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## Nata

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### Client:

LumCAT: 3-2099-M

Luminaire: 92.70.136.00

Report No: nata-0100

Test No:

LampCAT: CREE CMT2850

Lamp flux(lm): 3332.0

Number of Lamps: 1

Length(mm): 84

Phm Type: C

Voltage(V): 34.2000

Current(A): 0.6500

Power (W): 22.2300

PF: 0.0000

Ballast type: DC

Width(mm): 84

Height(mm): 0

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## Photometric Results

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Lumens(lm): 2989.74, Efficiency(%): 89.73% , Luminous Efficacy(lm/W): 134.49

Central intensity(cd): 11710.500, Maximum intensity(cd): 11710.500

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

Beam Angle(50%Imax): [C0/180]Total=23.0

[C90/270]Total=23.0

Field angle(10%Imax): [C0/180]Total=55.6

[C90/270]Total=55.6

Maximum s/h(1/2): C0\_180=0.39 C90\_270=0.39

Maximum s/h(1/4): C0\_180=0.38 C90\_270=0.38

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.75%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.533%

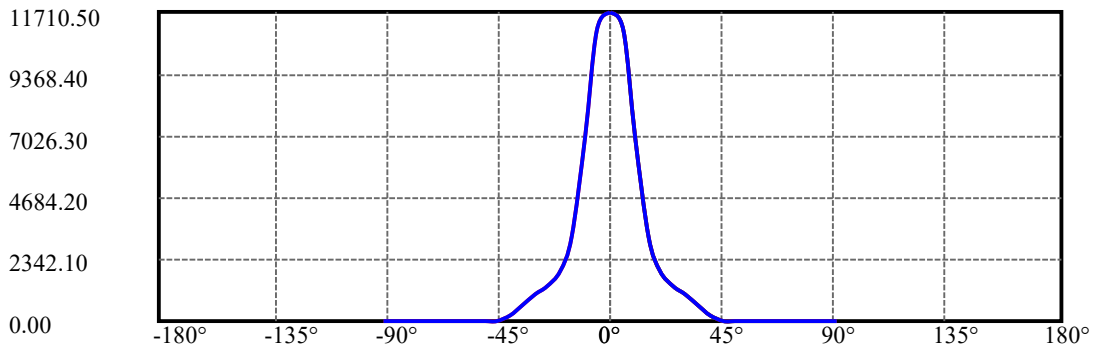
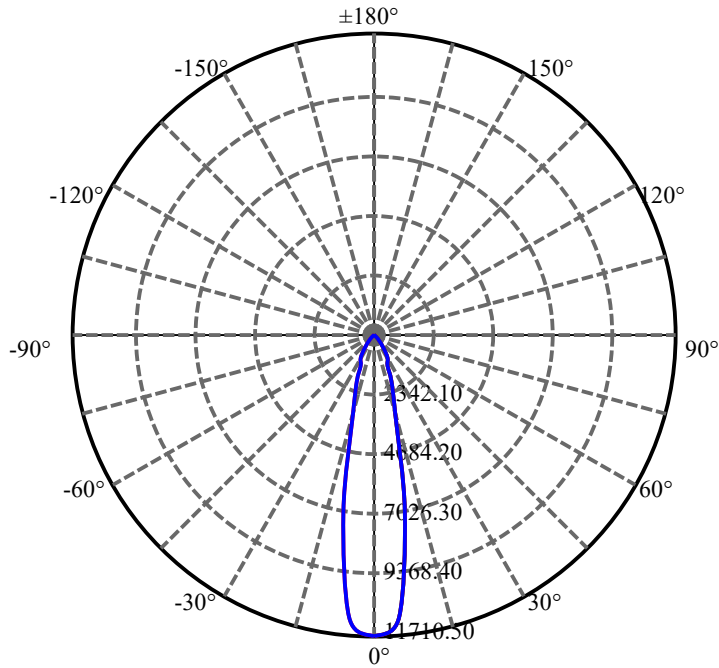
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11710.496	70.031	70.031	2.102%	2.342%
5.0	10993.731	525.207	595.238	15.763%	19.909%
10.0	6990.855	665.411	1260.649	19.971%	42.166%
15.0	3179.851	451.120	1711.77	13.539%	57.255%
20.0	1867.788	350.162	2061.931	10.509%	68.967%
25.0	1323.143	306.510	2368.441	9.199%	79.219%
30.0	1052.981	288.589	2657.03	8.661%	88.872%
35.0	595.607	187.258	2844.288	5.620%	95.135%
40.0	212.814	74.982	2919.27	2.250%	97.643%
45.0	24.101	9.341	2928.612	.280%	97.955%
50.0	18.375	7.716	2936.327	.232%	98.213%
55.0	16.400	7.364	2943.691	.221%	98.460%
60.0	15.299	7.262	2950.953	.218%	98.703%
65.0	14.411	7.159	2958.112	.215%	98.942%
70.0	14.012	7.217	2965.33	.217%	99.184%
75.0	13.406	7.098	2972.428	.213%	99.421%
80.0	13.014	7.025	2979.453	.211%	99.656%
85.0	12.704	6.937	2986.39	.208%	99.888%
90.0	12.223	3.350	2989.74	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2657.03	79.74%	88.87%
0-40	2919.27	87.61%	97.64%
0-60	2950.95	88.57%	98.70%
0-90	2986.39	89.63%	99.89%
0-120	2986.39	89.63%	99.89%
0-180	2989.74	89.73%	100.00%
60-90	42.70	1.28%	1.43%
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%
0-25.40	2391.79	71.78%	80.00%

ZONAL LUMEN SUMMARY

0-10	1260.65
10-20	801.28
20-30	595.10
30-40	262.24
40-50	17.06
50-60	14.63
60-70	14.38
70-80	14.12
80-90	6.94
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: —————

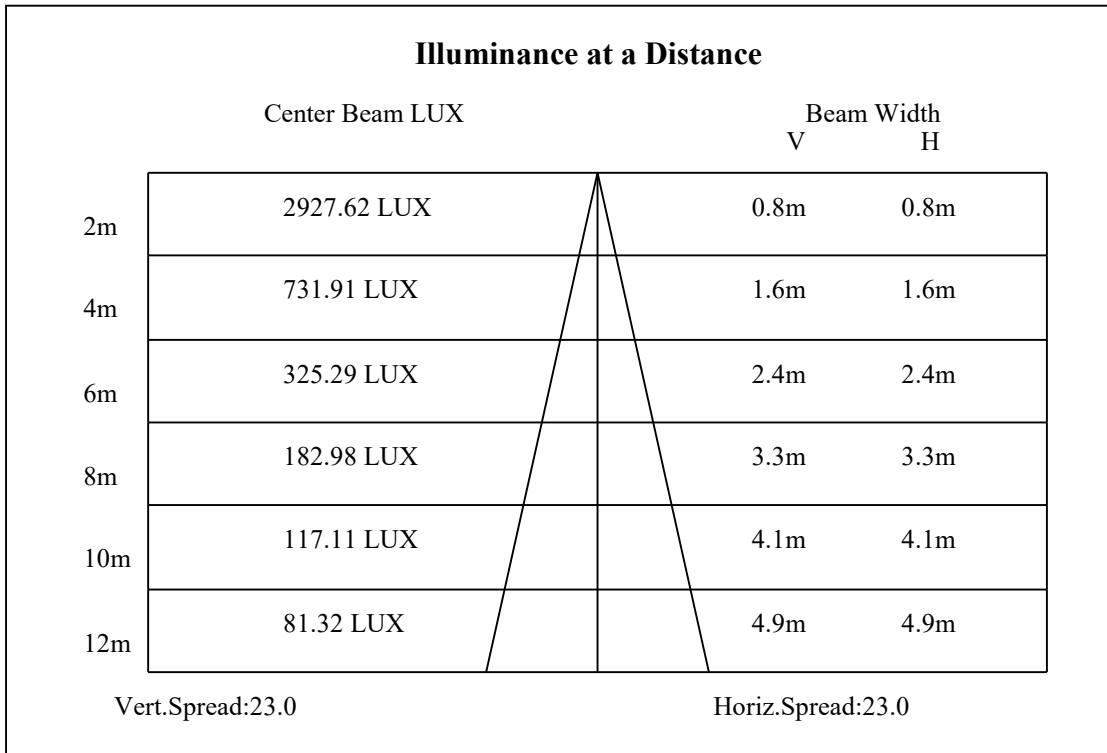
C90/C270: —————

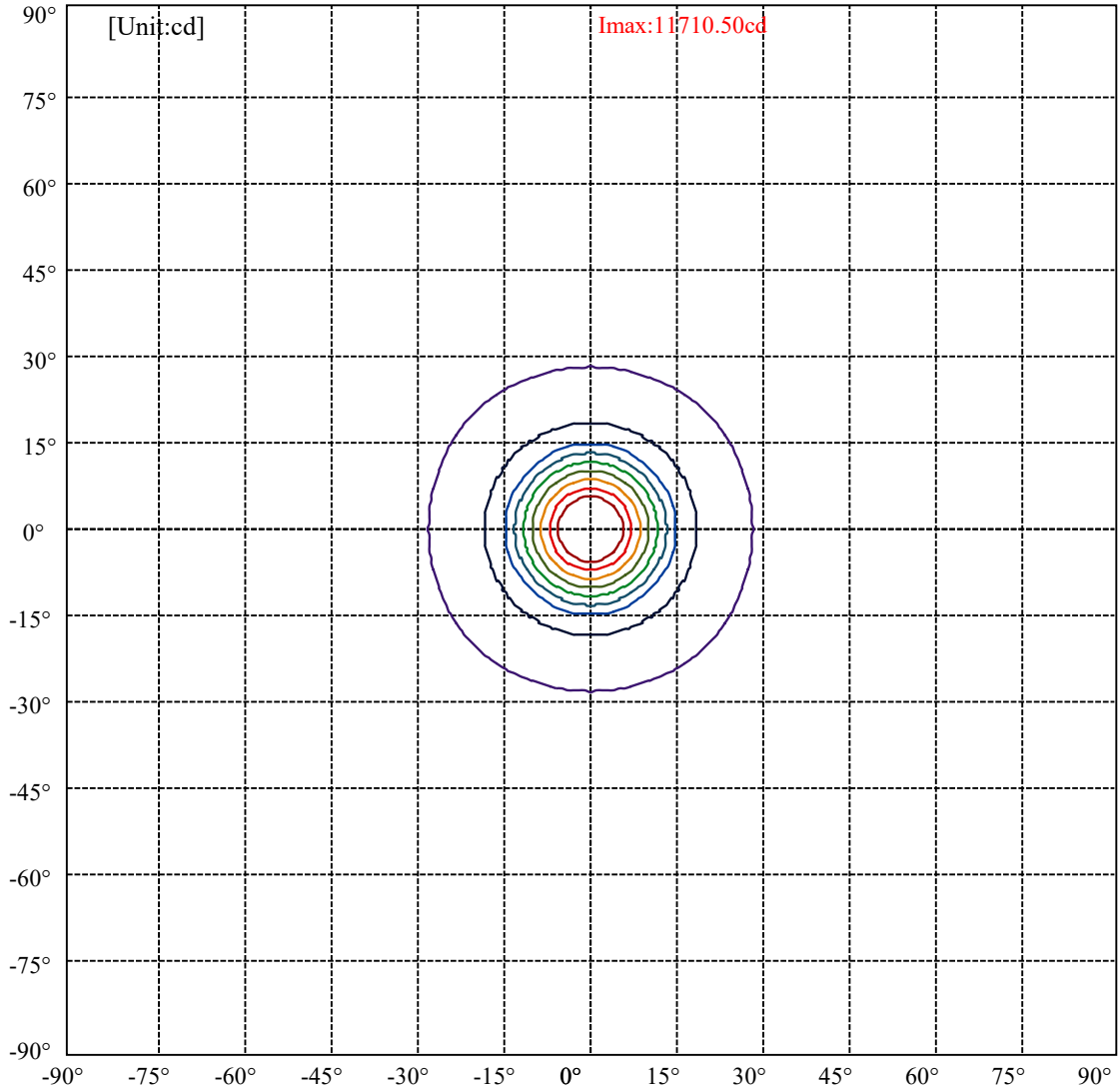
Field angle(10%Imax):C0/180Left:27.8 Right:27.8

:C90/270Left:27.8 Right:27.8

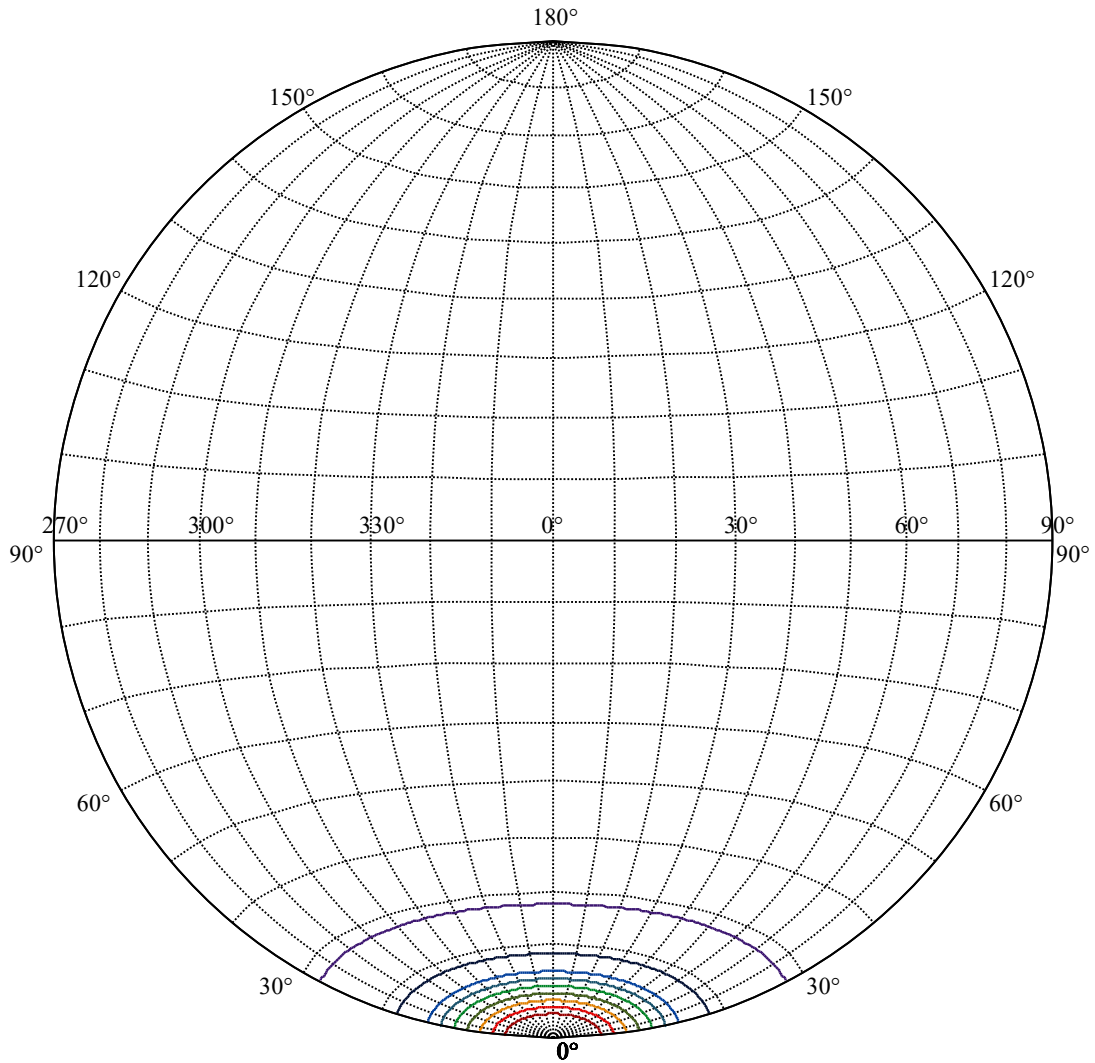
Beam Angle(50%Imax):C0/180Left:11.5 Right:11.5

:C90/270Left:11.5 Right:11.5





(10%Imax) 1171.05	—
(20%Imax) 2342.1	—
(30%Imax) 3513.15	—
(40%Imax) 4684.2	—
(50%Imax) 5855.25	—
(60%Imax) 7026.3	—
(70%Imax) 8197.35	—
(80%Imax) 9368.4	—
(90%Imax) 10539.4	—



House

[Unit:cd]

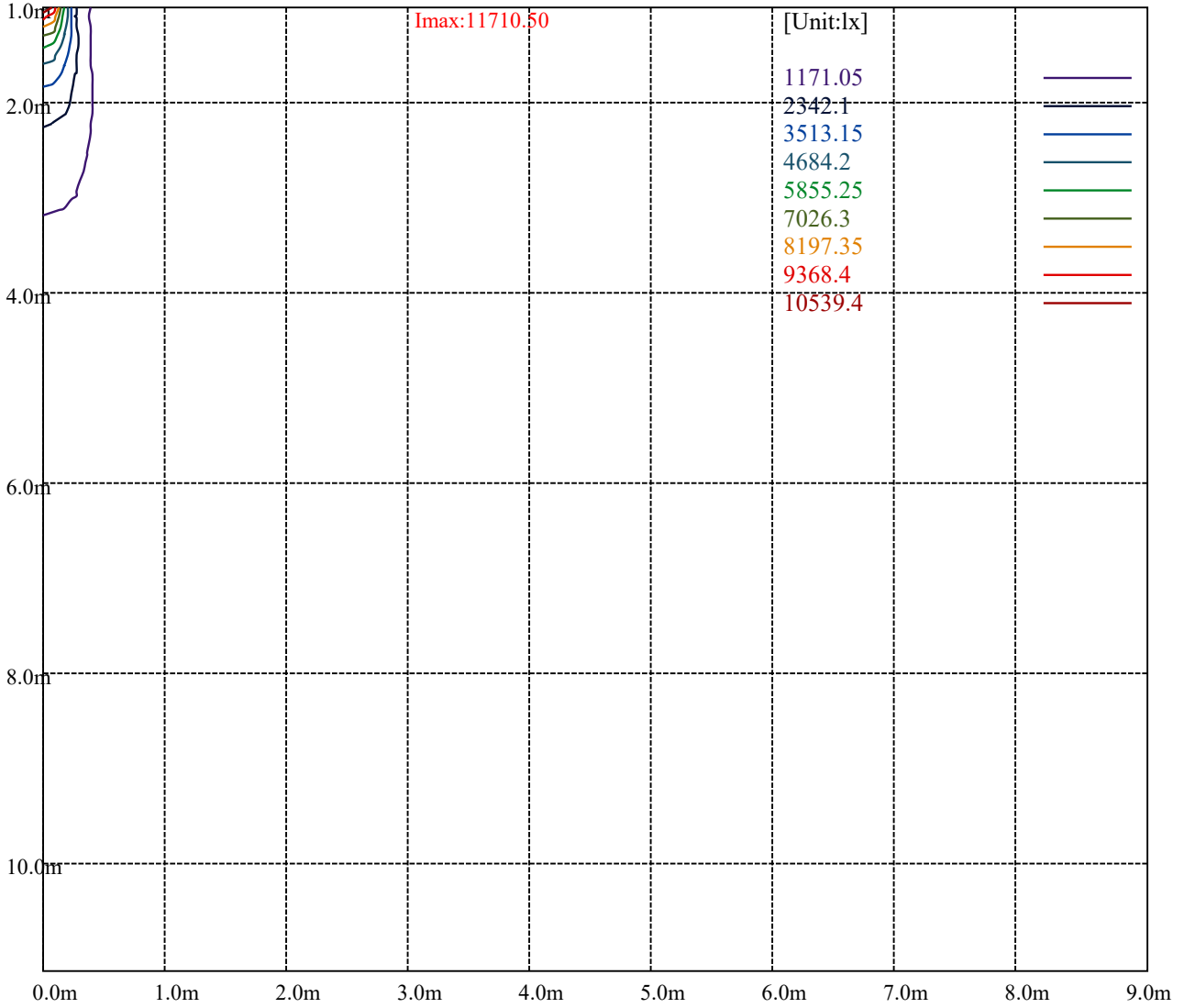
Road

**Imax:11710.50**

(10%Imax)	1171.05	—
(20%Imax)	2342.1	—
(30%Imax)	3513.15	—
(40%Imax)	4684.2	—
(50%Imax)	5855.25	—
(60%Imax)	7026.3	—
(70%Imax)	8197.35	—
(80%Imax)	9368.4	—
(90%Imax)	10539.4	—







Luminance Table

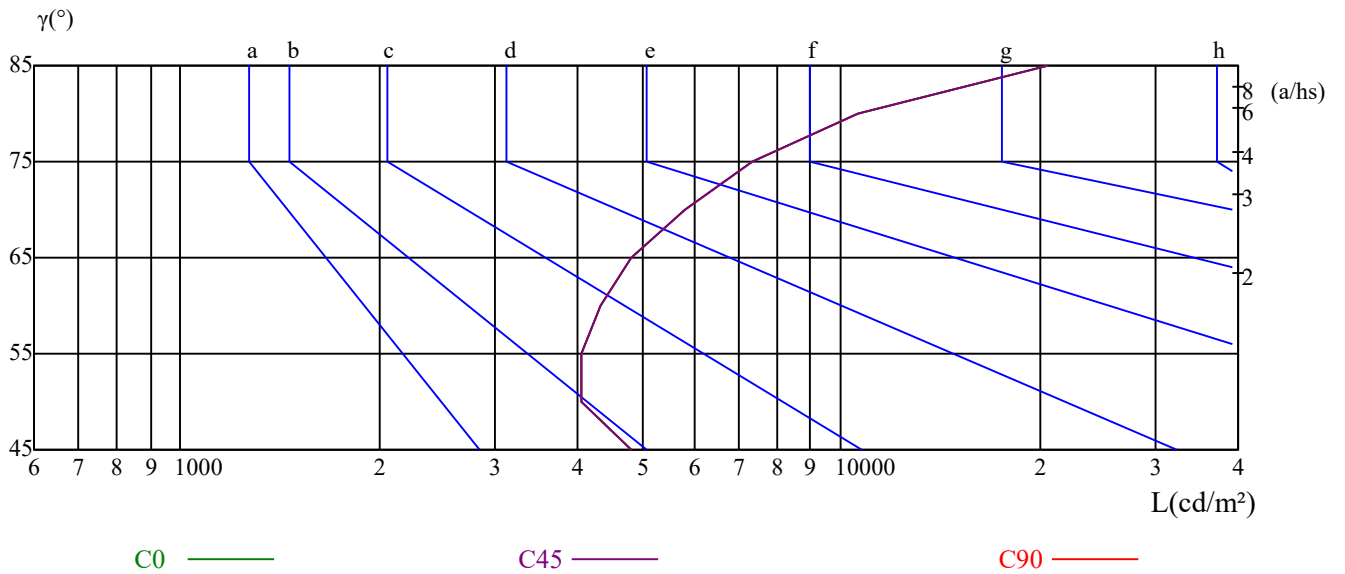
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4830	4051	4052	4336	4833	5806	7341	10621	20658
C45	4830	4051	4052	4336	4833	5806	7341	10621	20658
C90	4830	4051	4052	4336	4833	5806	7341	10621	20658

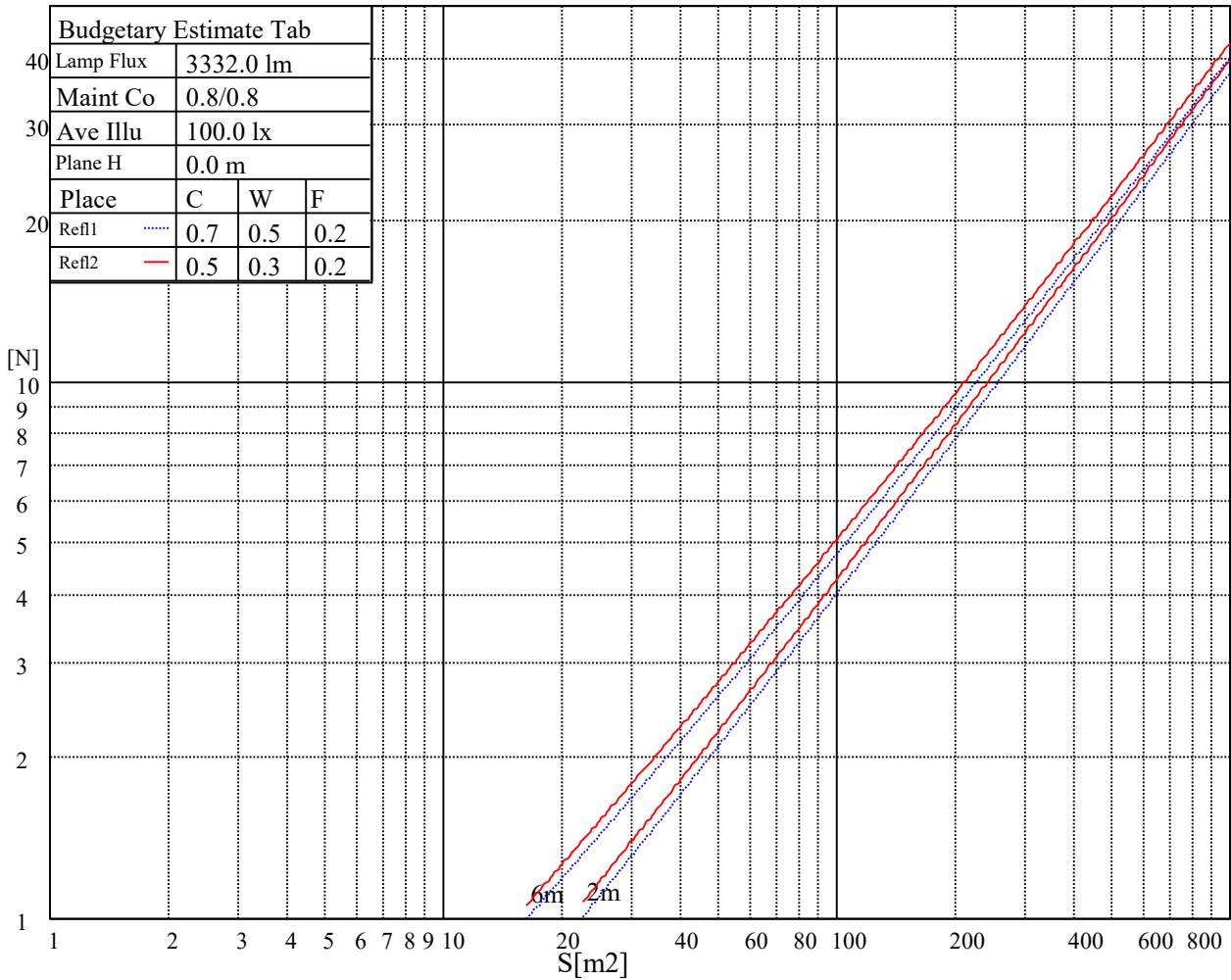
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4833	4833	4833	7341	7341	7341	20658	20658	20658

Glare Table

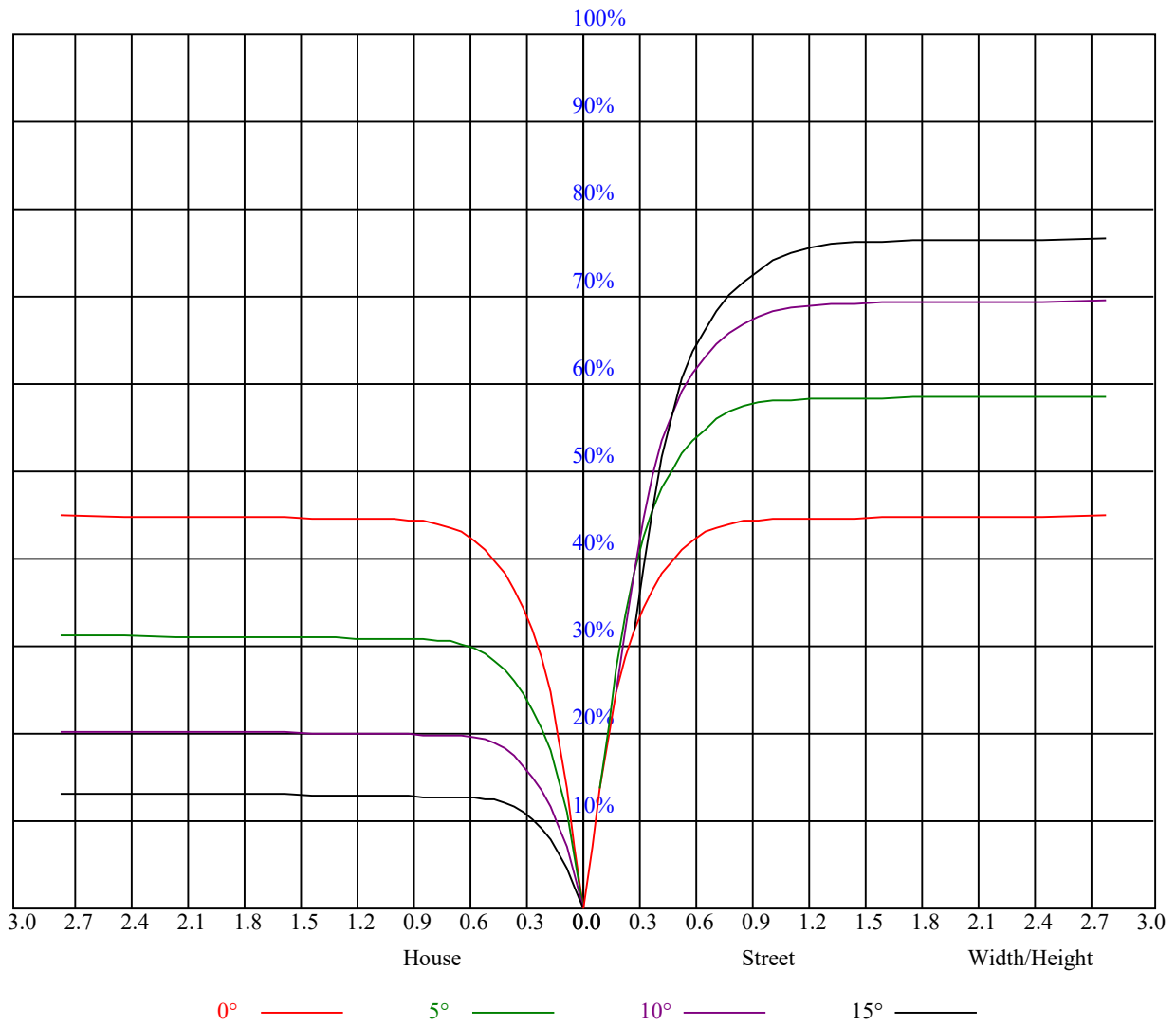
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

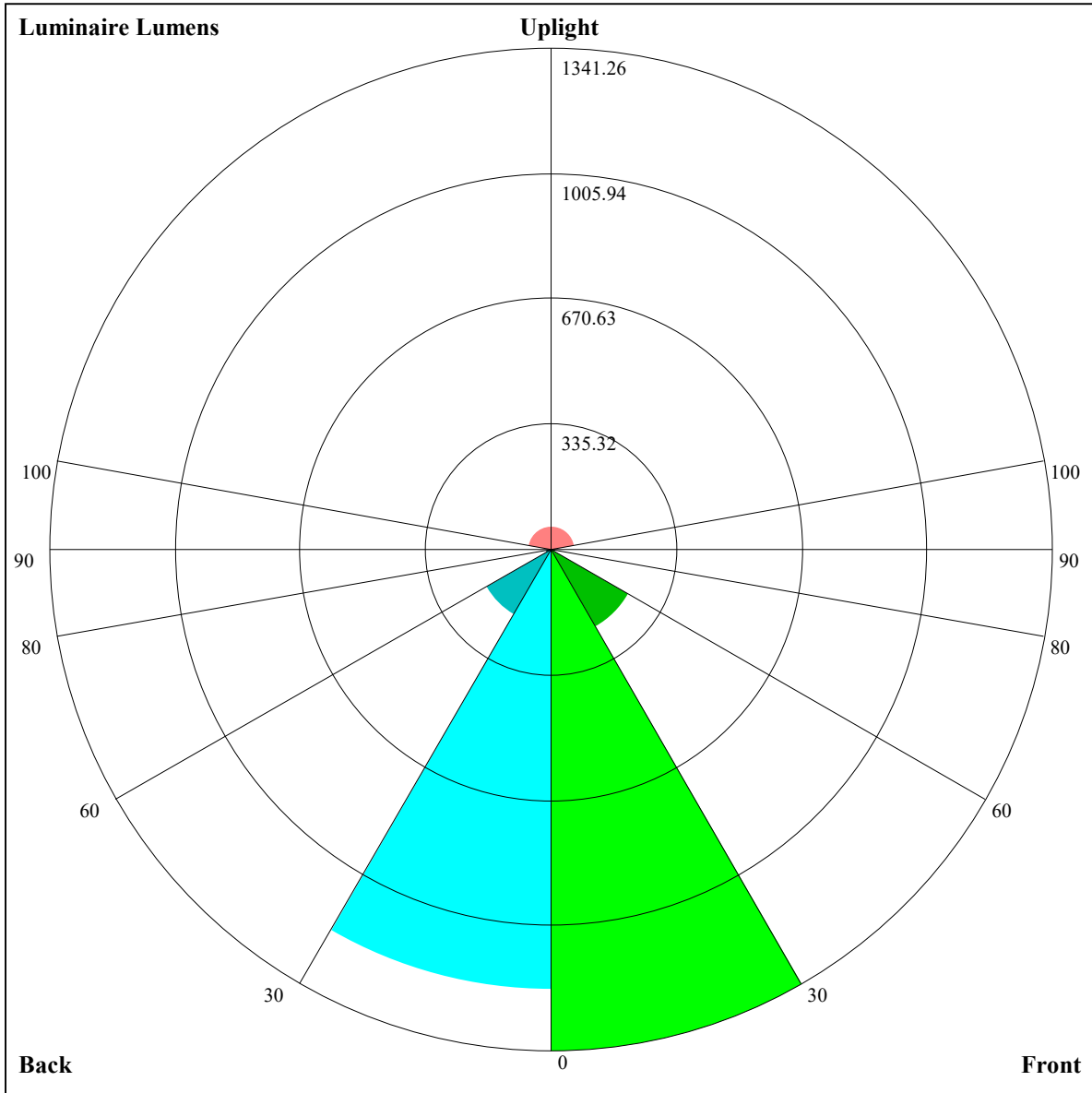
Luminance Limiting Curve





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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.00	0.98	0.95	0.98	0.96	0.94	0.95	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	0.94	0.90	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.91	0.87	0.83	0.89	0.86	0.83	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.87	0.82	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.75
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	0.76	0.73	0.80	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.74	0.70	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
9	0.73	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
10	0.71	0.66	0.64	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62





Luminaire Lumens:

FL=1341.26,FM=240.06,FH=14.16,FVH=6.87

BL=1176.65,BM=203.6,BH=14.42,BVH=6.92

UL=13.34,UH=63.46

BUG Rating:B3-U2-G0

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	11682.97	11638.92	8963.18	3964.06	2419.18	1445.23	1170.50	756.47	317.12
45.0	11721.51	11589.37	8891.61	3903.50	2032.68	1399.53	1139.12	703.07	297.86
90.0	11710.50	10973.29	6622.18	3092.52	1769.51	1281.71	1038.14	567.63	144.74
135.0	11727.01	11159.93	6606.77	3066.64	1785.48	1294.93	1046.07	580.85	301.16
180.0	11682.97	10047.79	5007.93	2501.76	1580.12	1213.44	910.25	428.06	61.17
225.0	11721.51	10346.20	5671.36	2627.84	1645.09	1255.84	970.70	479.65	94.70
270.0	11710.50	11237.01	7058.23	3138.21	1884.03	1365.40	1084.61	673.34	302.26
315.0	11727.01	10957.32	7105.58	3144.27	1826.22	1329.06	1064.46	575.78	183.50
360.0	11682.97	11638.92	8963.18	3964.06	2419.18	1445.23	1170.50	756.47	317.12

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	32.04	18.94	16.74	15.42	14.42	13.82	13.32	12.99	12.72
45.0	28.46	18.44	16.41	15.25	14.37	13.76	13.27	12.94	12.61
90.0	21.31	17.95	16.08	15.03	14.26	13.82	13.21	12.83	12.55
135.0	22.68	18.33	16.41	15.53	14.81	14.53	13.76	13.16	12.66
180.0	20.65	18.06	16.35	15.42	14.53	15.25	13.87	13.54	13.05
225.0	20.92	18.00	16.24	15.25	14.31	13.71	13.49	12.99	12.77
270.0	23.67	18.77	16.52	15.31	14.37	13.65	13.16	12.83	12.61
315.0	23.07	18.50	16.46	15.20	14.20	13.54	13.16	12.83	12.66
360.0	32.04	18.94	16.74	15.42	14.42	13.82	13.32	12.99	12.72

C/γ(°)	90.0
0.0	12.28
45.0	12.22
90.0	12.17
135.0	12.22
180.0	12.22
225.0	12.22
270.0	12.22
315.0	12.22
360.0	12.28