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## Nata

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### Client:

LumCAT: 2-1680-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): 70

Phm Type: C

Voltage(V): 35.3000

Current(A): 0.4000

Power (W): 14.1200

PF: 0.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1830.25, Efficiency(%): 91.62% , Luminous Efficacy(lm/W): 129.62

Central intensity(cd): 6732.296, Maximum intensity(cd): 6732.296

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

Beam Angle(50%Imax): [C0/180]Total=24.0

[C90/270]Total=24.0

Field angle(10%Imax): [C0/180]Total=58.6

[C90/270]Total=58.6

Maximum s/h(1/2): C0\_180=0.41 C90\_270=0.41

Maximum s/h(1/4): C0\_180=0.39 C90\_270=0.39

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 93.55%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.770%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2018/5/21  
Humidity(%): 60.0%

Operator: NT07  
Distance(m): 7.42

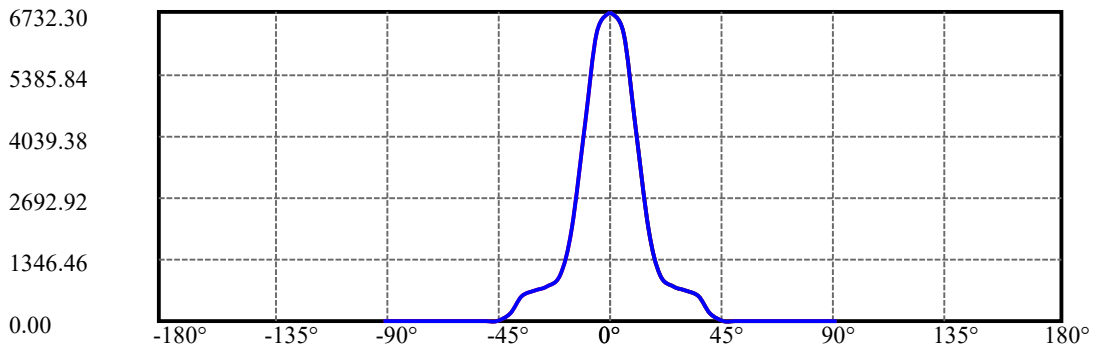
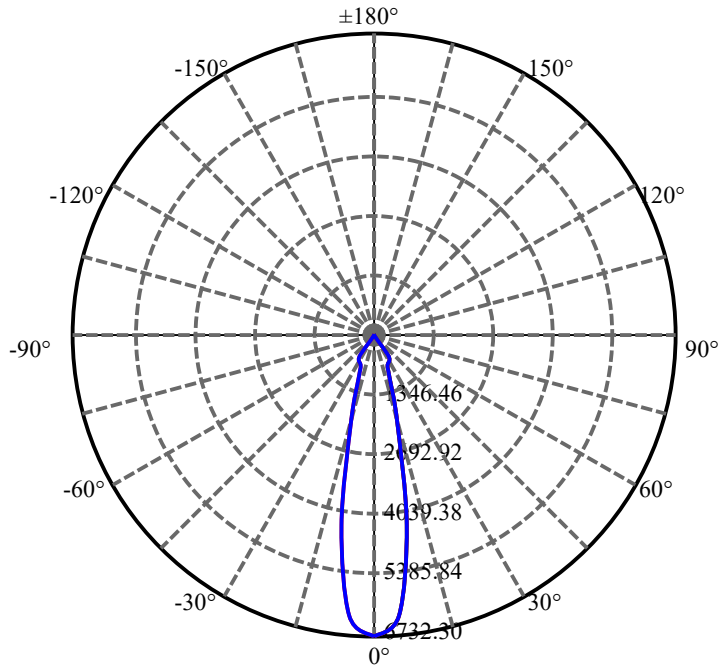
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6732.297	40.260	40.26	2.015%	2.200%
5.0	6280.077	300.020	340.281	15.019%	18.592%
10.0	4310.503	410.287	750.567	20.539%	41.009%
15.0	1990.495	282.388	1032.956	14.136%	56.438%
20.0	986.501	184.943	1217.899	9.258%	66.543%
25.0	740.144	171.456	1389.356	8.583%	75.911%
30.0	662.714	181.629	1570.985	9.092%	85.834%
35.0	529.154	166.365	1737.35	8.328%	94.924%
40.0	156.429	55.116	1792.466	2.759%	97.936%
45.0	12.112	4.695	1797.16	.235%	98.192%
50.0	8.940	3.754	1800.914	.188%	98.397%
55.0	8.293	3.724	1804.638	.186%	98.601%
60.0	7.928	3.763	1808.401	.188%	98.806%
65.0	7.722	3.836	1812.237	.192%	99.016%
70.0	7.591	3.910	1816.147	.196%	99.229%
75.0	7.508	3.975	1820.122	.199%	99.447%
80.0	7.474	4.034	1824.157	.202%	99.667%
85.0	7.446	4.066	1828.223	.204%	99.889%
90.0	7.398	2.028	1830.251	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1570.98	78.64%	85.83%
0-40	1792.47	89.73%	97.94%
0-60	1808.40	90.53%	98.81%
0-90	1828.22	91.52%	99.89%
0-120	1828.22	91.52%	99.89%
0-180	1830.25	91.62%	100.00%
60-90	23.59	1.18%	1.29%
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%
0-27.06	1464.20	73.30%	80.00%

ZONAL LUMEN SUMMARY

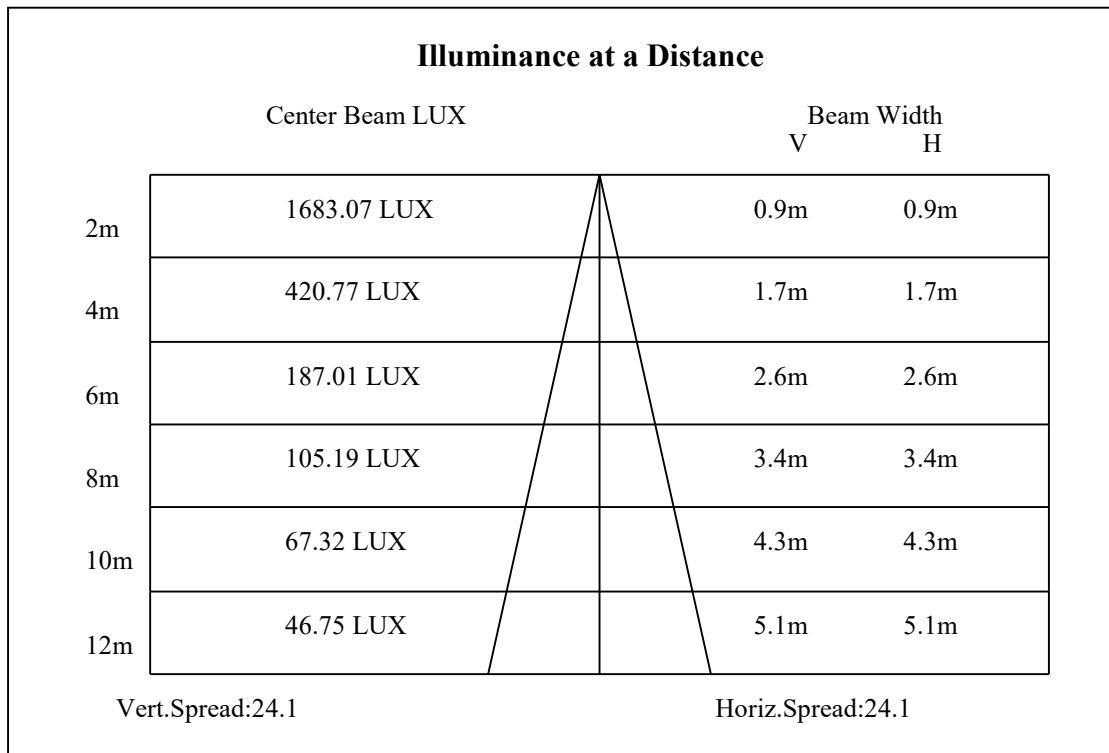
0-10	750.57
10-20	467.33
20-30	353.09
30-40	221.48
40-50	8.45
50-60	7.49
60-70	7.75
70-80	8.01
80-90	4.07
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

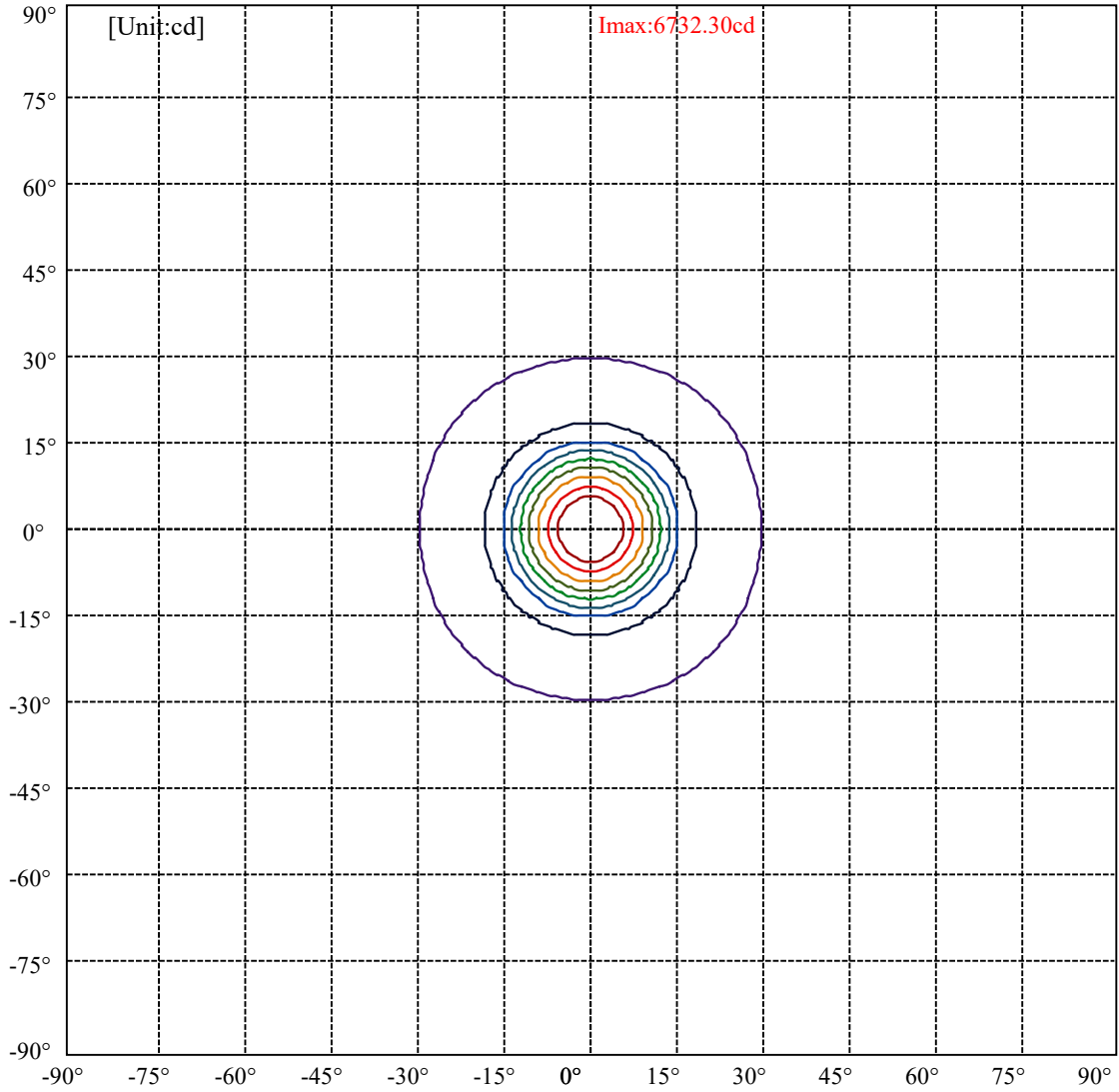


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

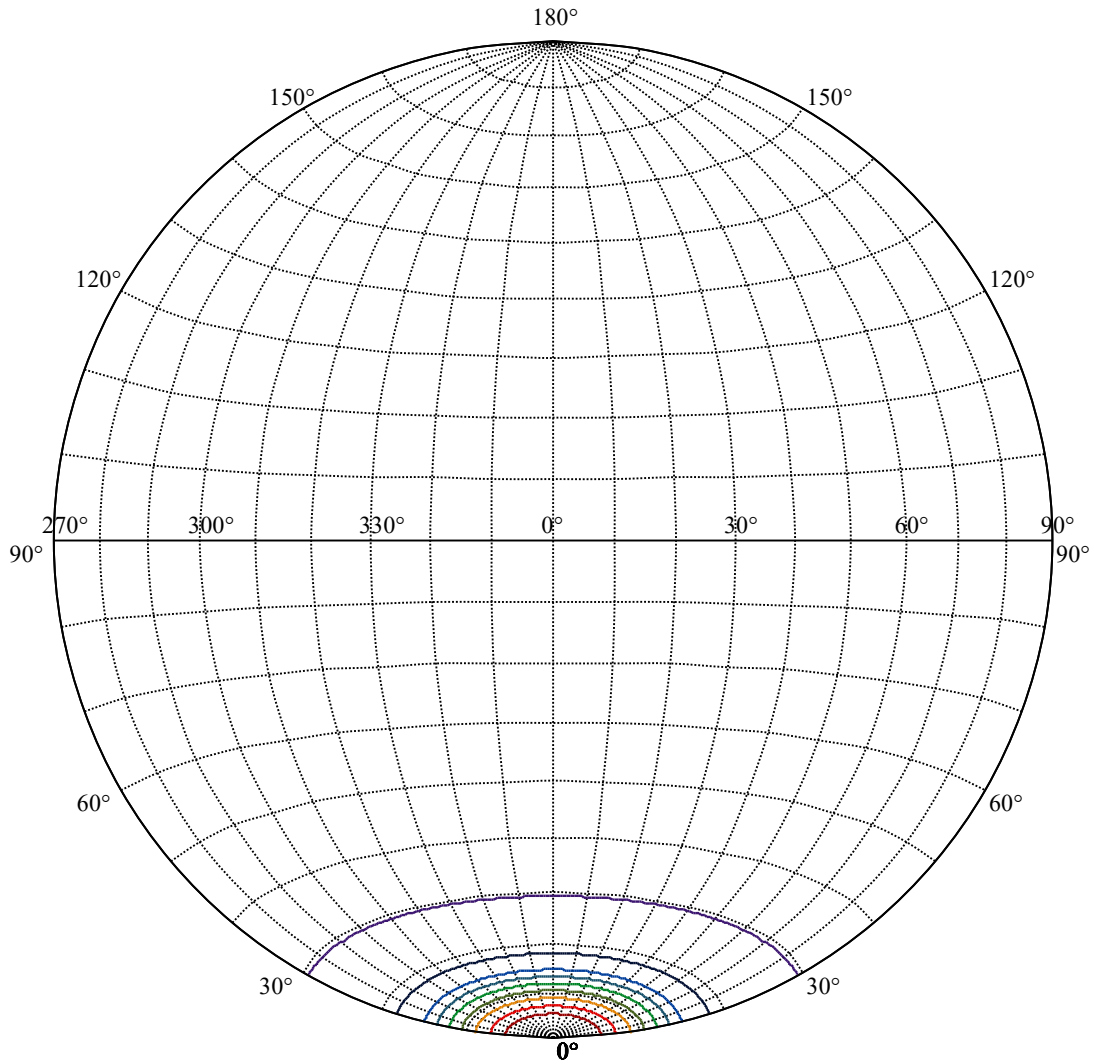
Field angle(10%Imax):C0/180Left:29.3 Right:29.3  
:C90/270Left:29.3 Right:29.3

Beam Angle(50%Imax):C0/180Left:12.0 Right:12.0  
:C90/270Left:12.0 Right:12.0





(10%Imax) 673.23	—
(20%Imax) 1346.46	—
(30%Imax) 2019.69	—
(40%Imax) 2692.92	—
(50%Imax) 3366.15	—
(60%Imax) 4039.38	—
(70%Imax) 4712.61	—
(80%Imax) 5385.84	—
(90%Imax) 6059.07	—



House

[Unit:cd]

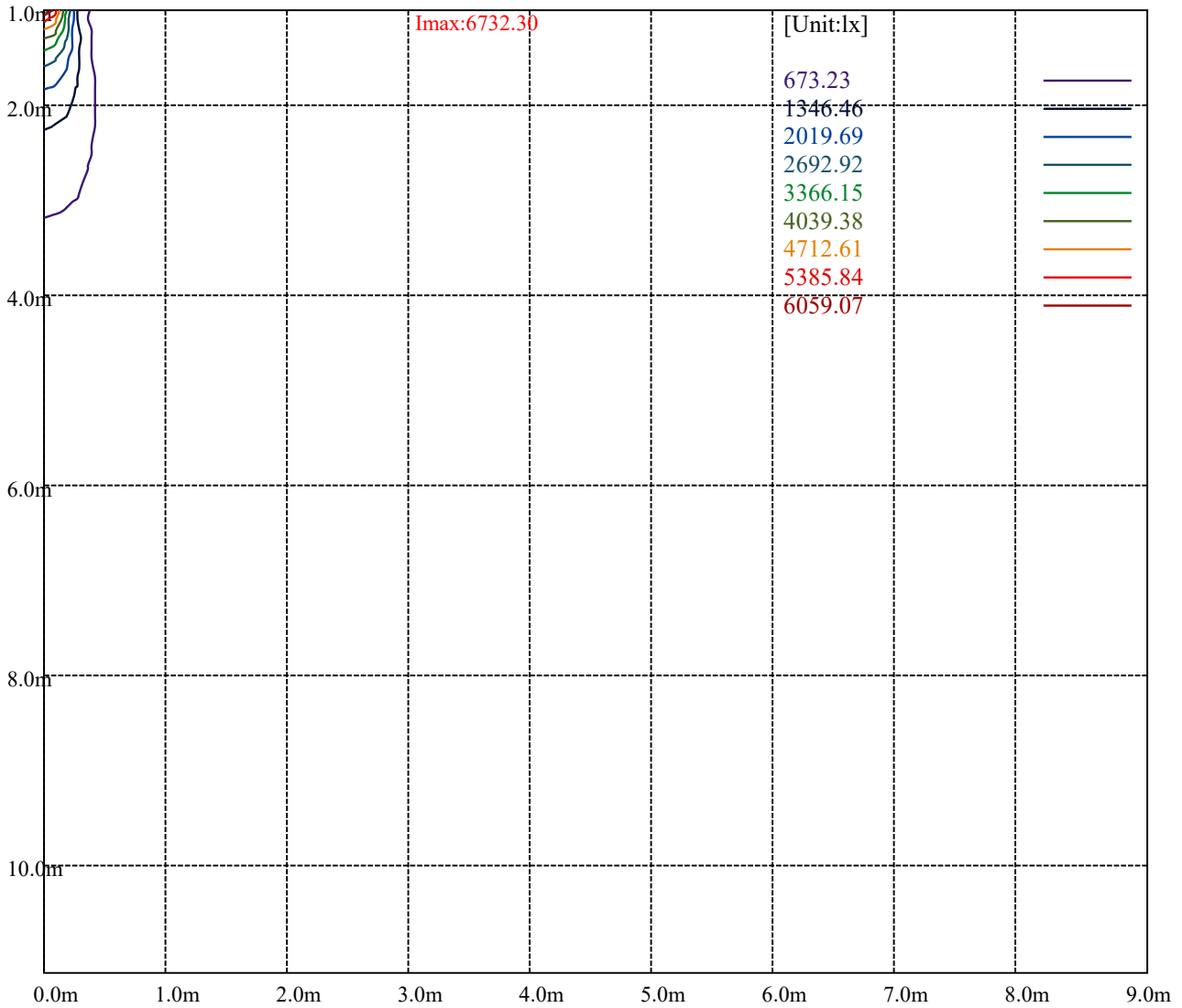
Road

**Imax:6732.30**

(10%Imax) 673.23	—
(20%Imax) 1346.46	—
(30%Imax) 2019.69	—
(40%Imax) 2692.92	—
(50%Imax) 3366.15	—
(60%Imax) 4039.38	—
(70%Imax) 4712.61	—
(80%Imax) 5385.84	—
(90%Imax) 6059.07	—







Luminance Table

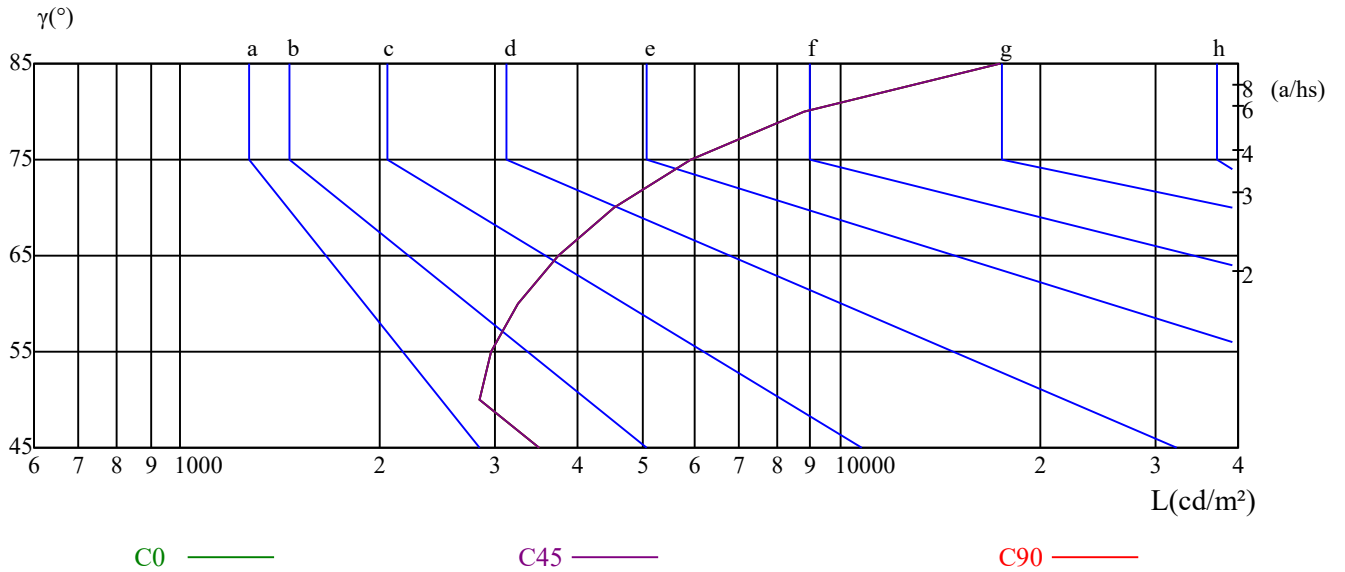
$\gamma$	45	50	55	60	65	70	75	80	85
C0	3496	2838	2951	3236	3729	4529	5920	8784	17436
C45	3496	2838	2951	3236	3729	4529	5920	8784	17436
C90	3496	2838	2951	3236	3729	4529	5920	8784	17436

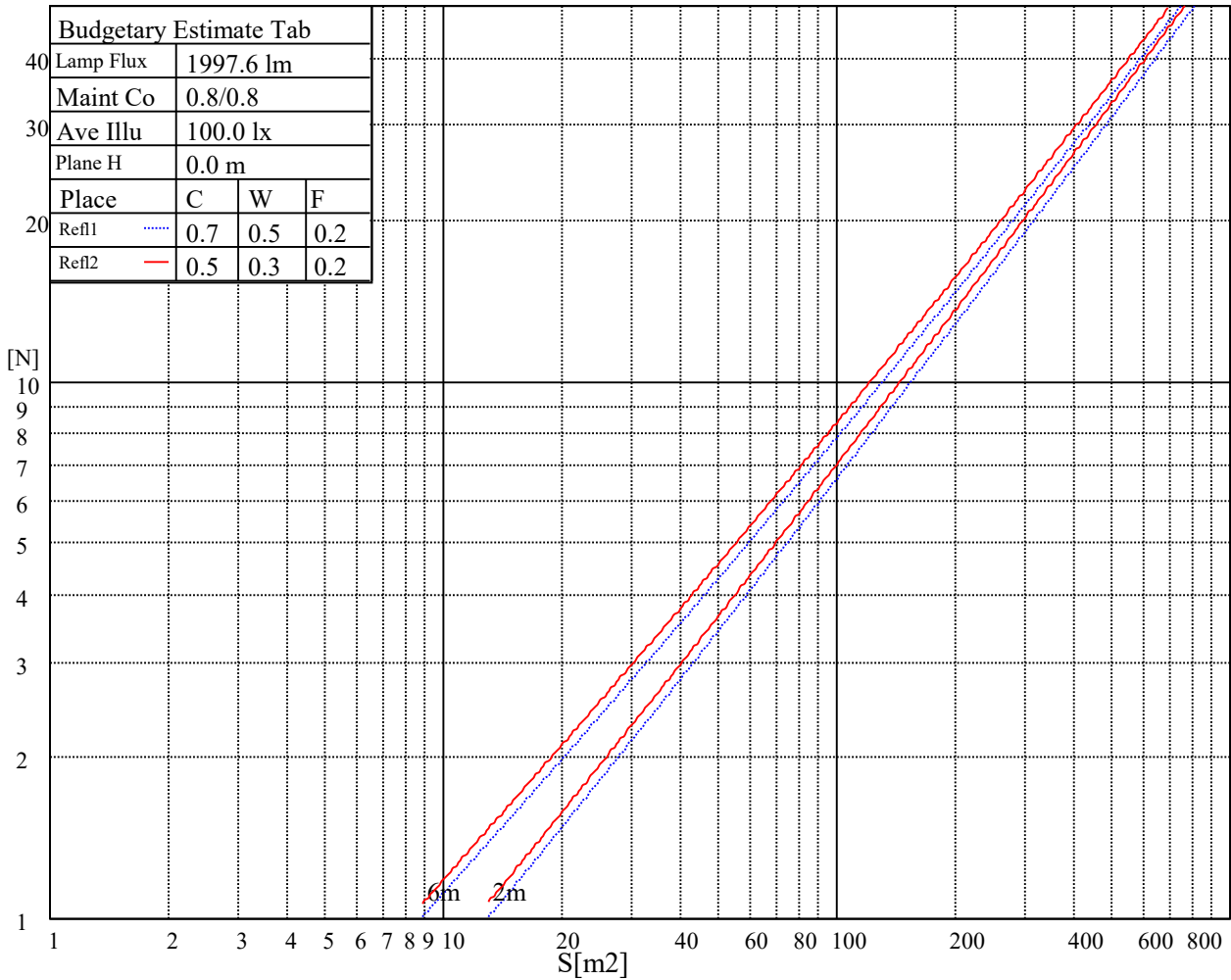
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3729	3729	3729	5920	5920	5920	17436	17436	17436

Glare Table

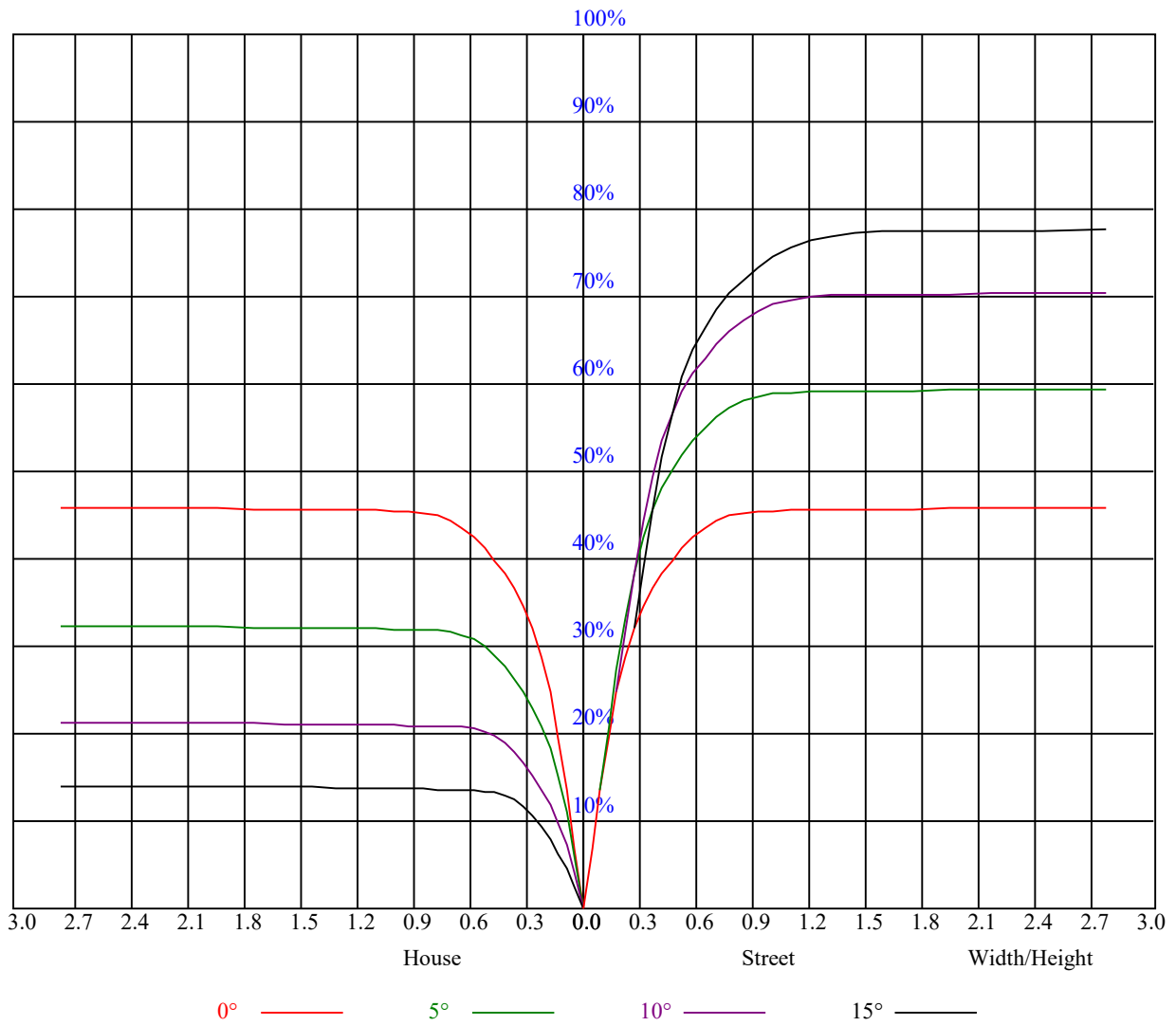
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

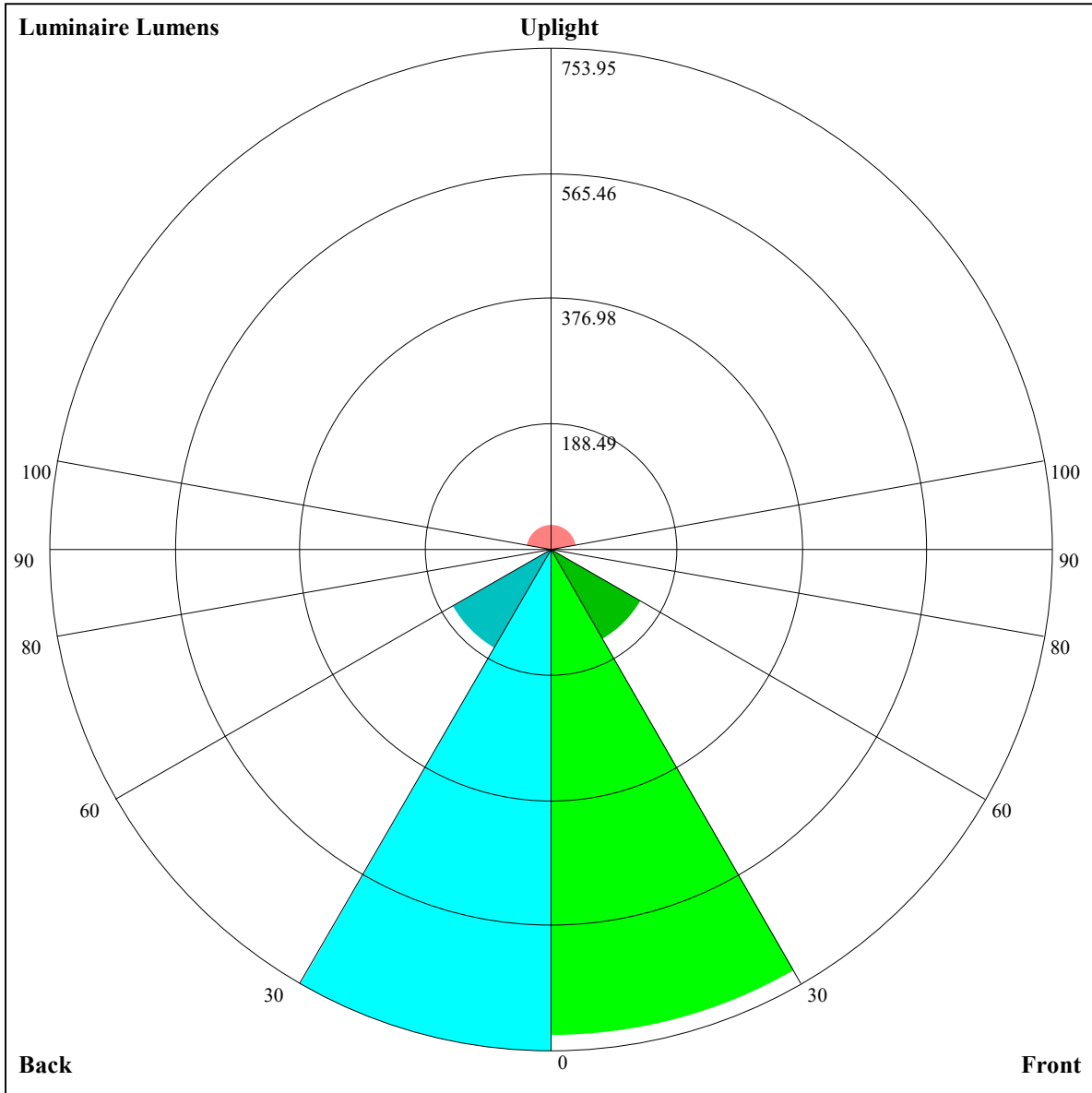
Luminance Limiting Curve





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	1.11	1.11	1.11	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.95	0.95	0.95	0.94
1	1.02	1.00	0.97	1.00	0.98	0.96	0.97	0.95	0.93	0.93	0.91	0.90	0.90	0.89	0.87	0.86
2	0.97	0.93	0.90	0.95	0.92	0.89	0.92	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.84	0.82
3	0.92	0.88	0.85	0.91	0.87	0.84	0.89	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.79
4	0.88	0.84	0.80	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.82	0.79	0.77	0.76
5	0.85	0.80	0.77	0.84	0.79	0.76	0.82	0.78	0.76	0.81	0.77	0.75	0.79	0.77	0.74	0.73
6	0.81	0.77	0.73	0.81	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.68
8	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.66
9	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.71	0.68	0.65	0.64
10	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.63	0.62





Luminaire Lumens:

FL=732.45,FM=156.62,FH=7.81,FVH=4.06

BL=753.95,BM=172.31,BH=7.83,BVH=4.06

UL=8.07,UH=38.41

BUG Rating:B2-U2-G0

Nata 2-1680-M

Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	6721.84	6405.26	4314.77	1939.09	971.19	745.46	672.79	557.17	172.49
45.0	6738.90	6085.93	3681.07	1620.86	876.50	720.14	651.87	442.65	33.20
90.0	6718.53	5572.26	3298.98	1085.16	817.04	693.77	630.29	353.90	26.87
135.0	6749.91	6218.62	4245.40	1907.70	928.80	722.34	648.01	526.34	281.34
180.0	6721.84	6301.20	4251.46	1943.49	963.98	729.33	651.76	552.33	116.61
225.0	6738.90	6547.86	4932.50	2461.57	1067.71	762.53	673.01	611.62	231.46
270.0	6718.53	6686.60	5284.31	2900.92	1276.21	797.22	699.22	630.95	296.75
315.0	6749.91	6422.88	4475.53	2065.17	990.57	750.36	674.77	558.27	92.71
360.0	6721.84	6405.26	4314.77	1939.09	971.19	745.46	672.79	557.17	172.49
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	9.97	8.86	8.20	7.87	7.65	7.54	7.49	7.49	7.43
45.0	9.52	8.70	8.20	7.87	7.71	7.60	7.49	7.43	7.43
90.0	9.41	8.64	8.15	7.87	7.71	7.54	7.49	7.43	7.43
135.0	10.30	8.92	8.31	7.98	7.76	7.60	7.54	7.49	7.43
180.0	11.51	8.97	8.31	7.93	7.76	7.60	7.49	7.43	7.43
225.0	13.71	9.25	8.48	7.98	7.71	7.60	7.49	7.49	7.43
270.0	21.64	9.30	8.48	8.04	7.76	7.65	7.54	7.49	7.49
315.0	10.85	8.86	8.20	7.87	7.71	7.60	7.54	7.54	7.49
360.0	9.97	8.86	8.20	7.87	7.65	7.54	7.49	7.49	7.43
C/ $\gamma$ (°)	90.0								
0.0	7.38								
45.0	7.38								
90.0	7.38								
135.0	7.43								
180.0	7.38								
225.0	7.38								
270.0	7.43								
315.0	7.43								
360.0	7.38								