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Nata

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Client:

LumCAT: 2-1674-M

Luminaire: 92.70.131.00

Report No: nata-0100

Test No:

LampCAT: CREE CMT1922

Lamp flux(lm): 2545.4

Number of Lamps: 1

Length(mm): 71

Phm Type: C

Voltage(V): 34.9000

Current(A): 0.6000

Power (W): 20.9400

PF: 0.0000

Ballast type: DC

Width(mm): 71

Height(mm): 0

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Photometric Results

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Lumens(lm): 2378.83, Efficiency(%): 93.46% , Luminous Efficacy(lm/W): 113.60

Central intensity(cd): 15591.970, Maximum intensity(cd): 15591.970

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

Beam Angle(50%Imax): [C0/180]Total=16.4

[C90/270]Total=16.4

Field angle(10%Imax): [C0/180]Total=33.0

[C90/270]Total=33.0

Maximum s/h(1/2): C0\_180=0.28 C90\_270=0.28

Maximum s/h(1/4): C0\_180=0.28 C90\_270=0.28

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 94.03%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.164%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	15591.972	14.921	14.921	.586%	.627%
2.0	15112.982	115.674	130.595	4.544%	5.490%
4.0	13579.799	207.751	338.346	8.162%	14.223%
6.0	10910.183	250.110	588.456	9.826%	24.737%
8.0	8032.935	245.185	833.641	9.633%	35.044%
10.0	5219.003	198.757	1032.399	7.809%	43.400%
12.0	3355.756	153.015	1185.414	6.012%	49.832%
14.0	2198.333	116.636	1302.05	4.582%	54.735%
16.0	1642.126	99.268	1401.318	3.900%	58.908%
18.0	1306.371	88.535	1489.853	3.478%	62.630%
20.0	1124.919	84.380	1574.233	3.315%	66.177%
22.0	1016.651	83.524	1657.757	3.281%	69.688%
24.0	939.317	83.790	1741.547	3.292%	73.210%
26.0	887.330	85.309	1826.855	3.352%	76.797%
28.0	846.258	87.132	1913.987	3.423%	80.459%
30.0	814.910	89.360	2003.348	3.511%	84.216%
32.0	769.282	89.405	2092.752	3.512%	87.974%
34.0	679.031	83.275	2176.028	3.272%	91.475%
36.0	523.497	67.484	2243.511	2.651%	94.312%
38.0	363.661	49.103	2292.614	1.929%	96.376%
40.0	190.915	26.914	2319.528	1.057%	97.507%
42.0	72.454	10.633	2330.16	.418%	97.954%
44.0	25.395	3.869	2334.029	.152%	98.117%
46.0	15.505	2.446	2336.475	.096%	98.220%
48.0	12.050	1.964	2338.439	.077%	98.302%
50.0	10.825	1.819	2340.258	.071%	98.379%
52.0	10.516	1.817	2342.075	.071%	98.455%
54.0	10.261	1.821	2343.896	.072%	98.532%
56.0	10.089	1.834	2345.73	.072%	98.609%
58.0	9.951	1.851	2347.581	.073%	98.687%
60.0	9.862	1.873	2349.454	.074%	98.765%
62.0	9.793	1.896	2351.351	.075%	98.845%
64.0	9.752	1.922	2353.273	.076%	98.926%
66.0	9.724	1.948	2355.221	.077%	99.008%
68.0	9.683	1.969	2357.19	.077%	99.091%
70.0	9.656	1.990	2359.18	.078%	99.174%
72.0	9.642	2.011	2361.191	.079%	99.259%
74.0	9.628	2.030	2363.221	.080%	99.344%

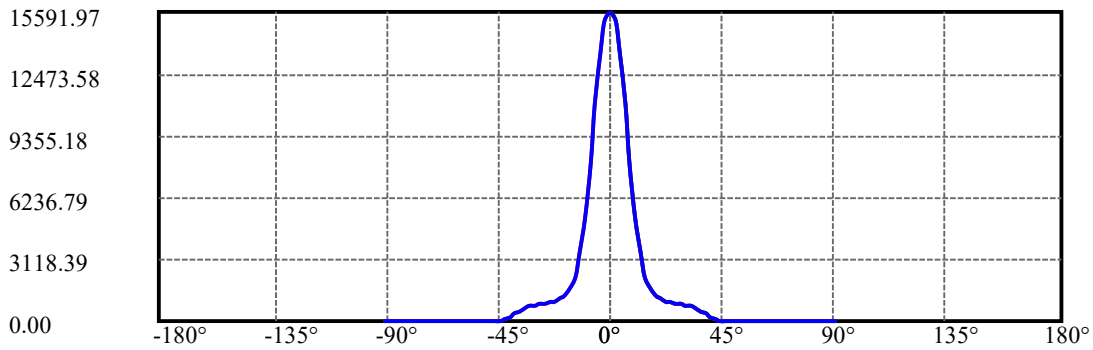
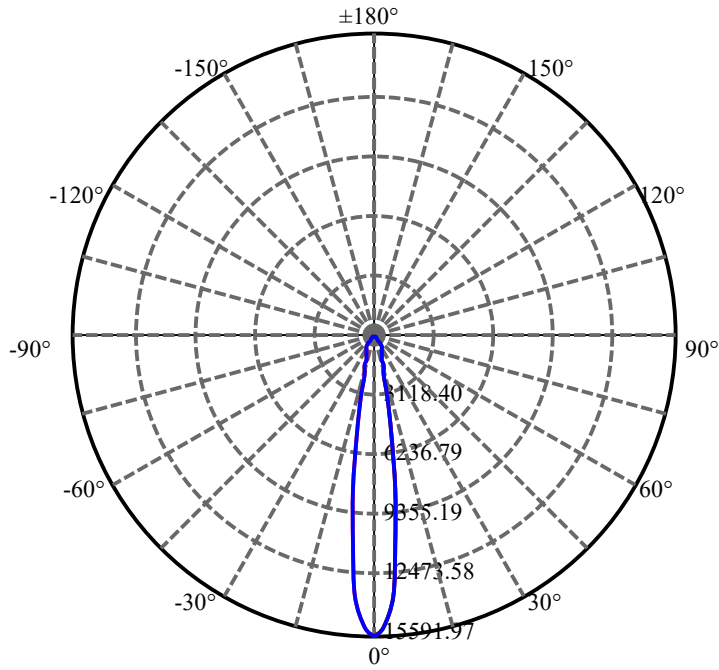
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.621	2.047	2365.268	.080%	99.430%
78.0	9.614	2.062	2367.331	.081%	99.517%
80.0	9.607	2.075	2369.406	.082%	99.604%
82.0	9.587	2.082	2371.488	.082%	99.692%
84.0	9.600	2.094	2373.582	.082%	99.780%
86.0	9.580	2.096	2375.677	.082%	99.868%
88.0	9.566	2.097	2377.774	.082%	99.956%
90.0	9.587	1.051	2378.825	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2003.35	78.71%	84.22%
0-40	2319.53	91.13%	97.51%
0-60	2349.45	92.30%	98.77%
0-90	2377.77	93.42%	99.96%
0-120	2377.77	93.42%	99.96%
0-180	2378.83	93.46%	100.00%
60-90	30.19	1.19%	1.27%
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%
0-27.75	1903.06	74.77%	80.00%

ZONAL LUMEN SUMMARY

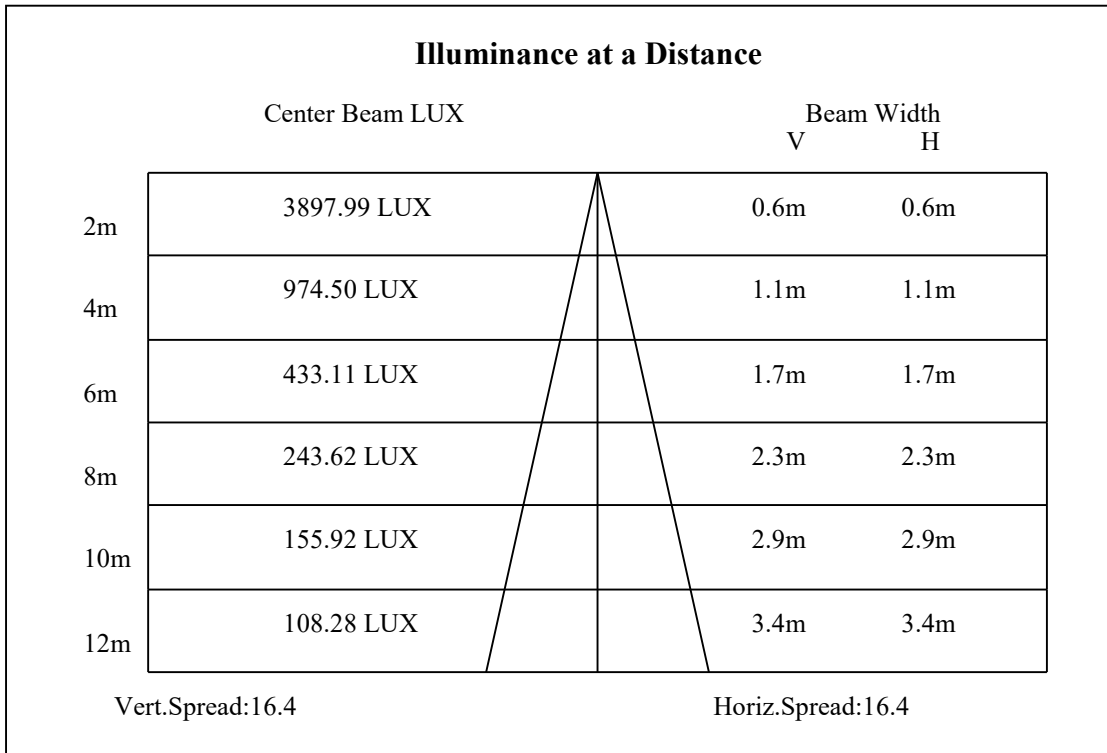
0-10	1032.40
10-20	541.83
20-30	429.11
30-40	316.18
40-50	20.73
50-60	9.20
60-70	9.73
70-80	10.23
80-90	8.37
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

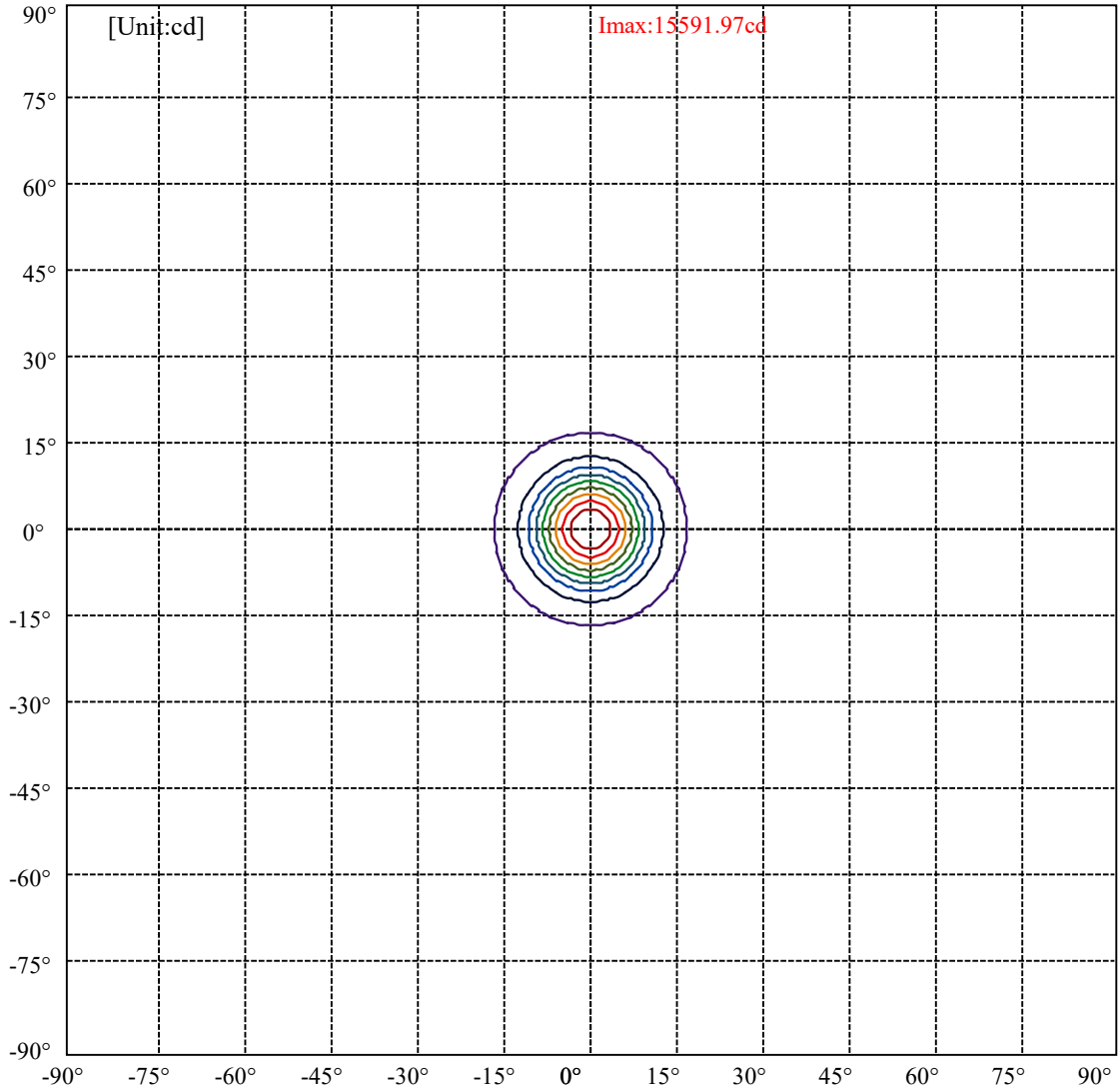


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

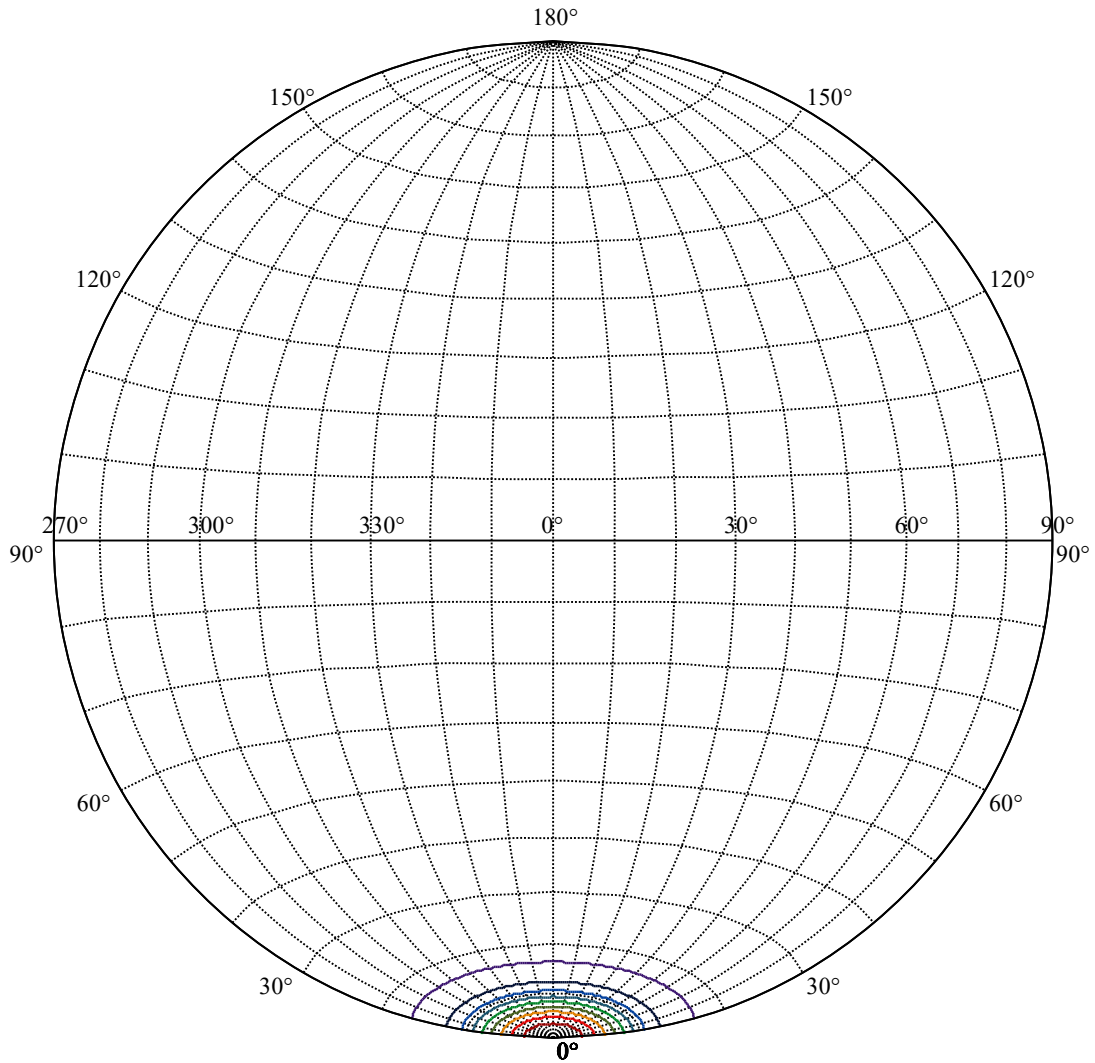
Field angle(10%Imax):C0/180Left:16.5 Right:16.5  
:C90/270Left:16.5 Right:16.5

Beam Angle(50%Imax):C0/180Left:8.2 Right:8.2  
:C90/270Left:8.2 Right:8.2





(10%Imax) 1559.2	—
(20%Imax) 3118.39	—
(30%Imax) 4677.59	—
(40%Imax) 6236.79	—
(50%Imax) 7795.99	—
(60%Imax) 9355.18	—
(70%Imax) 10914.4	—
(80%Imax) 12473.6	—
(90%Imax) 14032.8	—



House

[Unit:cd]

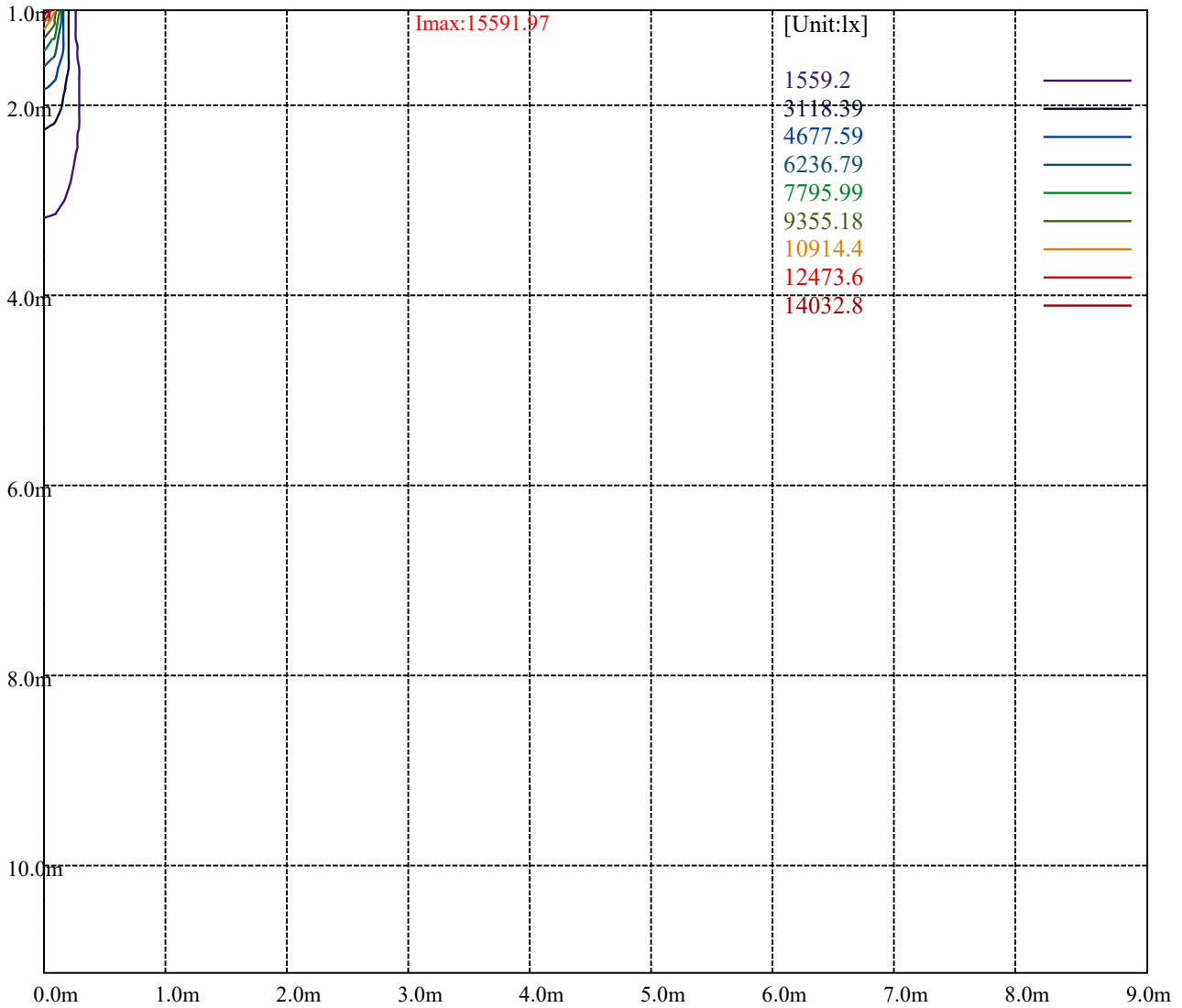
Road

**Imax:15591.97**

(10%Imax) 1559.2	—
(20%Imax) 3118.39	—
(30%Imax) 4677.59	—
(40%Imax) 6236.79	—
(50%Imax) 7795.99	—
(60%Imax) 9355.18	—
(70%Imax) 10914.4	—
(80%Imax) 12473.6	—
(90%Imax) 14032.8	—







Luminance Table

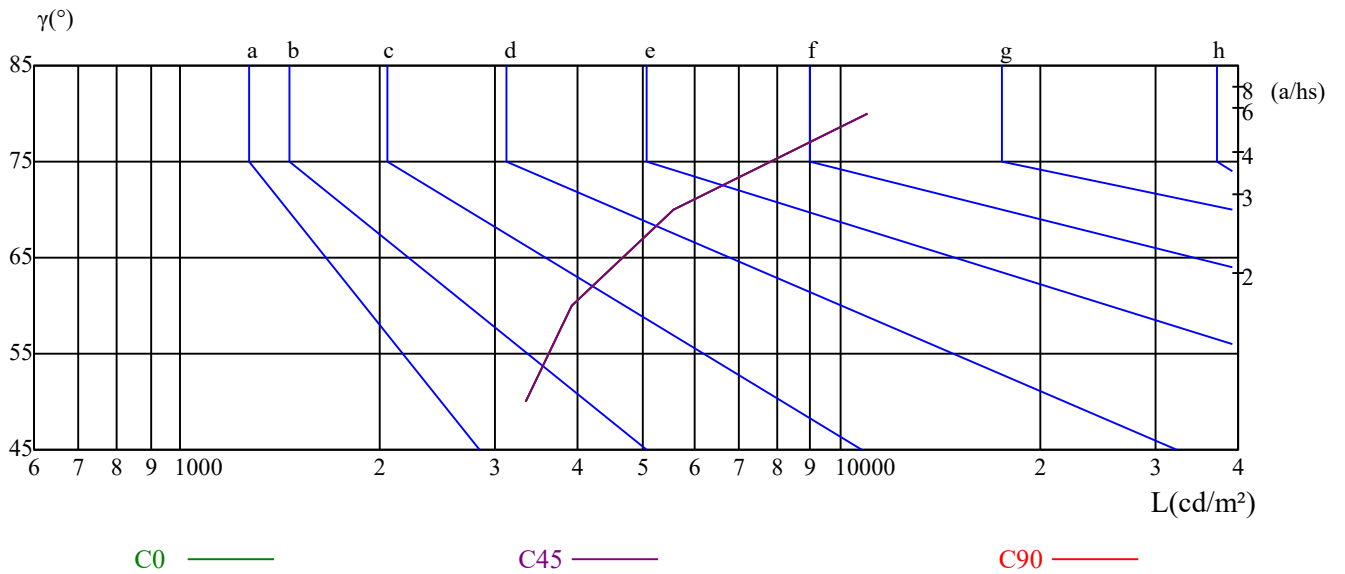
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	3341	0	3913	0	5600	0	10975	0
C45	0	3341	0	3913	0	5600	0	10975	0
C90	0	3341	0	3913	0	5600	0	10975	0

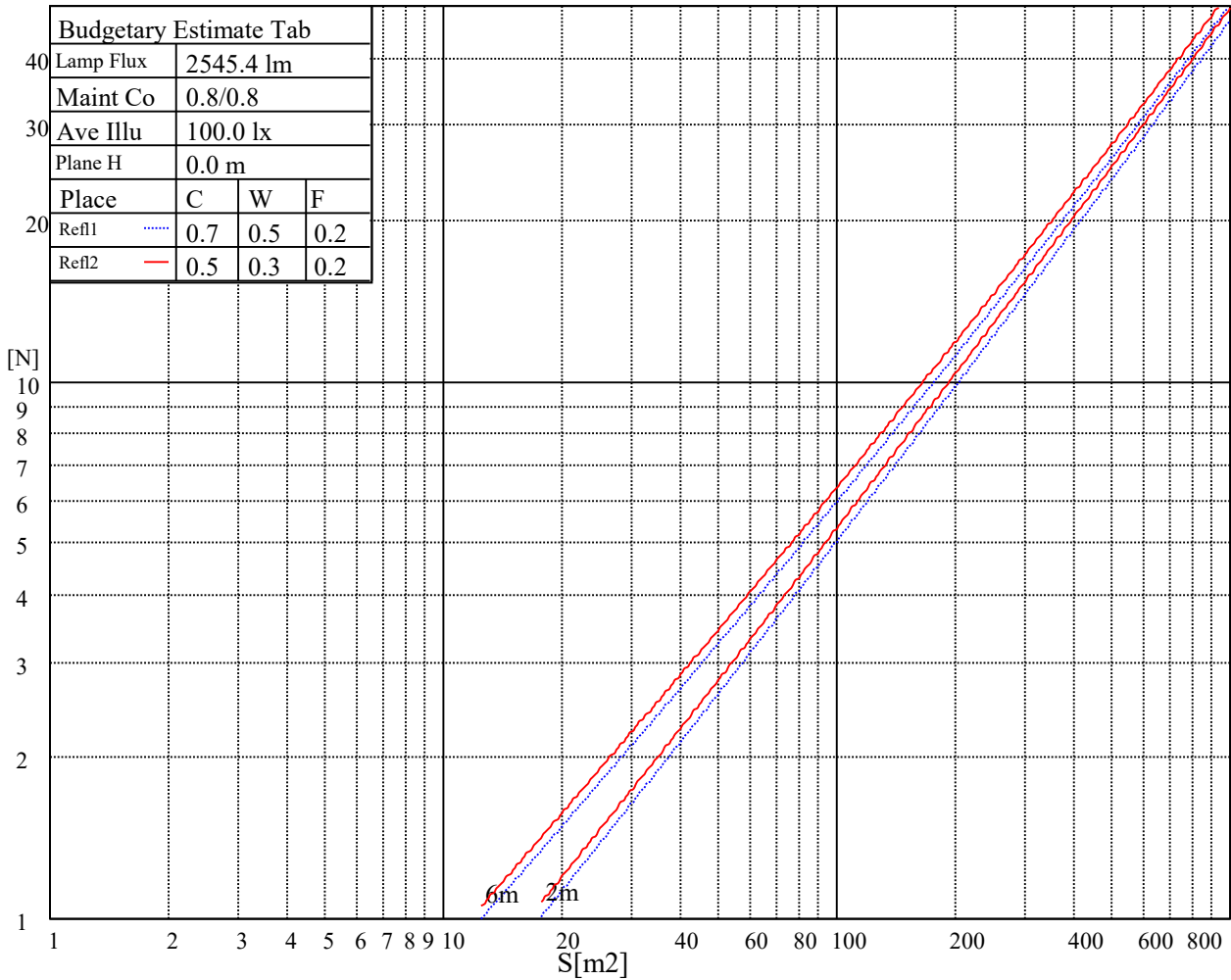
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4952	4952	4952	7691	7691	7691	22447	22447	22447

Glare Table

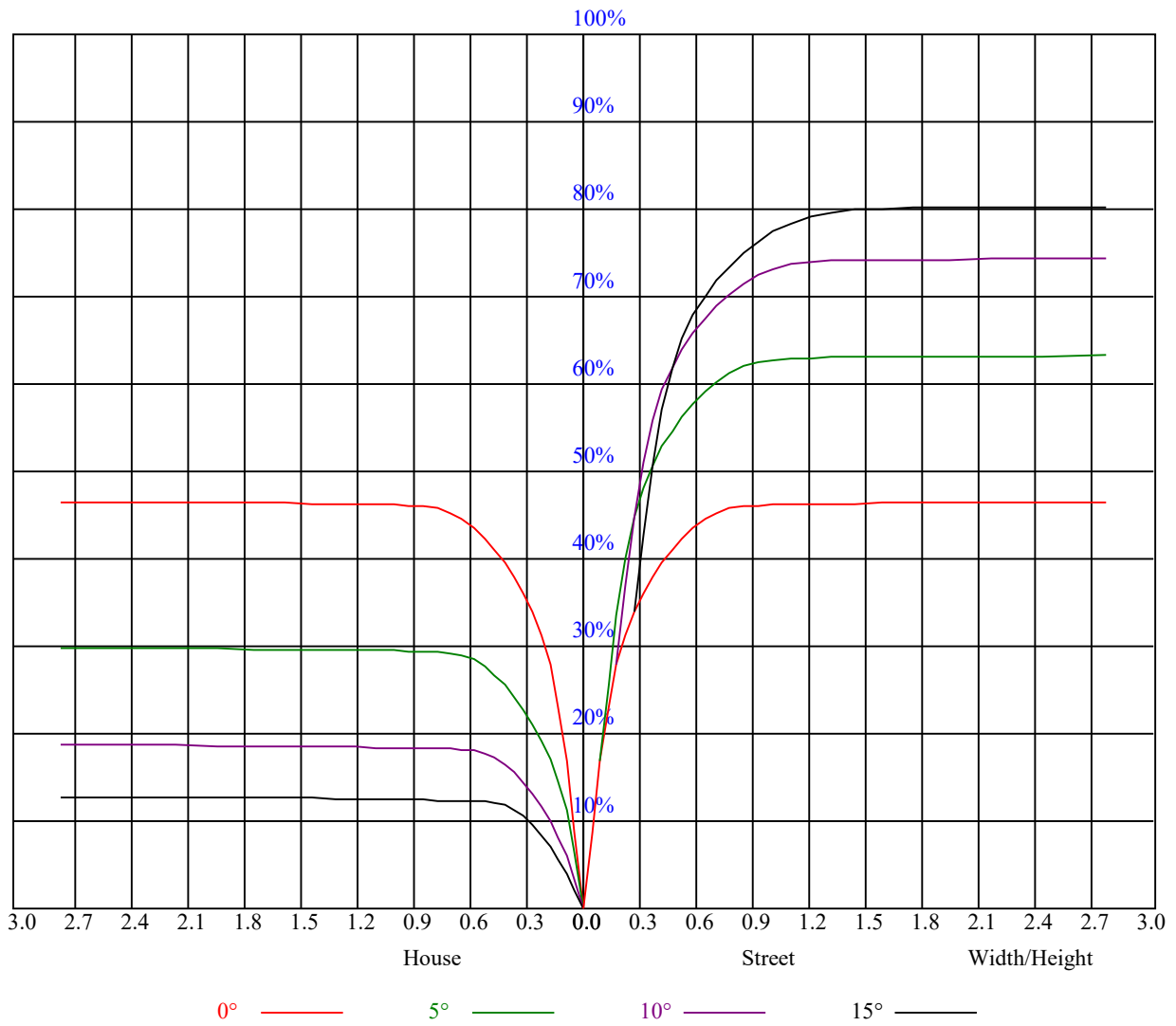
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

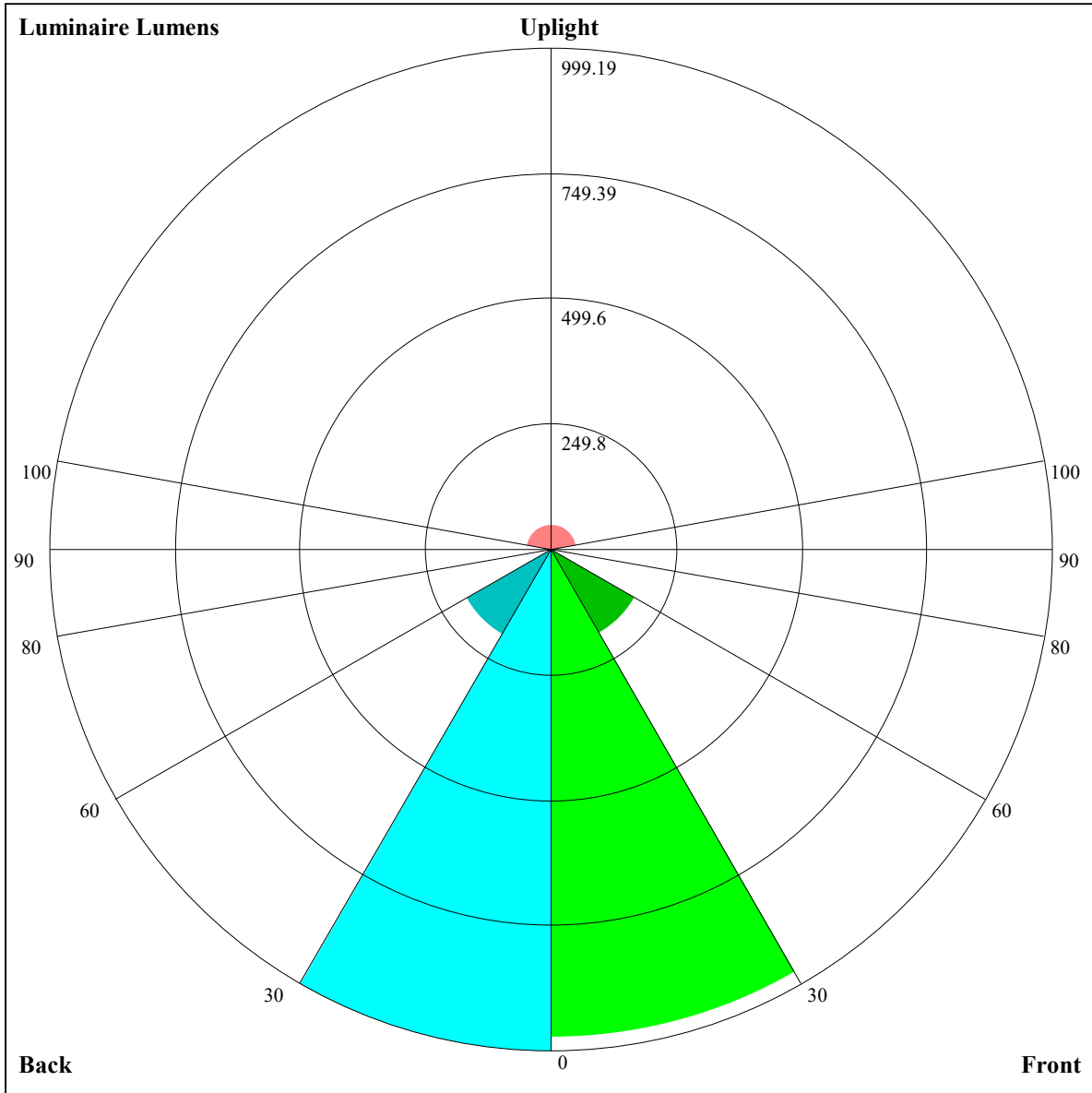
Luminance Limiting Curve





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	1.12	1.12	1.12	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.05	1.03	1.01	1.03	1.01	0.99	0.99	0.97	0.96	0.96	0.94	0.93	0.92	0.91	0.91	0.89
2	0.99	0.96	0.94	0.98	0.95	0.92	0.95	0.93	0.90	0.92	0.90	0.89	0.90	0.88	0.87	0.85
3	0.95	0.91	0.88	0.94	0.90	0.87	0.91	0.88	0.86	0.89	0.87	0.85	0.87	0.85	0.83	0.82
4	0.91	0.87	0.83	0.90	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.79
5	0.87	0.83	0.80	0.86	0.82	0.79	0.85	0.81	0.79	0.83	0.80	0.78	0.82	0.79	0.77	0.76
6	0.84	0.80	0.76	0.83	0.79	0.76	0.82	0.78	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.74
7	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.75	0.72	0.71
8	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
9	0.76	0.72	0.69	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
10	0.74	0.70	0.67	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.69	0.66	0.66





Luminaire Lumens:

FL=972.61,FM=194.02,FH=9.94,FVH=5.23

BL=999.19,BM=196.97,BH=9.93,BVH=5.23

UL=10.46,UH=49.78

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	15625.01	15267.14	13912.75	11165.44	7988.68	5109.23	3193.27	2126.28	1613.15
45.0	15625.01	14534.89	12464.77	9210.94	5984.63	3683.27	2813.38	1729.32	1361.54
90.0	15481.86	14248.60	10742.60	8409.31	5304.68	3270.35	2183.54	1581.22	1286.67
135.0	15636.02	14843.21	13274.10	10135.88	6909.58	4432.04	2785.85	1864.76	1457.34
180.0	15625.01	15079.95	13670.50	10911.08	7858.75	4842.76	3052.88	2097.65	1584.52
225.0	15625.01	15702.09	14980.85	12971.29	10078.62	6877.09	4281.19	2678.49	1948.45
270.0	15481.86	15779.16	15217.59	13516.35	11022.29	7669.36	4883.50	3094.17	2130.13
315.0	15636.02	15448.83	14375.23	10961.18	9116.24	5867.91	3652.44	2414.77	1755.20
360.0	15625.01	15267.14	13912.75	11165.44	7988.68	5109.23	3193.27	2126.28	1613.15
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1287.22	1117.09	1019.09	951.37	893.01	854.48	827.50	796.12	708.58
45.0	1144.62	1028.45	954.68	895.22	859.43	824.74	796.12	735.55	589.10
90.0	1095.79	999.05	935.19	877.76	841.32	812.08	783.18	677.19	542.25
135.0	1200.78	1058.18	977.80	910.63	864.94	831.90	800.52	755.92	632.05
180.0	1276.76	1096.78	999.93	924.12	874.46	837.35	805.20	772.44	671.96
225.0	1484.87	1221.15	1079.60	983.03	917.18	867.63	832.89	801.84	759.72
270.0	1585.62	1298.23	1123.15	1011.39	941.46	882.55	845.12	815.94	785.65
315.0	1375.31	1180.41	1043.76	961.01	906.83	859.32	828.76	799.25	742.93
360.0	1287.22	1117.09	1019.09	951.37	893.01	854.48	827.50	796.12	708.58
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	545.61	367.78	193.08	64.47	21.36	15.14	11.67	10.79	10.52
45.0	414.57	279.14	90.18	22.02	16.24	11.89	10.79	10.52	10.30
90.0	363.04	196.94	63.37	20.70	14.70	11.56	10.79	10.46	10.24
135.0	458.62	285.74	128.12	31.82	18.39	13.32	11.07	10.74	10.46
180.0	504.76	344.05	172.11	51.37	20.65	14.59	11.12	10.68	10.41
225.0	627.86	473.10	292.13	134.56	35.73	19.27	13.93	11.07	10.68
270.0	683.25	533.50	343.00	165.06	51.26	21.09	14.98	11.34	10.90
315.0	590.26	429.05	245.33	89.63	24.83	17.18	12.06	11.01	10.63
360.0	545.61	367.78	193.08	64.47	21.36	15.14	11.67	10.79	10.52
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	10.24	10.08	9.91	9.86	9.74	9.74	9.69	9.69	9.63
45.0	10.08	9.97	9.86	9.80	9.74	9.74	9.69	9.63	9.63
90.0	10.08	10.02	9.86	9.86	9.80	9.74	9.74	9.69	9.69
135.0	10.24	10.08	9.97	9.91	9.80	9.80	9.74	9.74	9.69
180.0	10.19	10.02	9.91	9.86	9.80	9.74	9.69	9.63	9.63
225.0	10.35	10.13	9.97	9.80	9.74	9.69	9.69	9.63	9.63
270.0	10.57	10.30	10.13	9.97	9.91	9.80	9.80	9.74	9.69
315.0	10.35	10.13	10.02	9.86	9.80	9.74	9.74	9.69	9.63
360.0	10.24	10.08	9.91	9.86	9.74	9.74	9.69	9.69	9.63
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	9.63	9.63	9.63	9.58	9.58	9.58	9.58	9.58	9.58
45.0	9.63	9.63	9.58	9.63	9.58	9.58	9.58	9.52	9.52
90.0	9.69	9.63	9.63	9.63	9.63	9.58	9.63	9.58	9.58
135.0	9.63	9.69	9.63	9.63	9.63	9.63	9.63	9.58	9.58
180.0	9.63	9.58	9.58	9.58	9.58	9.52	9.58	9.58	9.52
225.0	9.58	9.58	9.58	9.58	9.58	9.52	9.58	9.58	9.58
270.0	9.69	9.63	9.69	9.63	9.63	9.63	9.63	9.63	9.58
315.0	9.63	9.63	9.63	9.63	9.63	9.63	9.58	9.58	9.58
360.0	9.63	9.63	9.63	9.58	9.58	9.58	9.58	9.58	9.58



Intensity data(cd)

C/ $\gamma$ (°)	90.0
0.0	9.58
45.0	9.58
90.0	9.58
135.0	9.58
180.0	9.58
225.0	9.58
270.0	9.58
315.0	9.63
360.0	9.58