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## Nata

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LumCAT: 2-1121-A4  
Luminaire: 99.02.73.172+92.76.365.00  
Report No: NATA0100  
Test No: GC2018091210  
LampCAT: LUMINUS CXM-11-AC30  
Lamp flux(lm): 2496.0  
Number of Lamps: 1  
Length(mm): 71  
Phm Type: C

Voltage(V): 34.7000  
Current(A): 0.4900  
Power (W): 17.0030  
PF: 0.0000  
Ballast type: DC  
Width(mm): 71  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 2270.97  
Efficiency(%): 90.98%  
Lumens(lm)/Power(W): 133.56  
Central intensity(cd): 8157.797  
Maximum intensity(cd): 8157.797  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=25.3  
                                  [C90/270]Total=25.3  
Field angle(10%Imax): [C0/180]Total=56.7  
                                  [C90/270]Total=56.7  
Maximum s/h(1/2): C0\_180=0.43 C90\_270=0.43  
Maximum s/h(1/4): C0\_180=0.41 C90\_270=0.41  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 92.85%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 96.728%

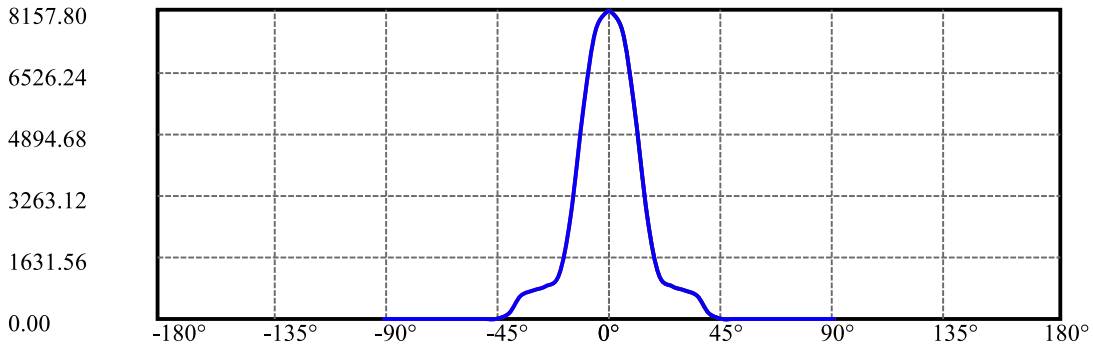
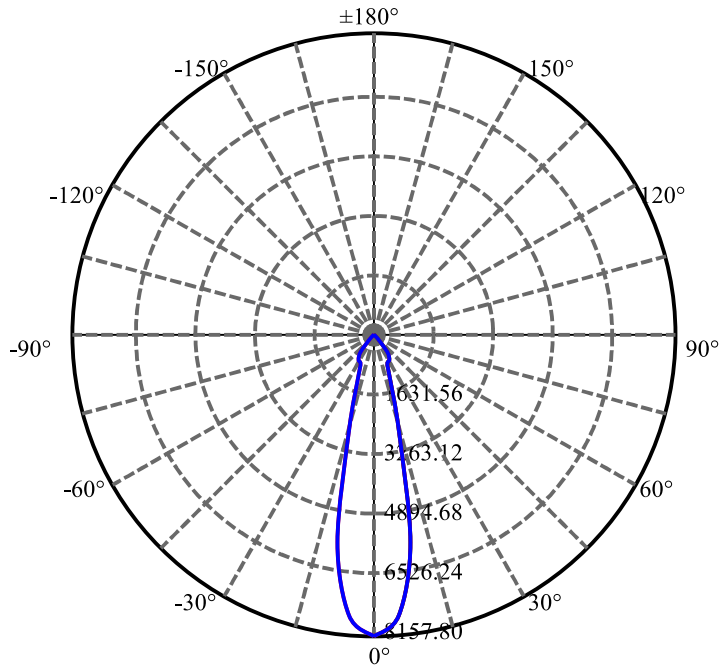
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8157.797	48.785	48.785	1.955%	2.148%
5.0	7595.719	362.873	411.658	14.538%	18.127%
10.0	5685.117	541.127	952.785	21.680%	41.955%
15.0	2668.922	378.636	1331.42	15.170%	58.628%
20.0	1185.715	222.291	1553.711	8.906%	68.416%
25.0	880.573	203.987	1757.698	8.173%	77.399%
30.0	784.308	214.954	1972.653	8.612%	86.864%
35.0	593.705	186.660	2159.313	7.478%	95.083%
40.0	166.669	58.723	2218.036	2.353%	97.669%
45.0	21.382	8.287	2226.323	.332%	98.034%
50.0	12.298	5.164	2231.487	.207%	98.262%
55.0	11.370	5.105	2236.592	.205%	98.486%
60.0	10.877	5.163	2241.756	.207%	98.714%
65.0	10.512	5.222	2246.978	.209%	98.944%
70.0	10.238	5.273	2252.251	.211%	99.176%
75.0	10.048	5.320	2257.571	.213%	99.410%
80.0	9.928	5.359	2262.93	.215%	99.646%
85.0	9.830	5.368	2268.298	.215%	99.882%
90.0	9.738	2.669	2270.966	.107%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1972.65	79.03%	86.86%
0-40	2218.04	88.86%	97.67%
0-60	2241.76	89.81%	98.71%
0-90	2268.30	90.88%	99.88%
0-120	2268.30	90.88%	99.88%
0-180	2270.97	90.98%	100.00%
60-90	31.71	1.27%	1.40%
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%
0-26.37	1816.77	72.79%	80.00%

ZONAL LUMEN SUMMARY

0-10	952.78
10-20	600.93
20-30	418.94
30-40	245.38
40-50	13.45
50-60	10.27
60-70	10.50
70-80	10.68
80-90	5.37
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: —————

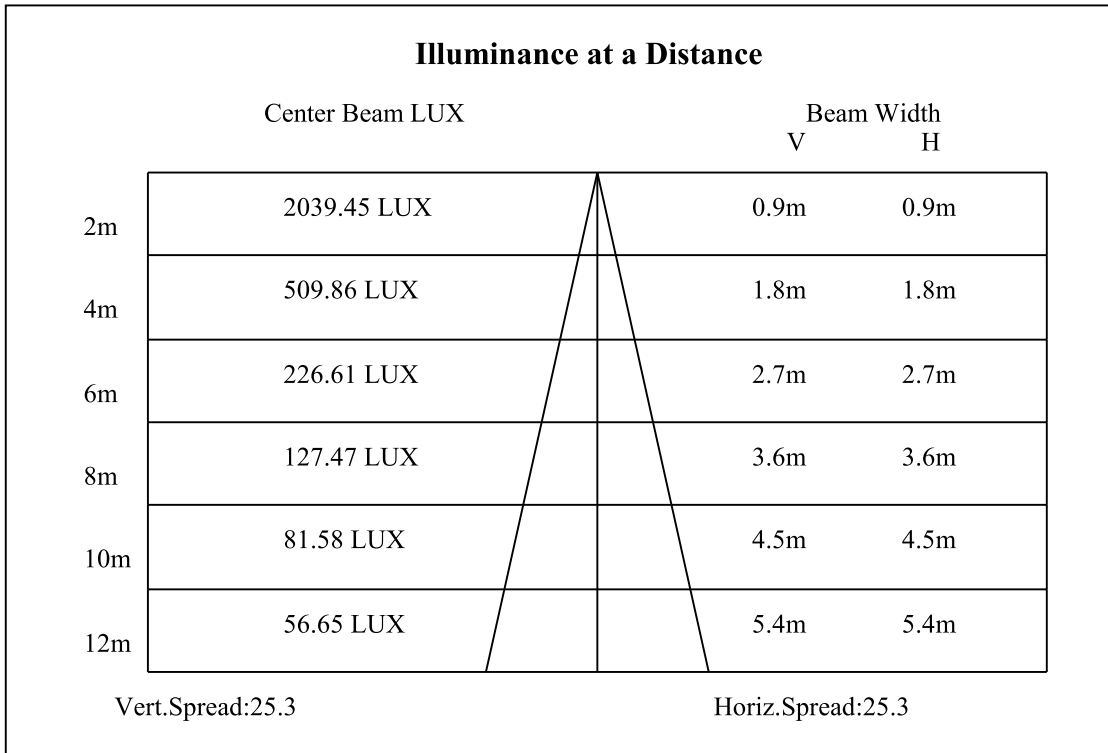
C90/C270: —————

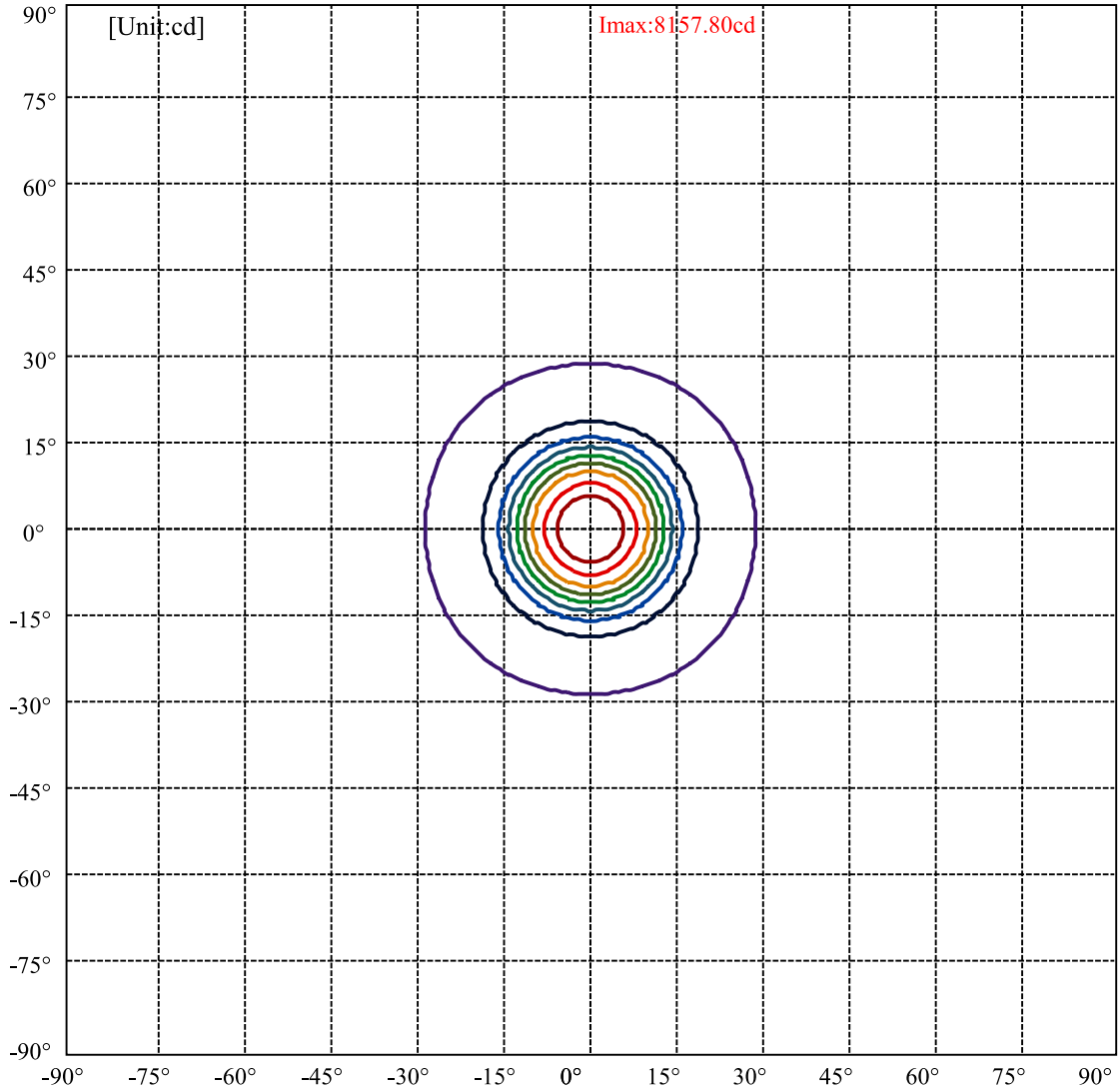
Field angle(10%Imax):C0/180Left:28.4 Right:28.4

:C90/270Left:28.4 Right:28.4

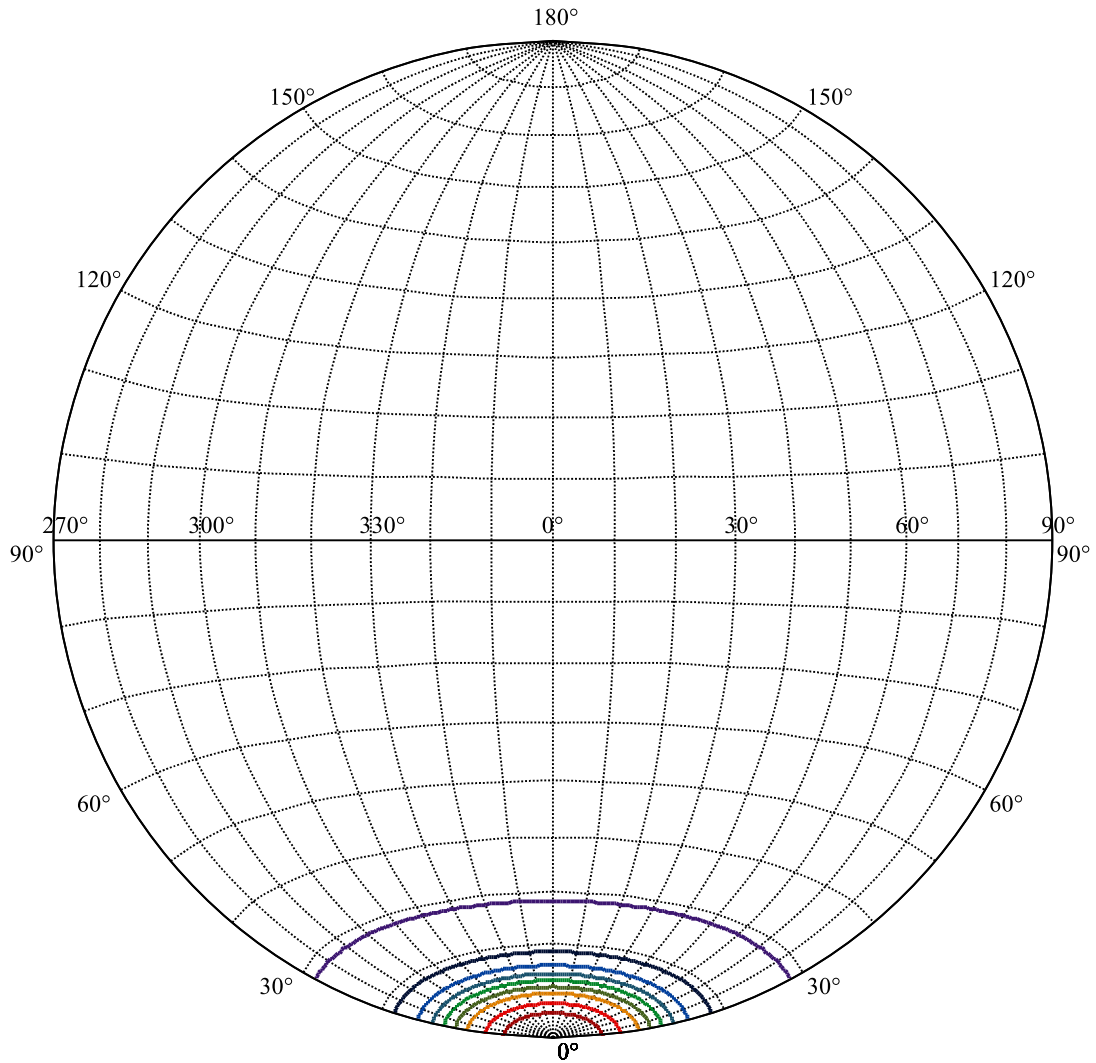
Beam Angle(50%Imax):C0/180Left:12.7 Right:12.7

:C90/270Left:12.7 Right:12.7





(10%Imax) 815.78	—
(20%Imax) 1631.56	—
(30%Imax) 2447.34	—
(40%Imax) 3263.12	—
(50%Imax) 4078.9	—
(60%Imax) 4894.68	—
(70%Imax) 5710.46	—
(80%Imax) 6526.24	—
(90%Imax) 7342.02	—



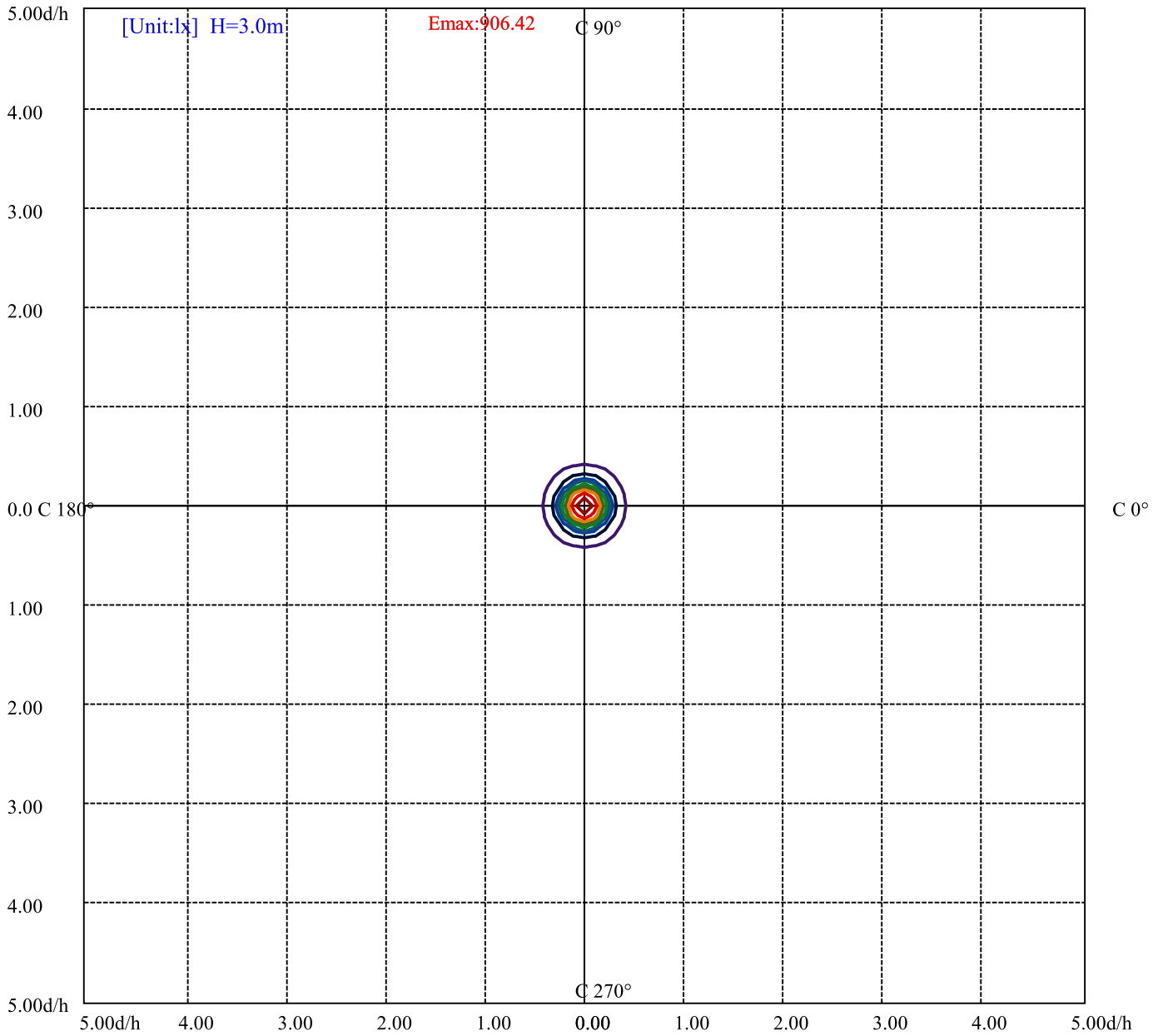
House

[Unit:cd]

Road

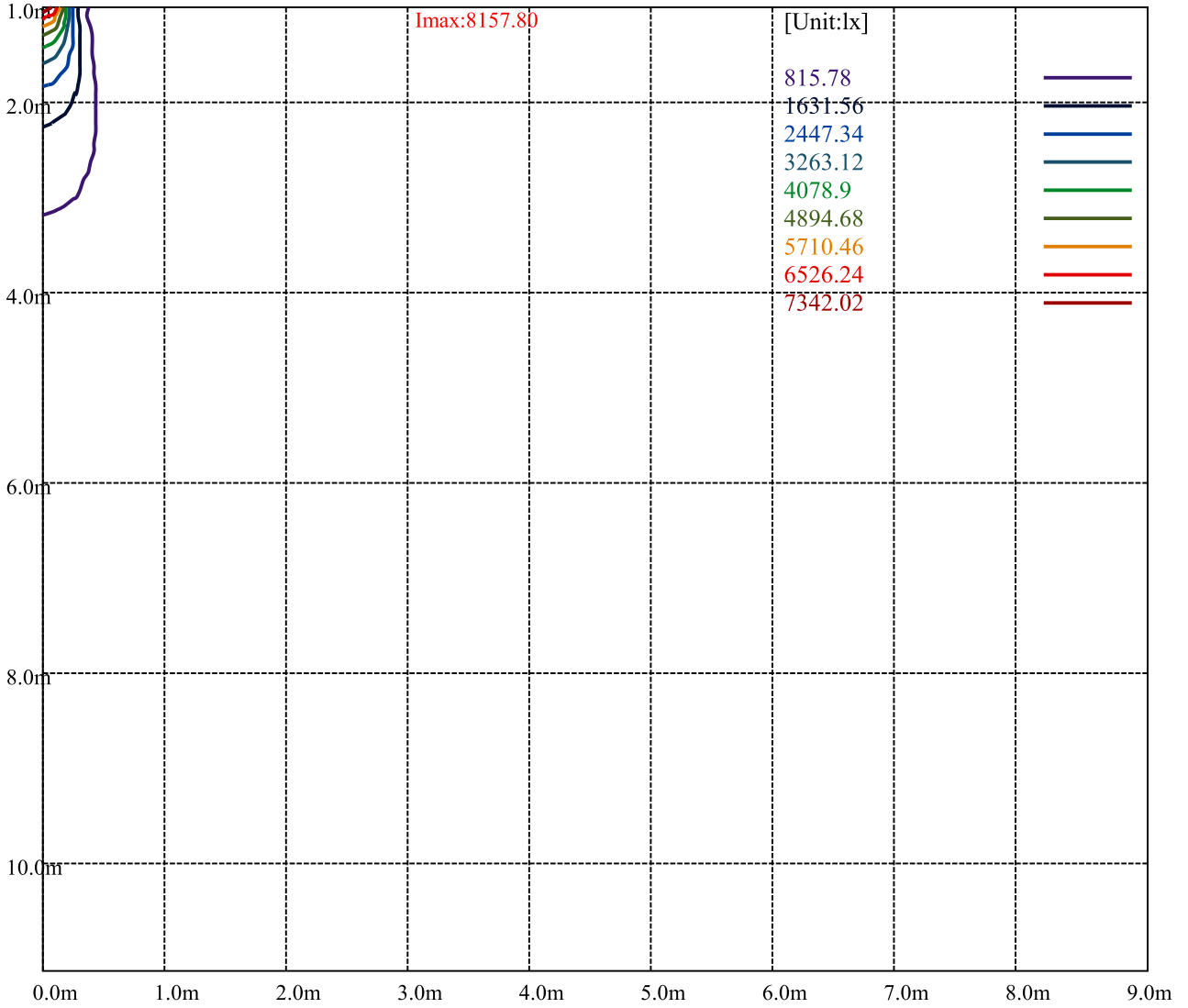
Imax:8157.80

(10%Imax) 815.78	—
(20%Imax) 1631.56	—
(30%Imax) 2447.34	—
(40%Imax) 3263.12	—
(50%Imax) 4078.9	—
(60%Imax) 4894.68	—
(70%Imax) 5710.46	—
(80%Imax) 6526.24	—
(90%Imax) 7342.02	—



(10%Emax) 90.642	—
(20%Emax) 181.2845	—
(30%Emax) 271.9256	—
(40%Emax) 362.5678	—
(50%Emax) 453.21	—
(60%Emax) 543.8522	—
(70%Emax) 634.4944	—
(80%Emax) 725.1356	—
(90%Emax) 815.7778	—





Luminance Table

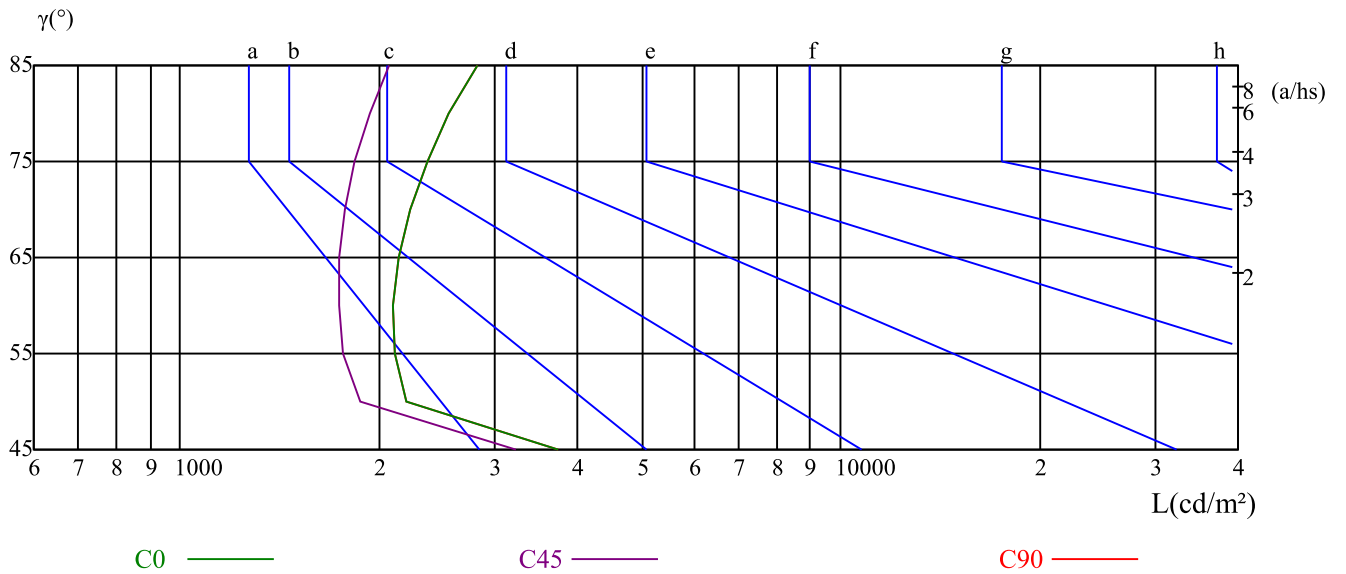
$\gamma$	45	50	55	60	65	70	75	80	85
C0	3736	2204	2108	2106	2146	2229	2362	2557	2824
C45	3231	1878	1769	1738	1739	1771	1835	1936	2074
C90	3736	2204	2108	2106	2146	2229	2362	2557	2824

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4934	4934	4934	7701	7701	7701	22373	22373	22373

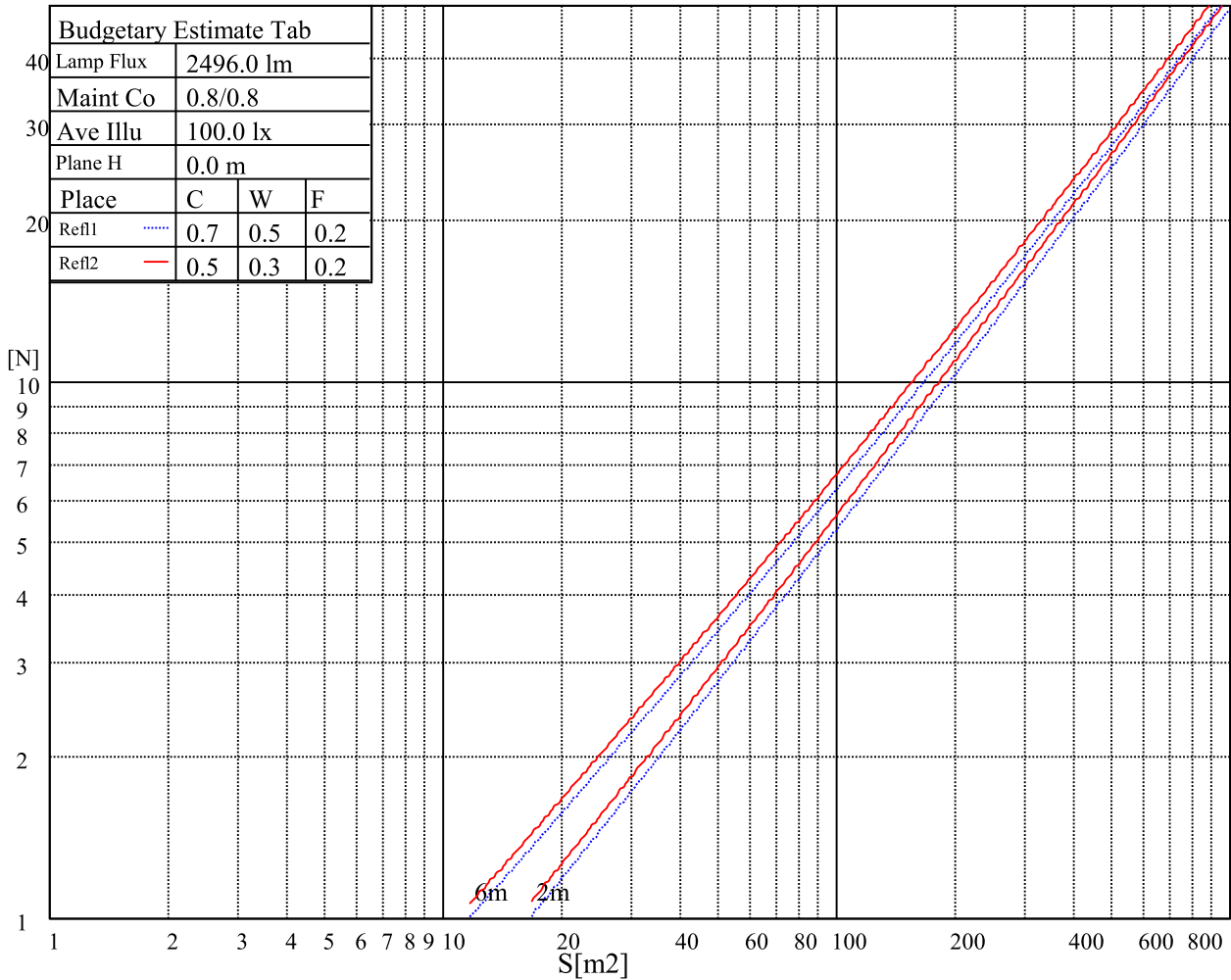
Glare Table

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

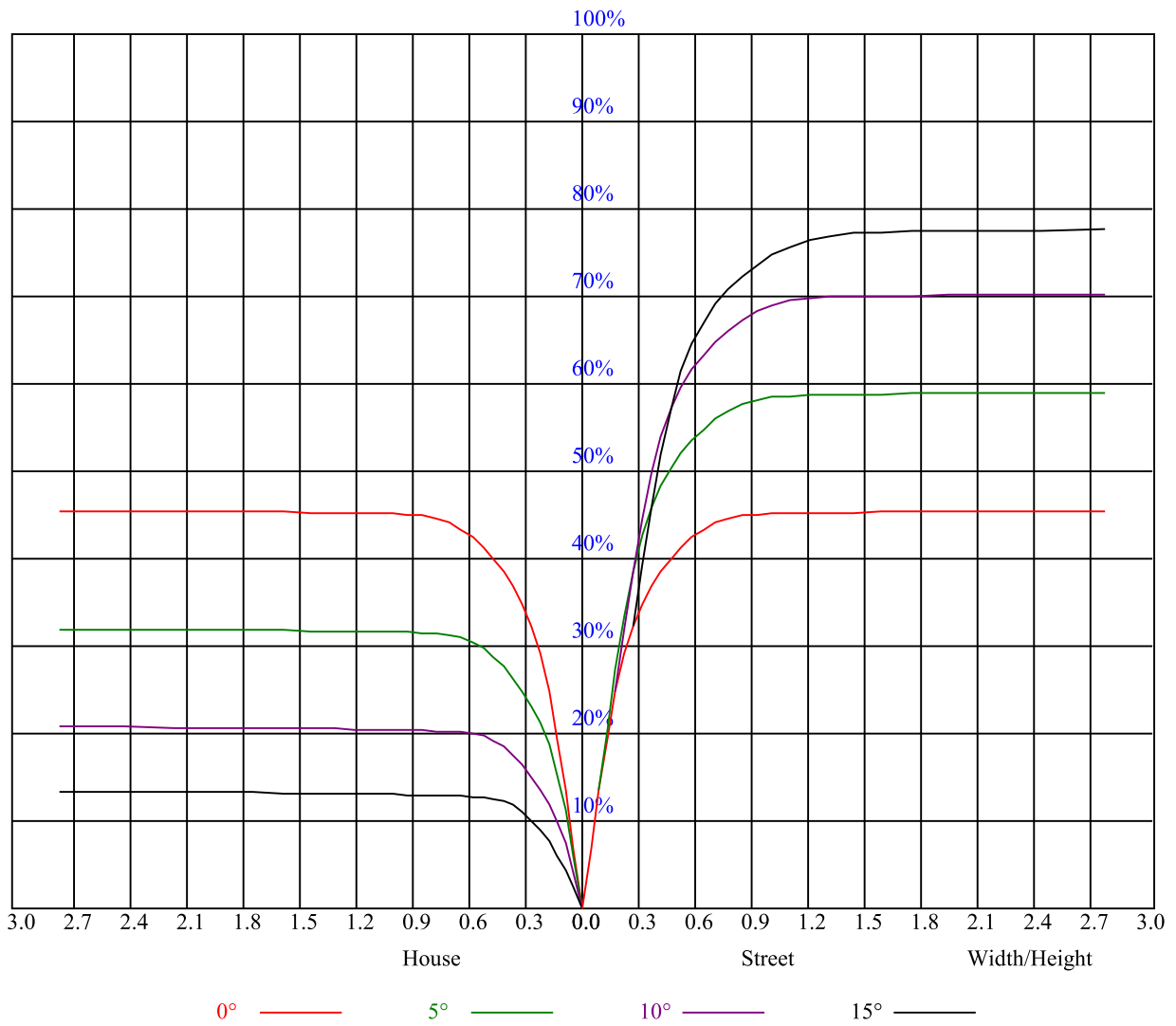
Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	0.99	1.91	1.36	2.22	2.54	0.99	1.91	1.36	2.22	2.53
	3H	3.24	4.05	3.63	4.38	4.75	3.24	4.05	3.62	4.38	4.75
	4H	4.47	5.22	4.88	5.57	5.96	4.46	5.21	4.87	5.57	5.96
	6H	5.77	6.45	6.19	6.83	7.23	5.76	6.44	6.18	6.82	7.22
	8H	6.42	7.06	6.86	7.45	7.86	6.41	7.05	6.84	7.44	7.85
	12H	7.42	8.03	7.86	8.42	8.85	7.40	8.02	7.84	8.40	8.83
4H	2H	1.48	2.23	1.89	2.59	2.98	1.48	2.23	1.89	2.58	2.97
	3H	4.02	4.64	4.44	5.05	5.45	4.02	4.63	4.44	5.04	5.45
	4H	5.42	5.97	5.86	6.40	6.85	5.42	5.97	5.86	6.39	6.84
	6H	6.82	7.29	7.29	7.74	8.22	6.82	7.29	7.29	7.74	8.21
	8H	7.58	8.02	8.06	8.47	8.95	7.58	8.01	8.05	8.46	8.94
8H	12H	8.58	8.96	9.07	9.45	9.93	8.57	8.94	9.06	9.43	9.91
	4H	5.86	6.29	6.33	6.74	7.22	5.85	6.29	6.33	6.74	7.22
	6H	7.50	7.84	8.01	8.34	8.83	7.49	7.83	8.00	8.34	8.82
	8H	8.41	8.71	8.95	9.24	9.74	8.40	8.71	8.94	9.23	9.73
12H	12H	9.54	9.80	10.06	10.30	10.88	9.53	9.79	10.05	10.29	10.87
	4H	5.94	6.32	6.44	6.81	7.29	5.94	6.32	6.43	6.81	7.29
	6H	7.87	7.97	8.20	8.44	8.99	7.86	7.96	8.20	8.44	8.99
	8H	8.68	8.94	9.20	9.44	10.02	8.67	8.93	9.19	9.43	10.01
Variation with the observer position at spacings:											
S = 1.0H	5.1/-8.5					5.1/-8.5					
S = 1.5H	7.5/-6.8					7.5/-6.8					
S = 2.0H	9.2/-5.6					9.2/-5.6					
Standard tables:	BK1					BK1					
Uncorrected UGR	-1.8					-1.8					



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	1.11	1.11	1.11	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.02	0.99	0.97	1.00	0.97	0.95	0.96	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.85
2	0.96	0.93	0.90	0.95	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.83	0.82
3	0.92	0.88	0.85	0.91	0.87	0.84	0.88	0.85	0.83	0.86	0.83	0.81	0.84	0.82	0.80	0.79
4	0.88	0.84	0.80	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.82	0.79	0.77	0.76
5	0.84	0.80	0.77	0.84	0.79	0.76	0.82	0.78	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.69
8	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.66
9	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.69	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	0.70	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	8206.88	7506.00	5538.38	2636.44	1188.56	860.06	776.81	557.44	91.97
45.0	8109.56	7874.44	6652.69	3603.38	1530.56	930.94	804.38	716.06	290.25
90.0	8213.63	7894.13	6210.56	2818.69	1103.51	908.83	792.06	682.76	244.41
135.0	8101.13	7998.19	6833.25	3530.25	1383.19	944.44	806.63	731.81	367.88
180.0	8206.88	7866.00	6139.69	2813.06	1121.12	888.58	784.24	639.79	172.80
225.0	8109.56	7367.63	4843.13	1919.25	1064.76	840.09	767.03	451.91	45.28
270.0	8213.63	7268.06	4943.81	2142.56	1078.88	851.06	780.75	545.63	82.52
315.0	8101.13	6991.31	4319.44	1887.75	1015.14	820.58	762.58	424.24	38.25
360.0	8206.88	7506.00	5538.38	2636.44	1188.56	860.06	776.81	557.44	91.97
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	19.86	12.26	11.36	10.86	10.52	10.24	10.01	9.90	9.79
45.0	22.95	12.83	11.64	11.08	10.69	10.35	10.18	9.96	9.90
90.0	21.43	12.21	11.36	10.86	10.52	10.24	10.07	9.96	9.84
135.0	26.89	12.60	11.42	10.91	10.52	10.24	10.07	9.96	9.84
180.0	22.67	12.49	11.36	10.86	10.52	10.24	10.07	9.90	9.79
225.0	17.55	11.98	11.25	10.74	10.46	10.24	10.07	9.96	9.84
270.0	21.77	12.15	11.36	10.91	10.46	10.24	10.01	9.96	9.84
315.0	17.94	11.87	11.19	10.80	10.41	10.13	9.90	9.84	9.79
360.0	19.86	12.26	11.36	10.86	10.52	10.24	10.01	9.90	9.79
C/ $\gamma$ (°)	90.0								
0.0	9.73								
45.0	9.79								
90.0	9.73								
135.0	9.73								
180.0	9.68								
225.0	9.79								
270.0	9.73								
315.0	9.73								
360.0	9.73								