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## NATA

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LumCAT: 2-1213-M

Luminaire:

Report No: NATA0100

Voltage(V): 28.9000

Test No: GC201810311

Current(A): 0.4000

LampCAT: XICATO XTM LES9MM

Power (W): 11.5600

Lamp flux(lm): 630.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 65

Width(mm):65

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 535.67

Efficiency(%): 85.03%

Lumens(lm)/Power(W): 46.62

Central intensity(cd): 631.294

Maximum intensity(cd): 631.294

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

Beam Angle(50%Imax): [C0/180]Total=61.5

[C90/270]Total=61.5

Field angle(10%Imax): [C0/180]Total=78.1

[C90/270]Total=78.1

Maximum s/h(1/2): C0\_180=0.94 C90\_270=0.94

Maximum s/h(1/4): C0\_180=0.91 C90\_270=0.91

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 85.55%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.203%

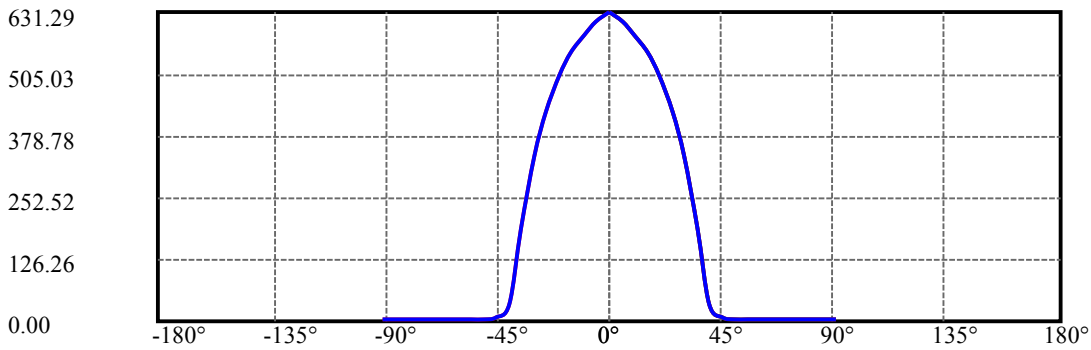
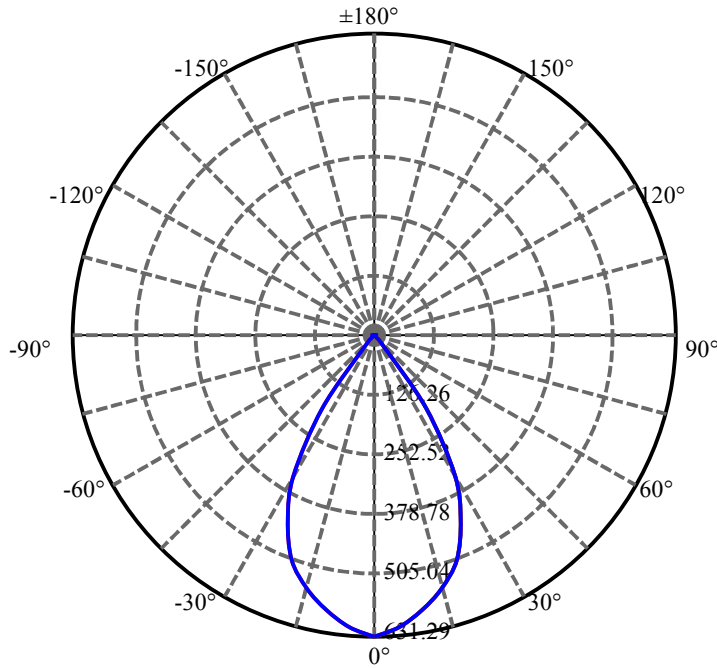
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	631.294	3.775	3.775	.599%	.705%
5.0	613.589	29.313	33.088	4.653%	6.177%
10.0	583.024	55.494	88.582	8.809%	16.537%
15.0	550.863	78.150	166.733	12.405%	31.126%
20.0	501.834	94.081	260.813	14.933%	48.689%
25.0	427.331	98.993	359.806	15.713%	67.169%
30.0	337.809	92.583	452.389	14.696%	84.452%
35.0	186.504	58.637	511.026	9.307%	95.399%
40.0	33.630	11.849	522.875	1.881%	97.611%
45.0	7.917	3.069	525.943	.487%	98.184%
50.0	2.890	1.213	527.157	.193%	98.410%
55.0	2.299	1.032	528.189	.164%	98.603%
60.0	2.243	1.065	529.254	.169%	98.802%
65.0	2.236	1.111	530.365	.176%	99.009%
70.0	2.222	1.144	531.509	.182%	99.223%
75.0	2.208	1.169	532.678	.186%	99.441%
80.0	2.201	1.188	533.866	.189%	99.663%
85.0	2.208	1.206	535.072	.191%	99.888%
90.0	2.194	0.601	535.673	.095%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	452.39	71.81%	84.45%
0-40	522.87	83.00%	97.61%
0-60	529.25	84.01%	98.80%
0-90	535.07	84.93%	99.89%
0-120	535.07	84.93%	99.89%
0-180	535.67	85.03%	100.00%
60-90	6.88	1.09%	1.28%
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%
0-28.71	428.54	68.02%	80.00%

ZONAL LUMEN SUMMARY

0-10	88.58
10-20	172.23
20-30	191.58
30-40	70.49
40-50	4.28
50-60	2.10
60-70	2.26
70-80	2.36
80-90	1.21
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

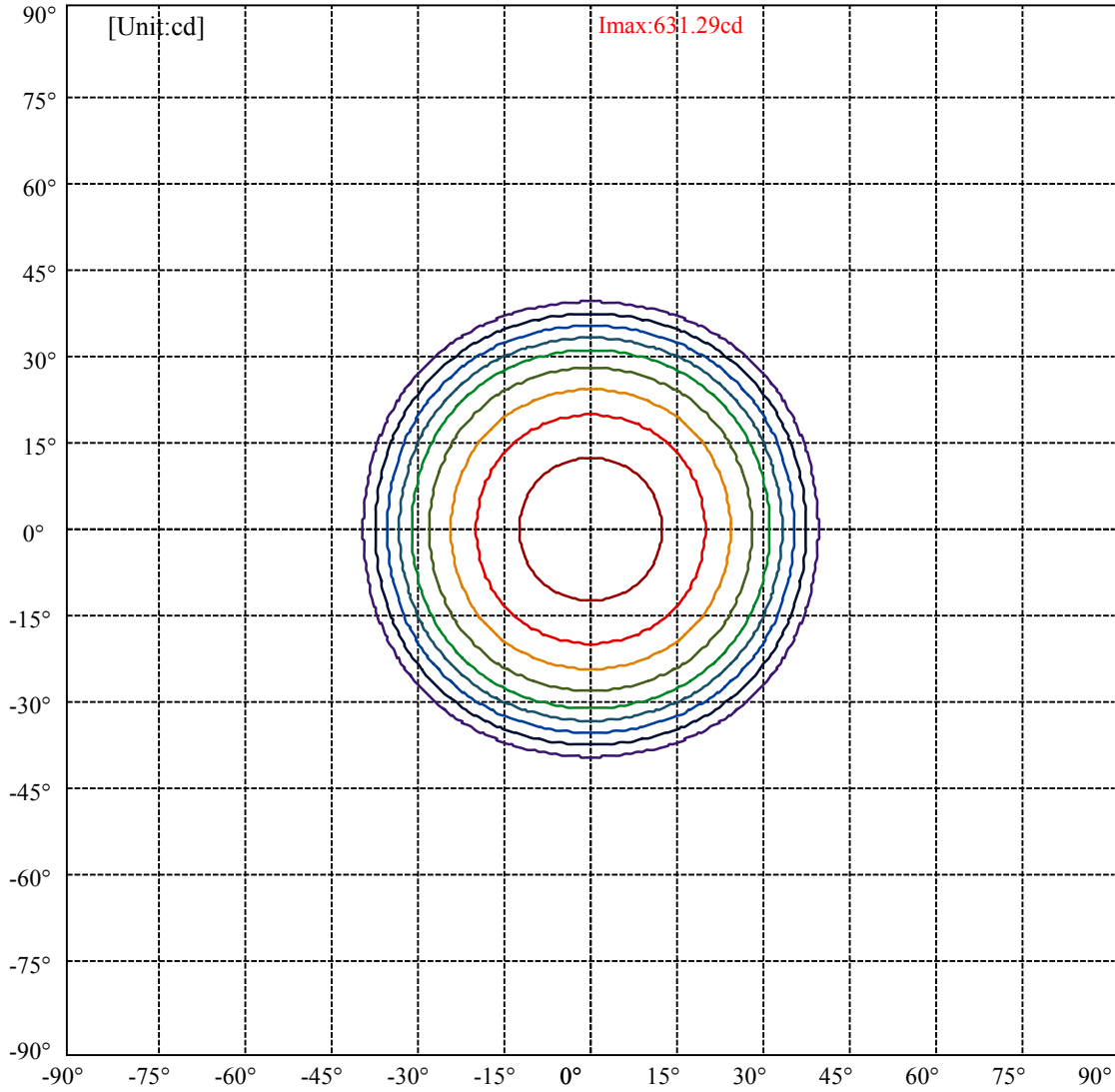


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

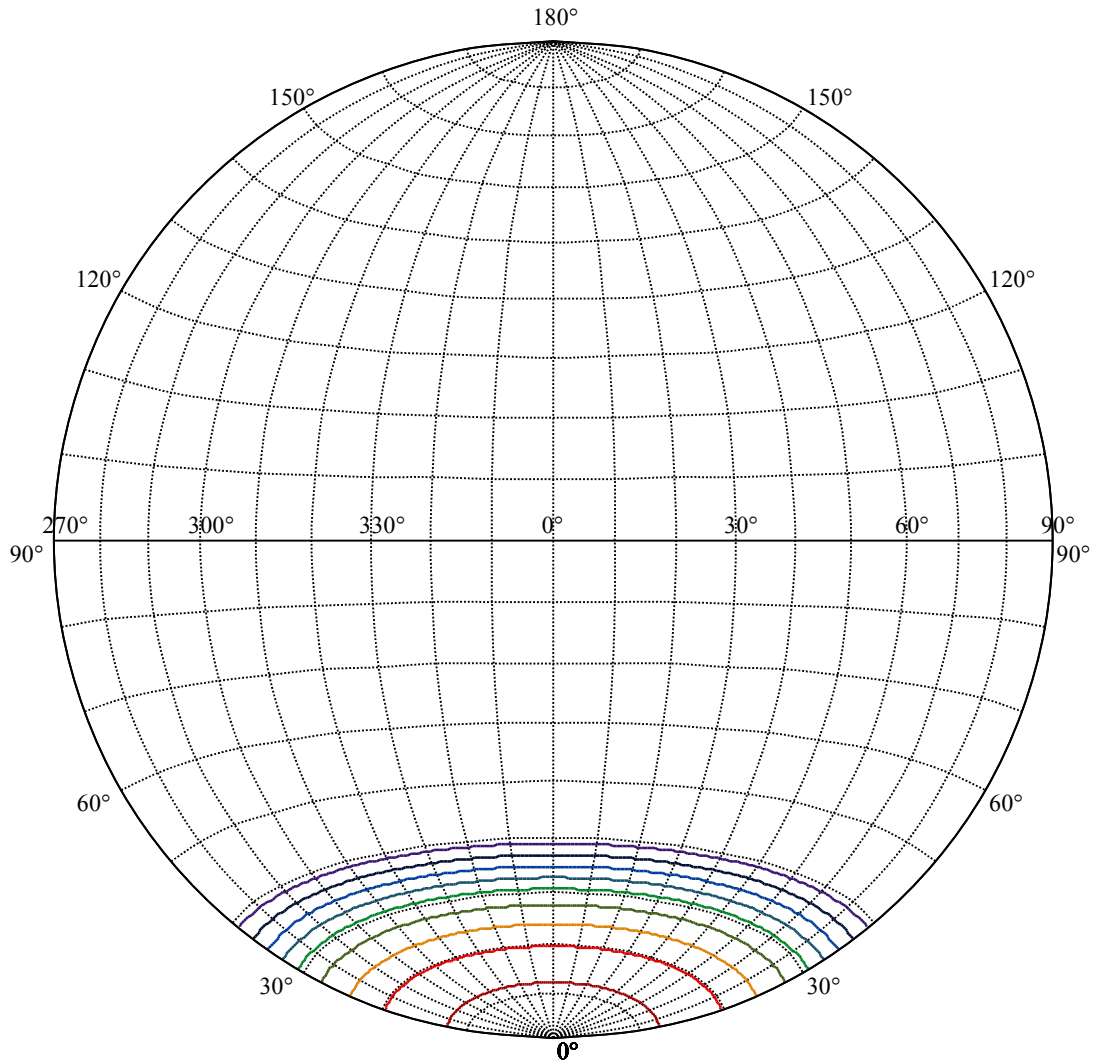
Field angle(10%Imax):C0/180Left:39.0 Right:39.0  
:C90/270Left:39.0 Right:39.0

Beam Angle(50%Imax):C0/180Left:30.7 Right:30.7  
:C90/270Left:30.7 Right:30.7





- (10%Imax) 63.1294
- (20%Imax) 126.259
- (30%Imax) 189.388
- (40%Imax) 252.517
- (50%Imax) 315.647
- (60%Imax) 378.776
- (70%Imax) 441.906
- (80%Imax) 505.035
- (90%Imax) 568.164



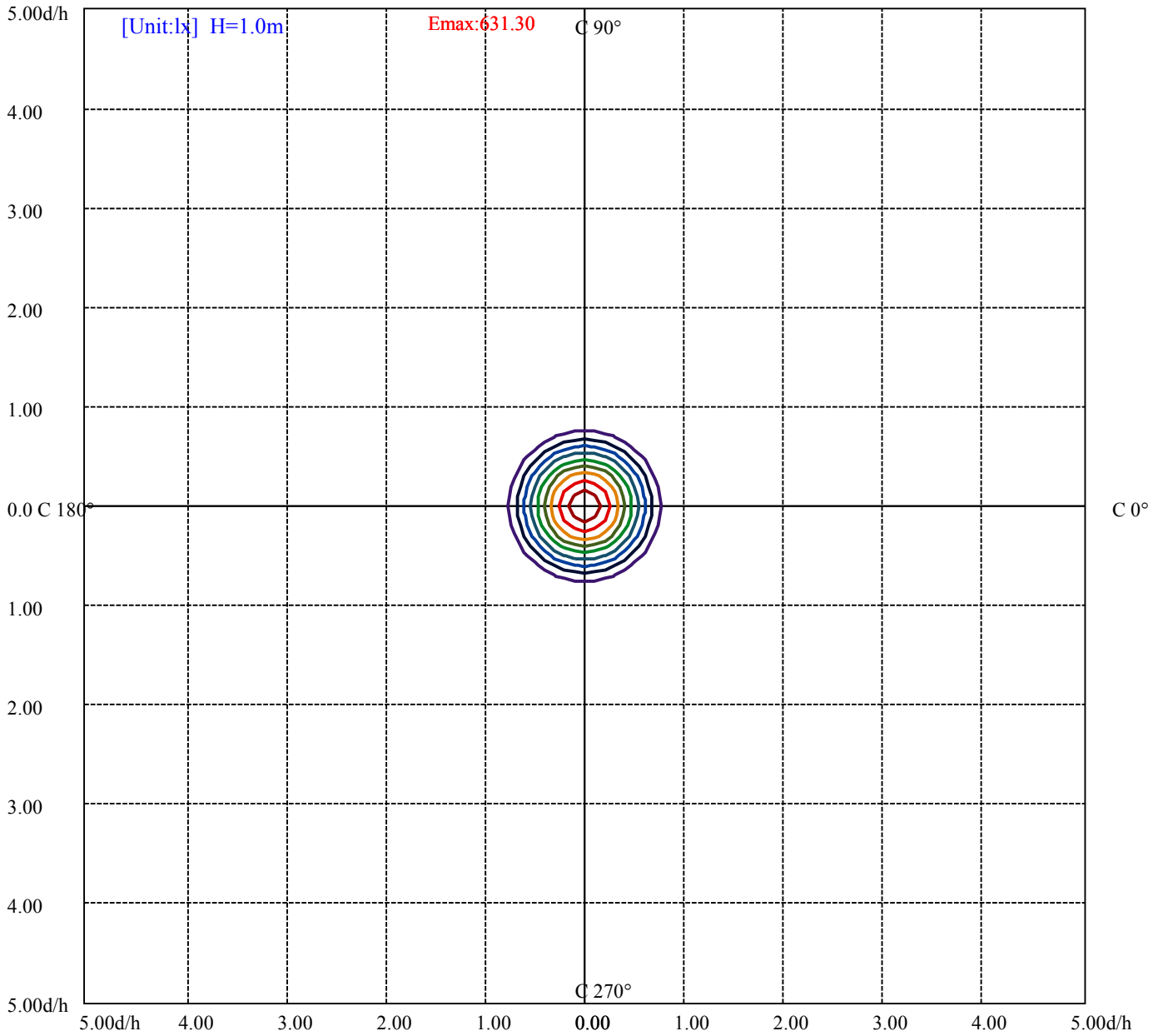
House

[Unit:cd]

Road

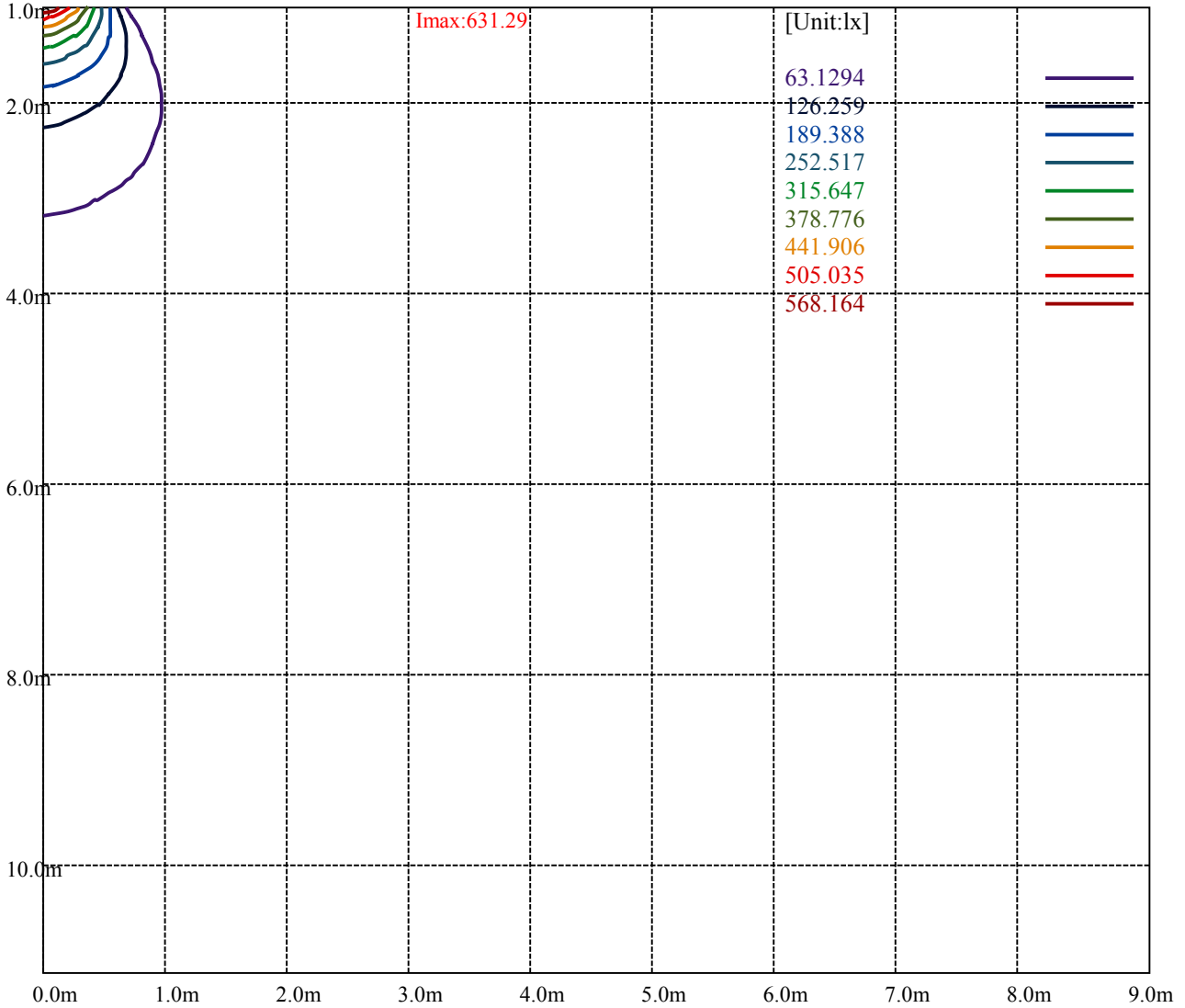
**Imax:631.29**

(10%Imax) 63.1294	—
(20%Imax) 126.259	—
(30%Imax) 189.388	—
(40%Imax) 252.517	—
(50%Imax) 315.647	—
(60%Imax) 378.776	—
(70%Imax) 441.906	—
(80%Imax) 505.035	—
(90%Imax) 568.164	—



(10%E <sub>max</sub> ) 63.1293	—
(20%E <sub>max</sub> ) 126.259	—
(30%E <sub>max</sub> ) 189.388	—
(40%E <sub>max</sub> ) 252.517	—
(50%E <sub>max</sub> ) 315.647	—
(60%E <sub>max</sub> ) 378.776	—
(70%E <sub>max</sub> ) 441.905	—
(80%E <sub>max</sub> ) 505.035	—
(90%E <sub>max</sub> ) 568.164	—





Luminance Table

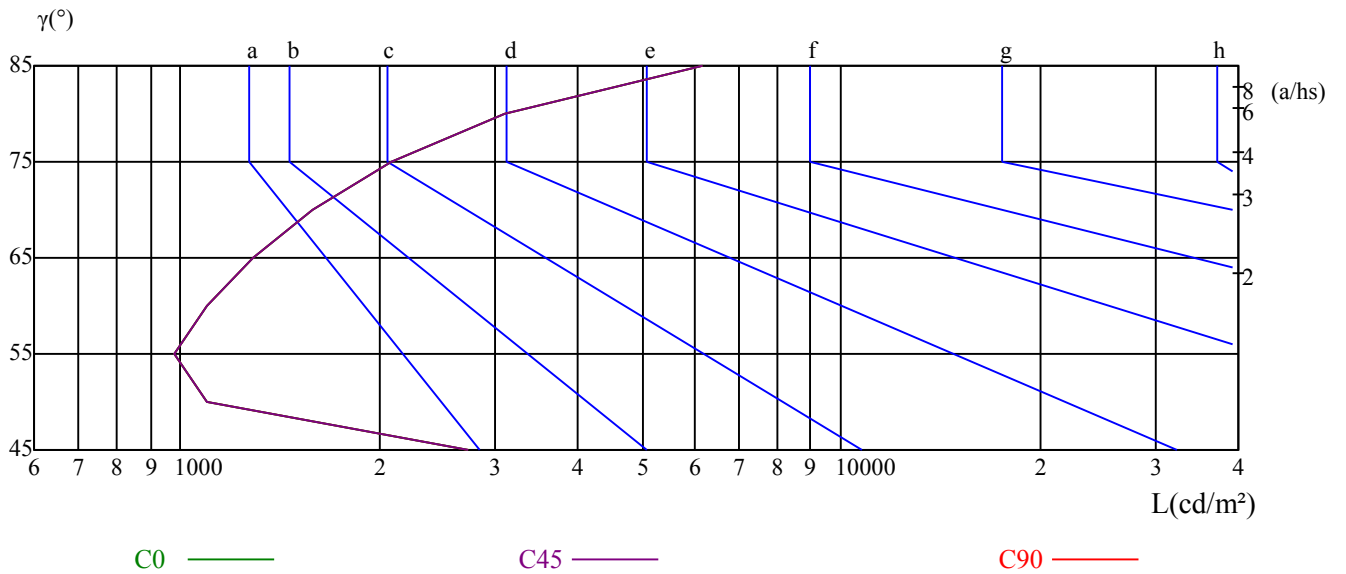
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2734	1098	979	1095	1292	1586	2083	3094	6185
C45	2734	1098	979	1095	1292	1586	2083	3094	6185
C90	2734	1098	979	1095	1292	1586	2083	3094	6185

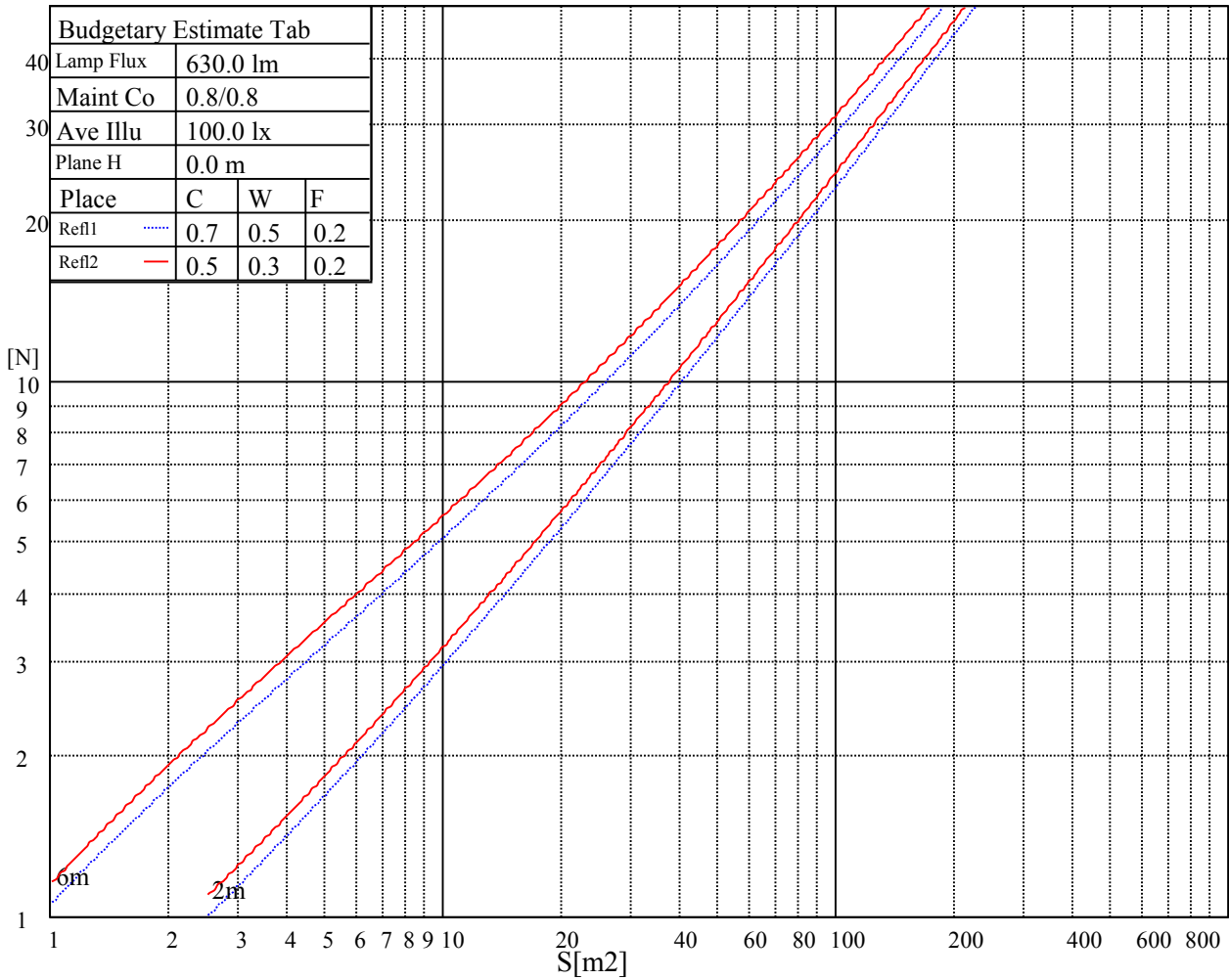
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1292	1292	1292	2083	2083	2083	6185	6185	6185

Glare Table

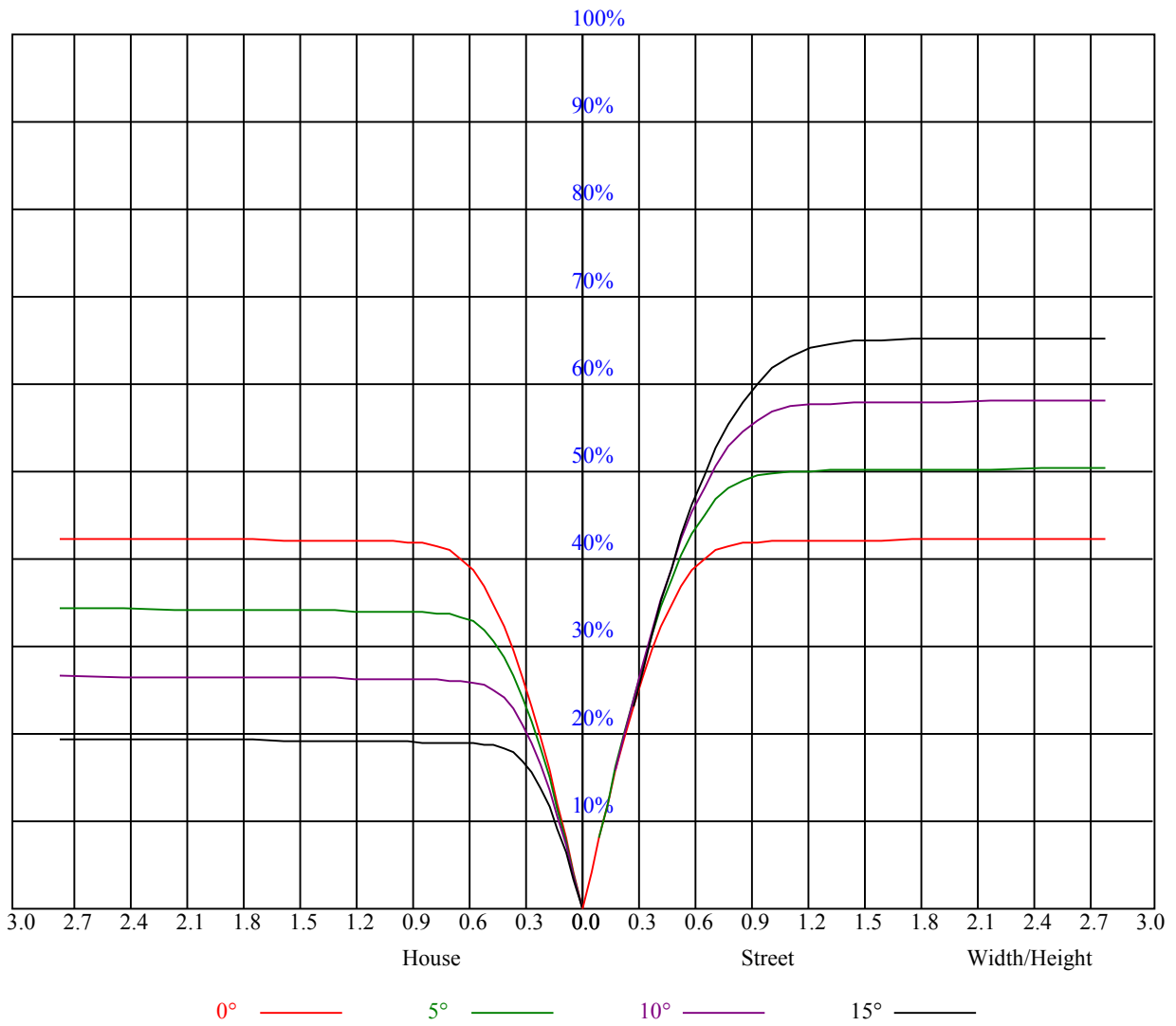
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.02	1.02	1.02	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.86
1	0.94	0.92	0.90	0.93	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.83	0.83	0.82	0.81	0.80
2	0.89	0.85	0.82	0.87	0.84	0.81	0.84	0.82	0.80	0.82	0.80	0.78	0.79	0.78	0.76	0.75
3	0.83	0.79	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.71
4	0.79	0.74	0.71	0.78	0.74	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.73	0.70	0.68	0.67
5	0.74	0.70	0.66	0.74	0.69	0.66	0.72	0.68	0.65	0.71	0.67	0.65	0.69	0.67	0.64	0.63
6	0.70	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.60
7	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.57
8	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.61	0.58	0.55	0.61	0.57	0.55	0.54
9	0.61	0.56	0.53	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.52	0.51
10	0.58	0.53	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.56	0.52	0.50	0.49



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	632.53	609.92	575.10	540.51	502.03	439.76	360.28	232.76	52.82
45.0	630.06	600.86	563.01	526.78	482.57	419.23	338.01	178.26	31.50
90.0	630.56	603.90	566.78	530.72	479.14	406.29	317.81	153.84	23.51
135.0	632.03	618.69	587.59	557.55	505.07	427.22	336.49	177.47	28.86
180.0	632.53	619.14	595.97	563.34	503.38	415.07	304.82	148.44	23.74
225.0	630.06	623.53	602.55	578.08	525.88	439.76	346.67	188.72	30.32
270.0	630.56	623.93	597.66	568.46	521.66	447.36	358.48	218.87	47.59
315.0	632.03	608.74	575.55	541.46	494.94	423.96	339.92	193.67	30.71
360.0	632.53	609.92	575.10	540.51	502.03	439.76	360.28	232.76	52.82
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	11.19	3.49	2.31	2.25	2.25	2.19	2.19	2.19	2.19
45.0	8.78	2.98	2.36	2.25	2.25	2.25	2.19	2.19	2.19
90.0	6.69	2.64	2.25	2.25	2.25	2.25	2.19	2.19	2.25
135.0	7.14	2.70	2.31	2.25	2.25	2.19	2.19	2.25	2.25
180.0	5.34	2.53	2.25	2.19	2.25	2.19	2.19	2.19	2.19
225.0	7.09	2.81	2.25	2.25	2.19	2.25	2.25	2.19	2.19
270.0	9.51	3.09	2.36	2.25	2.19	2.25	2.25	2.19	2.19
315.0	7.59	2.87	2.31	2.25	2.25	2.19	2.19	2.19	2.19
360.0	11.19	3.49	2.31	2.25	2.25	2.19	2.19	2.19	2.19
C/ $\gamma$ (°)	90.0								
0.0	2.19								
45.0	2.19								
90.0	2.19								
135.0	2.19								
180.0	2.19								
225.0	2.19								
270.0	2.19								
315.0	2.19								
360.0	2.19								