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Nata

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LumCAT: 4-2175-E  
Luminaire: LMOP009-2619-DH+92.76.233.00  
Report No: 2017010037  
Test No: 2017010907  
LampCAT: CITIZEN CLU241  
Lamp flux(lm): 615.0  
Number of Lamps: 1  
Length(mm): 0  
Phm Type: C

Voltage(V): 218.2000  
Current(A): 0.0290  
Power (W): 6.3000  
PF: 0.9860  
Ballast type: AC  
Width(mm): 0  
Height(mm): 0

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Photometric Results

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Lumens(lm): 580.32  
Efficiency(%): 94.36%  
Lumens(lm)/Power(W): 99.62  
Central intensity(cd): 8183.583  
Maximum intensity(cd): 8183.583  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=9.4  
                                  [C90/270]Total=9.7  
Field angle(10%Imax): [C0/180]Total=20.3  
                                  [C90/270]Total=19.9  
Maximum s/h(1/2): C0\_180=0.16 C90\_270=0.17  
Maximum s/h(1/4): C0\_180=0.20 C90\_270=0.20  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 102.05%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 91.318%

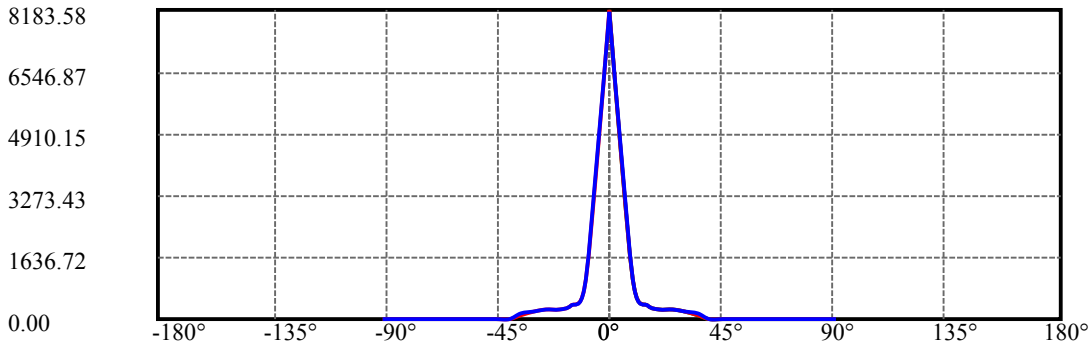
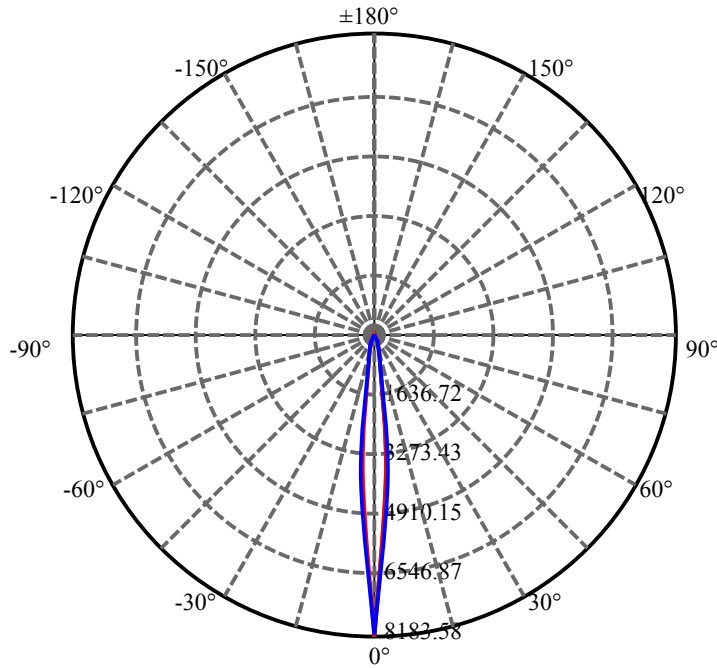
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7995.153	47.813	47.813	7.774%	8.239%
5.0	3913.959	186.983	234.795	30.404%	40.459%
10.0	825.461	78.570	313.365	12.776%	53.998%
15.0	339.127	48.111	361.477	7.823%	62.289%
20.0	269.763	50.573	412.05	8.223%	71.003%
25.0	236.357	54.753	466.803	8.903%	80.438%
30.0	217.665	59.655	526.458	9.700%	90.718%
35.0	122.879	38.633	565.091	6.282%	97.375%
40.0	9.215	3.247	568.338	.528%	97.934%
45.0	3.028	1.174	569.512	.191%	98.137%
50.0	2.822	1.185	570.697	.193%	98.341%
55.0	2.636	1.184	571.88	.192%	98.545%
60.0	2.567	1.219	573.099	.198%	98.755%
65.0	2.533	1.258	574.357	.205%	98.972%
70.0	2.484	1.280	575.636	.208%	99.192%
75.0	2.484	1.315	576.952	.214%	99.419%
80.0	2.484	1.341	578.293	.218%	99.650%
85.0	2.505	1.368	579.661	.222%	99.886%
90.0	2.422	0.664	580.325	.108%	100.000%

## ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	526.46	85.60%	90.72%
0-40	568.34	92.41%	97.93%
0-60	573.10	93.19%	98.75%
0-90	579.66	94.25%	99.89%
0-120	579.66	94.25%	99.89%
0-180	580.32	94.36%	100.00%
60-90	7.78	1.27%	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%
0-24.77	464.26	75.49%	80.00%

## ZONAL LUMEN SUMMARY

0-10	313.37
10-20	98.68
20-30	114.41
30-40	41.88
40-50	2.36
50-60	2.40
60-70	2.54
70-80	2.66
80-90	1.37
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



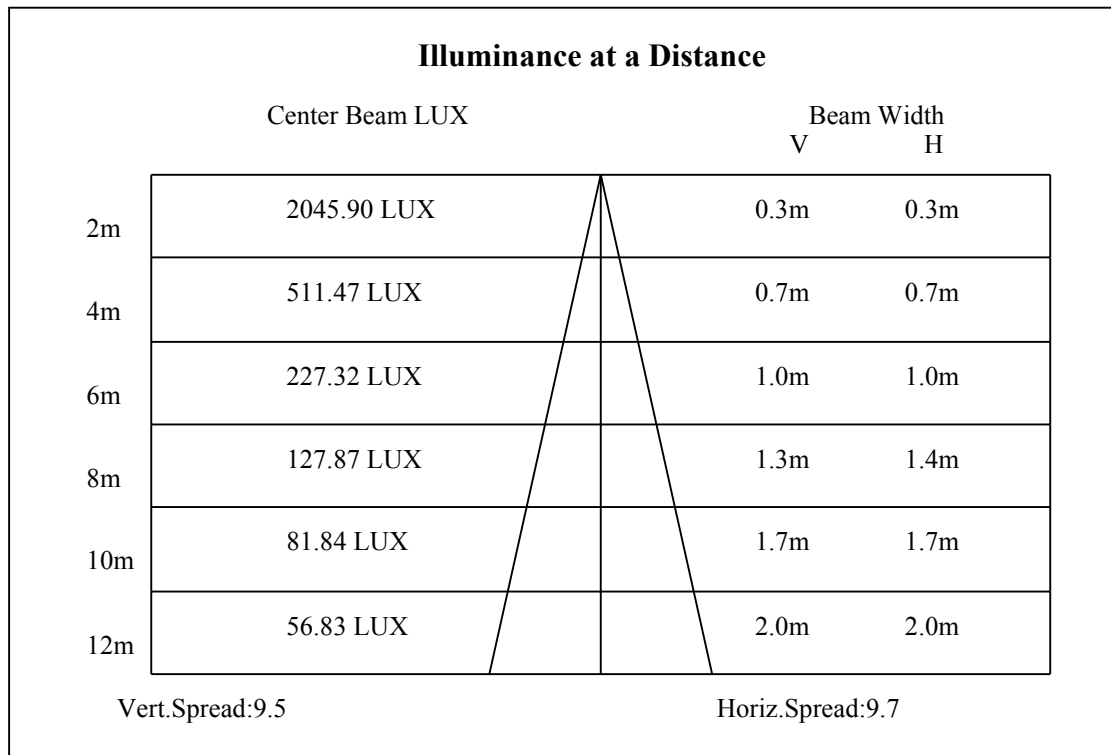
C0(Max): —————

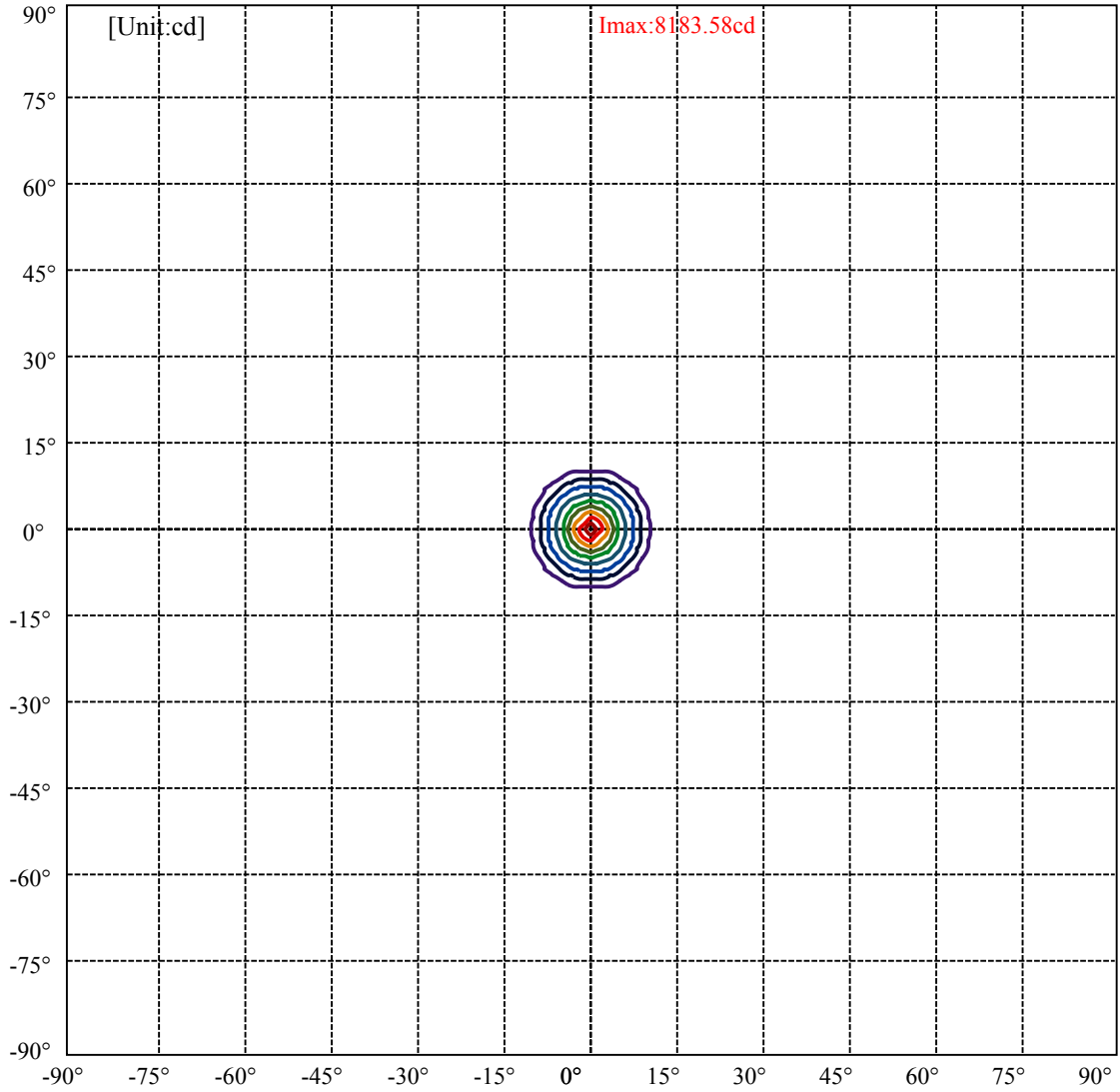
C0/C180: —————

C90/C270: —————

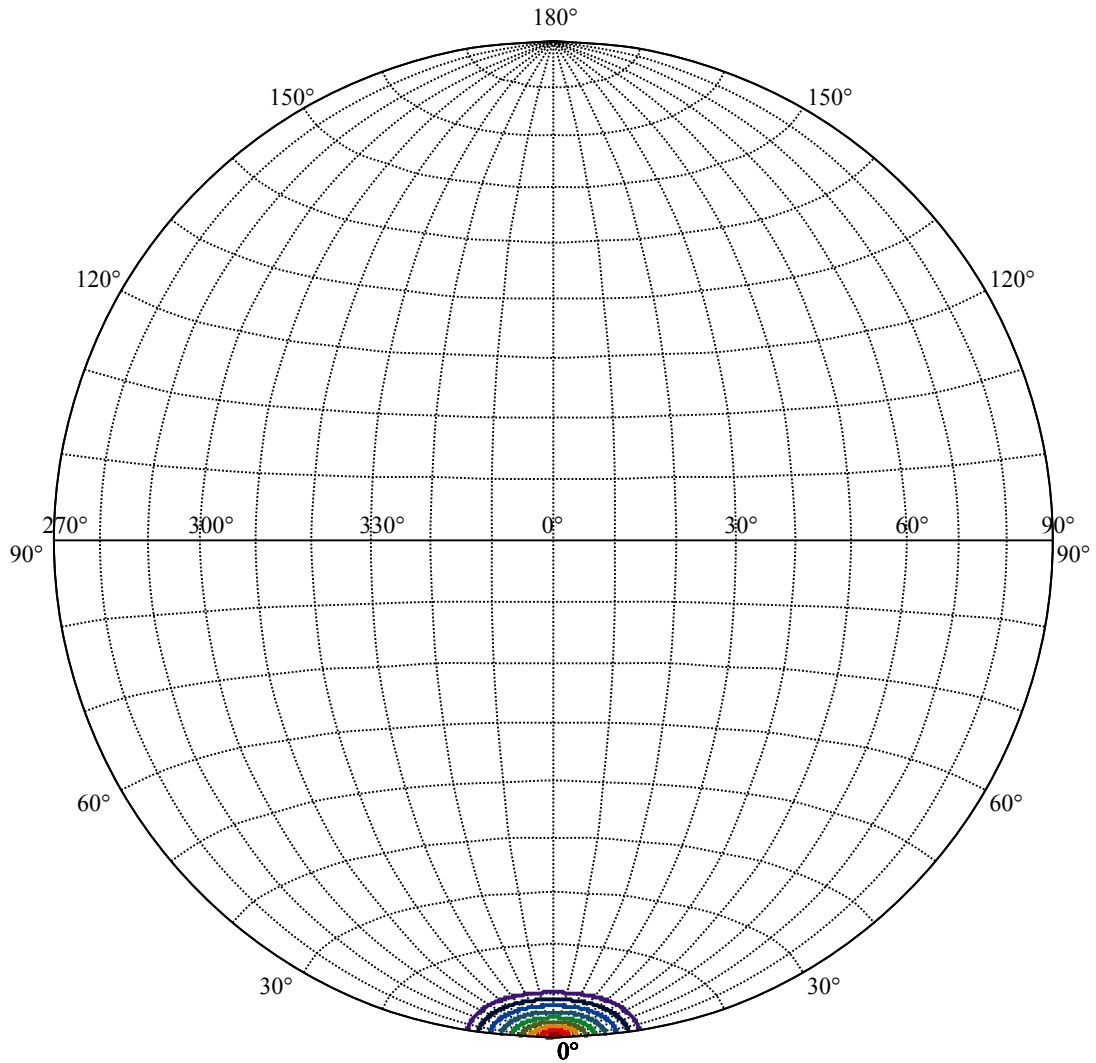
Field angle(10%Imax):C0/180Left:10.1 Right:10.1  
:C90/270Left:10.0 Right:10.0

Beam Angle(50%Imax):C0/180Left:4.7 Right:4.7  
:C90/270Left:4.8 Right:4.8





(10%I <sub>max</sub> ) 812.357	—
(20%I <sub>max</sub> ) 1624.71	—
(30%I <sub>max</sub> ) 2437.07	—
(40%I <sub>max</sub> ) 3249.43	—
(50%I <sub>max</sub> ) 4061.79	—
(60%I <sub>max</sub> ) 4874.14	—
(70%I <sub>max</sub> ) 5686.5	—
(80%I <sub>max</sub> ) 6498.86	—
(90%I <sub>max</sub> ) 7311.21	—



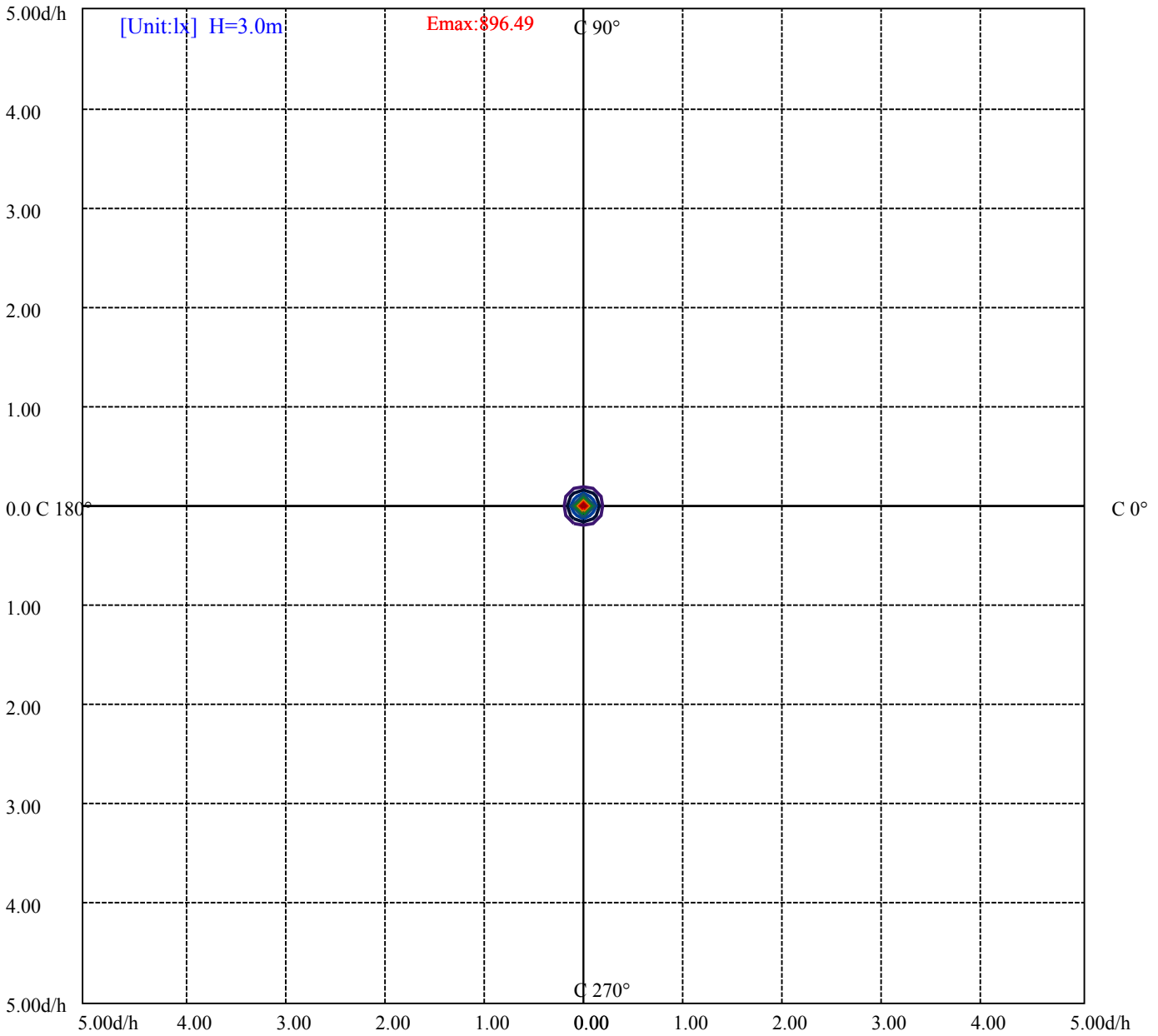
House

[Unit:cd]

Road

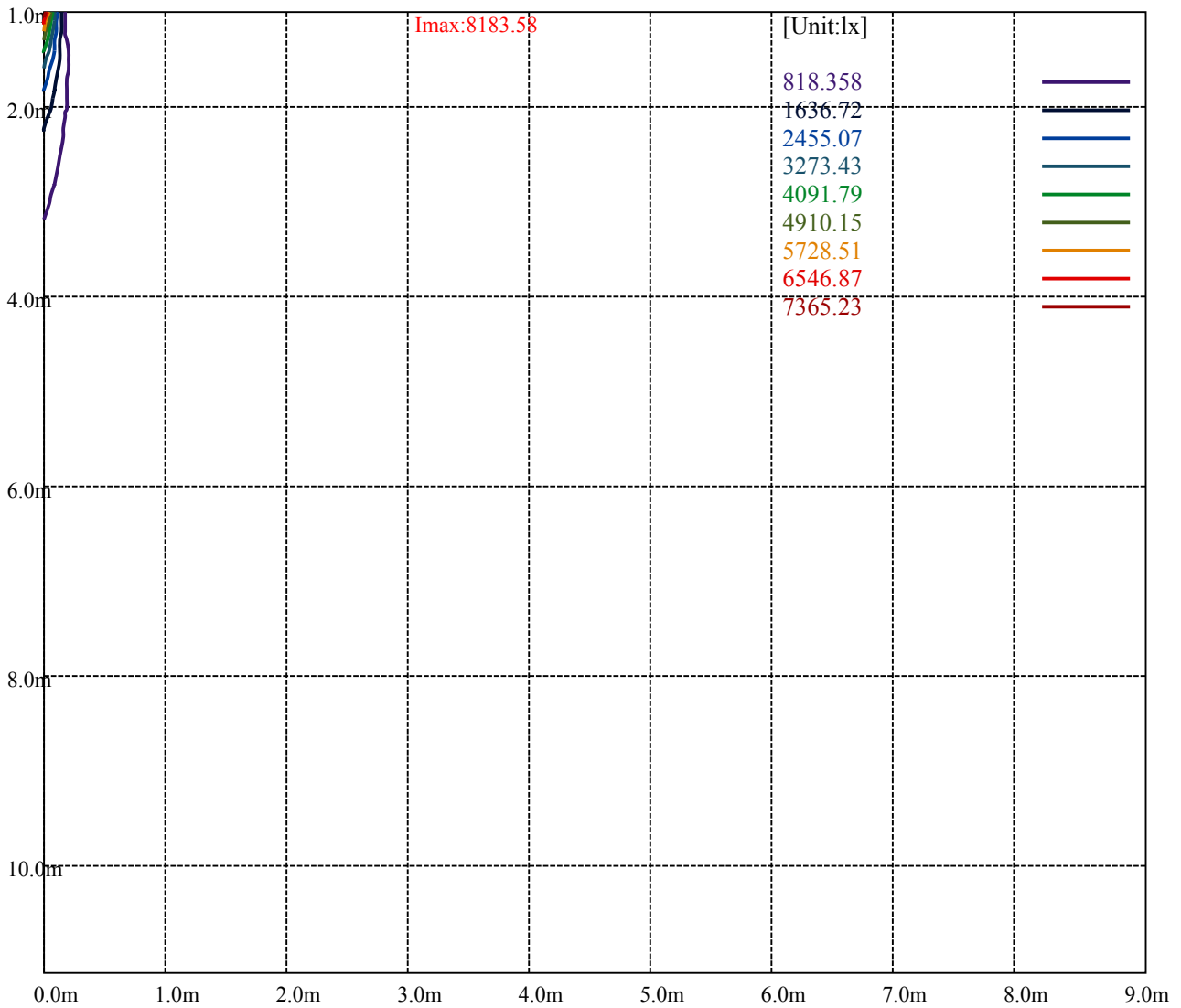
**Imax:8183.58**

(10%Imax) 818.358	—
(20%Imax) 1636.72	—
(30%Imax) 2455.07	—
(40%Imax) 3273.43	—
(50%Imax) 4091.79	—
(60%Imax) 4910.15	—
(70%Imax) 5728.51	—
(80%Imax) 6546.87	—
(90%Imax) 7365.23	—



- (10%Emax) 89.64877
- (20%Emax) 179.2978
- (30%Emax) 268.9467
- (40%Emax) 358.5956
- (50%Emax) 448.2444
- (60%Emax) 537.8933
- (70%Emax) 627.5422
- (80%Emax) 717.1912
- (90%Emax) 806.84





Luminance Table

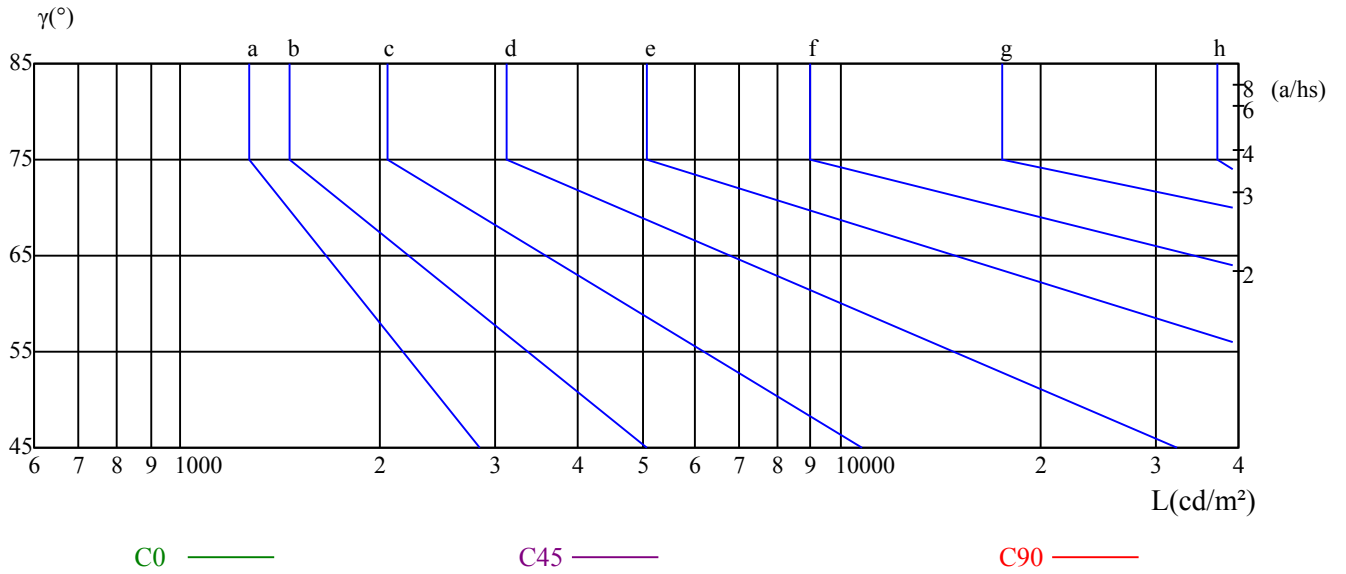
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

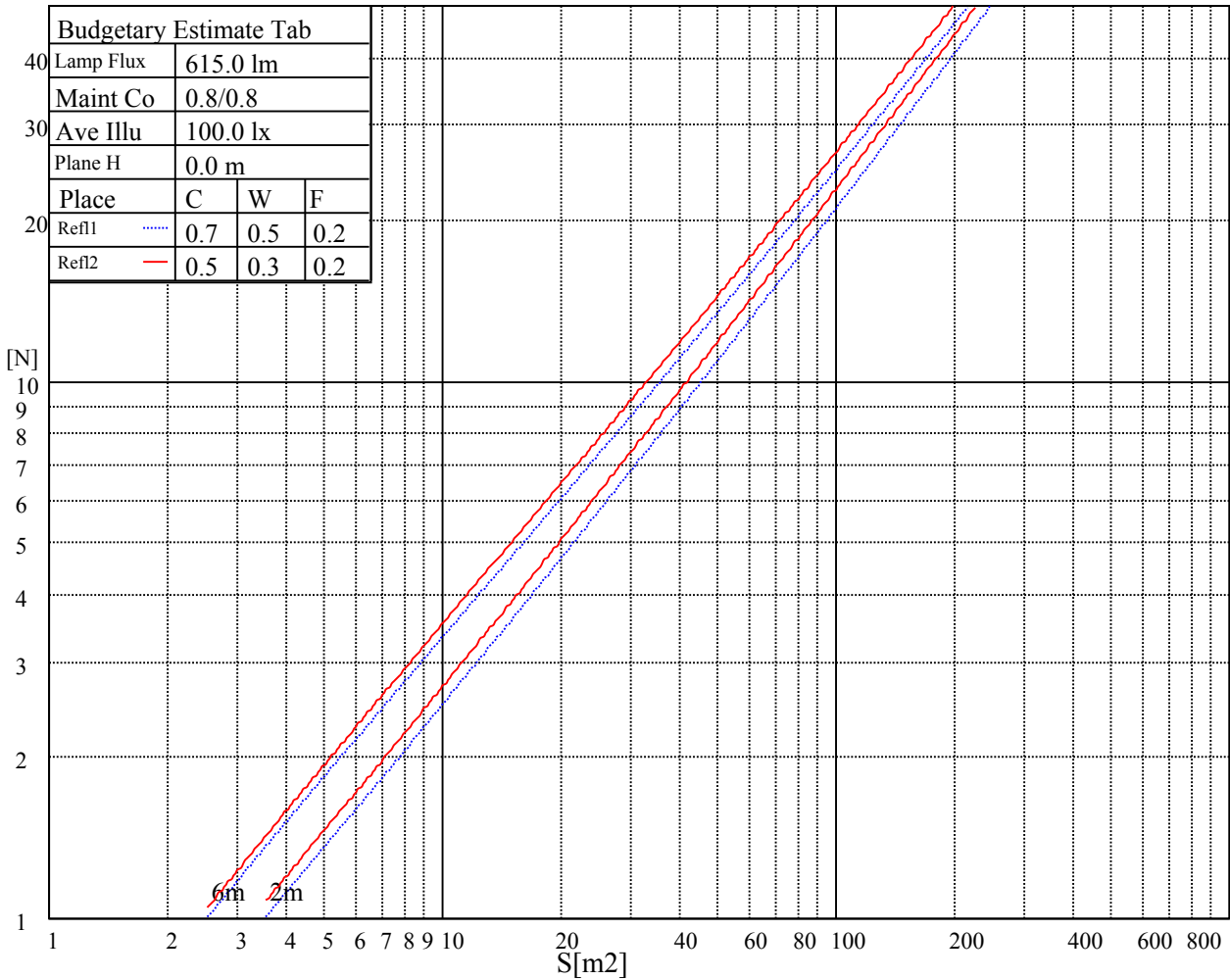
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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 RHOF=20 CU															
0	1.21	1.21	1.21	1.19	1.19	1.19	1.13	1.13	1.13	1.09	1.09	1.09	1.04	1.04	1.04	1.02
1	1.05	1.00	0.96	1.02	0.98	0.94	0.98	0.94	0.91	0.94	0.91	0.88	0.90	0.88	0.86	0.83
2	0.99	0.94	0.89	0.97	0.92	0.88	0.94	0.90	0.86	0.91	0.87	0.84	0.88	0.85	0.82	0.80
3	0.94	0.89	0.84	0.93	0.88	0.83	0.90	0.86	0.82	0.88	0.84	0.81	0.85	0.82	0.79	0.78
4	0.90	0.85	0.80	0.89	0.84	0.80	0.87	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.75
5	0.87	0.81	0.77	0.86	0.81	0.77	0.84	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.73
6	0.84	0.78	0.74	0.83	0.78	0.74	0.82	0.77	0.73	0.80	0.76	0.73	0.79	0.75	0.72	0.71
7	0.81	0.76	0.72	0.80	0.75	0.72	0.79	0.75	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.69
8	0.79	0.73	0.70	0.78	0.73	0.69	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.67
9	0.76	0.71	0.68	0.76	0.71	0.68	0.75	0.71	0.67	0.74	0.70	0.67	0.73	0.70	0.67	0.66
10	0.74	0.69	0.66	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.65	0.64

Intensity data(cd)

<b>C/γ(°)</b>	<b>0.0</b>	<b>5.0</b>	<b>10.0</b>	<b>15.0</b>	<b>20.0</b>	<b>25.0</b>	<b>30.0</b>	<b>35.0</b>	<b>40.0</b>
<b>0.0</b>	8183.58	3213.64	790.06	330.89	278.03	237.07	218.24	115.45	9.52
<b>45.0</b>	8068.52	4104.45	869.34	341.35	278.59	240.87	221.71	141.33	10.02
<b>90.0</b>	8123.57	3939.84	768.59	330.72	263.28	233.99	214.94	127.13	11.12
<b>135.0</b>	7604.94	5521.61	1150.13	380.99	278.59	237.13	218.96	160.54	11.45
<b>180.0</b>	8183.58	4448.01	872.53	341.40	261.79	231.79	215.49	123.27	8.53
<b>225.0</b>	8068.52	3713.00	731.20	328.63	264.27	235.81	218.74	111.38	7.32
<b>270.0</b>	8123.57	3892.49	807.68	344.10	279.14	240.71	219.12	131.25	7.93
<b>315.0</b>	7604.94	2478.64	614.15	314.92	254.42	233.49	214.11	72.67	7.82
<b>360.0</b>	8183.58	3213.64	790.06	330.89	278.03	237.07	218.24	115.45	9.52
<b>C/γ(°)</b>	<b>45.0</b>	<b>50.0</b>	<b>55.0</b>	<b>60.0</b>	<b>65.0</b>	<b>70.0</b>	<b>75.0</b>	<b>80.0</b>	<b>85.0</b>
<b>0.0</b>	3.03	2.81	2.64	2.53	2.53	2.48	2.48	2.48	2.48
<b>45.0</b>	3.03	2.81	2.70	2.59	2.59	2.53	2.53	2.53	2.48
<b>90.0</b>	2.97	2.75	2.70	2.59	2.53	2.48	2.48	2.48	2.48
<b>135.0</b>	3.30	2.86	2.64	2.59	2.48	2.48	2.48	2.48	2.48
<b>180.0</b>	2.97	3.03	2.53	2.53	2.59	2.42	2.42	2.42	2.42
<b>225.0</b>	2.97	2.81	2.59	2.59	2.53	2.48	2.53	2.48	2.53
<b>270.0</b>	3.03	2.81	2.70	2.59	2.53	2.53	2.53	2.53	2.48
<b>315.0</b>	2.92	2.70	2.59	2.53	2.48	2.48	2.42	2.48	2.70
<b>360.0</b>	3.03	2.81	2.64	2.53	2.53	2.48	2.48	2.48	2.48
<b>C/γ(°)</b>	<b>90.0</b>								
<b>0.0</b>	2.37								
<b>45.0</b>	2.42								
<b>90.0</b>	2.48								
<b>135.0</b>	2.42								
<b>180.0</b>	2.42								
<b>225.0</b>	2.42								
<b>270.0</b>	2.42								
<b>315.0</b>	2.42								
<b>360.0</b>	2.37								