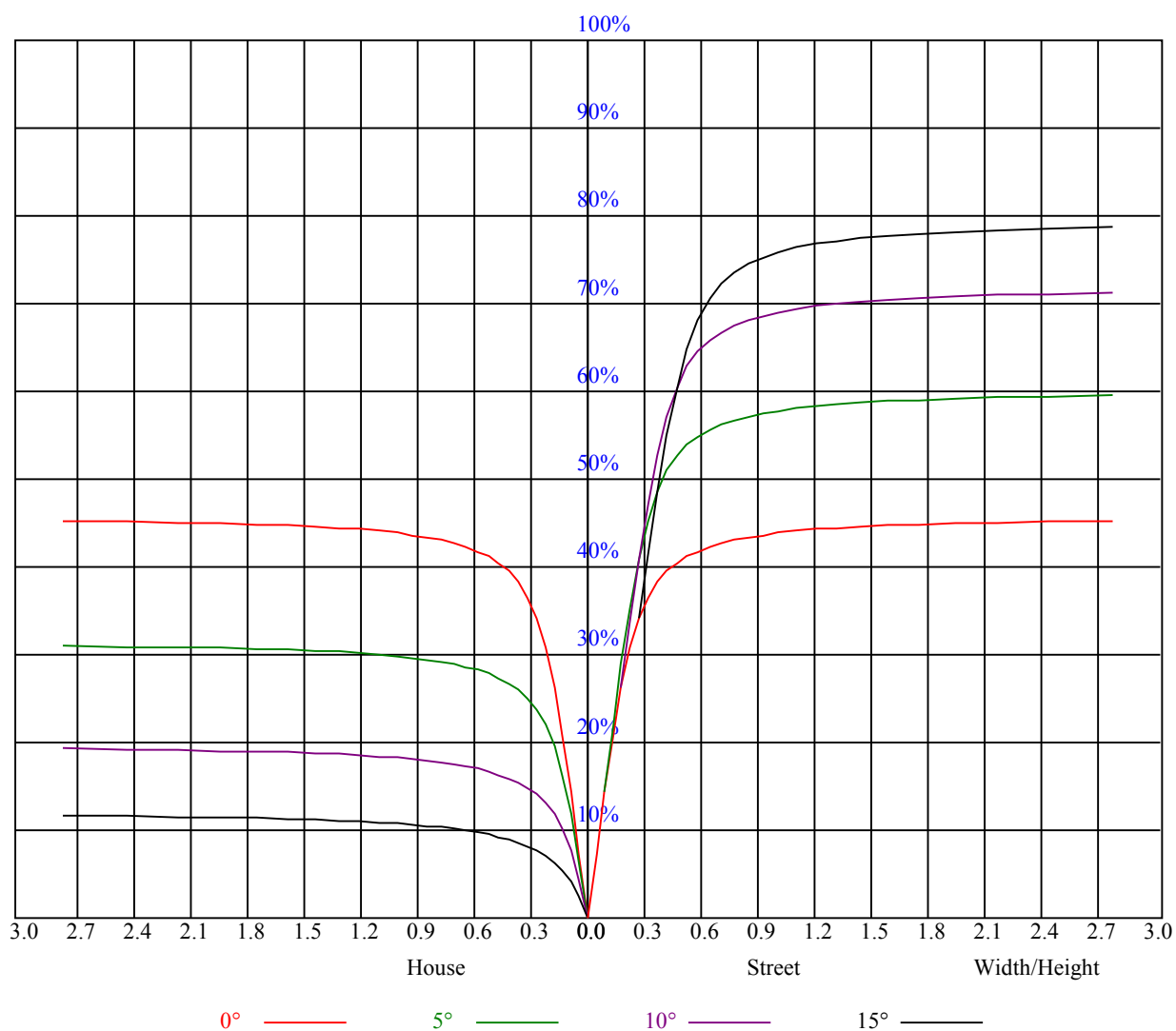
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

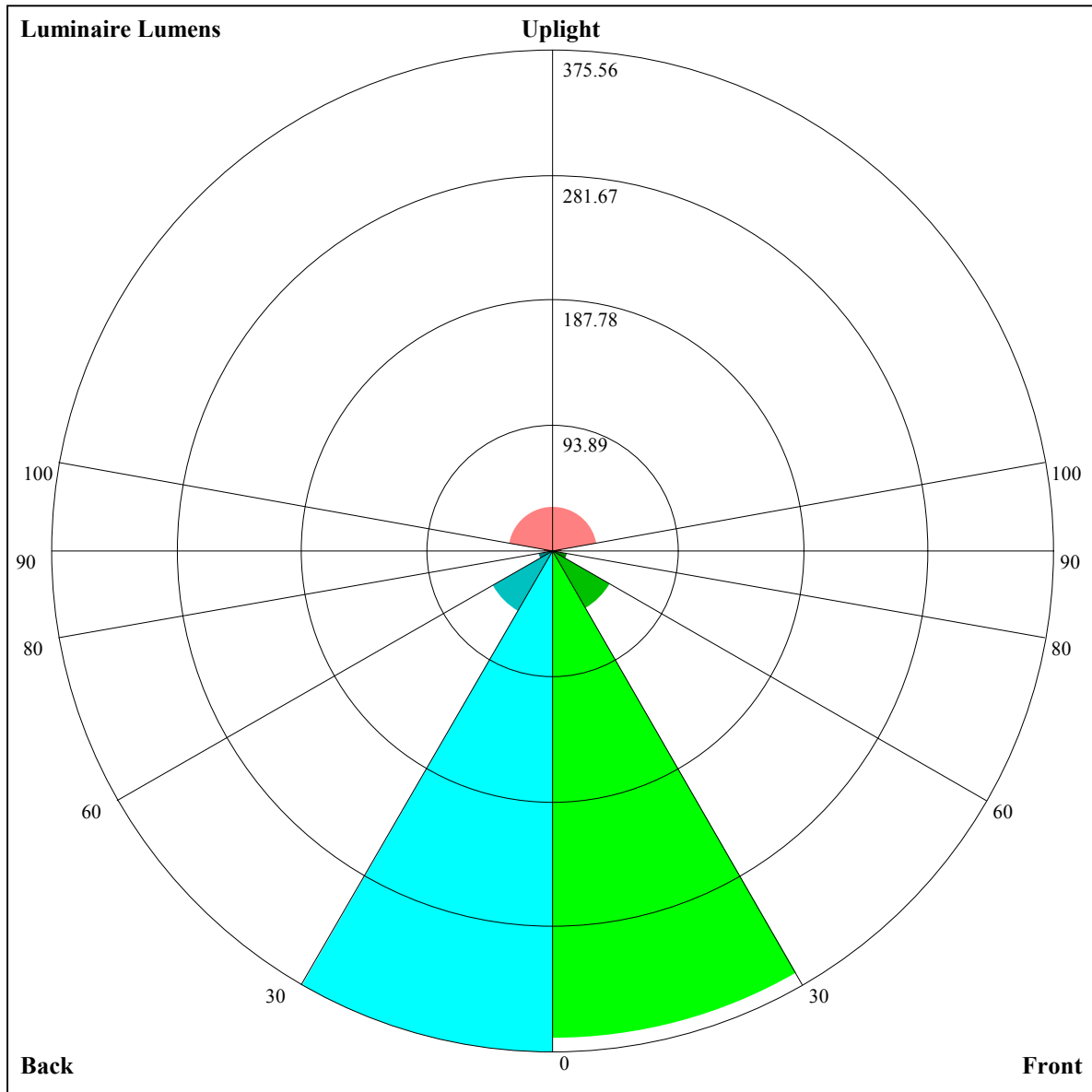
Luminance Limiting Curve





RHOC	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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.02	1.00	0.98	1.00	0.98	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
2	0.96	0.93	0.90	0.95	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.84	0.82
3	0.91	0.87	0.84	0.90	0.87	0.84	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.78
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.77	0.81	0.78	0.76	0.75
5	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.76	0.74	0.78	0.76	0.73	0.72
6	0.80	0.76	0.72	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
7	0.77	0.73	0.69	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.67
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
9	0.72	0.68	0.65	0.71	0.67	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
10	0.70	0.65	0.63	0.69	0.65	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.61





Luminaire Lumens:

FL=365.5,FM=50.4,FH=11.32,FVH=4.4

BL=375.56,BM=52.46,BH=11.58,BVH=4.38

UL=7.21,UH=34.32

BUG Rating:B1-U2-G0

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	3396.38	3378.94	3337.31	3281.63	3201.75	3102.75	2995.88	2867.63	2732.06
45.0	3385.13	3409.31	3407.06	3387.94	3350.25	3286.69	3213.00	3127.50	3007.13
90.0	3399.75	3426.75	3429.56	3414.38	3378.94	3315.94	3241.69	3134.25	3007.69
135.0	3380.63	3410.44	3422.81	3413.25	3381.19	3320.44	3252.38	3151.69	3034.13
180.0	3396.38	3394.13	3368.25	3309.19	3240.00	3148.88	3019.50	2898.00	2756.81
225.0	3385.13	3343.50	3265.31	3168.56	3058.88	2917.69	2774.25	2596.50	2407.50
270.0	3399.75	3357.56	3268.13	3180.38	3090.38	2909.81	2767.50	2625.19	2401.31
315.0	3380.63	3317.63	3253.50	3144.94	3035.81	2914.31	2765.25	2586.38	2412.56
360.0	3396.38	3378.94	3337.31	3281.63	3201.75	3102.75	2995.88	2867.63	2732.06
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2564.44	2366.44	2169.00	1949.63	1661.06	1433.81	1226.81	997.88	840.94
45.0	2873.81	2733.19	2547.00	2358.00	2123.44	1869.75	1640.25	1392.75	1167.19
90.0	2882.81	2719.13	2527.31	2340.56	2130.75	1854.56	1630.13	1409.63	1100.76
135.0	2891.81	2724.75	2562.19	2381.63	2140.88	1924.88	1701.56	1420.88	1213.88
180.0	2558.81	2378.25	2190.38	1940.63	1754.44	1514.81	1118.25	1097.27	936.96
225.0	2217.38	1992.94	1757.81	1544.06	1337.06	1100.70	937.41	796.84	679.44
270.0	2181.94	1995.19	1730.81	1519.31	1318.50	1087.88	924.75	783.00	633.38
315.0	2192.63	1946.25	1724.63	1482.19	1115.33	1072.46	894.32	752.51	618.08
360.0	2564.44	2366.44	2169.00	1949.63	1661.06	1433.81	1226.81	997.88	840.94
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	708.19	582.19	480.94	409.50	344.81	290.81	285.19	210.94	182.76
45.0	983.25	820.13	639.56	542.81	453.38	367.31	316.13	288.56	232.93
90.0	966.21	807.47	661.33	544.11	459.79	391.05	331.54	284.06	250.48
135.0	1026.00	847.13	695.81	597.94	500.06	420.19	358.31	313.31	286.88
180.0	786.71	659.64	565.54	474.86	402.75	351.73	309.83	268.59	240.53
225.0	559.97	482.06	416.70	351.28	310.44	275.29	240.02	208.74	183.99
270.0	536.06	457.31	378.00	326.81	285.75	241.09	212.18	187.65	164.08
315.0	509.29	429.69	366.13	303.75	264.38	231.69	197.44	174.83	156.21
360.0	708.19	582.19	480.94	409.50	344.81	290.81	285.19	210.94	182.76
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	157.28	136.69	121.95	110.03	98.10	90.34	83.93	77.51	71.94
45.0	199.41	175.33	152.66	136.01	120.26	108.23	99.06	90.73	83.53
90.0	218.31	192.99	168.30	147.15	131.40	117.17	106.20	97.99	91.01
135.0	240.41	217.29	188.66	167.12	147.09	126.00	112.61	102.04	91.58
180.0	213.81	185.18	158.96	137.59	117.56	101.59	90.73	81.17	74.87
225.0	159.24	137.42	121.78	107.78	97.99	88.82	81.00	75.26	70.20
270.0	145.35	130.78	118.13	108.90	99.56	91.91	85.61	79.26	72.90
315.0	136.41	124.71	112.11	100.91	94.11	86.85	79.37	74.76	69.81
360.0	157.28	136.69	121.95	110.03	98.10	90.34	83.93	77.51	71.94
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	67.05	62.27	58.44	54.68	51.08	48.32	45.56	43.03	40.78
45.0	77.85	72.90	67.33	63.51	59.40	55.69	52.09	48.99	46.01
90.0	83.76	78.75	74.19	68.68	64.58	60.64	56.59	52.71	49.56
135.0	84.71	78.86	72.51	68.29	64.07	60.02	55.86	52.65	49.33
180.0	68.96	64.41	60.92	57.15	53.83	51.02	48.26	45.00	42.58
225.0	64.46	60.69	56.98	52.76	49.61	46.97	44.04	41.29	38.98
270.0	67.28	61.93	56.14	52.03	48.54	45.34	42.19	39.66	37.29
315.0	63.56	59.96	56.25	52.37	48.88	46.01	43.09	40.22	37.74
360.0	67.05	62.27	58.44	54.68	51.08	48.32	45.56	43.03	40.78

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	38.70	36.11	34.14	32.23	30.15	28.29	26.83	25.37	24.08
45.0	43.20	40.95	38.76	36.39	34.20	32.12	30.32	28.63	26.89
90.0	46.24	43.43	40.05	37.18	34.93	32.40	30.21	28.46	26.94
135.0	46.41	43.76	40.95	38.64	36.23	33.92	31.95	30.09	27.96
180.0	40.50	38.36	36.06	34.14	32.06	29.98	28.07	26.61	25.20
225.0	36.68	34.65	32.46	30.43	28.74	27.06	25.59	24.30	23.23
270.0	34.37	32.57	30.60	29.03	27.17	25.48	24.24	22.95	21.66
315.0	35.21	33.13	30.94	28.97	27.45	25.82	24.36	23.18	21.94
360.0	38.70	36.11	34.14	32.23	30.15	28.29	26.83	25.37	24.08
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	22.95	21.71	20.76	19.63	18.62	17.78	16.93	16.09	15.30
45.0	25.31	24.02	22.67	21.32	20.25	19.24	17.89	16.88	15.92
90.0	25.03	23.74	22.61	21.21	20.31	19.46	18.51	17.72	16.93
135.0	26.38	24.98	23.40	22.33	21.32	20.36	19.35	17.72	16.37
180.0	23.91	22.61	21.66	20.87	19.58	18.45	17.55	16.43	15.64
225.0	21.94	20.98	20.03	18.73	17.55	16.59	15.58	14.74	14.01
270.0	20.59	19.46	18.23	17.21	16.31	15.36	14.46	13.67	12.88
315.0	20.59	19.46	18.39	17.21	16.14	15.19	14.18	13.28	12.54
360.0	22.95	21.71	20.76	19.63	18.62	17.78	16.93	16.09	15.30
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	14.51	13.56	12.88	12.49	12.09	11.87	11.64	11.48	11.03
45.0	14.96	13.89	13.28	12.43	11.70	11.19	10.74	10.41	10.13
90.0	15.92	15.19	14.40	13.56	13.11	12.66	12.09	11.76	11.42
135.0	15.47	14.46	13.61	12.94	12.21	11.64	11.19	10.80	10.41
180.0	14.79	14.06	13.39	12.83	12.21	11.76	11.36	10.97	10.63
225.0	13.28	12.71	12.09	11.64	11.25	10.91	10.52	10.24	9.96
270.0	12.26	11.76	11.31	10.91	10.46	10.07	9.79	9.39	8.94
315.0	11.93	11.25	10.74	10.35	10.07	9.84	9.51	9.34	9.17
360.0	14.51	13.56	12.88	12.49	12.09	11.87	11.64	11.48	11.03
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.69	10.29	10.01	9.56	9.28	9.00	8.89	8.72	8.61
45.0	9.84	9.62	9.39	9.17	9.00	8.89	8.61	8.49	8.38
90.0	10.91	10.69	10.41	10.07	9.90	9.68	9.39	9.51	10.13
135.0	10.13	9.90	9.56	9.34	9.28	9.45	9.68	9.96	10.29
180.0	10.35	10.01	9.79	9.51	9.23	9.00	8.78	8.55	8.33
225.0	9.62	9.39	9.17	9.06	9.06	9.17	9.00	8.16	7.88
270.0	8.66	8.44	8.21	7.99	7.93	7.93	8.10	8.21	8.33
315.0	8.94	8.78	8.61	8.49	8.38	8.38	9.17	10.18	10.52
360.0	10.69	10.29	10.01	9.56	9.28	9.00	8.89	8.72	8.61
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.38	8.21	7.99	7.88	7.82	7.76	7.54	7.31	6.98
45.0	8.27	8.55	8.66	8.33	8.16	8.21	7.54	7.31	7.09
90.0	10.63	11.19	10.86	9.23	8.72	8.78	7.59	7.31	6.98
135.0	10.69	10.86	10.29	8.83	8.27	8.33	8.38	7.09	6.81
180.0	8.21	8.04	7.99	7.82	7.71	7.59	7.48	7.14	6.86
225.0	7.82	7.88	8.16	8.27	8.27	8.21	7.54	7.20	6.98
270.0	7.93	7.65	7.48	7.48	7.20	7.03	6.69	6.47	6.24
315.0	9.73	8.61	8.83	9.06	9.17	8.83	7.93	7.54	7.03
360.0	8.38	8.21	7.99	7.88	7.82	7.76	7.54	7.31	6.98

Intensity data(cd)

Appendix Page: 19 Total:19

C/γ(°)	90.0
0.0	6.64
45.0	6.69
90.0	6.81
135.0	6.53
180.0	6.53
225.0	6.75
270.0	6.08
315.0	6.86
360.0	6.64