



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

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## Nata

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LumCAT: 1-0937-N	
Luminaire: 92.70.361.000	
Report No: 220516-B014	Voltage(V): 35.2800
Test No: 220516-C014	Current(A): 0.3600
LampCAT: CREE CMA1516	Power (W): 12.7000
Lamp flux(lm): 1745.8	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 1413.95  
Efficiency(%): 80.99%  
Lumens(lm)/Power(W): 111.33  
Central intensity(cd): 3680.629  
Maximum intensity(cd): 3680.629  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=34.8  
                                  [C90/270]Total=34.8  
Field angle(10%Imax): [C0/180]Total=57.7  
                                  [C90/270]Total=57.7  
Maximum s/h(1/2): C0\_180=0.58 C90\_270=0.58  
Maximum s/h(1/4): C0\_180=0.57 C90\_270=0.57  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 80.99%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.076%

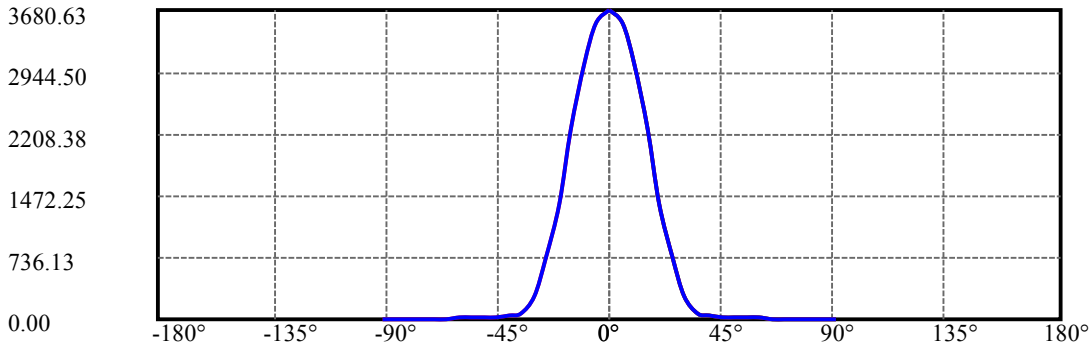
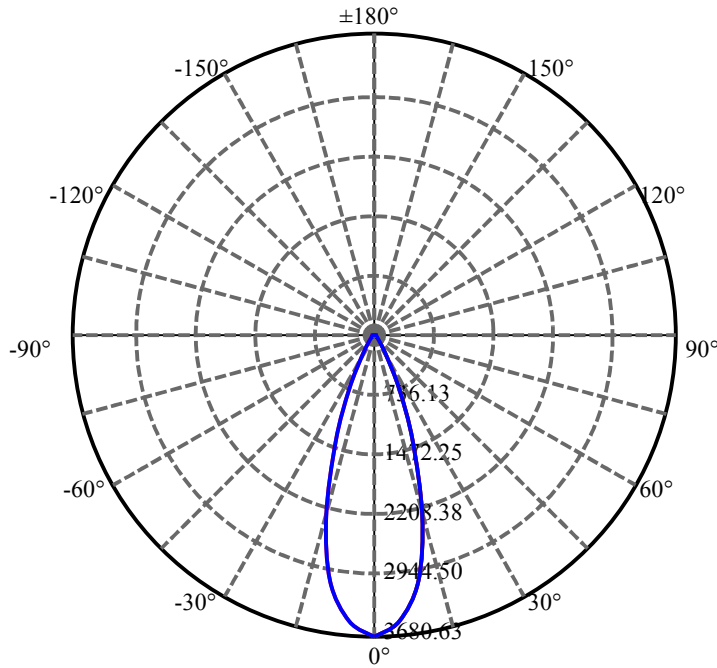
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3680.629	0.000	0	.000%	.000%
5.0	3517.504	86.052	86.052	4.929%	6.086%
10.0	3042.319	234.666	320.717	13.442%	22.682%
15.0	2274.121	315.368	636.085	18.064%	44.986%
20.0	1374.757	300.719	936.804	17.225%	66.254%
25.0	720.725	219.777	1156.581	12.589%	81.798%
30.0	264.287	124.654	1281.235	7.140%	90.614%
35.0	64.018	48.345	1329.58	2.769%	94.033%
40.0	42.880	17.835	1347.415	1.022%	95.294%
45.0	30.086	13.510	1360.926	.774%	96.250%
50.0	22.064	10.538	1371.463	.604%	96.995%
55.0	16.537	8.393	1379.856	.481%	97.588%
60.0	13.288	6.894	1386.75	.395%	98.076%
65.0	11.047	5.916	1392.666	.339%	98.494%
70.0	9.628	5.235	1397.9	.300%	98.865%
75.0	8.358	4.701	1402.602	.269%	99.197%
80.0	7.342	4.201	1406.803	.241%	99.494%
85.0	6.535	3.771	1410.573	.216%	99.761%
90.0	5.811	3.381	1413.954	.194%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1281.24	73.39%	90.61%
0-40	1347.42	77.18%	95.29%
0-60	1386.75	79.43%	98.08%
0-90	1410.57	80.80%	99.76%
0-120	1410.57	80.80%	99.76%
0-180	1413.95	80.99%	100.00%
60-90	30.72	1.76%	2.17%
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%
0-24.42	1131.16	64.79%	80.00%

ZONAL LUMEN SUMMARY

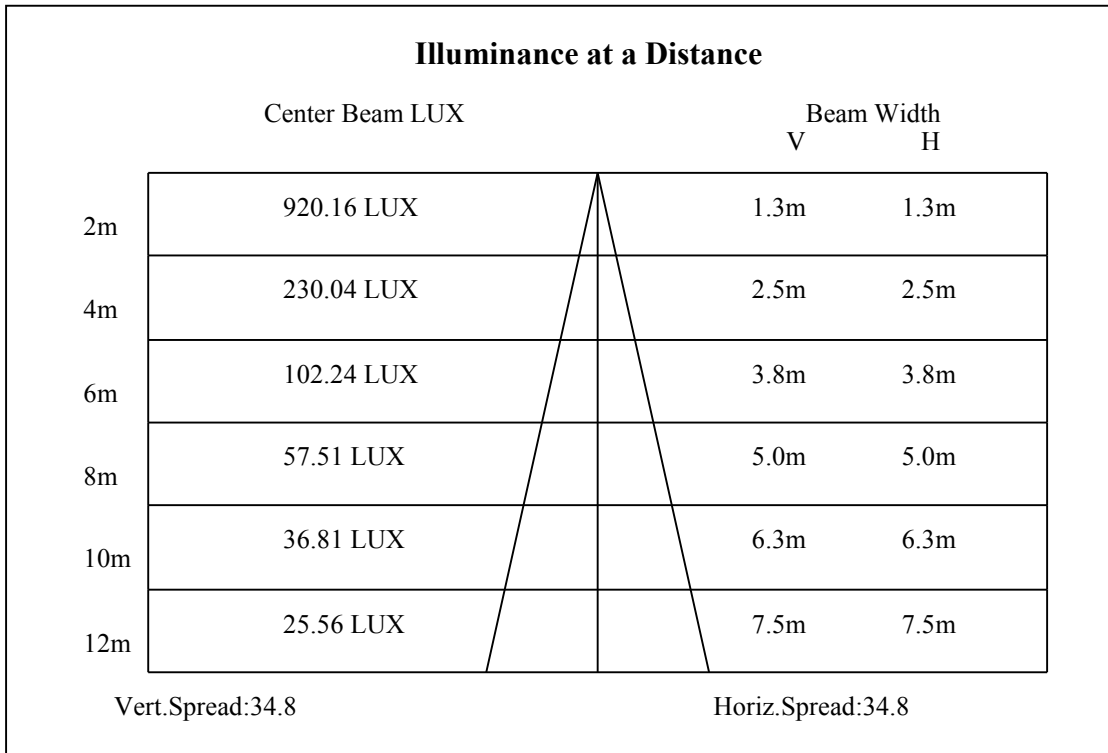
0-10	320.72
10-20	616.09
20-30	344.43
30-40	66.18
40-50	24.05
50-60	15.29
60-70	11.15
70-80	8.90
80-90	3.77
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

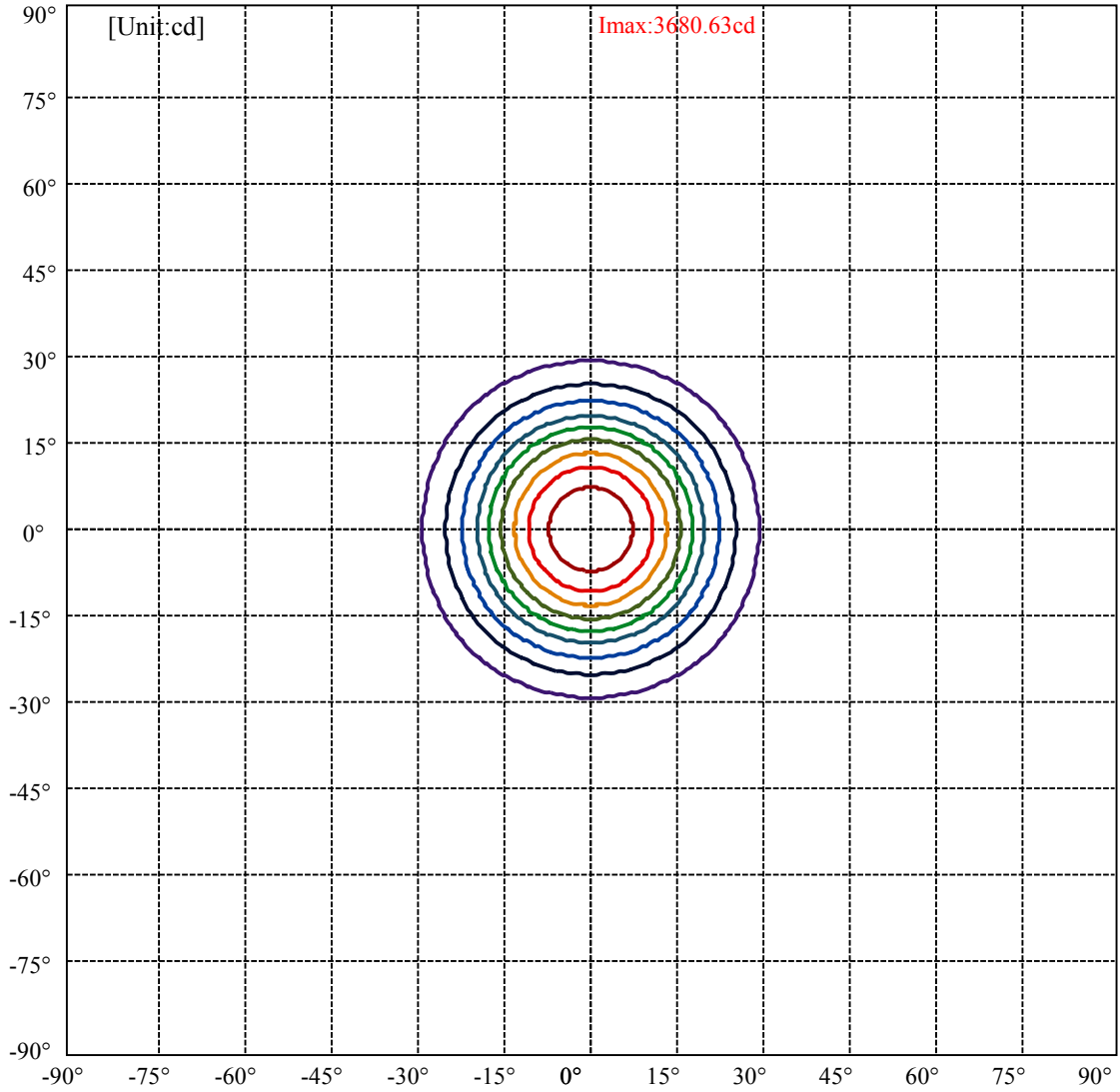


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

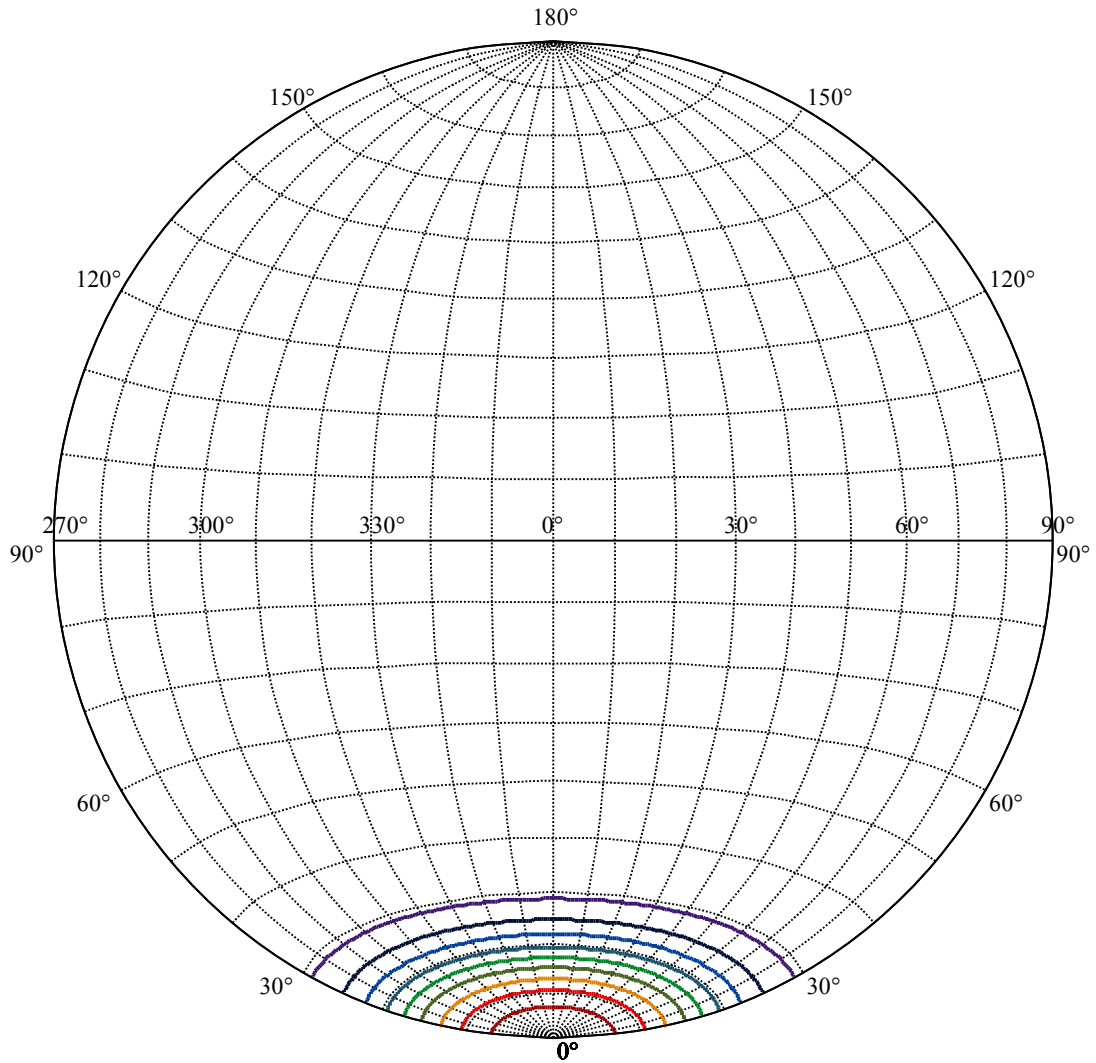
Field angle(10%Imax):C0/180Left:28.9 Right:28.9  
:C90/270Left:28.9 Right:28.9

Beam Angle(50%Imax):C0/180Left:17.4 Right:17.4  
:C90/270Left:17.4 Right:17.4





(10%Imax) 368.063	—
(20%Imax) 736.126	—
(30%Imax) 1104.19	—
(40%Imax) 1472.25	—
(50%Imax) 1840.31	—
(60%Imax) 2208.38	—
(70%Imax) 2576.44	—
(80%Imax) 2944.5	—
(90%Imax) 3312.57	—



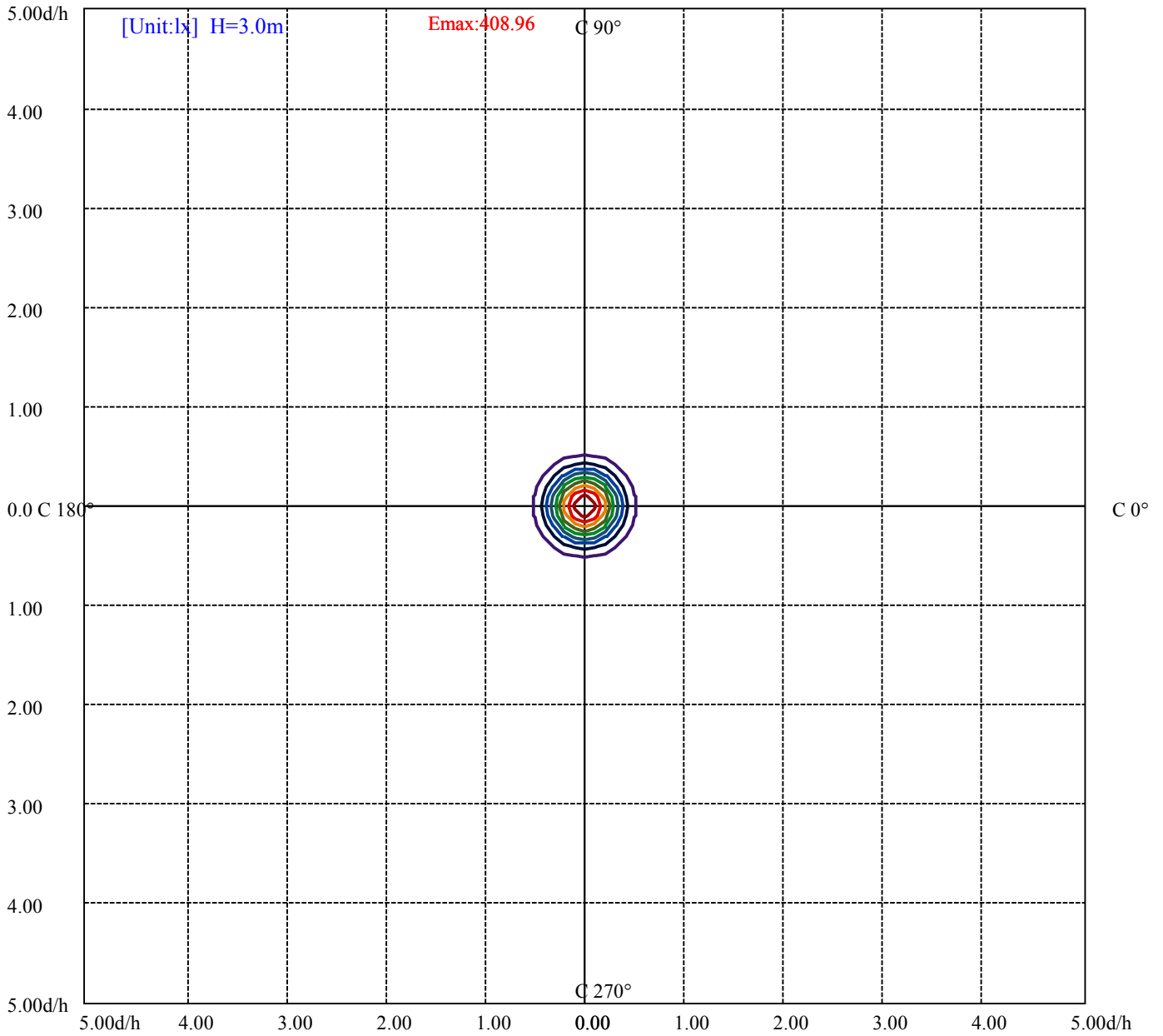
House

[Unit:cd]

Road

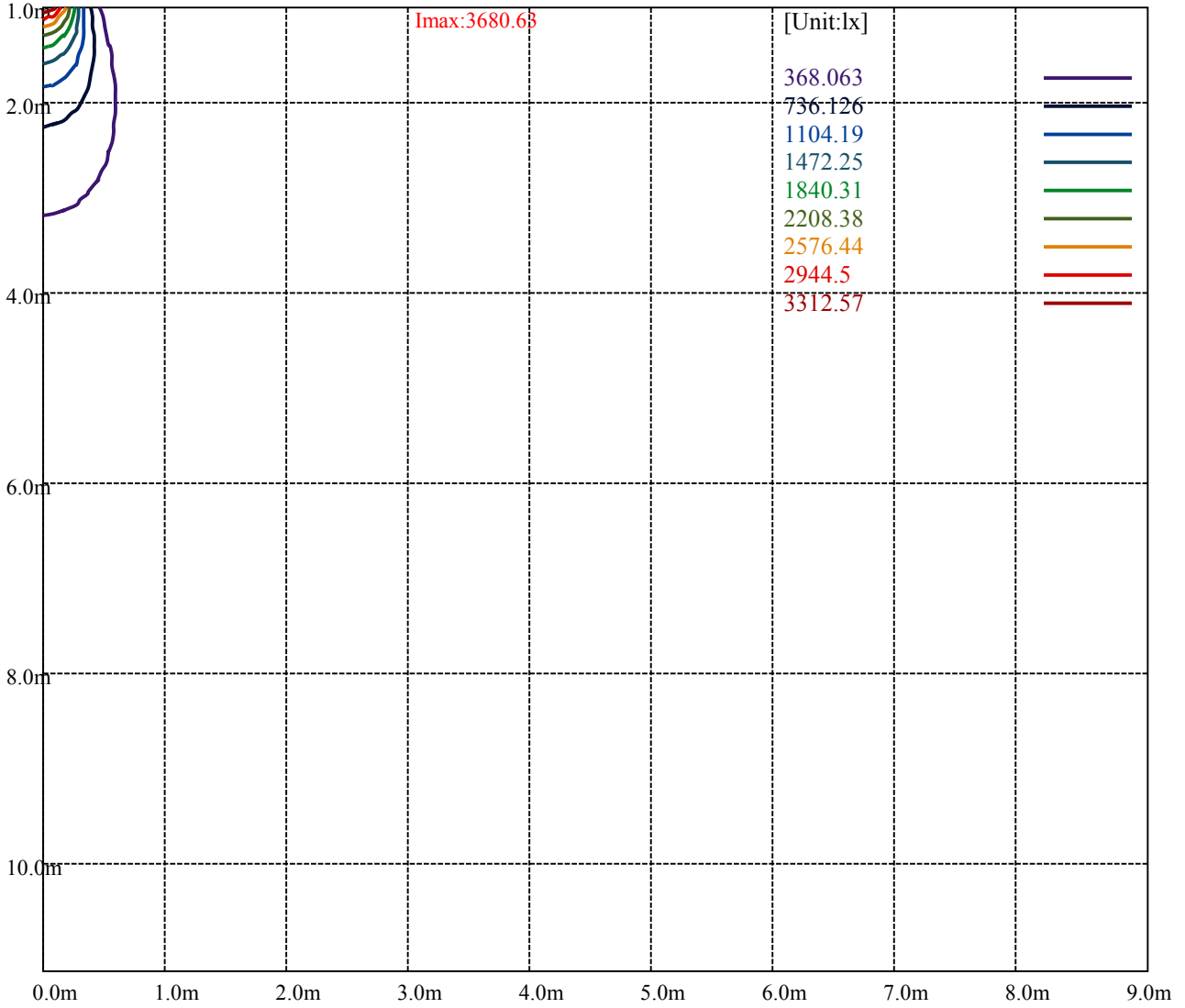
**Imax:3680.63**

(10%Imax) 368.063	—
(20%Imax) 736.126	—
(30%Imax) 1104.19	—
(40%Imax) 1472.25	—
(50%Imax) 1840.31	—
(60%Imax) 2208.38	—
(70%Imax) 2576.44	—
(80%Imax) 2944.5	—
(90%Imax) 3312.57	—



- (10%Emax) 40.89578
- (20%Emax) 81.79166
- (30%Emax) 122.6878
- (40%Emax) 163.5833
- (50%Emax) 204.4789
- (60%Emax) 245.3745
- (70%Emax) 286.2711
- (80%Emax) 327.1667
- (90%Emax) 368.0622





Luminance Table

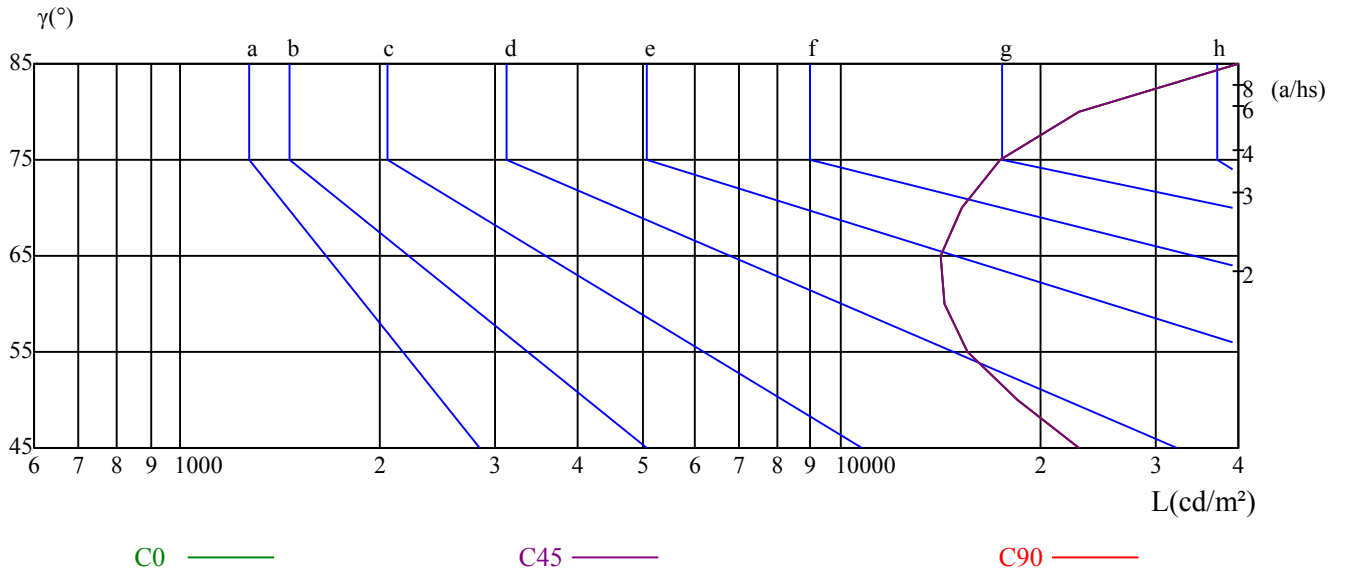
$\gamma$	45	50	55	60	65	70	75	80	85
C0	23011	18564	15593	14373	14137	15224	17465	22867	40555
C45	23011	18564	15593	14373	14137	15224	17465	22867	40555
C90	23011	18564	15593	14373	14137	15224	17465	22867	40555

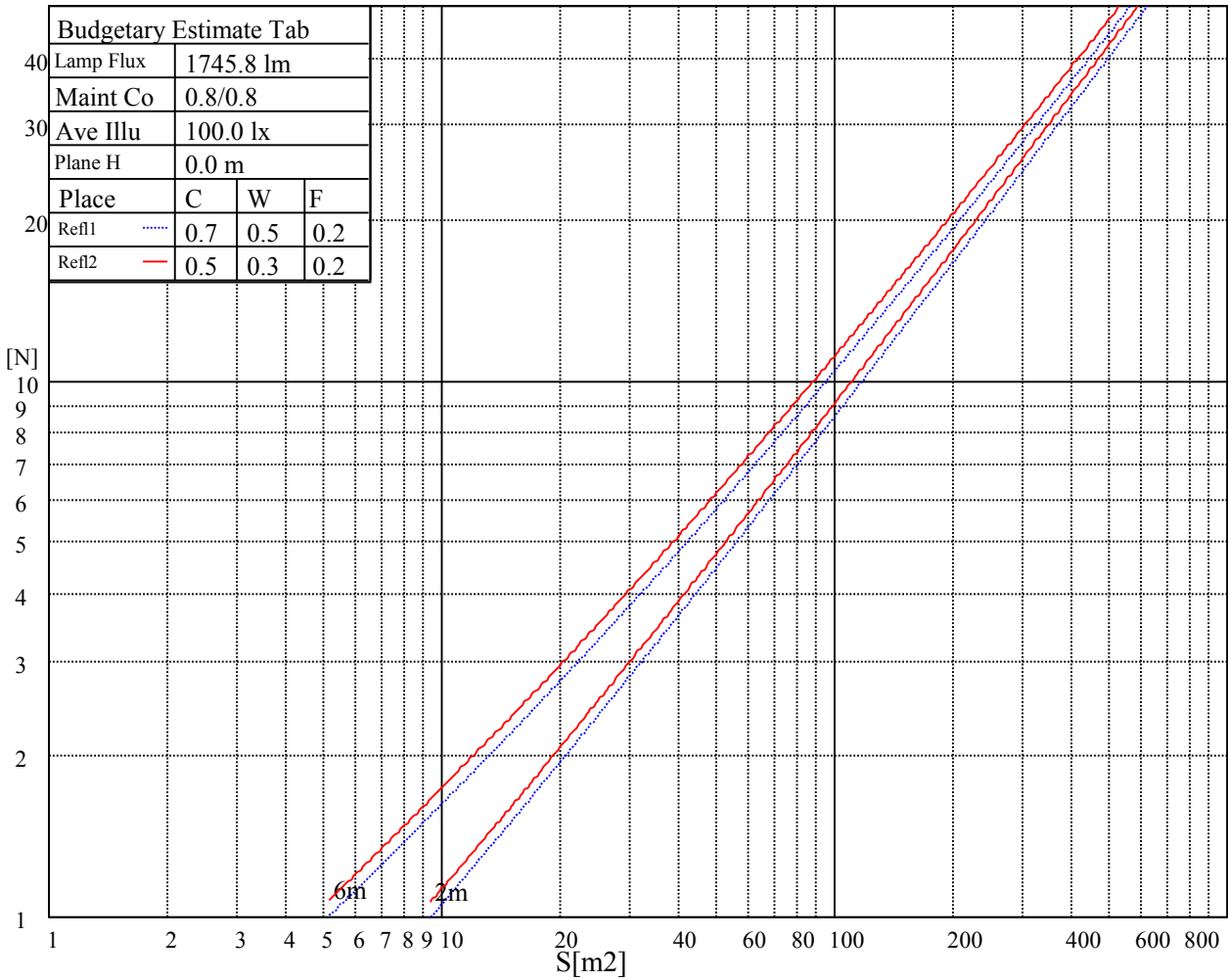
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
14137	14137	14137	17465	17465	17465	40555	40555	40555

Glare Table

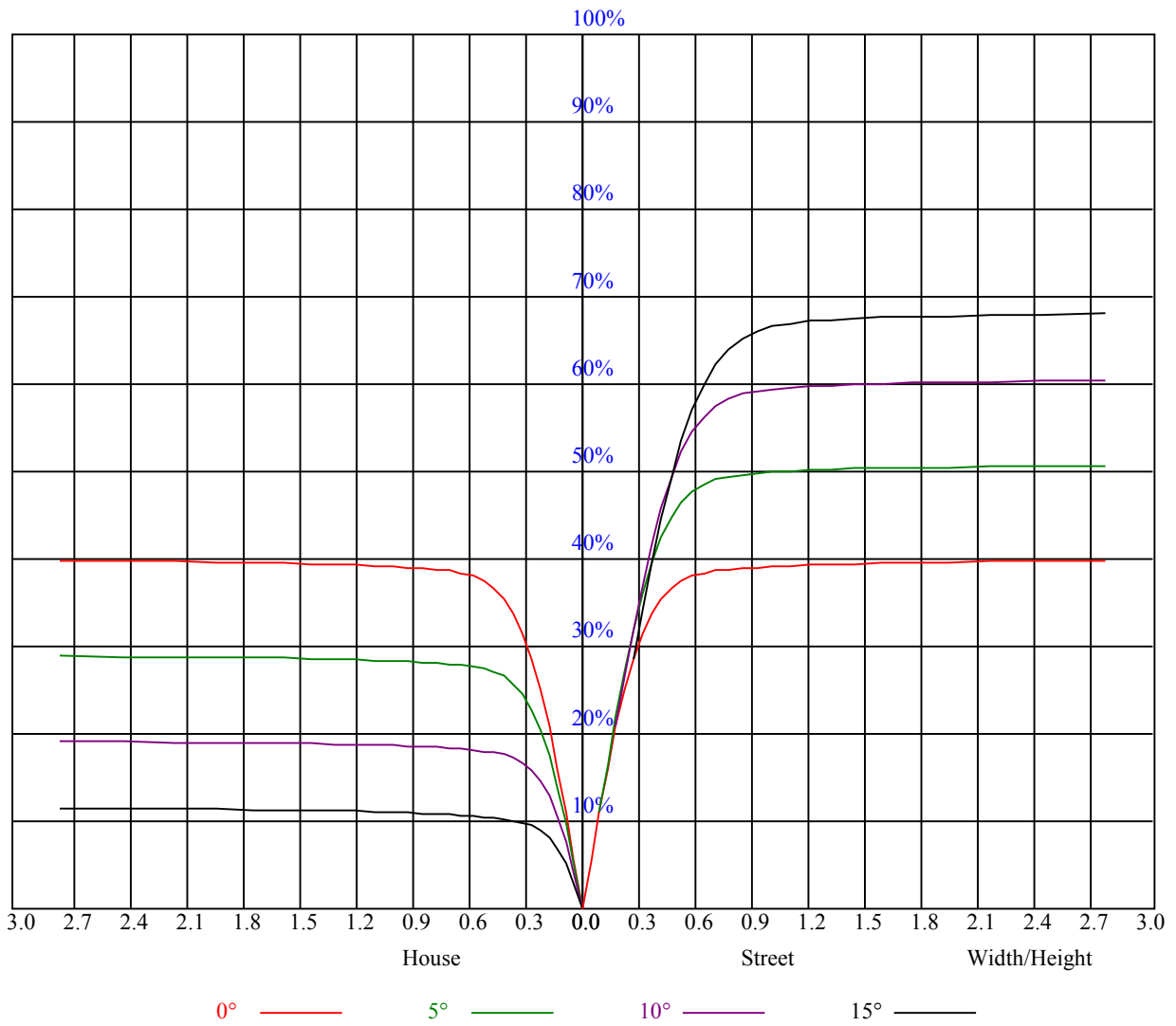
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.96	0.96	0.96	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.81
1	0.90	0.89	0.87	0.89	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.79	0.78	0.77
2	0.85	0.82	0.80	0.84	0.81	0.79	0.81	0.79	0.77	0.79	0.77	0.76	0.77	0.75	0.74	0.73
3	0.81	0.77	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.74	0.72	0.71	0.70
4	0.77	0.73	0.70	0.76	0.73	0.70	0.74	0.71	0.69	0.73	0.70	0.68	0.71	0.69	0.68	0.67
5	0.73	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.69	0.67	0.65	0.64
6	0.70	0.66	0.64	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
7	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.59
8	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.62	0.59	0.57	0.56
9	0.62	0.58	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.55	0.60	0.57	0.55	0.54
10	0.60	0.56	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.53	0.58	0.55	0.53	0.52



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	3661.06	3619.83	3247.57	2547.27	1716.10	948.88	362.70	76.18	47.32
45.0	3689.14	3509.89	3041.42	2285.55	1414.35	690.74	304.74	57.72	40.45
90.0	3681.38	3426.83	2889.05	2045.94	1180.66	539.39	138.15	53.48	37.76
135.0	3690.94	3497.93	2981.07	2172.62	1371.93	647.12	303.54	56.65	39.91
180.0	3661.06	3398.74	2813.76	1970.05	1162.67	518.24	125.96	54.67	38.12
225.0	3689.14	3535.58	3061.14	2286.15	1155.74	743.21	230.23	63.40	43.32
270.0	3681.38	3584.58	3202.16	2507.23	1631.25	894.50	352.54	76.36	48.94
315.0	3690.94	3566.65	3102.37	2378.17	1365.35	783.72	296.43	73.68	47.20
360.0	3661.06	3619.83	3247.57	2547.27	1716.10	948.88	362.70	76.18	47.32
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	33.16	24.50	18.11	14.34	11.83	10.16	8.72	7.59	6.81
45.0	29.22	21.51	16.13	12.97	10.88	9.44	8.19	7.29	6.45
90.0	27.19	20.02	15.12	12.37	10.34	9.08	8.01	7.11	6.33
135.0	28.14	20.55	15.66	12.61	10.58	9.44	8.25	7.23	6.33
180.0	26.83	20.02	15.18	12.37	10.40	9.26	8.07	7.05	6.33
225.0	30.23	22.05	16.73	13.38	11.17	9.74	8.43	7.41	6.63
270.0	33.64	24.20	17.81	14.22	11.59	9.98	8.66	7.59	6.69
315.0	32.27	23.66	17.57	14.04	11.59	9.92	8.54	7.47	6.69
360.0	33.16	24.50	18.11	14.34	11.83	10.16	8.72	7.59	6.81
C/ $\gamma$ (°)	90.0								
0.0	5.92								
45.0	5.80								
90.0	5.74								
135.0	5.74								
180.0	5.80								
225.0	5.80								
270.0	5.86								
315.0	5.86								
360.0	5.92								