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## Nata

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Client:

LumCAT: 3-2033-M

Luminaire: 92.70.131.00

Report No:

Voltage(V): 34.3900

Test No: GC20190824010

Current(A): 0.3970

LampCAT: TRIDONIC SLE 13MM G7

Power (W): 13.6500

Lamp flux(lm): 1702.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 79

Width(mm): 79

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1444.86, Efficiency(%): 84.89% , Luminous Efficacy(lm/W): 105.85

Central intensity(cd): 12318.750, Maximum intensity(cd): 12318.750

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

Beam Angle(50%Imax): [C0/180]Total=13.8

[C90/270]Total=13.8

Field angle(10%Imax): [C0/180]Total=27.4

[C90/270]Total=27.4

Maximum s/h(1/2): C0\_180=0.24 C90\_270=0.24

Maximum s/h(1/4): C0\_180=0.24 C90\_270=0.24

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 84.89%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.563%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2019/8/24  
Humidity(%): 65.0%

Operator: NT07  
Distance(m): 7.50

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12318.750	0.000	0	.000%	.000%
1.0	12101.133	11.684	11.684	.687%	.809%
2.0	11593.758	34.009	45.694	1.998%	3.162%
3.0	10847.883	53.673	99.367	3.154%	6.877%
4.0	9817.875	69.175	168.542	4.064%	11.665%
5.0	8644.078	79.422	247.964	4.666%	17.162%
6.0	7398.492	84.308	332.272	4.953%	22.997%
7.0	6064.875	83.567	415.839	4.910%	28.781%
8.0	4986.422	79.092	494.931	4.647%	34.255%
9.0	3888.563	71.927	566.858	4.226%	39.233%
10.0	2944.828	61.840	628.697	3.633%	43.513%
11.0	2308.781	52.494	681.192	3.084%	47.146%
12.0	1876.008	45.746	726.937	2.688%	50.312%
13.0	1392.490	38.789	765.726	2.279%	52.997%
14.0	1169.824	32.797	798.524	1.927%	55.266%
15.0	1031.063	30.215	828.738	1.775%	57.358%
16.0	905.794	28.380	857.119	1.667%	59.322%
17.0	821.370	26.897	884.015	1.580%	61.183%
18.0	755.205	25.994	910.01	1.527%	62.983%
19.0	702.155	25.355	935.365	1.490%	64.737%
20.0	659.939	24.930	960.295	1.465%	66.463%
21.0	627.792	24.727	985.022	1.453%	68.174%
22.0	602.241	24.718	1009.74	1.452%	69.885%
23.0	580.669	24.821	1034.561	1.458%	71.603%
24.0	563.977	25.026	1059.587	1.470%	73.335%
25.0	549.084	25.309	1084.895	1.487%	75.087%
26.0	536.168	25.618	1110.513	1.505%	76.860%
27.0	524.391	25.947	1136.46	1.524%	78.655%
28.0	513.696	26.282	1162.742	1.544%	80.474%
29.0	504.619	26.642	1189.384	1.565%	82.318%
30.0	496.835	27.039	1216.423	1.589%	84.190%
31.0	487.104	27.382	1243.804	1.609%	86.085%
32.0	470.805	27.443	1271.247	1.612%	87.984%
33.0	441.802	26.886	1298.133	1.580%	89.845%
34.0	392.730	25.255	1323.388	1.484%	91.593%
35.0	334.498	22.585	1345.973	1.327%	93.156%
36.0	278.719	19.525	1365.498	1.147%	94.507%
37.0	209.264	15.915	1381.414	.935%	95.609%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	148.226	11.933	1393.346	.701%	96.435%
39.0	90.907	8.162	1401.508	.480%	97.000%
40.0	47.883	4.840	1406.349	.284%	97.335%
41.0	25.263	2.605	1408.954	.153%	97.515%
42.0	16.249	1.508	1410.462	.089%	97.619%
43.0	13.859	1.115	1411.577	.066%	97.696%
44.0	12.030	0.977	1412.554	.057%	97.764%
45.0	10.673	0.873	1413.427	.051%	97.824%
46.0	9.696	0.797	1414.223	.047%	97.880%
47.0	9.239	0.753	1414.976	.044%	97.932%
48.0	8.979	0.736	1415.713	.043%	97.983%
49.0	8.740	0.728	1416.441	.043%	98.033%
50.0	8.529	0.720	1417.161	.042%	98.083%
51.0	8.346	0.714	1417.875	.042%	98.132%
52.0	8.163	0.708	1418.583	.042%	98.181%
53.0	8.002	0.703	1419.286	.041%	98.230%
54.0	7.840	0.698	1419.984	.041%	98.278%
55.0	7.685	0.693	1420.677	.041%	98.326%
56.0	7.559	0.689	1421.366	.040%	98.374%
57.0	7.439	0.686	1422.052	.040%	98.421%
58.0	7.341	0.683	1422.735	.040%	98.469%
59.0	7.249	0.682	1423.417	.040%	98.516%
60.0	7.172	0.681	1424.099	.040%	98.563%
61.0	7.109	0.681	1424.78	.040%	98.610%
62.0	7.031	0.681	1425.462	.040%	98.657%
63.0	6.968	0.681	1426.142	.040%	98.705%
64.0	6.919	0.681	1426.824	.040%	98.752%
65.0	6.863	0.682	1427.506	.040%	98.799%
66.0	6.820	0.683	1428.189	.040%	98.846%
67.0	6.785	0.684	1428.873	.040%	98.893%
68.0	6.743	0.685	1429.558	.040%	98.941%
69.0	6.708	0.686	1430.244	.040%	98.988%
70.0	6.680	0.688	1430.932	.040%	99.036%
71.0	6.645	0.689	1431.62	.040%	99.084%
72.0	6.616	0.690	1432.31	.041%	99.131%
73.0	6.595	0.691	1433.001	.041%	99.179%
74.0	6.574	0.692	1433.693	.041%	99.227%
75.0	6.567	0.694	1434.388	.041%	99.275%

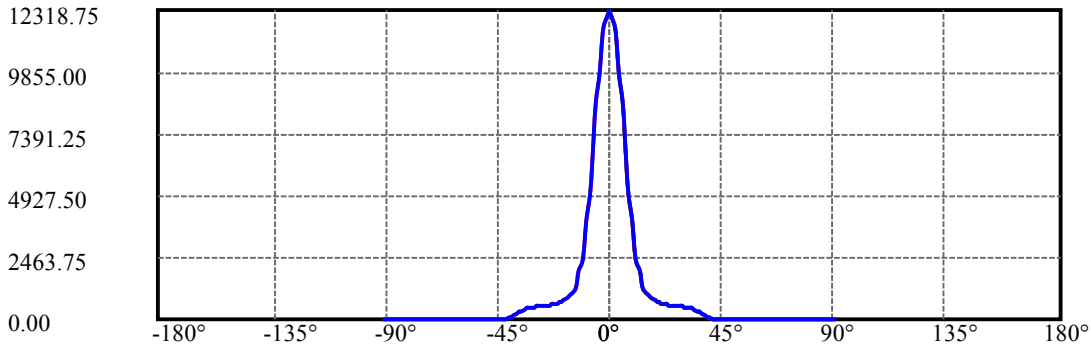
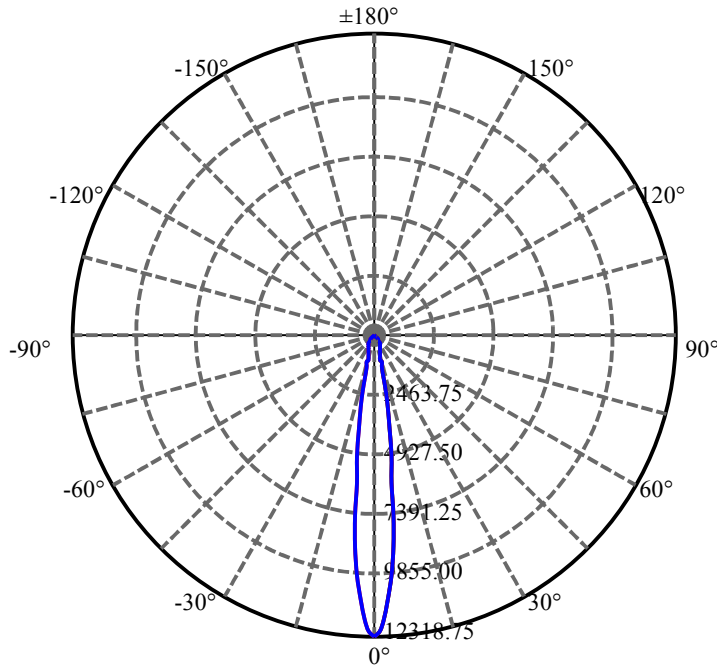
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	6.532	0.695	1435.083	.041%	99.323%
77.0	6.518	0.696	1435.779	.041%	99.371%
78.0	6.497	0.697	1436.475	.041%	99.420%
79.0	6.490	0.698	1437.173	.041%	99.468%
80.0	6.469	0.699	1437.872	.041%	99.516%
81.0	6.448	0.698	1438.57	.041%	99.565%
82.0	6.441	0.699	1439.269	.041%	99.613%
83.0	6.434	0.700	1439.969	.041%	99.661%
84.0	6.434	0.701	1440.67	.041%	99.710%
85.0	6.420	0.701	1441.371	.041%	99.759%
86.0	6.377	0.699	1442.071	.041%	99.807%
87.0	6.391	0.699	1442.77	.041%	99.855%
88.0	6.356	0.698	1443.468	.041%	99.904%
89.0	6.349	0.696	1444.164	.041%	99.952%
90.0	6.342	0.696	1444.86	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1216.42	71.47%	84.19%
0-40	1406.35	82.63%	97.33%
0-60	1424.10	83.67%	98.56%
0-90	1444.16	84.85%	99.95%
0-120	1444.16	84.85%	99.95%
0-180	1444.86	84.89%	100.00%
60-90	20.75	1.22%	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%
0-27.74	1155.89	67.91%	80.00%

ZONAL LUMEN SUMMARY

0-10	628.70
10-20	331.60
20-30	256.13
30-40	189.93
40-50	10.81
50-60	6.94
60-70	6.83
70-80	6.94
80-90	6.29
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



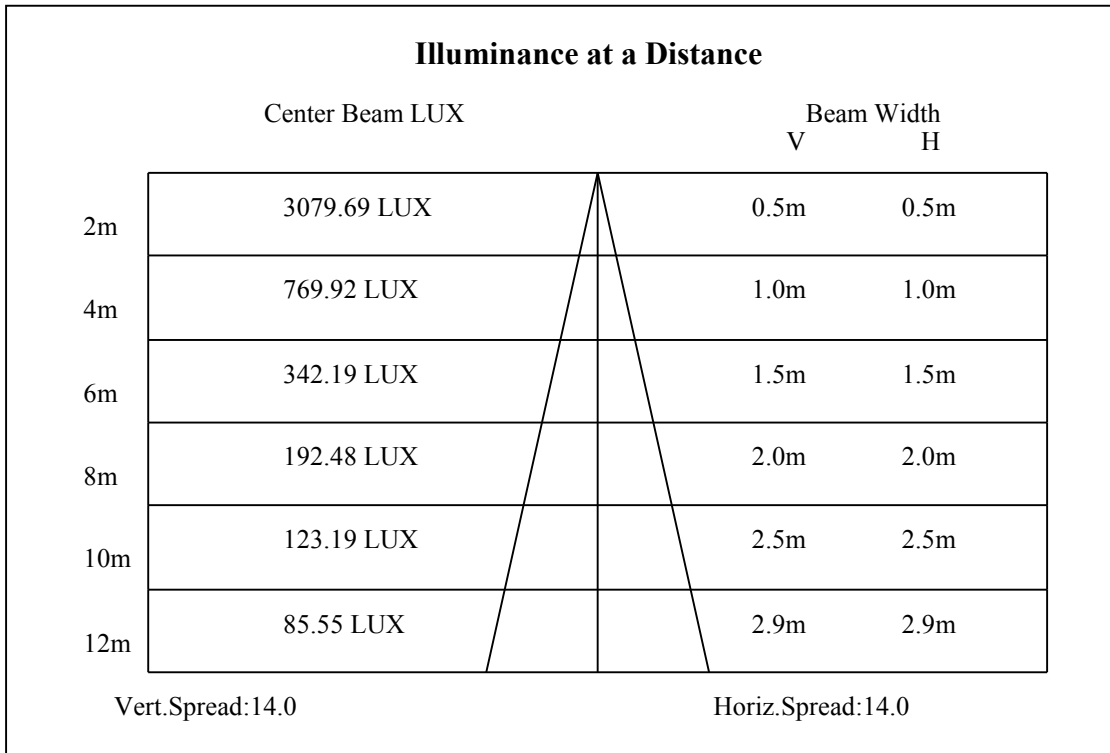
C0(Max): —————

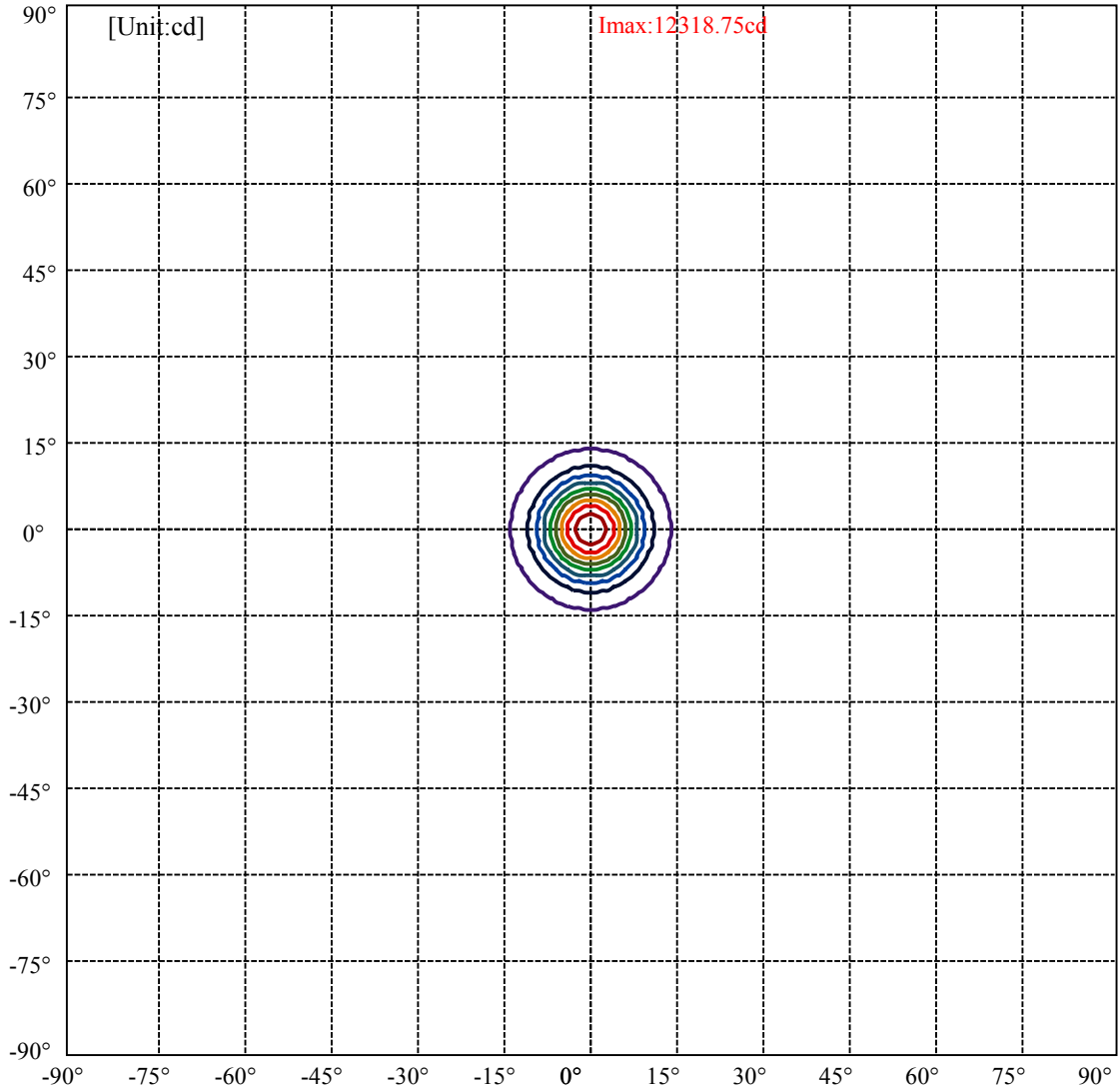
C0/C180: —————

C90/C270: —————

Field angle(10%Imax):C0/180Left:13.7 Right:13.7  
:C90/270Left:13.7 Right:13.7

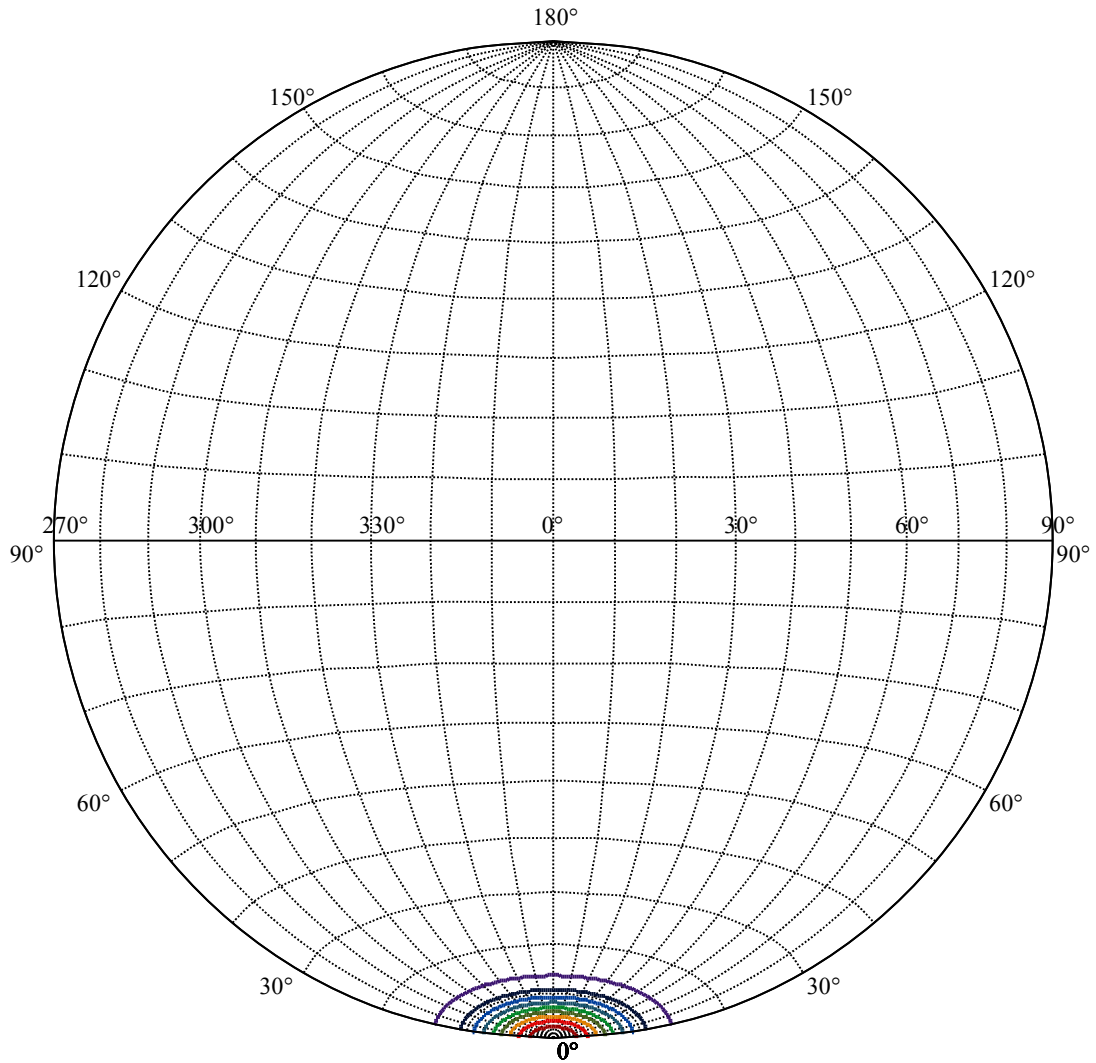
Beam Angle(50%Imax):C0/180Left:6.9 Right:6.9  
:C90/270Left:6.9 Right:6.9





(10%I <sub>max</sub> ) 1231.88	—
(20%I <sub>max</sub> ) 2463.75	—
(30%I <sub>max</sub> ) 3695.63	—
(40%I <sub>max</sub> ) 4927.5	—
(50%I <sub>max</sub> ) 6159.38	—
(60%I <sub>max</sub> ) 7391.25	—
(70%I <sub>max</sub> ) 8623.13	—
(80%I <sub>max</sub> ) 9855	—
(90%I <sub>max</sub> ) 11086.9	—





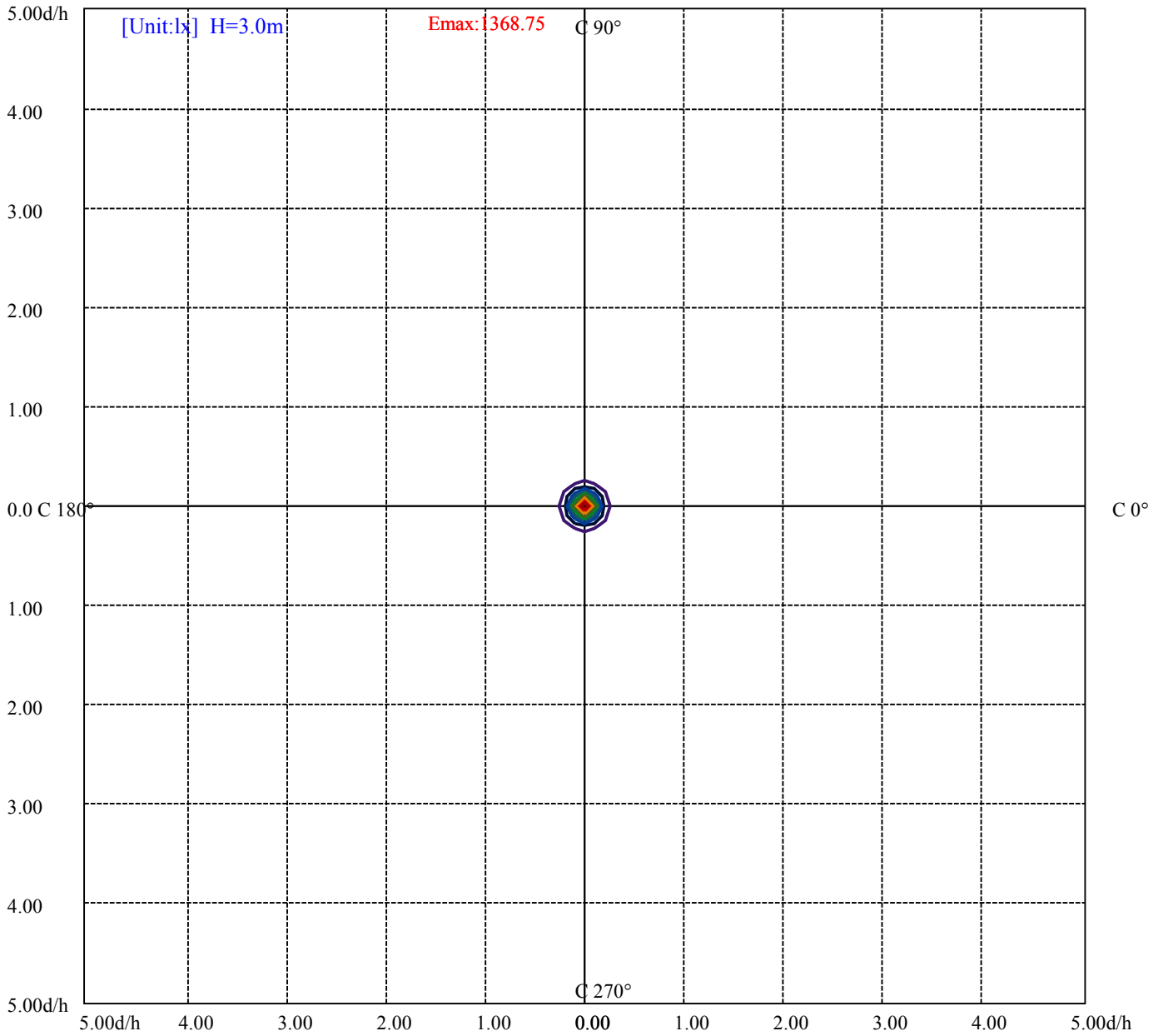
House

[Unit:cd]

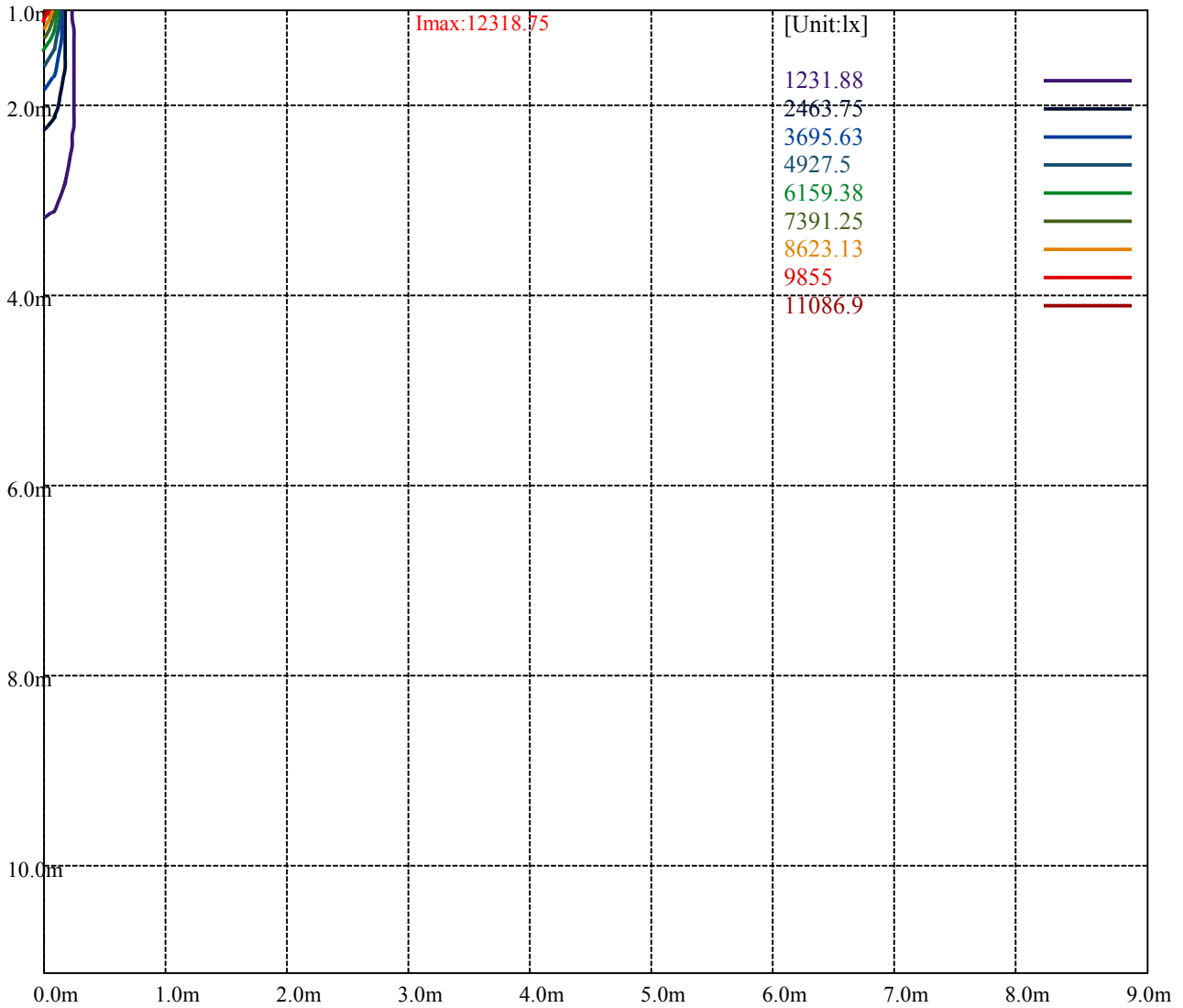
Road

**Imax:12318.75**

(10%Imax) 1231.88	—
(20%Imax) 2463.75	—
(30%Imax) 3695.63	—
(40%Imax) 4927.5	—
(50%Imax) 6159.38	—
(60%Imax) 7391.25	—
(70%Imax) 8623.13	—
(80%Imax) 9855	—
(90%Imax) 11086.9	—



- (10%Emax) 136.8745
- (20%Emax) 273.7489
- (30%Emax) 410.6234
- (40%Emax) 547.4989
- (50%Emax) 684.3733
- (60%Emax) 821.2478
- (70%Emax) 958.1222
- (80%Emax) 1094.997
- (90%Emax) 1231.867



Luminance Table

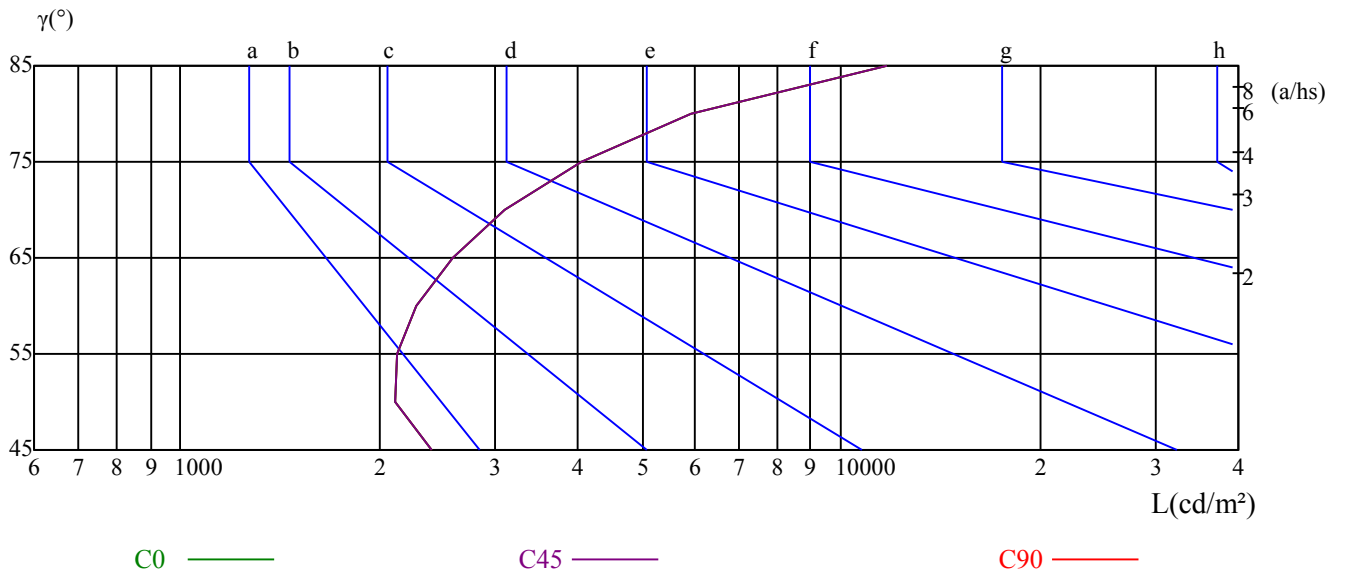
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2400	2110	2131	2281	2582	3106	4035	5924	11713
C45	2400	2110	2131	2281	2582	3106	4035	5924	11713
C90	2400	2110	2131	2281	2582	3106	4035	5924	11713

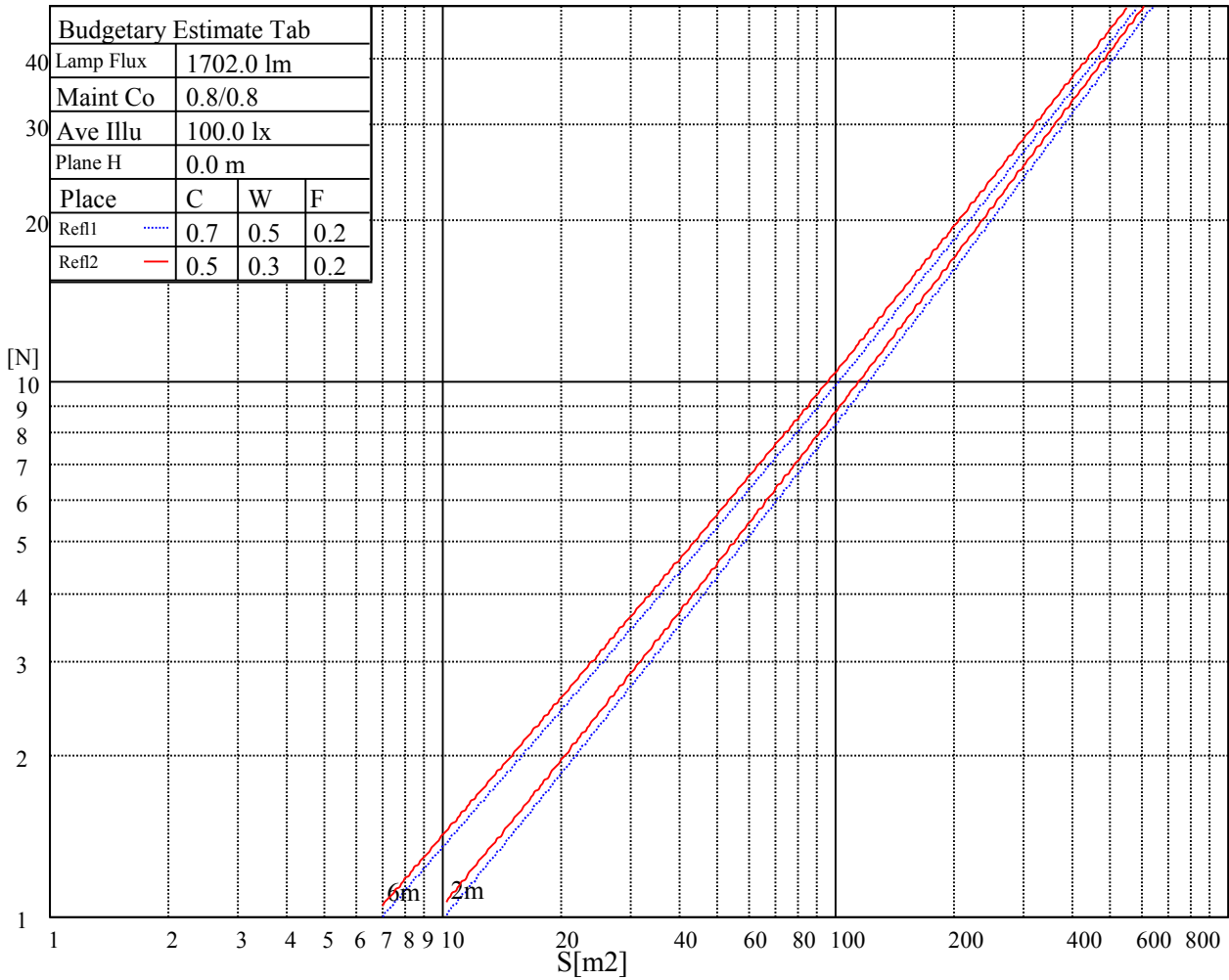
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2582	2582	2582	4035	4035	4035	11713	11713	11713

Glare Table

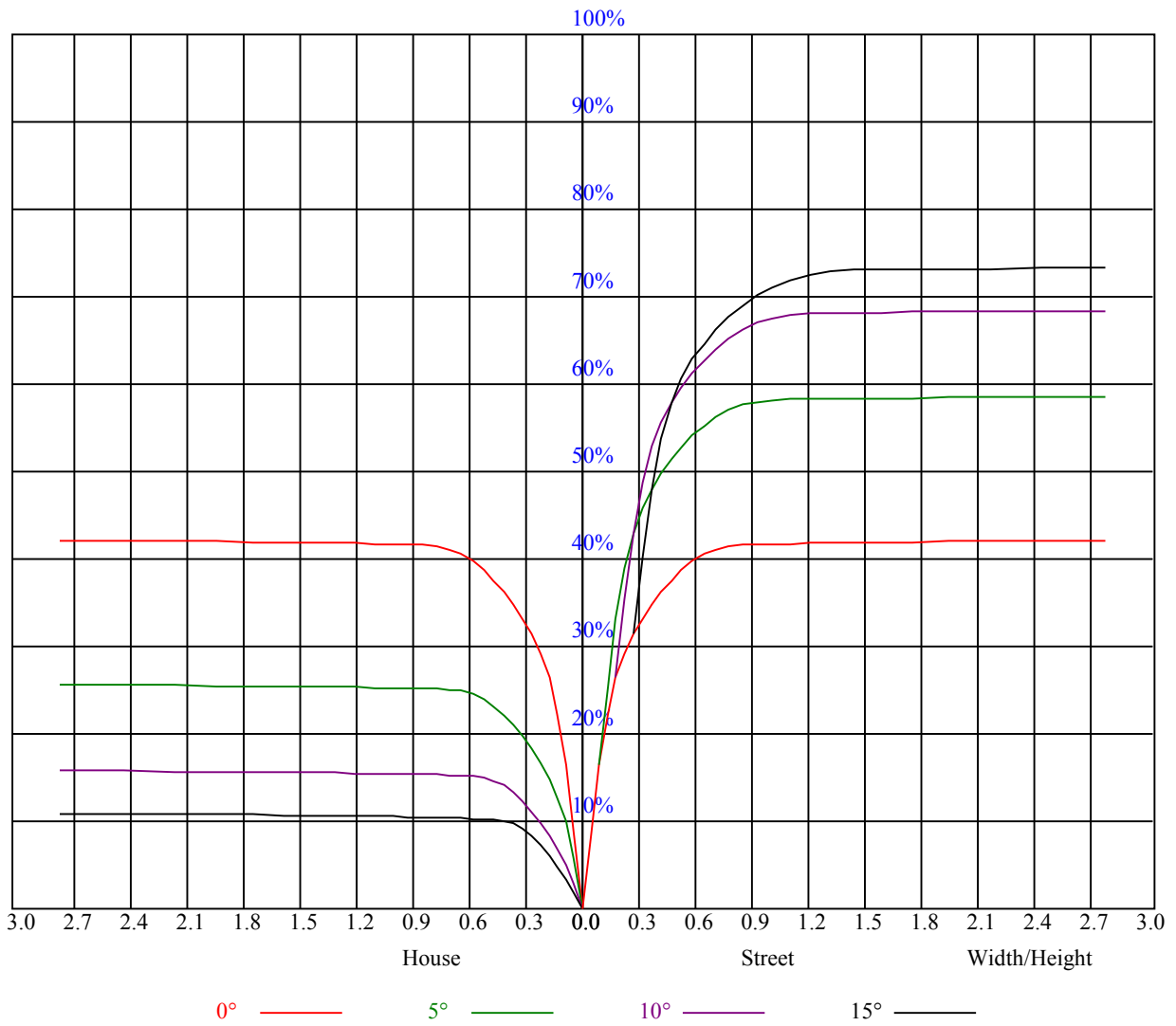
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

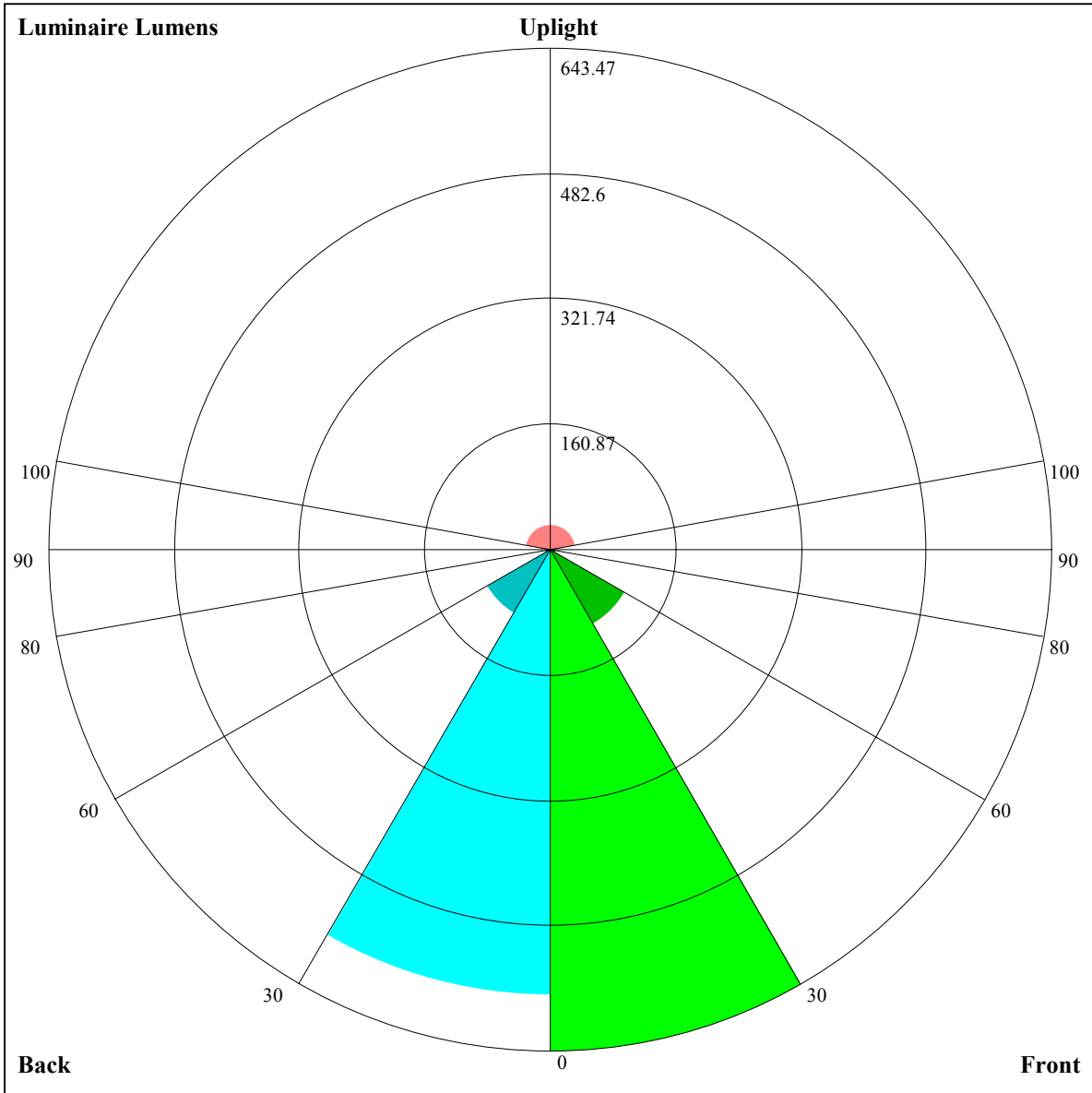
Luminance Limiting Curve





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





Luminaire Lumens:

FL=643.47,FM=110.4,FH=6.88,FVH=3.5

BL=572.35,BM=95.31,BH=6.89,BVH=3.5

UL=6.92,UH=32.93

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	12335.63	12470.63	12161.25	11570.63	10642.50	9483.75	8386.88	7093.13	5985.00
45.0	12183.75	12470.63	12358.13	11851.88	11171.25	10158.75	8943.75	7756.88	6558.75
90.0	12358.13	12262.50	11851.88	11150.44	10133.44	9051.19	7866.56	6184.69	5175.56
135.0	12397.50	12262.50	11745.00	10935.00	10018.13	8803.13	7425.00	6193.13	5045.63
180.0	12335.63	11885.63	11129.63	10212.75	8976.38	7764.19	6380.44	5064.75	4011.75
225.0	12183.75	11202.19	10792.13	9657.00	8353.13	7108.88	5923.13	4570.31	3608.44
270.0	12358.13	12110.63	11520.00	10625.63	9596.25	8263.13	6890.63	5720.63	4640.63
315.0	12397.50	12144.38	11192.06	10779.75	9651.94	8519.63	7371.56	5935.50	4865.63
360.0	12335.63	12470.63	12161.25	11570.63	10642.50	9483.75	8386.88	7093.13	5985.00
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4815.00	3740.63	2919.38	2535.19	1697.06	1393.88	1202.63	1005.19	883.69
45.0	5169.38	4140.00	3206.25	2891.25	1787.06	1452.94	1200.94	1029.94	919.69
90.0	4126.50	2889.00	2273.63	1774.69	1415.25	1114.82	1027.18	911.48	821.76
135.0	3780.00	2891.25	2473.31	1704.38	1342.13	1149.19	1007.44	883.13	810.00
180.0	3093.19	2198.81	1725.19	1416.94	1105.76	1023.24	917.27	827.27	760.28
225.0	2782.13	2017.69	1617.75	1342.13	1108.41	975.26	875.98	803.42	739.74
270.0	3453.75	2846.25	2066.06	1603.69	1315.13	1139.63	992.81	882.56	810.00
315.0	3888.56	2835.00	2188.69	1739.81	1369.13	1109.64	1024.26	903.38	825.81
360.0	4815.00	3740.63	2919.38	2535.19	1697.06	1393.88	1202.63	1005.19	883.69
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	813.94	739.69	690.19	658.69	624.94	602.44	583.31	564.19	549.56
45.0	827.44	763.31	705.94	662.06	631.13	599.06	575.44	559.13	545.63
90.0	748.91	698.51	655.37	623.48	598.73	575.55	559.18	543.09	529.14
135.0	748.69	693.00	649.13	622.13	595.69	574.88	558.00	545.63	534.38
180.0	709.99	662.79	628.09	597.83	573.98	557.94	545.51	532.52	521.83
225.0	690.13	655.20	625.44	600.53	582.08	565.59	553.22	539.49	528.41
270.0	745.31	699.75	658.13	624.94	603.00	584.44	568.69	556.31	542.25
315.0	757.24	704.98	667.24	632.70	608.40	585.45	568.46	552.32	538.14
360.0	813.94	739.69	690.19	658.69	624.94	602.44	583.31	564.19	549.56
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	538.31	523.69	514.13	507.38	497.81	490.50	483.75	459.00	413.44
45.0	529.88	518.63	509.63	501.19	492.19	484.31	476.44	448.88	403.88
90.0	517.78	507.43	497.98	490.39	482.23	468.62	432.62	385.59	323.33
135.0	520.88	510.19	502.31	494.44	483.19	475.31	455.63	390.38	333.56
180.0	513.68	502.48	494.16	486.28	475.76	454.16	413.04	352.86	286.03
225.0	518.96	510.30	500.01	492.24	480.77	430.71	375.30	315.51	245.64
270.0	528.75	520.88	512.44	503.44	493.88	481.50	442.69	378.56	318.38
315.0	526.89	515.98	506.31	499.33	491.01	481.33	454.95	411.08	351.73
360.0	538.31	523.69	514.13	507.38	497.81	490.50	483.75	459.00	413.44
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	360.56	293.06	245.53	152.78	89.83	45.96	17.89	15.69	13.95
45.0	344.81	288.00	218.93	159.47	96.58	49.05	18.68	15.41	13.73
90.0	257.68	200.25	136.24	78.24	37.46	17.78	16.20	13.78	11.42
135.0	289.69	203.23	138.88	89.16	42.69	20.81	16.48	14.23	12.15
180.0	224.38	158.34	104.46	54.90	23.91	16.76	15.19	12.71	11.14
225.0	177.19	121.28	65.53	28.74	17.66	15.64	13.89	11.87	10.80
270.0	290.25	186.36	120.60	70.71	28.58	17.55	15.69	13.33	11.53
315.0	285.19	223.59	155.64	93.26	46.35	18.56	15.98	13.84	11.53
360.0	360.56	293.06	245.53	152.78	89.83	45.96	17.89	15.69	13.95

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	11.93	10.46	9.51	9.11	8.83	8.61	8.44	8.21	8.04
45.0	11.64	10.18	9.23	9.06	8.72	8.55	8.38	8.16	8.04
90.0	10.52	9.28	8.94	8.72	8.55	8.33	8.16	7.99	7.88
135.0	10.69	9.34	9.11	8.83	8.61	8.44	8.27	8.10	7.93
180.0	9.90	9.39	9.17	8.94	8.72	8.49	8.33	8.16	7.99
225.0	9.90	9.62	9.34	9.06	8.89	8.66	8.44	8.33	8.16
270.0	10.52	9.79	9.45	9.17	8.89	8.66	8.44	8.21	7.99
315.0	10.29	9.51	9.17	8.94	8.72	8.49	8.33	8.16	7.99
360.0	11.93	10.46	9.51	9.11	8.83	8.61	8.44	8.21	8.04
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.88	7.76	7.65	7.48	7.37	7.31	7.20	7.14	7.03
45.0	7.93	7.76	7.65	7.54	7.37	7.31	7.26	7.14	7.09
90.0	7.76	7.65	7.48	7.37	7.31	7.20	7.09	7.09	6.98
135.0	7.82	7.65	7.54	7.43	7.37	7.26	7.20	7.14	7.03
180.0	7.82	7.65	7.54	7.43	7.37	7.26	7.20	7.09	7.03
225.0	7.88	7.65	7.54	7.43	7.31	7.26	7.14	7.09	7.03
270.0	7.82	7.65	7.54	7.43	7.31	7.20	7.14	7.09	7.03
315.0	7.82	7.71	7.54	7.43	7.31	7.20	7.14	7.09	7.03
360.0	7.88	7.76	7.65	7.48	7.37	7.31	7.20	7.14	7.03
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.98	6.92	6.86	6.81	6.75	6.75	6.69	6.69	6.64
45.0	7.03	6.98	6.92	6.86	6.86	6.81	6.75	6.69	6.69
90.0	6.92	6.92	6.86	6.81	6.75	6.69	6.69	6.64	6.64
135.0	6.98	6.92	6.86	6.81	6.75	6.75	6.69	6.64	6.64
180.0	6.98	6.92	6.86	6.86	6.81	6.75	6.75	6.75	6.69
225.0	6.98	6.92	6.86	6.81	6.81	6.75	6.75	6.69	6.64
270.0	6.98	6.92	6.86	6.81	6.81	6.75	6.69	6.69	6.64
315.0	6.92	6.86	6.81	6.81	6.75	6.69	6.64	6.64	6.58
360.0	6.98	6.92	6.86	6.81	6.75	6.75	6.69	6.69	6.64
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	6.58	6.58	6.58	6.58	6.53	6.53	6.47	6.47	6.47
45.0	6.64	6.64	6.58	6.58	6.58	6.53	6.53	6.53	6.47
90.0	6.58	6.58	6.53	6.53	6.47	6.47	6.47	6.47	6.47
135.0	6.58	6.58	6.53	6.53	6.53	6.53	6.47	6.47	6.41
180.0	6.69	6.64	6.64	6.64	6.58	6.58	6.53	6.53	6.53
225.0	6.64	6.64	6.64	6.58	6.58	6.53	6.53	6.47	6.53
270.0	6.64	6.58	6.58	6.58	6.53	6.53	6.53	6.53	6.47
315.0	6.58	6.53	6.53	6.53	6.47	6.47	6.47	6.47	6.41
360.0	6.58	6.58	6.58	6.58	6.53	6.53	6.47	6.47	6.47
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.47	6.41	6.41	6.41	6.41	6.36	6.41	6.36	6.36
45.0	6.47	6.47	6.47	6.47	6.47	6.41	6.41	6.41	6.41
90.0	6.41	6.41	6.41	6.41	6.41	6.36	6.41	6.36	6.36
135.0	6.41	6.41	6.41	6.36	6.41	6.36	6.36	6.36	6.30
180.0	6.47	6.47	6.47	6.47	6.41	6.36	6.36	6.30	6.30
225.0	6.47	6.47	6.47	6.47	6.41	6.41	6.41	6.36	6.36
270.0	6.47	6.47	6.41	6.47	6.41	6.41	6.41	6.36	6.36
315.0	6.41	6.41	6.41	6.41	6.41	6.36	6.36	6.36	6.36
360.0	6.47	6.41	6.41	6.41	6.41	6.36	6.41	6.36	6.36

Intensity data(cd)

C/ $\gamma$ (°)	90.0
0.0	6.36
45.0	6.36
90.0	6.36
135.0	6.30
180.0	6.30
225.0	6.36
270.0	6.36
315.0	6.36
360.0	6.36