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## NATA

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LumCAT: 4-1984-M

Luminaire:

Report No: NATA0100

Voltage(V): 18.2000

Test No: GC2018112607

Current(A): 0.6100

LampCAT: XICATO XTM LES19

Power (W): 11.1000

Lamp flux(lm): 1097.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 100

Width(mm): 100

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 951.09

Efficiency(%): 86.70%

Lumens(lm)/Power(W): 86.61

Central intensity(cd): 1862.719

Maximum intensity(cd): 1862.719

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=39.2

[C90/270]Total=39.2

Field angle(10%Imax): [C0/180]Total=72.7

[C90/270]Total=72.7

Maximum s/h(1/2): C0\_180=0.62 C90\_270=0.62

Maximum s/h(1/4): C0\_180=0.65 C90\_270=0.65

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.63%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.656%

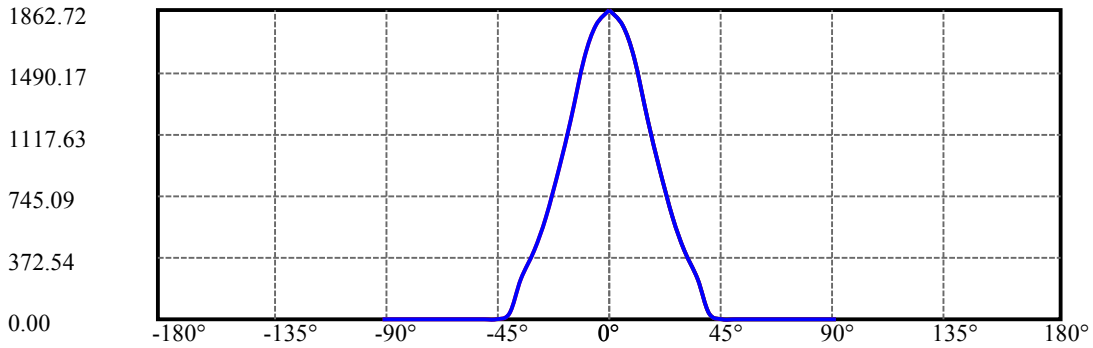
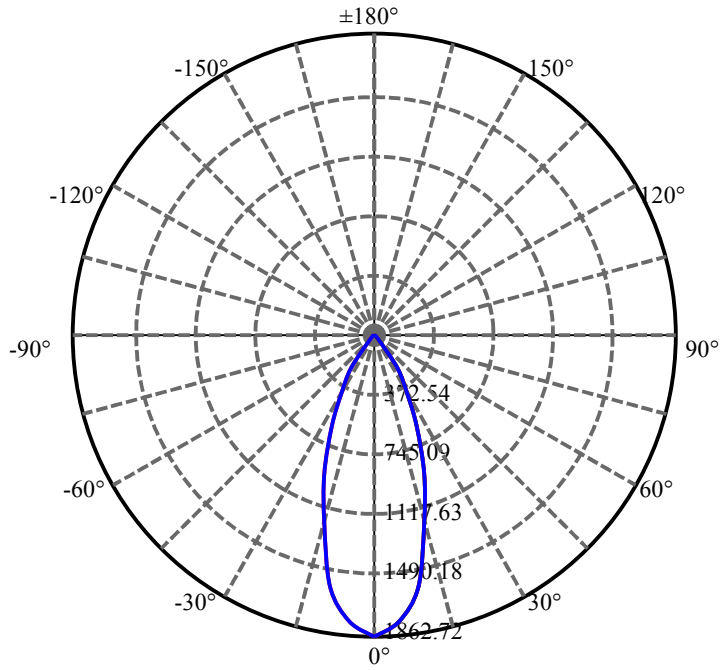
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1862.719	11.139	11.139	1.015%	1.171%
5.0	1775.109	84.803	95.942	7.730%	10.088%
10.0	1576.617	150.067	246.01	13.680%	25.866%
15.0	1205.831	171.069	417.079	15.594%	43.853%
20.0	908.227	170.269	587.348	15.521%	61.755%
25.0	610.734	141.478	728.826	12.897%	76.631%
30.0	412.650	113.094	841.921	10.309%	88.522%
35.0	243.499	76.556	918.476	6.979%	96.571%
40.0	34.516	12.161	930.638	1.109%	97.850%
45.0	5.576	2.161	932.799	.197%	98.077%
50.0	4.809	2.019	934.818	.184%	98.289%
55.0	4.409	1.979	936.798	.180%	98.498%
60.0	4.198	1.993	938.791	.182%	98.707%
65.0	4.141	2.057	940.848	.188%	98.923%
70.0	4.141	2.133	942.981	.194%	99.148%
75.0	4.155	2.200	945.181	.201%	99.379%
80.0	4.163	2.247	947.428	.205%	99.615%
85.0	4.627	2.526	949.954	.230%	99.881%
90.0	4.134	1.133	951.088	.103%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	841.92	76.75%	88.52%
0-40	930.64	84.83%	97.85%
0-60	938.79	85.58%	98.71%
0-90	949.95	86.60%	99.88%
0-120	949.95	86.60%	99.88%
0-180	951.09	86.70%	100.00%
60-90	13.16	1.20%	1.38%
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%
0-26.42	760.87	69.36%	80.00%

ZONAL LUMEN SUMMARY

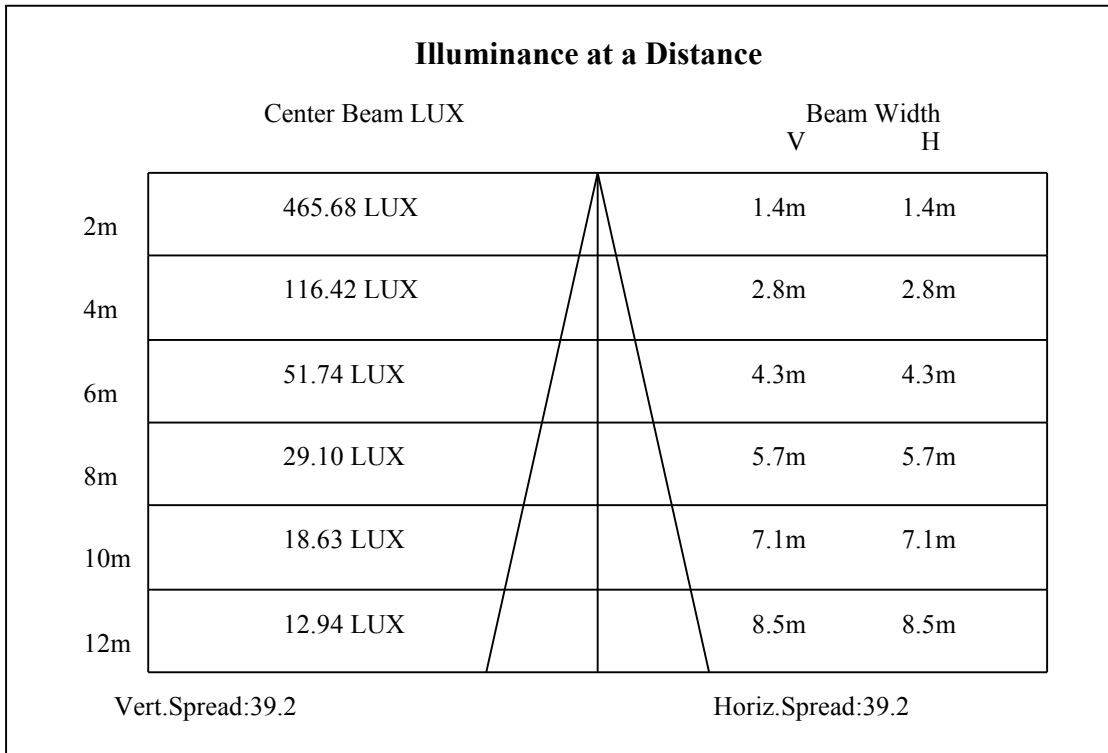
0-10	246.01
10-20	341.34
20-30	254.57
30-40	88.72
40-50	4.18
50-60	3.97
60-70	4.19
70-80	4.45
80-90	2.53
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

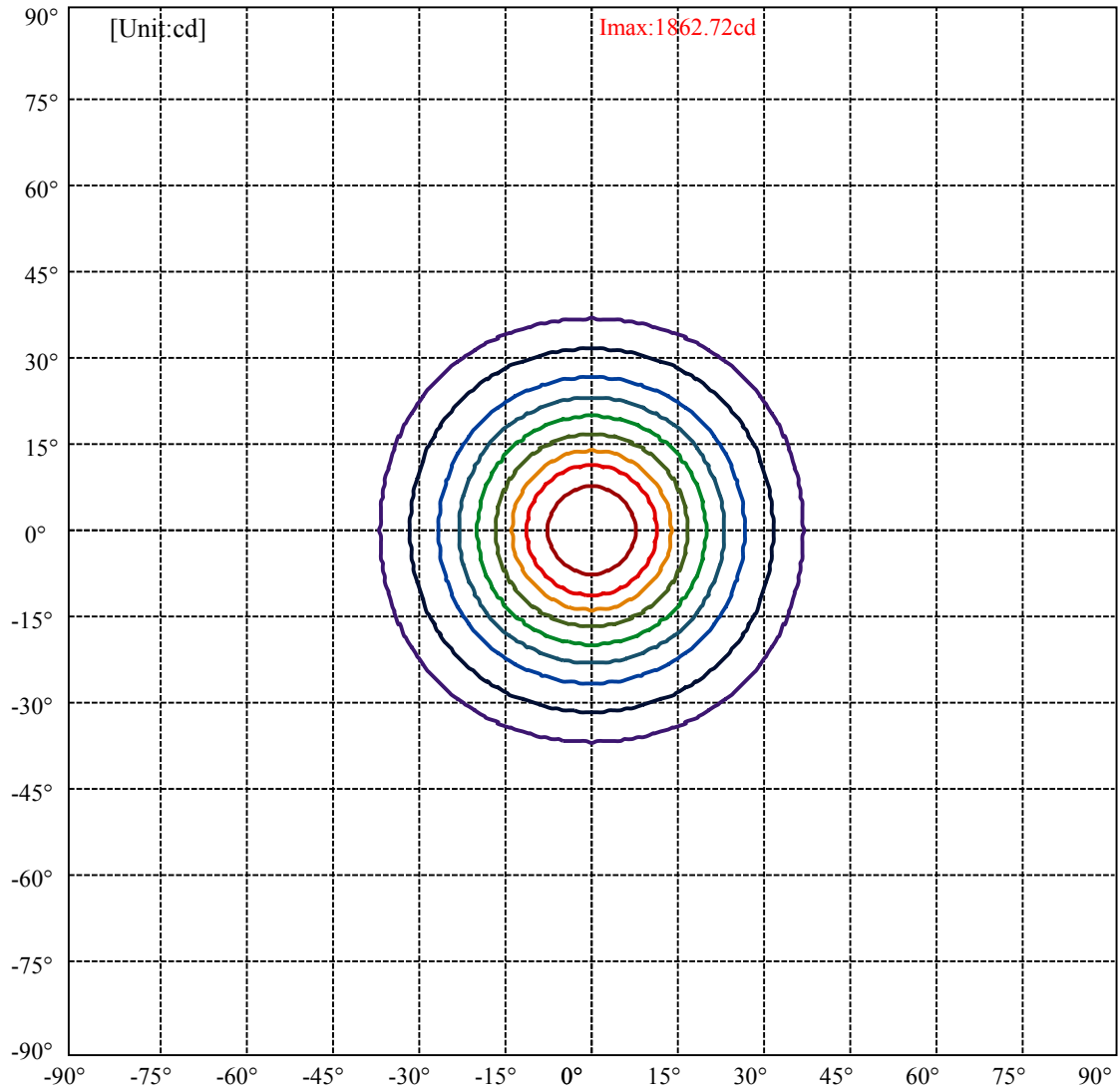


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

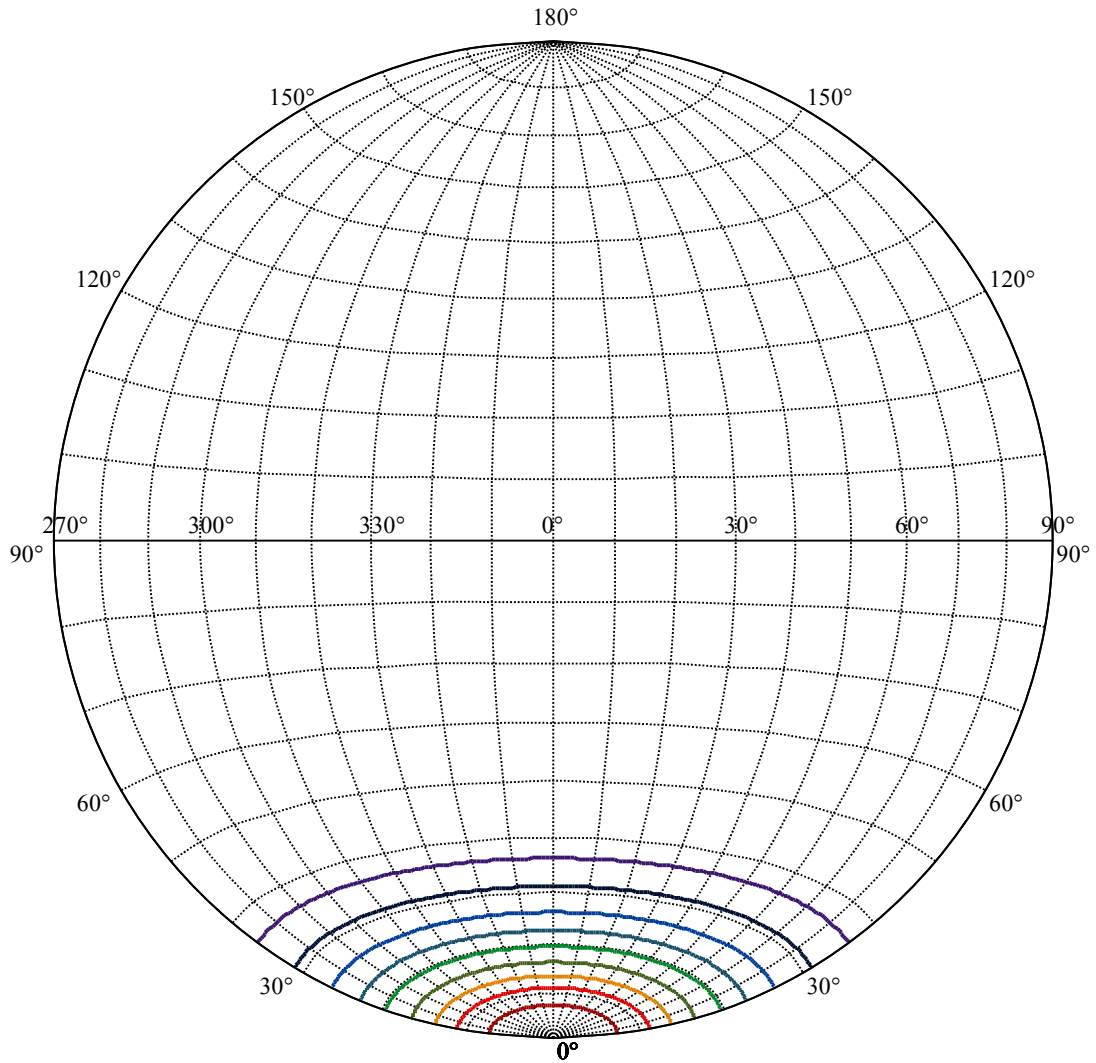
Field angle(10%Imax):C0/180Left:36.4 Right:36.4  
:C90/270Left:36.4 Right:36.4

Beam Angle(50%Imax):C0/180Left:19.6 Right:19.6  
:C90/270Left:19.6 Right:19.6





(10%Imax) 186.272	—
(20%Imax) 372.544	—
(30%Imax) 558.816	—
(40%Imax) 745.087	—
(50%Imax) 931.359	—
(60%Imax) 1117.63	—
(70%Imax) 1303.9	—
(80%Imax) 1490.17	—
(90%Imax) 1676.45	—



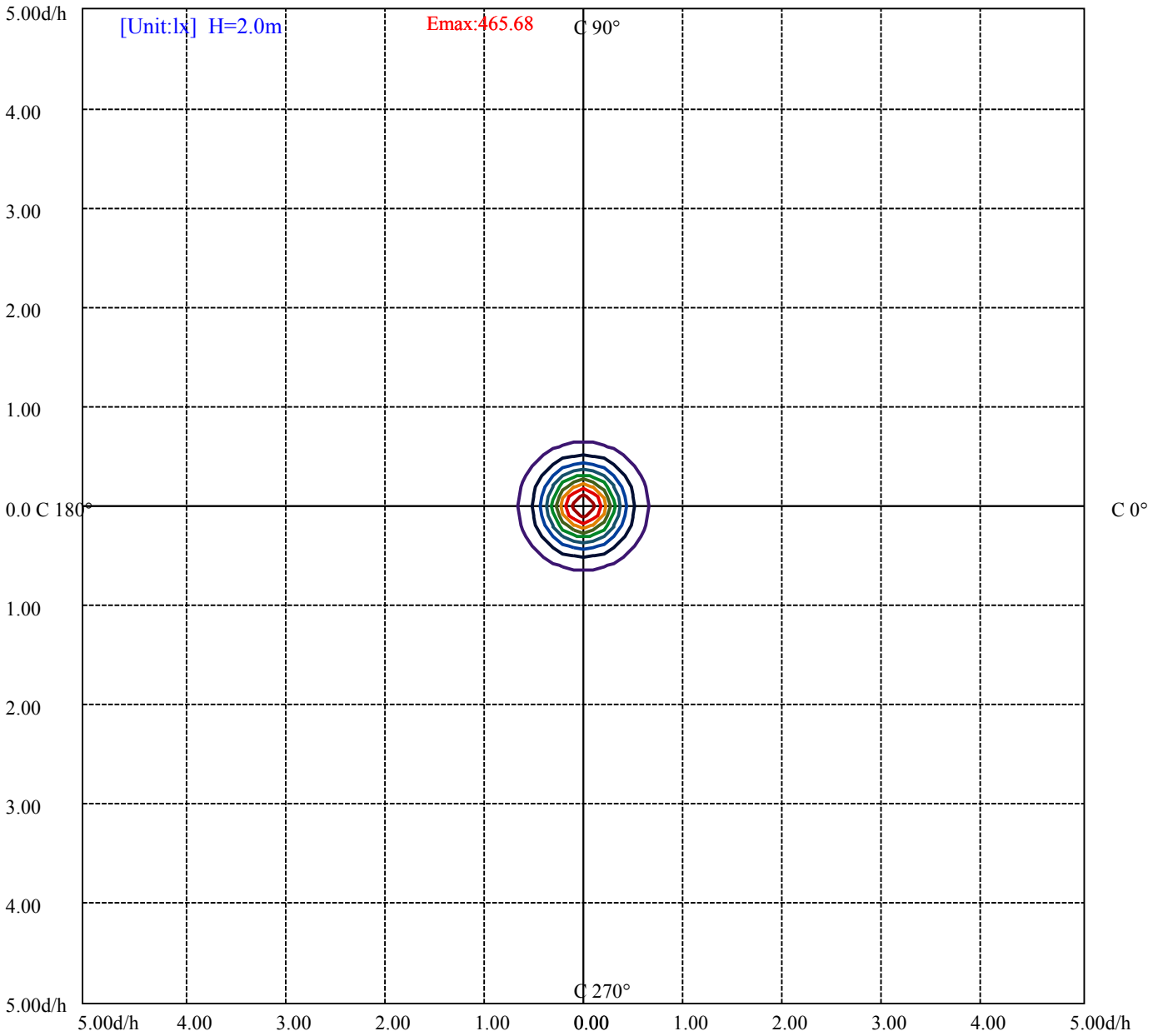
House

[Unit:cd]

Road

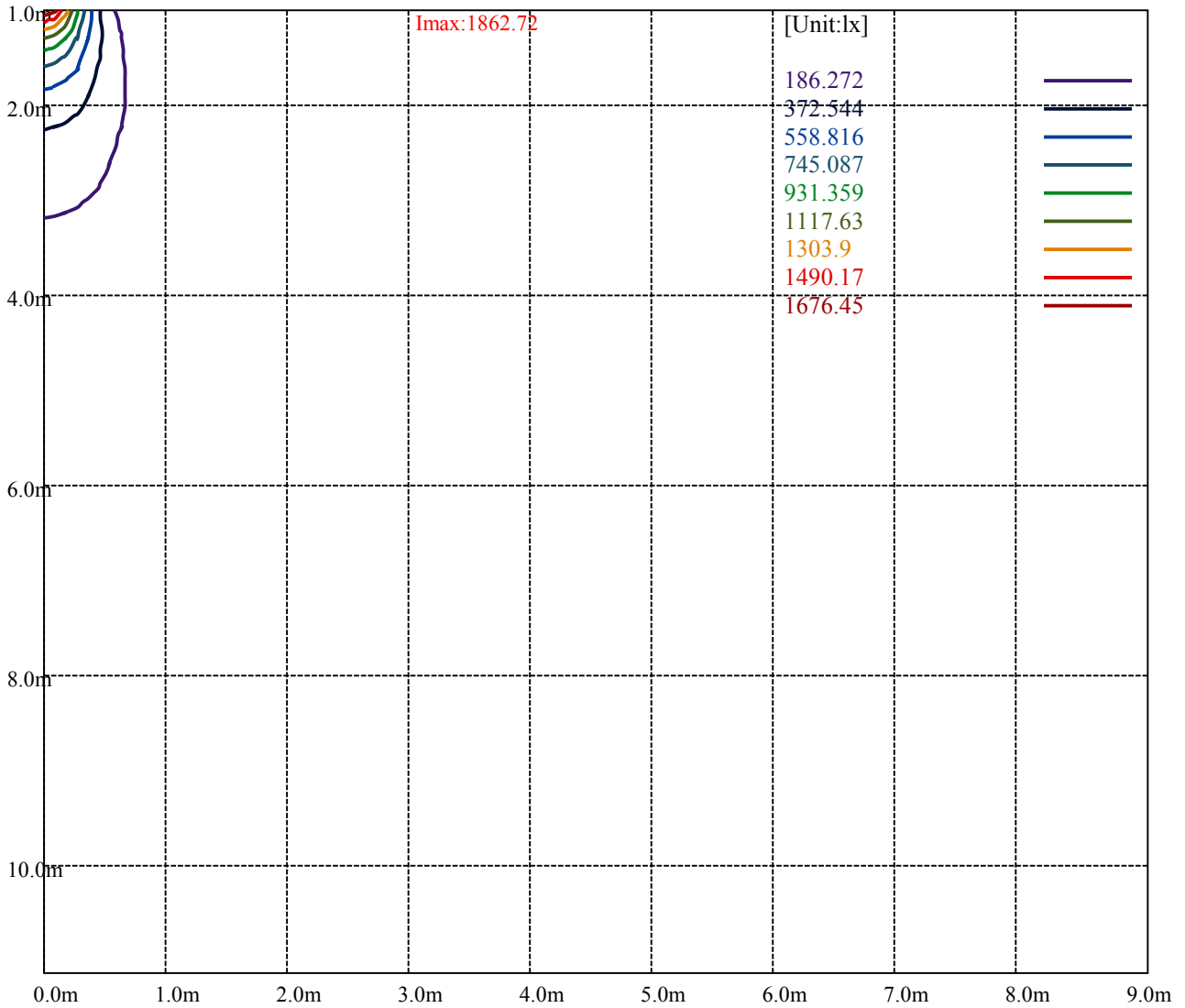
Imax:1862.72

(10%Imax)	186.272	—
(20%Imax)	372.544	—
(30%Imax)	558.816	—
(40%Imax)	745.087	—
(50%Imax)	931.359	—
(60%Imax)	1117.63	—
(70%Imax)	1303.9	—
(80%Imax)	1490.17	—
(90%Imax)	1676.45	—



- (10%Emax) 46.568
- (20%Emax) 93.13575
- (30%Emax) 139.7038
- (40%Emax) 186.2715
- (50%Emax) 232.8395
- (60%Emax) 279.4075
- (70%Emax) 325.975
- (80%Emax) 372.5425
- (90%Emax) 419.11





Luminance Table

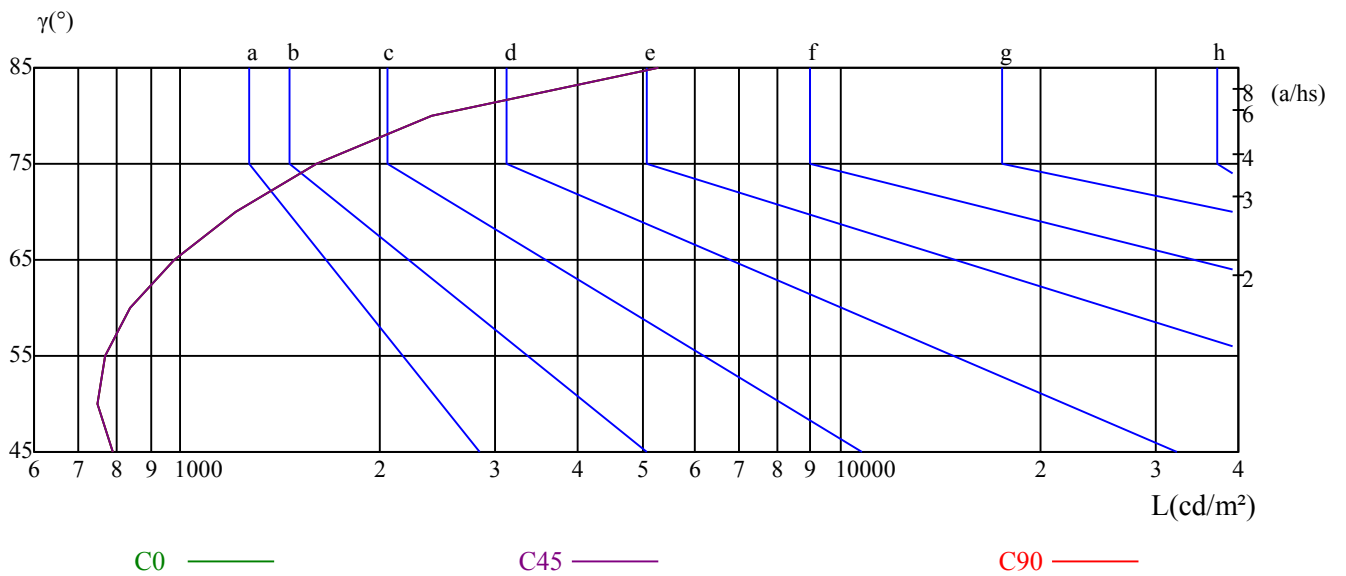
$\gamma$	45	50	55	60	65	70	75	80	85
C0	789	748	769	840	980	1211	1606	2397	5308
C45	789	748	769	840	980	1211	1606	2397	5308
C90	789	748	769	840	980	1211	1606	2397	5308

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
980	980	980	1606	1606	1606	5308	5308	5308

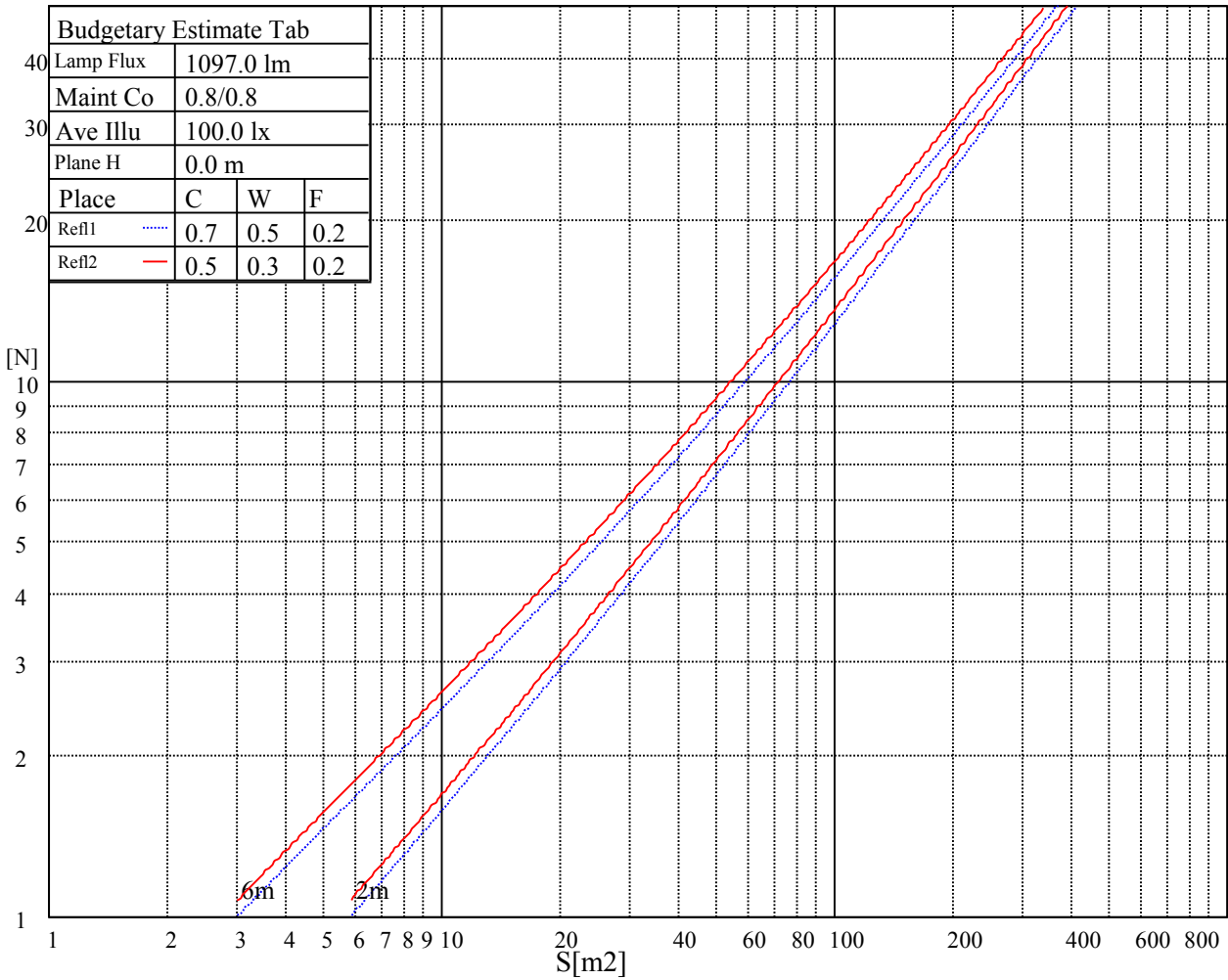
Glare Table

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

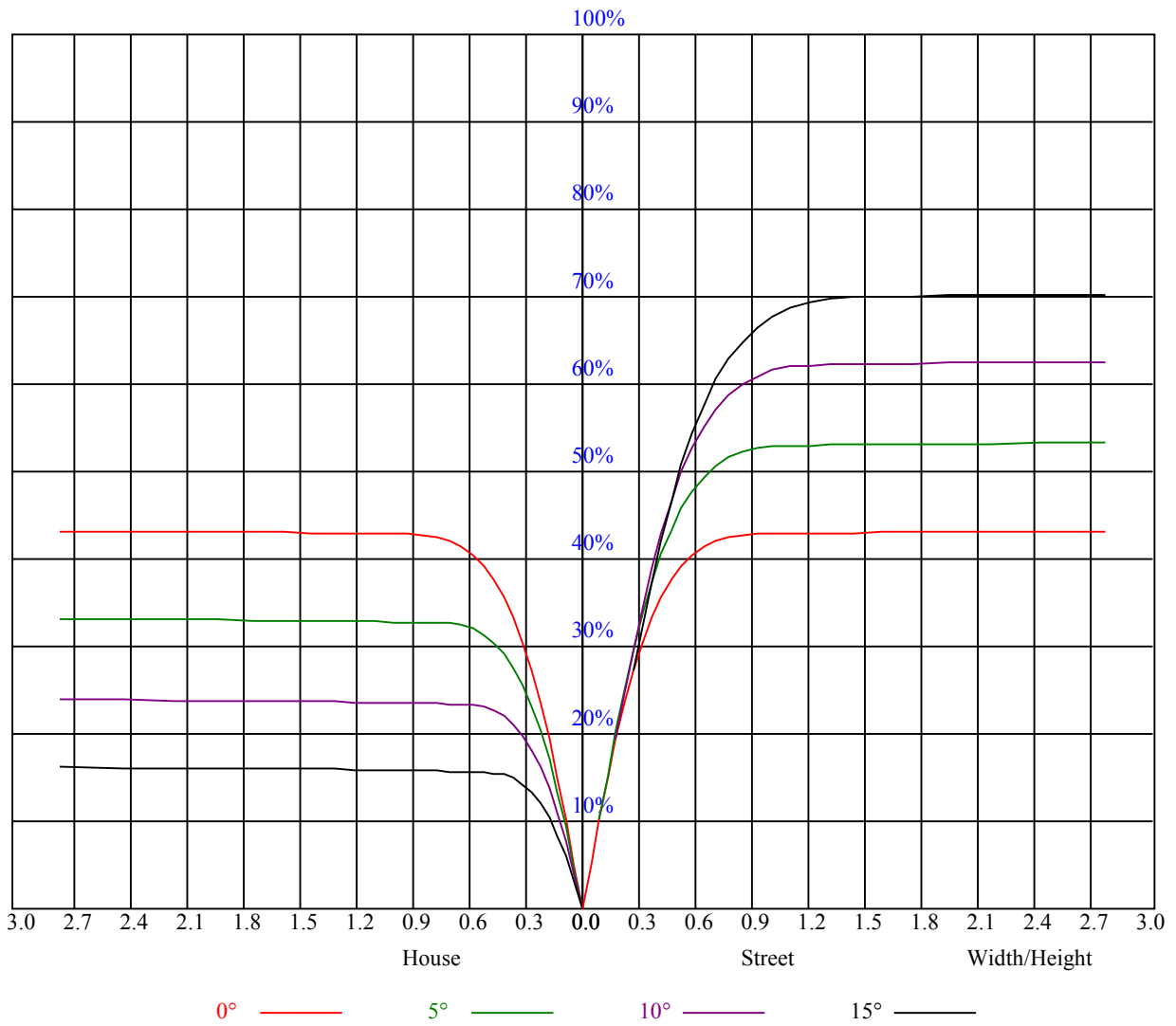
Luminance Limiting Curve



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	0.06	0.97	0.42	1.28	1.60	0.00	0.91	0.37	1.22	1.54
	3H	3.38	4.18	3.76	4.52	4.89	3.35	4.15	3.73	4.49	4.86
	4H	5.23	5.97	5.64	6.33	6.72	5.21	5.96	5.62	6.31	6.70
	6H	7.29	7.97	7.71	8.35	8.75	7.26	7.95	7.68	8.32	8.72
	8H	8.45	9.08	8.88	9.48	9.89	8.47	9.11	8.91	9.50	9.91
	12H	10.31	10.92	10.75	11.30	11.74	10.49	11.10	10.92	11.48	11.92
4H	2H	0.98	1.73	1.39	2.08	2.48	0.95	1.69	1.35	2.05	2.44
	3H	4.55	5.17	4.97	5.58	5.98	4.53	5.15	4.95	5.56	5.96
	4H	6.57	7.11	7.00	7.54	7.99	6.55	7.10	6.99	7.53	7.98
	6H	8.80	9.27	9.27	9.72	10.19	8.77	9.23	9.24	9.68	10.16
	8H	10.06	10.50	10.54	10.95	11.42	10.08	10.52	10.56	10.97	11.45
8H	12H	11.82	12.20	12.31	12.69	13.16	11.99	12.36	12.48	12.85	13.33
	4H	7.32	7.76	7.80	8.21	8.69	7.31	7.75	7.79	8.20	8.68
	6H	9.83	10.18	10.34	10.68	11.17	9.81	10.16	10.32	10.66	11.15
	8H	11.31	11.61	11.84	12.14	12.64	11.34	11.65	11.88	12.17	12.67
12H	12H	13.21	13.47	13.74	13.97	14.55	13.37	13.63	13.89	14.13	14.71
	4H	7.55	7.92	8.04	8.41	8.89	7.54	7.91	8.03	8.40	8.88
	6H	10.40	10.50	10.73	10.97	11.52	10.38	10.48	10.71	10.95	11.50
	8H	11.82	12.08	12.35	12.58	13.17	11.86	12.12	12.38	12.62	13.20
Variation with the observer position at spacings:											
S = 1.0H	5.6/-8.1					5.6/-8.1					
S = 1.5H	7.8/-6.0					7.8/-6.0					
S = 2.0H	9.2/-4.5					9.2/-4.5					
Standard tables:	BK3					BK3					
Uncorrected UGR	-3.3					-3.3					



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	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.88
1	0.97	0.94	0.92	0.95	0.93	0.91	0.91	0.90	0.88	0.88	0.87	0.85	0.85	0.84	0.83	0.81
2	0.91	0.88	0.85	0.90	0.87	0.84	0.87	0.84	0.82	0.84	0.82	0.81	0.82	0.80	0.79	0.77
3	0.86	0.83	0.79	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.78	0.76	0.79	0.77	0.75	0.74
4	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.76	0.74	0.72	0.71
5	0.78	0.74	0.71	0.78	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.69	0.73	0.71	0.69	0.67
6	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
7	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
8	0.69	0.64	0.61	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60
9	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.58	0.57
10	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.62	0.58	0.56	0.55



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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	1864.13	1791.00	1603.69	1312.31	946.13	674.44	437.06	294.19	54.96
45.0	1861.88	1778.63	1579.50	1257.75	928.69	620.44	419.06	284.06	39.71
90.0	1861.88	1763.44	1537.31	1106.16	876.49	583.59	390.21	191.42	24.92
135.0	1863.00	1788.19	1618.31	1290.94	938.81	626.06	436.50	290.81	52.48
180.0	1864.13	1755.00	1551.94	1116.51	864.79	573.69	396.28	197.04	21.32
225.0	1861.88	1774.13	1561.50	1121.79	892.07	589.33	390.15	211.56	25.31
270.0	1861.88	1789.88	1604.81	1324.13	950.06	631.69	437.63	286.88	39.38
315.0	1863.00	1760.63	1555.88	1117.07	868.78	586.63	394.31	192.04	18.06
360.0	1864.13	1791.00	1603.69	1312.31	946.13	674.44	437.06	294.19	54.96
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	5.68	4.78	4.39	4.16	4.11	4.16	4.16	4.16	4.89
45.0	5.63	4.95	4.50	4.28	4.22	4.22	4.22	4.22	4.28
90.0	5.46	4.84	4.44	4.22	4.22	4.16	4.16	4.16	4.22
135.0	5.74	4.84	4.39	4.22	4.11	4.11	4.11	4.11	4.11
180.0	5.34	4.73	4.39	4.16	4.11	4.11	4.16	4.11	4.22
225.0	5.51	4.78	4.39	4.16	4.16	4.11	4.16	4.16	4.61
270.0	5.85	4.89	4.44	4.22	4.11	4.11	4.16	4.16	4.22
315.0	5.40	4.67	4.33	4.16	4.11	4.16	4.11	4.22	6.47
360.0	5.68	4.78	4.39	4.16	4.11	4.16	4.16	4.16	4.89
C/ $\gamma$ (°)	90.0								
0.0	4.11								
45.0	4.16								
90.0	4.16								
135.0	4.11								
180.0	4.11								
225.0	4.16								
270.0	4.16								
315.0	4.11								
360.0	4.11								