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## Nata

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### Client:

LumCAT: 3-2116-N

Luminaire: 92.70.131.00

Report No:

Voltage(V): 34.9600

Test No: GC2019082206

Current(A): 0.3980

LampCAT: TRIDONIC SLE 13MM G7

Power (W): 13.9200

Lamp flux(lm): 1702.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 80

Width(mm): 80

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1462.97, Efficiency(%): 85.96% , Luminous Efficacy(lm/W): 105.10

Central intensity(cd): 5795.859, Maximum intensity(cd): 5795.859

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

Beam Angle(50%Imax): [C0/180]Total=24.4

[C90/270]Total=24.4

Field angle(10%Imax): [C0/180]Total=53.8

[C90/270]Total=53.8

Maximum s/h(1/2): C0\_180=0.41 C90\_270=0.41

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(%): 85.96%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.643%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5795.859	0.000	0	.000%	.000%
1.0	5778.563	5.538	5.538	.325%	.379%
2.0	5718.234	16.501	22.039	.970%	1.506%
3.0	5619.375	27.116	49.155	1.593%	3.360%
4.0	5486.063	37.173	86.329	2.184%	5.901%
5.0	5301.422	46.407	132.736	2.727%	9.073%
6.0	5052.586	54.413	187.149	3.197%	12.792%
7.0	4788.000	61.080	248.229	3.589%	16.968%
8.0	4461.188	66.195	314.424	3.889%	21.492%
9.0	4110.328	69.467	383.891	4.082%	26.241%
10.0	3723.539	70.894	454.785	4.165%	31.086%
11.0	3334.500	70.524	525.309	4.144%	35.907%
12.0	2964.516	68.857	594.167	4.046%	40.614%
13.0	2582.789	65.833	659.999	3.868%	45.114%
14.0	2225.109	61.541	721.54	3.616%	49.320%
15.0	1934.719	57.108	778.648	3.355%	53.224%
16.0	1676.039	52.908	831.556	3.109%	56.840%
17.0	1419.138	48.200	879.756	2.832%	60.135%
18.0	1251.309	44.030	923.786	2.587%	63.145%
19.0	1109.630	41.076	964.861	2.413%	65.952%
20.0	988.615	38.404	1003.265	2.256%	68.577%
21.0	898.172	36.230	1039.495	2.129%	71.054%
22.0	829.188	34.712	1074.207	2.039%	73.427%
23.0	768.150	33.516	1107.723	1.969%	75.718%
24.0	714.790	32.422	1140.146	1.905%	77.934%
25.0	670.556	31.500	1171.646	1.851%	80.087%
26.0	625.964	30.605	1202.25	1.798%	82.179%
27.0	575.438	29.393	1231.643	1.727%	84.188%
28.0	511.172	27.511	1259.153	1.616%	86.068%
29.0	441.696	24.930	1284.083	1.465%	87.773%
30.0	370.610	21.932	1306.015	1.289%	89.272%
31.0	300.684	18.681	1324.696	1.098%	90.549%
32.0	222.645	14.993	1339.689	.881%	91.573%
33.0	169.045	11.539	1351.228	.678%	92.362%
34.0	111.480	8.490	1359.718	.499%	92.942%
35.0	74.876	5.788	1365.505	.340%	93.338%
36.0	60.722	4.317	1369.823	.254%	93.633%
37.0	54.436	3.756	1373.579	.221%	93.890%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	50.091	3.489	1377.068	.205%	94.128%
39.0	46.013	3.280	1380.348	.193%	94.353%
40.0	43.411	3.119	1383.467	.183%	94.566%
41.0	41.231	3.014	1386.481	.177%	94.772%
42.0	39.080	2.918	1389.399	.171%	94.971%
43.0	37.202	2.826	1392.224	.166%	95.164%
44.0	35.571	2.747	1394.971	.161%	95.352%
45.0	33.905	2.670	1397.641	.157%	95.535%
46.0	32.245	2.587	1400.228	.152%	95.712%
47.0	30.790	2.507	1402.735	.147%	95.883%
48.0	29.320	2.430	1405.165	.143%	96.049%
49.0	27.921	2.351	1407.516	.138%	96.210%
50.0	26.360	2.263	1409.779	.133%	96.364%
51.0	25.003	2.173	1411.952	.128%	96.513%
52.0	23.723	2.091	1414.043	.123%	96.656%
53.0	22.528	2.012	1416.055	.118%	96.793%
54.0	21.340	1.934	1417.988	.114%	96.926%
55.0	20.447	1.865	1419.854	.110%	97.053%
56.0	19.702	1.814	1421.668	.107%	97.177%
57.0	18.921	1.766	1423.434	.104%	97.298%
58.0	18.309	1.722	1425.155	.101%	97.415%
59.0	17.740	1.685	1426.841	.099%	97.531%
60.0	17.191	1.650	1428.491	.097%	97.643%
61.0	16.713	1.618	1430.109	.095%	97.754%
62.0	16.291	1.590	1431.699	.093%	97.863%
63.0	15.834	1.562	1433.262	.092%	97.970%
64.0	15.370	1.531	1434.793	.090%	98.074%
65.0	14.759	1.491	1436.284	.088%	98.176%
66.0	13.838	1.427	1437.711	.084%	98.274%
67.0	12.895	1.344	1439.055	.079%	98.365%
68.0	12.080	1.265	1440.32	.074%	98.452%
69.0	11.700	1.213	1441.533	.071%	98.535%
70.0	11.468	1.190	1442.723	.070%	98.616%
71.0	11.271	1.175	1443.898	.069%	98.697%
72.0	11.039	1.160	1445.058	.068%	98.776%
73.0	10.849	1.145	1446.203	.067%	98.854%
74.0	10.659	1.131	1447.334	.066%	98.931%
75.0	10.448	1.115	1448.449	.066%	99.008%

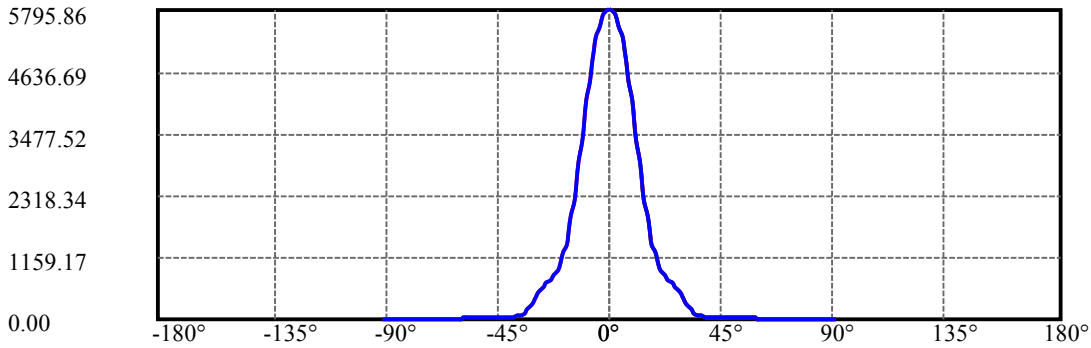
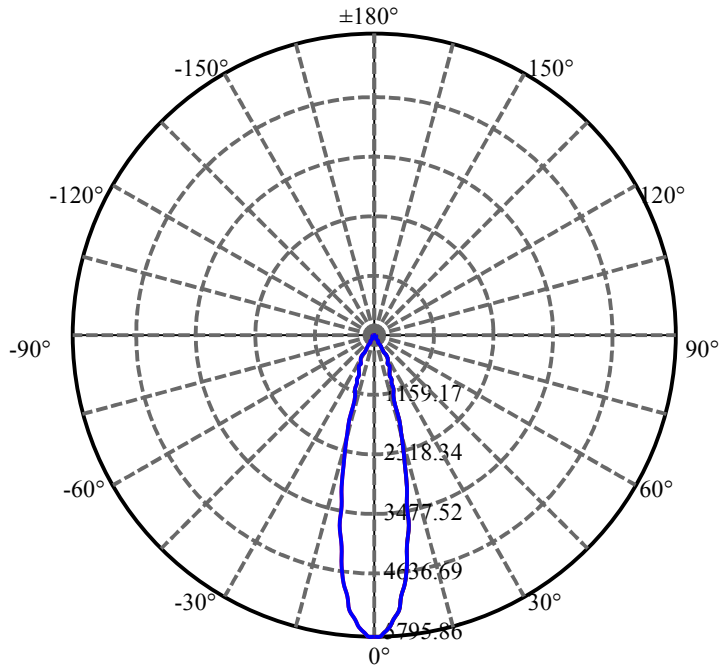
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.245	1.098	1449.548	.065%	99.083%
77.0	10.055	1.082	1450.63	.064%	99.157%
78.0	9.879	1.067	1451.697	.063%	99.230%
79.0	9.675	1.051	1452.748	.062%	99.301%
80.0	9.506	1.034	1453.782	.061%	99.372%
81.0	9.330	1.019	1454.8	.060%	99.442%
82.0	9.190	1.004	1455.805	.059%	99.510%
83.0	9.007	0.989	1456.794	.058%	99.578%
84.0	8.761	0.968	1457.762	.057%	99.644%
85.0	8.501	0.942	1458.704	.055%	99.709%
86.0	8.191	0.912	1459.616	.054%	99.771%
87.0	7.889	0.880	1460.496	.052%	99.831%
88.0	7.615	0.849	1461.346	.050%	99.889%
89.0	7.411	0.824	1462.169	.048%	99.945%
90.0	7.144	0.798	1462.967	.047%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1306.02	76.73%	89.27%
0-40	1383.47	81.28%	94.57%
0-60	1428.49	83.93%	97.64%
0-90	1462.17	85.91%	99.95%
0-120	1462.17	85.91%	99.95%
0-180	1462.97	85.96%	100.00%
60-90	35.33	2.08%	2.41%
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%
0-24.96	1170.37	68.76%	80.00%

ZONAL LUMEN SUMMARY

0-10	454.79
10-20	548.48
20-30	302.75
30-40	77.45
40-50	26.31
50-60	18.71
60-70	14.23
70-80	11.06
80-90	8.39
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: ———

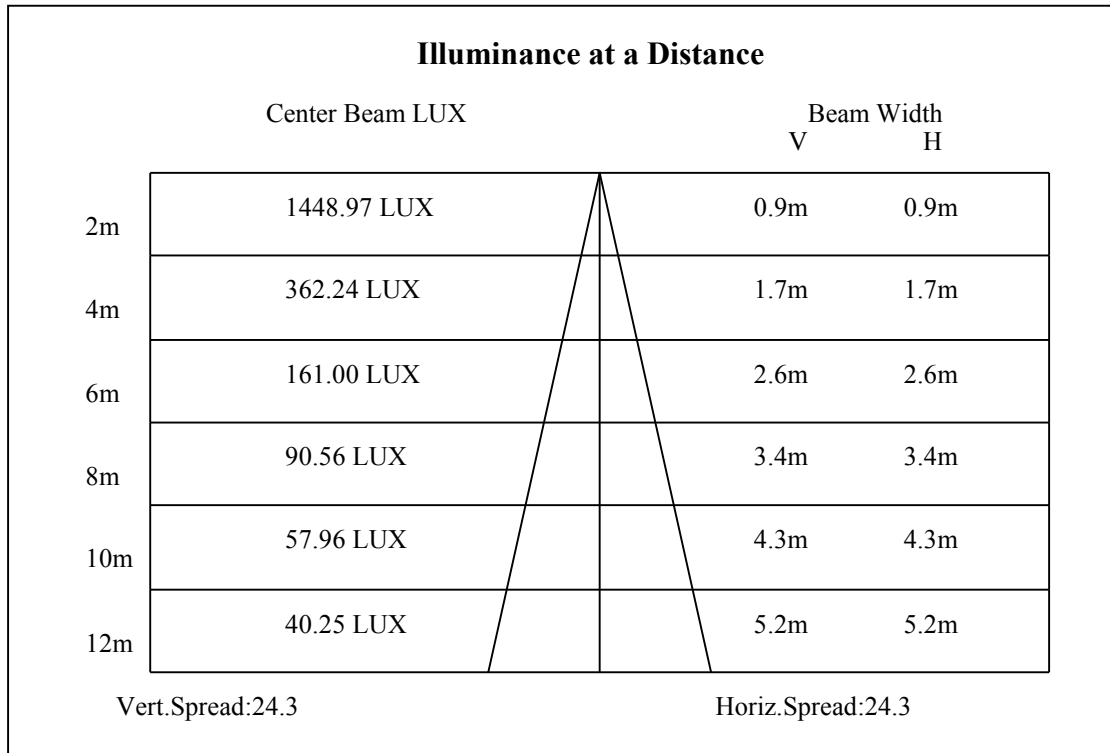
C90/C270: ———

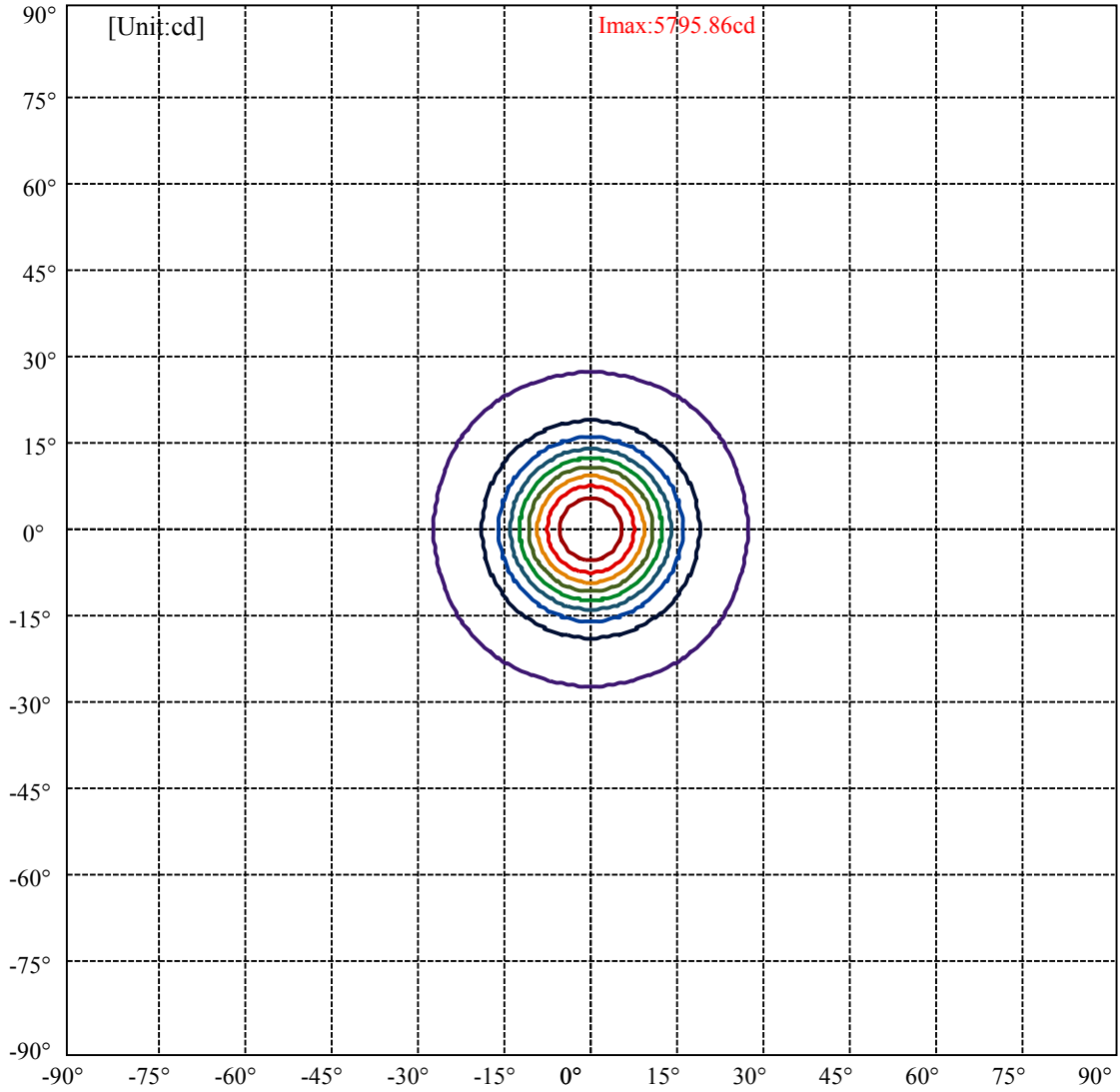
Field angle(10%Imax):C0/180Left:26.9 Right:26.9

:C90/270Left:26.9 Right:26.9

Beam Angle(50%Imax):C0/180Left:12.2 Right:12.2

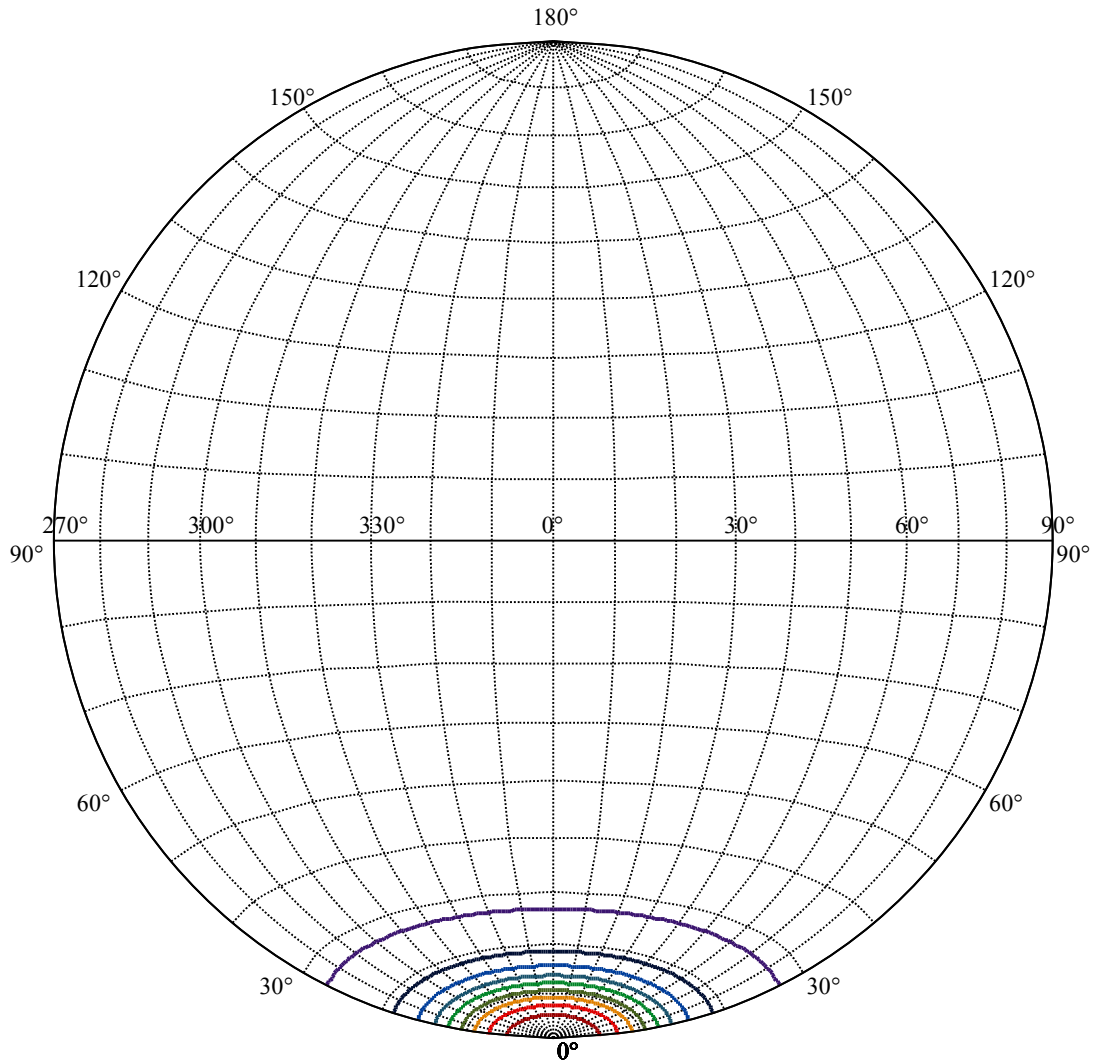
:C90/270Left:12.2 Right:12.2





(10%Imax) 579.586	—
(20%Imax) 1159.17	—
(30%Imax) 1738.76	—
(40%Imax) 2318.34	—
(50%Imax) 2897.93	—
(60%Imax) 3477.52	—
(70%Imax) 4057.1	—
(80%Imax) 4636.69	—
(90%Imax) 5216.27	—





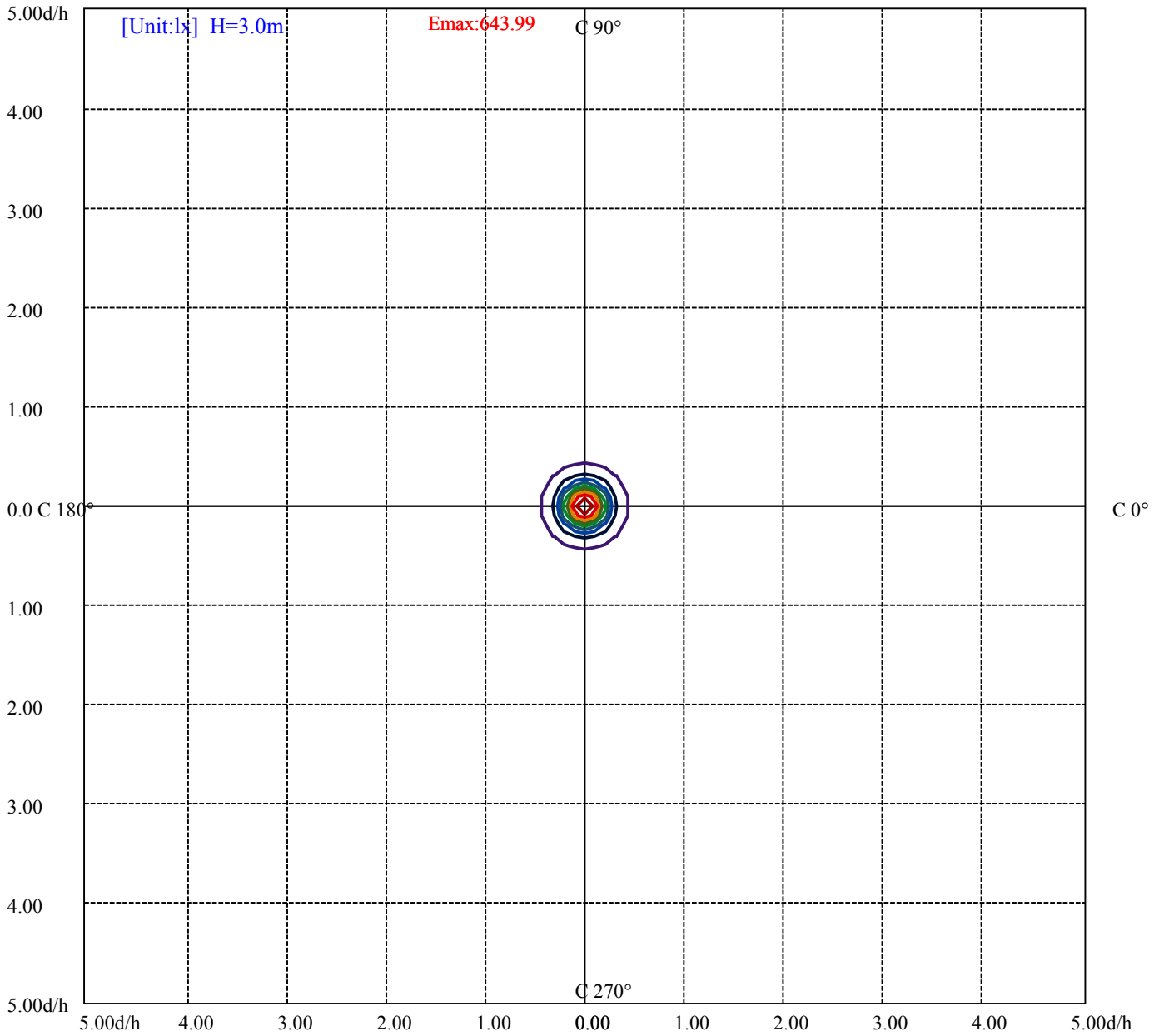
House

[Unit:cd]

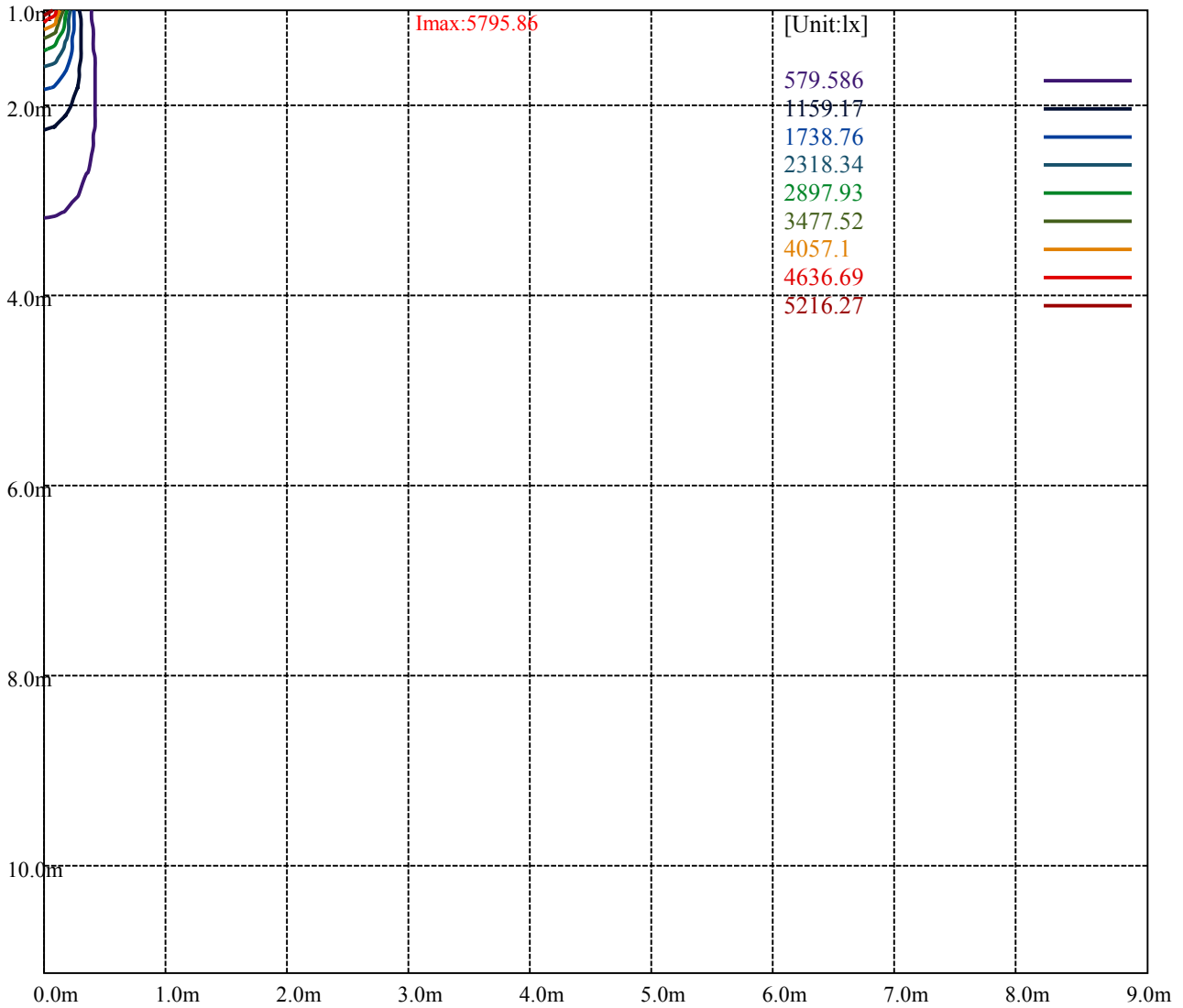
Road

**Imax:5795.86**

(10%Imax) 579.586	—
(20%Imax) 1159.17	—
(30%Imax) 1738.76	—
(40%Imax) 2318.34	—
(50%Imax) 2897.93	—
(60%Imax) 3477.52	—
(70%Imax) 4057.1	—
(80%Imax) 4636.69	—
(90%Imax) 5216.27	—



- (10%Emax) 64.39845
- (20%Emax) 128.7967
- (30%Emax) 193.1956
- (40%Emax) 257.5934
- (50%Emax) 321.9922
- (60%Emax) 386.39
- (70%Emax) 450.7889
- (80%Emax) 515.1877
- (90%Emax) 579.5856



Luminance Table

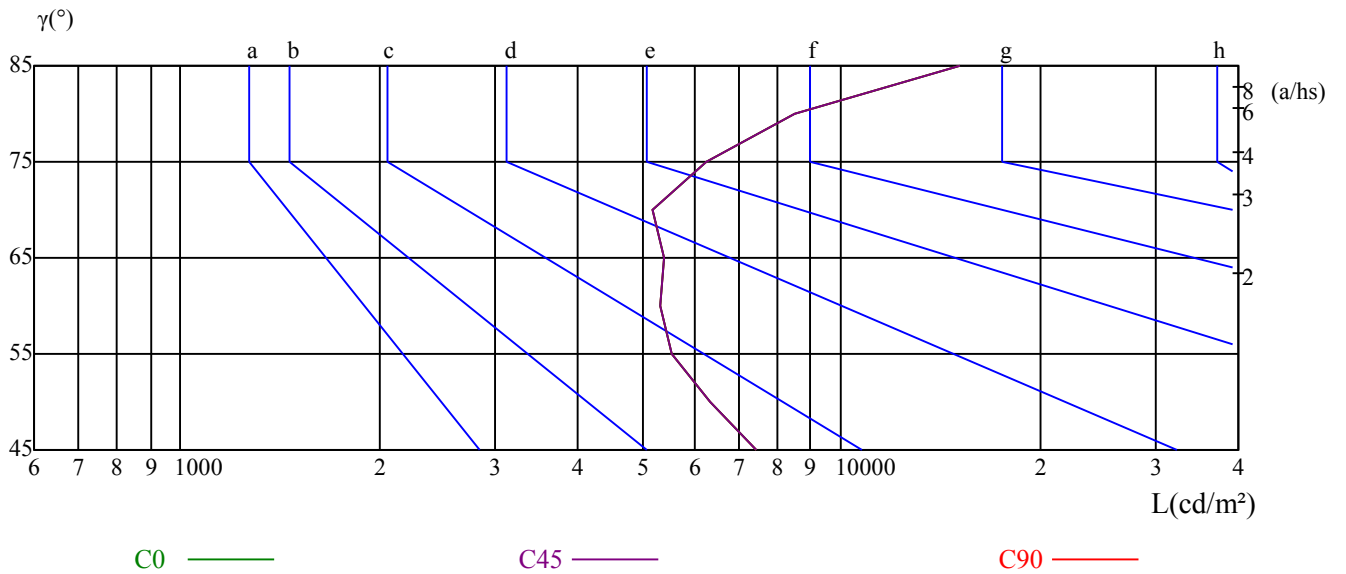
$\gamma$	45	50	55	60	65	70	75	80	85
C0	7436	6360	5528	5332	5416	5200	6261	8490	15126
C45	7436	6360	5528	5332	5416	5200	6261	8490	15126
C90	7436	6360	5528	5332	5416	5200	6261	8490	15126

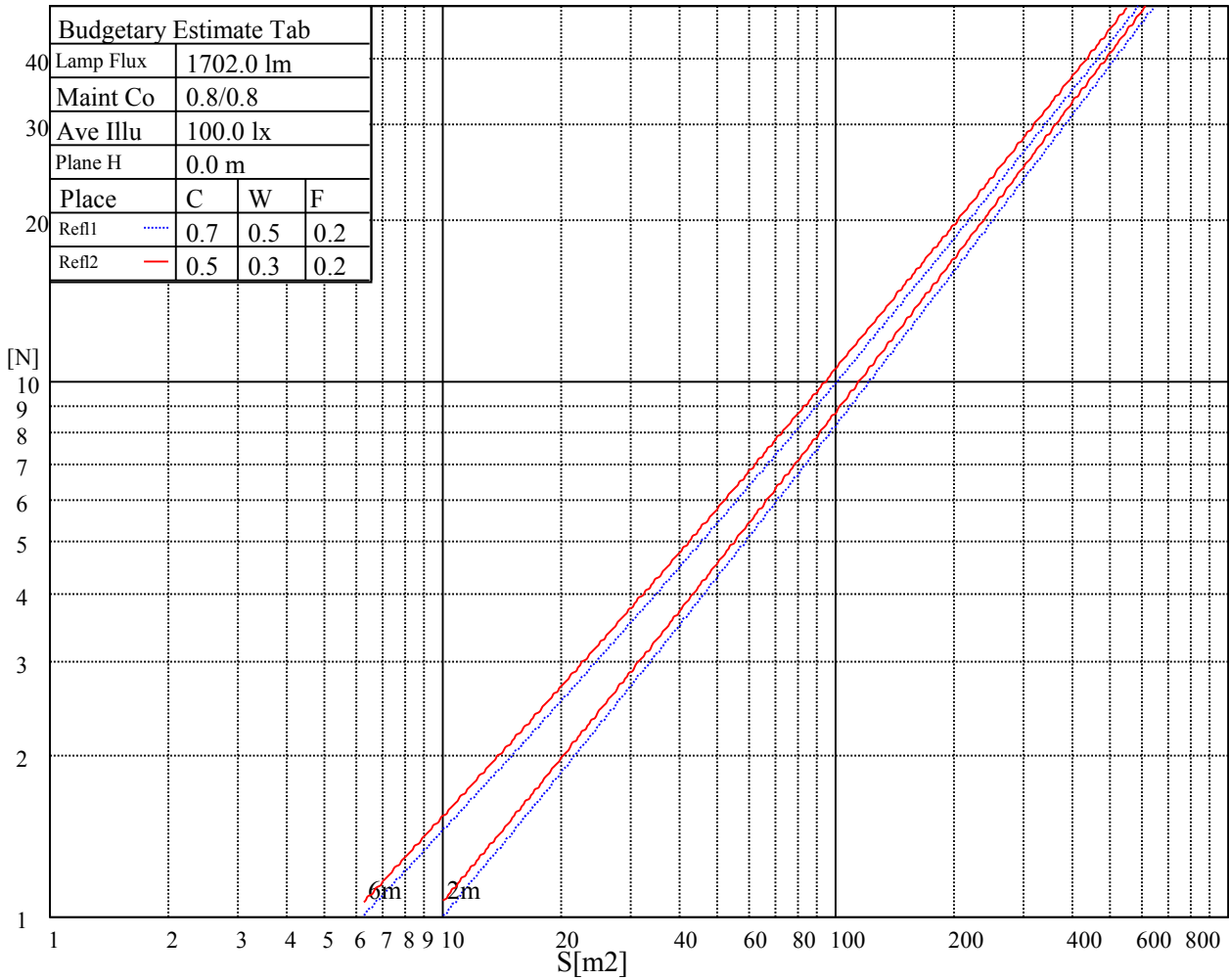
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5416	5416	5416	6261	6261	6261	15126	15126	15126

Glare Table

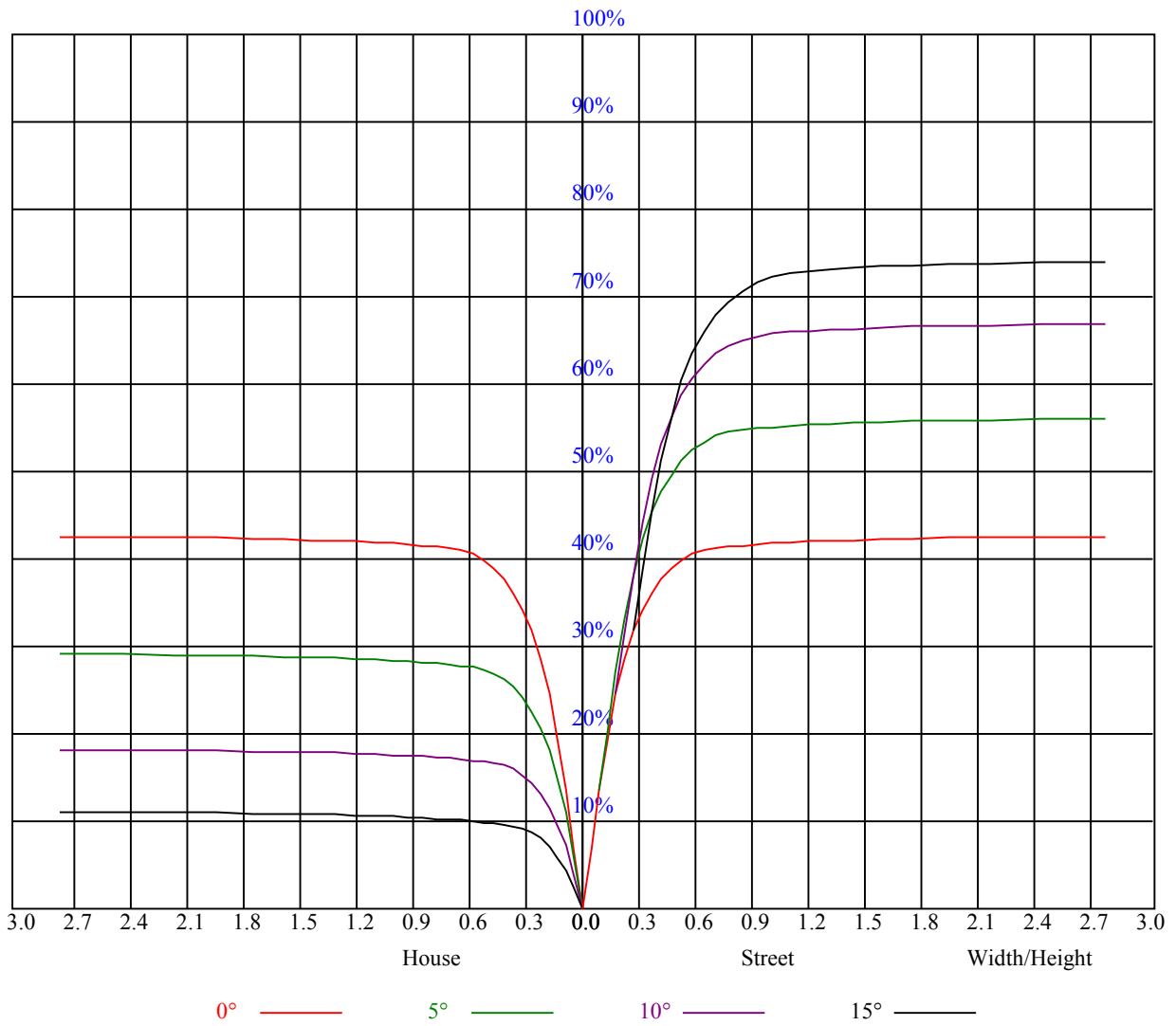
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

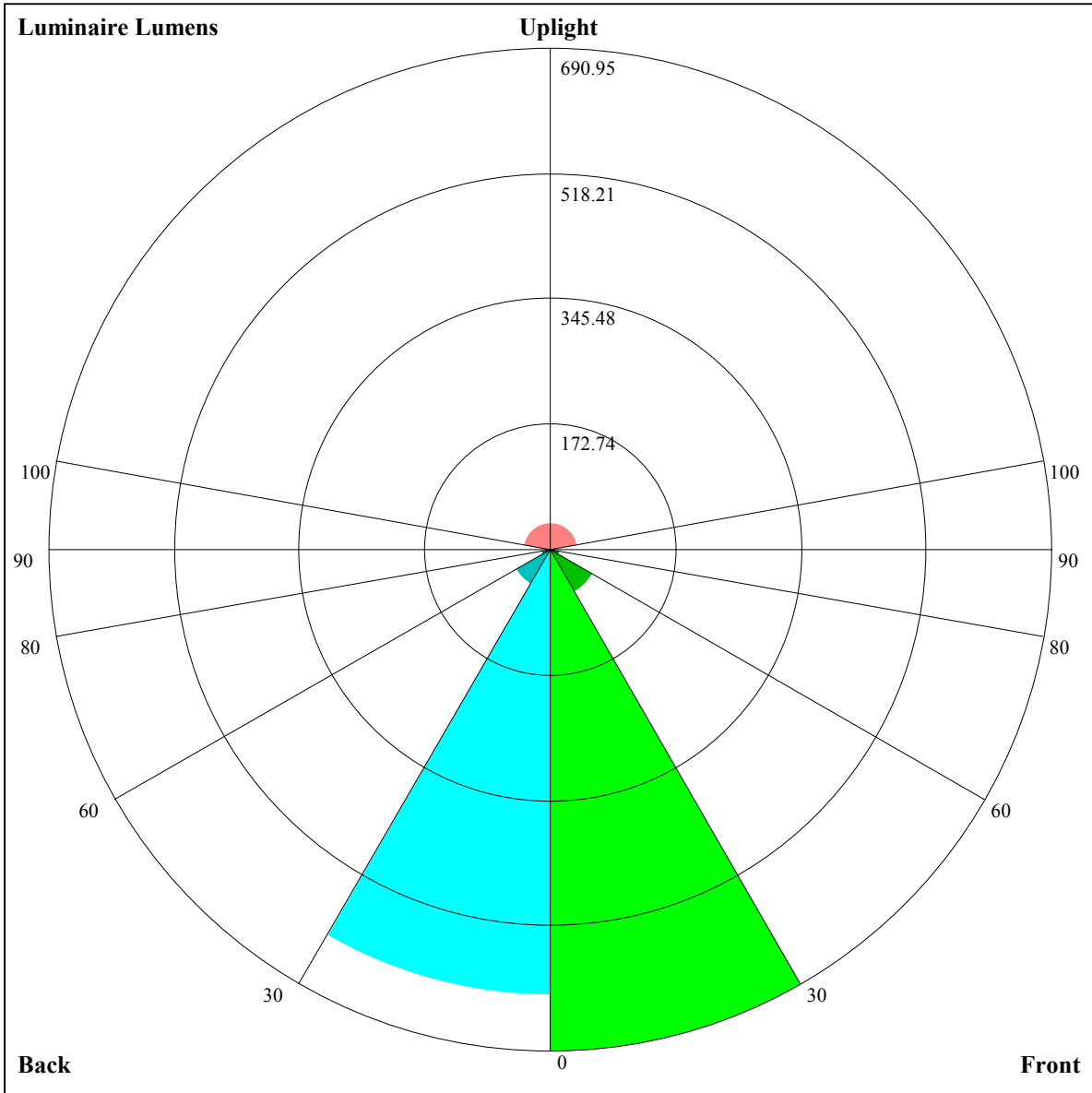
Luminance Limiting Curve





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	1.02	1.02	1.02	1.00	1.00	1.00	0.96	0.96	0.96	0.91	0.91	0.91	0.88	0.88	0.88	0.86
1	0.96	0.94	0.92	0.94	0.93	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.85	0.84	0.83	0.82
2	0.91	0.88	0.85	0.89	0.87	0.84	0.87	0.84	0.83	0.84	0.82	0.81	0.82	0.80	0.79	0.78
3	0.86	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.76	0.75
4	0.82	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.77	0.74	0.73	0.72
5	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.73	0.71	0.75	0.73	0.70	0.74	0.72	0.70	0.69
6	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
7	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
8	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62
9	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.58





Luminaire Lumens:

FL=690.95,FM=68.31,FH=12.87,FVH=4.65

BL=614.45,BM=54.98,BH=12.35,BVH=4.47

UL=7.79,UH=37.09

BUG Rating:B2-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	5806.13	5834.81	5841.56	5794.31	5711.06	5580.00	5393.25	5186.25	4906.13
45.0	5766.19	5802.19	5811.19	5781.38	5716.13	5612.06	5431.50	5227.88	4987.69
90.0	5796.00	5784.19	5732.44	5648.06	5537.81	5365.13	5142.94	4907.81	4596.19
135.0	5815.13	5787.00	5706.00	5613.19	5481.56	5292.00	5047.31	4789.13	4444.88
180.0	5806.13	5748.75	5627.25	5482.69	5311.69	5062.50	4763.25	4451.06	4057.88
225.0	5766.19	5680.13	5557.50	5380.88	5149.69	4898.25	4573.13	4203.00	3853.13
270.0	5796.00	5773.50	5706.00	5586.19	5437.69	5250.38	4952.81	4668.75	4314.38
315.0	5815.13	5817.94	5763.94	5668.31	5542.88	5351.06	5116.50	4870.13	4529.25
360.0	5806.13	5834.81	5841.56	5794.31	5711.06	5580.00	5393.25	5186.25	4906.13
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4582.13	4235.63	3832.31	3462.19	3036.38	2630.81	2297.25	1998.56	1679.06
45.0	4634.44	4313.81	3965.06	3546.56	3130.31	2757.38	2368.69	2063.25	1763.44
90.0	4215.38	3862.13	3440.81	3080.81	2680.31	2308.50	2010.94	1757.25	1478.25
135.0	4117.50	3718.69	3305.25	2922.19	2530.13	2174.06	1896.19	1655.44	1398.94
180.0	3686.63	3268.13	2867.06	2518.88	2212.31	1856.25	1611.56	1404.00	1112.34
225.0	3492.00	3034.69	2679.75	2346.19	1969.31	1711.69	1488.94	1218.94	1101.83
270.0	3974.06	3575.25	3217.50	2831.63	2451.94	2109.38	1833.75	1595.25	1366.88
315.0	4180.50	3780.00	3368.25	3007.69	2651.63	2252.81	1970.44	1715.63	1452.38
360.0	4582.13	4235.63	3832.31	3462.19	3036.38	2630.81	2297.25	1998.56	1679.06
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1467.56	1295.44	1125.56	1018.13	932.63	853.31	790.88	741.38	693.56
45.0	1500.19	1315.13	1145.81	1016.44	923.06	852.75	777.94	726.19	685.13
90.0	1290.38	1109.76	1001.25	918.17	852.30	790.31	732.60	686.64	642.83
135.0	1229.06	1097.44	970.31	888.75	817.88	758.25	707.63	662.06	621.00
180.0	1066.16	963.39	871.99	799.48	745.88	702.28	659.03	625.89	577.41
225.0	992.25	904.78	823.05	752.63	703.58	655.26	618.08	585.45	528.75
270.0	1188.00	1069.31	969.75	875.25	813.94	758.81	707.63	657.56	619.31
315.0	1276.88	1121.79	1001.19	916.54	844.26	774.23	724.56	679.28	639.73
360.0	1467.56	1295.44	1125.56	1018.13	932.63	853.31	790.88	741.38	693.56
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	655.31	601.88	536.06	470.25	390.38	309.94	292.50	169.88	99.45
45.0	642.94	603.56	554.06	487.13	411.75	346.50	284.06	193.56	124.71
90.0	604.52	544.28	472.11	405.39	324.84	237.49	178.20	118.46	68.57
135.0	570.94	506.25	432.00	360.56	289.13	207.51	136.91	88.26	63.90
180.0	507.83	430.93	359.49	277.14	207.90	139.78	85.95	63.23	57.26
225.0	466.48	387.23	308.93	243.06	183.15	116.38	78.98	63.23	56.59
270.0	560.25	486.00	415.13	337.50	285.75	194.63	131.46	85.73	61.20
315.0	595.24	529.26	455.79	383.85	312.58	228.94	164.31	109.52	67.33
360.0	655.31	601.88	536.06	470.25	390.38	309.94	292.50	169.88	99.45
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	67.89	60.75	55.58	49.84	46.80	44.27	41.57	39.77	38.14
45.0	79.88	62.94	57.66	50.96	46.80	44.04	40.95	38.93	37.35
90.0	60.81	56.03	50.96	46.97	44.16	41.57	39.66	37.35	35.55
135.0	57.54	52.88	48.99	44.83	42.47	40.67	38.31	36.79	35.38
180.0	51.98	48.04	45.23	42.30	40.28	38.59	36.79	34.93	33.41
225.0	51.47	47.64	44.49	41.79	39.88	38.03	36.11	34.14	32.46
270.0	55.46	51.19	47.14	43.99	41.74	39.88	38.03	36.17	34.54
315.0	60.75	56.03	50.68	47.42	45.17	42.81	41.23	39.54	37.74
360.0	67.89	60.75	55.58	49.84	46.80	44.27	41.57	39.77	38.14

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	36.23	34.48	32.91	31.16	29.76	28.18	26.66	25.20	23.79
45.0	35.49	33.69	32.34	30.94	29.48	28.01	26.83	25.59	24.24
90.0	33.98	32.29	30.77	29.48	28.13	26.55	25.37	24.13	22.84
135.0	33.98	32.63	31.33	29.87	28.46	27.23	25.54	24.08	22.56
180.0	31.78	30.26	29.03	27.45	26.10	24.69	23.23	21.99	20.98
225.0	30.99	29.36	27.84	26.55	25.37	23.85	22.73	21.71	20.87
270.0	32.74	30.99	29.59	28.07	26.66	25.14	23.91	22.73	21.77
315.0	36.06	34.26	32.51	31.05	29.42	27.23	25.76	24.36	23.18
360.0	36.23	34.48	32.91	31.16	29.76	28.18	26.66	25.20	23.79
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	22.39	21.32	20.59	19.52	18.90	18.34	17.49	17.04	16.65
45.0	23.06	21.83	20.93	19.97	19.18	18.45	17.78	17.33	16.88
90.0	21.49	20.42	19.46	18.62	18.06	17.44	17.04	16.65	16.20
135.0	21.09	20.03	19.29	19.01	18.51	17.94	17.38	16.99	16.54
180.0	19.86	19.07	18.45	17.72	17.21	16.82	16.43	15.92	15.53
225.0	19.97	19.29	18.62	17.89	17.33	16.88	16.43	15.92	15.53
270.0	20.87	20.19	19.41	18.56	17.94	17.44	16.99	16.43	16.03
315.0	21.99	21.43	20.87	20.08	19.35	18.62	18.00	17.44	16.99
360.0	22.39	21.32	20.59	19.52	18.90	18.34	17.49	17.04	16.65
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	16.09	15.69	15.24	14.74	13.89	12.54	11.64	11.42	11.25
45.0	16.59	16.03	15.58	15.13	14.40	13.05	12.26	11.87	11.64
90.0	15.81	15.41	14.96	14.18	12.71	11.70	11.48	11.25	11.03
135.0	16.09	15.69	15.41	14.01	12.88	12.15	11.87	11.70	11.53
180.0	15.02	14.63	13.67	12.15	11.53	11.31	11.14	10.91	10.74
225.0	15.13	14.46	13.05	12.32	11.93	11.59	11.36	11.19	10.97
270.0	15.53	15.08	14.51	13.28	12.26	11.64	11.42	11.19	10.97
315.0	16.43	15.98	15.64	14.91	13.56	12.66	12.43	12.21	12.04
360.0	16.09	15.69	15.24	14.74	13.89	12.54	11.64	11.42	11.25
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	11.03	10.86	10.69	10.46	10.24	10.01	9.84	9.62	9.45
45.0	11.42	11.19	10.97	10.80	10.58	10.35	10.13	9.90	9.62
90.0	10.80	10.58	10.35	10.18	9.96	9.73	9.56	9.34	9.17
135.0	11.31	11.14	10.97	10.74	10.58	10.46	10.29	10.13	9.96
180.0	10.52	10.35	10.18	9.96	9.79	9.62	9.45	9.23	9.17
225.0	10.74	10.52	10.29	10.07	9.84	9.68	9.45	9.23	9.00
270.0	10.74	10.52	10.35	10.13	9.96	9.73	9.56	9.39	9.23
315.0	11.76	11.64	11.48	11.25	11.03	10.86	10.74	10.58	10.46
360.0	11.03	10.86	10.69	10.46	10.24	10.01	9.84	9.62	9.45
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.23	9.11	9.06	8.89	8.72	8.33	7.99	7.65	7.48
45.0	9.39	9.11	8.94	8.78	8.61	8.44	8.10	7.65	7.31
90.0	8.94	8.78	8.61	8.38	8.16	7.88	7.65	7.37	7.20
135.0	9.84	9.68	9.45	9.17	8.94	8.66	8.33	7.99	7.65
180.0	9.00	8.94	8.66	8.38	8.10	7.82	7.48	7.26	7.03
225.0	8.83	8.66	8.44	8.16	7.76	7.43	7.20	7.03	6.92
270.0	9.06	8.94	8.78	8.44	8.16	7.76	7.43	7.26	7.09
315.0	10.35	10.29	10.13	9.90	9.56	9.23	8.94	8.72	8.61
360.0	9.23	9.11	9.06	8.89	8.72	8.33	7.99	7.65	7.48

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>7.31</b>
<b>45.0</b>	<b>7.09</b>
<b>90.0</b>	<b>7.03</b>
<b>135.0</b>	<b>7.31</b>
<b>180.0</b>	<b>6.98</b>
<b>225.0</b>	<b>6.92</b>
<b>270.0</b>	<b>6.92</b>
<b>315.0</b>	<b>7.59</b>
<b>360.0</b>	<b>7.31</b>