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Nata

Client:

LumCAT: 2-1674-M

Luminaire: 92.70.131.00

Report No:

Voltage(V): 34.0200

Test No: GC20190823010

Current(A): 0.4480

LampCAT: TRIDONIC SLE 15MM G7

Power (W): 15.2400

Lamp flux(lm): 2050.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 71

Width(mm): 71

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1788.25, Efficiency(%): 87.23% , Luminous Efficacy(lm/W): 117.34

Central intensity(cd): 9790.313, Maximum intensity(cd): 9790.313

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=17.8

[C90/270]Total=17.8

Field angle(10%Imax): [C0/180]Total=38.2

[C90/270]Total=38.2

Maximum s/h(1/2): C0_180=0.30 C90_270=0.30

Maximum s/h(1/4): C0_180=0.31 C90_270=0.31

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.23%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.461%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9790.313	0.000	0	.000%	.000%
1.0	9702.773	9.327	9.327	.455%	.522%
2.0	9468.141	27.516	36.843	1.342%	2.060%
3.0	9056.391	44.305	81.148	2.161%	4.538%
4.0	8545.500	58.919	140.067	2.874%	7.833%
5.0	7918.664	70.828	210.895	3.455%	11.793%
6.0	7187.133	79.385	290.28	3.872%	16.233%
7.0	6352.172	84.038	374.318	4.099%	20.932%
8.0	5591.039	85.475	459.793	4.170%	25.712%
9.0	4782.797	84.074	543.867	4.101%	30.413%
10.0	3986.789	79.362	623.229	3.871%	34.851%
11.0	3375.352	73.563	696.792	3.588%	38.965%
12.0	2813.555	67.654	764.446	3.300%	42.748%
13.0	2338.945	61.147	825.593	2.983%	46.168%
14.0	1975.148	55.220	880.813	2.694%	49.255%
15.0	1682.339	50.212	931.024	2.449%	52.063%
16.0	1445.597	45.833	976.857	2.236%	54.626%
17.0	1256.330	42.076	1018.934	2.053%	56.979%
18.0	1107.984	38.982	1057.916	1.902%	59.159%
19.0	989.979	36.500	1094.416	1.781%	61.200%
20.0	905.878	34.699	1129.116	1.693%	63.141%
21.0	836.508	33.457	1162.573	1.632%	65.012%
22.0	786.846	32.622	1195.195	1.591%	66.836%
23.0	750.952	32.267	1227.462	1.574%	68.640%
24.0	725.168	32.273	1259.735	1.574%	70.445%
25.0	703.842	32.493	1292.228	1.585%	72.262%
26.0	688.057	32.856	1325.084	1.603%	74.099%
27.0	673.692	33.315	1358.399	1.625%	75.962%
28.0	659.784	33.761	1392.16	1.647%	77.850%
29.0	647.775	34.209	1426.37	1.669%	79.763%
30.0	634.704	34.627	1460.996	1.689%	81.700%
31.0	613.828	34.745	1495.741	1.695%	83.643%
32.0	587.208	34.408	1530.15	1.678%	85.567%
33.0	552.832	33.586	1563.735	1.638%	87.445%
34.0	505.174	32.018	1595.754	1.562%	89.235%
35.0	450.471	29.679	1625.433	1.448%	90.895%
36.0	391.177	26.798	1652.231	1.307%	92.394%
37.0	333.127	23.623	1675.854	1.152%	93.715%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	266.323	20.009	1695.862	.976%	94.833%
39.0	201.452	15.966	1711.829	.779%	95.726%
40.0	146.897	12.149	1723.978	.593%	96.406%
41.0	100.308	8.803	1732.781	.429%	96.898%
42.0	65.187	6.013	1738.794	.293%	97.234%
43.0	37.962	3.821	1742.615	.186%	97.448%
44.0	25.495	2.395	1745.01	.117%	97.582%
45.0	18.457	1.689	1746.699	.082%	97.676%
46.0	15.715	1.336	1748.035	.065%	97.751%
47.0	13.922	1.179	1749.214	.057%	97.817%
48.0	12.502	1.068	1750.282	.052%	97.877%
49.0	11.644	0.992	1751.274	.048%	97.932%
50.0	11.004	0.944	1752.218	.046%	97.985%
51.0	10.209	0.898	1753.115	.044%	98.035%
52.0	9.914	0.864	1753.979	.042%	98.083%
53.0	9.724	0.854	1754.833	.042%	98.131%
54.0	9.555	0.850	1755.683	.041%	98.179%
55.0	9.422	0.847	1756.53	.041%	98.226%
56.0	9.274	0.845	1757.375	.041%	98.273%
57.0	9.155	0.843	1758.217	.041%	98.320%
58.0	9.035	0.841	1759.059	.041%	98.367%
59.0	8.937	0.840	1759.899	.041%	98.414%
60.0	8.845	0.840	1760.739	.041%	98.461%
61.0	8.775	0.841	1761.58	.041%	98.508%
62.0	8.691	0.842	1762.421	.041%	98.555%
63.0	8.641	0.843	1763.264	.041%	98.603%
64.0	8.571	0.845	1764.109	.041%	98.650%
65.0	8.529	0.846	1764.955	.041%	98.697%
66.0	8.501	0.850	1765.805	.041%	98.745%
67.0	8.473	0.853	1766.658	.042%	98.792%
68.0	8.445	0.857	1767.515	.042%	98.840%
69.0	8.430	0.861	1768.376	.042%	98.888%
70.0	8.402	0.865	1769.241	.042%	98.937%
71.0	8.395	0.868	1770.109	.042%	98.985%
72.0	8.374	0.872	1770.981	.043%	99.034%
73.0	8.374	0.876	1771.857	.043%	99.083%
74.0	8.395	0.882	1772.738	.043%	99.132%
75.0	8.402	0.888	1773.626	.043%	99.182%

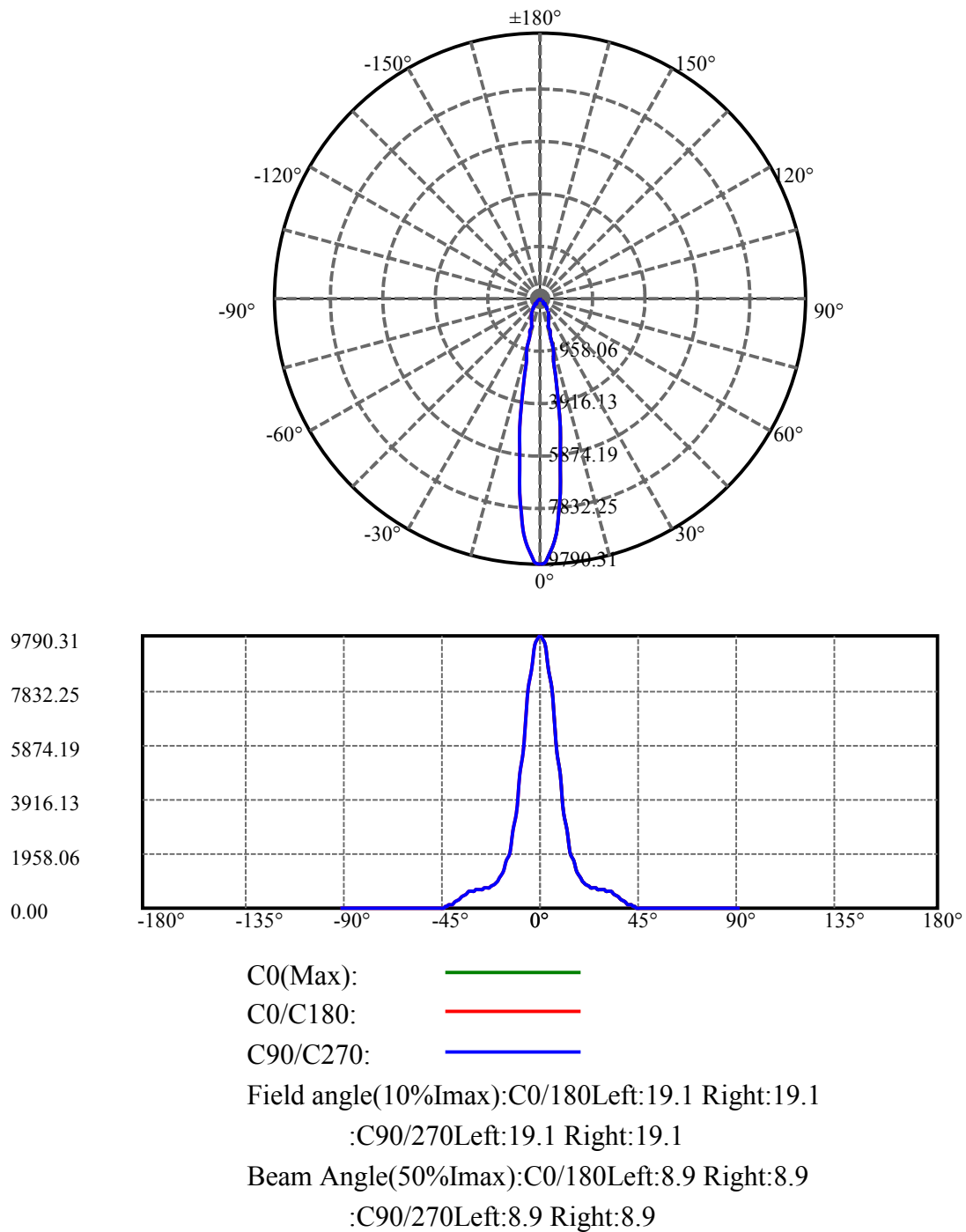
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.430	0.894	1774.519	.044%	99.232%
77.0	8.459	0.900	1775.42	.044%	99.282%
78.0	8.529	0.909	1776.329	.044%	99.333%
79.0	8.958	0.940	1777.269	.046%	99.386%
80.0	9.548	0.998	1778.266	.049%	99.442%
81.0	10.209	1.068	1779.335	.052%	99.501%
82.0	9.977	1.095	1780.43	.053%	99.563%
83.0	9.155	1.040	1781.47	.051%	99.621%
84.0	9.007	0.989	1782.459	.048%	99.676%
85.0	9.309	1.000	1783.459	.049%	99.732%
86.0	9.527	1.030	1784.488	.050%	99.789%
87.0	9.281	1.029	1785.518	.050%	99.847%
88.0	8.585	0.979	1786.496	.048%	99.902%
89.0	7.812	0.899	1787.395	.044%	99.952%
90.0	7.833	0.858	1788.253	.042%	100.000%

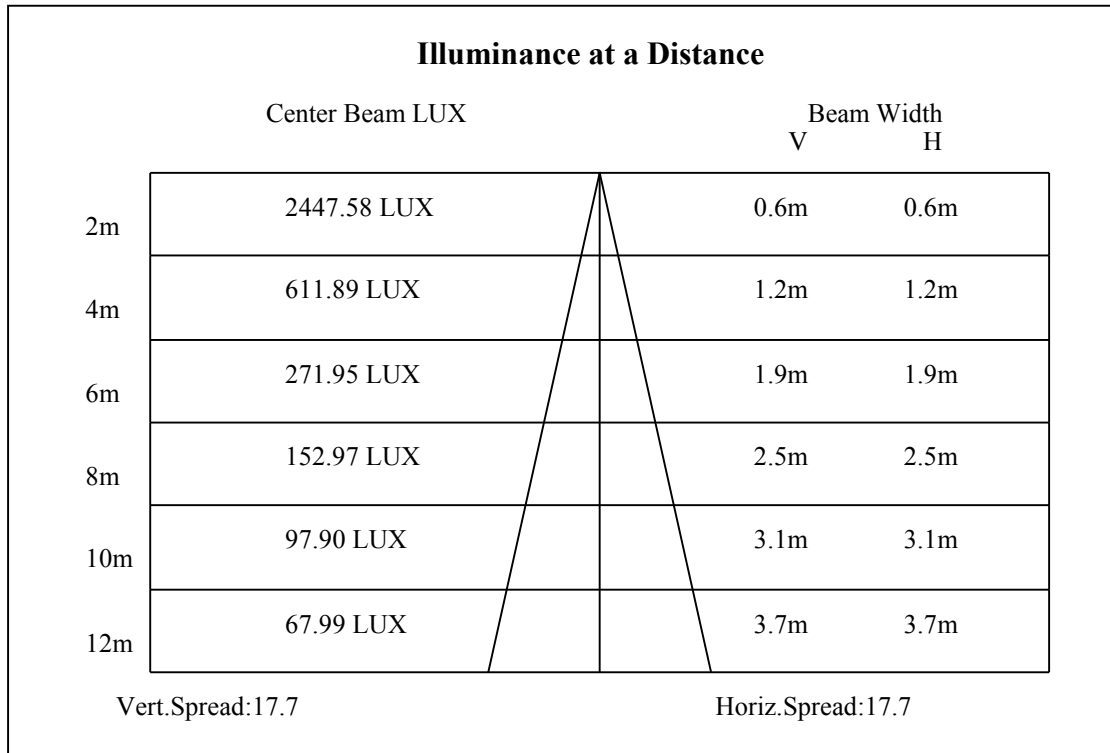
ZONAL LUMEN SUMMARY

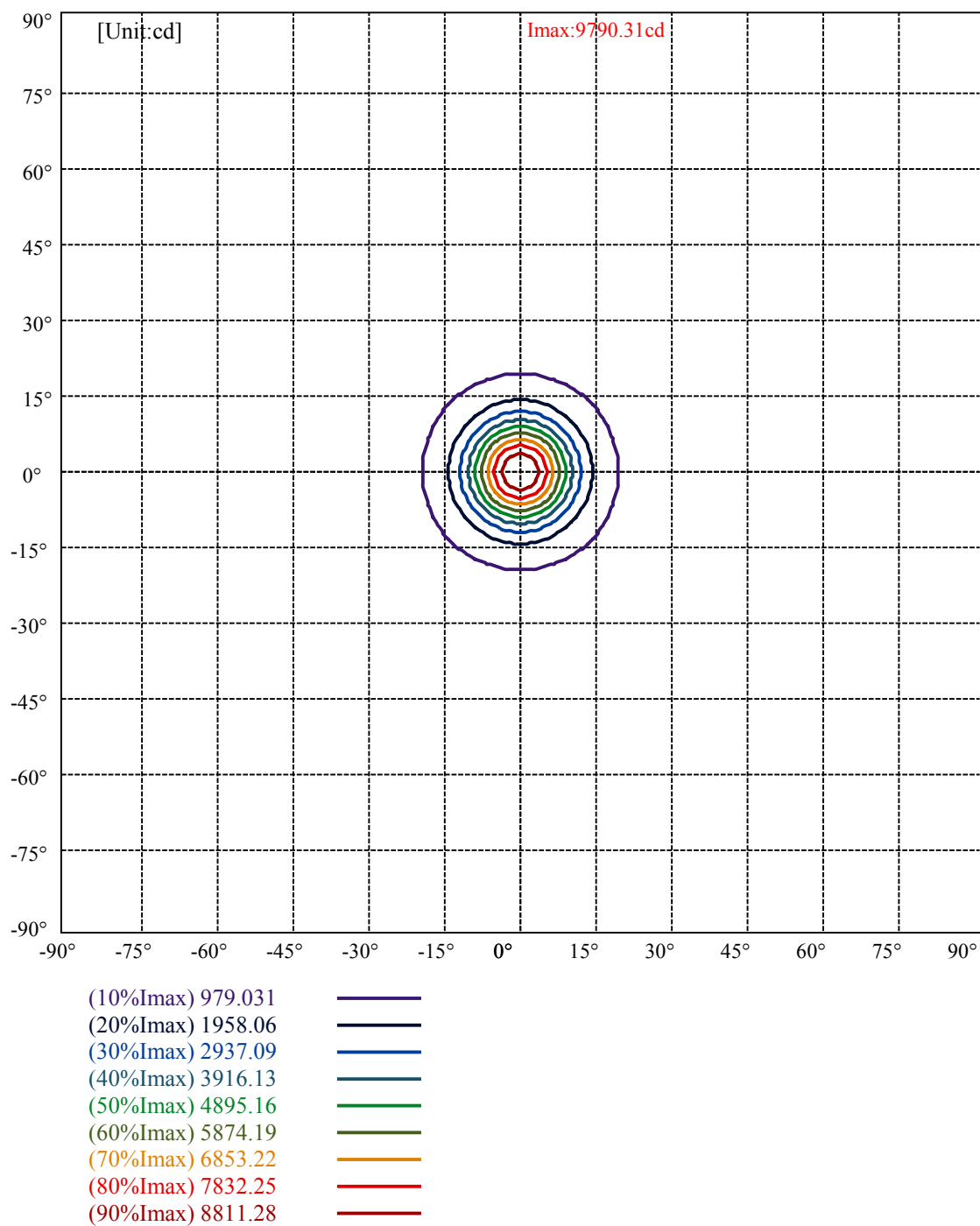
Zone	Lumens	%Lamp	%Fixt
0-30	1461.00	71.27%	81.70%
0-40	1723.98	84.10%	96.41%
0-60	1760.74	85.89%	98.46%
0-90	1787.40	87.19%	99.95%
0-120	1787.40	87.19%	99.95%
0-180	1788.25	87.23%	100.00%
60-90	27.50	1.34%	1.54%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-29.12	1430.60	69.79%	80.00%

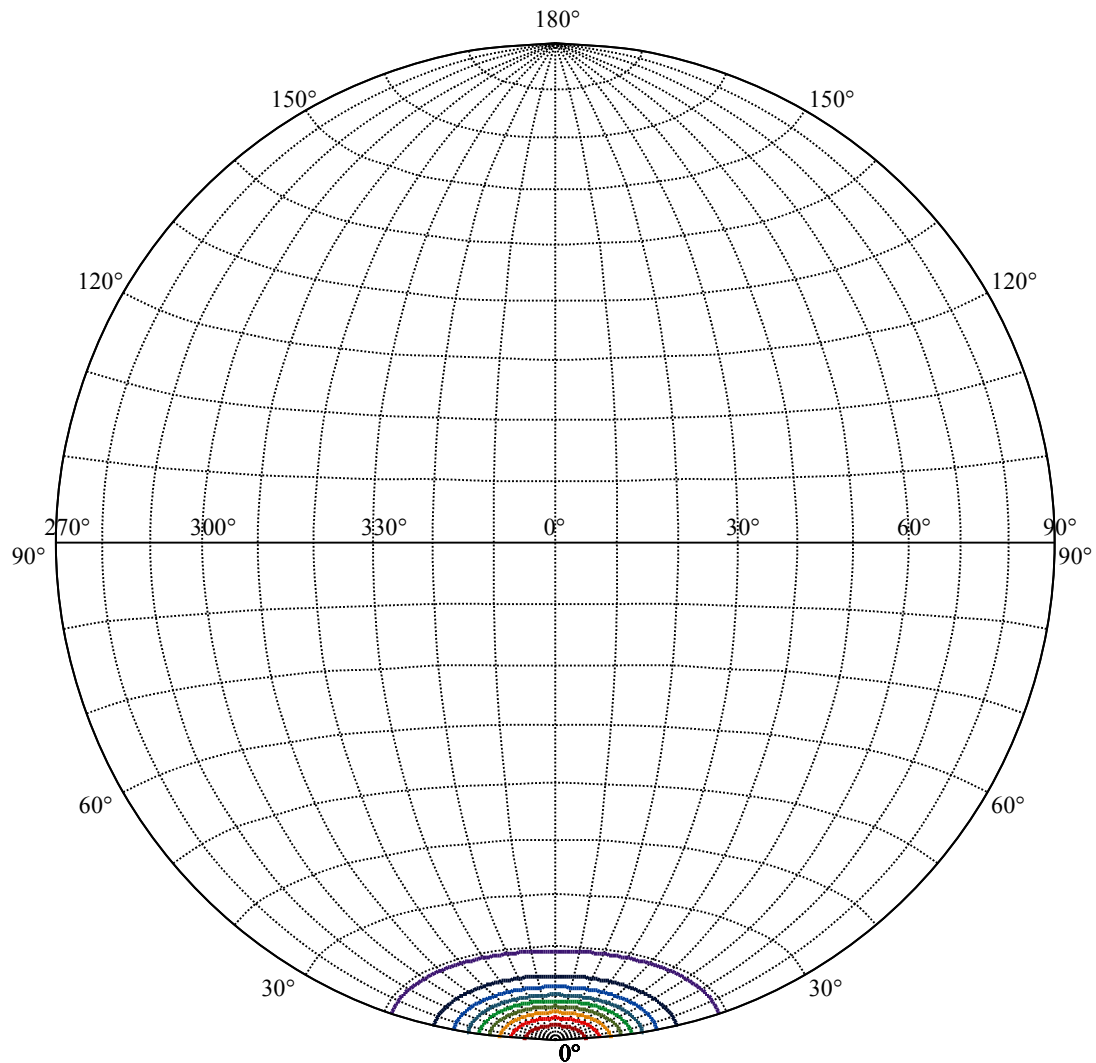
ZONAL LUMEN SUMMARY

0-10	623.23
10-20	505.89
20-30	331.88
30-40	262.98
40-50	28.24
50-60	8.52
60-70	8.50
70-80	9.03
80-90	9.13
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









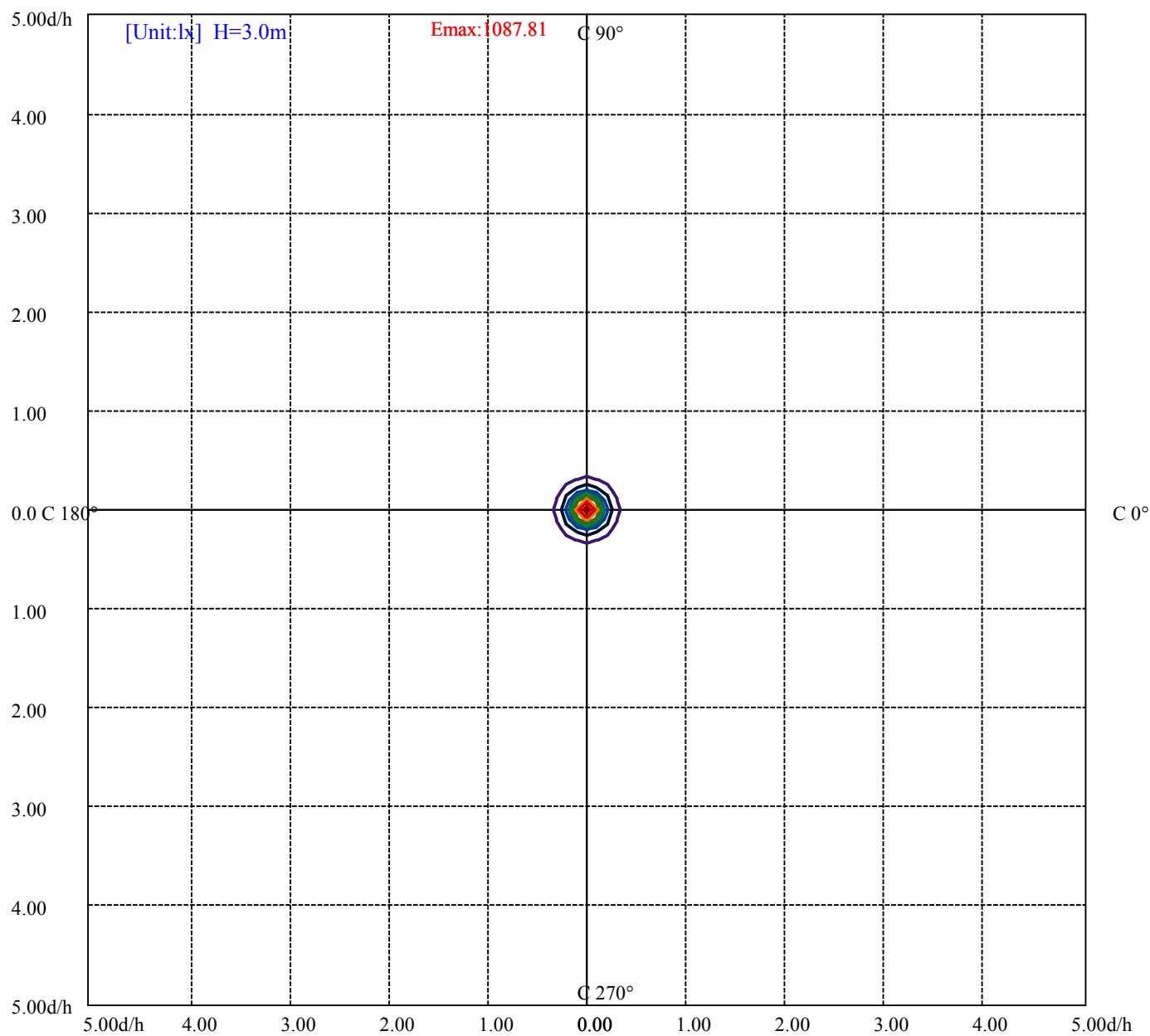
House

[Unit:cd]

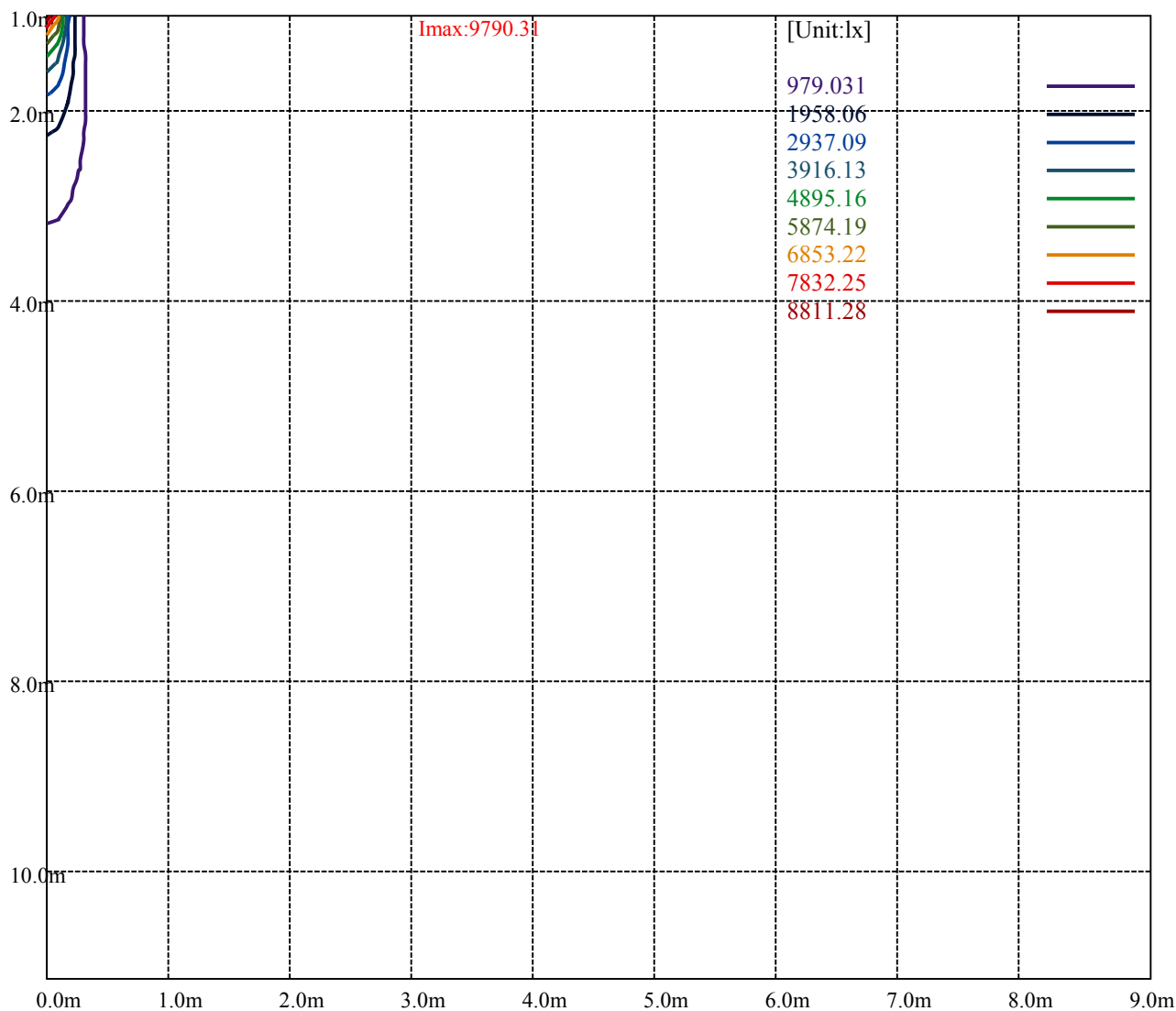
Road

Imax:9790.31

(10%Imax)	979.031	—
(20%Imax)	1958.06	—
(30%Imax)	2937.09	—
(40%Imax)	3916.13	—
(50%Imax)	4895.16	—
(60%Imax)	5874.19	—
(70%Imax)	6853.22	—
(80%Imax)	7832.25	—
(90%Imax)	8811.28	—



(10%E _{max}) 108.7811	—
(20%E _{max}) 217.5622	—
(30%E _{max}) 326.3434	—
(40%E _{max}) 435.1245	—
(50%E _{max}) 543.9055	—
(60%E _{max}) 652.6867	—
(70%E _{max}) 761.4678	—
(80%E _{max}) 870.2489	—
(90%E _{max}) 979.03	—



Luminance Table

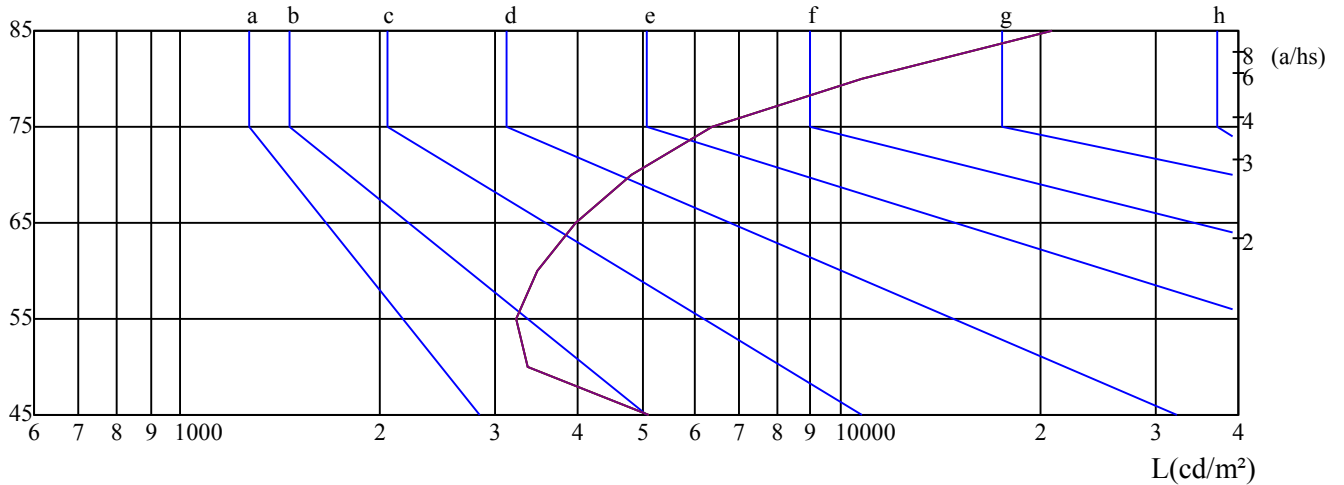
γ	45	50	55	60	65	70	75	80	85
C0	5120	3358	3222	3470	3959	4819	6368	10786	20952
C45	5120	3358	3222	3470	3959	4819	6368	10786	20952
C90	5120	3358	3222	3470	3959	4819	6368	10786	20952

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3959	3959	3959	6368	6368	6368	20952	20952	20952

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

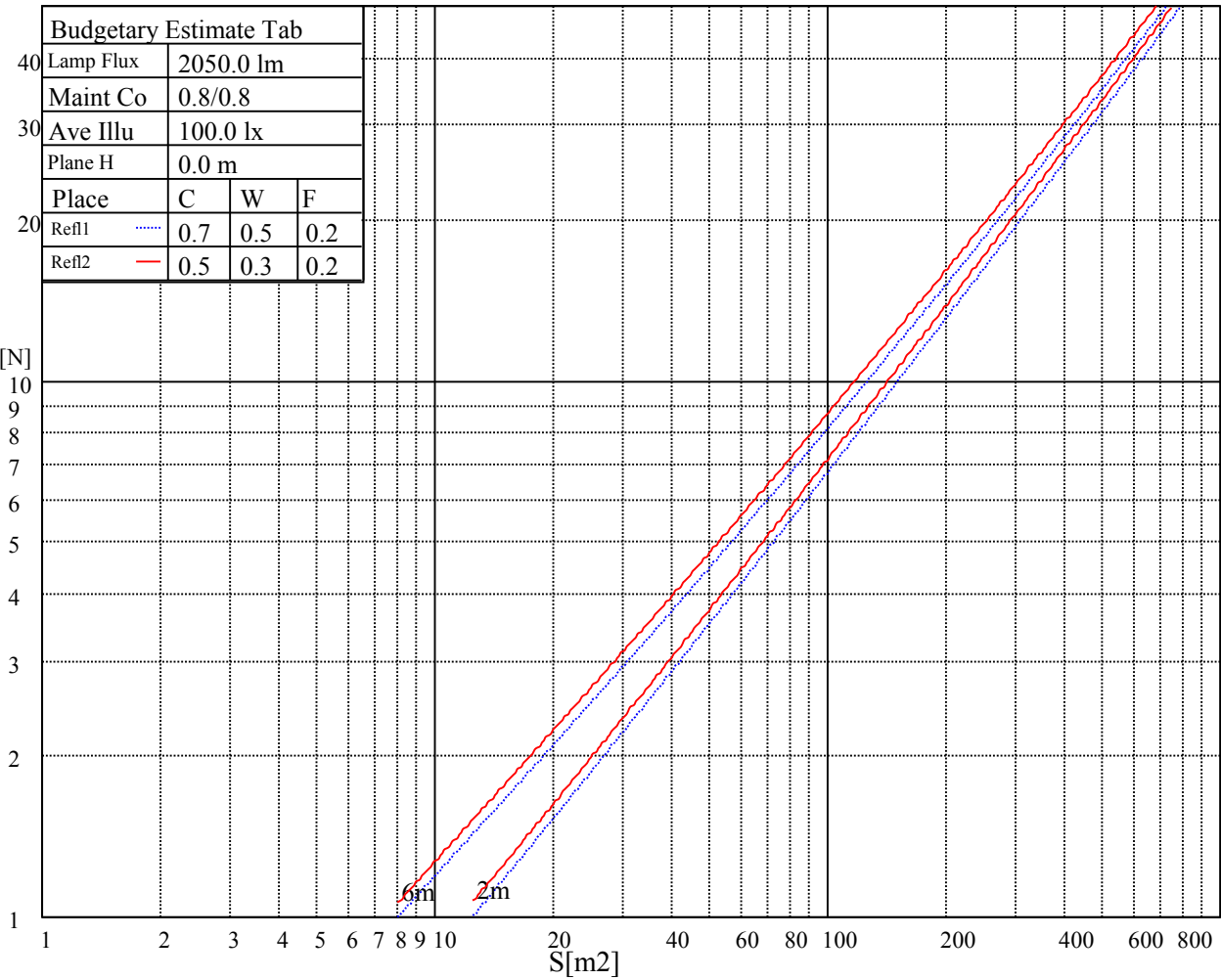
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

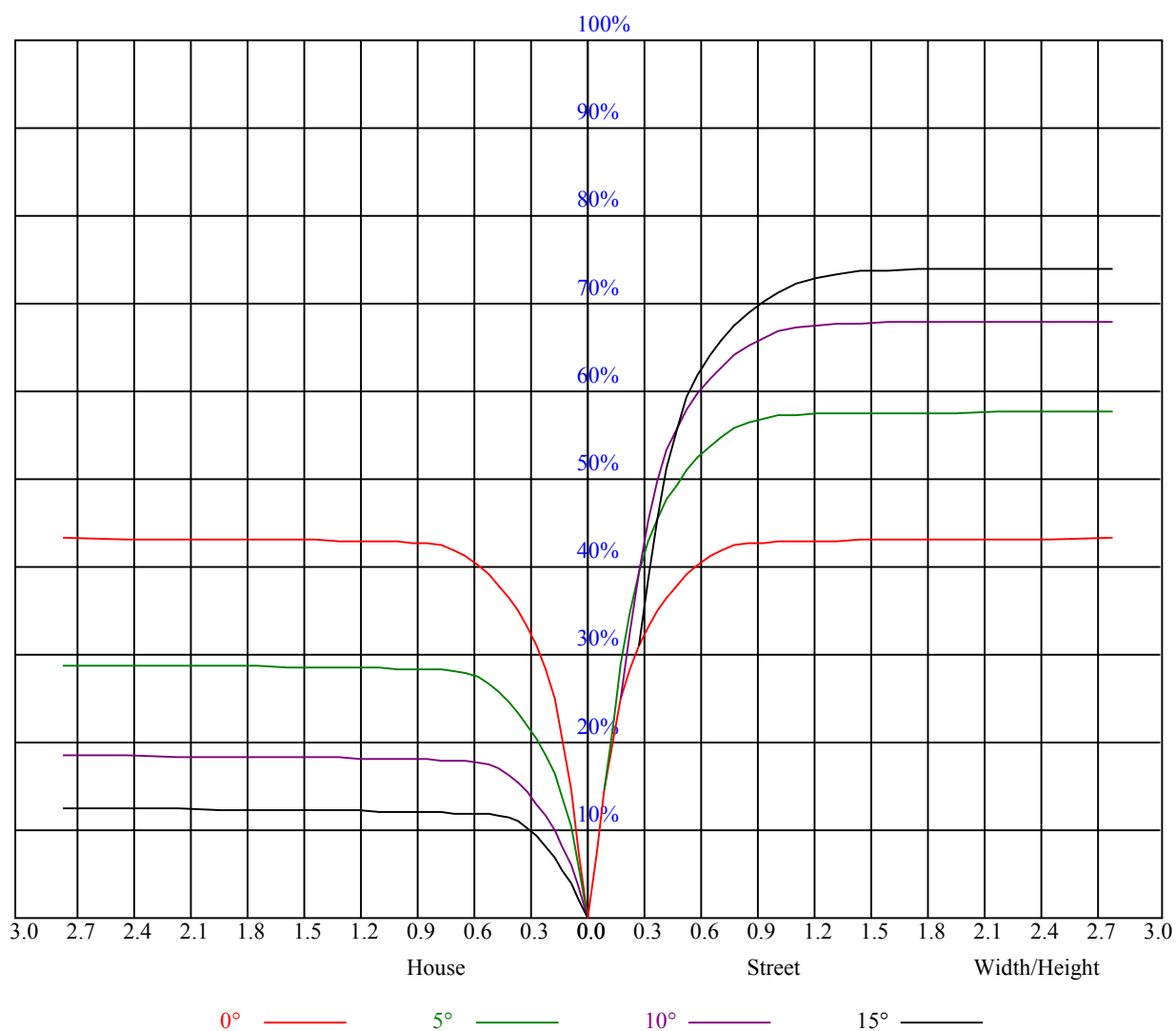
C0 ———

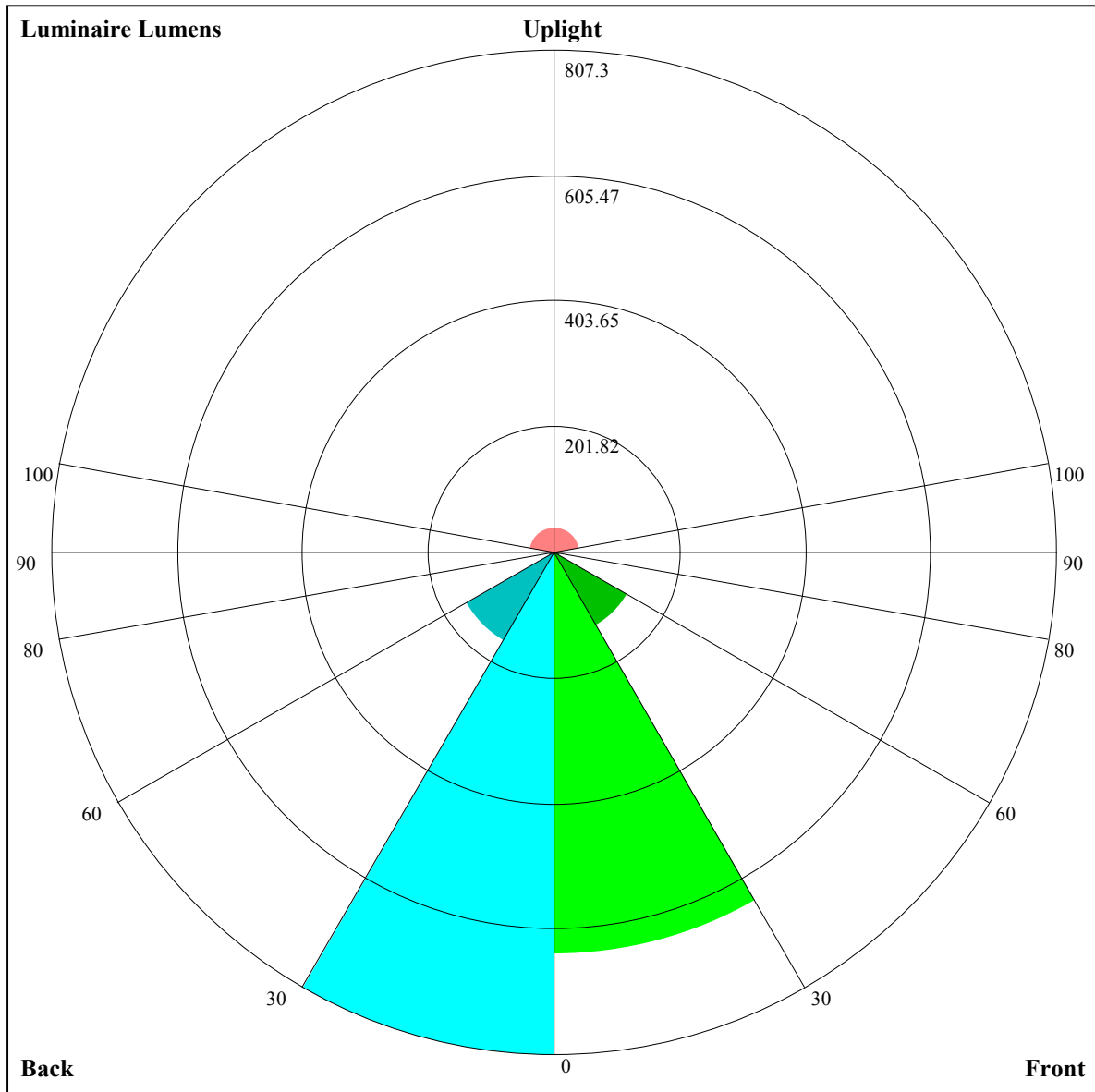
C45 ———

C90 ———



RHOC	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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.98	0.96	0.94	0.96	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.83
2	0.92	0.89	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.83	0.82	0.80	0.79
3	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.77	0.76
4	0.83	0.79	0.76	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
5	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.72	0.76	0.73	0.71	0.75	0.72	0.71	0.69
6	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.73	0.70	0.68	0.72	0.70	0.68	0.67
7	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
8	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62
9	0.68	0.64	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58





Luminaire Lumens:

FL=646.99,FM=134.92,FH=8.91,FVH=5.31

BL=807.3,BM=165.38,BH=8.68,BVH=4.73

UL=8.55,UH=40.67

BUG Rating:B2-U2-G0

Nata 2-1674-M

Intensity data(cd)									Appendix Page: 17 Total:19
C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	9906.75	9325.13	8609.63	7868.81	6947.44	6082.88	5247.56	4316.06	3682.69
45.0	9880.31	9786.94	9493.31	9096.75	8492.06	7747.31	6973.88	6029.44	5213.25
90.0	9875.25	10098.00	10157.06	10017.00	9735.19	9293.06	8569.13	7649.44	6753.38
135.0	9498.94	10116.00	10551.38	10766.81	10803.38	10659.94	10380.38	9763.88	8966.81
180.0	9906.75	10259.44	10496.81	10528.31	10360.13	10027.69	9386.44	8655.19	7773.19
225.0	9880.31	9778.50	9516.38	9021.38	8468.44	7783.88	6893.44	5956.88	5137.31
270.0	9875.25	9433.13	8832.94	8186.63	7355.81	6418.69	5571.00	4705.88	4028.06
315.0	9498.94	8825.06	8087.63	6965.44	6201.56	5335.88	4475.25	3740.63	3173.63
360.0	9906.75	9325.13	8609.63	7868.81	6947.44	6082.88	5247.56	4316.06	3682.69
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3137.06	2570.06	2211.75	1919.81	1625.06	1432.69	1269.56	1122.19	1009.69
45.0	4372.88	3632.63	3080.25	2616.75	2139.19	1838.25	1594.13	1359.00	1200.38
90.0	5729.06	4733.44	3952.69	3232.13	2721.38	2244.94	1830.38	1611.00	1396.69
135.0	7907.63	6776.44	5740.31	4753.13	3709.69	3061.13	2552.63	2083.50	1765.13
180.0	6826.50	5610.94	4698.56	3816.56	3181.50	2604.38	2195.44	1832.06	1545.75
225.0	4285.69	3543.75	2987.44	2423.25	2111.63	1790.44	1535.06	1346.63	1110.60
270.0	3359.25	2800.13	2396.25	2070.56	1749.94	1545.75	1360.13	1175.63	1067.06
315.0	2644.31	2226.94	1935.56	1676.25	1473.19	1283.63	1121.40	1034.78	955.35
360.0	3137.06	2570.06	2211.75	1919.81	1625.06	1432.69	1269.56	1122.19	1009.69
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	933.75	865.69	814.50	779.06	746.44	724.50	702.56	686.81	675.00
45.0	1069.88	952.31	876.38	819.56	770.06	736.31	713.81	696.38	679.50
90.0	1107.00	1025.27	929.25	843.41	793.24	755.94	728.49	703.01	685.24
135.0	1512.00	1266.19	1090.13	963.00	865.69	798.19	764.44	734.06	714.38
180.0	1332.56	1120.16	1010.70	905.34	833.74	787.16	749.08	721.35	701.38
225.0	1042.99	955.24	887.34	816.86	783.11	752.91	727.48	707.23	690.36
270.0	981.56	903.94	844.31	803.81	768.94	740.81	720.00	702.00	689.06
315.0	884.14	831.04	794.42	761.01	733.56	711.79	695.48	679.89	669.54
360.0	933.75	865.69	814.50	779.06	746.44	724.50	702.56	686.81	675.00
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	664.31	652.50	641.81	631.69	591.75	545.63	494.44	430.31	361.69
45.0	664.88	653.06	643.50	632.81	621.56	605.25	570.38	514.69	453.38
90.0	670.11	653.96	640.58	629.78	618.58	607.28	592.93	552.94	507.15
135.0	694.69	676.69	662.06	648.00	631.69	621.00	609.75	597.38	569.25
180.0	684.17	665.38	651.49	639.56	627.47	615.94	605.31	585.68	541.46
225.0	675.45	664.03	652.16	639.56	628.82	611.66	568.13	516.26	461.25
270.0	676.13	664.31	653.06	641.81	622.69	582.19	532.13	466.88	397.69
315.0	659.81	648.34	637.54	614.42	568.07	508.73	449.61	377.27	311.91
360.0	664.31	652.50	641.81	631.69	591.75	545.63	494.44	430.31	361.69
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	297.00	247.95	160.88	102.71	55.18	29.03	21.77	19.41	17.16
45.0	395.44	336.38	284.06	197.44	143.10	87.30	42.13	23.85	21.54
90.0	449.21	386.49	326.98	260.61	193.84	137.36	87.92	38.42	22.95
135.0	531.56	475.31	411.75	352.13	288.00	219.09	151.20	92.76	55.13
180.0	492.98	432.06	373.44	303.81	234.84	176.91	124.71	66.66	32.91
225.0	387.79	323.83	260.49	188.33	135.45	87.36	48.43	24.19	21.66
270.0	334.69	287.44	191.81	137.64	90.28	42.64	24.98	21.71	18.45
315.0	240.75	175.56	121.16	68.96	34.48	22.78	20.36	16.71	14.18
360.0	297.00	247.95	160.88	102.71	55.18	29.03	21.77	19.41	17.16

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	14.85	10.58	10.29	10.07	9.84	9.62	9.51	9.39	9.23		
45.0	18.90	16.54	14.29	10.86	10.35	10.13	9.96	9.79	9.62		
90.0	20.81	17.94	15.58	14.29	12.26	11.08	10.13	9.84	9.68		
135.0	25.09	21.66	19.07	16.76	15.41	14.29	11.48	10.35	10.13		
180.0	21.77	18.84	16.65	14.68	13.78	12.09	10.41	10.18	10.01		
225.0	18.68	15.64	14.01	12.32	10.97	10.69	10.46	10.29	10.07		
270.0	15.75	13.89	11.14	10.91	10.63	10.41	10.18	10.07	9.79		
315.0	11.81	10.63	10.35	10.13	9.90	9.73	9.56	9.39	9.28		
360.0	14.85	10.58	10.29	10.07	9.84	9.62	9.51	9.39	9.23		
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	9.11	9.00	8.89	8.78	8.72	8.66	8.61	8.61	8.55		
45.0	9.45	9.28	9.17	9.06	9.00	8.89	8.83	8.78	8.66		
90.0	9.51	9.39	9.28	9.11	8.94	8.89	8.78	8.66	8.61		
135.0	9.90	9.79	9.56	9.39	9.28	9.11	8.94	8.89	8.72		
180.0	9.79	9.62	9.45	9.28	9.11	9.00	8.89	8.78	8.66		
225.0	9.90	9.73	9.56	9.45	9.28	9.17	9.06	8.94	8.89		
270.0	9.68	9.56	9.39	9.34	9.23	9.11	9.06	9.00	8.89		
315.0	9.11	9.00	8.89	8.83	8.72	8.66	8.61	8.55	8.55		
360.0	9.11	9.00	8.89	8.78	8.72	8.66	8.61	8.61	8.55		
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	8.55	8.49	8.49	8.49	8.49	8.49	8.55	8.55	8.55		
45.0	8.66	8.61	8.55	8.55	8.55	8.49	8.49	8.49	8.49		
90.0	8.55	8.44	8.38	8.38	8.33	8.27	8.27	8.21	8.16		
135.0	8.66	8.55	8.49	8.44	8.38	8.33	8.27	8.21	8.16		
180.0	8.55	8.49	8.38	8.33	8.27	8.21	8.16	8.10	8.10		
225.0	8.78	8.72	8.66	8.61	8.55	8.55	8.49	8.49	8.49		
270.0	8.89	8.83	8.83	8.78	8.78	8.78	8.78	8.72	8.78		
315.0	8.49	8.44	8.44	8.44	8.44	8.44	8.44	8.44	8.44		
360.0	8.55	8.49	8.49	8.49	8.49	8.49	8.55	8.55	8.55		
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	8.55	8.55	8.61	8.61	8.66	8.72	8.78	9.73	12.94		
45.0	8.44	8.49	8.49	8.49	8.49	8.49	8.55	8.55	8.55		
90.0	8.16	8.16	8.16	8.10	8.10	8.10	8.10	8.10	8.10		
135.0	8.16	8.10	8.10	8.10	8.10	8.04	8.04	8.04	8.04		
180.0	8.04	7.99	7.99	7.99	7.93	7.93	7.93	7.93	7.88		
225.0	8.44	8.44	8.44	8.44	8.49	8.49	8.55	8.61	8.55		
270.0	8.78	8.78	8.83	8.89	9.00	9.11	9.28	9.45	10.01		
315.0	8.44	8.49	8.55	8.61	8.66	8.78	9.00	11.25	12.32		
360.0	8.55	8.55	8.61	8.61	8.66	8.72	8.78	9.73	12.94		
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	15.75	13.05	9.79	10.24	10.80	11.19	10.86	11.19	7.71		
45.0	8.61	8.61	8.72	8.89	9.23	9.56	9.84	9.68	7.93		
90.0	8.10	8.04	8.04	8.04	8.04	8.04	8.10	7.88	7.88		
135.0	8.04	8.04	8.04	8.10	8.10	8.10	8.10	7.82	7.82		
180.0	7.88	7.88	7.88	7.88	7.88	7.88	7.71	7.71	7.65		
225.0	8.61	8.66	8.78	8.89	9.17	9.28	7.93	7.88	7.88		
270.0	13.44	15.98	12.71	10.24	10.97	11.64	11.53	7.88	7.88		
315.0	11.25	9.56	9.28	9.79	10.29	10.52	10.18	8.66	7.76		
360.0	15.75	13.05	9.79	10.24	10.80	11.19	10.86	11.19	7.71		

Intensity data(cd)

Appendix Page: 19 Total:19

C/ $\gamma(^{\circ})$	90.0
0.0	7.71
45.0	7.93
90.0	7.88
135.0	7.82
180.0	7.71
225.0	7.93
270.0	7.88
315.0	7.82
360.0	7.71