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## Nata

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Client:

LumCAT: LM01D06924BJ

Luminaire: 92.70.065.00

Report No:

Voltage(V): 32.9700

Test No: GC2019072208

Current(A): 0.2970

LampCAT: LUMINUS CXM-14

Power (W): 9.7900

Lamp flux(lm): 1570.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 65

Width(mm): 65

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1398.01, Efficiency(%): 89.05% , Luminous Efficacy(lm/W): 142.80

Central intensity(cd): 4949.789, Maximum intensity(cd): 4949.789

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

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

[C90/270]Total=26.0

Field angle(10%Imax): [C0/180]Total=49.2

[C90/270]Total=49.2

Maximum s/h(1/2): C0\_180=0.44 C90\_270=0.44

Maximum s/h(1/4): C0\_180=0.45 C90\_270=0.45

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.05%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 94.898%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4949.789	0.000	0	.000%	.000%
1.0	4924.336	4.725	4.725	.301%	.338%
2.0	4858.172	14.041	18.765	.894%	1.342%
3.0	4745.531	22.969	41.734	1.463%	2.985%
4.0	4604.906	31.299	73.033	1.994%	5.224%
5.0	4438.477	38.904	111.937	2.478%	8.007%
6.0	4229.086	45.550	157.488	2.901%	11.265%
7.0	4009.148	51.135	208.622	3.257%	14.923%
8.0	3790.477	55.820	264.443	3.555%	18.916%
9.0	3531.445	59.340	323.783	3.780%	23.160%
10.0	3261.867	61.477	385.26	3.916%	27.558%
11.0	3018.797	62.757	448.017	3.997%	32.047%
12.0	2767.430	63.252	511.268	4.029%	36.571%
13.0	2483.648	62.317	573.585	3.969%	41.029%
14.0	2241.070	60.476	634.061	3.852%	45.355%
15.0	2007.703	58.329	692.39	3.715%	49.527%
16.0	1761.188	55.225	747.615	3.518%	53.477%
17.0	1544.906	51.485	799.1	3.279%	57.160%
18.0	1326.115	47.337	846.437	3.015%	60.546%
19.0	1147.655	43.039	889.475	2.741%	63.624%
20.0	999.647	39.302	928.777	2.503%	66.436%
21.0	859.690	35.703	964.48	2.274%	68.989%
22.0	732.347	31.993	996.473	2.038%	71.278%
23.0	629.297	28.571	1025.044	1.820%	73.322%
24.0	541.758	25.603	1050.647	1.631%	75.153%
25.0	461.693	22.816	1073.463	1.453%	76.785%
26.0	403.924	20.433	1093.896	1.301%	78.247%
27.0	351.893	18.491	1112.388	1.178%	79.569%
28.0	305.079	16.633	1129.021	1.059%	80.759%
29.0	268.959	15.018	1144.039	.957%	81.833%
30.0	236.595	13.650	1157.689	.869%	82.810%
31.0	204.005	12.261	1169.95	.781%	83.687%
32.0	181.765	11.052	1181.002	.704%	84.477%
33.0	163.807	10.181	1191.183	.648%	85.206%
34.0	146.053	9.377	1200.56	.597%	85.876%
35.0	132.195	8.641	1209.201	.550%	86.494%
36.0	120.206	8.036	1217.238	.512%	87.069%
37.0	109.343	7.487	1224.725	.477%	87.605%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	100.505	7.004	1231.729	.446%	88.106%
39.0	92.208	6.578	1238.307	.419%	88.576%
40.0	84.354	6.158	1244.465	.392%	89.017%
41.0	78.504	5.799	1250.264	.369%	89.432%
42.0	73.055	5.506	1255.77	.351%	89.826%
43.0	67.669	5.213	1260.983	.332%	90.198%
44.0	63.823	4.963	1265.946	.316%	90.553%
45.0	60.307	4.770	1270.716	.304%	90.895%
46.0	56.665	4.575	1275.291	.291%	91.222%
47.0	53.979	4.401	1279.692	.280%	91.537%
48.0	51.687	4.272	1283.963	.272%	91.842%
49.0	49.310	4.147	1288.111	.264%	92.139%
50.0	47.032	4.017	1292.127	.256%	92.426%
51.0	45.113	3.898	1296.026	.248%	92.705%
52.0	43.045	3.783	1299.809	.241%	92.976%
53.0	41.280	3.668	1303.477	.234%	93.238%
54.0	39.670	3.568	1307.045	.227%	93.493%
55.0	38.102	3.472	1310.517	.221%	93.742%
56.0	36.788	3.384	1313.901	.216%	93.984%
57.0	35.557	3.308	1317.208	.211%	94.220%
58.0	34.263	3.229	1320.437	.206%	94.451%
59.0	33.216	3.155	1323.592	.201%	94.677%
60.0	32.168	3.089	1326.681	.197%	94.898%
61.0	30.959	3.013	1329.693	.192%	95.113%
62.0	30.059	2.940	1332.633	.187%	95.324%
63.0	29.243	2.884	1335.518	.184%	95.530%
64.0	28.378	2.827	1338.345	.180%	95.732%
65.0	27.506	2.766	1341.111	.176%	95.930%
66.0	26.578	2.698	1343.809	.172%	96.123%
67.0	25.559	2.622	1346.431	.167%	96.311%
68.0	24.659	2.544	1348.975	.162%	96.492%
69.0	23.885	2.476	1351.451	.158%	96.670%
70.0	23.238	2.420	1353.871	.154%	96.843%
71.0	22.641	2.371	1356.243	.151%	97.012%
72.0	22.148	2.329	1358.571	.148%	97.179%
73.0	21.748	2.295	1360.867	.146%	97.343%
74.0	21.438	2.270	1363.137	.145%	97.506%
75.0	21.080	2.246	1365.384	.143%	97.666%

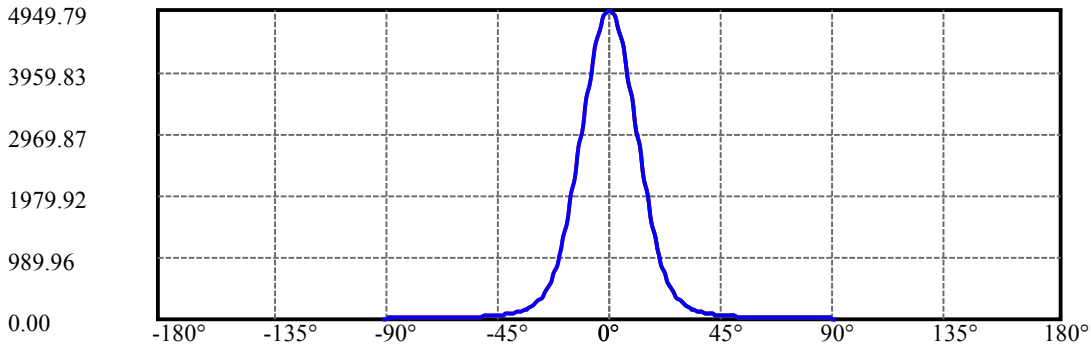
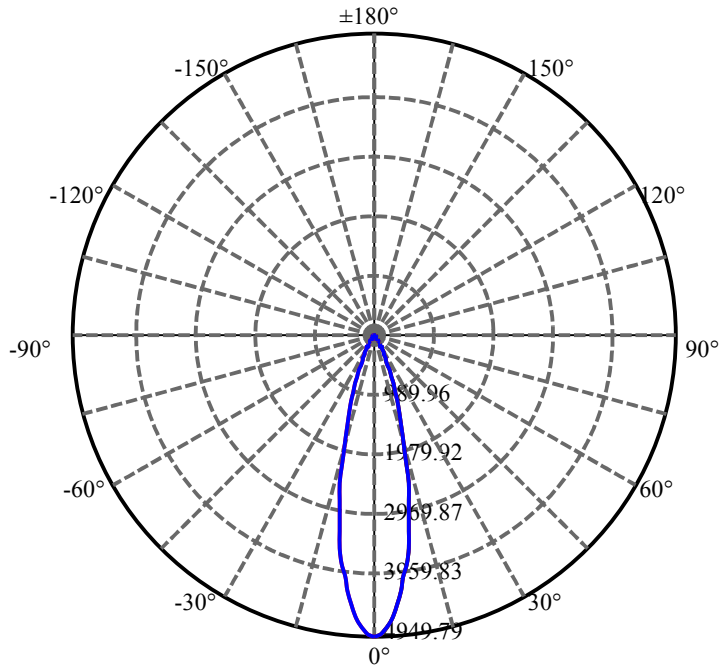
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	20.707	2.218	1367.602	.141%	97.825%
77.0	20.974	2.222	1369.824	.142%	97.984%
78.0	22.008	2.301	1372.125	.147%	98.148%
79.0	23.386	2.439	1374.564	.155%	98.323%
80.0	24.110	2.561	1377.125	.163%	98.506%
81.0	23.766	2.589	1379.714	.165%	98.691%
82.0	21.347	2.446	1382.16	.156%	98.866%
83.0	19.505	2.221	1384.381	.141%	99.025%
84.0	19.027	2.099	1386.48	.134%	99.175%
85.0	19.188	2.086	1388.566	.133%	99.324%
86.0	19.554	2.118	1390.683	.135%	99.476%
87.0	18.113	2.061	1392.745	.131%	99.623%
88.0	16.741	1.909	1394.654	.122%	99.760%
89.0	15.272	1.755	1396.409	.112%	99.885%
90.0	13.936	1.601	1398.01	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1157.69	73.74%	82.81%
0-40	1244.46	79.27%	89.02%
0-60	1326.68	84.50%	94.90%
0-90	1396.41	88.94%	99.89%
0-120	1396.41	88.94%	99.89%
0-180	1398.01	89.05%	100.00%
60-90	72.82	4.64%	5.21%
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%
0-27.36	1118.41	71.24%	80.00%

ZONAL LUMEN SUMMARY

0-10	385.26
10-20	543.52
20-30	228.91
30-40	86.78
40-50	47.66
50-60	34.55
60-70	27.19
70-80	23.25
80-90	19.28
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: —————

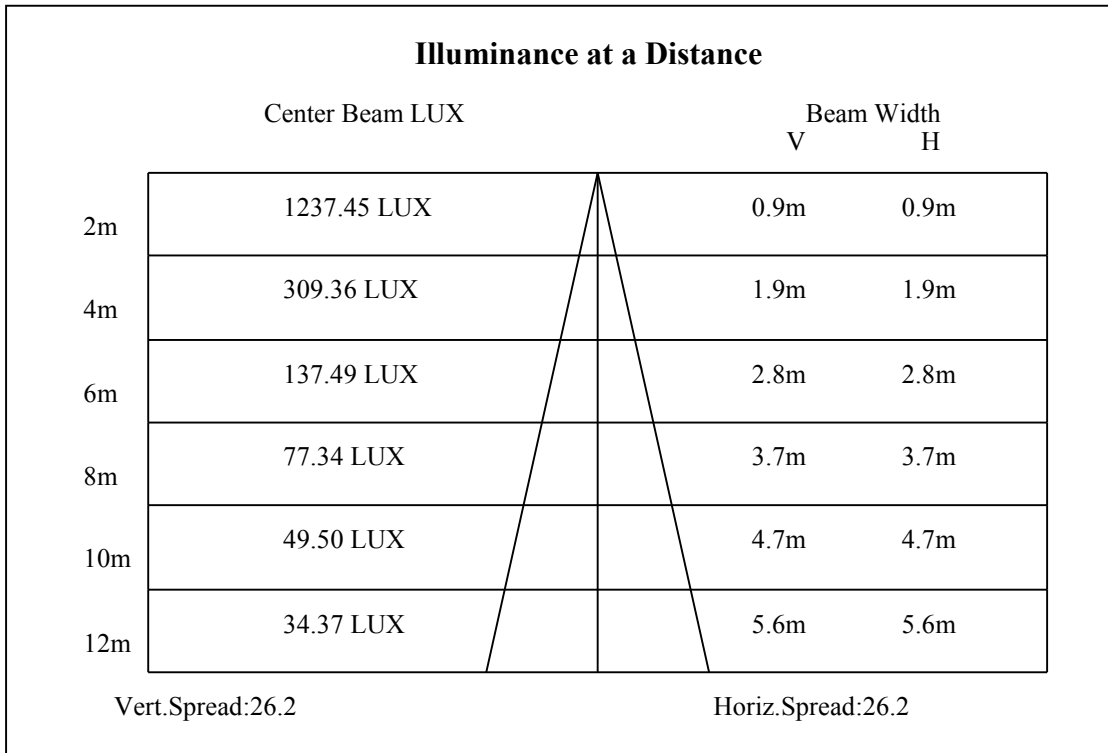
C90/C270: —————

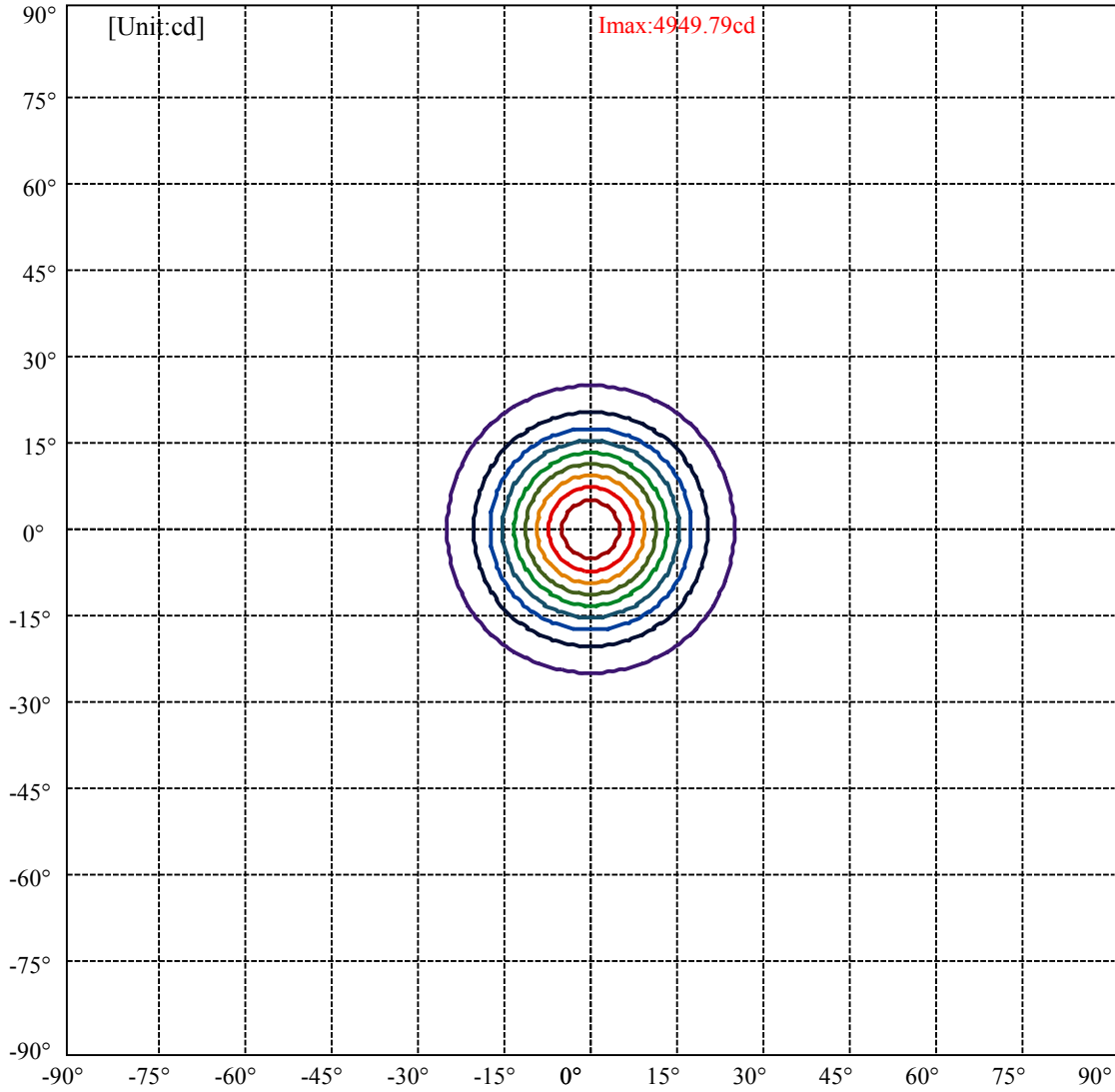
Field angle(10%Imax):C0/180Left:24.6 Right:24.6

:C90/270Left:24.6 Right:24.6

Beam Angle(50%Imax):C0/180Left:13.0 Right:13.0

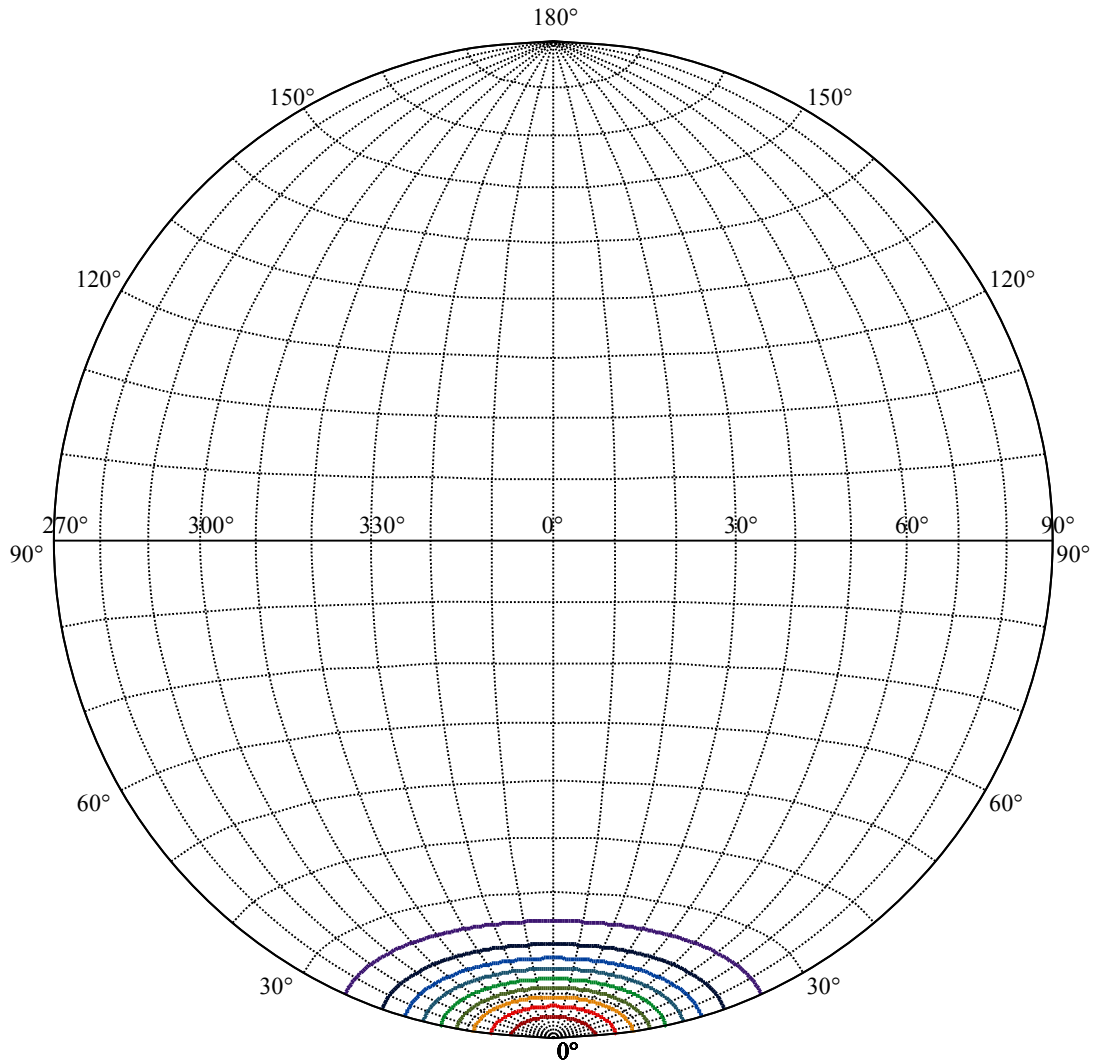
:C90/270Left:13.0 Right:13.0





(10%Imax) 494.979	—
(20%Imax) 989.958	—
(30%Imax) 1484.94	—
(40%Imax) 1979.92	—
(50%Imax) 2474.89	—
(60%Imax) 2969.87	—
(70%Imax) 3464.85	—
(80%Imax) 3959.83	—
(90%Imax) 4454.81	—





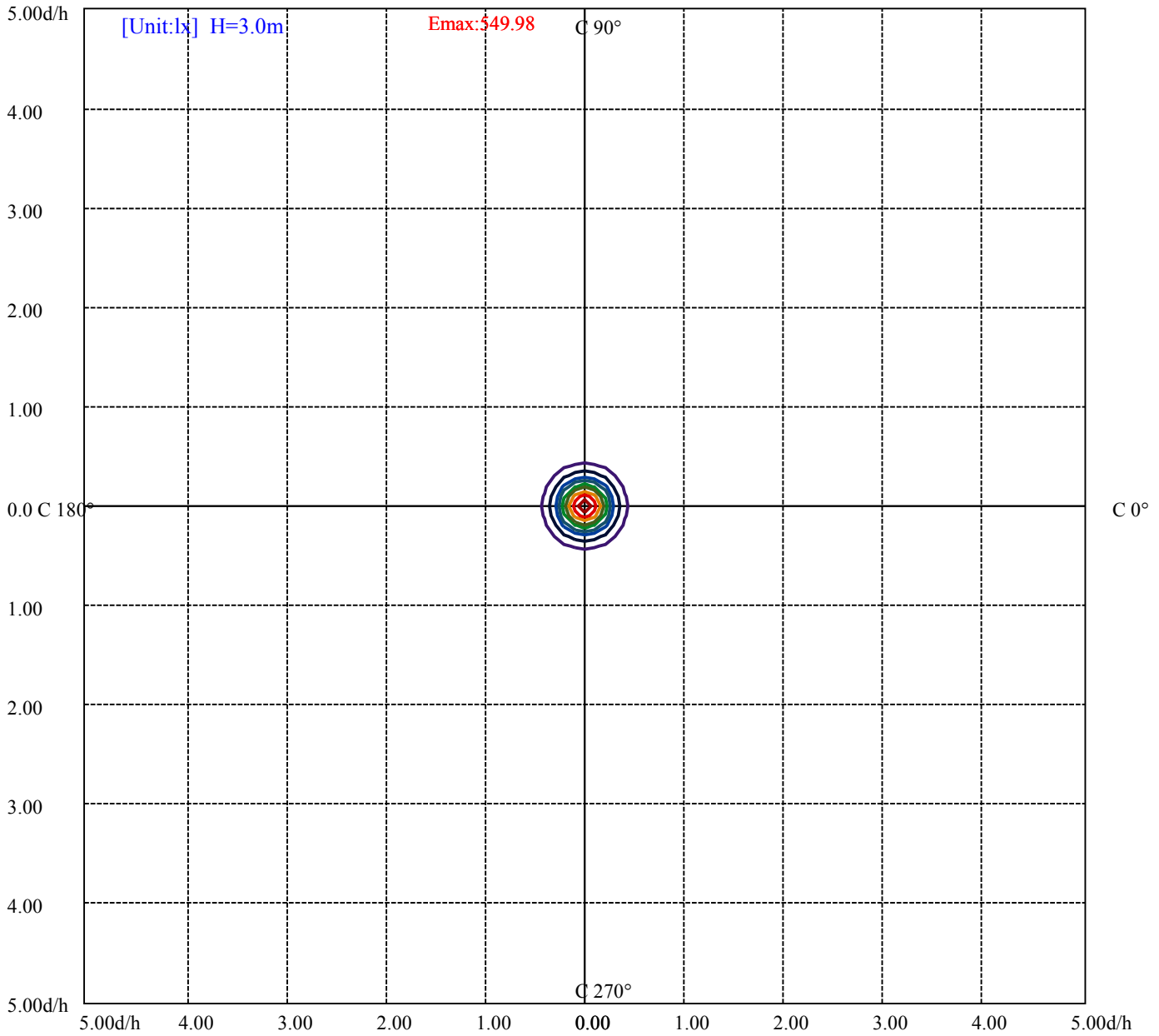
House

[Unit:cd]

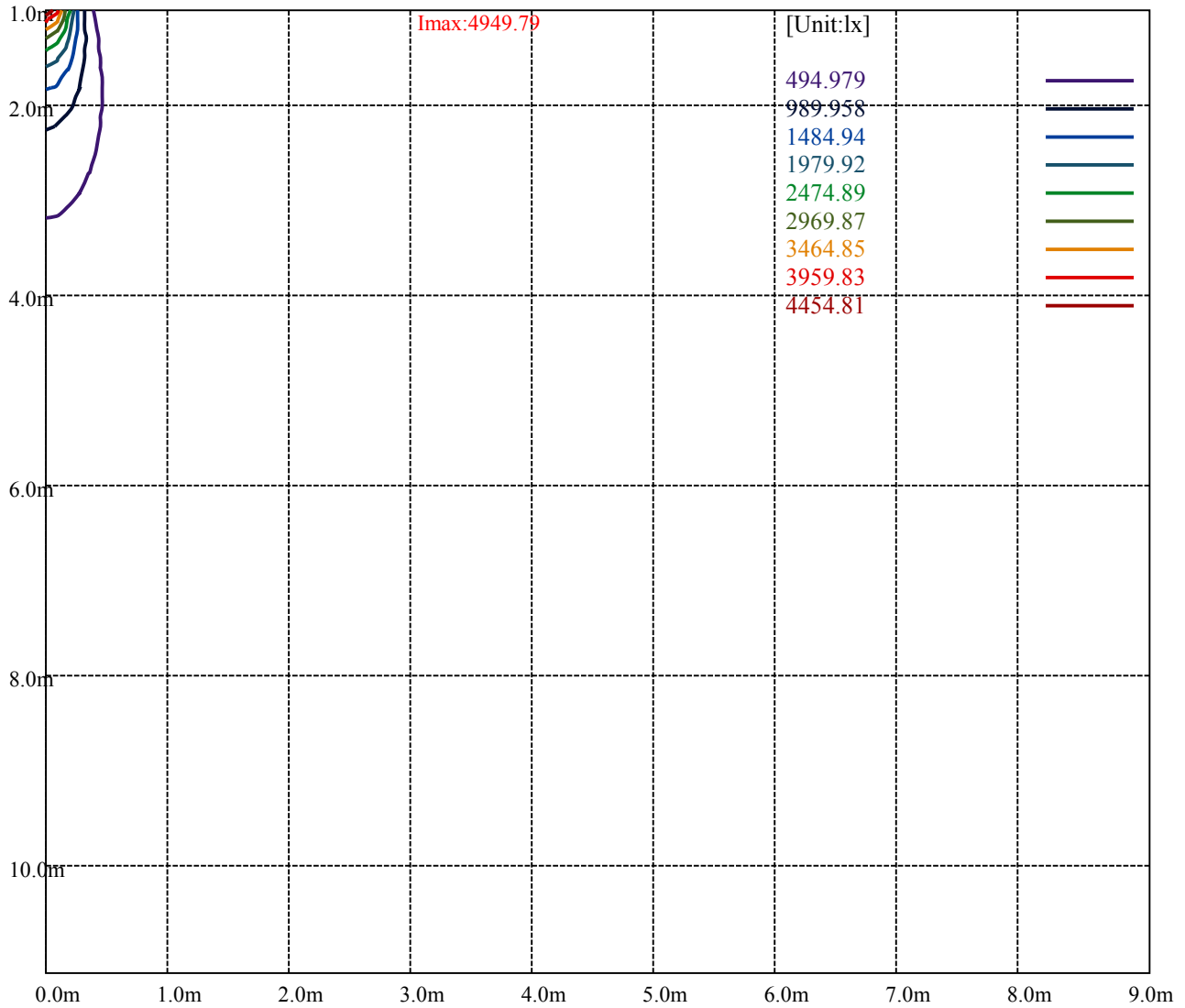
Road

Imax:4949.79

(10%Imax) 494.979	—
(20%Imax) 989.958	—
(30%Imax) 1484.94	—
(40%Imax) 1979.92	—
(50%Imax) 2474.89	—
(60%Imax) 2969.87	—
(70%Imax) 3464.85	—
(80%Imax) 3959.83	—
(90%Imax) 4454.81	—



- (10%Emax) 54.99767
- (20%Emax) 109.9952
- (30%Emax) 164.9933
- (40%Emax) 219.99
- (50%Emax) 274.9878
- (60%Emax) 329.9856
- (70%Emax) 384.9833
- (80%Emax) 439.9811
- (90%Emax) 494.9789



Luminance Table

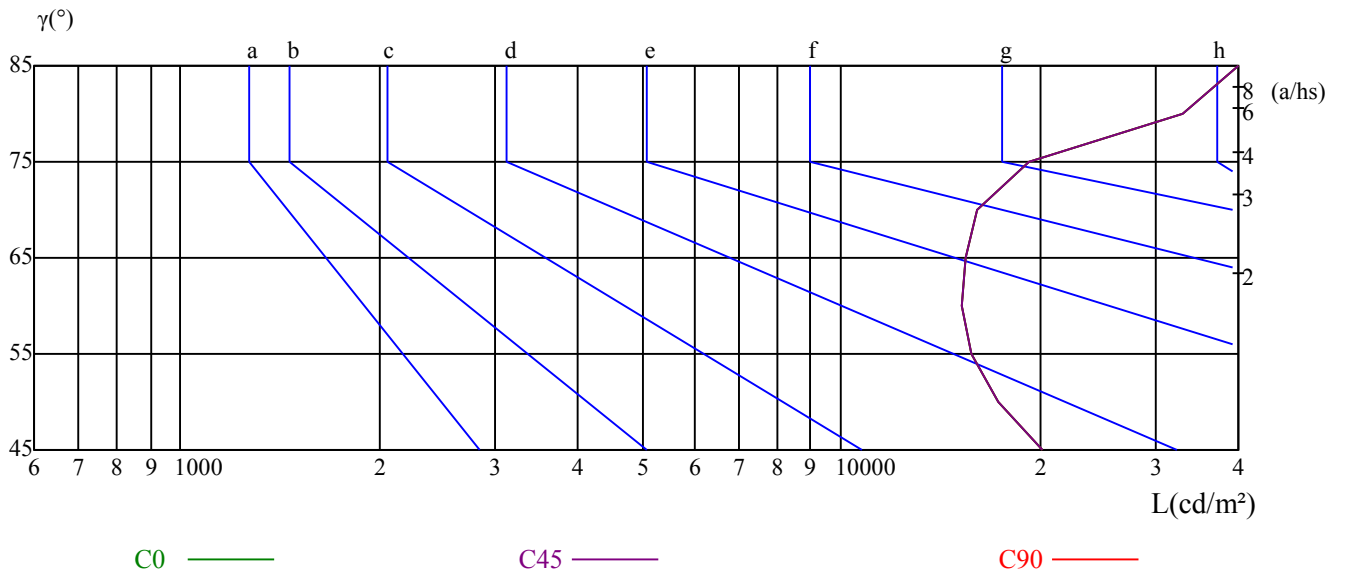
$\gamma$	45	50	55	60	65	70	75	80	85
C0	20186	17318	15723	15227	15405	16081	19277	32863	52109
C45	20186	17318	15723	15227	15405	16081	19277	32863	52109
C90	20186	17318	15723	15227	15405	16081	19277	32863	52109

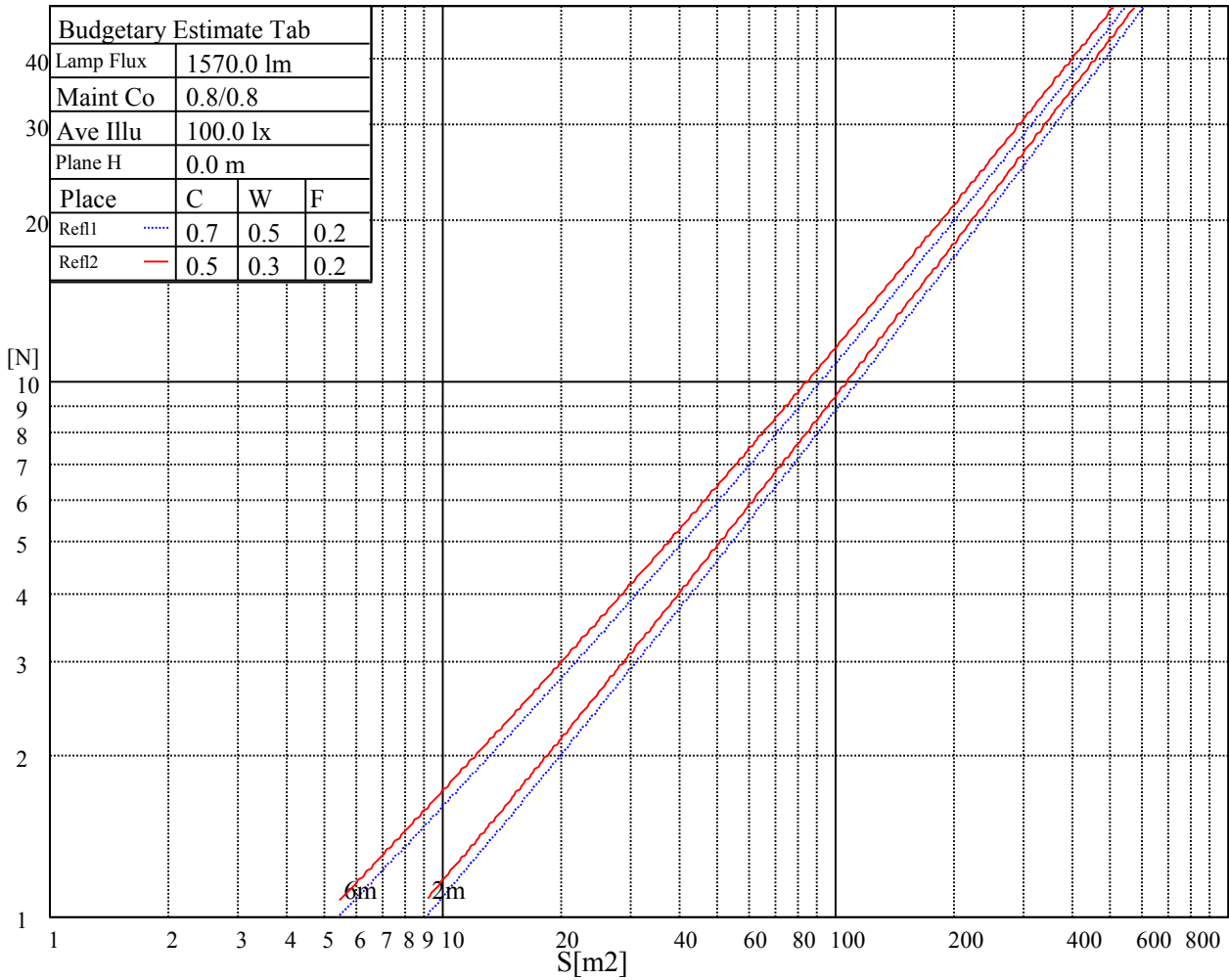
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
15405	15405	15405	19277	19277	19277	52109	52109	52109

Glare Table

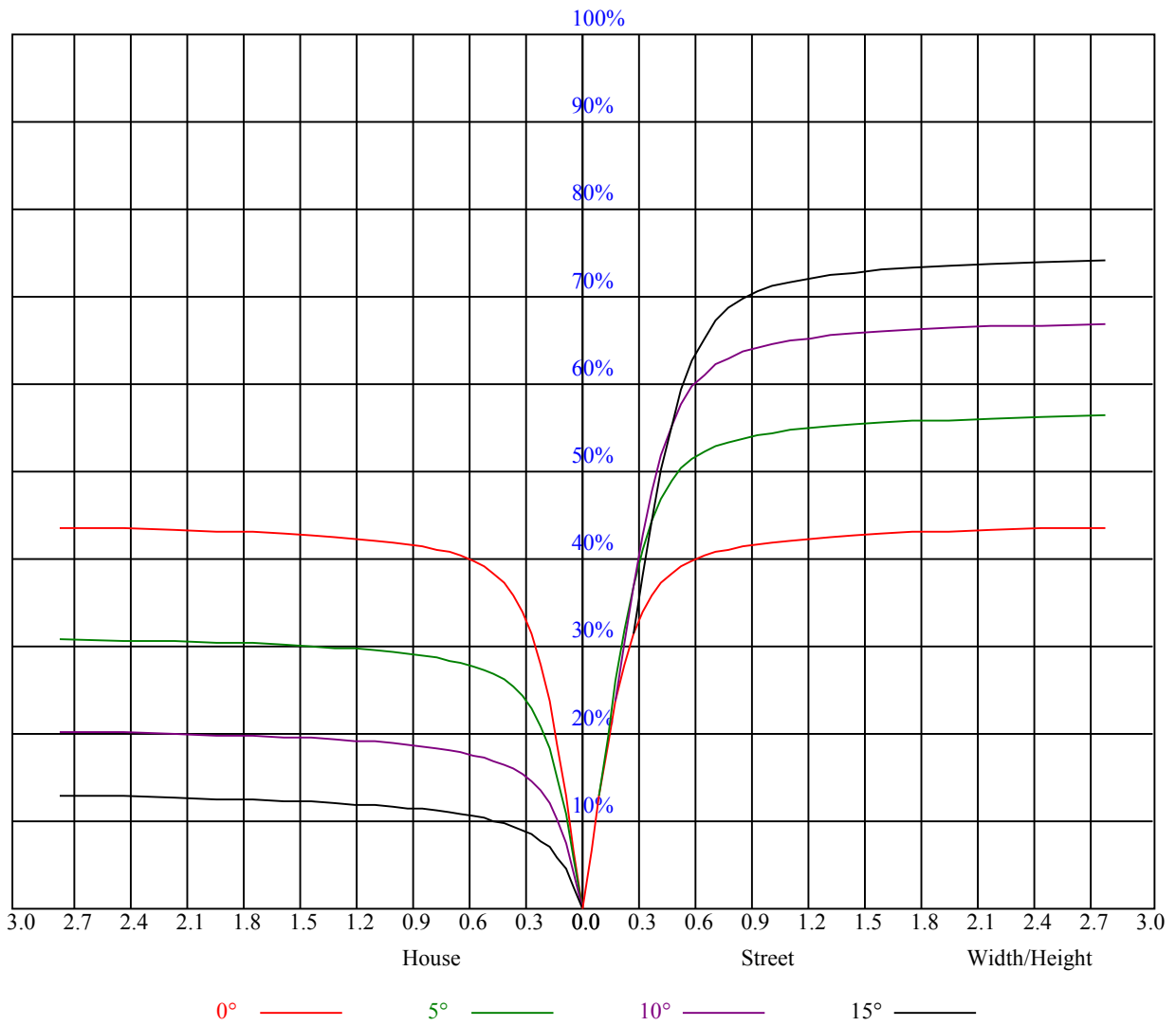
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

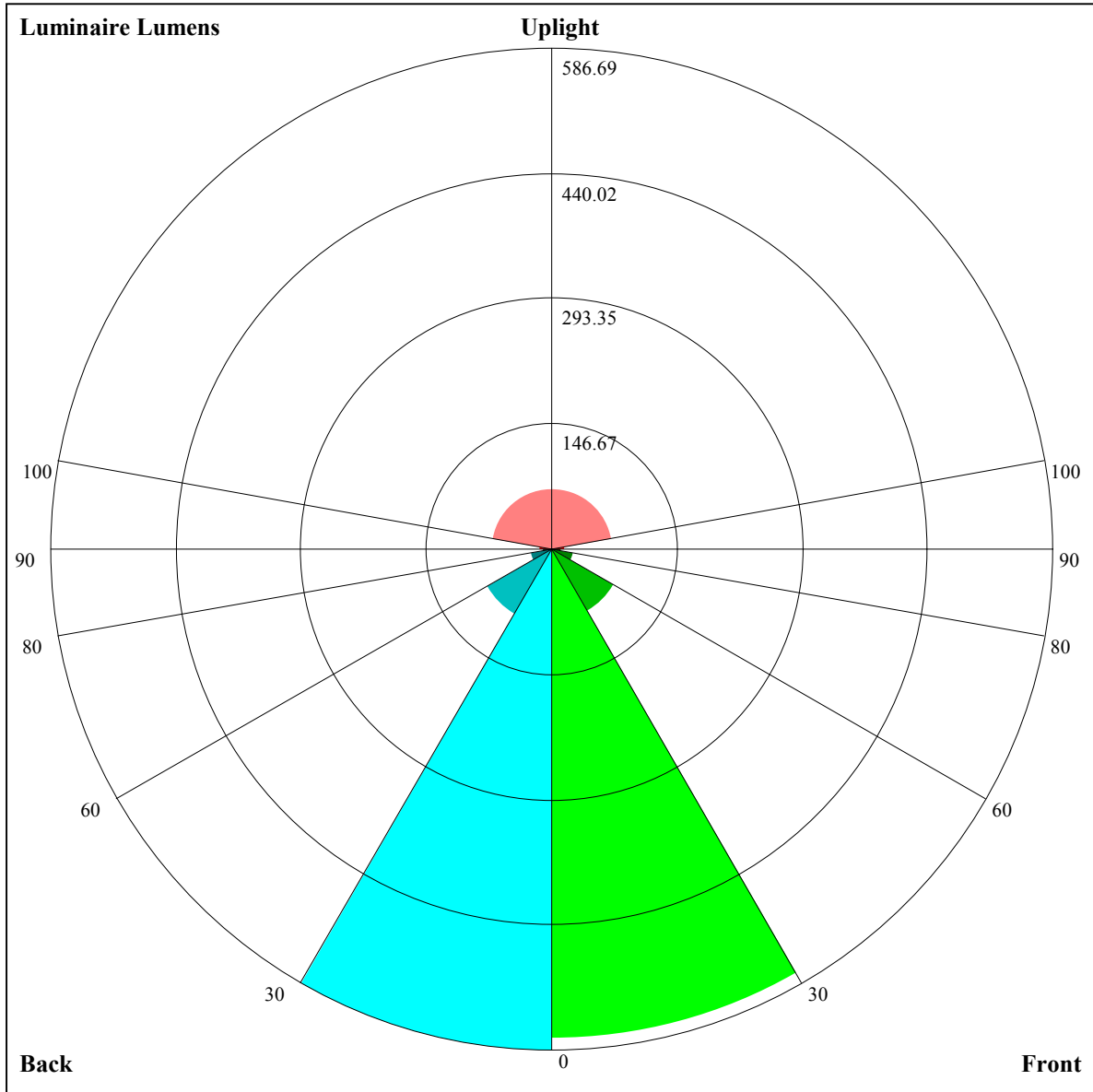
Luminance Limiting Curve





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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.98	0.96	0.94	0.97	0.95	0.93	0.93	0.91	0.90	0.90	0.88	0.87	0.87	0.86	0.85	0.83
2	0.92	0.89	0.86	0.91	0.88	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.80	0.78
3	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.74
4	0.83	0.79	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.71
5	0.79	0.75	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
6	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.71	0.69	0.66	0.65
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	0.70	0.65	0.62	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.60
9	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.58
10	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.57





Luminaire Lumens:

FL=573.97,FM=83.54,FH=25.48,FVH=10.44

BL=586.69,BM=88.01,BH=25.18,BVH=10.66

UL=15.2,UH=72.36

BUG Rating:B2-U2-G1



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	4954.50	4930.88	4857.75	4746.94	4608.00	4442.63	4213.69	4013.44	3793.50
45.0	4947.19	4938.75	4884.19	4794.75	4655.81	4487.06	4311.56	4088.81	3873.38
90.0	4949.44	4930.88	4866.75	4767.75	4626.00	4471.31	4240.69	4028.06	3808.69
135.0	4948.31	4950.00	4912.31	4817.81	4708.69	4548.94	4356.56	4161.94	3953.81
180.0	4954.50	4915.69	4852.13	4741.31	4587.19	4424.06	4217.06	3987.56	3768.75
225.0	4947.19	4906.69	4829.63	4689.56	4548.38	4371.75	4136.63	3930.75	3711.38
270.0	4948.88	4930.31	4856.63	4750.31	4601.25	4433.63	4222.69	3994.88	3776.63
315.0	4948.31	4891.50	4806.00	4655.81	4503.94	4328.44	4133.81	3867.75	3637.69
360.0	4954.50	4930.88	4857.75	4746.94	4608.00	4442.63	4213.69	4013.44	3793.50
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3513.94	3273.75	3038.06	2766.38	2495.81	2253.38	1994.06	1766.25	1529.44
45.0	3621.38	3353.06	3105.56	2858.06	2557.13	2316.38	2084.63	1806.75	1600.88
90.0	3573.00	3268.13	3025.13	2784.38	2486.25	2253.94	2027.25	1783.13	1558.13
135.0	3674.81	3447.00	3203.44	2954.25	2657.81	2422.13	2194.31	1917.00	1705.50
180.0	3537.56	3242.25	3000.94	2764.13	2473.88	2241.00	2019.94	1776.94	1551.38
225.0	3418.31	3174.19	2933.44	2629.13	2419.31	2157.19	1879.88	1692.00	1487.25
270.0	3516.75	3244.50	2999.25	2784.38	2449.13	2214.56	2014.31	1739.81	1514.81
315.0	3395.81	3092.06	2844.56	2598.75	2329.88	2070.00	1847.25	1607.63	1411.88
360.0	3513.94	3273.75	3038.06	2766.38	2495.81	2253.38	1994.06	1766.25	1529.44
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1317.38	1145.81	971.44	816.75	699.19	597.38	491.63	420.19	362.25
45.0	1401.75	1198.13	1007.44	878.63	746.44	626.06	544.50	462.38	403.88
90.0	1347.75	1117.46	1027.01	878.51	753.81	656.94	564.86	488.93	430.65
135.0	1486.13	1303.88	1113.19	971.44	837.56	707.06	619.31	532.69	466.31
180.0	1367.44	1111.67	1017.96	864.11	733.16	634.89	538.76	458.83	400.33
225.0	1215.56	1108.18	963.39	819.39	695.98	602.66	523.13	441.68	388.41
270.0	1357.31	1156.50	995.06	884.81	745.31	650.25	568.69	482.06	422.44
315.0	1115.61	1039.61	901.69	763.88	647.33	559.13	483.19	406.80	357.13
360.0	1317.38	1145.81	971.44	816.75	699.19	597.38	491.63	420.19	362.25
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	308.81	284.06	230.79	204.30	178.09	161.21	146.42	132.24	119.31
45.0	347.63	300.38	287.44	232.14	198.79	178.09	160.03	141.58	129.32
90.0	379.86	326.14	288.34	254.70	222.30	195.92	175.78	157.16	141.53
135.0	402.19	347.06	306.00	288.00	229.33	204.64	183.09	161.38	146.70
180.0	350.83	298.29	262.41	231.30	205.99	179.89	162.90	145.97	132.02
225.0	342.23	297.17	258.08	228.49	201.09	179.44	161.49	144.23	131.06
270.0	370.13	316.69	284.06	246.60	213.24	191.36	172.80	153.96	137.93
315.0	313.48	270.84	234.56	207.23	183.21	163.58	147.94	131.91	119.70
360.0	308.81	284.06	230.79	204.30	178.09	161.21	146.42	132.24	119.31
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	109.07	99.34	91.80	84.04	77.34	72.34	67.50	63.23	59.79
45.0	117.90	108.39	98.16	91.01	83.25	77.57	71.83	66.71	62.66
90.0	129.21	116.94	107.38	97.82	89.10	82.46	76.95	70.71	66.71
135.0	132.81	120.38	109.46	101.36	91.91	85.44	78.64	72.79	68.34
180.0	120.94	110.19	102.43	93.83	85.67	79.93	74.59	69.08	64.91
225.0	118.52	107.83	99.90	91.58	83.93	78.02	72.84	67.22	63.28
270.0	125.04	113.06	103.61	94.33	86.46	80.21	74.42	69.19	65.42
315.0	108.17	98.61	91.29	83.70	77.18	72.06	67.67	62.44	59.46
360.0	109.07	99.34	91.80	84.04	77.34	72.34	67.50	63.23	59.79

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	56.93	53.04	50.46	48.54	46.46	44.55	43.09	40.89	39.09
45.0	59.01	55.74	53.16	51.08	48.38	46.35	44.38	42.47	40.39
90.0	62.94	58.89	56.36	53.78	51.02	48.49	46.46	44.33	42.53
135.0	64.13	60.36	57.32	54.84	51.69	49.39	47.25	45.00	43.26
180.0	61.26	57.71	54.96	52.93	50.63	47.98	46.01	44.16	42.19
225.0	59.91	56.31	53.33	50.91	48.71	46.29	44.16	41.96	40.16
270.0	61.76	57.99	55.41	52.82	50.63	48.32	46.41	44.38	42.64
315.0	56.53	53.27	50.85	48.60	46.97	44.89	43.14	41.18	39.99
360.0	56.93	53.04	50.46	48.54	46.46	44.55	43.09	40.89	39.09
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	37.91	36.39	35.21	34.26	32.96	32.18	31.22	30.04	29.42
45.0	38.81	37.29	35.83	34.65	33.53	32.46	31.22	30.15	29.14
90.0	40.61	38.93	37.52	36.11	34.82	33.81	32.79	31.44	30.43
135.0	41.57	39.66	38.14	36.79	35.33	34.09	32.74	31.50	30.43
180.0	40.39	38.98	37.52	36.28	35.16	33.86	32.91	31.73	30.60
225.0	38.31	36.84	35.49	34.31	32.85	31.67	30.71	29.42	28.46
270.0	41.23	39.71	38.53	37.07	35.83	34.88	33.81	32.68	31.95
315.0	38.53	37.01	36.06	34.99	33.64	32.79	31.95	30.71	30.04
360.0	37.91	36.39	35.21	34.26	32.96	32.18	31.22	30.04	29.42
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	29.03	28.63	28.29	28.13	28.46	28.35	28.35	28.52	28.24
45.0	28.18	27.28	26.44	25.54	24.47	23.40	22.56	21.94	20.98
90.0	29.53	28.52	27.51	26.21	24.58	23.34	22.28	21.15	20.48
135.0	29.42	28.41	27.62	26.78	25.31	24.36	23.46	22.50	21.71
180.0	29.70	28.86	27.68	26.66	25.88	24.98	24.36	24.08	24.30
225.0	27.62	26.72	25.88	24.92	23.85	23.06	22.22	21.49	20.87
270.0	31.28	30.38	29.53	28.41	27.00	25.76	24.75	23.85	22.89
315.0	29.19	28.24	27.11	25.99	24.92	24.02	23.12	22.39	21.66
360.0	29.03	28.63	28.29	28.13	28.46	28.35	28.35	28.52	28.24
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	27.68	27.00	26.83	26.38	25.48	24.30	23.06	21.60	20.70
45.0	20.36	20.03	19.29	19.13	18.56	18.17	18.96	20.08	21.04
90.0	19.63	18.96	18.45	18.34	17.78	18.90	21.71	26.21	28.35
135.0	21.04	20.42	19.86	19.41	19.01	18.84	20.14	22.22	23.91
180.0	24.86	25.48	25.99	25.76	24.98	23.46	22.16	20.64	19.69
225.0	20.48	20.08	19.97	19.58	19.13	19.80	21.32	22.67	23.29
270.0	22.11	21.49	20.93	20.31	20.25	22.33	25.26	29.08	30.94
315.0	21.04	20.53	20.19	19.74	20.48	21.99	23.46	24.58	24.98
360.0	27.68	27.00	26.83	26.38	25.48	24.30	23.06	21.60	20.70
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	20.08	19.58	19.52	19.01	18.56	18.73	17.27	15.92	14.51
45.0	20.87	19.13	17.61	17.66	17.72	18.06	16.54	15.64	14.57
90.0	28.80	23.63	19.91	19.24	19.97	20.81	18.11	16.71	14.79
135.0	25.03	24.08	20.98	19.24	19.13	19.52	19.63	17.27	15.64
180.0	19.13	18.56	18.51	18.06	17.61	17.94	17.78	16.31	15.13
225.0	22.67	20.53	19.35	19.35	19.69	19.91	18.68	17.38	16.09
270.0	30.43	25.14	21.04	20.36	21.09	21.60	19.29	17.83	16.48
315.0	23.12	20.14	19.13	19.29	19.74	19.86	17.61	16.88	14.96
360.0	20.08	19.58	19.52	19.01	18.56	18.73	17.27	15.92	14.51

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>13.16</b>
<b>45.0</b>	<b>13.56</b>
<b>90.0</b>	<b>13.61</b>
<b>135.0</b>	<b>13.39</b>
<b>180.0</b>	<b>14.01</b>
<b>225.0</b>	<b>14.68</b>
<b>270.0</b>	<b>14.74</b>
<b>315.0</b>	<b>14.34</b>
<b>360.0</b>	<b>13.16</b>