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Nata

LumCAT: 1406-N	
Luminaire: 92.70.064.00	
Report No: NATA0100	Voltage(V): 33.7900
Test No: GC20190603	Current(A): 0.2970
LampCAT: XICATOXOB LES 9.8MM	Power (W): 10.0000
Lamp flux(lm): 990.9	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 39	Width(mm): 39
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 856.74
Efficiency(%): 86.46%
Lumens(lm)/Power(W): 85.67
Central intensity(cd): 1211.555
Maximum intensity(cd): 1211.555
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=38.4
[C90/270]Total=38.4
Field angle(10%Imax): [C0/180]Total=89.7
[C90/270]Total=89.7
Maximum s/h(1/2): C0_180=0.61 C90_270=0.61
Maximum s/h(1/4): C0_180=0.67 C90_270=0.67
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 86.46%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.841%

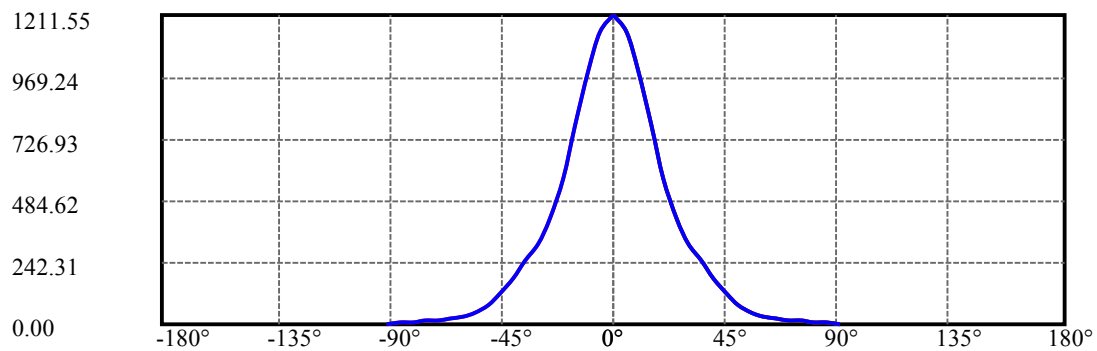
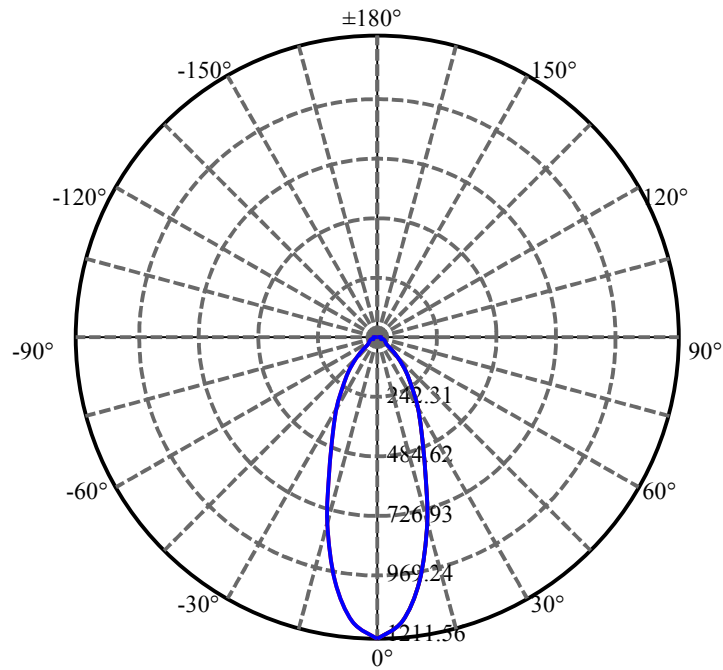
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1211.555	0.000	0	.000%	.000%
5.0	1142.754	28.145	28.145	2.840%	3.285%
10.0	993.143	76.408	104.553	7.711%	12.204%
15.0	774.766	104.871	209.424	10.583%	24.444%
20.0	572.885	111.065	320.489	11.209%	37.408%
25.0	417.312	103.853	424.343	10.481%	49.530%
30.0	318.727	93.146	517.489	9.400%	60.402%
35.0	247.852	83.433	600.922	8.420%	70.141%
40.0	179.452	71.292	672.214	7.195%	78.462%
45.0	119.116	55.282	727.496	5.579%	84.915%
50.0	75.459	39.317	766.813	3.968%	89.504%
55.0	48.129	26.872	793.685	2.712%	92.640%
60.0	33.441	18.855	812.54	1.903%	94.841%
65.0	23.913	13.943	826.483	1.407%	96.468%
70.0	17.698	10.536	837.019	1.063%	97.698%
75.0	12.523	7.899	844.918	.797%	98.620%
80.0	8.501	5.625	850.543	.568%	99.277%
85.0	5.280	3.745	854.288	.378%	99.714%
90.0	3.670	2.451	856.739	.247%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	517.49	52.22%	60.40%
0-40	672.21	67.84%	78.46%
0-60	812.54	82.00%	94.84%
0-90	854.29	86.21%	99.71%
0-120	854.29	86.21%	99.71%
0-180	856.74	86.46%	100.00%
60-90	60.60	6.12%	7.07%
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%
0-41.19	685.39	69.17%	80.00%

ZONAL LUMEN SUMMARY

0-10	104.55
10-20	215.94
20-30	197.00
30-40	154.72
40-50	94.60
50-60	45.73
60-70	24.48
70-80	13.52
80-90	3.74
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:

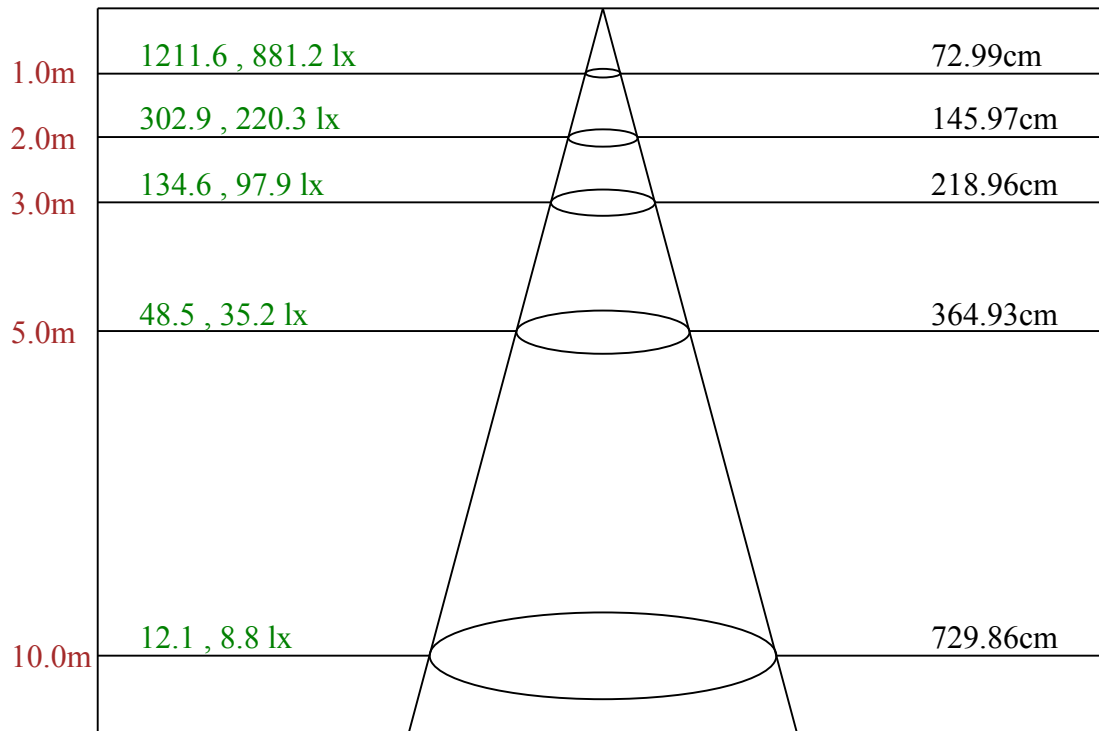
C90/C270:

Field angle(10%Imax):C0/180Left:44.8 Right:44.8

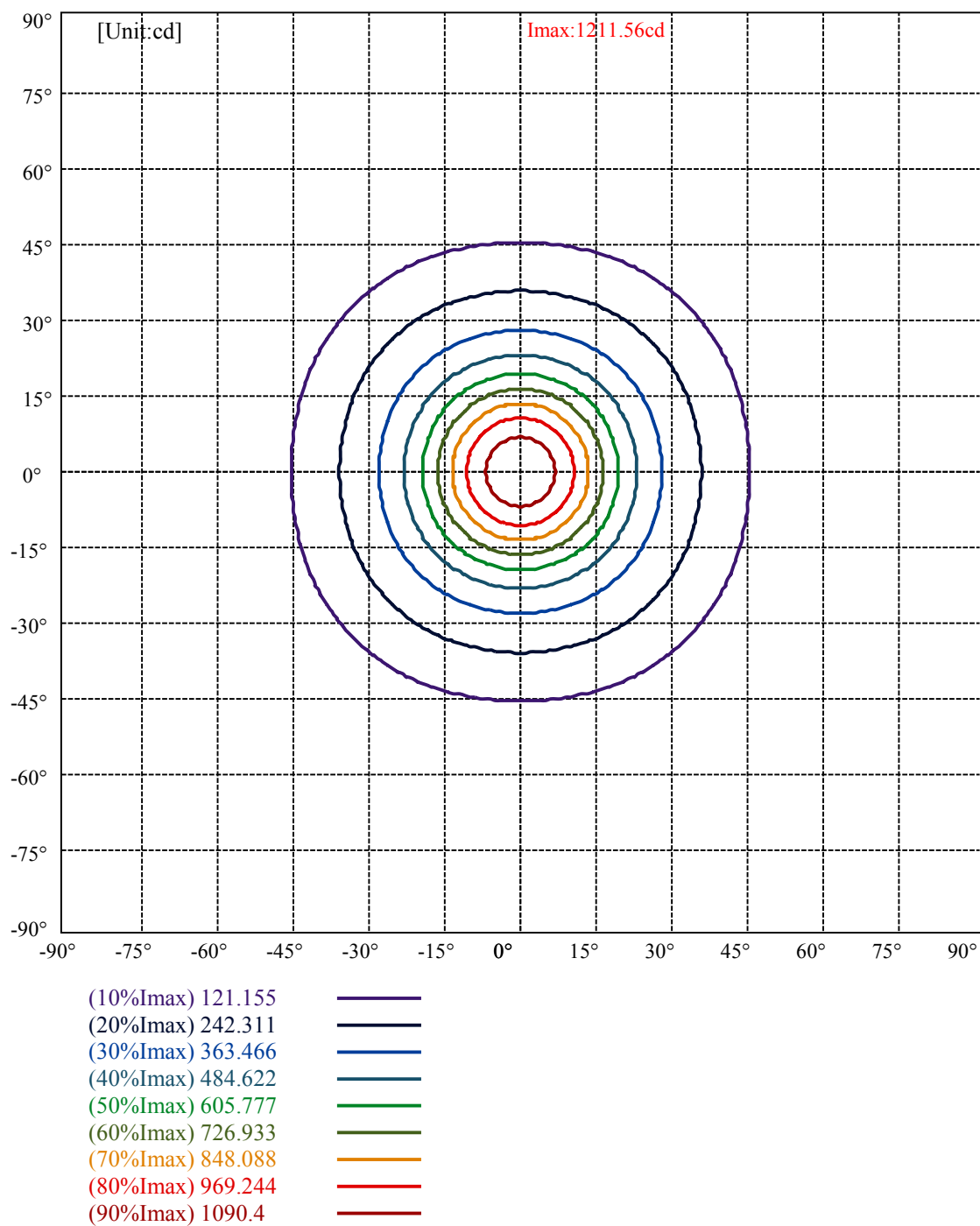
:C90/270Left:44.8 Right:44.8

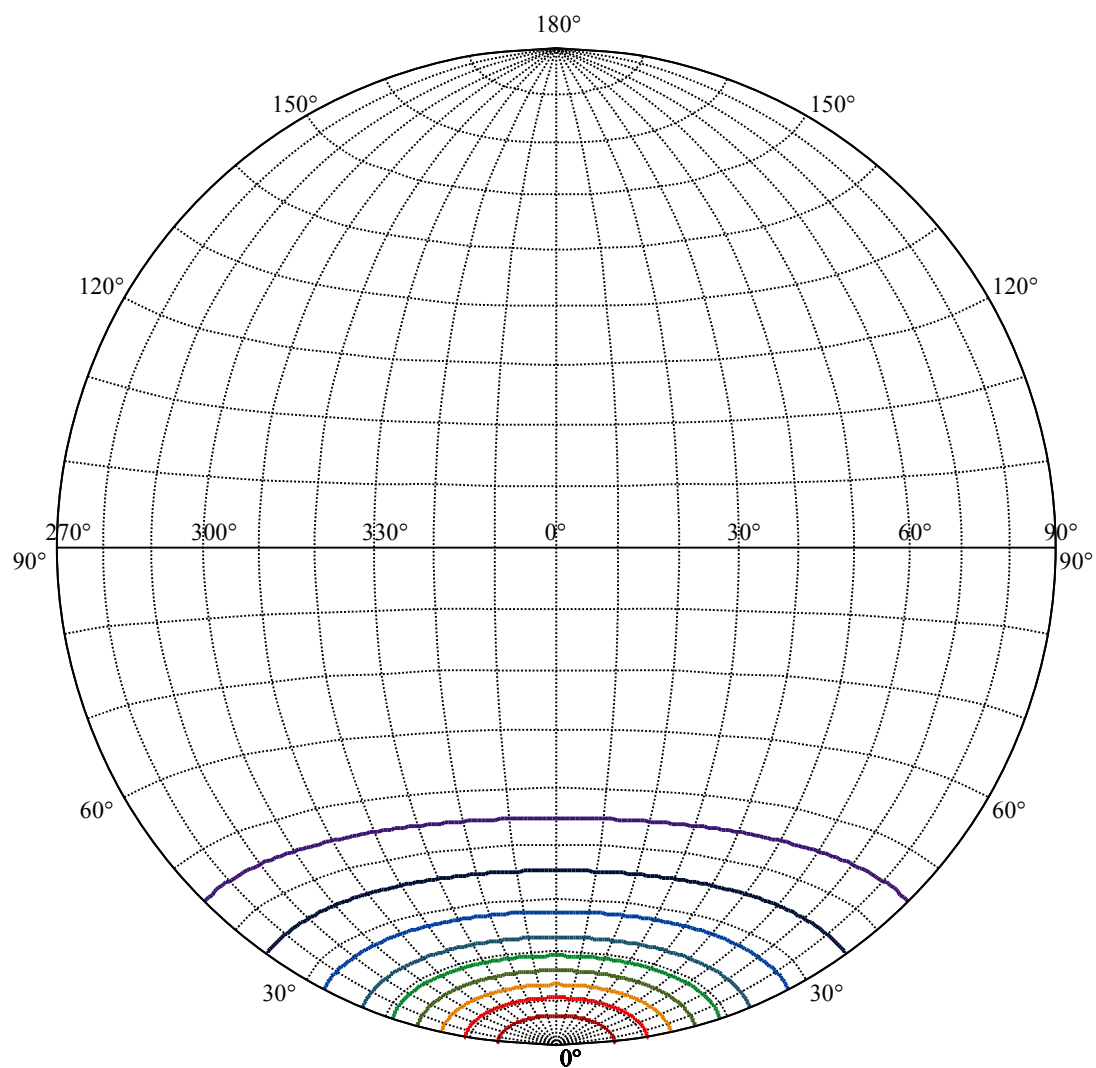
Beam Angle(50%Imax):C0/180Left:19.2 Right:19.2

:C90/270Left:19.2 Right:19.2



Max , Ave Beam angle of C0 plane 40.10



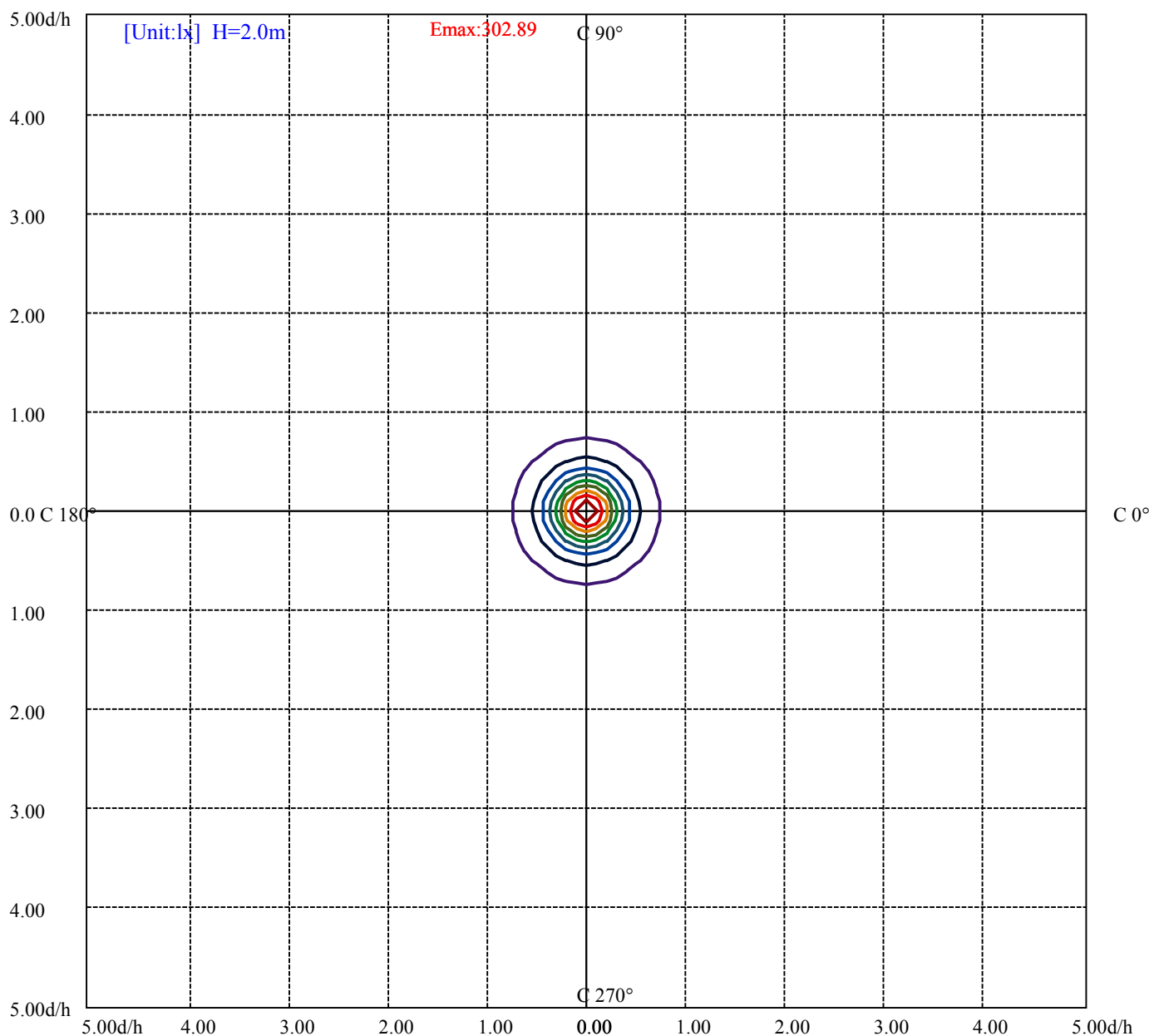


House

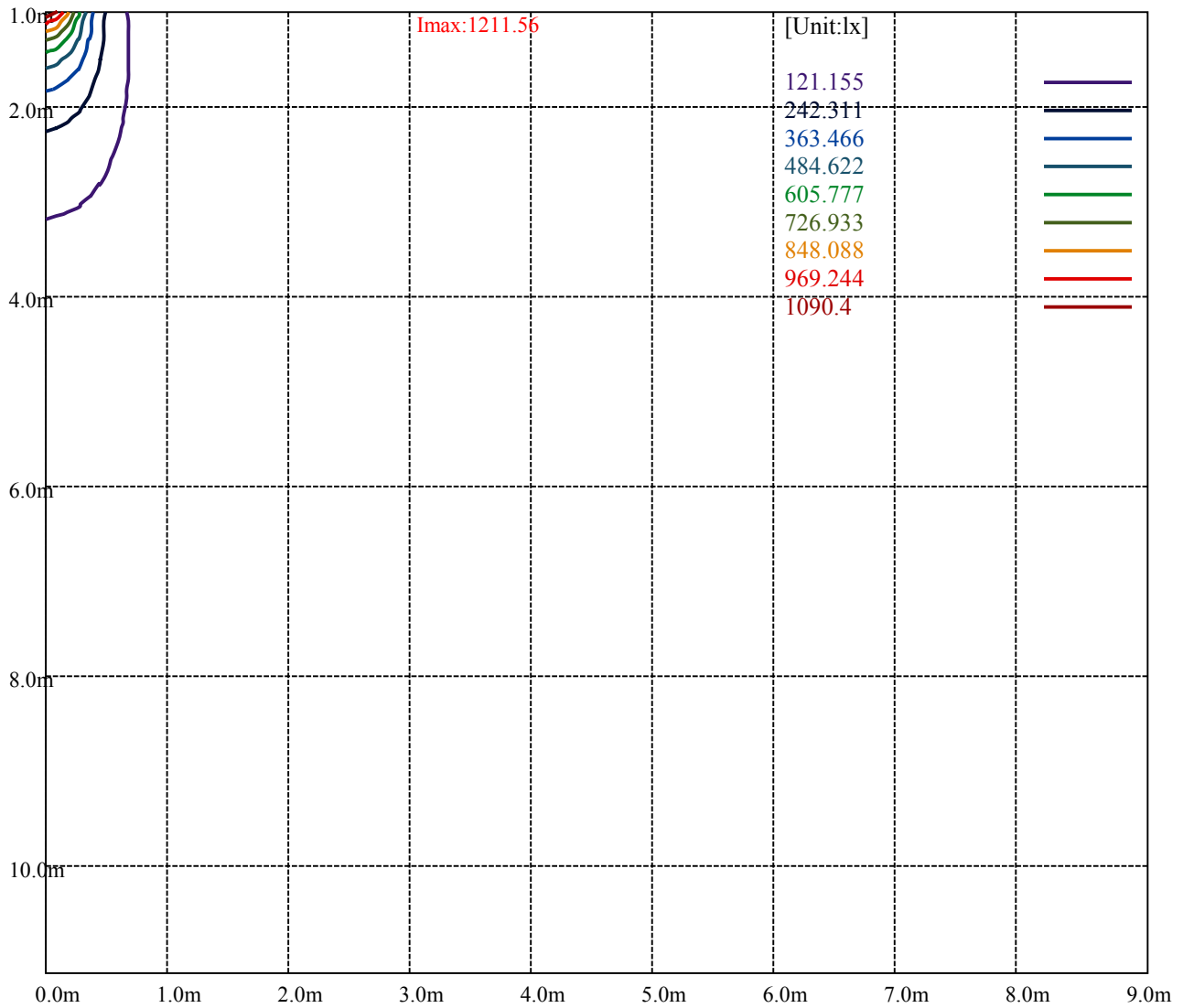
[Unit:cd]

Road

I_{max}:1211.56(10%I_{max}) 121.155(20%I_{max}) 242.311(30%I_{max}) 363.466(40%I_{max}) 484.622(50%I_{max}) 605.777(60%I_{max}) 726.933(70%I_{max}) 848.088(80%I_{max}) 969.244(90%I_{max}) 1090.4



(10%Emax)	30.28875	
(20%Emax)	60.57775	
(30%Emax)	90.8665	
(40%Emax)	121.1553	
(50%Emax)	151.444	
(60%Emax)	181.733	
(70%Emax)	212.0217	
(80%Emax)	242.3105	
(90%Emax)	272.6	



Luminance Table

γ	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

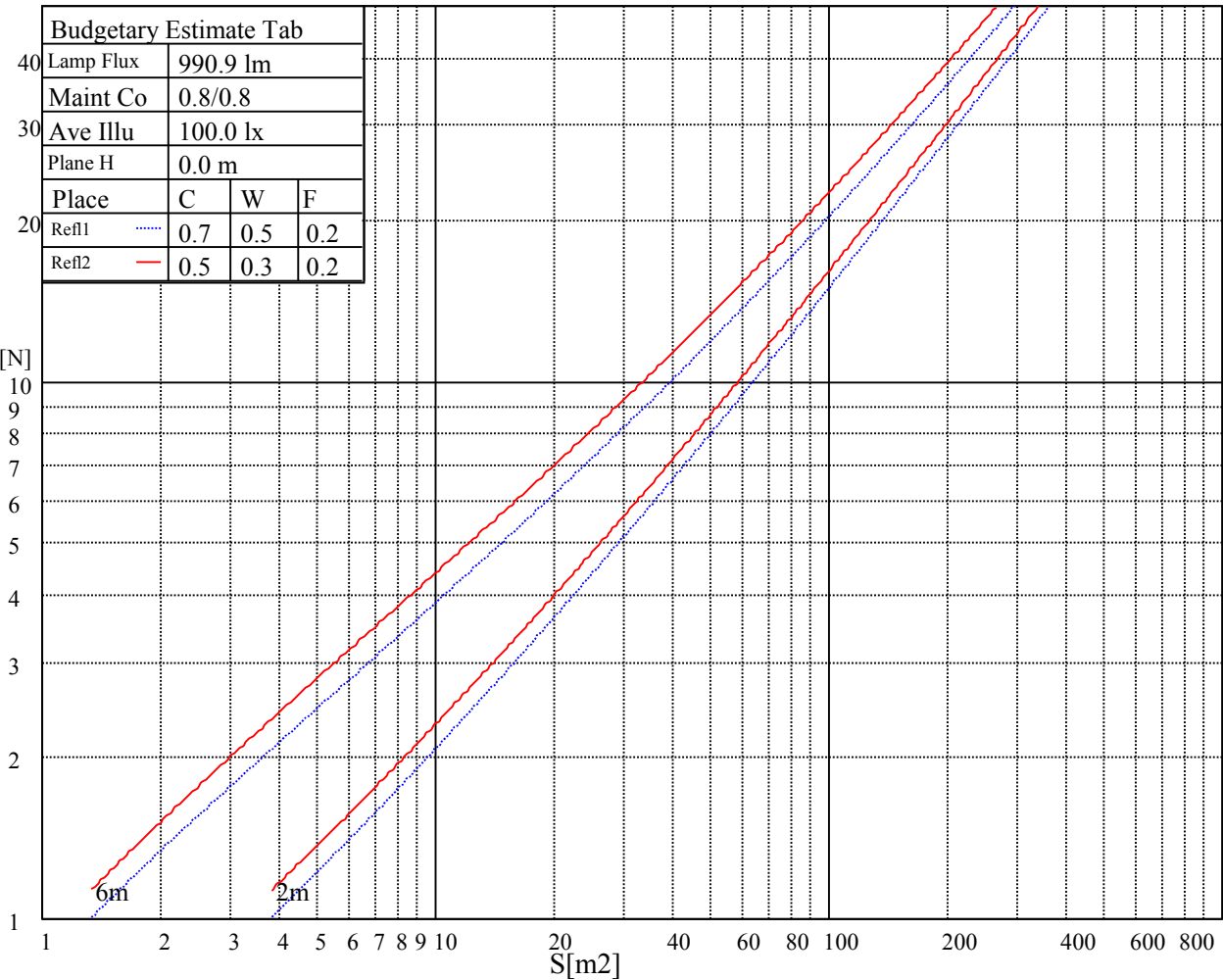
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

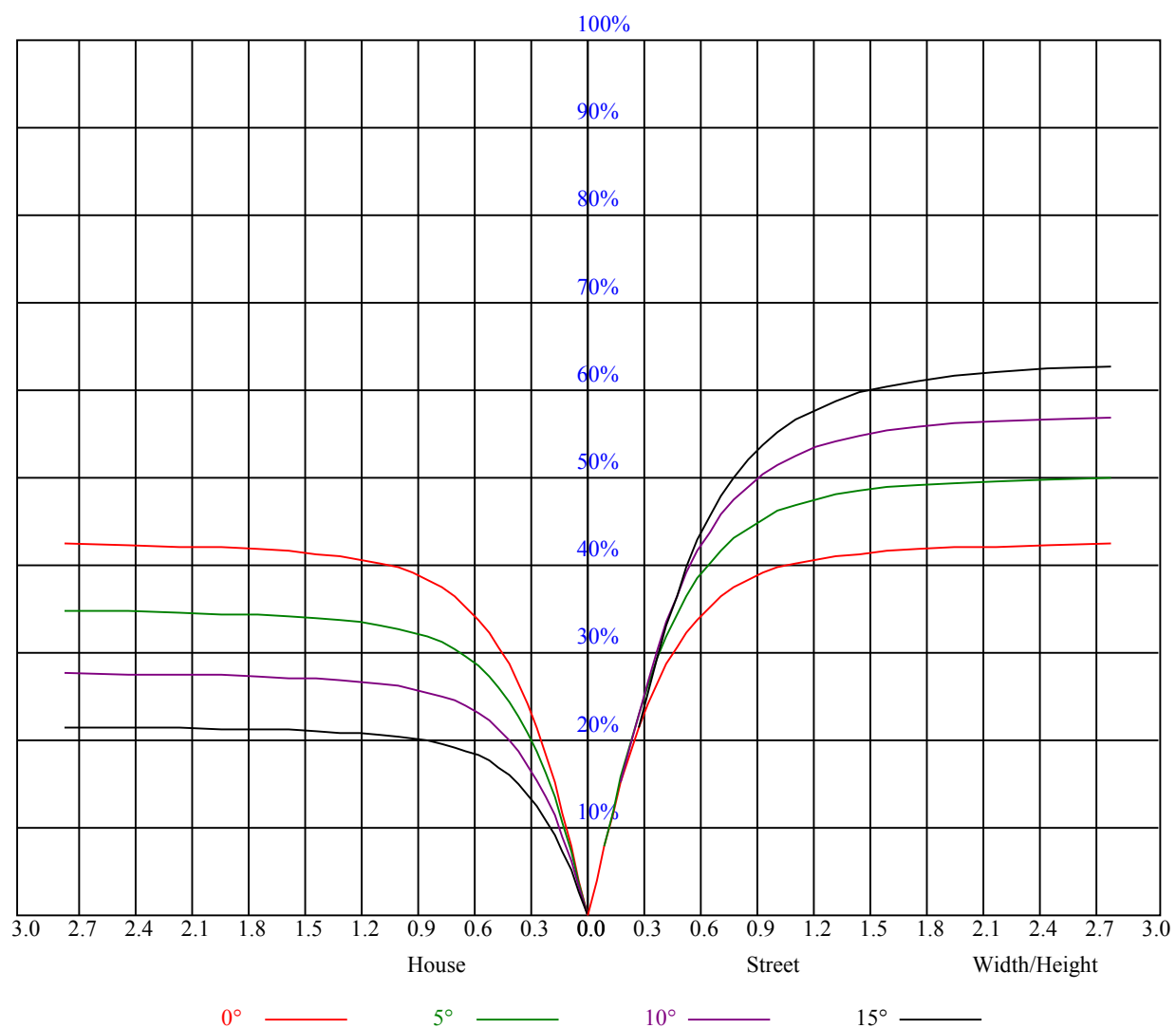
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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 RHOFC=20 CU															
0	1.03	1.03	1.03	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.94	0.92	0.90	0.92	0.90	0.88	0.89	0.87	0.85	0.86	0.84	0.83	0.83	0.82	0.80	0.79
2	0.87	0.83	0.79	0.85	0.82	0.78	0.82	0.79	0.77	0.80	0.77	0.75	0.77	0.75	0.73	0.72
3	0.80	0.75	0.71	0.79	0.74	0.71	0.76	0.73	0.69	0.74	0.71	0.68	0.72	0.70	0.67	0.66
4	0.74	0.69	0.65	0.73	0.68	0.64	0.71	0.67	0.63	0.69	0.66	0.63	0.68	0.65	0.62	0.60
5	0.69	0.63	0.59	0.68	0.63	0.59	0.66	0.62	0.58	0.65	0.61	0.58	0.64	0.60	0.57	0.56
6	0.64	0.59	0.55	0.64	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.53	0.52
7	0.60	0.55	0.51	0.60	0.54	0.50	0.58	0.54	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.48
8	0.57	0.51	0.47	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.53	0.49	0.46	0.45
9	0.53	0.48	0.44	0.53	0.48	0.44	0.52	0.47	0.44	0.51	0.47	0.44	0.51	0.47	0.44	0.42
10	0.51	0.45	0.42	0.50	0.45	0.42	0.49	0.45	0.41	0.49	0.44	0.41	0.48	0.44	0.41	0.40



Nata 1687-M

Intensity data(cd)										Appendix Page: 14 Total:14	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	1211.63	1165.50	1022.06	819.00	600.75	442.13	335.25	284.06	192.60		
45.0	1213.88	1138.50	979.31	749.25	547.88	405.00	309.38	231.13	171.90		
90.0	1207.13	1101.54	912.71	670.56	503.55	367.03	281.93	213.08	151.48		
135.0	1215.56	1132.31	973.13	756.56	553.50	400.50	311.06	231.19	166.95		
180.0	1211.63	1119.04	975.15	749.25	545.74	401.85	307.13	232.82	165.66		
225.0	1213.88	1118.70	996.08	797.23	588.09	422.55	326.25	252.06	188.04		
270.0	1203.19	1195.88	1068.19	855.56	649.69	465.75	349.31	285.19	207.73		
315.0	1215.56	1170.56	1018.52	800.72	593.89	433.69	329.51	253.29	191.25		
360.0	1211.63	1165.50	1022.06	819.00	600.75	442.13	335.25	284.06	192.60		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	127.80	80.04	50.23	35.21	24.92	18.17	13.11	8.94	5.40		
45.0	112.89	72.23	47.08	32.96	23.51	17.78	12.21	8.27	5.12		
90.0	97.65	63.28	42.75	30.43	21.38	16.09	11.08	7.37	4.84		
135.0	112.11	71.78	46.69	32.85	23.74	17.21	11.98	8.10	4.73		
180.0	112.33	71.78	46.01	33.08	23.63	17.33	12.32	7.99	5.06		
225.0	125.72	78.08	48.60	32.63	24.19	17.94	12.77	8.89	5.57		
270.0	139.28	88.59	53.66	35.94	25.48	19.13	13.73	9.62	5.96		
315.0	125.16	77.91	50.01	34.43	24.47	17.94	12.99	8.83	5.57		
360.0	127.80	80.04	50.23	35.21	24.92	18.17	13.11	8.94	5.40		
C/γ(°)	90.0										
0.0	3.54										
45.0	3.54										
90.0	3.66										
135.0	3.54										
180.0	3.49										
225.0	3.88										
270.0	3.88										
315.0	3.83										
360.0	3.54										