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## NATA

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LumCAT: 3-2044-M  
Luminaire: 92.70.131.00  
Report No: NATA0100  
Test No: GC2018111218  
LampCAT: OSRAM SOLERIQ S15  
Lamp flux(lm): 2582.0  
Number of Lamps: 1  
Length(mm): 84  
Phm Type: C

Voltage(V): 36.1000  
Current(A): 0.5500  
Power (W): 19.8550  
PF: 0.0000  
Ballast type: DC  
Width(mm): 84  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 2310.08  
Efficiency(%): 89.47%  
Lumens(lm)/Power(W): 118.79  
Central intensity(cd): 8463.517  
Maximum intensity(cd): 8463.517  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=25.5  
                                  [C90/270]Total=25.5  
Field angle(10%Imax): [C0/180]Total=55.6  
                                  [C90/270]Total=55.6  
Maximum s/h(1/2): C0\_180=0.43 C90\_270=0.43  
Maximum s/h(1/4): C0\_180=0.43 C90\_270=0.43  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 91.34%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 96.739%

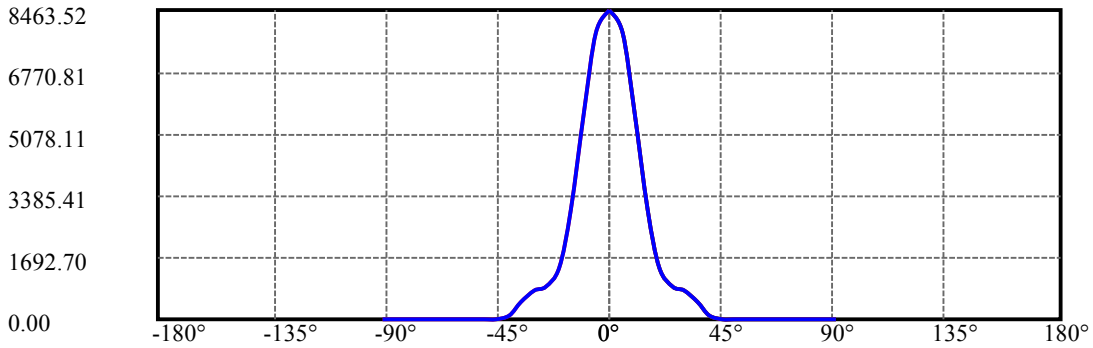
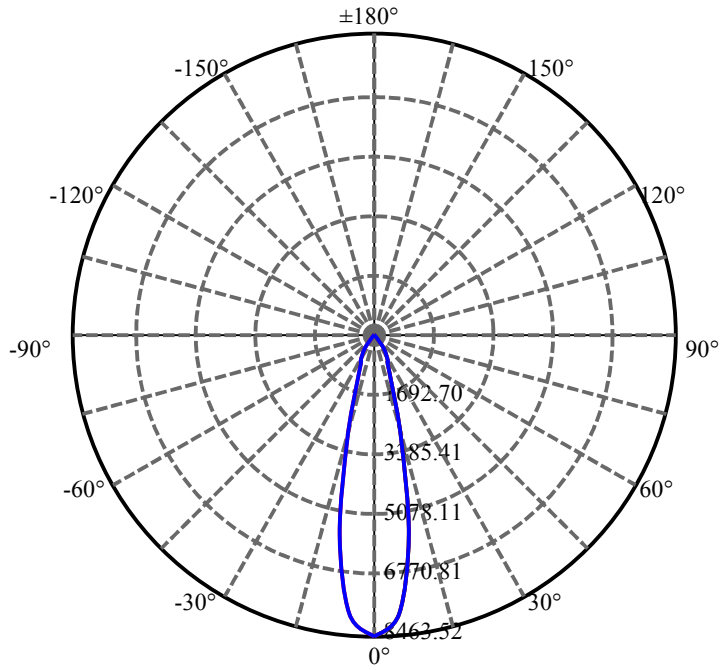
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8463.516	50.614	50.614	1.960%	2.191%
5.0	7827.680	373.954	424.568	14.483%	18.379%
10.0	5717.391	544.199	968.766	21.077%	41.936%
15.0	2994.539	424.830	1393.597	16.454%	60.327%
20.0	1406.630	263.707	1657.303	10.213%	71.742%
25.0	908.494	210.455	1867.759	8.151%	80.852%
30.0	798.497	218.843	2086.602	8.476%	90.326%
35.0	466.889	146.789	2233.391	5.685%	96.680%
40.0	79.938	28.165	2261.556	1.091%	97.899%
45.0	13.472	5.222	2266.778	.202%	98.125%
50.0	11.721	4.922	2271.699	.191%	98.338%
55.0	10.934	4.909	2276.609	.190%	98.551%
60.0	10.491	4.980	2281.589	.193%	98.767%
65.0	10.188	5.061	2286.65	.196%	98.986%
70.0	9.970	5.136	2291.785	.199%	99.208%
75.0	9.795	5.186	2296.971	.201%	99.432%
80.0	9.689	5.230	2302.201	.203%	99.659%
85.0	9.647	5.268	2307.469	.204%	99.887%
90.0	9.534	2.613	2310.082	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2086.60	80.81%	90.33%
0-40	2261.56	87.59%	97.90%
0-60	2281.59	88.37%	98.77%
0-90	2307.47	89.37%	99.89%
0-120	2307.47	89.37%	99.89%
0-180	2310.08	89.47%	100.00%
60-90	30.86	1.20%	1.34%
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%
0-24.53	1848.07	71.57%	80.00%

ZONAL LUMEN SUMMARY

0-10	968.77
10-20	688.54
20-30	429.30
30-40	174.95
40-50	10.14
50-60	9.89
60-70	10.20
70-80	10.42
80-90	5.27
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: —————

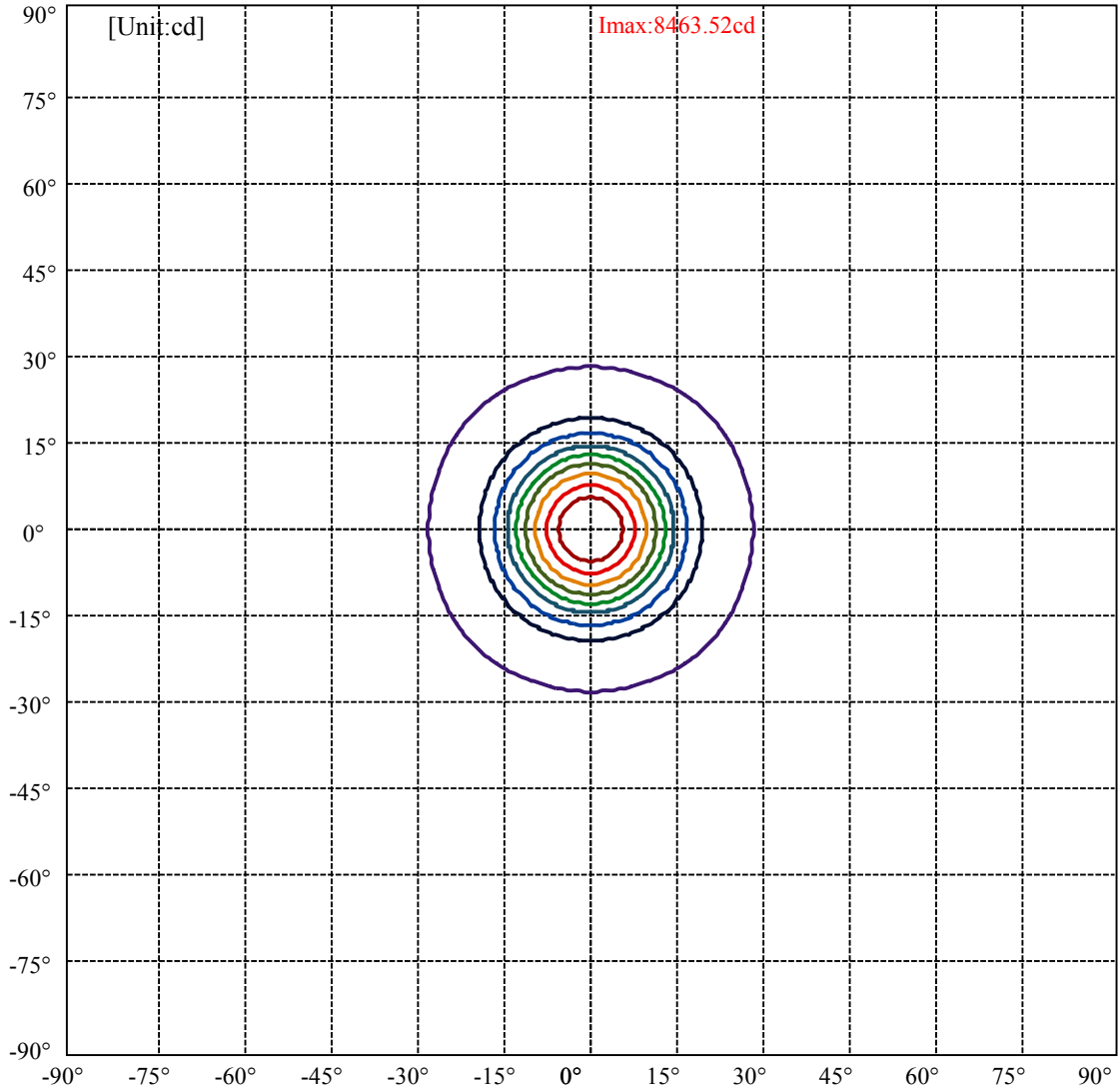
Field angle(10%Imax):C0/180Left:27.8 Right:27.8

:C90/270Left:27.8 Right:27.8

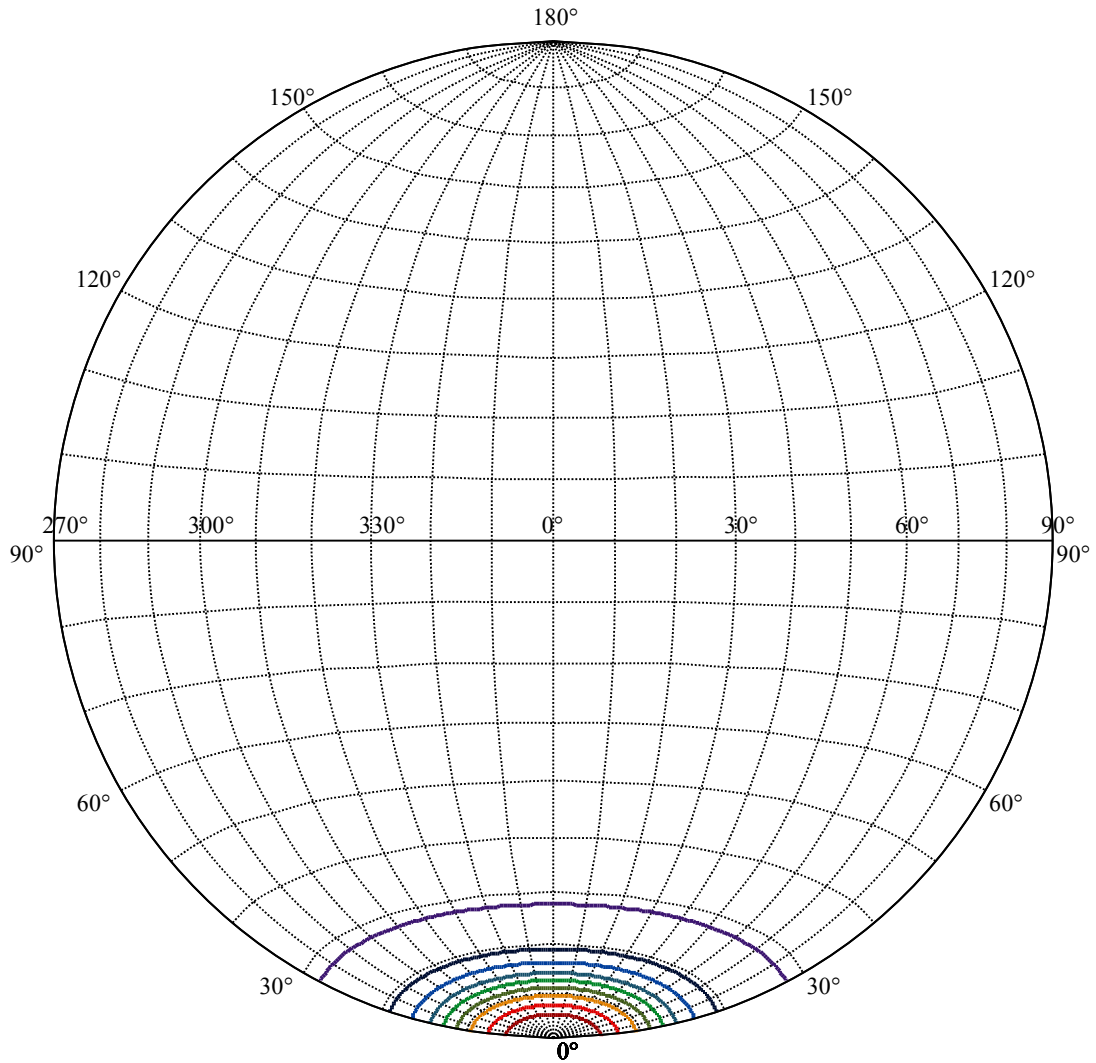
Beam Angle(50%Imax):C0/180Left:12.7 Right:12.7

:C90/270Left:12.7 Right:12.7





(10%Imax) 846.352	—
(20%Imax) 1692.7	—
(30%Imax) 2539.05	—
(40%Imax) 3385.41	—
(50%Imax) 4231.76	—
(60%Imax) 5078.11	—
(70%Imax) 5924.46	—
(80%Imax) 6770.81	—
(90%Imax) 7617.17	—



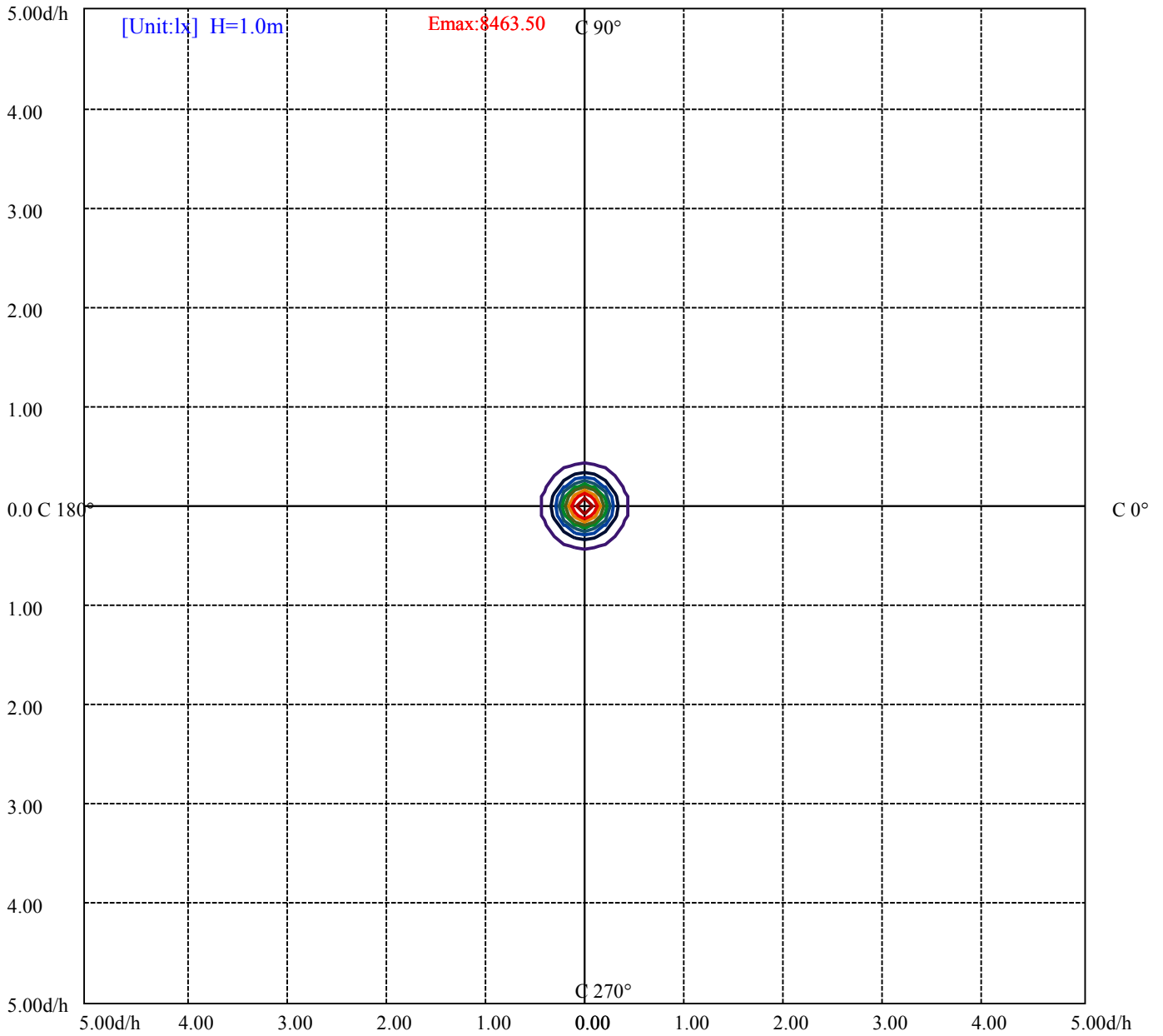
House

[Unit:cd]

Road

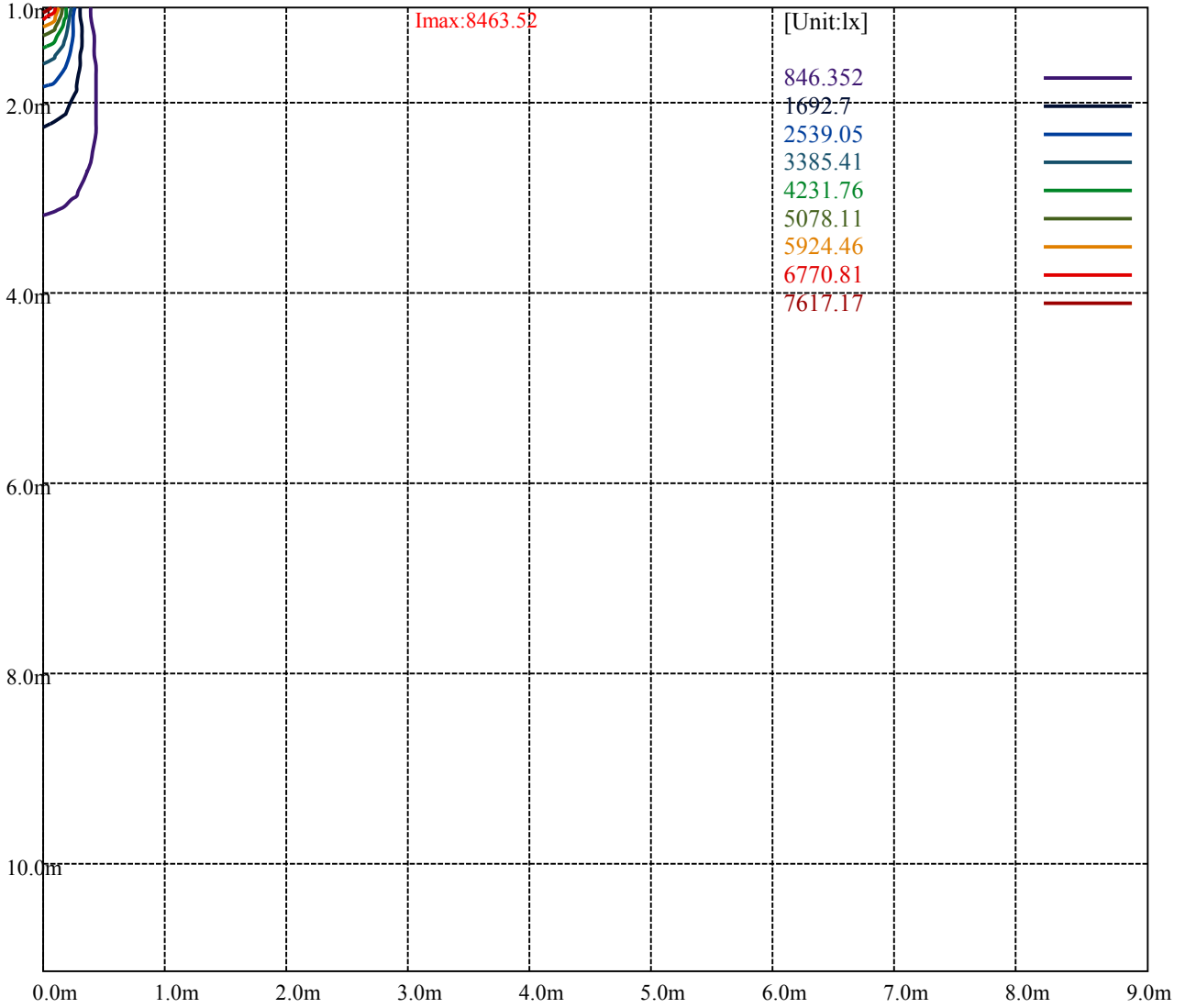
**Imax:8463.52**

(10%Imax) 846.352	—
(20%Imax) 1692.7	—
(30%Imax) 2539.05	—
(40%Imax) 3385.41	—
(50%Imax) 4231.76	—
(60%Imax) 5078.11	—
(70%Imax) 5924.46	—
(80%Imax) 6770.81	—
(90%Imax) 7617.17	—



(10%Emax) 846.35	—
(20%Emax) 1692.7	—
(30%Emax) 2539.05	—
(40%Emax) 3385.4	—
(50%Emax) 4231.75	—
(60%Emax) 5078.1	—
(70%Emax) 5924.45	—
(80%Emax) 6770.8	—
(90%Emax) 7617.15	—





Luminance Table

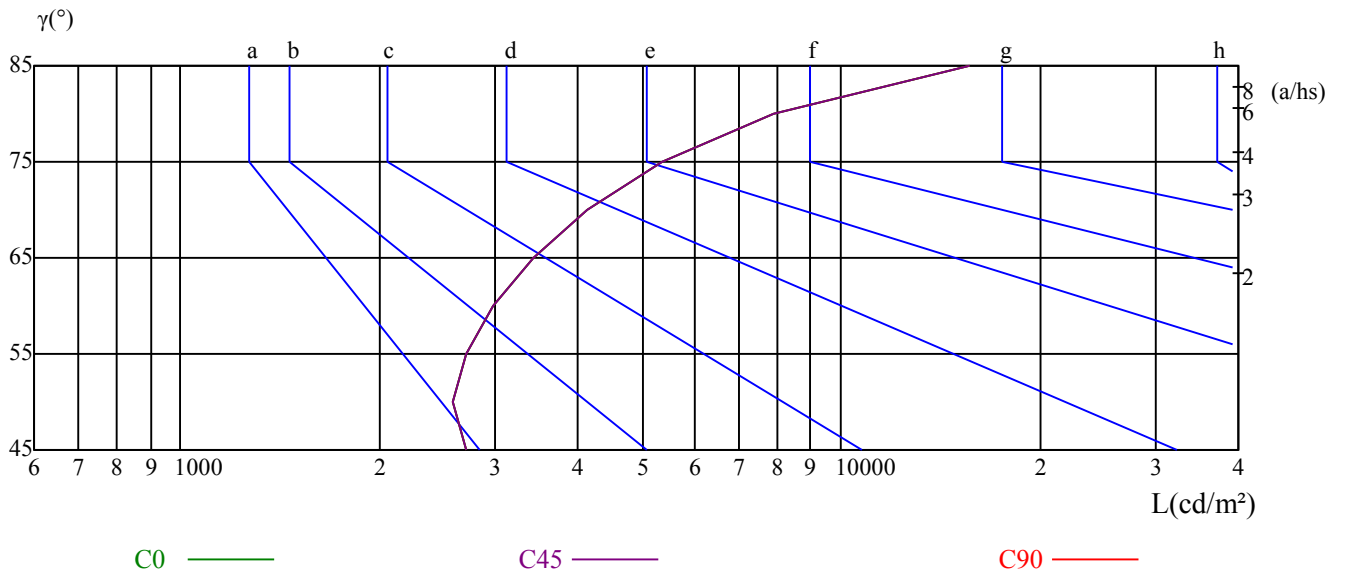
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2700	2584	2702	2974	3417	4131	5363	7908	15687
C45	2700	2584	2702	2974	3417	4131	5363	7908	15687
C90	2700	2584	2702	2974	3417	4131	5363	7908	15687

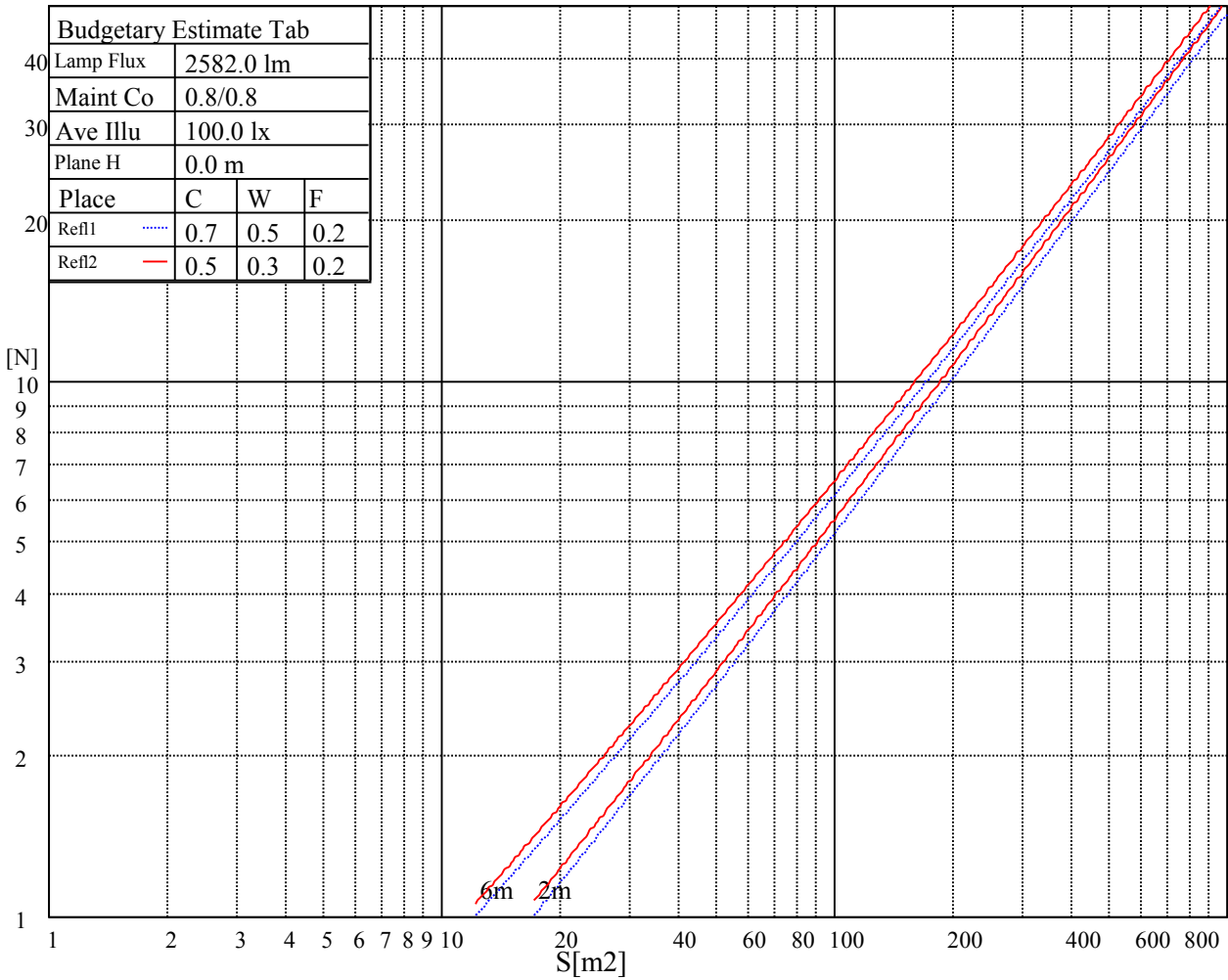
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3417	3417	3417	5363	5363	5363	15687	15687	15687

Glare Table

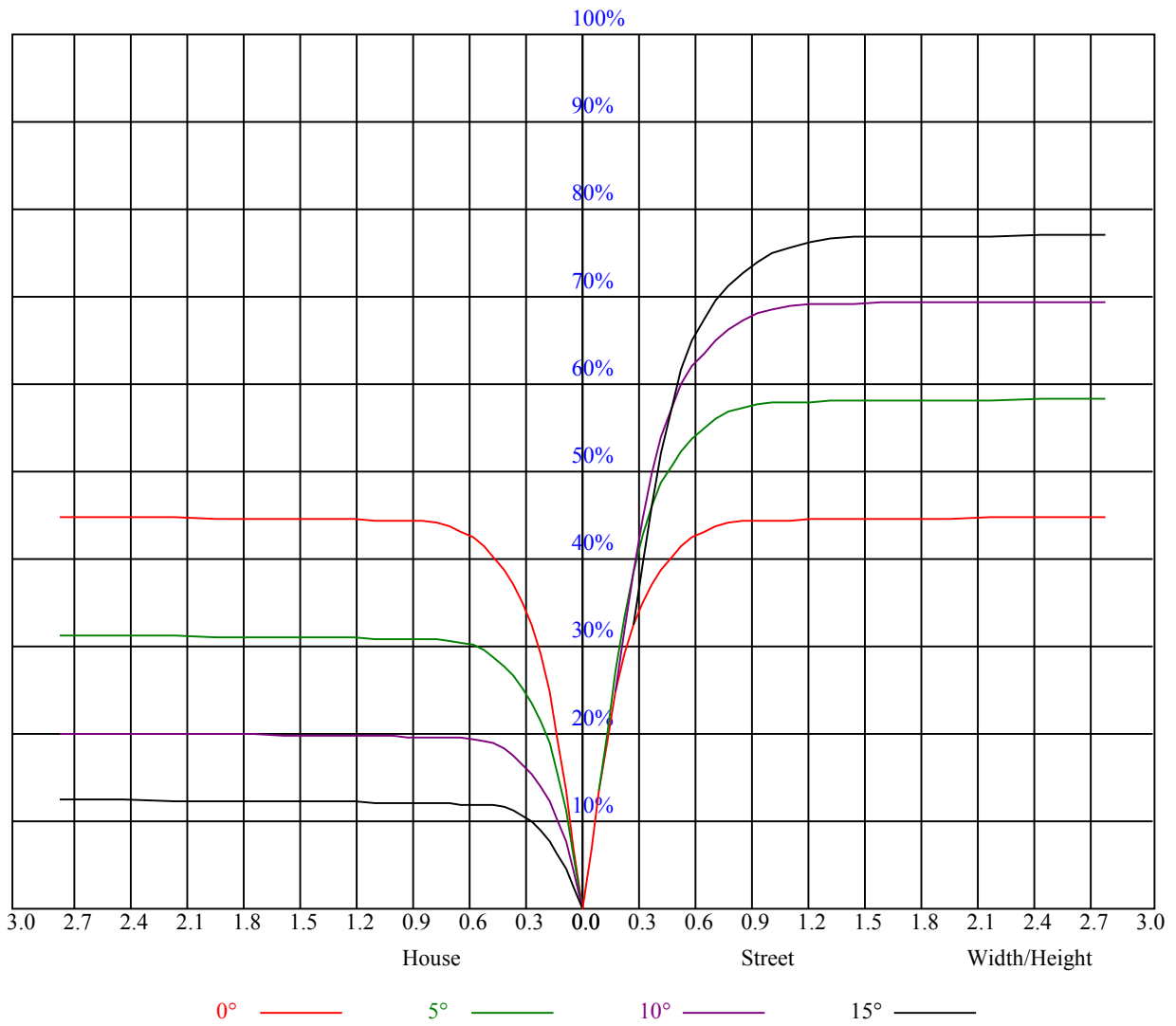
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.98	0.95	0.98	0.96	0.94	0.94	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	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.80	0.83	0.81	0.79	0.78
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.77	0.81	0.78	0.76	0.75
5	0.84	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.76	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.69	0.68
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.67	0.67
9	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63



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	8433.56	8220.38	6536.81	3789.56	1786.50	992.81	828.00	639.56	302.06
45.0	8474.63	7905.38	5748.19	2904.19	1410.75	894.94	797.06	507.38	35.83
90.0	8468.44	7673.06	5193.56	2511.56	1083.43	863.16	779.51	307.91	24.47
135.0	8477.44	7774.31	5676.75	2841.19	1342.69	884.25	788.63	421.31	29.31
180.0	8433.56	7396.31	4805.44	2397.94	1095.92	841.22	761.74	285.30	21.71
225.0	8474.63	7786.69	5673.94	2792.81	1316.25	909.06	797.12	478.46	35.55
270.0	8468.44	8024.63	6179.63	3557.25	1694.81	958.50	828.56	595.13	152.94
315.0	8477.44	7840.69	5924.81	3161.81	1522.69	924.02	807.36	500.06	37.63
360.0	8433.56	8220.38	6536.81	3789.56	1786.50	992.81	828.00	639.56	302.06
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	16.09	12.09	11.19	10.63	10.29	10.07	9.84	9.68	9.62
45.0	12.88	11.81	10.97	10.52	10.18	9.96	9.79	9.68	9.62
90.0	12.43	11.42	10.74	10.41	10.13	9.90	9.79	9.73	9.56
135.0	12.71	11.53	10.86	10.41	10.13	9.90	9.73	9.62	9.62
180.0	12.38	11.36	10.74	10.35	10.07	9.90	9.73	9.62	9.56
225.0	13.05	11.76	10.91	10.46	10.18	9.96	9.79	9.68	9.68
270.0	14.85	11.98	11.08	10.63	10.35	10.13	9.90	9.84	9.90
315.0	13.39	11.81	10.97	10.52	10.18	9.96	9.79	9.68	9.62
360.0	16.09	12.09	11.19	10.63	10.29	10.07	9.84	9.68	9.62
C/ $\gamma$ (°)	90.0								
0.0	9.56								
45.0	9.56								
90.0	9.51								
135.0	9.51								
180.0	9.51								
225.0	9.56								
270.0	9.56								
315.0	9.51								
360.0	9.56								