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Nata

Client:

LumCAT: 2-2004-M

Luminaire: 92.70.131.00

Report No:

Voltage(V): 220.5000

Test No: GC2019091909

Current(A): 0.0690

LampCAT: BRIDGELEX V13B

Power (W): 14.0200

Lamp flux(lm): 1760.0

PF: 0.9160

Number of Lamps: 1

Ballast type: AC

Length(mm): 70

Width(mm): 70

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1547.32, Efficiency(%): 87.92% , Luminous Efficacy(lm/W): 110.37

Central intensity(cd): 8898.815, Maximum intensity(cd): 8898.815

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=16.8

[C90/270]Total=16.8

Field angle(10%Imax): [C0/180]Total=39.0

[C90/270]Total=39.0

Maximum s/h(1/2): C0_180=0.29 C90_270=0.29

Maximum s/h(1/4): C0_180=0.30 C90_270=0.30

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.92%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 99.703%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8898.816	0.000	0	.000%	.000%
1.0	8819.118	8.478	8.478	.482%	.548%
2.0	8578.575	24.971	33.449	1.419%	2.162%
3.0	8186.234	40.096	73.544	2.278%	4.753%
4.0	7653.872	53.022	126.566	3.013%	8.180%
5.0	7052.891	63.268	189.834	3.595%	12.269%
6.0	6300.286	70.174	260.009	3.987%	16.804%
7.0	5472.857	73.076	333.084	4.152%	21.527%
8.0	4785.971	73.420	406.505	4.172%	26.272%
9.0	3990.212	71.126	477.631	4.041%	30.868%
10.0	3302.398	65.995	543.626	3.750%	35.133%
11.0	2801.938	60.995	604.621	3.466%	39.075%
12.0	2331.234	56.113	660.734	3.188%	42.702%
13.0	1988.372	51.263	711.997	2.913%	46.015%
14.0	1707.167	47.303	759.299	2.688%	49.072%
15.0	1481.589	43.777	803.076	2.487%	51.901%
16.0	1261.121	40.188	843.265	2.283%	54.498%
17.0	1120.009	37.081	880.345	2.107%	56.895%
18.0	1003.385	35.010	915.355	1.989%	59.158%
19.0	921.884	33.496	948.851	1.903%	61.322%
20.0	857.157	32.561	981.412	1.850%	63.427%
21.0	795.783	31.740	1013.152	1.803%	65.478%
22.0	744.397	30.951	1044.103	1.759%	67.478%
23.0	700.812	30.324	1074.427	1.723%	69.438%
24.0	665.441	29.871	1104.298	1.697%	71.369%
25.0	635.958	29.591	1133.889	1.681%	73.281%
26.0	614.415	29.515	1163.404	1.677%	75.188%
27.0	594.189	29.569	1192.973	1.680%	77.099%
28.0	580.477	29.740	1222.713	1.690%	79.021%
29.0	568.261	30.054	1252.767	1.708%	80.964%
30.0	556.562	30.370	1283.137	1.726%	82.927%
31.0	545.077	30.657	1313.794	1.742%	84.908%
32.0	532.919	30.883	1344.678	1.755%	86.904%
33.0	504.532	30.564	1375.241	1.737%	88.879%
34.0	466.957	29.400	1404.642	1.670%	90.779%
35.0	416.888	27.449	1432.09	1.560%	92.553%
36.0	358.385	24.685	1456.775	1.403%	94.148%
37.0	296.285	21.352	1478.127	1.213%	95.528%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	237.974	17.833	1495.96	1.013%	96.681%
39.0	198.763	14.907	1510.867	.847%	97.644%
40.0	129.924	11.463	1522.33	.651%	98.385%
41.0	80.579	7.496	1529.826	.426%	98.870%
42.0	34.779	4.191	1534.017	.238%	99.140%
43.0	19.066	1.995	1536.012	.113%	99.269%
44.0	12.065	1.175	1537.187	.067%	99.345%
45.0	9.223	0.818	1538.005	.046%	99.398%
46.0	7.314	0.647	1538.652	.037%	99.440%
47.0	5.882	0.525	1539.177	.030%	99.474%
48.0	4.588	0.423	1539.6	.024%	99.501%
49.0	4.008	0.353	1539.953	.020%	99.524%
50.0	3.654	0.319	1540.272	.018%	99.545%
51.0	3.416	0.299	1540.571	.017%	99.564%
52.0	3.196	0.284	1540.855	.016%	99.582%
53.0	3.016	0.270	1541.125	.015%	99.600%
54.0	2.842	0.258	1541.384	.015%	99.617%
55.0	2.680	0.246	1541.63	.014%	99.632%
56.0	2.541	0.236	1541.866	.013%	99.648%
57.0	2.401	0.226	1542.092	.013%	99.662%
58.0	2.274	0.216	1542.308	.012%	99.676%
59.0	2.175	0.208	1542.516	.012%	99.690%
60.0	2.077	0.201	1542.717	.011%	99.703%
61.0	1.984	0.194	1542.911	.011%	99.715%
62.0	1.903	0.187	1543.098	.011%	99.727%
63.0	1.827	0.181	1543.279	.010%	99.739%
64.0	1.775	0.177	1543.456	.010%	99.750%
65.0	1.711	0.173	1543.629	.010%	99.762%
66.0	1.665	0.168	1543.797	.010%	99.772%
67.0	1.589	0.164	1543.961	.009%	99.783%
68.0	1.560	0.160	1544.12	.009%	99.793%
69.0	1.555	0.159	1544.279	.009%	99.804%
70.0	1.514	0.158	1544.437	.009%	99.814%
71.0	1.439	0.153	1544.589	.009%	99.824%
72.0	1.433	0.149	1544.739	.008%	99.833%
73.0	1.410	0.149	1544.887	.008%	99.843%
74.0	1.410	0.148	1545.036	.008%	99.853%
75.0	1.363	0.146	1545.182	.008%	99.862%

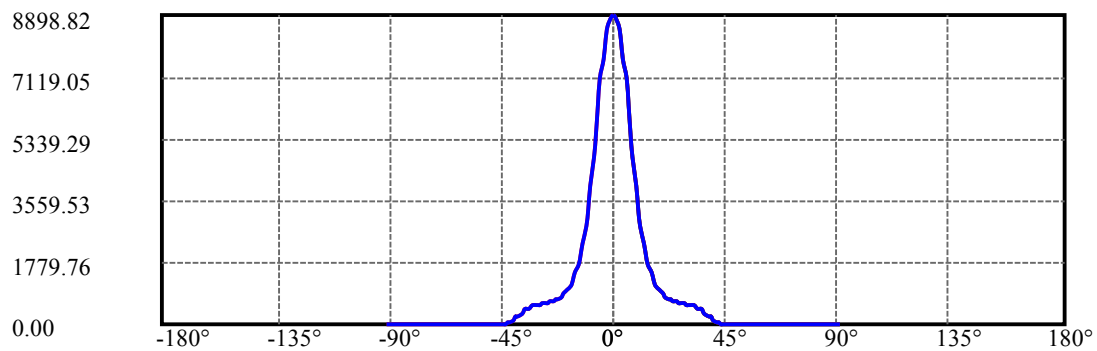
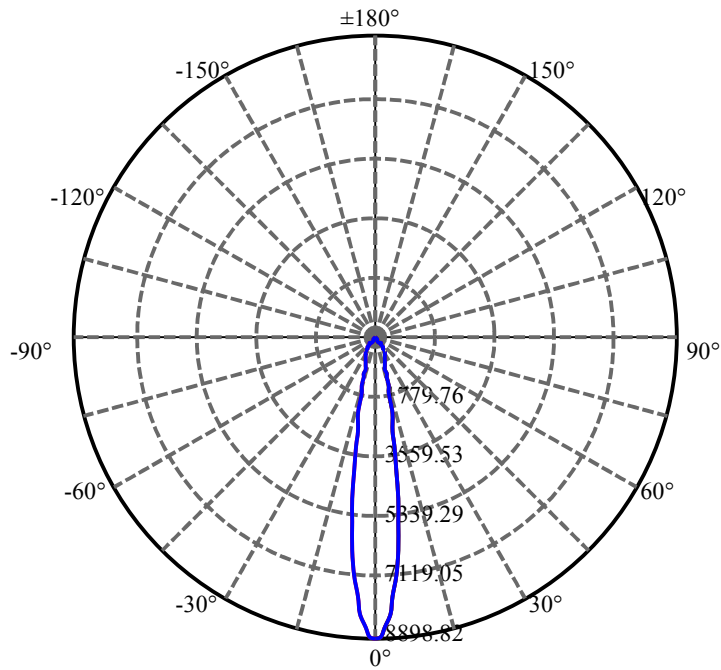
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.357	0.144	1545.326	.008%	99.871%
77.0	1.346	0.144	1545.471	.008%	99.881%
78.0	1.334	0.143	1545.614	.008%	99.890%
79.0	1.311	0.142	1545.756	.008%	99.899%
80.0	1.317	0.142	1545.898	.008%	99.908%
81.0	1.293	0.141	1546.039	.008%	99.917%
82.0	1.293	0.140	1546.179	.008%	99.926%
83.0	1.299	0.141	1546.32	.008%	99.936%
84.0	1.288	0.141	1546.461	.008%	99.945%
85.0	1.264	0.139	1546.6	.008%	99.954%
86.0	1.270	0.139	1546.739	.008%	99.963%
87.0	1.299	0.141	1546.88	.008%	99.972%
88.0	1.322	0.144	1547.023	.008%	99.981%
89.0	1.340	0.146	1547.169	.008%	99.990%
90.0	1.363	0.148	1547.317	.008%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1283.14	72.91%	82.93%
0-40	1522.33	86.50%	98.39%
0-60	1542.72	87.65%	99.70%
0-90	1547.17	87.91%	99.99%
0-120	1547.17	87.91%	99.99%
0-180	1547.32	87.92%	100.00%
60-90	4.65	0.26%	0.30%
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%
0-28.50	1237.85	70.33%	80.00%

ZONAL LUMEN SUMMARY

0-10	543.63
10-20	437.79
20-30	301.73
30-40	239.19
40-50	17.94
50-60	2.44
60-70	1.72
70-80	1.46
80-90	1.27
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: —————

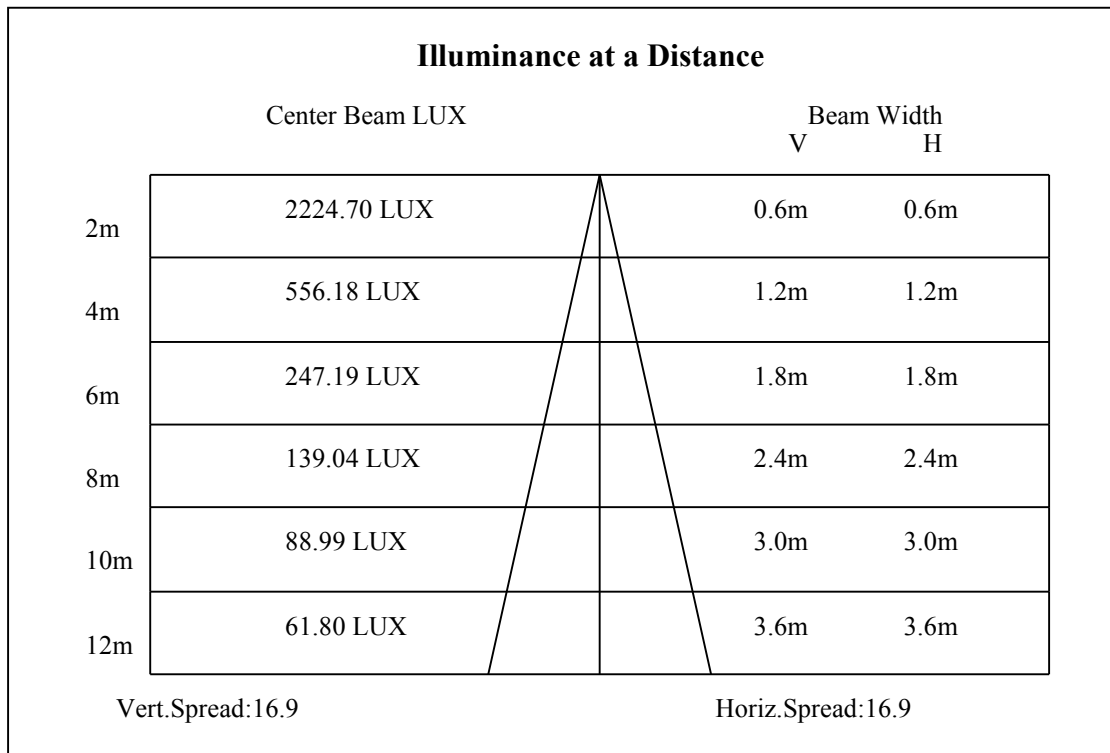
C90/C270: —————

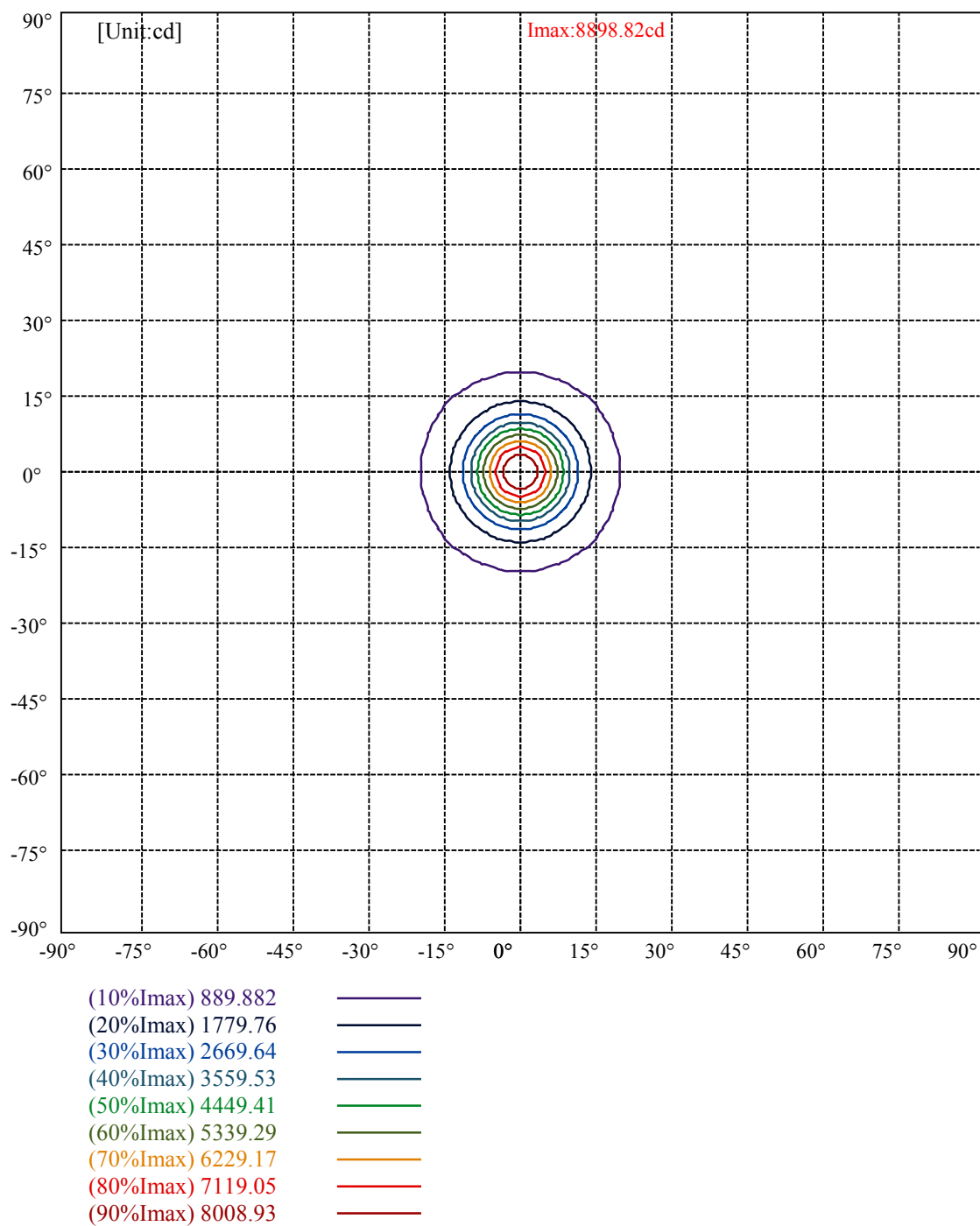
Field angle(10%Imax):C0/180Left:19.5 Right:19.5

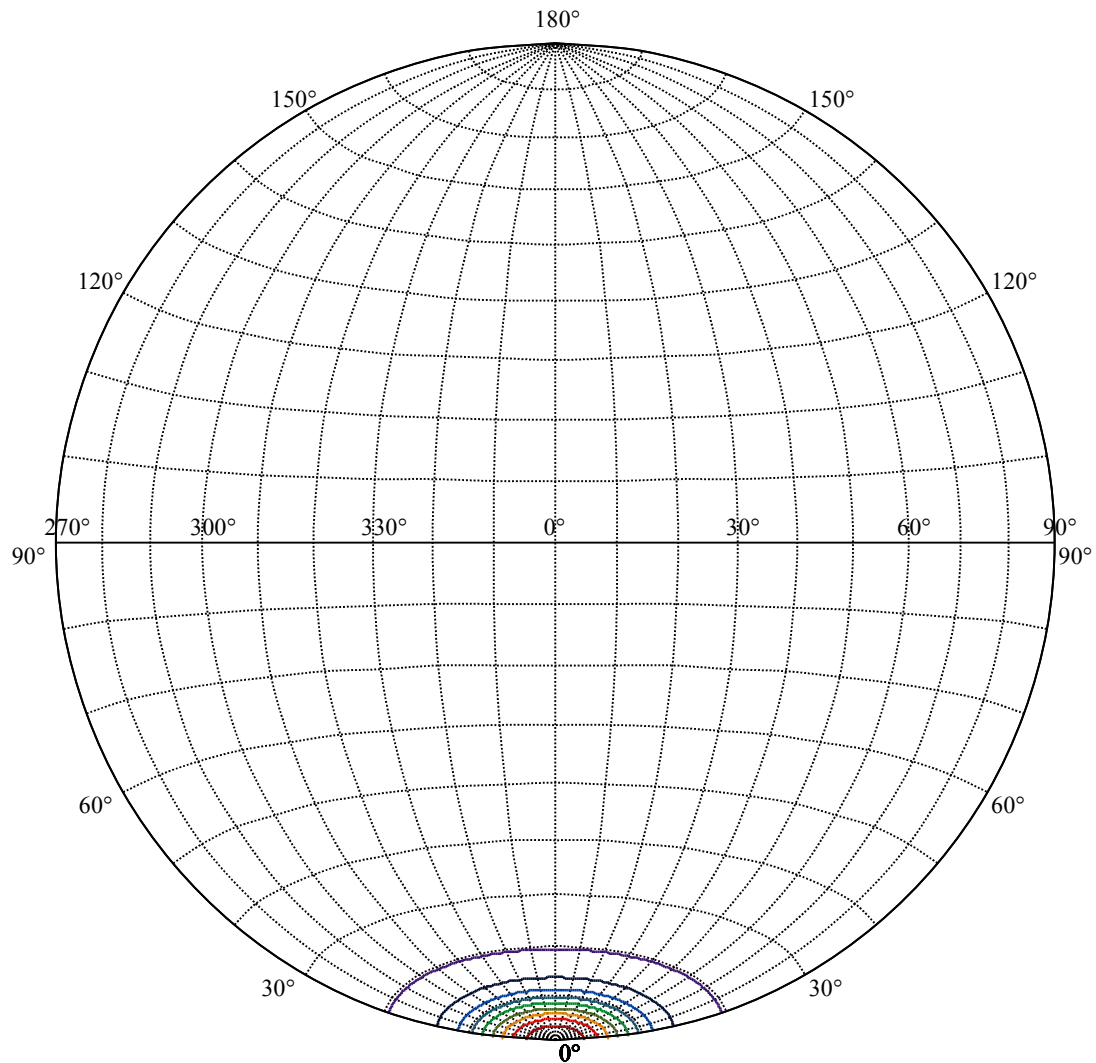
:C90/270Left:19.5 Right:19.5

Beam Angle(50%Imax):C0/180Left:8.4 Right:8.4

:C90/270Left:8.4 Right:8.4







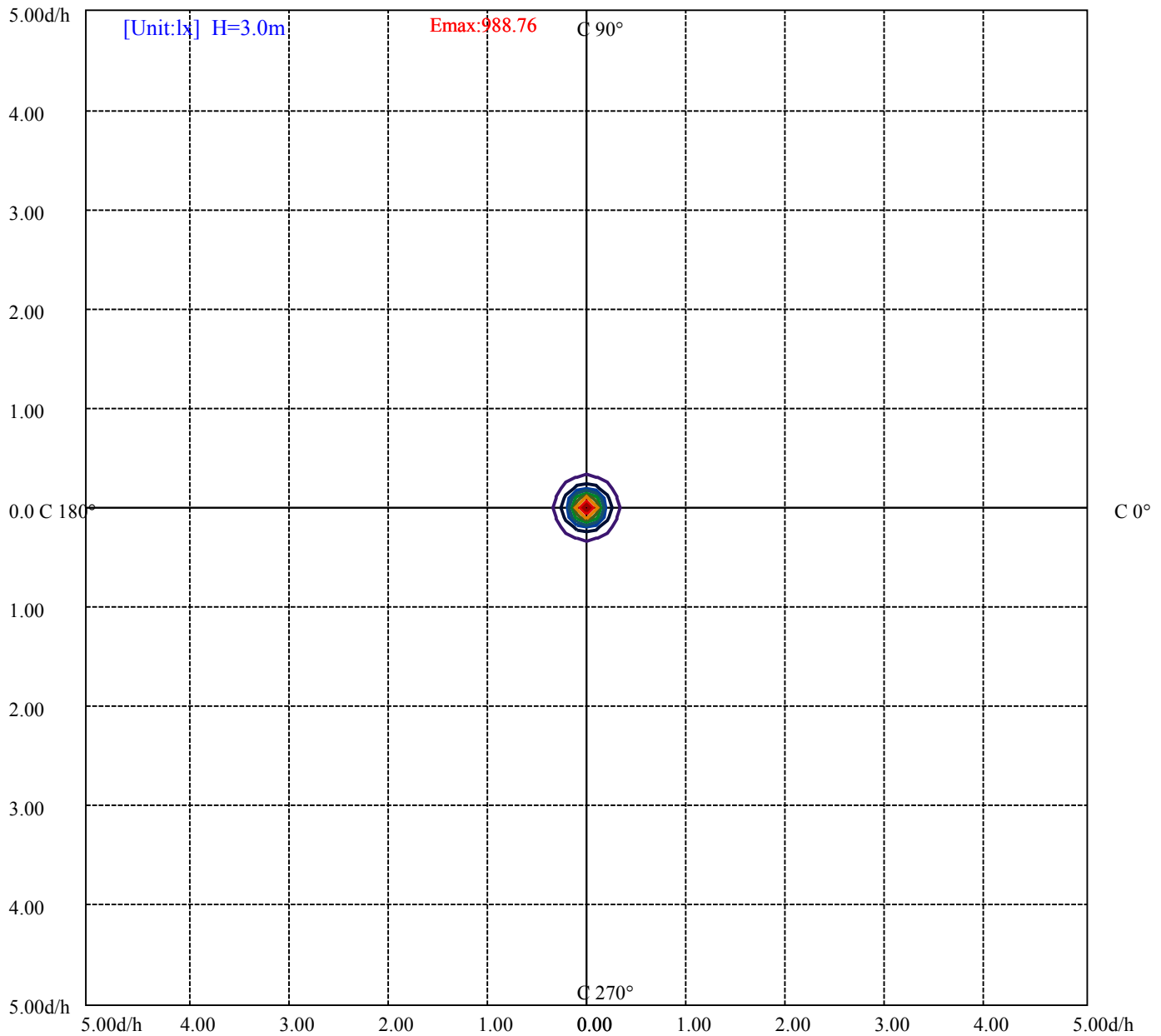
House

[Unit:cd]

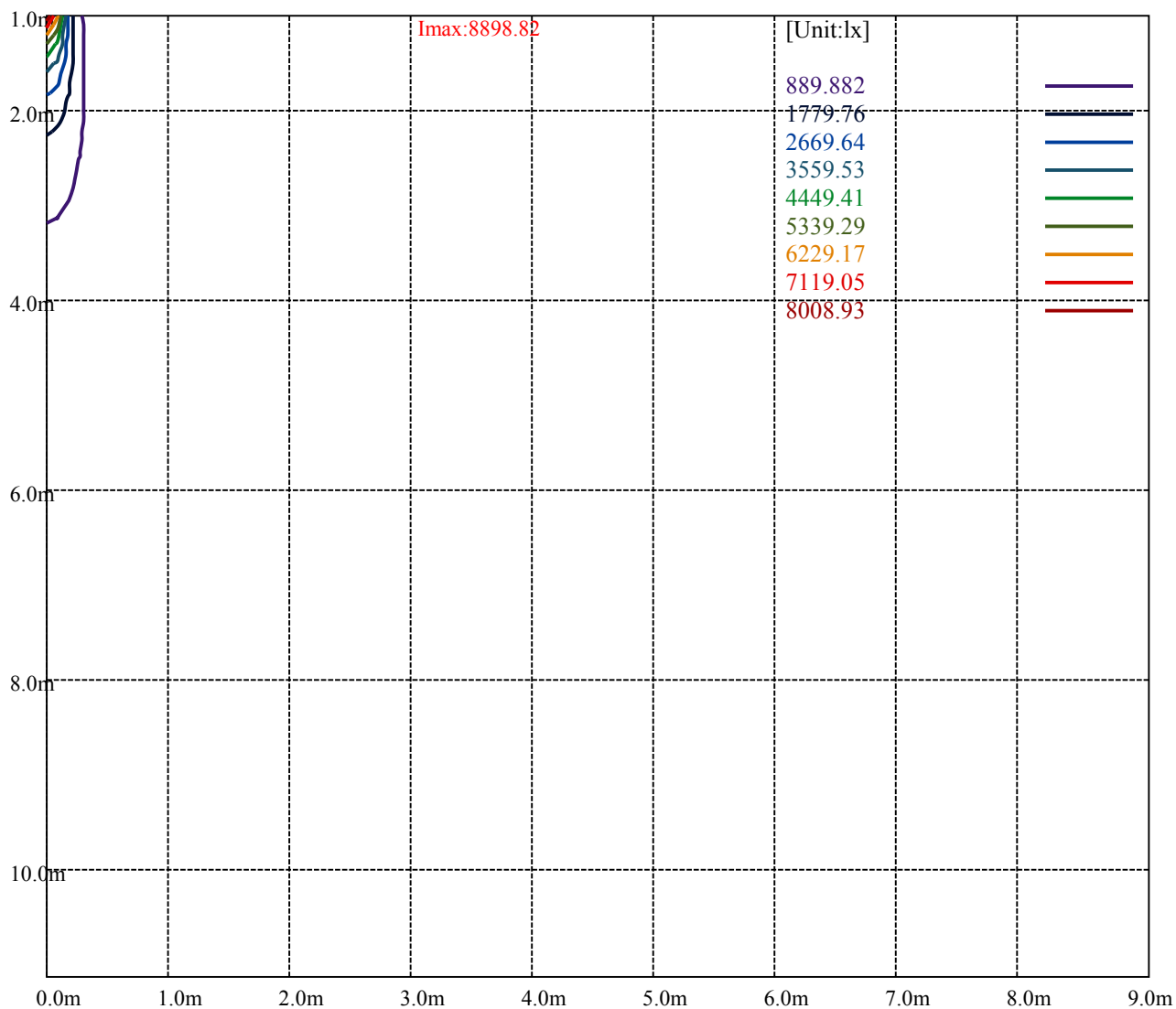
Road

Imax:8898.82

(10%Imax)	889.882	—
(20%Imax)	1779.76	—
(30%Imax)	2669.64	—
(40%Imax)	3559.53	—
(50%Imax)	4449.41	—
(60%Imax)	5339.29	—
(70%Imax)	6229.17	—
(80%Imax)	7119.05	—
(90%Imax)	8008.93	—



(10%Emax)	98.87556	—
(20%Emax)	197.7511	—
(30%Emax)	296.6266	—
(40%Emax)	395.5022	—
(50%Emax)	494.3778	—
(60%Emax)	593.2533	—
(70%Emax)	692.1289	—
(80%Emax)	791.0045	—
(90%Emax)	889.88	—



Luminance Table

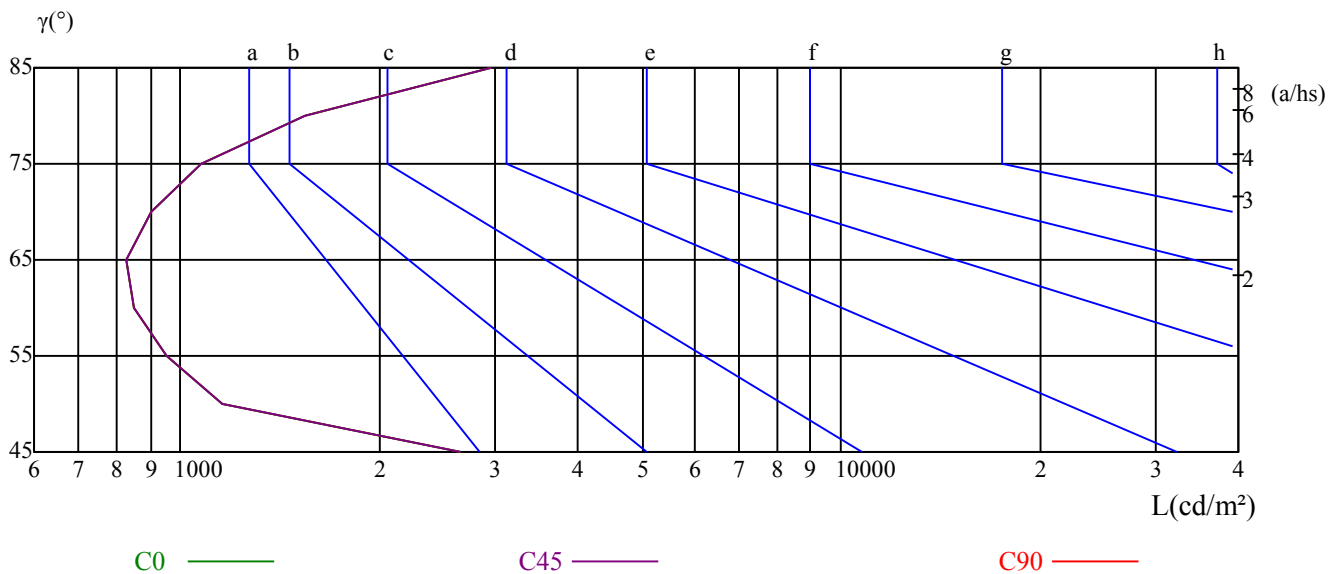
γ	45	50	55	60	65	70	75	80	85
C0	2662	1160	953	848	826	903	1075	1547	2961
C45	2662	1160	953	848	826	903	1075	1547	2961
C90	2662	1160	953	848	826	903	1075	1547	2961

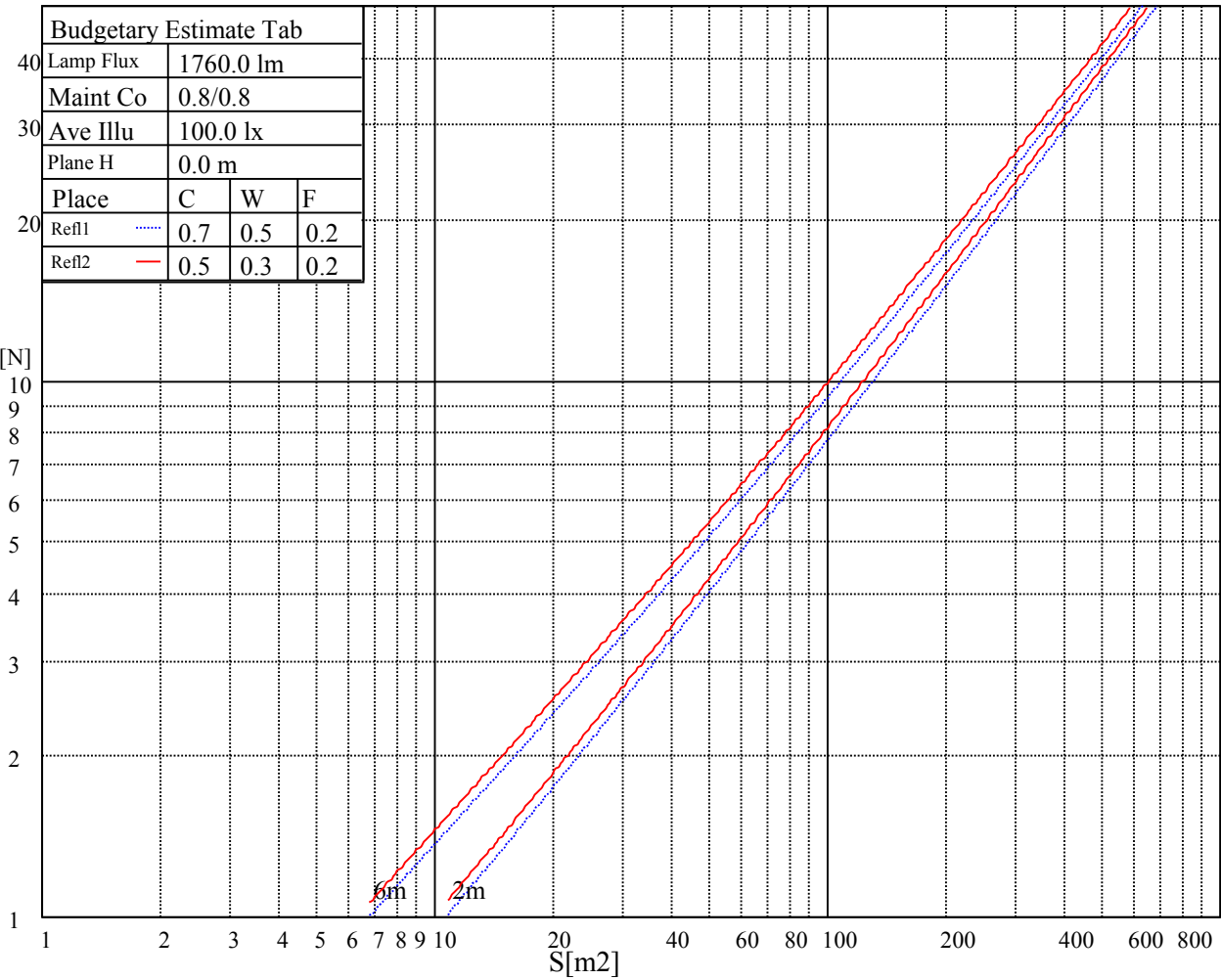
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
826	826	826	1075	1075	1075	2961	2961	2961

Glare Table

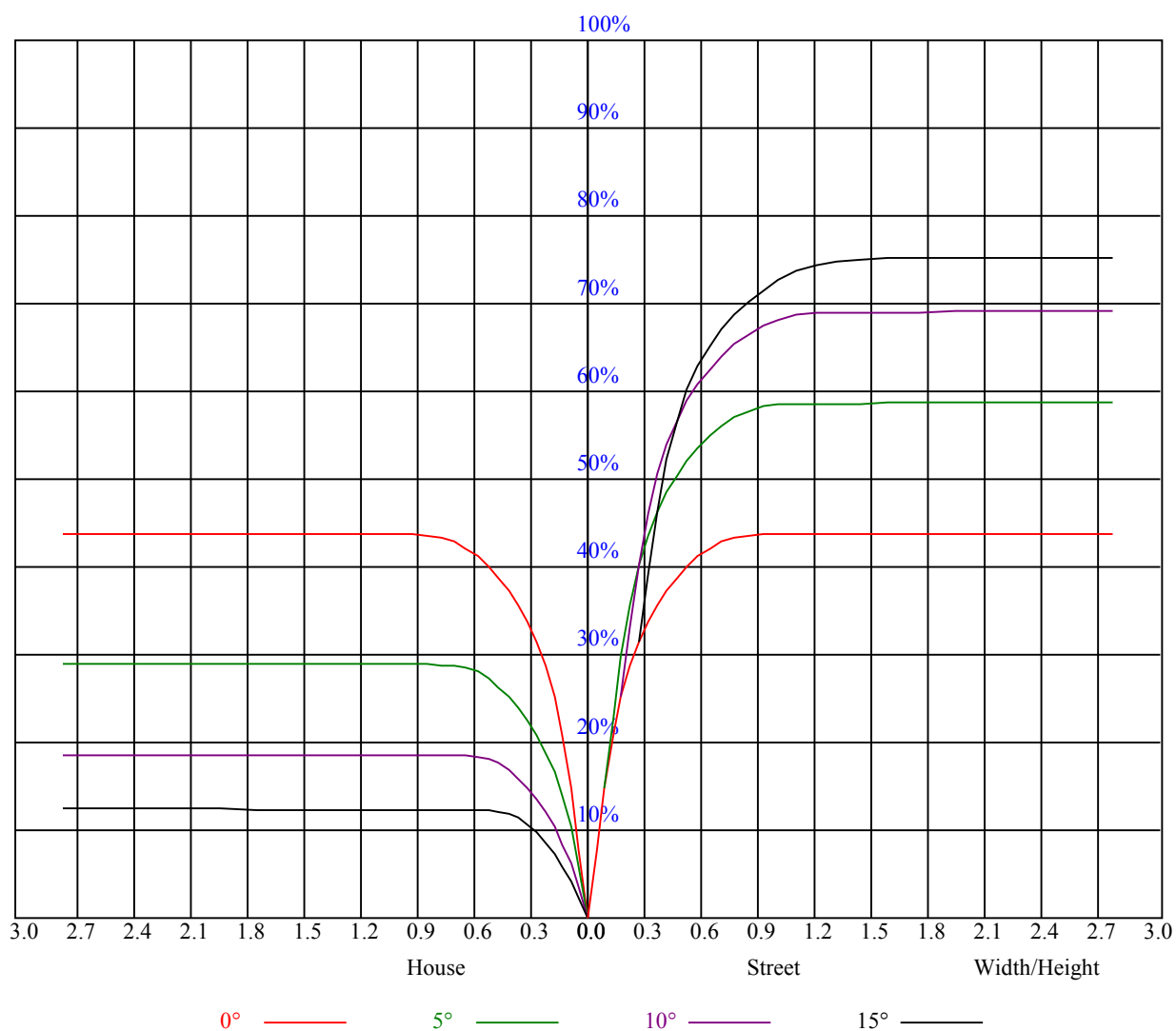
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

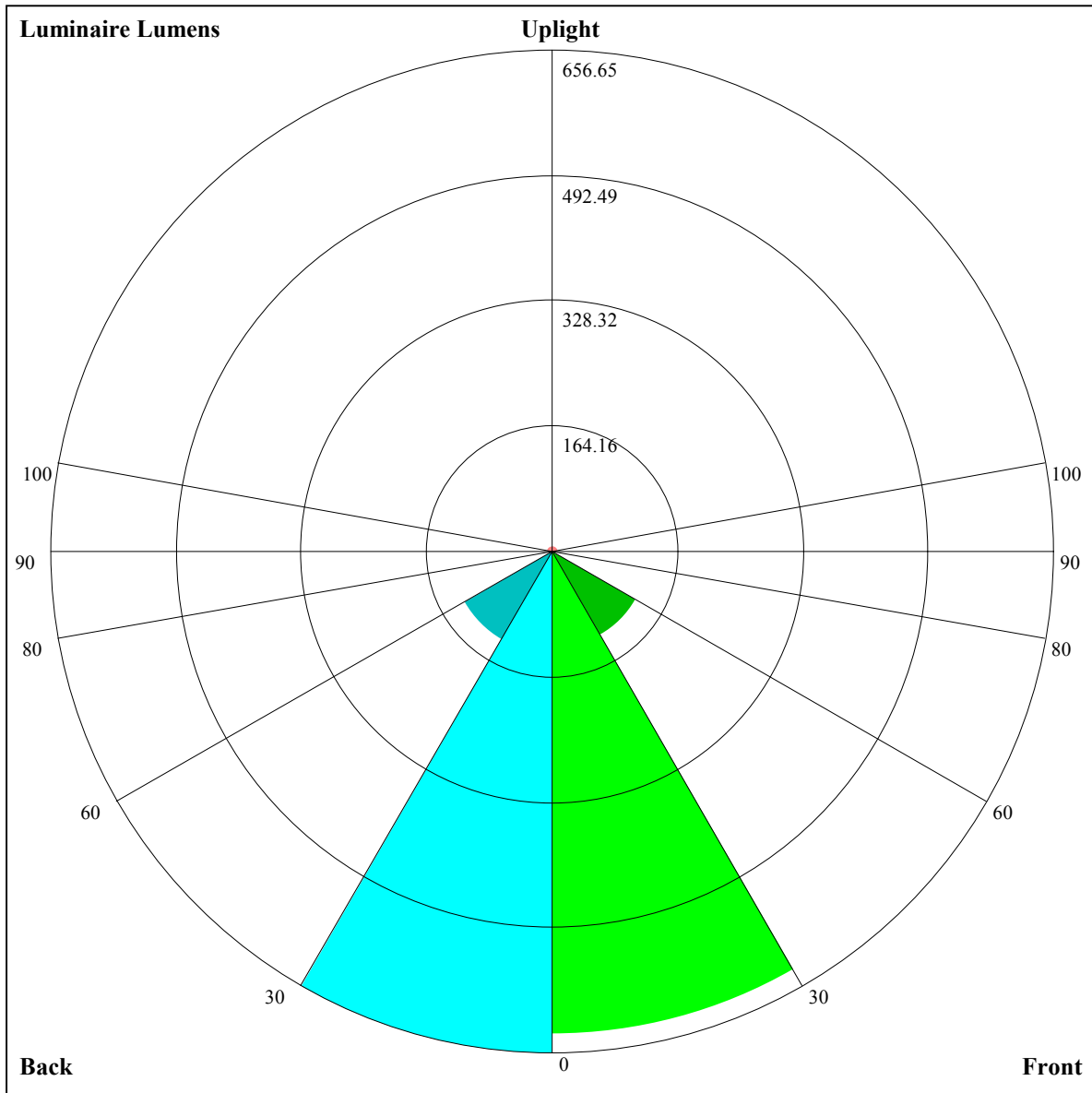
Luminance Limiting Curve





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	1.02	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	0.99	0.97	0.95	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.84
2	0.94	0.91	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.84	0.84	0.83	0.82	0.81
3	0.89	0.85	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.83	0.81	0.79	0.82	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	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	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.66
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
9	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61
10	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.59





Luminaire Lumens:

FL=632.39,FM=126.25,FH=1.6,FVH=0.71

BL=656.65,BM=133.28,BH=1.6,BVH=0.71

UL=1.49,UH=7.08

BUG Rating:B2-U1-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	8890.93	8691.86	8344.30	7847.78	7224.12	6504.40	5708.59	4872.86	4039.46
45.0	8968.88	8841.74	8548.01	8110.89	7535.95	7131.31	6365.19	5195.83	4687.71
90.0	8785.59	8449.17	7964.72	7337.34	6599.99	5790.26	4952.21	4113.70	3390.27
135.0	8949.86	8862.62	8616.22	8219.47	7678.87	7002.31	6228.30	5415.32	4583.77
180.0	8890.93	8930.37	8805.08	8517.38	8075.62	7497.43	6799.99	6005.10	5513.23
225.0	8968.88	8935.47	8732.23	8377.24	7879.80	7249.18	6500.69	5682.14	4835.27
270.0	8785.59	8973.53	8987.45	8833.85	8528.52	8178.64	7512.75	6961.48	6195.36
315.0	8949.86	8868.19	8630.60	8245.92	7708.11	7069.60	6334.57	5536.43	5042.70
360.0	8890.93	8691.86	8344.30	7847.78	7224.12	6504.40	5708.59	4872.86	4039.46
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3327.17	2769.86	2328.57	1965.69	1672.42	1526.25	1326.72	1119.30	924.03
45.0	3864.52	3185.17	2654.32	2236.22	1898.41	1624.16	1404.21	1232.52	1095.17
90.0	2814.41	2361.05	2002.35	1706.30	1467.32	1283.56	1190.29	900.78	900.78
135.0	4098.85	3135.98	2804.20	2355.02	1992.14	1696.55	1456.18	1267.79	1123.47
180.0	4671.94	3875.65	3205.13	2673.81	2248.29	1905.83	1626.48	1402.82	1227.41
225.0	4020.43	3314.64	2761.51	2326.25	1972.65	1677.53	1483.10	1261.75	1146.21
270.0	5220.89	4548.50	3767.53	3118.35	2602.81	2195.39	1861.75	1589.82	1376.83
315.0	3903.50	3228.33	2891.90	2268.24	2052.93	1748.06	1503.98	1314.19	1166.16
360.0	3327.17	2769.86	2328.57	1965.69	1672.42	1526.25	1326.72	1119.30	924.03
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	924.03	864.26	801.20	749.60	705.89	669.55	640.51	615.54	596.10
45.0	987.97	903.52	832.06	773.59	725.79	683.57	651.55	623.24	608.39
90.0	886.26	819.20	764.82	719.48	679.02	647.65	621.11	599.39	583.34
135.0	1008.39	920.22	848.30	788.44	738.32	695.63	660.37	632.06	607.47
180.0	1089.60	980.55	896.56	826.49	771.27	722.08	682.18	650.16	623.71
225.0	907.09	907.09	862.31	801.39	747.70	703.75	667.37	637.77	613.27
270.0	1212.57	1082.64	983.33	901.20	832.99	773.59	726.26	685.42	665.01
315.0	1011.18	897.58	868.67	806.07	754.19	710.67	674.19	644.08	618.05
360.0	924.03	864.26	801.20	749.60	705.89	669.55	640.51	615.54	596.10
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	581.48	569.46	557.68	546.96	537.26	526.40	470.67	437.77	378.65
45.0	590.76	571.74	564.78	553.64	543.43	533.22	507.23	463.15	408.86
90.0	571.04	559.95	547.51	537.44	520.46	488.81	439.25	368.54	315.87
135.0	589.83	575.91	564.31	555.49	543.43	531.83	510.48	467.33	413.50
180.0	601.43	584.26	574.06	563.38	549.00	542.04	529.97	497.49	451.55
225.0	593.36	579.44	567.28	556.38	546.49	541.34	508.58	483.15	432.53
270.0	626.03	612.57	593.55	574.98	567.10	556.89	545.75	534.15	503.06
315.0	599.58	590.48	576.93	564.22	553.45	542.83	524.31	484.08	431.09
360.0	581.48	569.46	557.68	546.96	537.26	526.40	470.67	437.77	378.65
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	316.80	251.88	189.23	129.84	76.94	36.43	15.31	11.93	9.93
45.0	346.68	281.25	230.67	230.67	88.58	60.70	18.61	12.06	11.04
90.0	251.65	187.42	127.98	77.86	38.28	16.10	12.71	10.58	8.07
135.0	352.25	288.68	250.16	250.16	104.64	57.08	25.29	13.78	11.88
180.0	396.33	336.47	271.97	258.98	232.99	91.37	46.45	18.61	12.02
225.0	375.26	312.20	248.40	184.96	125.20	73.46	33.41	13.46	10.26
270.0	457.12	404.22	342.04	278.00	252.02	239.95	94.29	56.98	20.65
315.0	370.99	308.16	243.34	179.63	120.74	69.56	32.16	15.13	12.67
360.0	316.80	251.88	189.23	129.84	76.94	36.43	15.31	11.93	9.93

Intensity data(cd)										Appendix Page: 18 Total:19	
C/ γ (°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0		
0.0	7.66	5.94	4.78	3.85	3.53	3.43	3.20	2.92	2.88		
45.0	9.00	6.82	5.38	3.94	3.67	3.48	3.25	3.02	2.83		
90.0	6.13	4.69	4.04	3.76	3.53	3.29	3.11	2.92	2.74		
135.0	9.56	7.33	6.40	5.34	4.22	3.99	3.81	3.57	3.34		
180.0	9.61	8.49	6.26	4.97	3.94	3.57	3.34	3.16	3.02		
225.0	8.49	6.50	5.15	3.90	3.43	3.29	3.11	2.88	2.69		
270.0	13.27	11.23	8.63	6.36	5.38	4.13	3.81	3.53	3.34		
315.0	10.07	7.52	6.40	4.59	4.36	4.04	3.71	3.57	3.29		
360.0	7.66	5.94	4.78	3.85	3.53	3.43	3.20	2.92	2.88		
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	2.64	2.51	2.41	2.32	2.13	2.04	2.00	1.95	1.81		
45.0	2.74	2.60	2.41	2.27	2.18	2.13	2.00	1.90	1.86		
90.0	2.64	2.46	2.37	2.27	2.13	2.09	2.00	1.90	1.86		
135.0	3.06	2.88	2.78	2.64	2.41	2.27	2.23	2.13	2.00		
180.0	2.78	2.60	2.51	2.37	2.23	2.09	2.09	1.95	1.86		
225.0	2.60	2.51	2.32	2.18	2.13	2.04	1.90	1.81	1.81		
270.0	3.16	2.97	2.78	2.60	2.51	2.41	2.23	2.13	2.04		
315.0	3.11	2.92	2.74	2.55	2.46	2.32	2.18	2.09	2.00		
360.0	2.64	2.51	2.41	2.32	2.13	2.04	2.00	1.95	1.81		
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	1.76	1.72	1.67	1.58	1.53	1.53	1.53	1.44	1.39		
45.0	1.81	1.72	1.76	1.67	1.58	1.58	1.58	1.53	1.39		
90.0	1.76	1.72	1.62	1.62	1.58	1.53	1.53	1.48	1.44		
135.0	1.86	1.86	1.81	1.76	1.62	1.58	1.58	1.58	1.53		
180.0	1.76	1.76	1.72	1.58	1.58	1.58	1.53	1.44	1.39		
225.0	1.76	1.67	1.62	1.62	1.53	1.48	1.48	1.48	1.44		
270.0	2.00	1.95	1.76	1.76	1.67	1.62	1.67	1.62	1.48		
315.0	1.90	1.81	1.72	1.72	1.62	1.58	1.53	1.53	1.44		
360.0	1.76	1.72	1.67	1.58	1.53	1.53	1.53	1.44	1.39		
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	1.44	1.39	1.39	1.35	1.39	1.39	1.35	1.25	1.30		
45.0	1.44	1.44	1.44	1.35	1.35	1.35	1.39	1.35	1.25		
90.0	1.44	1.39	1.35	1.35	1.35	1.35	1.35	1.35	1.35		
135.0	1.44	1.39	1.44	1.44	1.35	1.30	1.35	1.35	1.35		
180.0	1.44	1.39	1.35	1.35	1.39	1.35	1.25	1.30	1.35		
225.0	1.35	1.39	1.39	1.35	1.30	1.35	1.30	1.30	1.35		
270.0	1.48	1.48	1.48	1.39	1.35	1.35	1.39	1.35	1.30		
315.0	1.44	1.39	1.44	1.35	1.39	1.35	1.30	1.25	1.30		
360.0	1.44	1.39	1.39	1.35	1.39	1.39	1.35	1.25	1.30		
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	1.35	1.25	1.30	1.30	1.25	1.30	1.35	1.35	1.39		
45.0	1.30	1.35	1.30	1.35	1.35	1.35	1.48	1.39	1.35		
90.0	1.30	1.30	1.30	1.30	1.25	1.25	1.30	1.39	1.35		
135.0	1.25	1.25	1.30	1.30	1.25	1.25	1.25	1.30	1.35		
180.0	1.25	1.25	1.35	1.25	1.21	1.21	1.25	1.30	1.35		
225.0	1.30	1.35	1.30	1.25	1.21	1.25	1.25	1.30	1.30		
270.0	1.30	1.35	1.30	1.30	1.30	1.30	1.21	1.25	1.25		
315.0	1.30	1.25	1.25	1.25	1.30	1.25	1.30	1.30	1.39		
360.0	1.35	1.25	1.30	1.30	1.25	1.30	1.35	1.35	1.39		

Intensity data(cd)

Appendix Page: 19 Total:19

C/ γ (°)	90.0
0.0	1.35
45.0	1.35
90.0	1.35
135.0	1.30
180.0	1.53
225.0	1.35
270.0	1.25
315.0	1.44
360.0	1.35