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Nata

LumCAT: 2-2078-M
Luminaire: 92.70.129.00
Report No: NATA0100
Test No: GC2019092007
LampCAT: CREE CXA1830
Lamp flux(lm): 2331.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 33.6500
Current(A): 0.4470
Power (W): 15.0000
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1831.01
Efficiency(%): 78.55%
Lumens(lm)/Power(W): 122.07
Central intensity(cd): 5882.906
Maximum intensity(cd): 5882.906
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=33.4
[C90/270]Total=33.4
Field angle(10%Imax): [C0/180]Total=49.7
[C90/270]Total=49.7
Maximum s/h(1/2): C0_180=0.56 C90_270=0.56
Maximum s/h(1/4): C0_180=0.53 C90_270=0.53
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 78.55%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.448%

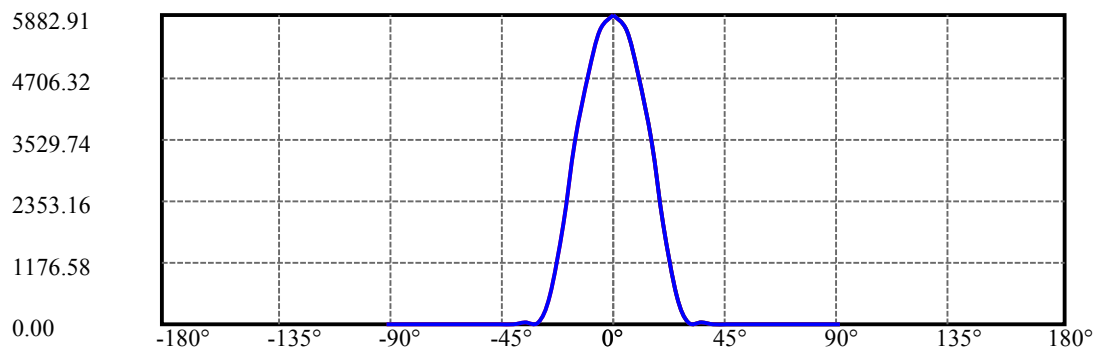
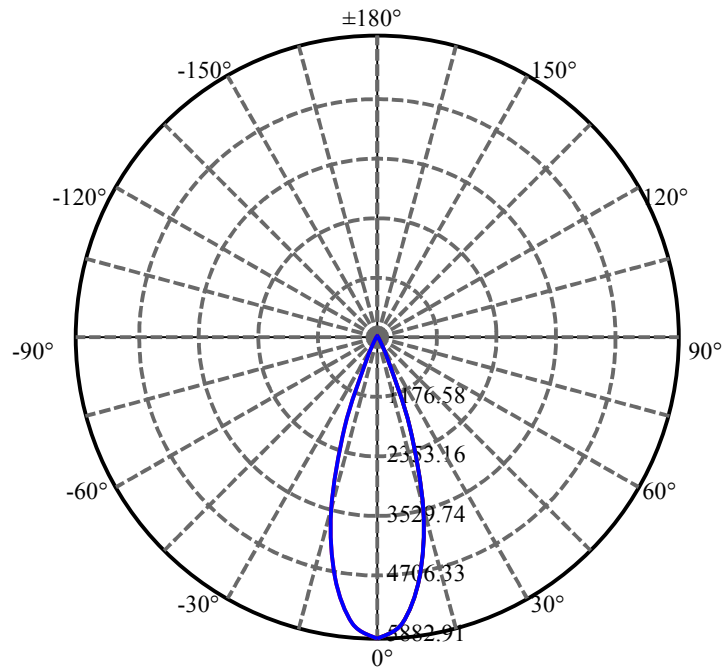
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5882.906	0.000	0	.000%	.000%
5.0	5593.430	137.196	137.196	5.886%	7.493%
10.0	4749.750	370.008	507.204	15.873%	27.701%
15.0	3488.484	488.687	995.891	20.965%	54.390%
20.0	1889.691	443.237	1439.128	19.015%	78.598%
25.0	552.213	256.111	1695.239	10.987%	92.585%
30.0	41.238	75.102	1770.341	3.222%	96.687%
35.0	19.427	8.933	1779.274	.383%	97.175%
40.0	14.070	5.589	1784.863	.240%	97.480%
45.0	11.461	4.727	1789.59	.203%	97.738%
50.0	10.223	4.382	1793.972	.188%	97.977%
55.0	9.534	4.296	1798.268	.184%	98.212%
60.0	9.148	4.318	1802.586	.185%	98.448%
65.0	10.027	4.661	1807.247	.200%	98.702%
70.0	9.661	4.985	1812.232	.214%	98.975%
75.0	8.803	4.826	1817.058	.207%	99.238%
80.0	8.564	4.647	1821.705	.199%	99.492%
85.0	8.522	4.643	1826.348	.199%	99.745%
90.0	8.501	4.661	1831.009	.200%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1770.34	75.95%	96.69%
0-40	1784.86	76.57%	97.48%
0-60	1802.59	77.33%	98.45%
0-90	1826.35	78.35%	99.75%
0-120	1826.35	78.35%	99.75%
0-180	1831.01	78.55%	100.00%
60-90	28.08	1.20%	1.53%
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%
0-20.50	1464.81	62.84%	80.00%

ZONAL LUMEN SUMMARY

0-10	507.20
10-20	931.92
20-30	331.21
30-40	14.52
40-50	9.11
50-60	8.61
60-70	9.65
70-80	9.47
80-90	4.64
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: —————

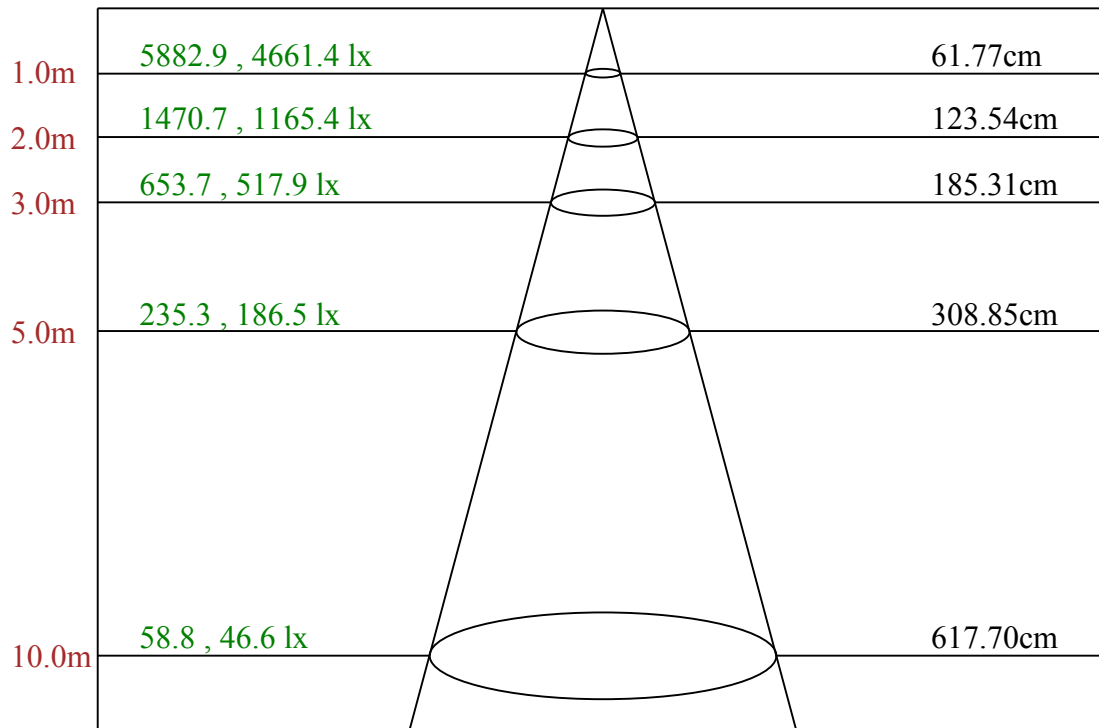
C90/C270: —————

Field angle(10%Imax):C0/180Left:24.9 Right:24.9

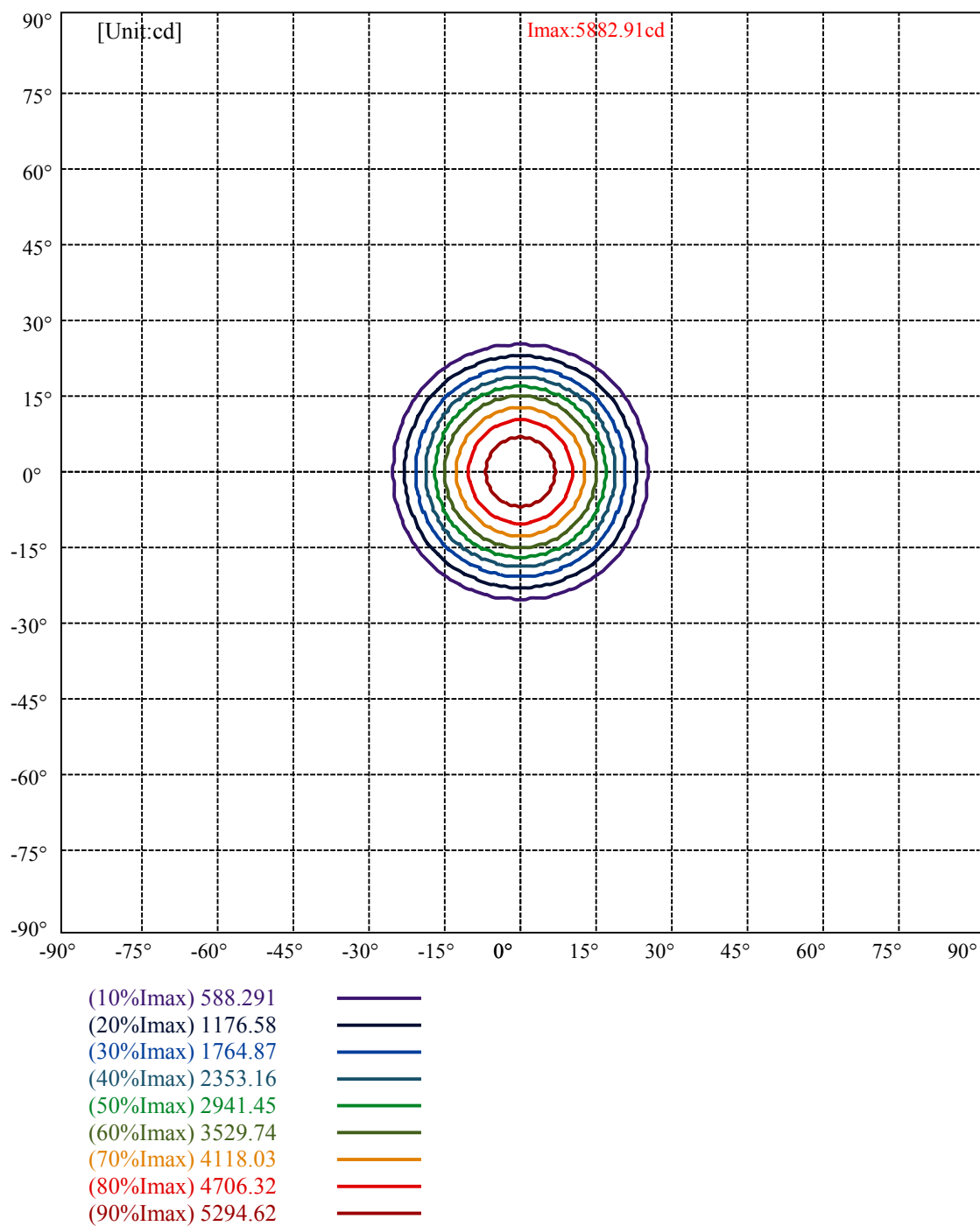
:C90/270Left:24.9 Right:24.9

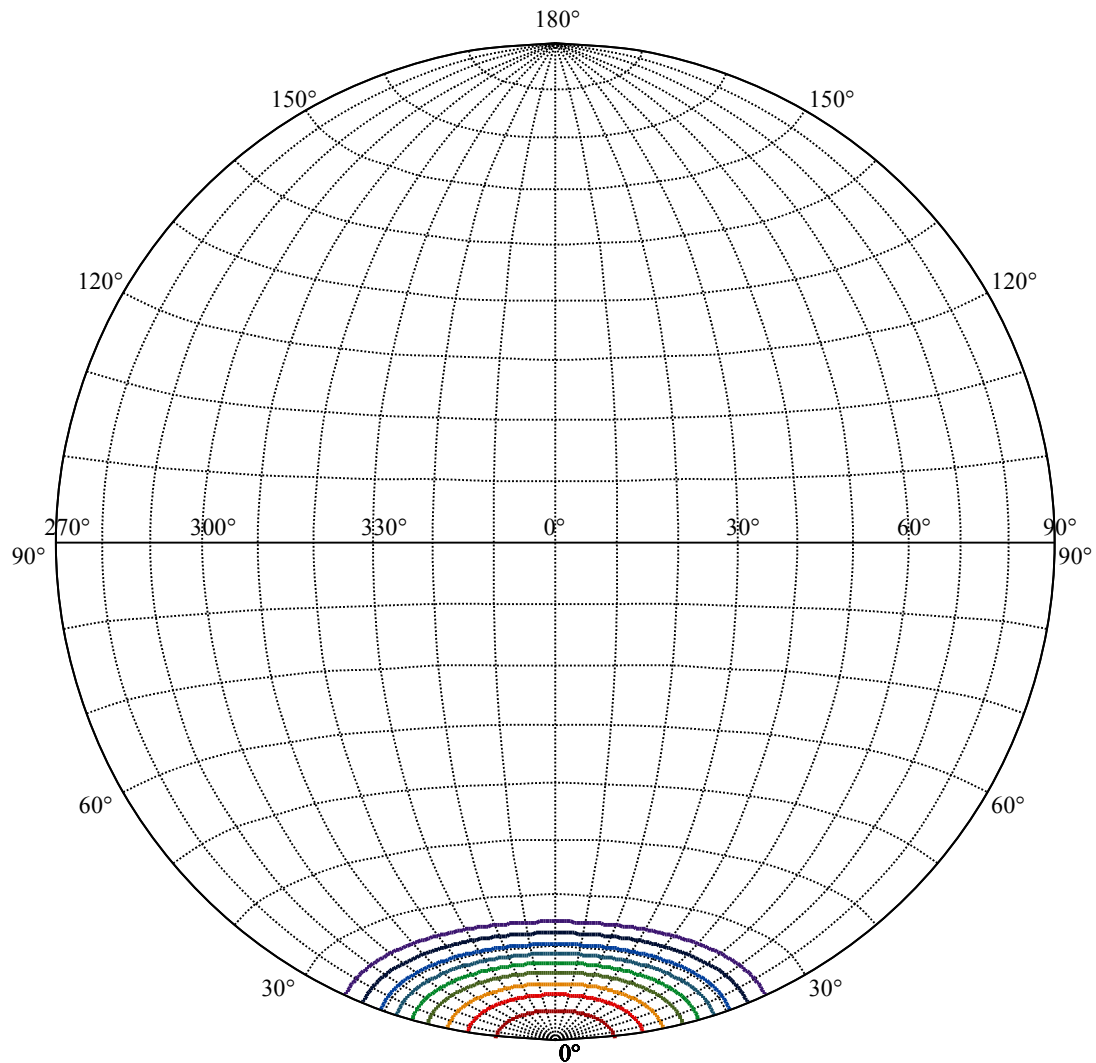
Beam Angle(50%Imax):C0/180Left:16.7 Right:16.7

:C90/270Left:16.7 Right:16.7



Max , Ave Beam angle of C0 plane 34.33





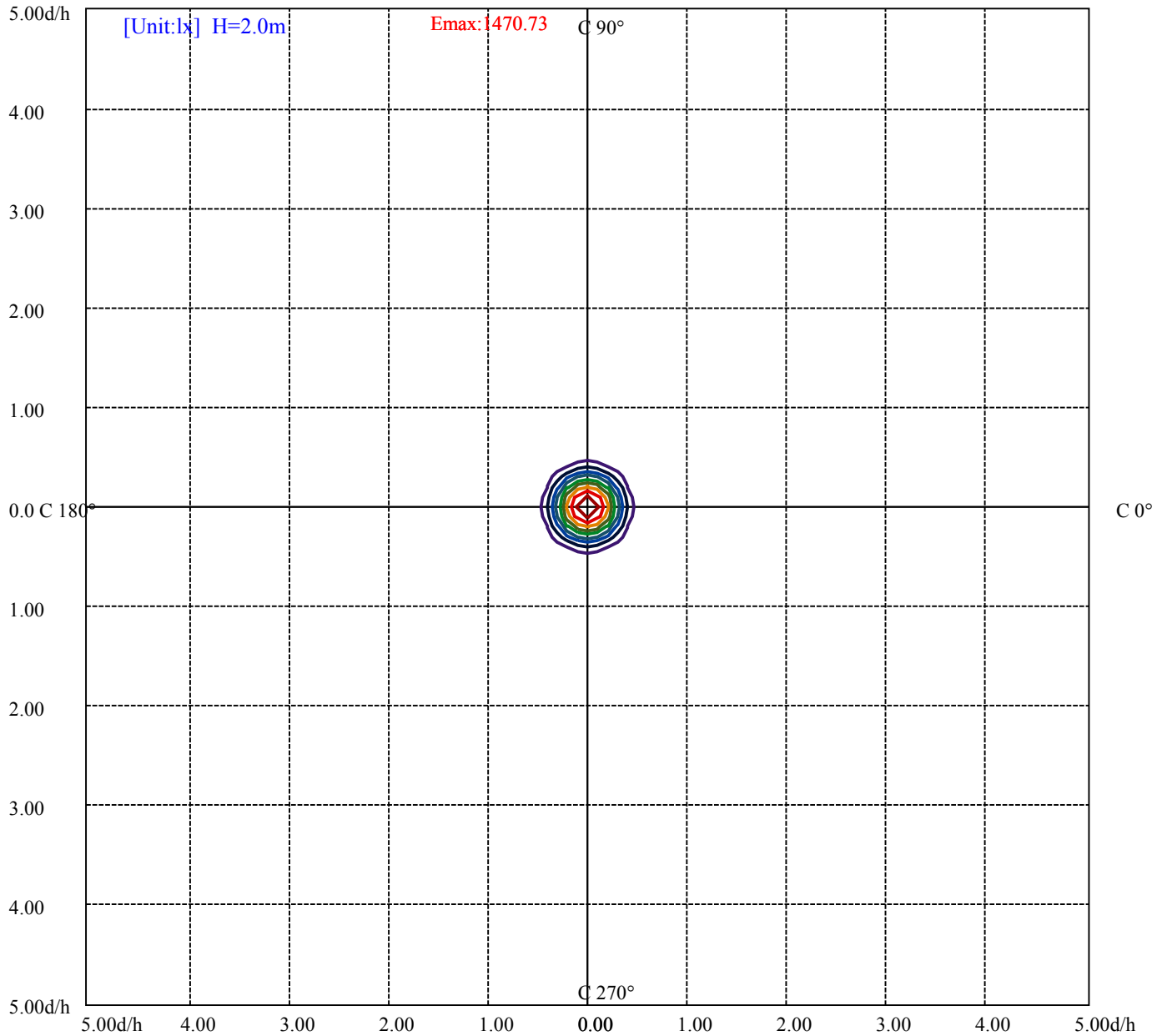
House

[Unit:cd]

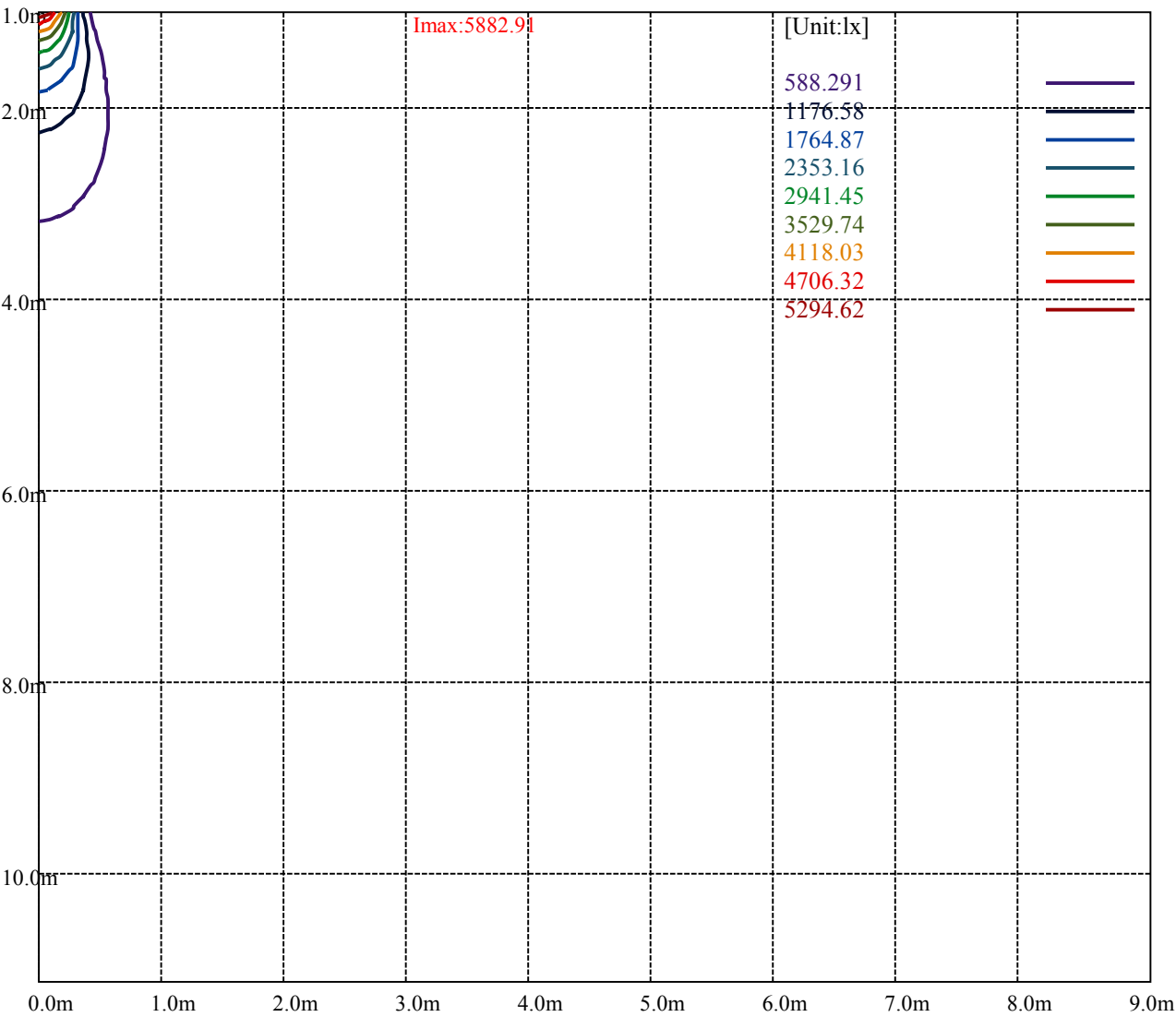
Road

Imax:5882.91

(10%Imax)	588.291	—
(20%Imax)	1176.58	—
(30%Imax)	1764.87	—
(40%Imax)	2353.16	—
(50%Imax)	2941.45	—
(60%Imax)	3529.74	—
(70%Imax)	4118.03	—
(80%Imax)	4706.32	—
(90%Imax)	5294.62	—



(10%Emax)	147.0725	—
(20%Emax)	294.145	—
(30%Emax)	441.2175	—
(40%Emax)	588.29	—
(50%Emax)	735.3625	—
(60%Emax)	882.435	—
(70%Emax)	1029.507	—
(80%Emax)	1176.58	—
(90%Emax)	1323.652	—



Luminance Table

γ	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

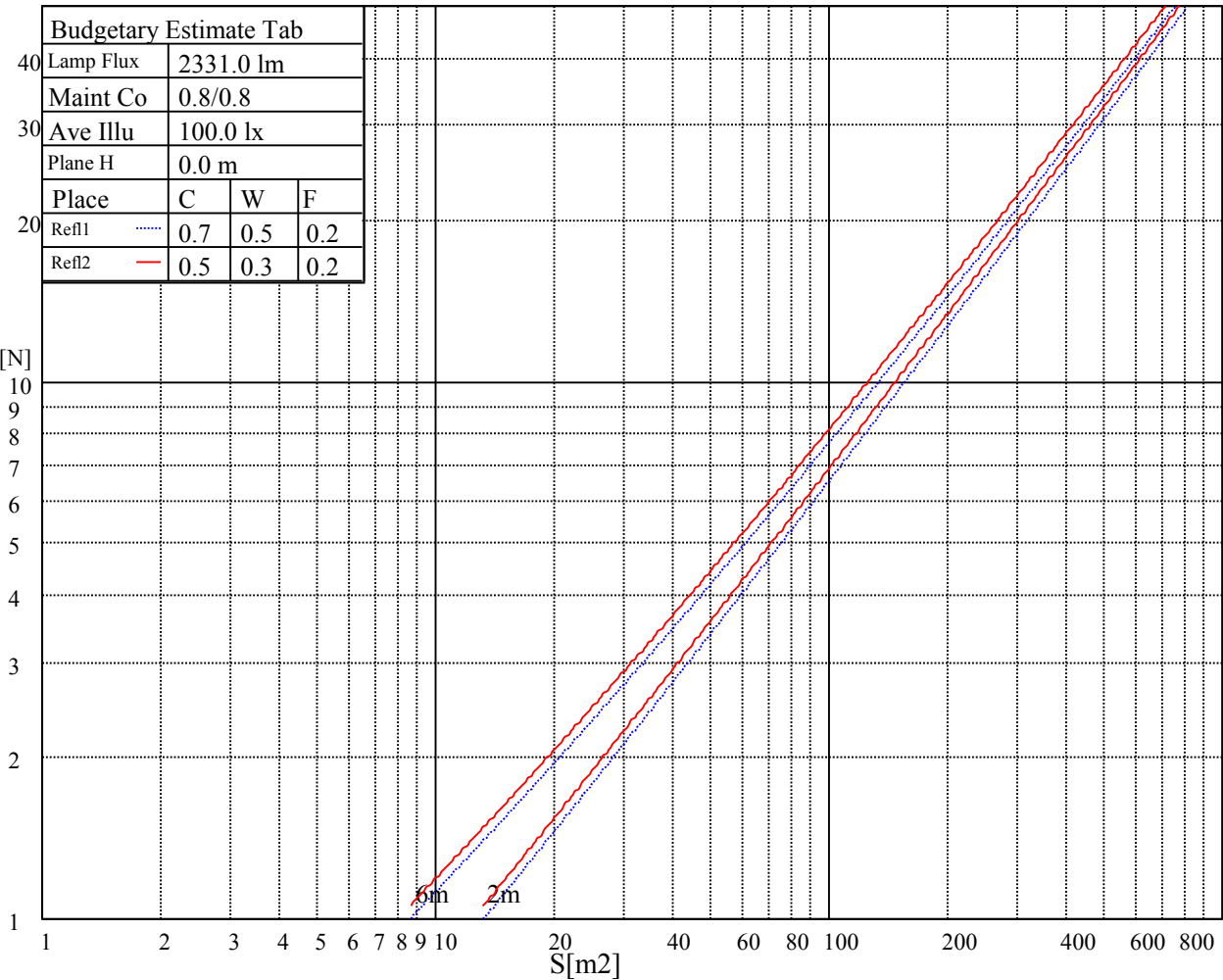
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

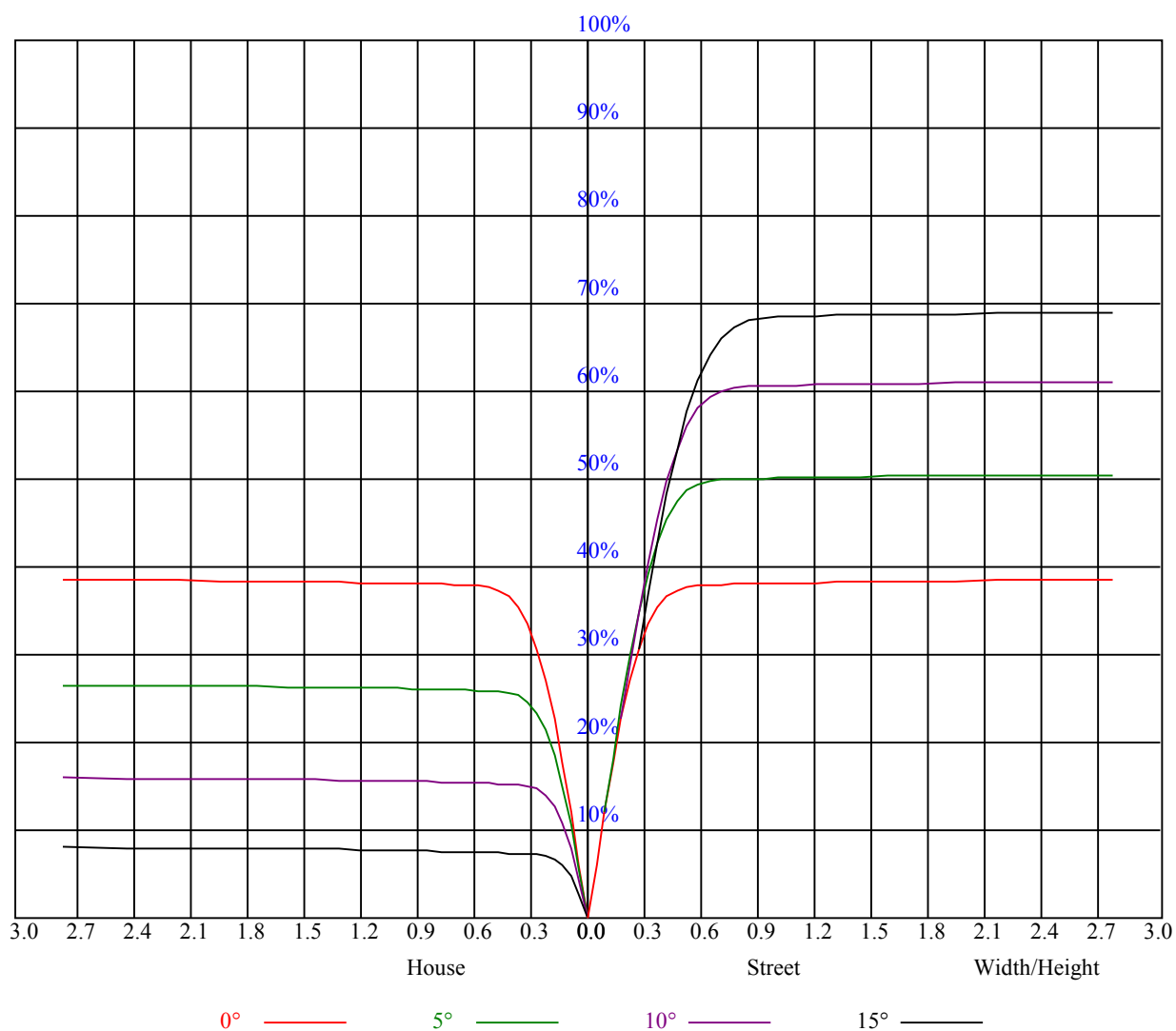
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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



Intensity data(cd)										Appendix Page: 14 Total:14	
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	5891.06	5715.56	4991.63	3773.25	2361.94	795.38	50.91	21.26	14.74		
45.0	5870.25	5702.63	4962.94	3870.00	2293.31	758.25	57.83	20.76	14.63		
90.0	5879.81	5531.06	4696.88	3371.63	1839.38	484.03	37.86	18.90	13.95		
135.0	5890.50	5600.81	4819.50	3528.56	1995.75	595.69	42.30	19.13	14.06		
180.0	5891.06	5487.75	4499.44	3043.13	1104.53	345.04	29.53	17.72	13.33		
225.0	5870.25	5491.13	4530.38	3161.81	1452.38	360.68	32.34	18.28	13.44		
270.0	5879.81	5631.75	4795.31	3698.44	2125.13	601.88	42.41	20.31	14.46		
315.0	5890.50	5586.75	4701.94	3461.06	1945.13	476.78	36.73	19.07	13.95		
360.0	5891.06	5715.56	4991.63	3773.25	2361.94	795.38	50.91	21.26	14.74		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	11.76	10.41	9.62	9.23	8.94	8.83	8.72	8.61	8.55		
45.0	11.70	10.41	9.62	9.17	8.89	8.78	8.66	8.55	8.49		
90.0	11.36	10.13	9.45	9.11	8.83	8.72	8.66	8.61	8.55		
135.0	11.48	10.24	9.62	9.17	8.89	8.78	8.61	8.55	8.49		
180.0	11.19	10.18	9.51	9.17	8.94	8.78	8.66	8.61	8.55		
225.0	11.14	10.01	9.45	9.06	18.00	15.92	9.90	8.55	8.49		
270.0	11.70	10.29	9.56	9.17	8.89	8.78	8.61	8.55	8.61		
315.0	11.36	10.13	9.45	9.11	8.83	8.72	8.61	8.49	8.44		
360.0	11.76	10.41	9.62	9.23	8.94	8.83	8.72	8.61	8.55		
C/ γ (°)	90.0										
0.0	8.49										
45.0	8.44										
90.0	8.44										
135.0	8.44										
180.0	8.94										
225.0	8.44										
270.0	8.38										
315.0	8.44										
360.0	8.49										