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## Nata

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### Client:

LumCAT: 2-1121-A4

Luminaire: 99.02.73.172+92.76.365.00

Report No:

Voltage(V): 34.9200

Test No: GC20190823010

Current(A): 0.3980

LampCAT: TRIDONIC SLE 13MM G7

Power (W): 13.9000

Lamp flux(lm): 1702.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 71

Width(mm): 71

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1572.10, Efficiency(%): 92.37% , Luminous Efficacy(lm/W): 113.10

Central intensity(cd): 5061.234, Maximum intensity(cd): 5061.234

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

Beam Angle(50%Imax): [C0/180]Total=27.2

[C90/270]Total=27.2

Field angle(10%Imax): [C0/180]Total=65.6

[C90/270]Total=65.6

Maximum s/h(1/2): C0\_180=0.47 C90\_270=0.47

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(%): 92.37%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.557%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5061.234	0.000	0	.000%	.000%
1.0	5048.156	4.837	4.837	.284%	.308%
2.0	5006.391	14.431	19.268	.848%	1.226%
3.0	4949.297	23.811	43.079	1.399%	2.740%
4.0	4894.594	32.951	76.03	1.936%	4.836%
5.0	4821.328	41.797	117.827	2.456%	7.495%
6.0	4725.422	50.171	167.998	2.948%	10.686%
7.0	4589.156	57.815	225.813	3.397%	14.364%
8.0	4402.828	64.354	290.167	3.781%	18.457%
9.0	4160.953	69.405	359.572	4.078%	22.872%
10.0	3874.992	72.722	432.294	4.273%	27.498%
11.0	3540.305	74.094	506.388	4.353%	32.211%
12.0	3174.398	73.401	579.79	4.313%	36.880%
13.0	2777.414	70.633	650.423	4.150%	41.373%
14.0	2355.539	65.701	716.124	3.860%	45.552%
15.0	1988.648	59.639	775.763	3.504%	49.346%
16.0	1640.461	53.177	828.94	3.124%	52.728%
17.0	1338.033	46.383	875.323	2.725%	55.678%
18.0	1133.220	40.746	916.068	2.394%	58.270%
19.0	976.992	36.713	952.782	2.157%	60.606%
20.0	856.842	33.564	986.346	1.972%	62.740%
21.0	773.002	31.296	1017.642	1.839%	64.731%
22.0	718.580	29.974	1047.616	1.761%	66.638%
23.0	678.094	29.306	1076.922	1.722%	68.502%
24.0	647.845	28.990	1105.912	1.703%	70.346%
25.0	622.702	28.889	1134.801	1.697%	72.184%
26.0	602.459	28.920	1163.722	1.699%	74.023%
27.0	583.784	29.022	1192.743	1.705%	75.869%
28.0	568.695	29.178	1221.921	1.714%	77.725%
29.0	554.231	29.379	1251.3	1.726%	79.594%
30.0	543.009	29.625	1280.926	1.741%	81.478%
31.0	532.308	29.925	1310.85	1.758%	83.382%
32.0	520.657	30.166	1341.016	1.772%	85.301%
33.0	502.699	30.148	1371.165	1.771%	87.218%
34.0	468.584	29.394	1400.559	1.727%	89.088%
35.0	422.072	27.660	1428.219	1.625%	90.848%
36.0	364.500	25.045	1453.264	1.471%	92.441%
37.0	307.245	21.909	1475.172	1.287%	93.834%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	247.985	18.533	1493.705	1.089%	95.013%
39.0	187.601	14.868	1508.573	.874%	95.959%
40.0	128.327	11.018	1519.591	.647%	96.660%
41.0	79.587	7.404	1526.995	.435%	97.131%
42.0	42.110	4.421	1531.417	.260%	97.412%
43.0	24.321	2.461	1533.877	.145%	97.568%
44.0	18.907	1.632	1535.509	.096%	97.672%
45.0	16.509	1.361	1536.87	.080%	97.759%
46.0	14.280	1.204	1538.074	.071%	97.835%
47.0	12.516	1.066	1539.14	.063%	97.903%
48.0	11.292	0.962	1540.102	.057%	97.964%
49.0	10.005	0.875	1540.977	.051%	98.020%
50.0	9.359	0.807	1541.784	.047%	98.071%
51.0	9.134	0.782	1542.567	.046%	98.121%
52.0	8.944	0.776	1543.342	.046%	98.170%
53.0	8.747	0.770	1544.112	.045%	98.219%
54.0	8.620	0.765	1544.877	.045%	98.268%
55.0	8.466	0.763	1545.64	.045%	98.317%
56.0	8.339	0.759	1546.399	.045%	98.365%
57.0	8.227	0.757	1547.157	.045%	98.413%
58.0	8.114	0.756	1547.912	.044%	98.461%
59.0	8.023	0.754	1548.667	.044%	98.509%
60.0	7.910	0.753	1549.42	.044%	98.557%
61.0	7.833	0.751	1550.171	.044%	98.605%
62.0	7.763	0.751	1550.922	.044%	98.653%
63.0	7.692	0.752	1551.674	.044%	98.700%
64.0	7.629	0.752	1552.426	.044%	98.748%
65.0	7.580	0.753	1553.178	.044%	98.796%
66.0	7.523	0.754	1553.932	.044%	98.844%
67.0	7.467	0.754	1554.686	.044%	98.892%
68.0	7.411	0.754	1555.439	.044%	98.940%
69.0	7.369	0.754	1556.193	.044%	98.988%
70.0	7.334	0.755	1556.949	.044%	99.036%
71.0	7.284	0.756	1557.704	.044%	99.084%
72.0	7.242	0.755	1558.459	.044%	99.132%
73.0	7.214	0.756	1559.215	.044%	99.180%
74.0	7.179	0.757	1559.972	.044%	99.228%
75.0	7.151	0.757	1560.729	.044%	99.276%

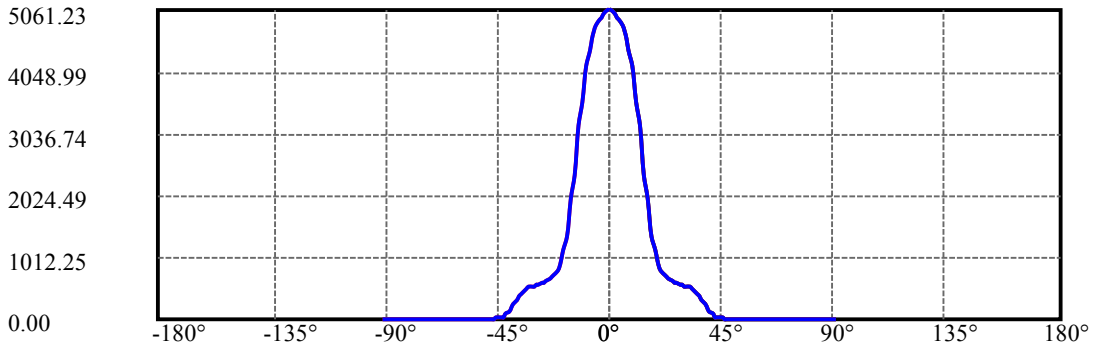
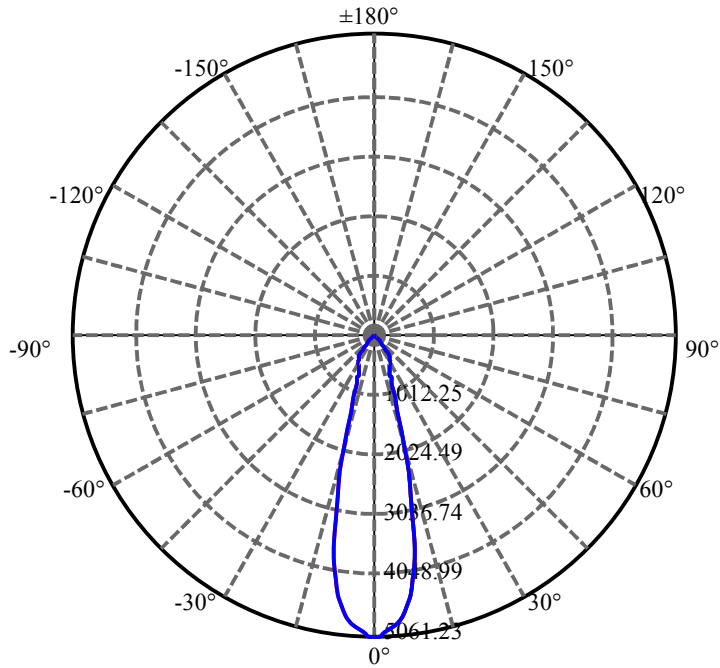
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.123	0.758	1561.487	.045%	99.325%
77.0	7.095	0.758	1562.245	.045%	99.373%
78.0	7.080	0.759	1563.004	.045%	99.421%
79.0	7.052	0.759	1563.763	.045%	99.469%
80.0	7.038	0.760	1564.523	.045%	99.518%
81.0	7.003	0.759	1565.282	.045%	99.566%
82.0	6.996	0.759	1566.041	.045%	99.614%
83.0	6.982	0.760	1566.801	.045%	99.663%
84.0	6.961	0.760	1567.561	.045%	99.711%
85.0	6.954	0.759	1568.32	.045%	99.759%
86.0	6.940	0.759	1569.079	.045%	99.808%
87.0	6.919	0.758	1569.838	.045%	99.856%
88.0	6.898	0.757	1570.595	.044%	99.904%
89.0	6.877	0.755	1571.35	.044%	99.952%
90.0	6.884	0.754	1572.104	.044%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1280.93	75.26%	81.48%
0-40	1519.59	89.28%	96.66%
0-60	1549.42	91.04%	98.56%
0-90	1571.35	92.32%	99.95%
0-120	1571.35	92.32%	99.95%
0-180	1572.10	92.37%	100.00%
60-90	22.68	1.33%	1.44%
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%
0-29.22	1257.68	73.89%	80.00%

ZONAL LUMEN SUMMARY

0-10	432.29
10-20	554.05
20-30	294.58
30-40	238.67
40-50	22.19
50-60	7.64
60-70	7.53
70-80	7.57
80-90	6.83
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: —————

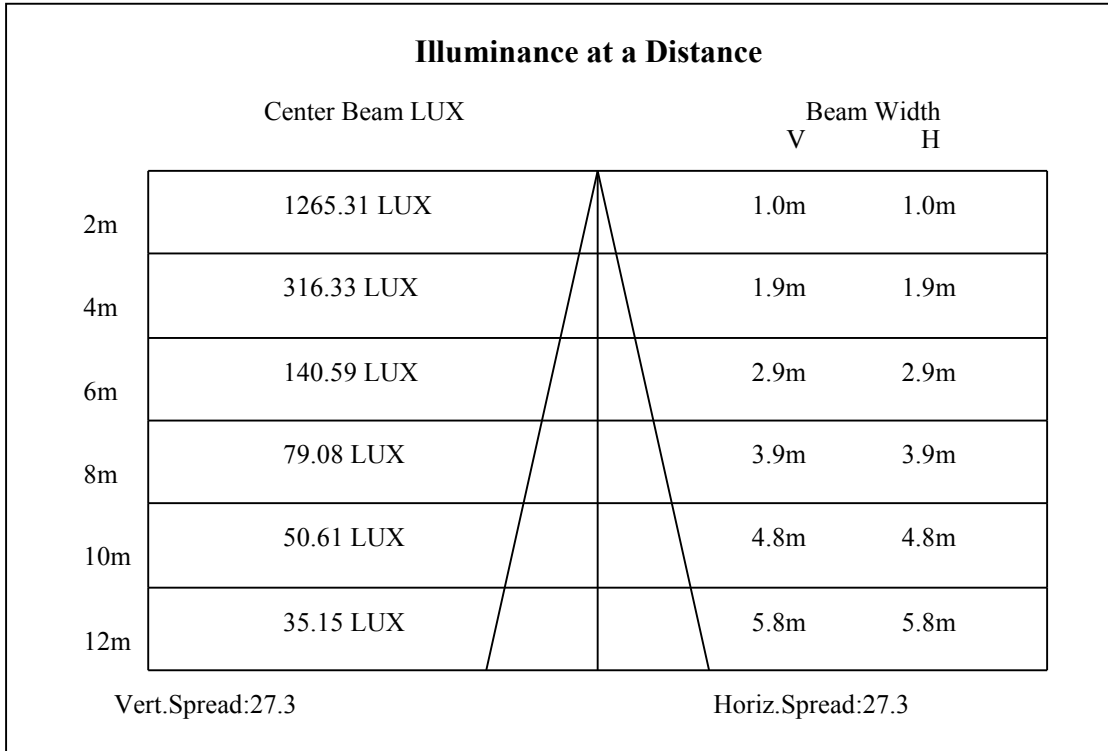
C90/C270: —————

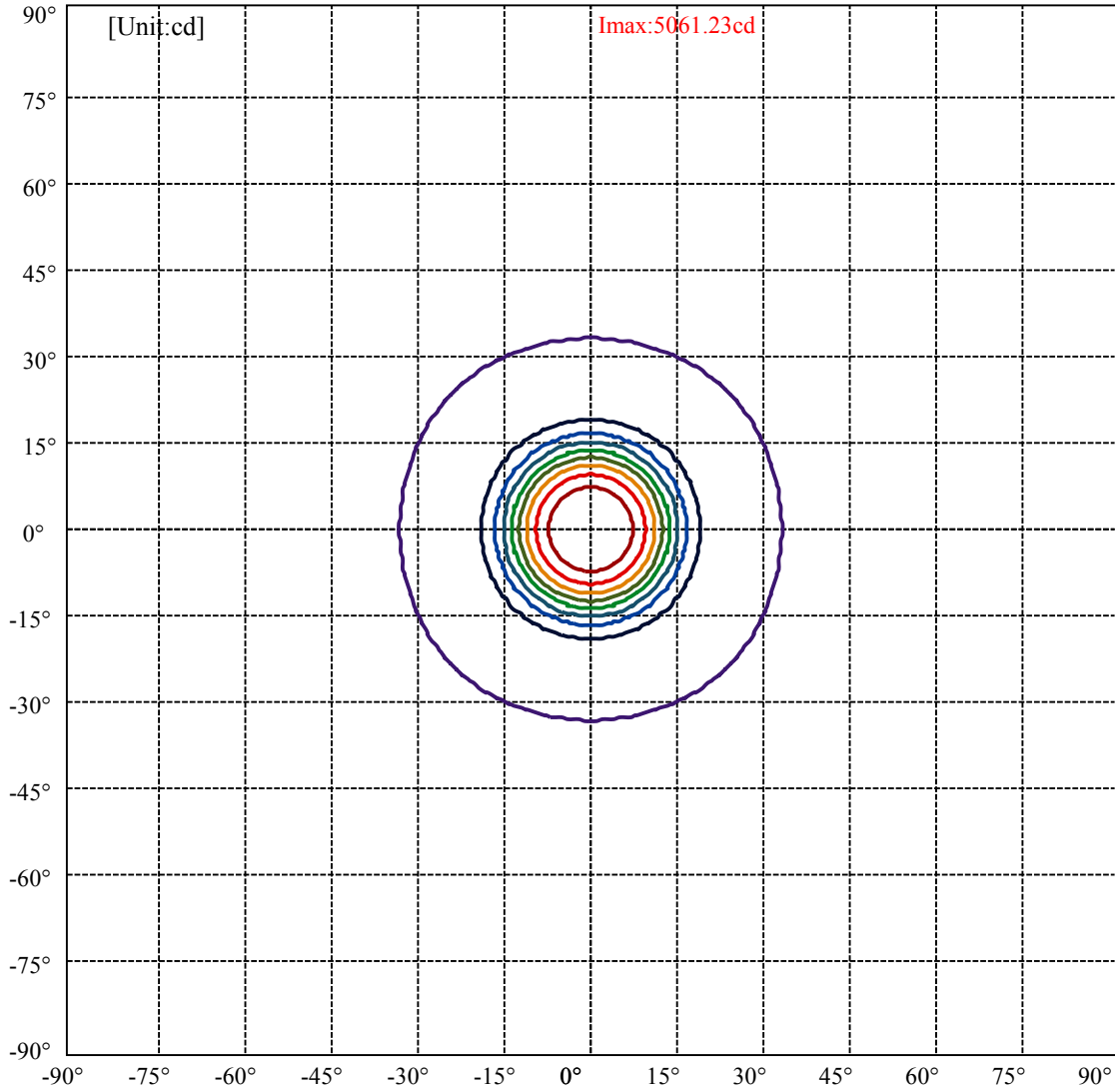
Field angle(10%Imax):C0/180Left:32.8 Right:32.8

:C90/270Left:32.8 Right:32.8

Beam Angle(50%Imax):C0/180Left:13.6 Right:13.6

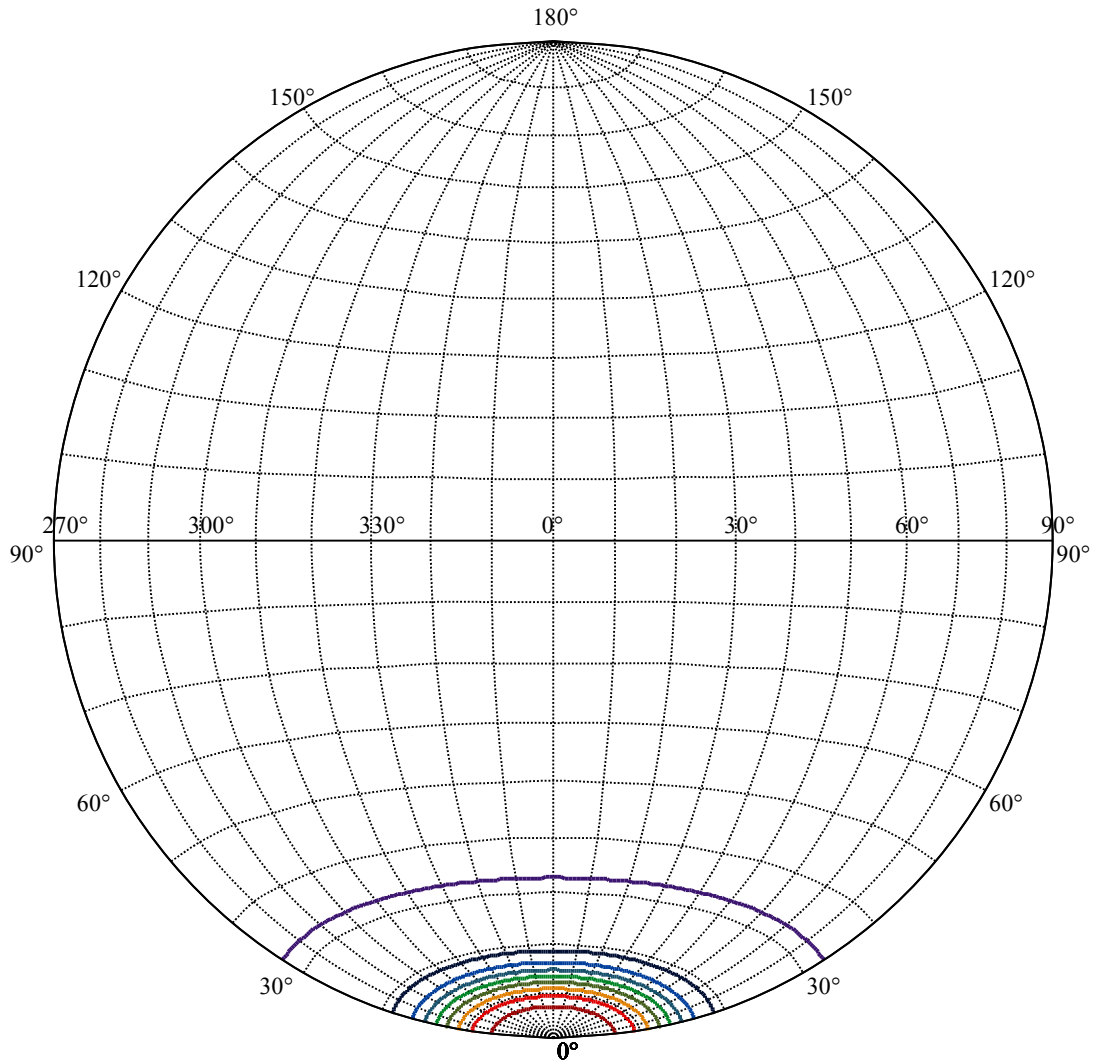
:C90/270Left:13.6 Right:13.6





(10%Imax) 506.123	—
(20%Imax) 1012.25	—
(30%Imax) 1518.37	—
(40%Imax) 2024.49	—
(50%Imax) 2530.62	—
(60%Imax) 3036.74	—
(70%Imax) 3542.86	—
(80%Imax) 4048.99	—
(90%Imax) 4555.11	—





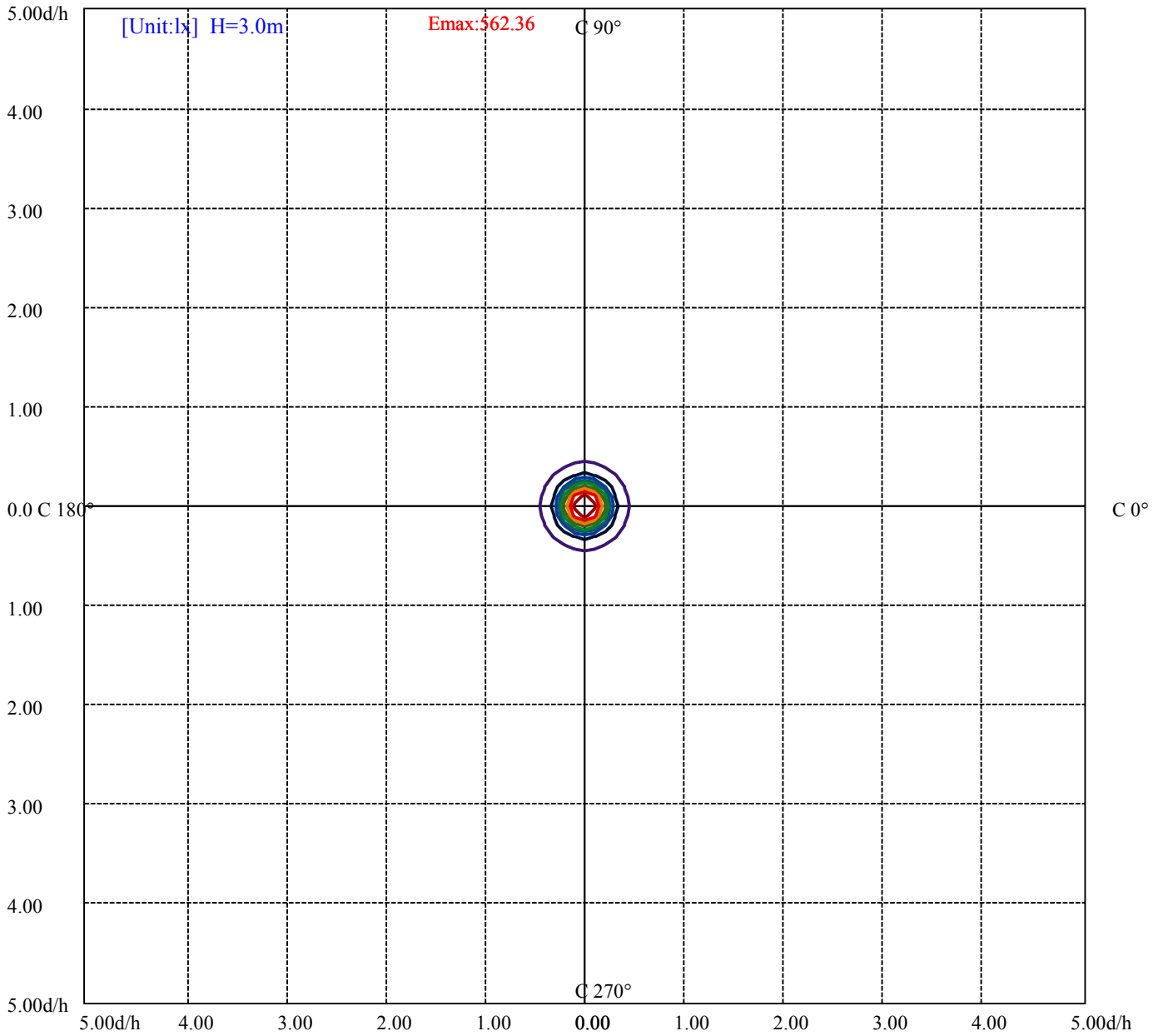
House

[Unit:cd]

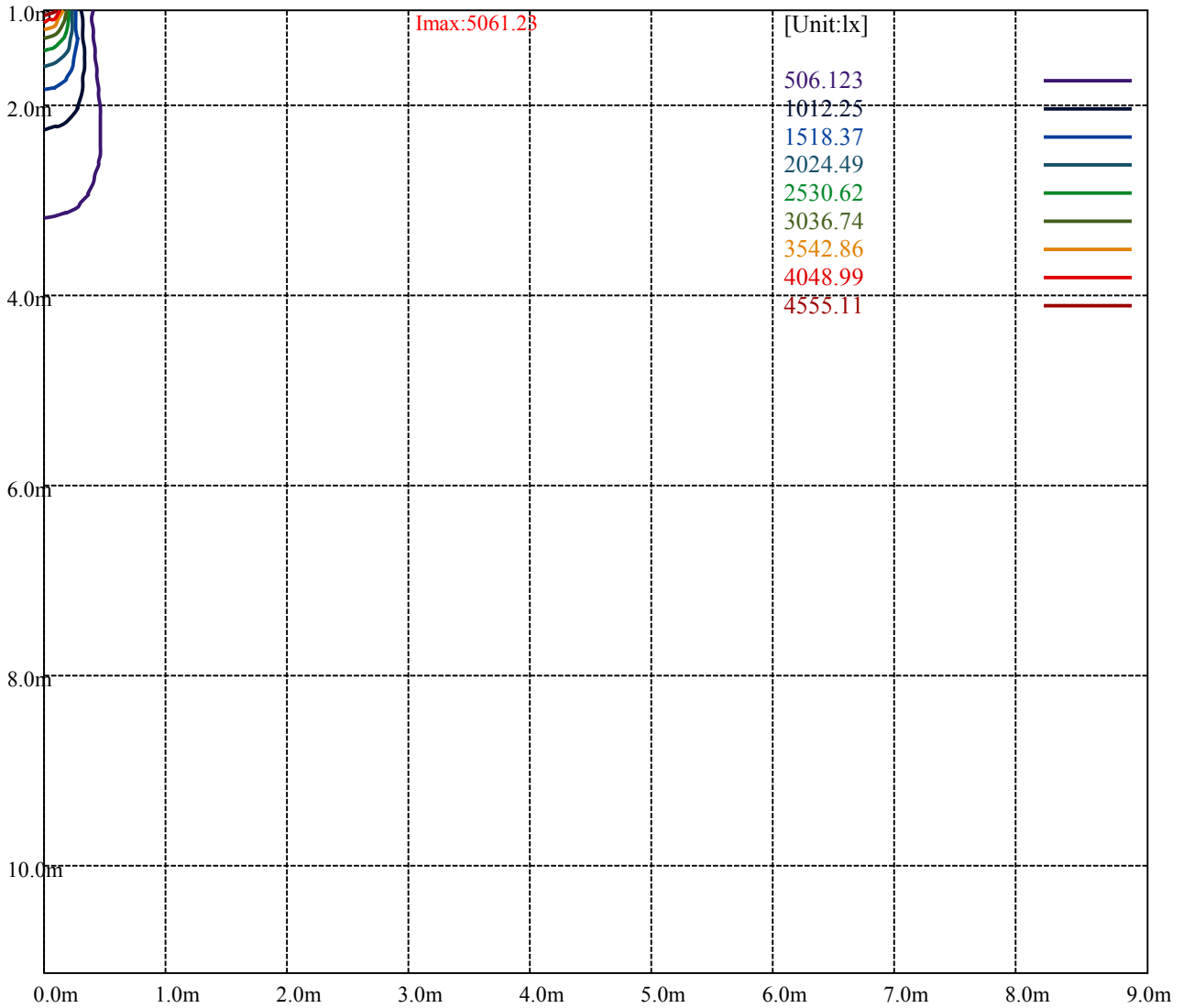
Road

Imax:5061.23

(10%Imax) 506.123	—
(20%Imax) 1012.25	—
(30%Imax) 1518.37	—
(40%Imax) 2024.49	—
(50%Imax) 2530.62	—
(60%Imax) 3036.74	—
(70%Imax) 3542.86	—
(80%Imax) 4048.99	—
(90%Imax) 4555.11	—



- (10%Emax) 56.23589
- (20%Emax) 112.4722
- (30%Emax) 168.7078
- (40%Emax) 224.9433
- (50%Emax) 281.18
- (60%Emax) 337.4156
- (70%Emax) 393.6511
- (80%Emax) 449.8878
- (90%Emax) 506.1233



Luminance Table

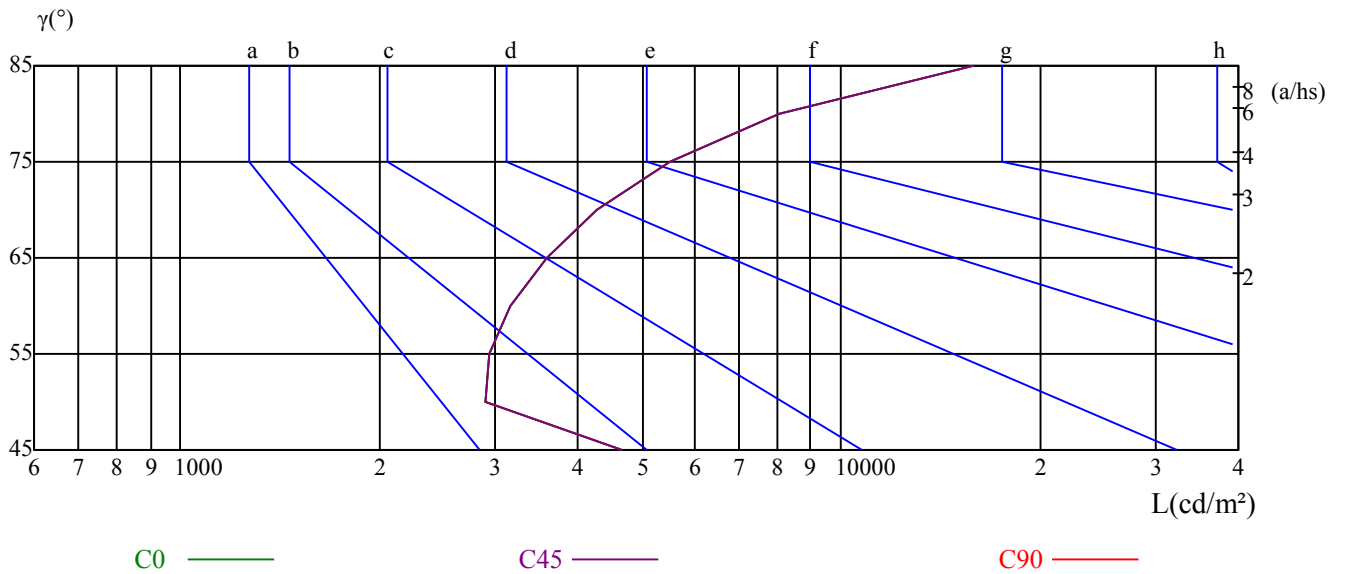
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4658	2905	2944	3156	3578	4278	5512	8086	15917
C45	4658	2905	2944	3156	3578	4278	5512	8086	15917
C90	4658	2905	2944	3156	3578	4278	5512	8086	15917

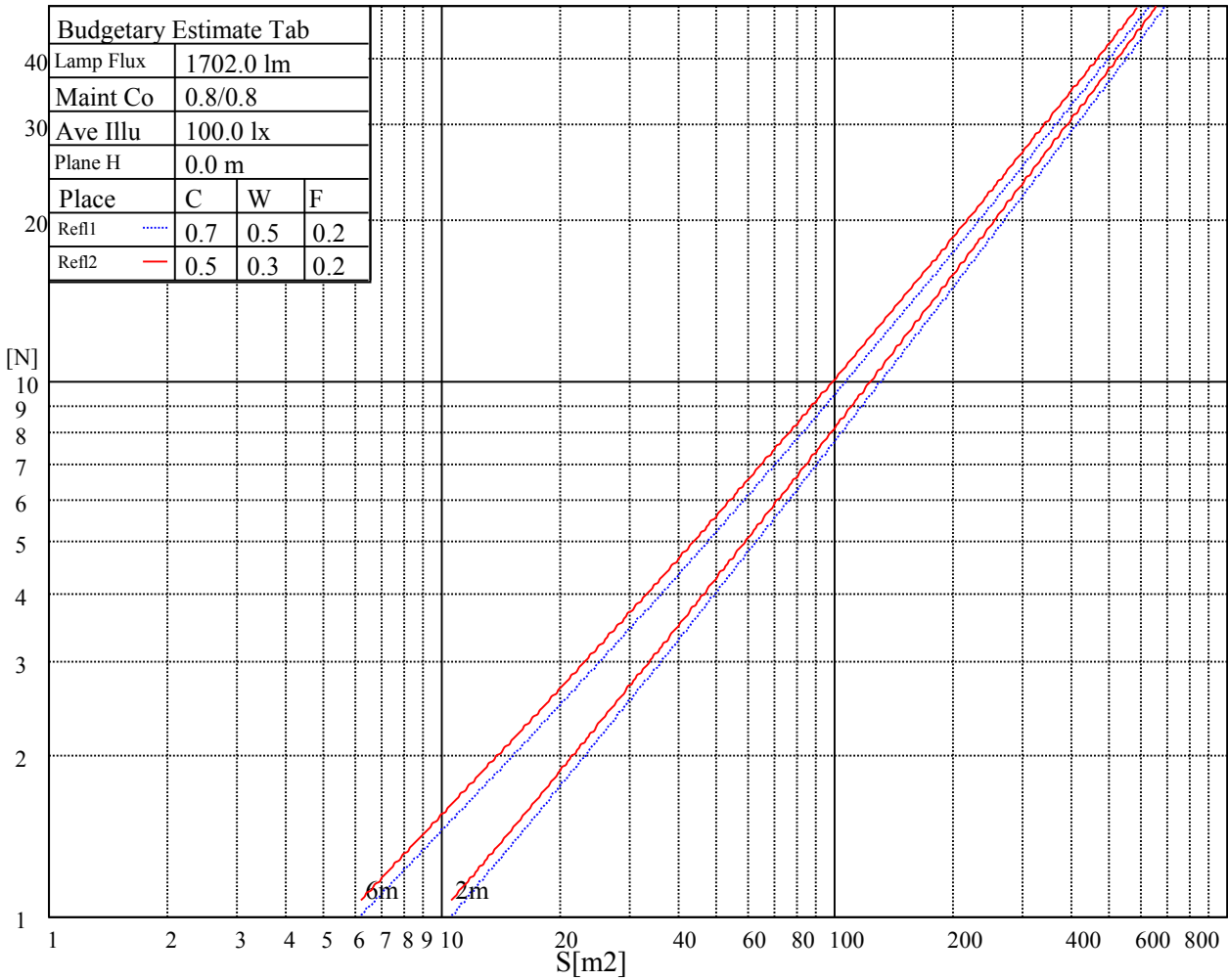
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3578	3578	3578	5512	5512	5512	15917	15917	15917

Glare Table

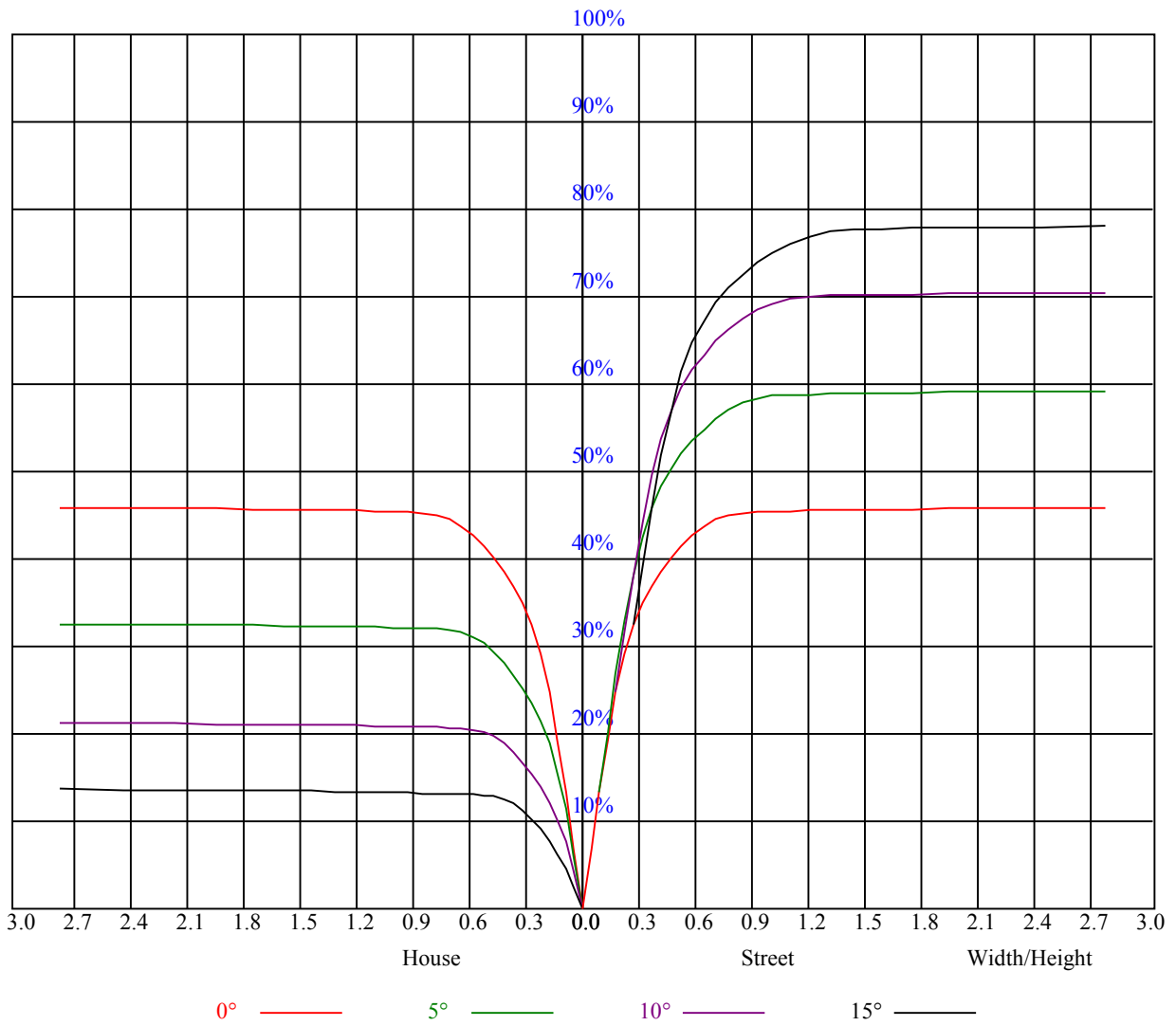
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

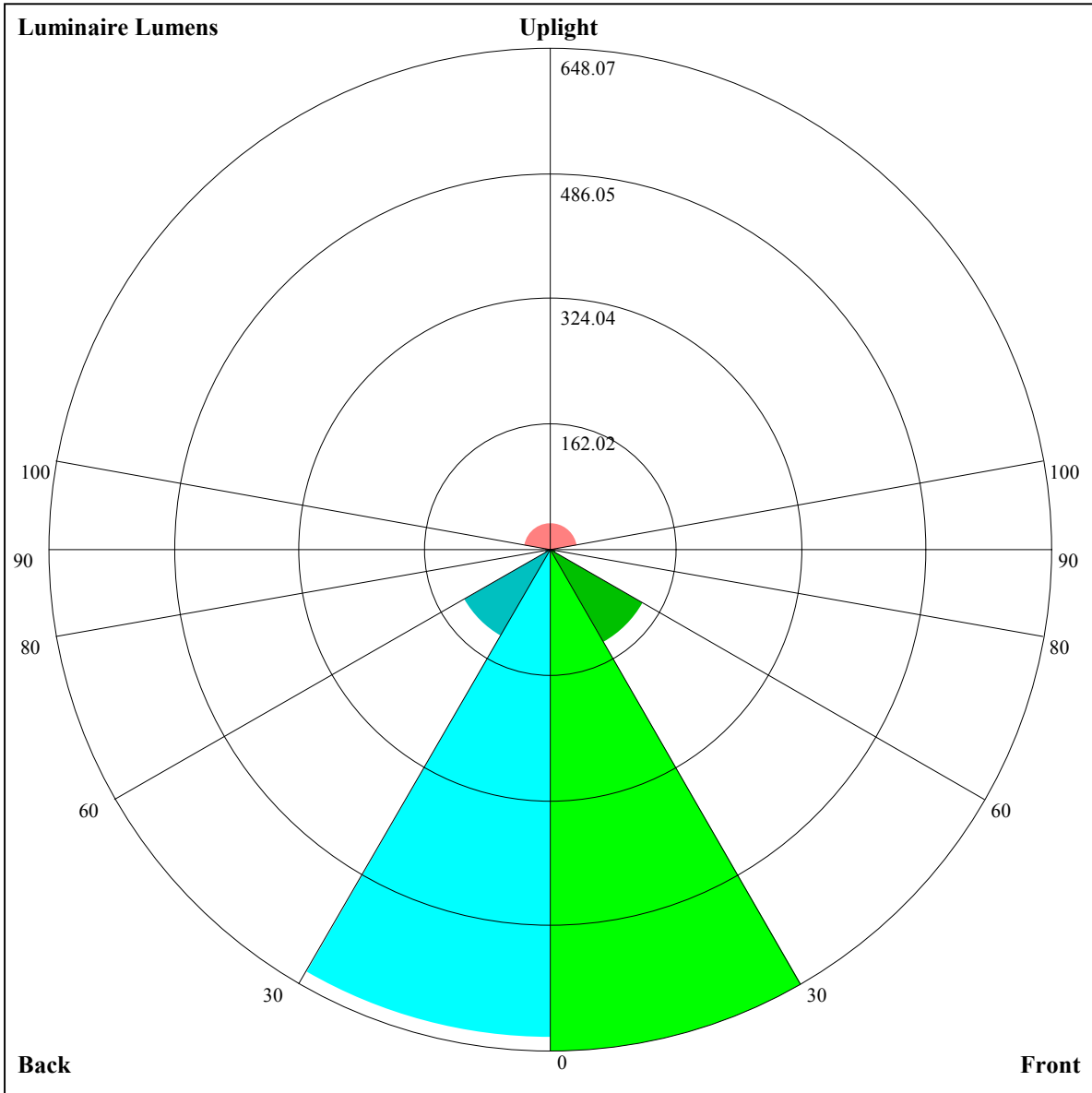
Luminance Limiting Curve





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	1.10	1.10	1.10	1.07	1.07	1.07	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.03	1.01	0.99	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
2	0.97	0.94	0.91	0.96	0.93	0.90	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.85	0.83
3	0.92	0.88	0.85	0.91	0.87	0.84	0.89	0.86	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.79
4	0.88	0.83	0.80	0.87	0.83	0.80	0.85	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.83	0.79	0.76	0.83	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.72
6	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.73	0.71	0.75	0.73	0.70	0.69
7	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.61
10	0.68	0.64	0.61	0.68	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.66	0.63	0.60	0.59





Luminaire Lumens:

FL=648.07,FM=139.64,FH=7.55,FVH=3.8

BL=630.4,BM=130.26,BH=7.55,BVH=3.79

UL=7.51,UH=35.74

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	5064.19	5037.75	4992.19	4939.31	4880.81	4820.06	4743.56	4628.81	4490.44
45.0	5064.19	5071.50	5045.63	5015.25	4967.44	4912.31	4857.19	4786.88	4656.38
90.0	5064.75	5064.75	5030.44	4973.63	4924.13	4866.75	4780.69	4654.13	4484.81
135.0	5051.81	5069.25	5047.88	4997.81	4934.81	4867.31	4798.13	4670.44	4507.31
180.0	5064.19	5060.25	5023.69	4951.13	4892.63	4824.00	4692.94	4550.06	4353.75
225.0	5064.19	5035.50	4973.63	4914.00	4859.44	4753.13	4646.81	4466.81	4201.31
270.0	5064.75	5036.63	4983.19	4923.00	4870.69	4780.69	4663.13	4506.19	4285.13
315.0	5051.81	5009.63	4954.50	4880.25	4826.81	4746.38	4620.94	4449.94	4243.50
360.0	5064.19	5037.75	4992.19	4939.31	4880.81	4820.06	4743.56	4628.81	4490.44
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4277.81	4009.50	3724.31	3396.94	2944.69	2567.25	2187.56	1745.44	1447.31
45.0	4471.31	4267.13	3964.50	3641.63	3241.69	2817.56	2421.56	1988.44	1624.50
90.0	4240.13	3942.56	3624.19	3224.81	2850.75	2417.06	2001.38	1672.88	1400.63
135.0	4283.44	3998.81	3684.94	3333.94	2869.88	2479.50	2104.31	1679.63	1420.88
180.0	4063.50	3784.50	3460.50	3029.63	2717.44	2313.00	1887.19	1622.81	1367.44
225.0	3972.94	3637.13	3206.81	2881.69	2508.19	2028.94	1756.69	1482.75	1102.89
270.0	4006.69	3719.25	3353.06	2988.56	2561.06	2148.19	1812.38	1485.56	1227.38
315.0	3971.81	3641.06	3304.13	2898.00	2525.63	2072.81	1738.13	1446.19	1113.24
360.0	4277.81	4009.50	3724.31	3396.94	2944.69	2567.25	2187.56	1745.44	1447.31
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1208.81	1017.56	886.50	804.94	740.25	696.38	669.38	644.06	623.81
45.0	1347.75	1120.50	947.81	846.00	773.44	717.19	679.50	653.06	631.13
90.0	1107.39	969.53	856.41	763.54	713.59	677.42	647.55	624.71	606.83
135.0	1209.94	1015.88	892.69	810.56	744.75	700.31	662.06	628.88	602.44
180.0	1113.64	959.85	844.76	754.48	691.93	653.51	624.43	593.61	573.64
225.0	1046.64	919.35	824.12	739.35	690.75	654.08	622.07	597.66	580.56
270.0	1050.75	929.81	798.75	736.31	698.06	658.13	635.06	618.75	598.50
315.0	980.83	883.46	803.70	728.83	695.87	667.74	642.71	620.89	602.78
360.0	1208.81	1017.56	886.50	804.94	740.25	696.38	669.38	644.06	623.81
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	603.56	585.56	570.94	559.13	544.50	534.38	525.38	492.75	447.75
45.0	610.31	594.56	576.56	563.63	550.13	537.75	526.50	510.75	468.00
90.0	588.15	573.08	556.26	542.36	532.29	522.28	513.51	491.12	452.25
135.0	578.81	560.81	547.31	537.19	527.06	518.63	510.19	478.13	441.00
180.0	557.89	543.15	531.62	523.46	514.29	503.55	477.51	432.00	387.23
225.0	564.64	552.60	542.25	532.07	523.52	502.31	459.56	411.13	357.64
270.0	582.75	571.50	555.75	545.63	536.06	524.81	505.69	469.13	407.81
315.0	584.16	568.29	553.16	540.62	530.61	521.55	503.27	463.67	414.90
360.0	603.56	585.56	570.94	559.13	544.50	534.38	525.38	492.75	447.75
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	397.13	333.56	287.44	203.01	143.04	96.30	52.14	28.46	20.70
45.0	419.63	362.25	293.63	285.75	179.55	120.88	68.51	36.23	21.60
90.0	391.39	338.91	283.95	214.82	160.03	108.00	58.05	27.73	21.83
135.0	390.38	342.00	285.75	209.31	163.80	101.19	51.64	27.11	20.53
180.0	329.06	265.56	208.24	154.01	92.47	49.95	24.41	19.35	17.66
225.0	288.84	232.09	176.74	109.63	63.73	31.28	18.84	16.88	14.85
270.0	351.56	295.31	219.49	164.48	113.29	61.93	28.74	18.90	16.48
315.0	348.02	288.28	228.66	159.81	110.70	67.16	34.54	19.91	17.61
360.0	397.13	333.56	287.44	203.01	143.04	96.30	52.14	28.46	20.70

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	18.23	14.96	12.77	11.53	9.96	9.56	9.34	9.17	8.83
45.0	19.58	17.33	14.63	12.88	10.86	9.79	9.51	9.28	9.06
90.0	19.29	17.16	14.68	12.88	10.86	9.39	9.17	9.00	8.78
135.0	18.39	16.37	13.95	12.49	10.63	9.39	9.11	8.94	8.78
180.0	15.47	13.11	11.87	10.63	9.51	9.23	9.06	8.83	8.72
225.0	12.49	11.48	10.58	9.73	9.45	9.23	9.00	8.83	8.66
270.0	13.73	11.70	10.80	10.13	9.39	9.17	9.00	8.78	8.61
315.0	14.91	12.15	10.86	10.07	9.39	9.11	8.89	8.72	8.55
360.0	18.23	14.96	12.77	11.53	9.96	9.56	9.34	9.17	8.83
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.72	8.55	8.38	8.27	8.16	8.04	7.88	7.82	7.76
45.0	8.89	8.72	8.55	8.44	8.33	8.21	8.10	7.99	7.93
90.0	8.66	8.49	8.44	8.27	8.16	8.04	7.99	7.88	7.82
135.0	8.66	8.49	8.38	8.27	8.16	8.10	7.99	7.93	7.82
180.0	8.55	8.44	8.33	8.21	8.10	7.99	7.88	7.82	7.71
225.0	8.55	8.38	8.27	8.16	8.04	7.99	7.88	7.76	7.71
270.0	8.49	8.38	8.21	8.16	8.04	7.93	7.82	7.76	7.71
315.0	8.44	8.27	8.16	8.04	7.93	7.88	7.76	7.71	7.65
360.0	8.72	8.55	8.38	8.27	8.16	8.04	7.88	7.82	7.76
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.65	7.59	7.54	7.48	7.43	7.37	7.31	7.31	7.26
45.0	7.88	7.76	7.71	7.65	7.59	7.54	7.48	7.43	7.37
90.0	7.76	7.71	7.65	7.54	7.54	7.43	7.43	7.37	7.31
135.0	7.76	7.71	7.65	7.59	7.48	7.43	7.43	7.37	7.31
180.0	7.65	7.59	7.54	7.54	7.48	7.43	7.37	7.31	7.26
225.0	7.65	7.59	7.59	7.48	7.43	7.43	7.37	7.31	7.31
270.0	7.59	7.54	7.48	7.48	7.43	7.37	7.31	7.31	7.26
315.0	7.59	7.54	7.48	7.43	7.37	7.31	7.26	7.26	7.20
360.0	7.65	7.59	7.54	7.48	7.43	7.37	7.31	7.31	7.26
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.26	7.20	7.14	7.14	7.09	7.09	7.09	7.03	7.03
45.0	7.31	7.31	7.26	7.20	7.20	7.14	7.14	7.14	7.09
90.0	7.26	7.20	7.20	7.14	7.14	7.09	7.09	7.03	7.03
135.0	7.26	7.26	7.14	7.14	7.09	7.09	7.03	7.03	7.03
180.0	7.26	7.20	7.20	7.14	7.09	7.09	7.09	7.03	6.98
225.0	7.26	7.20	7.20	7.20	7.14	7.14	7.09	7.09	7.09
270.0	7.20	7.20	7.14	7.14	7.14	7.09	7.09	7.03	7.03
315.0	7.14	7.14	7.14	7.09	7.09	7.03	7.03	7.03	7.03
360.0	7.26	7.20	7.14	7.14	7.09	7.09	7.09	7.03	7.03
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.98	7.03	6.98	6.98	6.92	6.92	6.92	6.86	6.86
45.0	7.09	7.03	7.03	7.03	6.98	6.98	6.98	6.98	6.92
90.0	6.98	6.98	6.98	6.98	6.98	6.92	6.92	6.92	6.86
135.0	6.98	6.98	6.98	6.92	6.98	6.92	6.86	6.86	6.86
180.0	6.98	6.98	6.92	6.92	6.92	6.92	6.86	6.86	6.86
225.0	7.03	7.03	7.03	6.98	6.98	6.98	6.92	6.92	6.92
270.0	7.03	7.03	6.98	6.98	6.98	6.98	6.98	6.92	6.86
315.0	6.98	6.92	6.98	6.92	6.92	6.92	6.92	6.86	6.86
360.0	6.98	7.03	6.98	6.98	6.92	6.92	6.92	6.86	6.86

Intensity data(cd)

C/ $\gamma$ ( $^{\circ}$ )	90.0
0.0	6.86
45.0	6.92
90.0	6.92
135.0	6.86
180.0	6.86
225.0	6.92
270.0	6.86
315.0	6.86
360.0	6.86