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Nata

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Client:

LumCAT: 3-2031-M

Luminaire: 92.70.124.00

Report No: nata-0100

Test No:

LampCAT: CREE CMT1420

Lamp flux(lm): 1997.6

Number of Lamps: 1

Length(mm): 79

Phm Type: C

Voltage(V): 35.3000

Current(A): 0.4000

Power (W): 14.1200

PF: 0.0000

Ballast type: DC

Width(mm): 79

Height(mm): 0

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Photometric Results

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Lumens(lm): 1776.06, Efficiency(%): 88.91% , Luminous Efficacy(lm/W): 125.78

Central intensity(cd): 20472.720, Maximum intensity(cd): 20472.720

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

Beam Angle(50%Imax): [C0/180]Total=11.2

[C90/270]Total=11.2

Field angle(10%Imax): [C0/180]Total=22.8

[C90/270]Total=22.8

Maximum s/h(1/2): C0\_180=0.19 C90\_270=0.19

Maximum s/h(1/4): C0\_180=0.20 C90\_270=0.20

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.88%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.629%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	20472.723	19.592	19.592	.981%	1.103%
2.0	18527.855	141.811	161.402	7.099%	9.088%
4.0	13986.803	213.978	375.38	10.712%	21.136%
6.0	9204.535	211.009	586.389	10.563%	33.016%
8.0	5348.660	163.255	749.644	8.172%	42.208%
10.0	2826.045	107.625	857.269	5.388%	48.268%
12.0	1740.058	79.343	936.612	3.972%	52.735%
14.0	1177.120	62.454	999.066	3.126%	56.252%
16.0	965.029	58.337	1057.403	2.920%	59.537%
18.0	865.666	58.668	1116.071	2.937%	62.840%
20.0	812.646	60.956	1177.027	3.051%	66.272%
22.0	774.017	63.590	1240.617	3.183%	69.852%
24.0	742.002	66.189	1306.806	3.313%	73.579%
26.0	717.006	68.933	1375.739	3.451%	77.460%
28.0	691.956	71.245	1446.984	3.566%	81.472%
30.0	667.015	73.143	1520.127	3.661%	85.590%
32.0	637.292	74.065	1594.192	3.708%	89.760%
34.0	540.640	66.303	1660.495	3.319%	93.493%
36.0	347.922	44.850	1705.345	2.245%	96.019%
38.0	167.516	22.618	1727.964	1.132%	97.292%
40.0	40.680	5.735	1733.699	.287%	97.615%
42.0	18.031	2.646	1736.345	.132%	97.764%
44.0	13.826	2.106	1738.451	.105%	97.883%
46.0	12.532	1.977	1740.428	.099%	97.994%
48.0	11.699	1.907	1742.335	.095%	98.101%
50.0	11.011	1.850	1744.185	.093%	98.205%
52.0	10.433	1.803	1745.988	.090%	98.307%
54.0	9.883	1.753	1747.741	.088%	98.406%
56.0	9.463	1.721	1749.462	.086%	98.503%
58.0	9.071	1.687	1751.149	.084%	98.598%
60.0	8.768	1.665	1752.814	.083%	98.691%
62.0	8.520	1.650	1754.464	.083%	98.784%
64.0	8.279	1.632	1756.096	.082%	98.876%
66.0	8.080	1.619	1757.715	.081%	98.967%
68.0	7.914	1.609	1759.324	.081%	99.058%
70.0	7.797	1.607	1760.931	.080%	99.148%
72.0	7.667	1.599	1762.53	.080%	99.238%
74.0	7.584	1.599	1764.129	.080%	99.328%

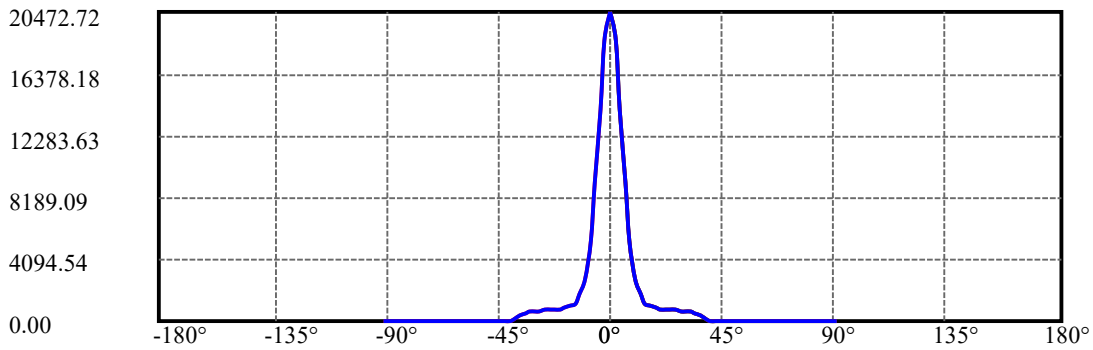
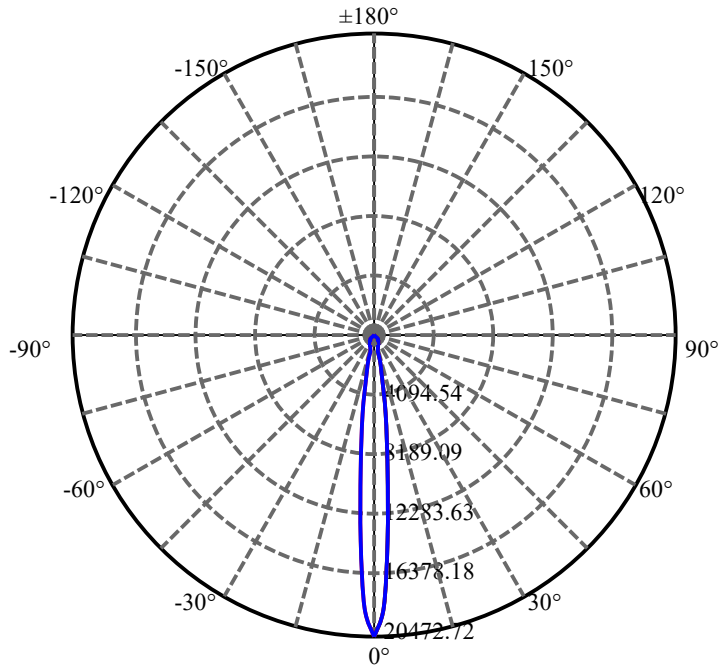
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.508	1.598	1765.727	.080%	99.418%
78.0	7.446	1.597	1767.324	.080%	99.508%
80.0	7.378	1.593	1768.917	.080%	99.598%
82.0	7.343	1.595	1770.512	.080%	99.688%
84.0	7.295	1.591	1772.103	.080%	99.777%
86.0	7.261	1.588	1773.692	.080%	99.867%
88.0	7.206	1.579	1775.271	.079%	99.956%
90.0	7.171	0.786	1776.058	.039%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1520.13	76.10%	85.59%
0-40	1733.70	86.79%	97.62%
0-60	1752.81	87.74%	98.69%
0-90	1775.27	88.87%	99.96%
0-120	1775.27	88.87%	99.96%
0-180	1776.06	88.91%	100.00%
60-90	24.12	1.21%	1.36%
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%
0-27.27	1420.85	71.13%	80.00%

ZONAL LUMEN SUMMARY

0-10	857.27
10-20	319.76
20-30	343.10
30-40	213.57
40-50	10.49
50-60	8.63
60-70	8.12
70-80	7.99
80-90	6.35
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): —————

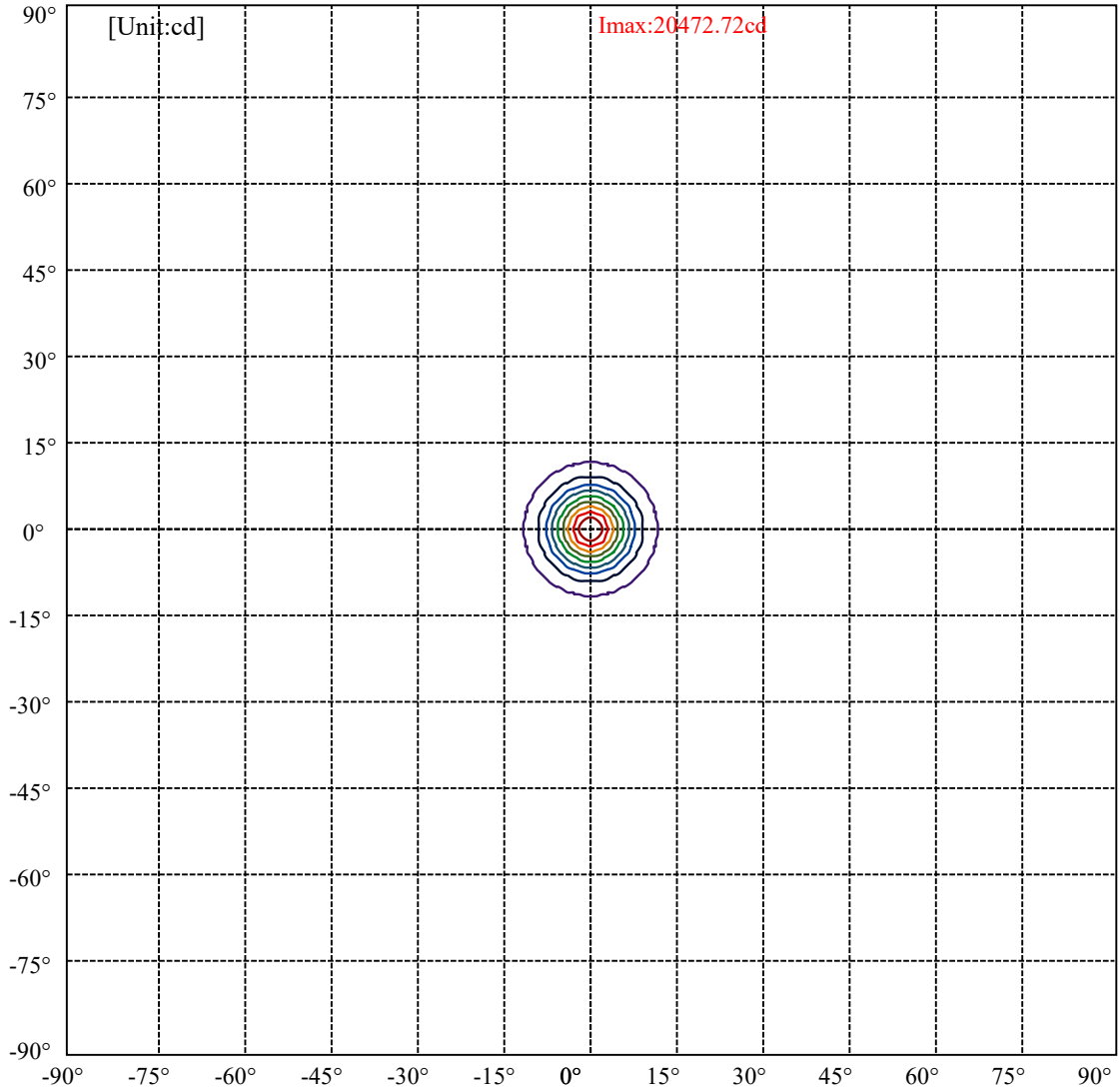
C0/C180: —————

C90/C270: —————

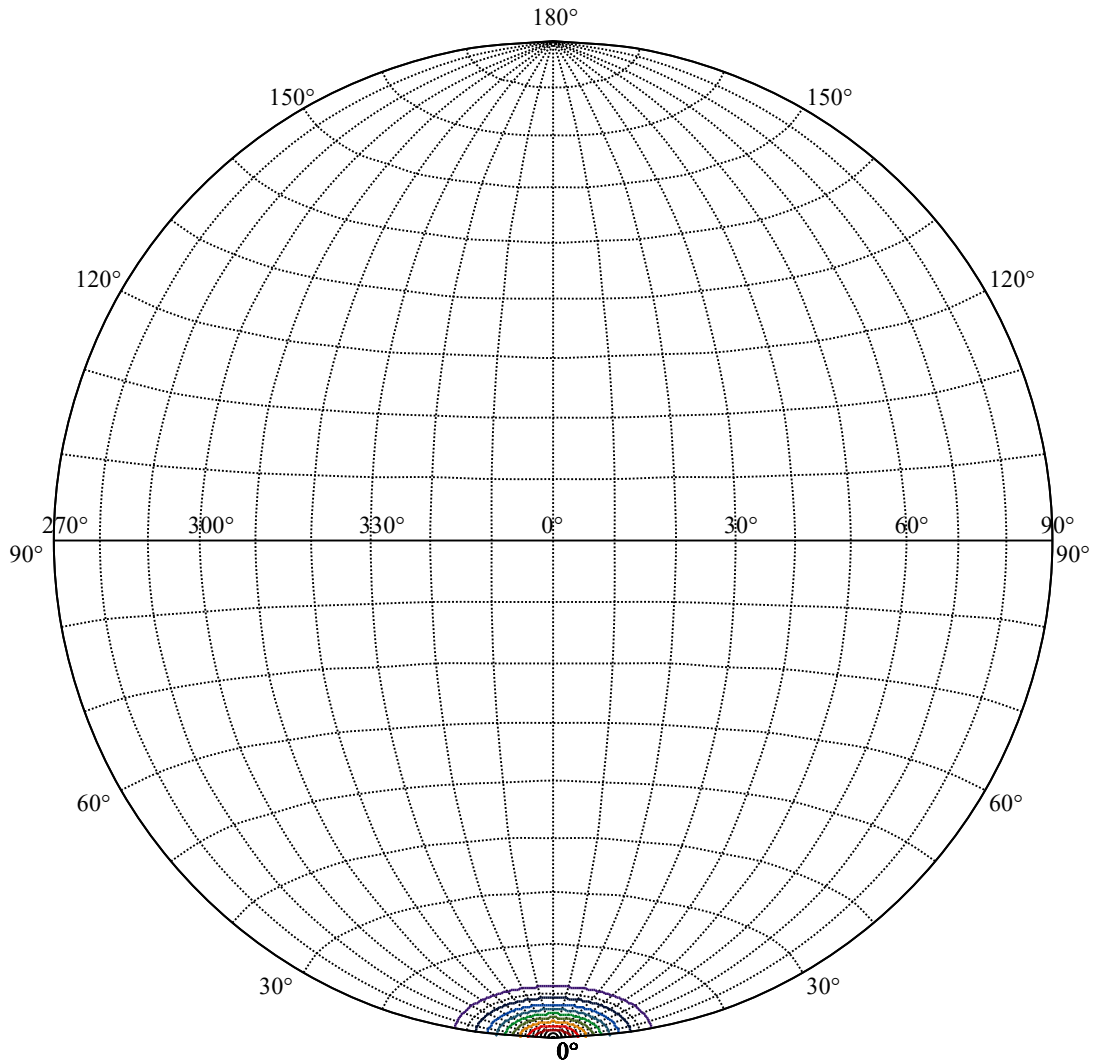
Field angle(10%Imax):C0/180Left:11.4 Right:11.4  
:C90/270Left:11.4 Right:11.4

Beam Angle(50%Imax):C0/180Left:5.6 Right:5.6  
:C90/270Left:5.6 Right:5.6





(10%Imax) 2047.27	—
(20%Imax) 4094.54	—
(30%Imax) 6141.82	—
(40%Imax) 8189.09	—
(50%Imax) 10236.4	—
(60%Imax) 12283.6	—
(70%Imax) 14330.9	—
(80%Imax) 16378.2	—
(90%Imax) 18425.4	—



House

[Unit:cd]

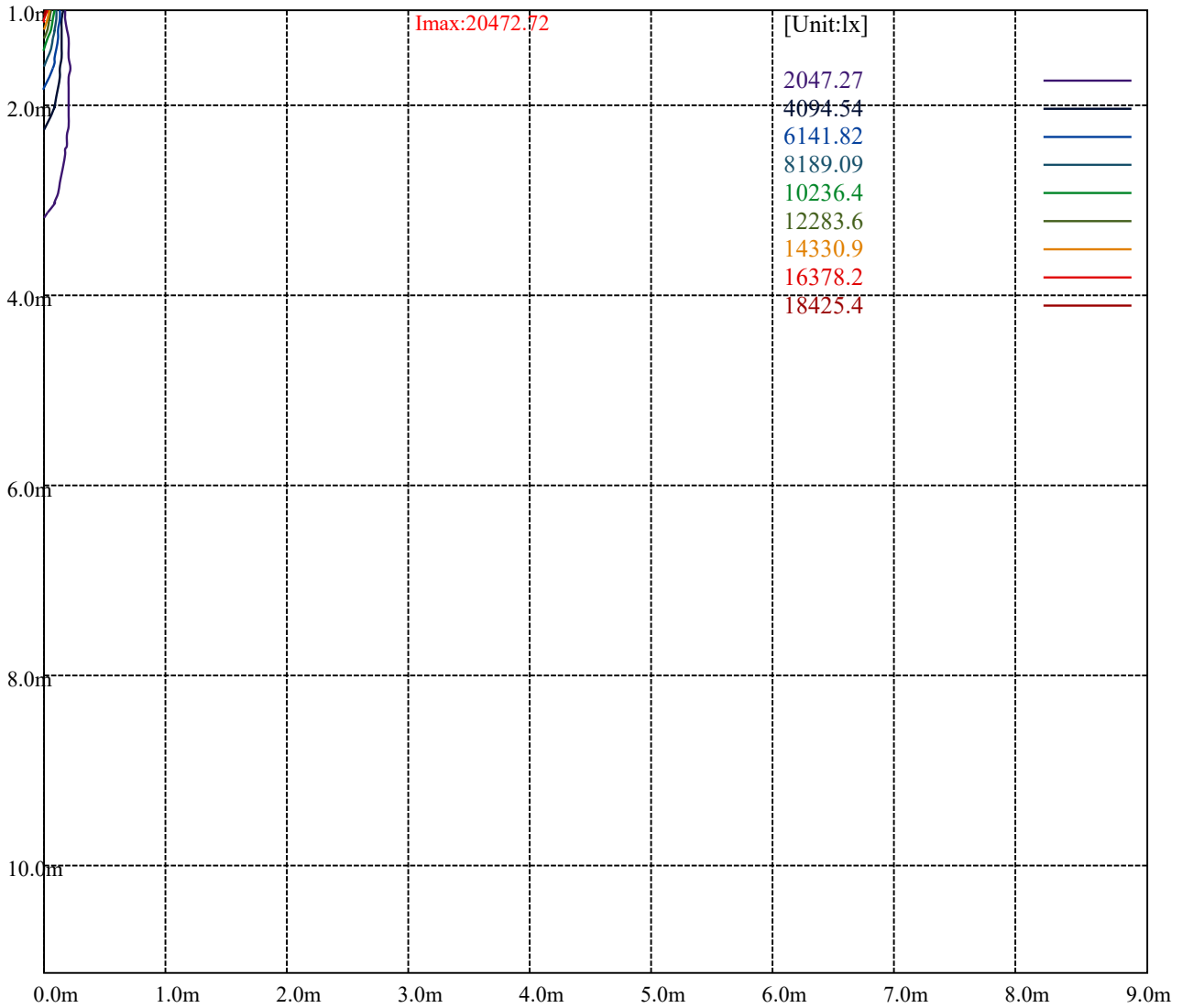
Road

**Imax:20472.72**

(10%Imax) 2047.27	—
(20%Imax) 4094.54	—
(30%Imax) 6141.82	—
(40%Imax) 8189.09	—
(50%Imax) 10236.4	—
(60%Imax) 12283.6	—
(70%Imax) 14330.9	—
(80%Imax) 16378.2	—
(90%Imax) 18425.4	—







Luminance Table

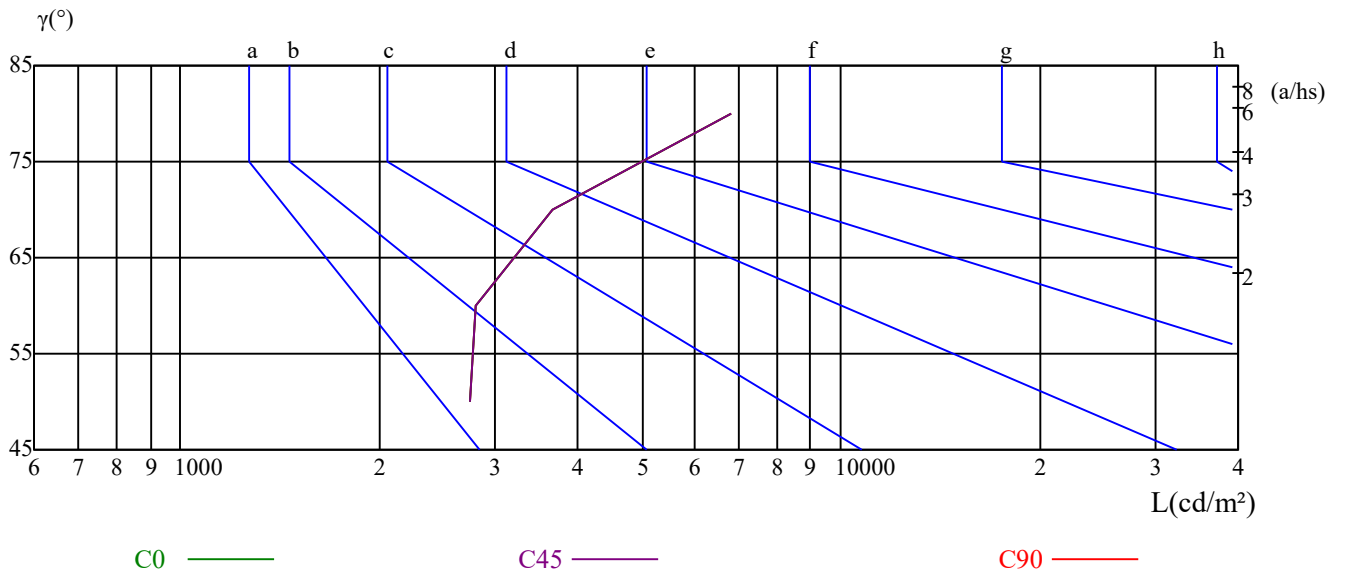
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	2745	0	2810	0	3653	0	6808	0
C45	0	2745	0	2810	0	3653	0	6808	0
C90	0	2745	0	2810	0	3653	0	6808	0

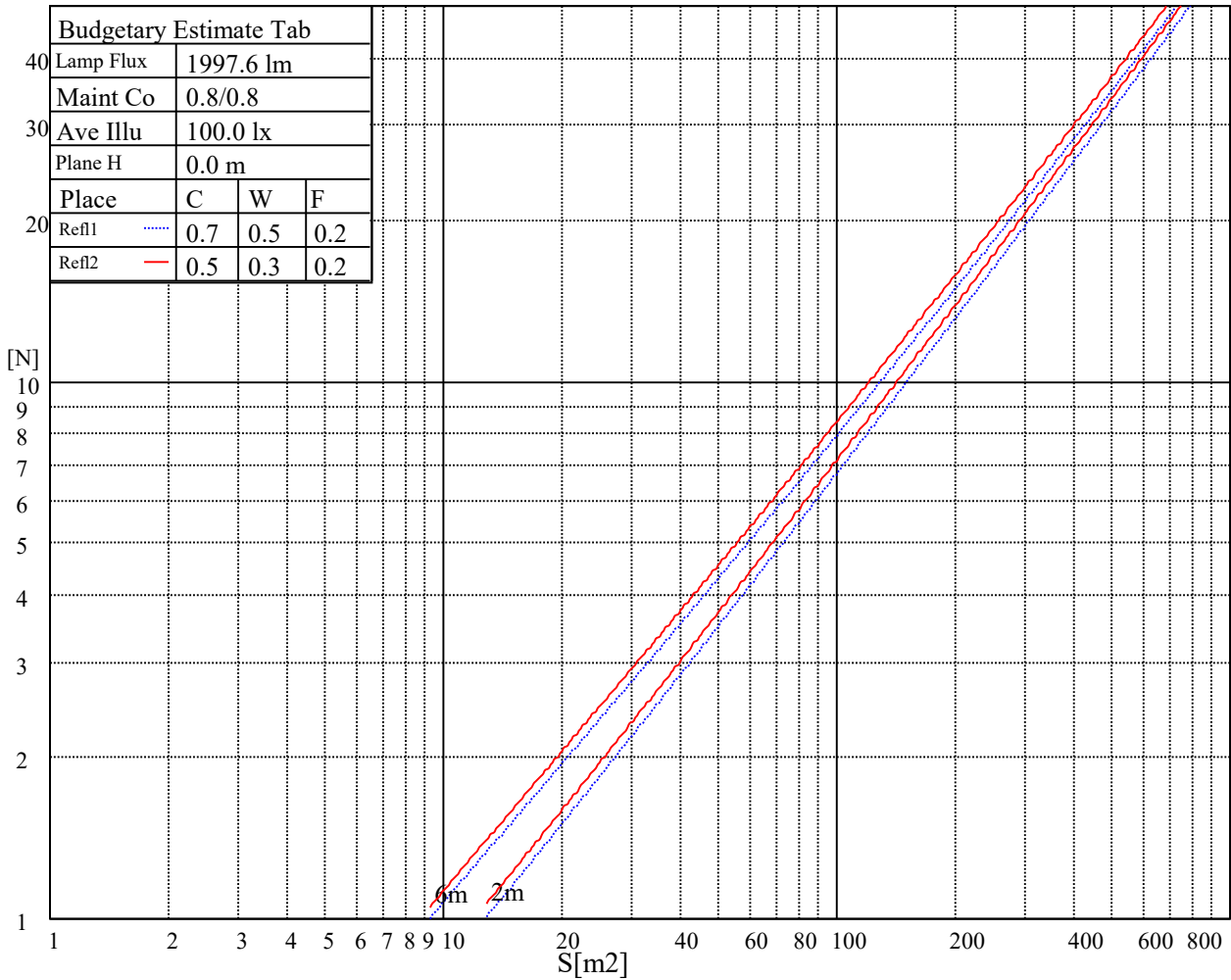
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3102	3102	3102	4682	4682	4682	13892	13892	13892

Glare Table

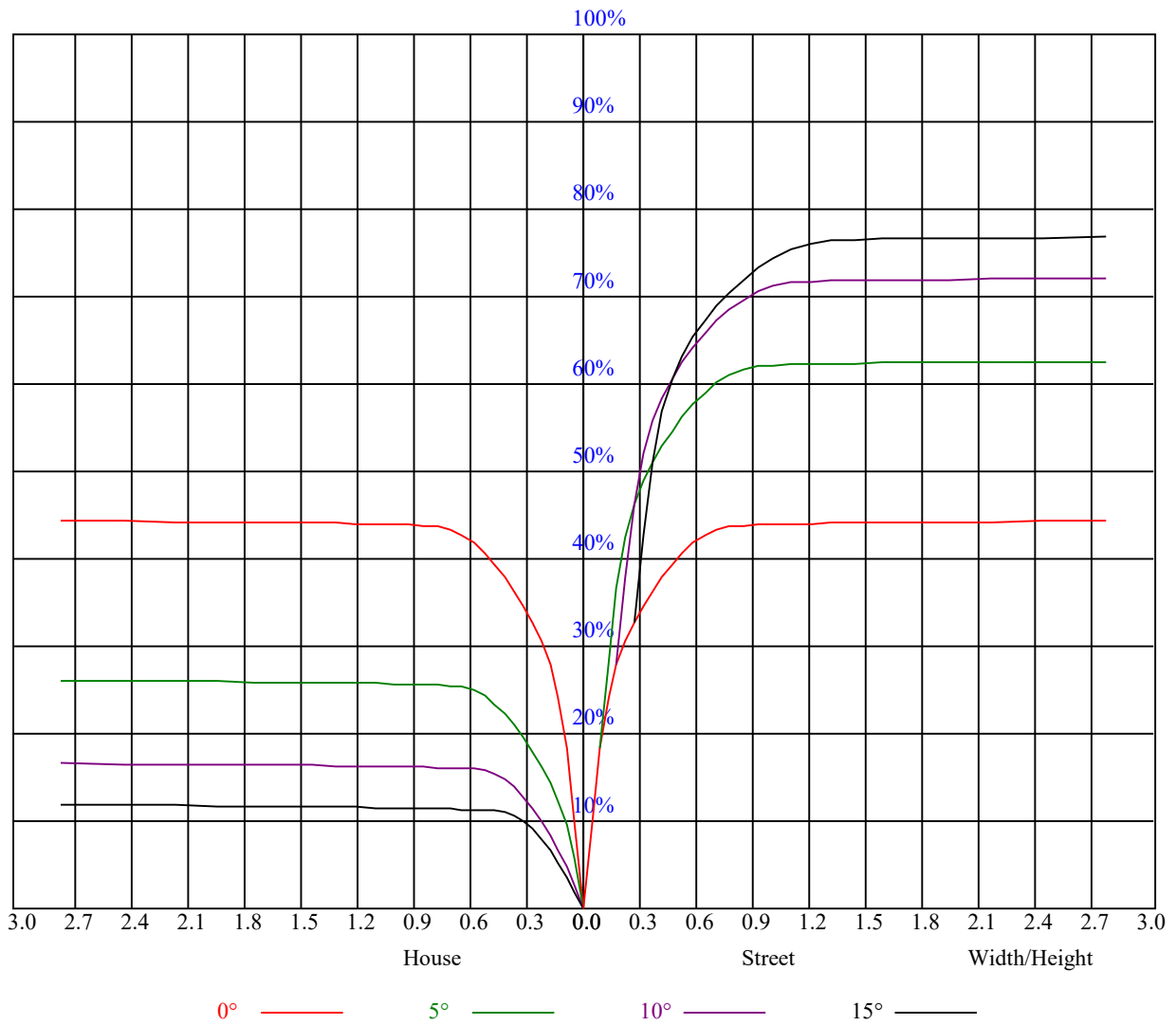
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

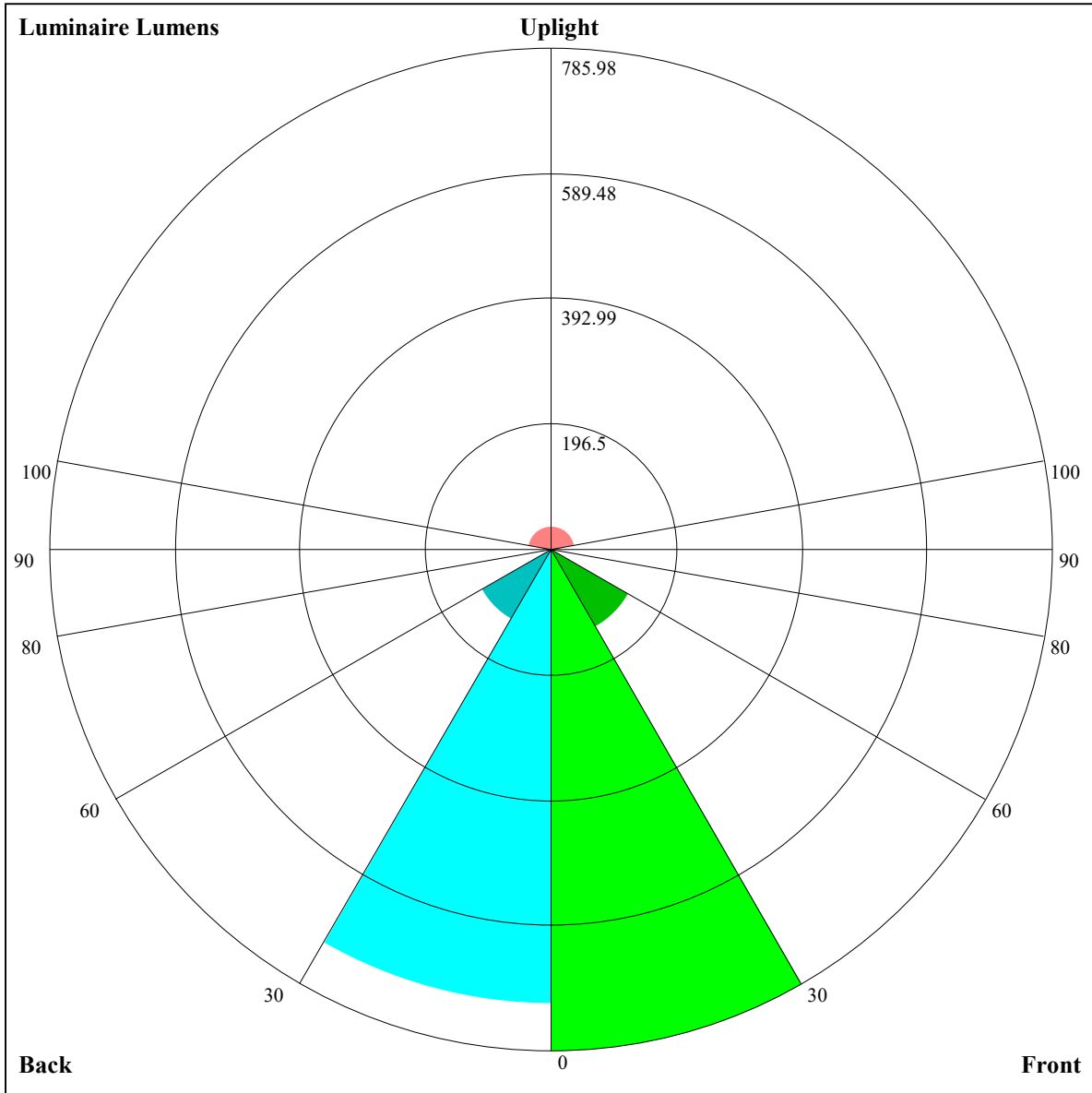
Luminance Limiting Curve





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	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.98	0.96	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.88	0.88	0.87	0.86	0.84
2	0.95	0.92	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.90	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.79	0.78
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.77	0.81	0.78	0.77	0.75
5	0.83	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.76	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.69
8	0.75	0.71	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.67
9	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.64





Luminaire Lumens:

FL=785.98,FM=139.86,FH=8.09,FVH=3.98

BL=711.36,BM=126.83,BH=8.06,BVH=3.97

UL=7.82,UH=37.23

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	19930.42	19748.73	16236.13	11049.82	6948.12	3452.04	1942.94	1334.02	1012.49
45.0	20431.43	21086.60	18130.07	12569.38	7867.56	4393.50	2824.39	1399.53	1063.14
90.0	21136.15	20794.80	17023.44	10951.27	7226.70	3643.08	2022.22	1348.33	1036.38
135.0	20392.89	19578.06	15773.66	10587.35	6287.44	3226.31	1845.49	1240.97	1001.48
180.0	19930.42	16461.86	10811.43	7223.95	3604.54	1969.37	1314.20	1005.50	900.83
225.0	20431.43	16219.62	10812.53	6602.36	3370.00	1825.67	1258.59	999.55	883.88
270.0	21136.15	17139.06	12200.50	7179.35	3710.80	1998.00	1337.32	1030.66	905.68
315.0	20392.89	17194.11	10906.67	7472.81	3774.12	2100.40	1375.31	1058.40	916.36
360.0	19930.42	19748.73	16236.13	11049.82	6948.12	3452.04	1942.94	1334.02	1012.49
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	891.91	835.21	787.86	751.52	726.74	699.77	676.09	652.42	623.24
45.0	917.24	847.32	806.03	769.69	741.61	715.73	689.31	663.98	637.00
90.0	894.89	833.17	788.13	755.48	729.99	705.22	677.96	655.34	620.21
135.0	879.80	817.04	777.95	743.81	718.49	693.71	668.38	645.26	615.53
180.0	834.16	790.50	756.97	728.51	702.19	679.34	651.70	618.28	471.78
225.0	820.45	782.24	749.59	722.23	702.19	677.69	655.12	609.42	421.18
270.0	842.36	794.46	761.98	732.25	706.92	682.15	659.58	620.49	444.86
315.0	844.51	801.24	763.63	732.53	707.92	682.04	657.98	633.15	491.32
360.0	891.91	835.21	787.86	751.52	726.74	699.77	676.09	652.42	623.24
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	468.53	285.74	60.89	22.24	15.31	12.88	12.00	11.23	10.63
45.0	487.25	292.35	75.76	22.96	14.53	13.05	12.17	11.45	10.85
90.0	436.16	230.36	50.60	20.76	14.42	12.77	11.84	11.18	10.52
135.0	435.50	289.05	49.61	19.21	13.71	12.55	11.73	11.01	10.46
180.0	242.14	71.13	22.90	14.42	13.10	12.33	11.56	10.90	10.41
225.0	169.96	43.11	19.71	15.47	13.10	12.22	11.45	10.79	10.24
270.0	286.84	50.32	21.53	14.37	13.32	12.33	11.51	10.85	10.24
315.0	257.00	78.07	24.45	14.81	13.10	12.11	11.34	10.68	10.13
360.0	468.53	285.74	60.89	22.24	15.31	12.88	12.00	11.23	10.63
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	10.08	9.58	9.19	8.86	8.59	8.37	8.15	7.93	7.82
45.0	10.24	9.74	9.36	9.03	8.75	8.48	8.26	8.04	7.93
90.0	9.97	9.52	9.14	8.86	8.59	8.31	8.09	7.98	7.87
135.0	9.91	9.47	9.03	8.75	8.53	8.31	8.09	7.93	7.82
180.0	9.80	9.41	8.97	8.64	8.37	8.15	7.98	7.82	7.71
225.0	9.69	9.36	8.97	8.70	8.48	8.20	8.04	7.87	7.76
270.0	9.74	9.36	8.97	8.70	8.48	8.26	8.04	7.93	7.76
315.0	9.63	9.25	8.92	8.59	8.37	8.15	7.98	7.82	7.71
360.0	10.08	9.58	9.19	8.86	8.59	8.37	8.15	7.93	7.82
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	7.65	7.54	7.49	7.38	7.38	7.32	7.27	7.27	7.21
45.0	7.76	7.65	7.60	7.54	7.43	7.38	7.38	7.32	7.27
90.0	7.71	7.60	7.54	7.49	7.38	7.38	7.32	7.27	7.21
135.0	7.65	7.60	7.54	7.49	7.38	7.32	7.27	7.21	7.21
180.0	7.60	7.54	7.43	7.38	7.32	7.32	7.21	7.16	7.16
225.0	7.65	7.60	7.54	7.43	7.38	7.32	7.27	7.27	7.21
270.0	7.65	7.60	7.49	7.49	7.43	7.38	7.32	7.32	7.21
315.0	7.65	7.54	7.43	7.38	7.32	7.32	7.32	7.27	7.16
360.0	7.65	7.54	7.49	7.38	7.38	7.32	7.27	7.27	7.21



Intensity data(cd)

C/γ(°)	90.0
0.0	7.16
45.0	7.16
90.0	7.16
135.0	7.16
180.0	7.16
225.0	7.21
270.0	7.21
315.0	7.16
360.0	7.16