



NATA LIGHTING CO.,LTD.  
www.nata.cn  
Email:info@nata.com  
Tel:+86-750-3770000 Fax:+86-750-3771111  
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

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## NATA

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Client:

LumCAT: 1658-S

Luminaire: 92.70.124.00

Report No: nt0100

Voltage(V): 34.8400

Test No: GC2020011601

Current(A): 0.3970

LampCAT: LUMINUS CXM-9-AC40

Power (W): 13.8300

Lamp flux(lm): 1387.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1223.04, Efficiency(%): 88.18% , Luminous Efficacy(lm/W): 88.43

Central intensity(cd): 2663.156, Maximum intensity(cd): 2663.156

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

Beam Angle(50%Imax): [C0/180]Total=36.4

[C90/270]Total=36.4

Field angle(10%Imax): [C0/180]Total=67.8

[C90/270]Total=67.8

Maximum s/h(1/2): C0\_180=0.59 C90\_270=0.59

Maximum s/h(1/4): C0\_180=0.62 C90\_270=0.62

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.18%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.311%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2020/1/16  
Humidity(%): 65.0%

Operator: NT07  
Distance(m): 7.50

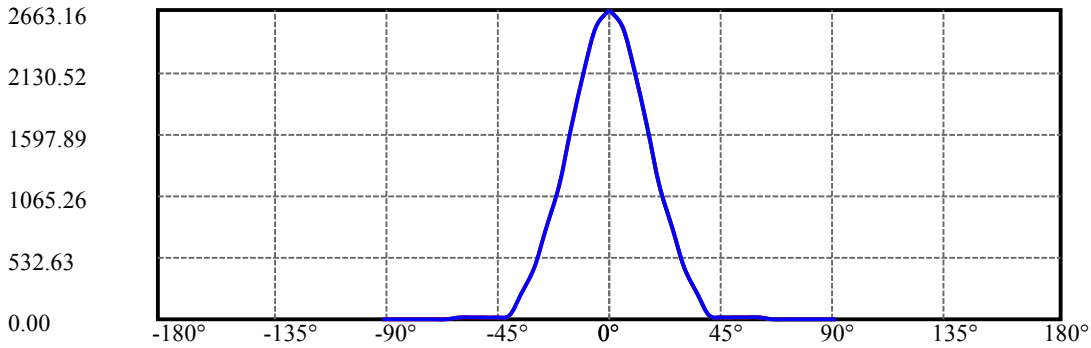
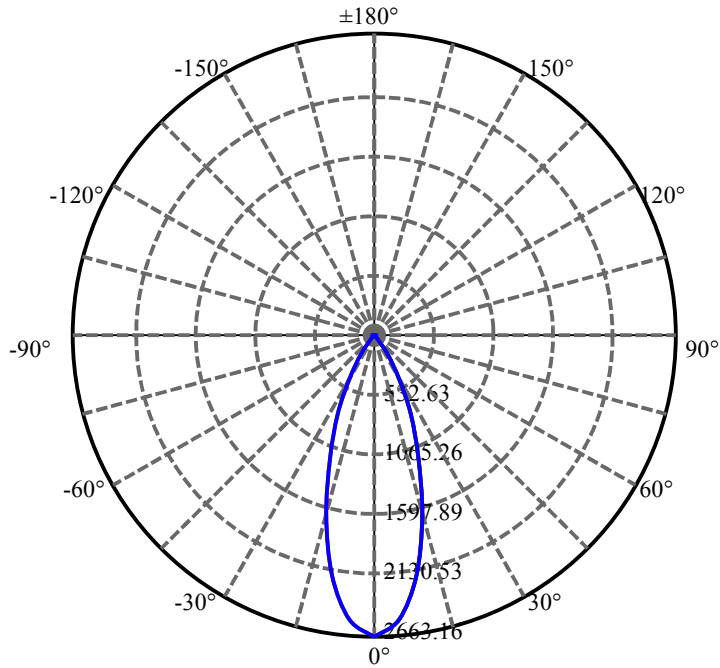
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2663.156	0.000	0	.000%	.000%
5.0	2512.758	61.877	61.877	4.461%	5.059%
10.0	2148.398	166.744	228.621	12.022%	18.693%
15.0	1643.555	224.936	453.557	16.217%	37.084%
20.0	1159.798	231.036	684.592	16.657%	55.975%
25.0	771.778	202.587	887.179	14.606%	72.539%
30.0	451.470	154.803	1041.982	11.161%	85.196%
35.0	212.421	97.763	1139.745	7.048%	93.190%
40.0	30.741	40.570	1180.314	2.925%	96.507%
45.0	14.020	8.288	1188.602	.598%	97.184%
50.0	11.257	5.108	1193.71	.368%	97.602%
55.0	9.570	4.528	1198.238	.326%	97.972%
60.0	8.353	4.143	1202.381	.299%	98.311%
65.0	7.467	3.846	1206.227	.277%	98.625%
70.0	6.877	3.632	1209.859	.262%	98.922%
75.0	6.448	3.483	1213.342	.251%	99.207%
80.0	6.145	3.370	1216.711	.243%	99.483%
85.0	5.787	3.242	1219.953	.234%	99.748%
90.0	5.484	3.086	1223.04	.223%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1041.98	75.12%	85.20%
0-40	1180.31	85.10%	96.51%
0-60	1202.38	86.69%	98.31%
0-90	1219.95	87.96%	99.75%
0-120	1219.95	87.96%	99.75%
0-180	1223.04	88.18%	100.00%
60-90	21.72	1.57%	1.78%
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%
0-27.95	978.43	70.54%	80.00%

ZONAL LUMEN SUMMARY

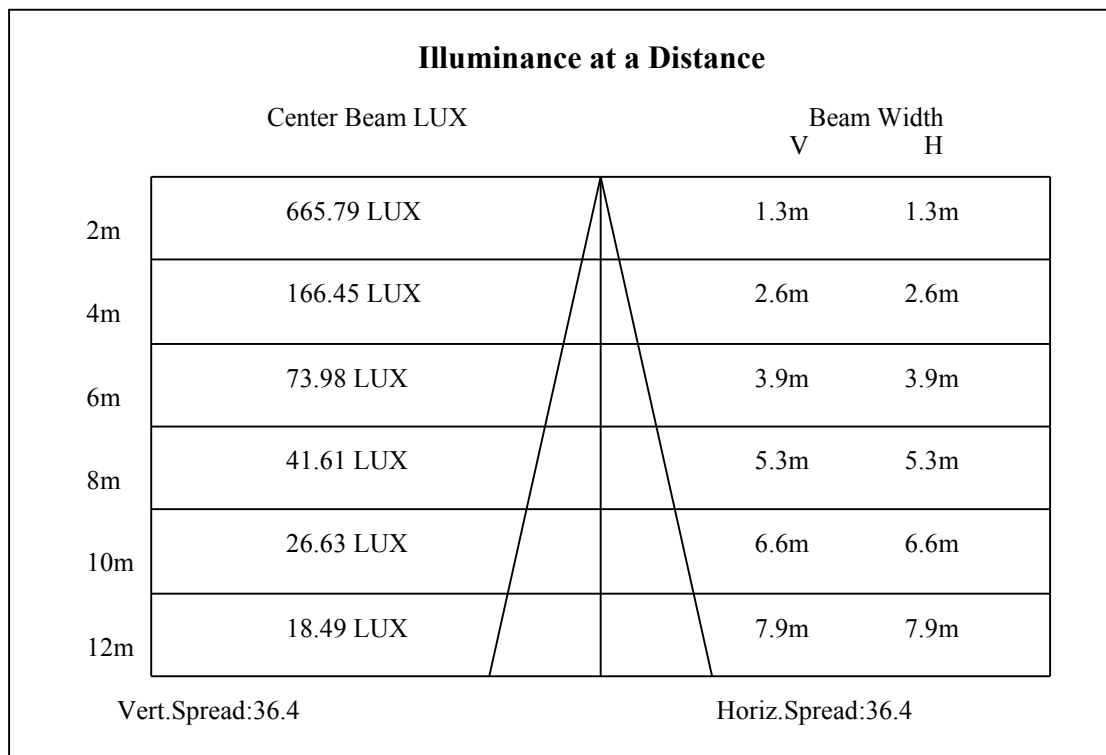
0-10	228.62
10-20	455.97
20-30	357.39
30-40	138.33
40-50	13.40
50-60	8.67
60-70	7.48
70-80	6.85
80-90	3.24
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

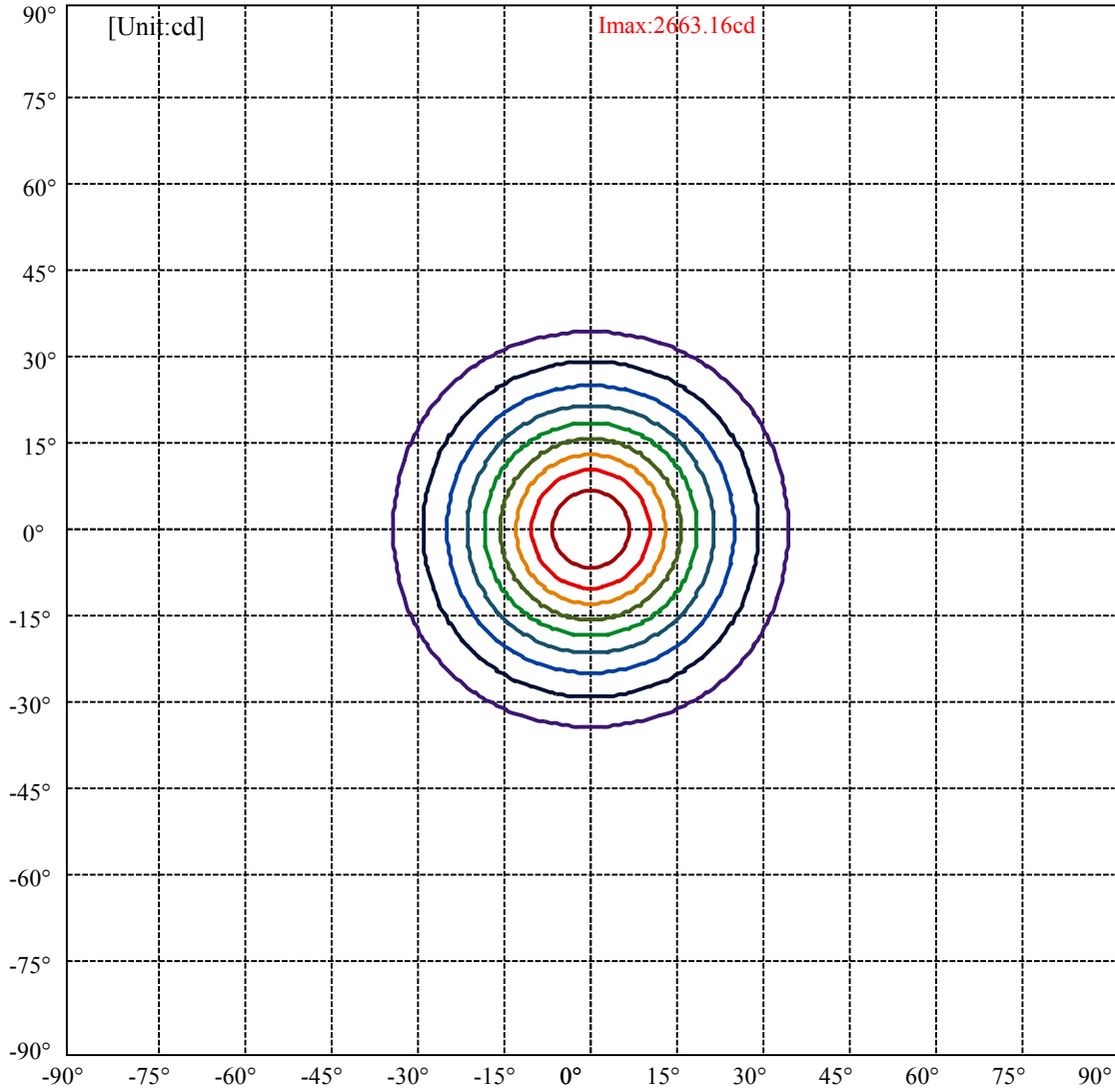


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

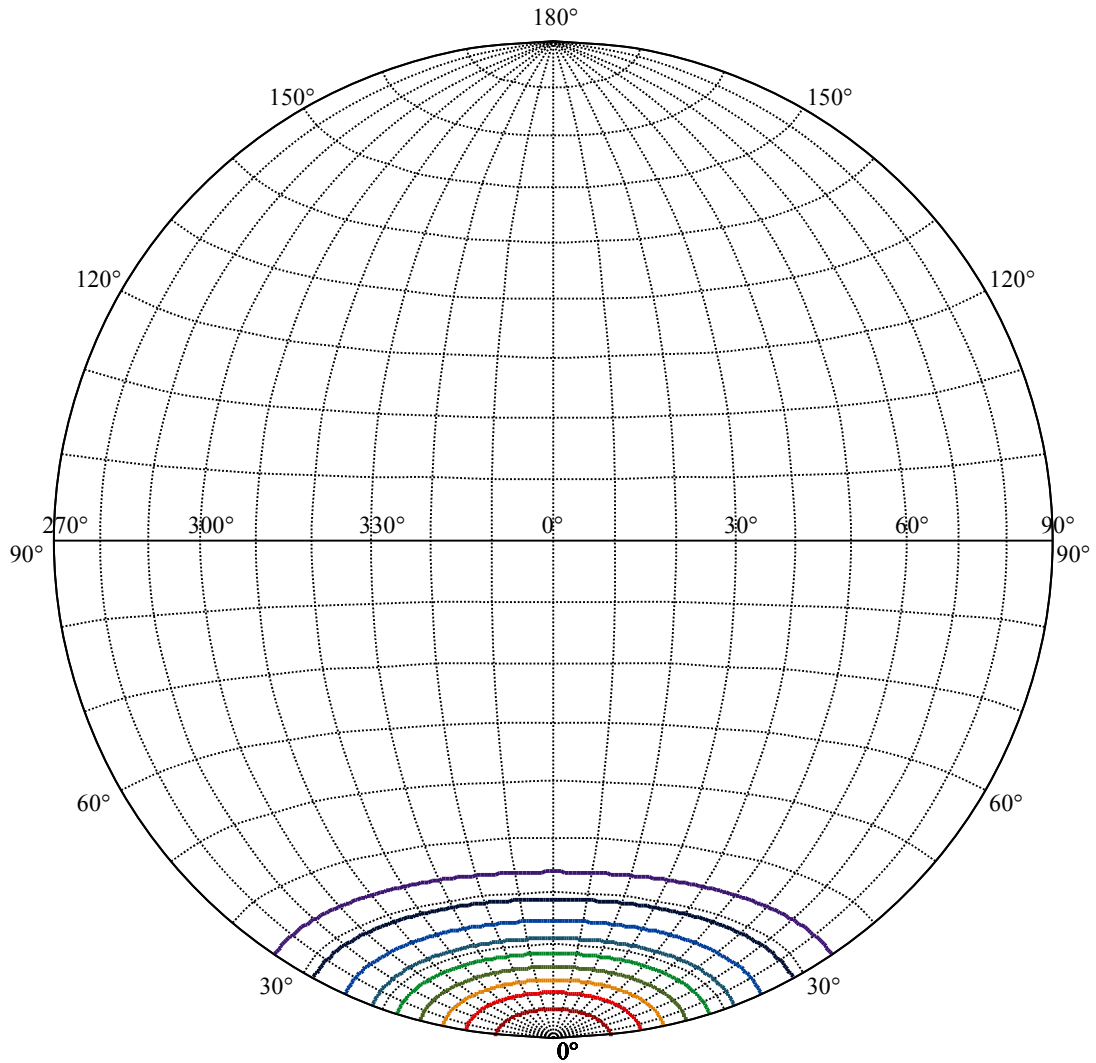
Field angle(10%Imax):C0/180Left:33.9 Right:33.9  
:C90/270Left:33.9 Right:33.9

Beam Angle(50%Imax):C0/180Left:18.2 Right:18.2  
:C90/270Left:18.2 Right:18.2





(10%Imax) 266.316	—
(20%Imax) 532.631	—
(30%Imax) 798.947	—
(40%Imax) 1065.26	—
(50%Imax) 1331.58	—
(60%Imax) 1597.89	—
(70%Imax) 1864.21	—
(80%Imax) 2130.52	—
(90%Imax) 2396.84	—



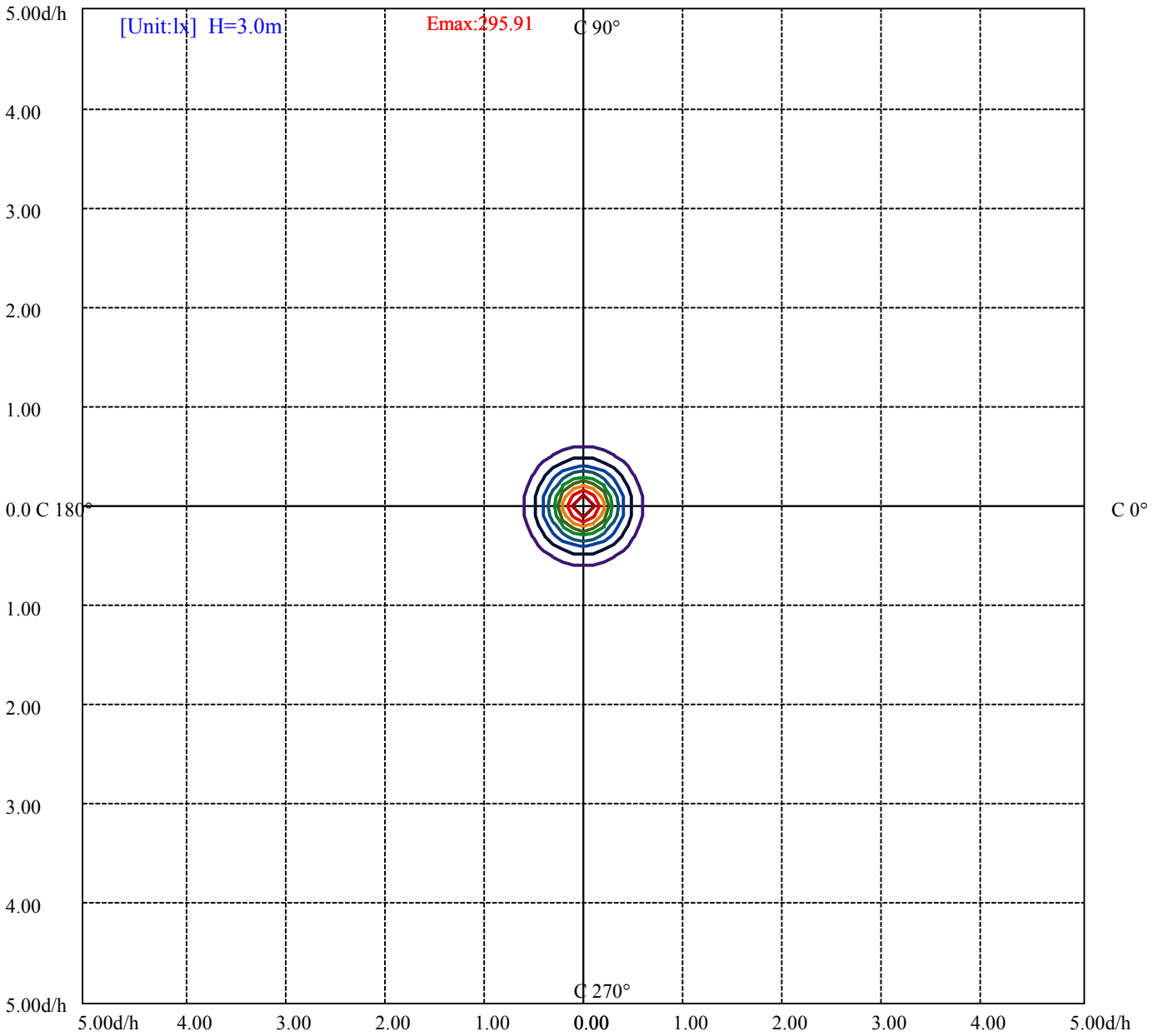
House

[Unit:cd]

Road

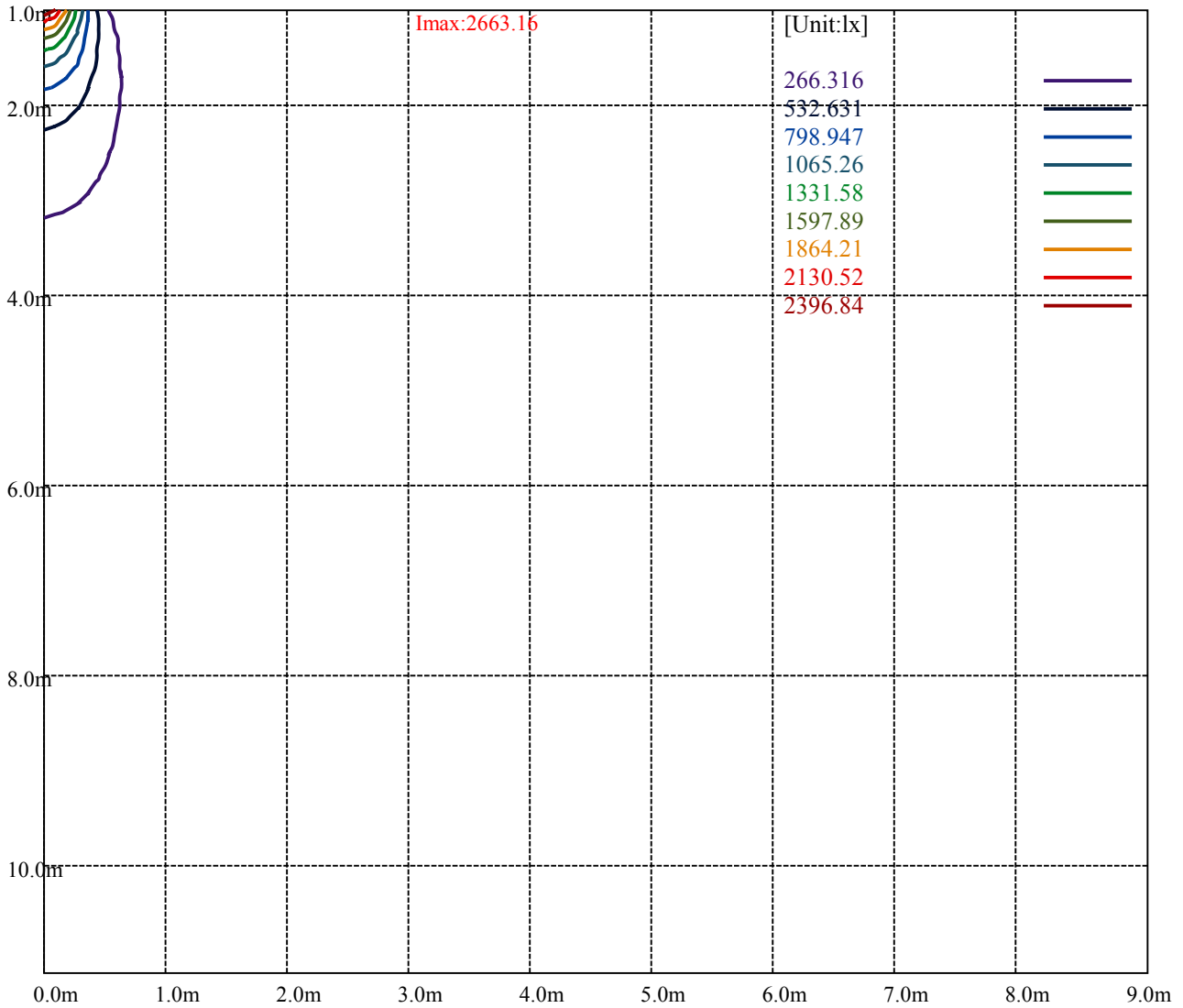
Imax:2663.16

(10%Imax)	266.316	—
(20%Imax)	532.631	—
(30%Imax)	798.947	—
(40%Imax)	1065.26	—
(50%Imax)	1331.58	—
(60%Imax)	1597.89	—
(70%Imax)	1864.21	—
(80%Imax)	2130.52	—
(90%Imax)	2396.84	—



- (10%Emax) 29.59056
- (20%Emax) 59.18111
- (30%Emax) 88.77167
- (40%Emax) 118.3622
- (50%Emax) 147.9533
- (60%Emax) 177.5433
- (70%Emax) 207.1344
- (80%Emax) 236.7244
- (90%Emax) 266.3156





Luminance Table

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

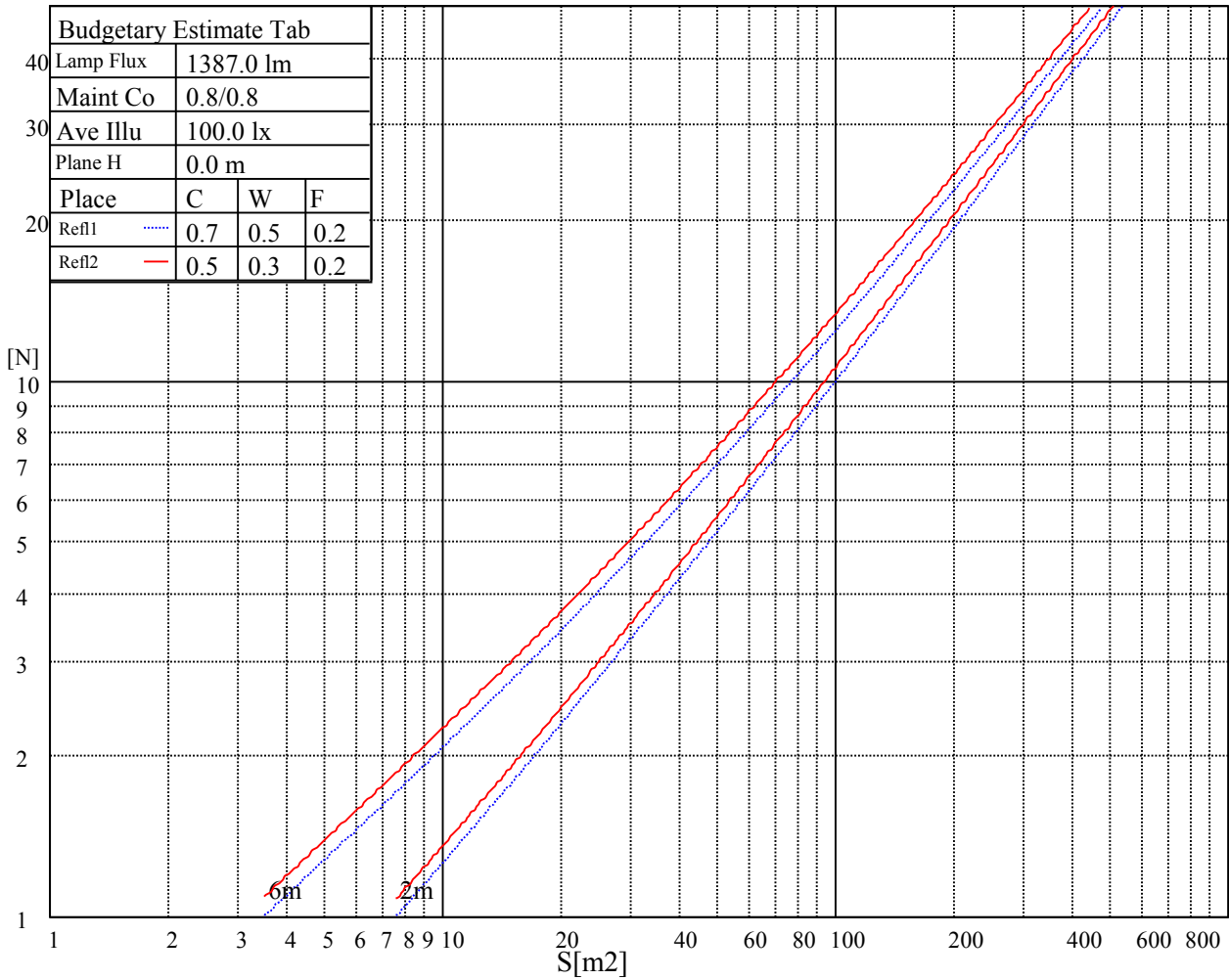
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

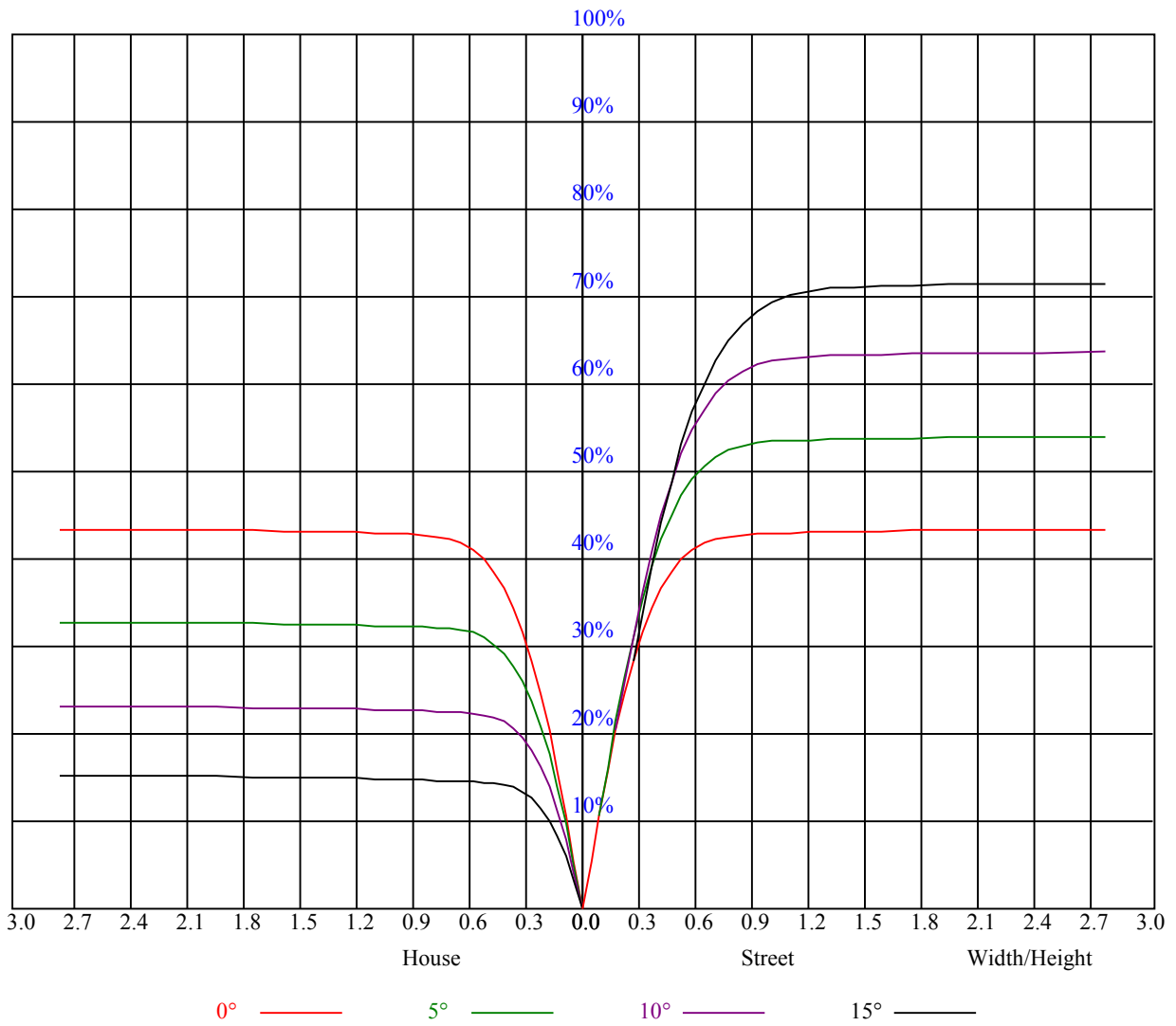
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

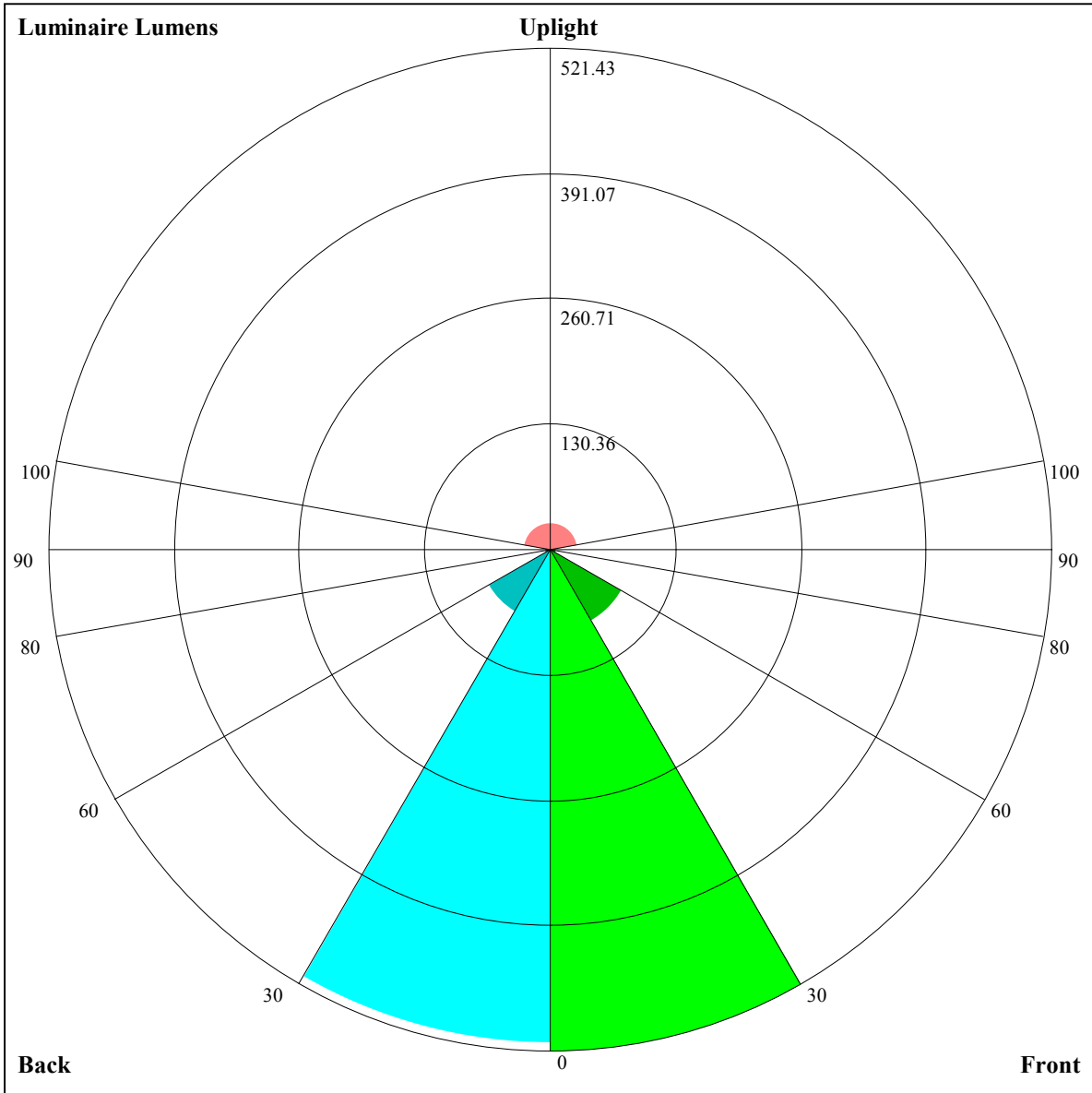
Luminance Limiting Curve





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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.98	0.96	0.94	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.83
2	0.92	0.89	0.86	0.91	0.88	0.85	0.88	0.86	0.83	0.85	0.83	0.82	0.83	0.81	0.80	0.79
3	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.81	0.79	0.77	0.80	0.77	0.76	0.74
4	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.76	0.74	0.72	0.71
5	0.78	0.74	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.71	0.69	0.73	0.70	0.68	0.67
6	0.74	0.70	0.67	0.74	0.69	0.66	0.73	0.69	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
7	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61
8	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.58
9	0.65	0.60	0.57	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.56
10	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.54	0.60	0.57	0.54	0.53





Luminaire Lumens:

FL=521.43,FM=84.98,FH=7.15,FVH=3.16

BL=512.67,BM=74.97,BH=7.09,BVH=3.16

UL=5.98,UH=28.48

BUG Rating:B2-U2-G0

NATA 1658-S

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	2666.81	2556.56	2215.13	1720.13	1208.81	822.38	520.31	296.44	33.81
45.0	2658.38	2557.13	2239.31	1723.50	1254.38	852.75	518.63	292.50	37.46
90.0	2665.69	2500.31	2143.13	1623.38	1111.39	768.71	436.95	174.43	26.72
135.0	2661.75	2550.38	2217.38	1725.19	1207.69	777.94	444.38	228.32	32.63
180.0	2666.81	2467.69	2098.69	1564.31	1103.29	753.24	429.24	138.38	24.92
225.0	2658.38	2464.88	2030.06	1553.06	1119.66	739.91	422.10	134.33	25.37
270.0	2665.69	2531.81	2150.44	1670.63	1225.13	818.44	477.00	287.44	34.65
315.0	2661.75	2473.31	2093.06	1568.25	1048.05	640.86	363.15	147.54	30.38
360.0	2666.81	2556.56	2215.13	1720.13	1208.81	822.38	520.31	296.44	33.81
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	14.68	11.14	9.23	8.16	7.37	6.75	6.24	6.02	5.74
45.0	14.68	11.36	9.51	8.33	7.48	6.98	6.53	6.19	5.96
90.0	12.15	9.96	8.55	7.71	7.14	6.58	6.30	6.08	5.74
135.0	14.12	12.26	10.91	9.28	7.82	7.31	6.86	6.41	5.79
180.0	11.98	9.79	8.55	7.82	7.14	6.58	6.30	6.19	5.68
225.0	13.44	10.74	9.06	8.10	7.37	6.75	6.30	6.02	5.85
270.0	15.24	11.53	9.39	8.16	7.31	6.75	6.30	5.96	5.79
315.0	15.86	13.28	11.36	9.28	8.10	7.31	6.75	6.30	5.74
360.0	14.68	11.14	9.23	8.16	7.37	6.75	6.24	6.02	5.74
C/ $\gamma$ (°)	90.0								
0.0	5.46								
45.0	5.46								
90.0	5.51								
135.0	5.46								
180.0	5.51								
225.0	5.51								
270.0	5.51								
315.0	5.46								
360.0	5.46								