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Nata

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LumCAT: 1651-S  
Luminaire: 92.70.043.00  
Report No: NT2017121901  
Test No: nata-0100  
LampCAT: CREE CXA1310  
Lamp flux(lm): 658.0  
Number of Lamps: 1  
Length(mm): 22  
Phm Type: C

Voltage(V): 18.2000  
Current(A): 0.3600  
Power (W): 6.5520  
PF: 0.0000  
Ballast type: DC  
Width(mm): 22  
Height(mm): 0

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Photometric Results

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Lumens(lm): 598.37  
Efficiency(%): 90.94%  
Lumens(lm)/Power(W): 91.33  
Central intensity(cd): 2113.478  
Maximum intensity(cd): 2113.478  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=21.8  
                                  [C90/270]Total=21.8  
Field angle(10%Imax): [C0/180]Total=60.3  
                                  [C90/270]Total=60.3  
Maximum s/h(1/2): C0\_180=0.37 C90\_270=0.37  
Maximum s/h(1/4): C0\_180=0.39 C90\_270=0.39  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 92.77%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 96.716%

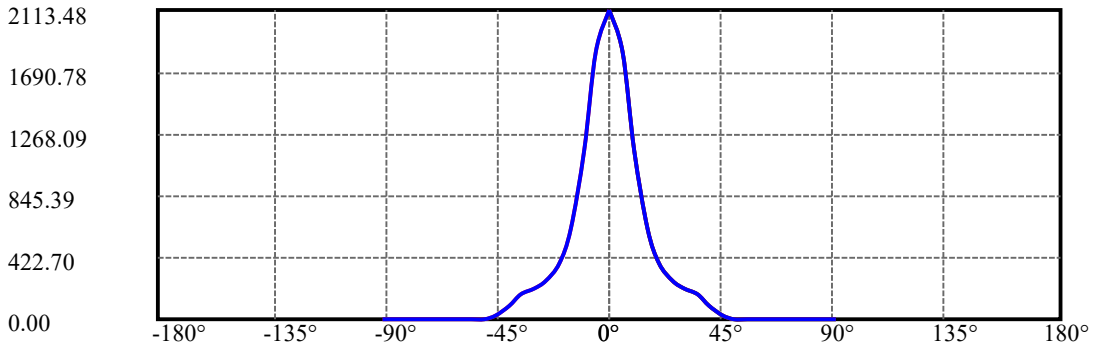
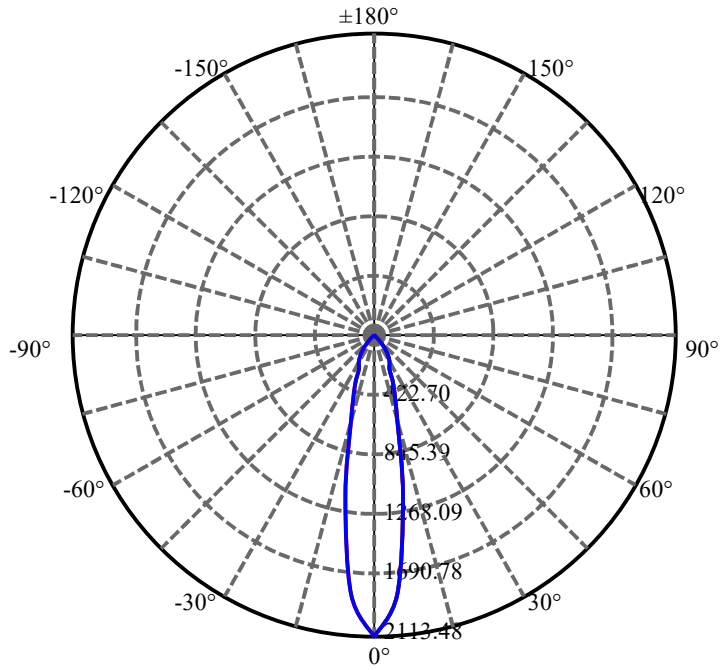
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2113.478	12.639	12.639	1.921%	2.112%
5.0	1827.184	87.291	99.93	13.266%	16.700%
10.0	1154.058	109.847	209.776	16.694%	35.058%
15.0	615.186	87.276	297.052	13.264%	49.644%
20.0	375.003	70.303	367.355	10.684%	61.393%
25.0	264.374	61.243	428.598	9.307%	71.628%
30.0	212.593	58.265	486.863	8.855%	81.365%
35.0	167.117	52.541	539.405	7.985%	90.146%
40.0	97.278	34.274	573.679	5.209%	95.874%
45.0	28.953	11.222	584.901	1.705%	97.749%
50.0	6.228	2.615	587.516	.397%	98.186%
55.0	3.400	1.527	589.043	.232%	98.441%
60.0	2.849	1.353	590.395	.206%	98.667%
65.0	2.801	1.391	591.787	.211%	98.900%
70.0	2.815	1.450	593.237	.220%	99.142%
75.0	2.822	1.494	594.731	.227%	99.392%
80.0	2.815	1.519	596.25	.231%	99.646%
85.0	2.636	1.439	597.689	.219%	99.886%
90.0	2.484	0.681	598.37	.103%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	486.86	73.99%	81.36%
0-40	573.68	87.19%	95.87%
0-60	590.40	89.73%	98.67%
0-90	597.69	90.83%	99.89%
0-120	597.69	90.83%	99.89%
0-180	598.37	90.94%	100.00%
60-90	8.65	1.31%	1.45%
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%
0-29.30	478.70	72.75%	80.00%

ZONAL LUMEN SUMMARY

0-10	209.78
10-20	157.58
20-30	119.51
30-40	86.82
40-50	13.84
50-60	2.88
60-70	2.84
70-80	3.01
80-90	1.44
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

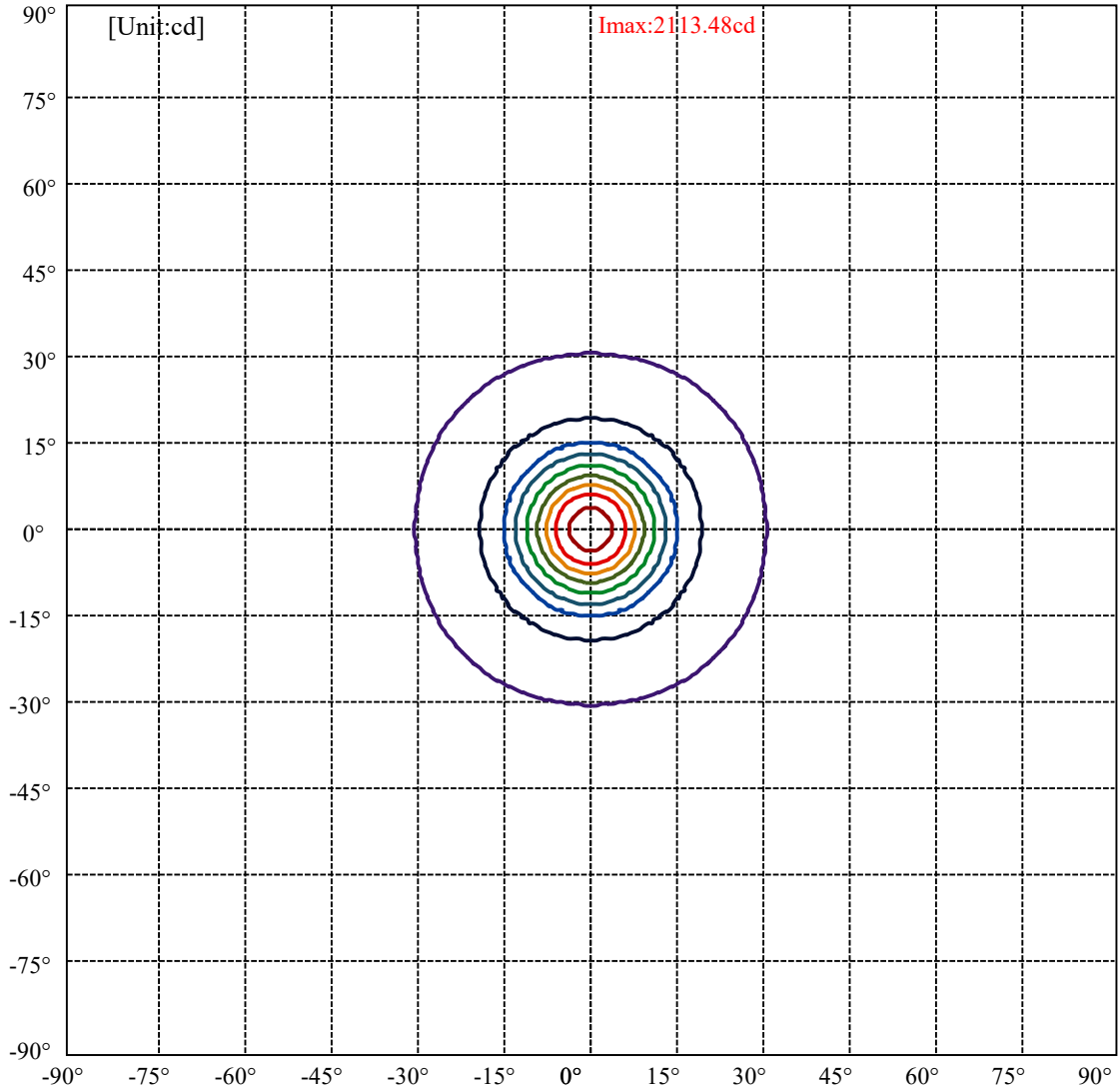


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

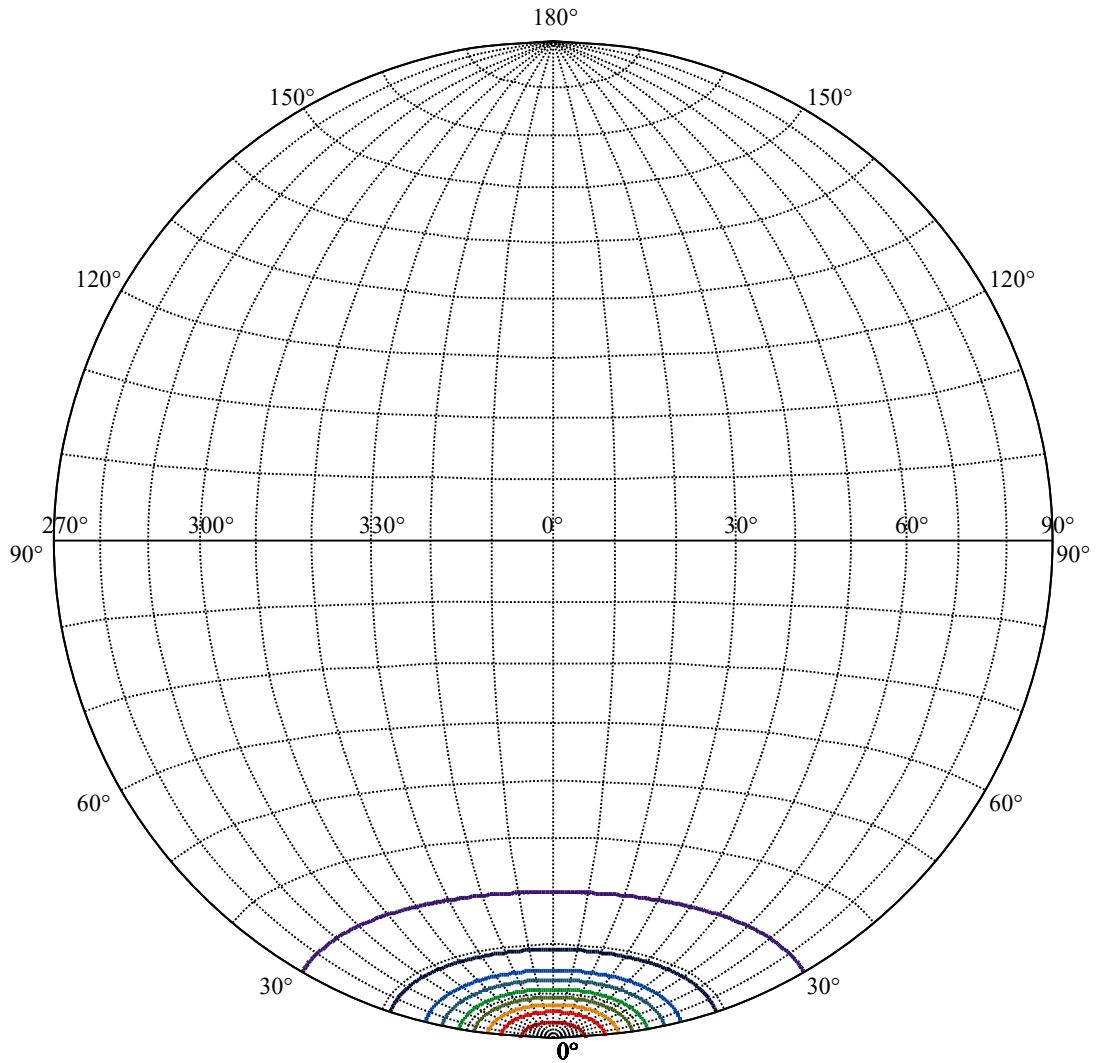
Field angle(10%Imax):C0/180Left:30.1 Right:30.1  
:C90/270Left:30.1 Right:30.1

Beam Angle(50%Imax):C0/180Left:10.9 Right:10.9  
:C90/270Left:10.9 Right:10.9





(10%Imax) 211.348	—
(20%Imax) 422.695	—
(30%Imax) 634.043	—
(40%Imax) 845.391	—
(50%Imax) 1056.74	—
(60%Imax) 1268.09	—
(70%Imax) 1479.43	—
(80%Imax) 1690.78	—
(90%Imax) 1902.13	—



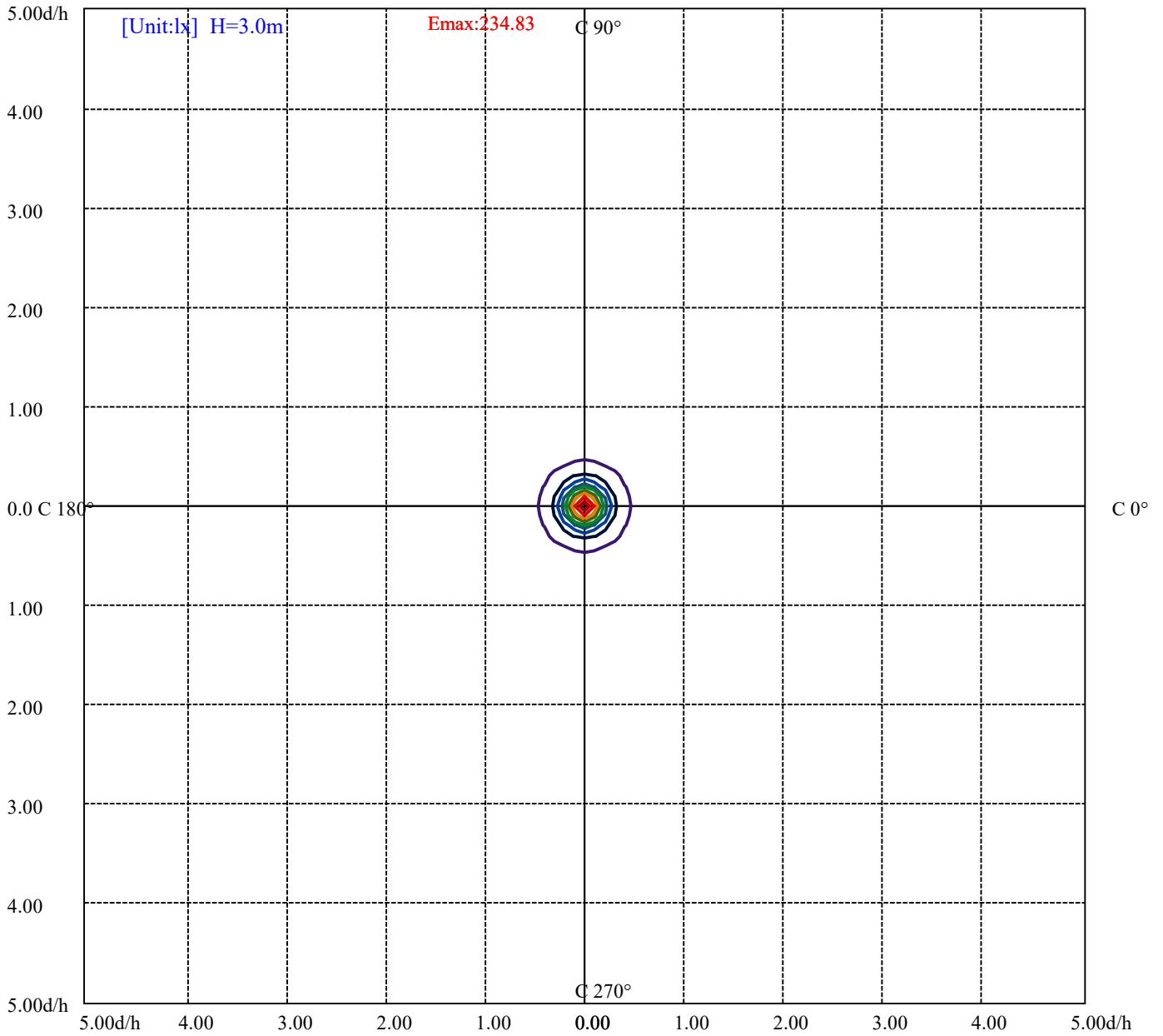
House

[Unit:cd]

Road

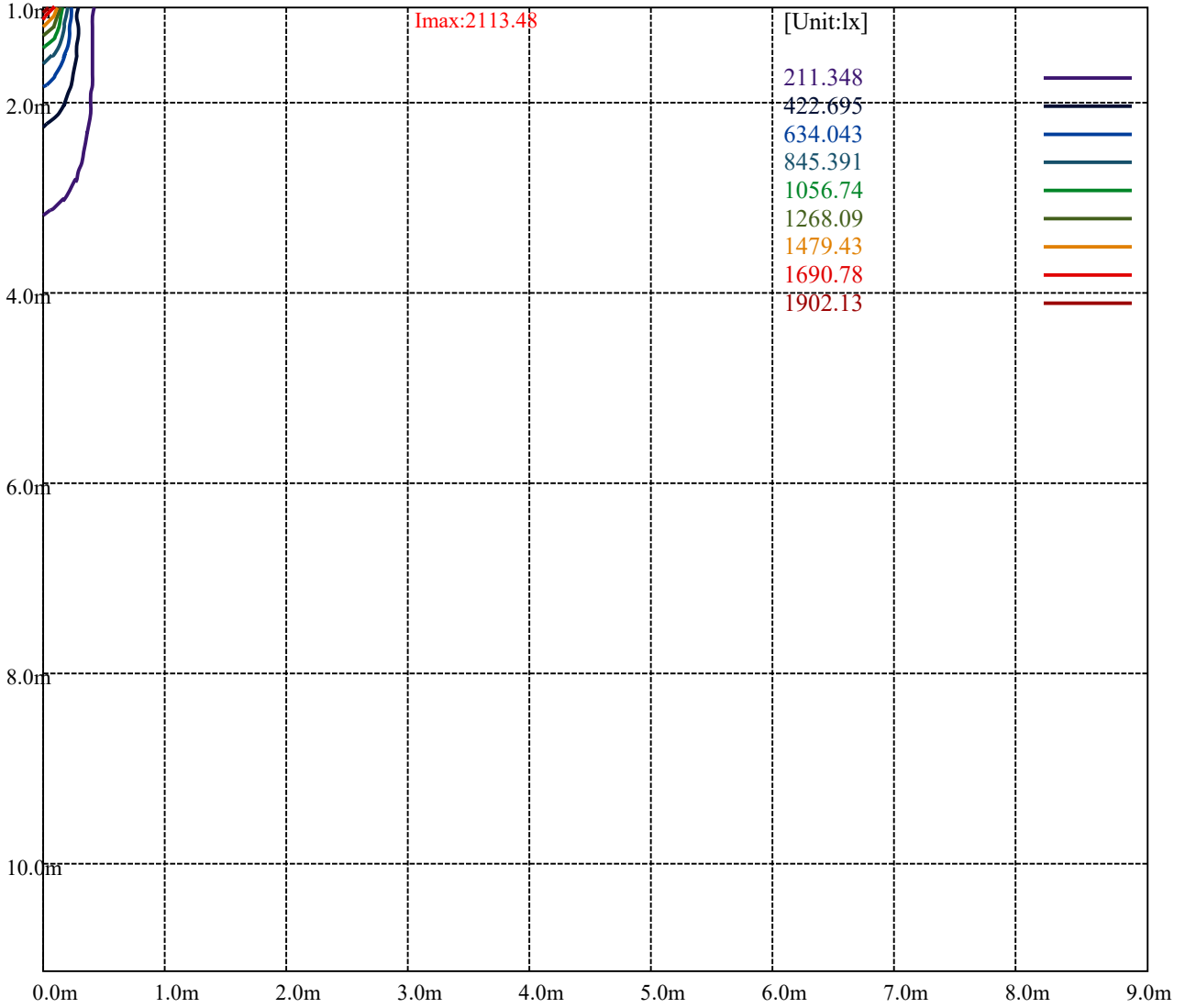
**Imax:2113.48**

(10%Imax) 211.348	—
(20%Imax) 422.695	—
(30%Imax) 634.043	—
(40%Imax) 845.391	—
(50%Imax) 1056.74	—
(60%Imax) 1268.09	—
(70%Imax) 1479.43	—
(80%Imax) 1690.78	—
(90%Imax) 1902.13	—



(10%Emax) 23.483	—
(20%Emax) 46.966	—
(30%Emax) 70.44901	—
(40%Emax) 93.932	—
(50%Emax) 117.4144	—
(60%Emax) 140.8978	—
(70%Emax) 164.3811	—
(80%Emax) 187.8644	—
(90%Emax) 211.3467	—





Luminance Table

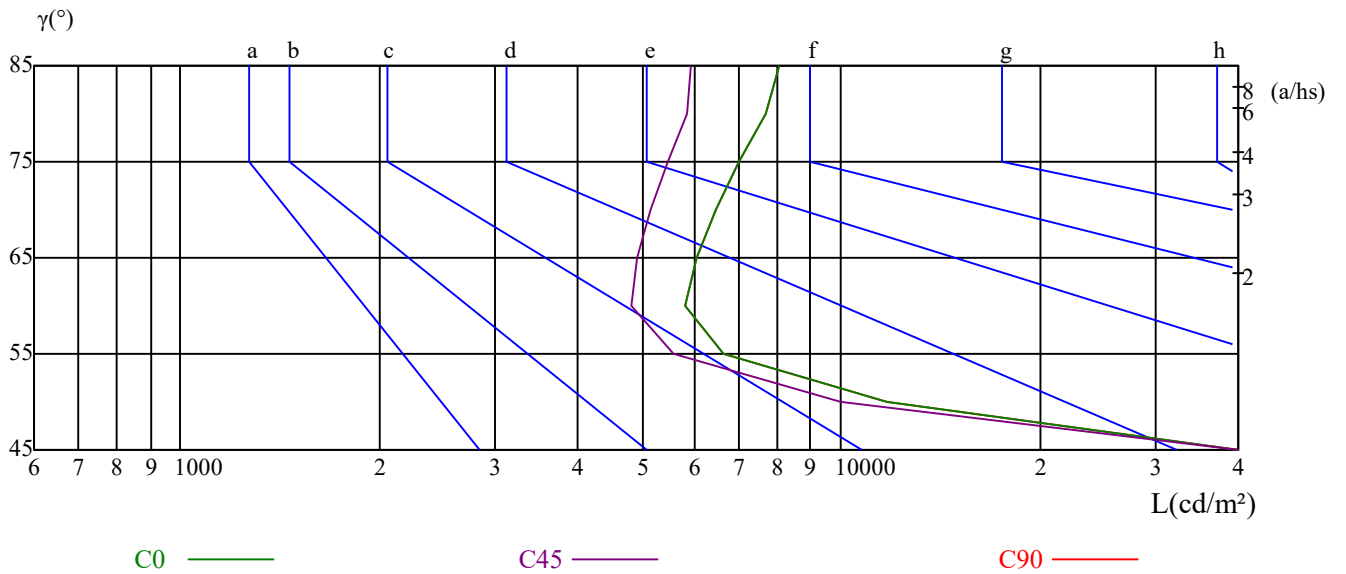
$\gamma$	45	50	55	60	65	70	75	80	85
C0	53176	11747	6642	5818	6040	6481	7027	7697	8058
C45	46086	10030	5583	4811	4904	5159	5469	5835	5922
C90	53176	11747	6642	5818	6040	6481	7027	7697	8058

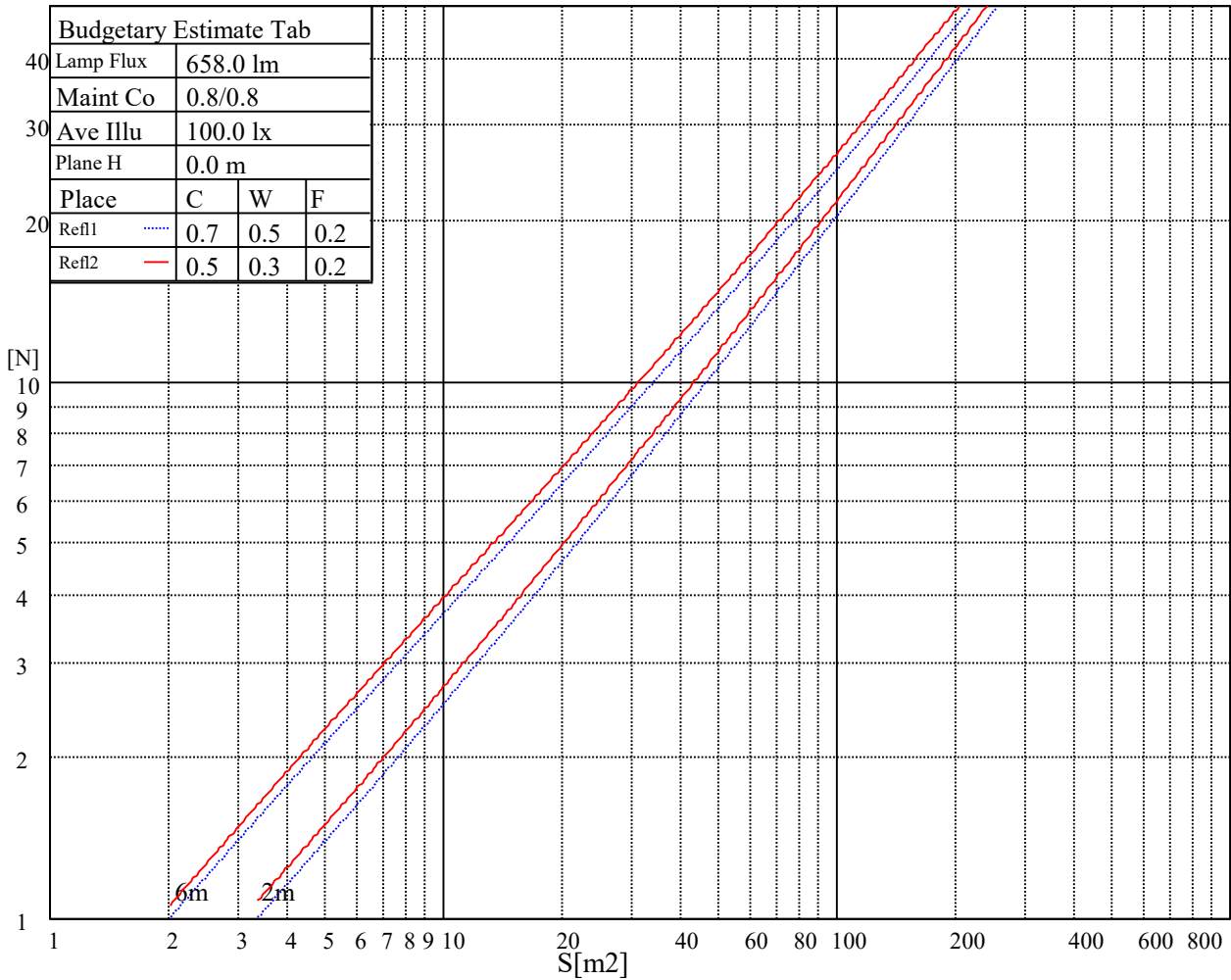
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
13694	13694	13694	22525	22525	22525	62485	62485	62485

Glare Table

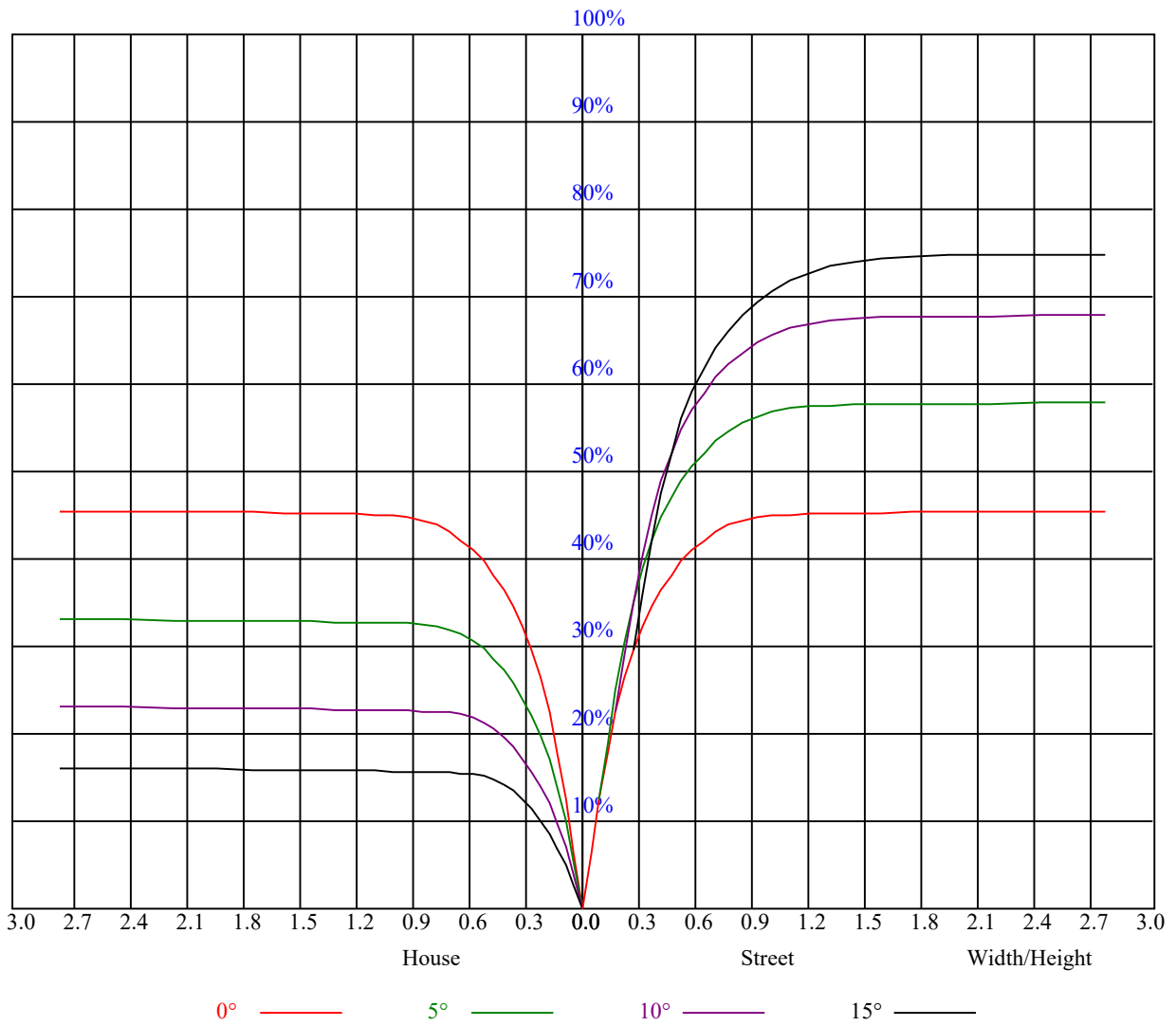
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.10	1.10	1.10	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	1.01	0.99	0.96	0.99	0.97	0.95	0.95	0.93	0.92	0.92	0.90	0.89	0.89	0.87	0.86	0.85
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	0.86	0.84	0.82	0.81
3	0.90	0.86	0.83	0.89	0.85	0.82	0.87	0.83	0.81	0.85	0.82	0.79	0.82	0.80	0.78	0.77
4	0.86	0.81	0.78	0.85	0.81	0.77	0.83	0.79	0.76	0.81	0.78	0.76	0.80	0.77	0.75	0.73
5	0.82	0.77	0.74	0.81	0.77	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.70
6	0.78	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.67
7	0.75	0.70	0.67	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.66	0.65
8	0.72	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.62
9	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.60
10	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.58



Nata 1651-S

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	2075.08	2168.67	1681.97	852.82	478.99	306.66	230.36	197.60	138.74
45.0	2153.26	1920.92	1172.70	601.22	370.53	278.59	210.26	166.60	92.44
90.0	2100.95	1590.03	891.80	484.66	310.19	232.83	197.21	139.40	68.32
135.0	2124.63	1641.23	904.58	493.31	322.63	242.30	205.20	146.51	73.06
180.0	2075.08	1296.03	756.81	442.60	297.52	230.69	196.11	133.46	57.09
225.0	2153.26	1875.22	1070.68	578.70	368.60	259.15	213.29	172.93	100.26
270.0	2100.95	2045.35	1451.29	736.65	427.79	282.99	222.76	190.05	125.03
315.0	2124.63	2080.03	1302.63	731.53	423.77	281.78	225.57	190.39	123.27
360.0	2075.08	2168.67	1681.97	852.82	478.99	306.66	230.36	197.60	138.74
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	58.91	10.02	4.51	2.81	2.70	2.64	2.64	2.59	2.59
45.0	21.03	5.29	3.03	2.75	2.70	2.70	2.64	2.64	2.59
90.0	10.24	4.68	2.97	2.86	2.81	2.81	2.81	2.81	2.48
135.0	11.62	5.12	3.03	2.97	2.97	3.03	3.14	3.14	2.53
180.0	8.31	4.57	2.97	2.97	2.97	3.03	3.03	3.03	2.48
225.0	25.93	6.00	3.08	2.92	2.86	2.92	2.97	2.97	3.03
270.0	48.78	7.05	3.85	2.81	2.75	2.75	2.75	2.75	2.75
315.0	46.80	7.10	3.74	2.70	2.64	2.64	2.59	2.59	2.64
360.0	58.91	10.02	4.51	2.81	2.70	2.64	2.64	2.59	2.59
C/ $\gamma$ (°)	90.0								
0.0	2.48								
45.0	2.48								
90.0	2.48								
135.0	2.48								
180.0	2.48								
225.0	2.53								
270.0	2.48								
315.0	2.48								
360.0	2.48								