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Nata

LumCAT: 1687-M	
Luminaire: 92.70.127.00	
Report No: NT2016031407	Voltage(V): 37.3800
Test No: GC2017081407	Current(A): 0.3000
LampCAT: CREE CXA1512	Power (W): 11.2100
Lamp flux(lm): 1330.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 47	Width(mm): 47
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1229.18
Efficiency(%): 92.42%
Lumens(lm)/Power(W): 109.65
Central intensity(cd): 3630.154
Maximum intensity(cd): 3630.154
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=24.4
[C90/270]Total=24.4
Field angle(10%Imax): [C0/180]Total=74.0
[C90/270]Total=74.0
Maximum s/h(1/2): C0_180=0.41 C90_270=0.41
Maximum s/h(1/4): C0_180=0.42 C90_270=0.42
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.96%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.269%

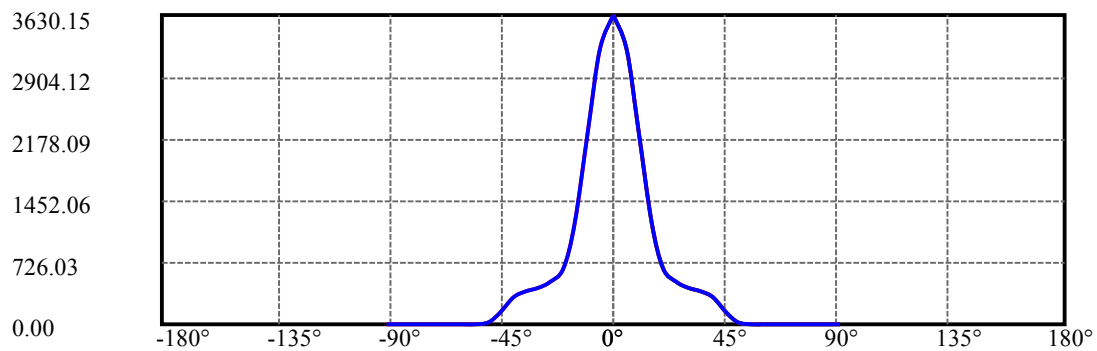
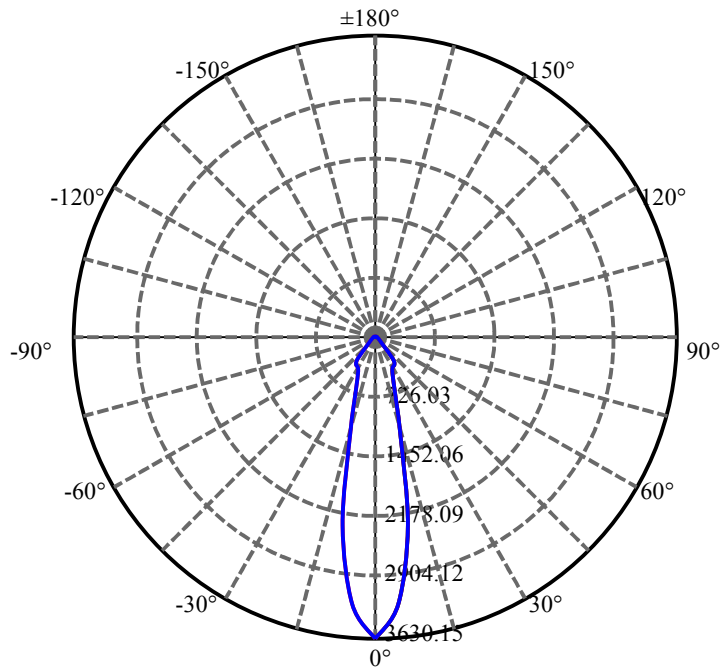
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3630.154	21.709	21.709	1.632%	1.766%
5.0	3218.402	153.754	175.463	11.560%	14.275%
10.0	2292.289	218.187	393.65	16.405%	32.025%
15.0	1203.375	170.721	564.371	12.836%	45.914%
20.0	654.637	122.727	687.098	9.228%	55.899%
25.0	486.381	112.672	799.77	8.472%	65.065%
30.0	430.110	117.880	917.65	8.863%	74.655%
35.0	392.852	123.512	1041.162	9.287%	84.704%
40.0	317.611	111.906	1153.067	8.414%	93.808%
45.0	130.573	50.609	1203.676	3.805%	97.925%
50.0	16.626	6.981	1210.657	.525%	98.493%
55.0	5.746	2.580	1213.237	.194%	98.703%
60.0	4.953	2.351	1215.588	.177%	98.894%
65.0	4.814	2.391	1217.98	.180%	99.089%
70.0	4.710	2.426	1220.406	.182%	99.286%
75.0	4.696	2.486	1222.892	.187%	99.488%
80.0	4.647	2.508	1225.4	.189%	99.692%
85.0	4.619	2.522	1227.923	.190%	99.898%
90.0	4.591	1.258	1229.181	.095%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	917.65	69.00%	74.66%
0-40	1153.07	86.70%	93.81%
0-60	1215.59	91.40%	98.89%
0-90	1227.92	92.33%	99.90%
0-120	1227.92	92.33%	99.90%
0-180	1229.18	92.42%	100.00%
60-90	14.69	1.10%	1.19%
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%
0-32.66	983.34	73.94%	80.00%

ZONAL LUMEN SUMMARY

0-10	393.65
10-20	293.45
20-30	230.55
30-40	235.42
40-50	57.59
50-60	4.93
60-70	4.82
70-80	4.99
80-90	2.52
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:

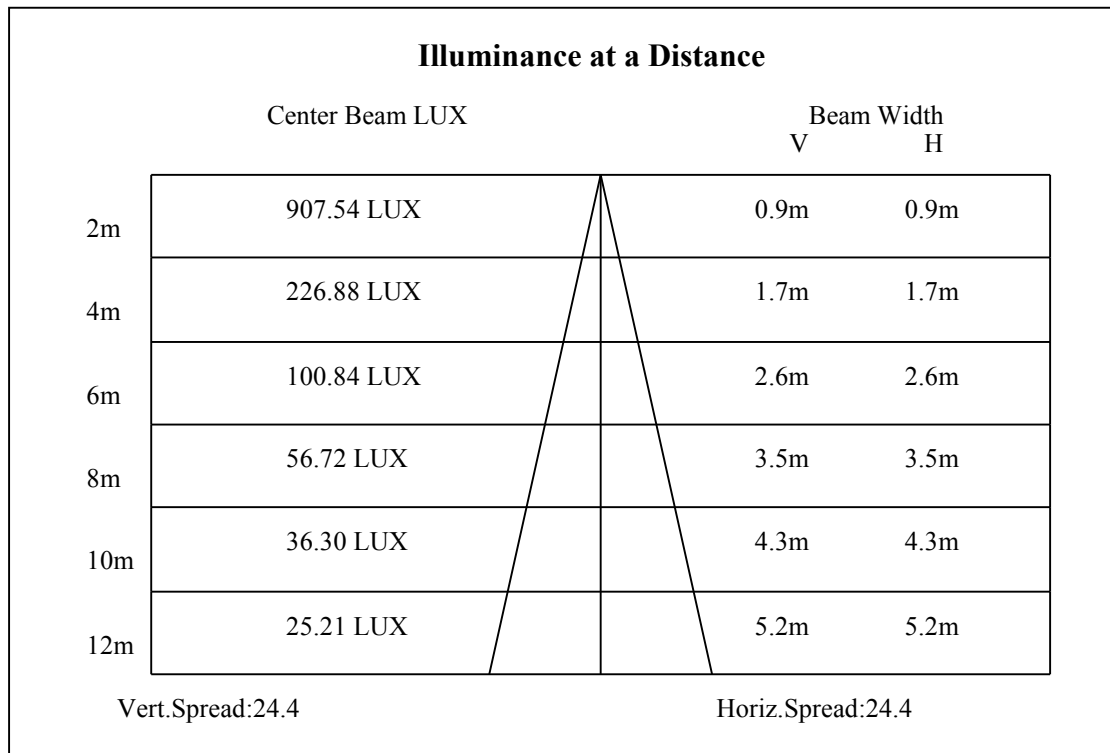
C90/C270:

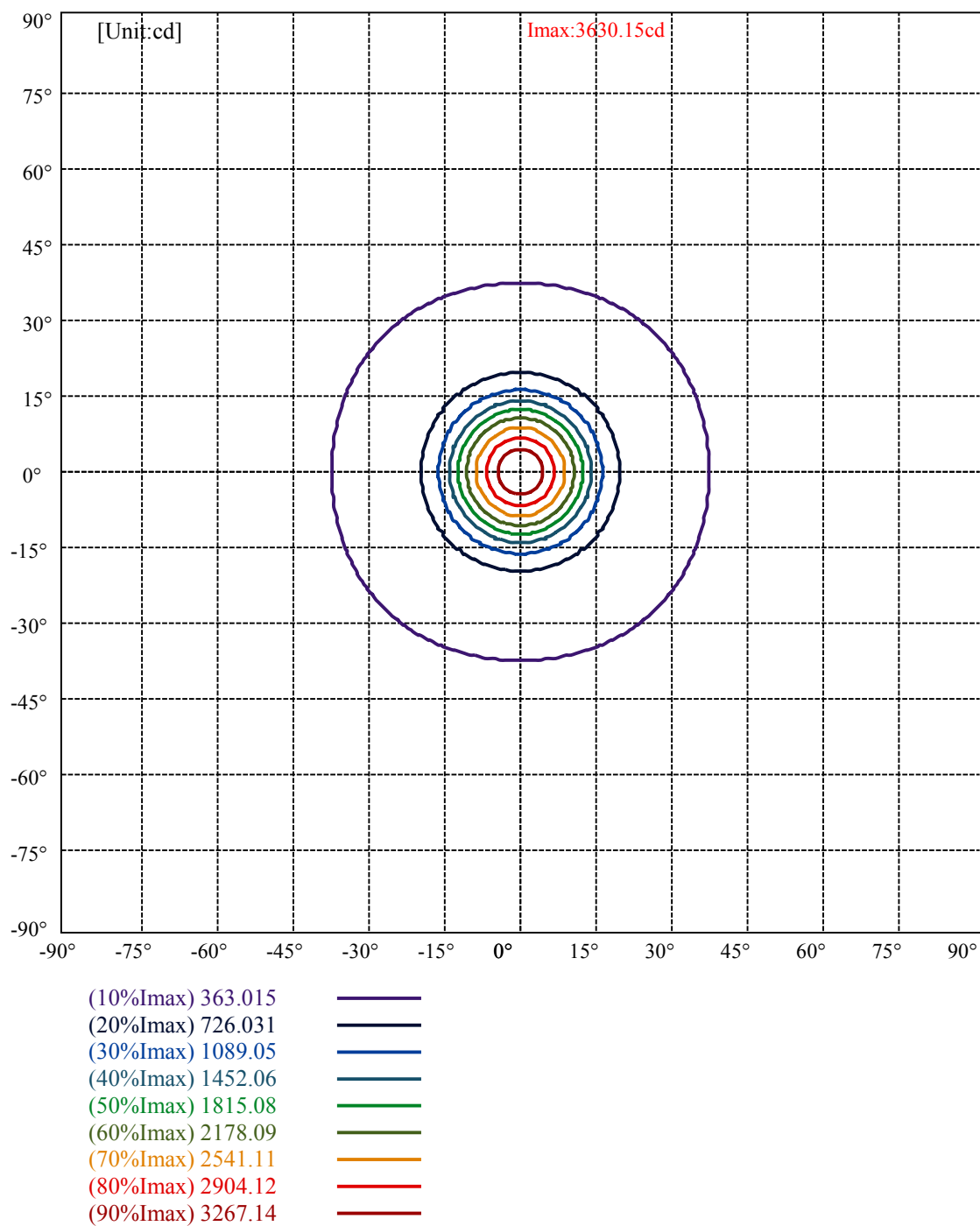
Field angle(10%Imax):C0/180Left:37.0 Right:37.0

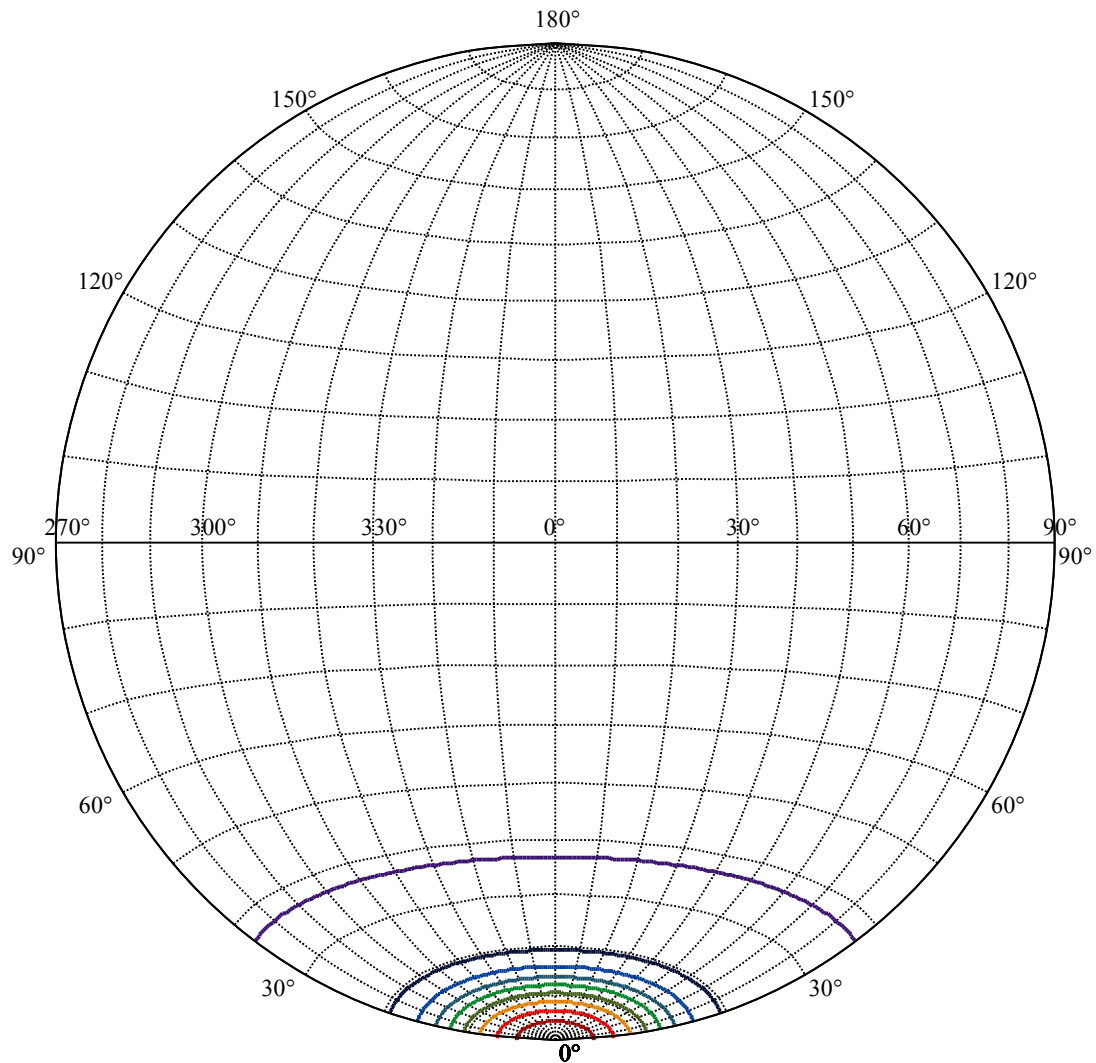
:C90/270Left:37.0 Right:37.0

Beam Angle(50%Imax):C0/180Left:12.2 Right:12.2

:C90/270Left:12.2 Right:12.2







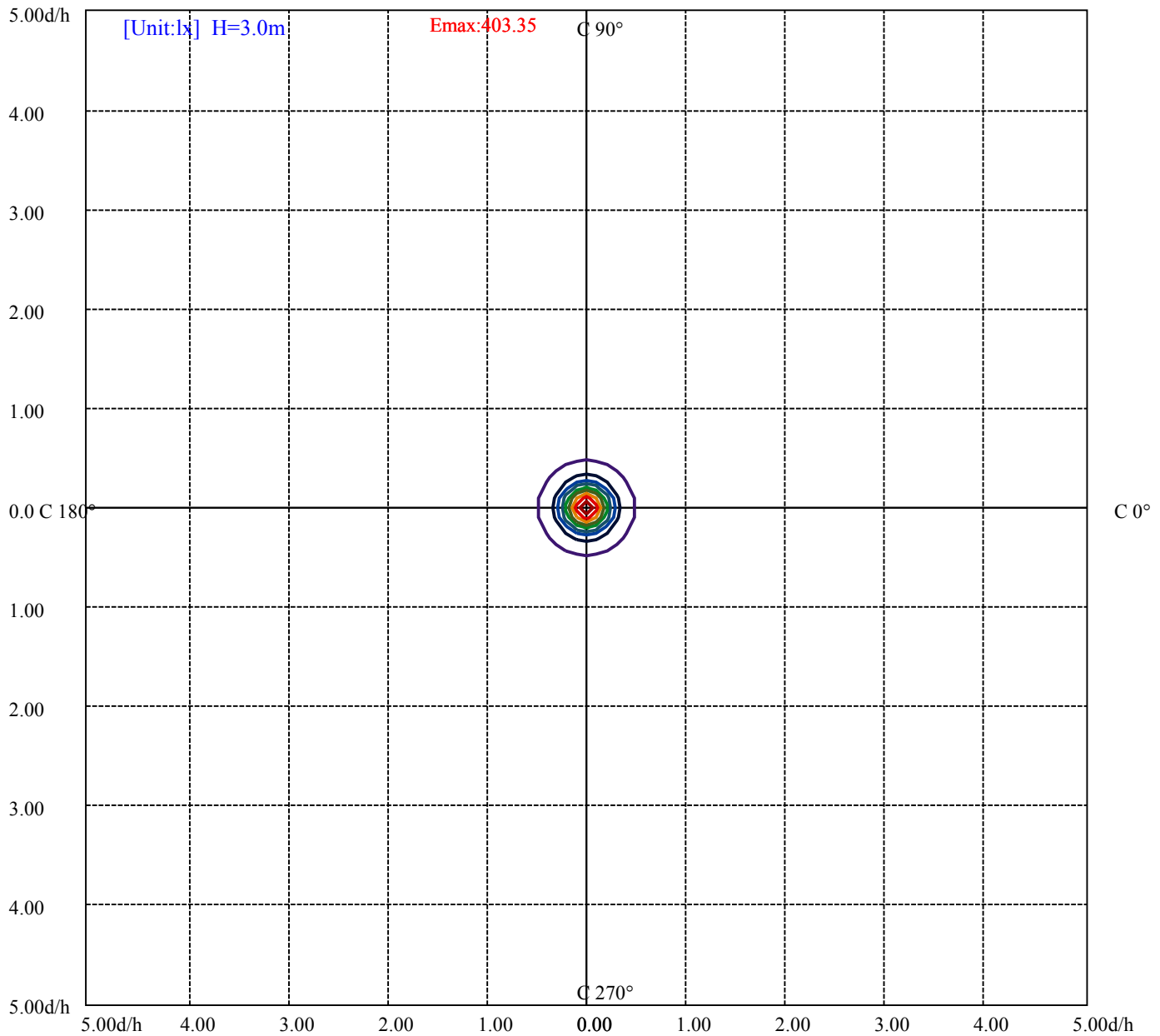
House

[Unit:cd]

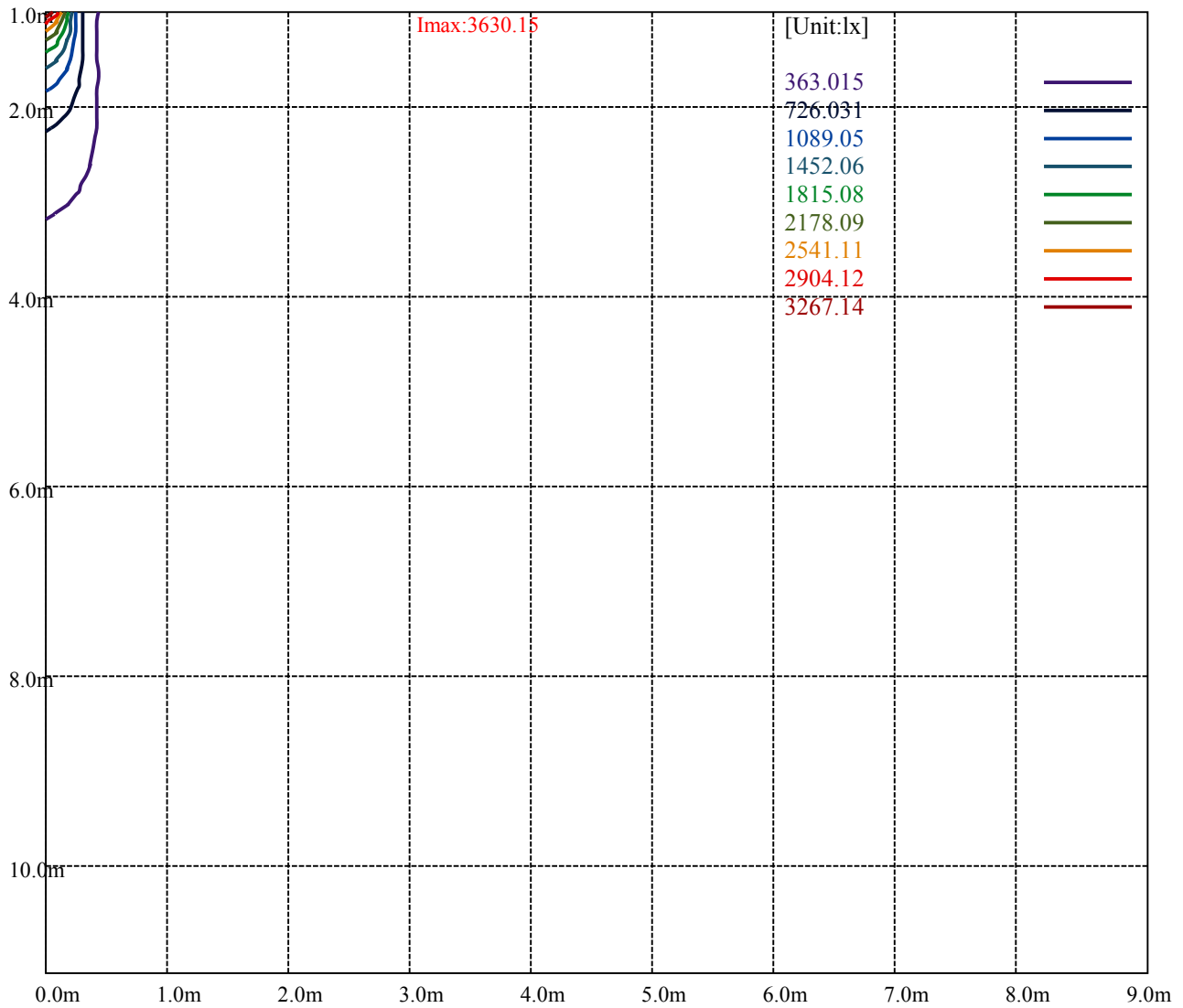
Road

Imax:3630.15

(10%Imax)	363.015	—
(20%Imax)	726.031	—
(30%Imax)	1089.05	—
(40%Imax)	1452.06	—
(50%Imax)	1815.08	—
(60%Imax)	2178.09	—
(70%Imax)	2541.11	—
(80%Imax)	2904.12	—
(90%Imax)	3267.14	—



(10%Emax)	40.33489	—
(20%Emax)	80.66978	—
(30%Emax)	121.0044	—
(40%Emax)	161.34	—
(50%Emax)	201.6744	—
(60%Emax)	242.0089	—
(70%Emax)	282.3445	—
(80%Emax)	322.6789	—
(90%Emax)	363.0144	—



Luminance Table

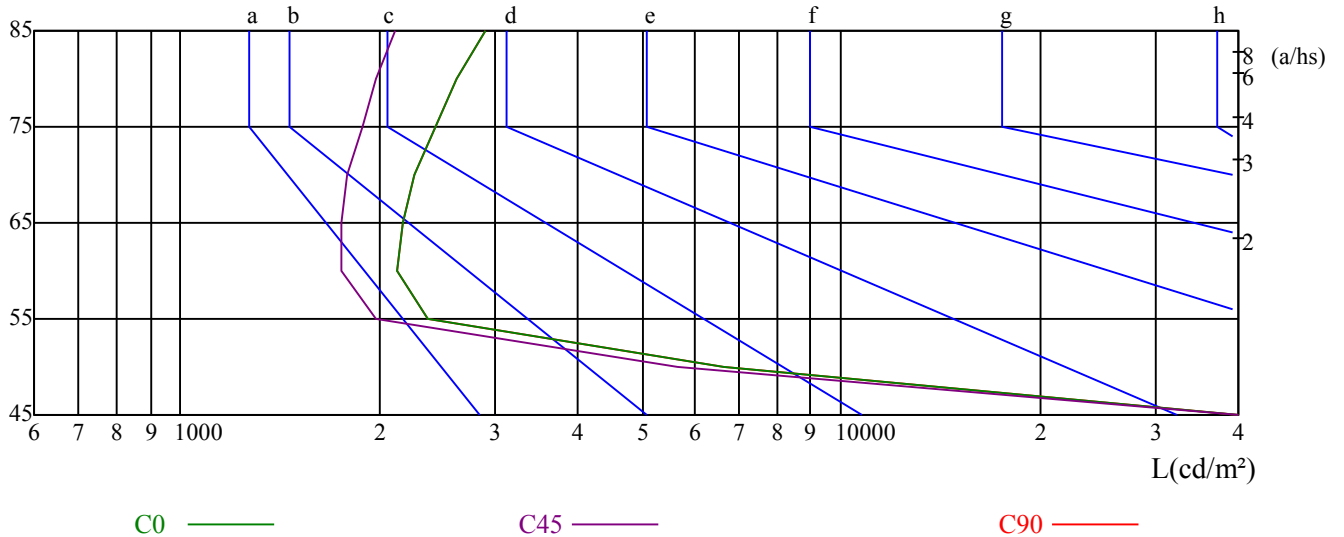
γ	45	50	55	60	65	70	75	80	85
C0	51024	6650	2372	2130	2177	2264	2428	2622	2892
C45	43934	5641	1981	1749	1756	1791	1880	1980	2120
C90	51024	6650	2372	2130	2177	2264	2428	2622	2892

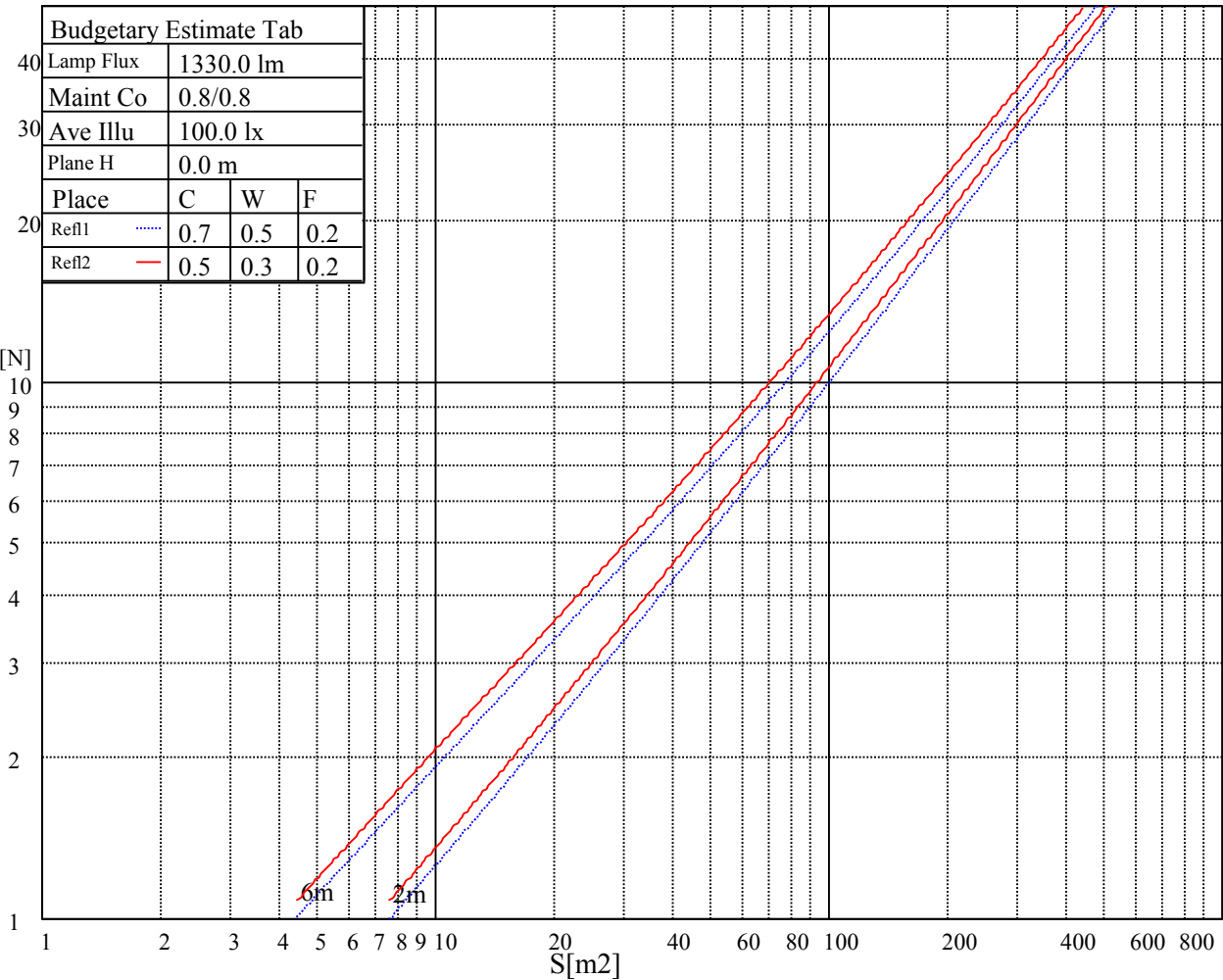
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5156	5156	5156	8213	8213	8213	23992	23992	23992

Glare Table

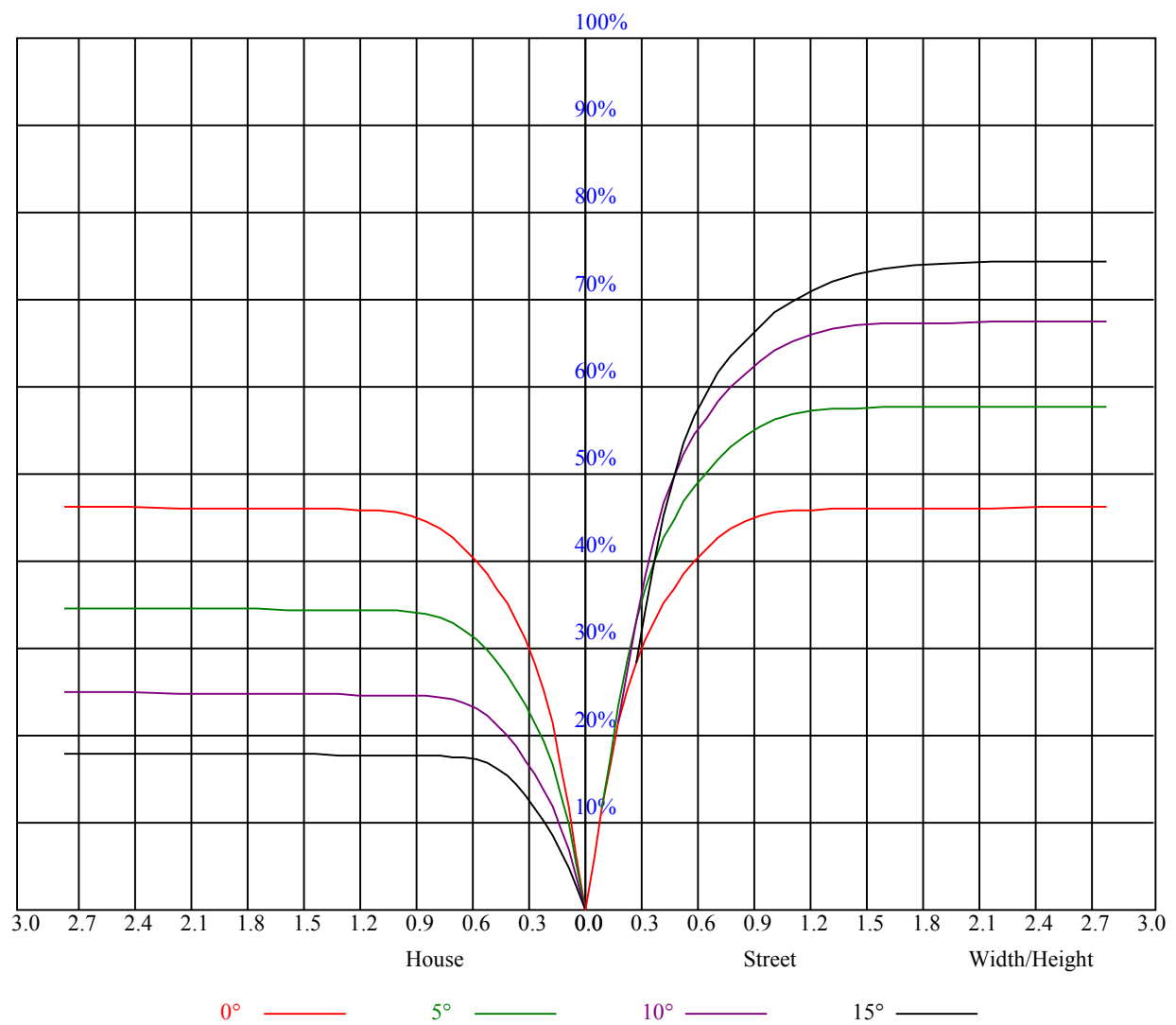
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	1.12	1.12	1.12	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.03	1.00	0.98	1.01	0.98	0.96	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.86
2	0.96	0.93	0.89	0.95	0.91	0.88	0.92	0.89	0.86	0.89	0.87	0.85	0.86	0.85	0.83	0.81
3	0.91	0.86	0.83	0.90	0.86	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	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	0.75	0.80	0.77	0.74	0.73
5	0.82	0.77	0.73	0.81	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.69
6	0.78	0.73	0.69	0.77	0.72	0.69	0.76	0.72	0.68	0.75	0.71	0.68	0.73	0.70	0.68	0.66
7	0.74	0.69	0.66	0.74	0.69	0.66	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.63
8	0.71	0.66	0.63	0.71	0.66	0.63	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.61
9	0.68	0.63	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.66	0.62	0.59	0.58
10	0.66	0.61	0.58	0.65	0.61	0.58	0.65	0.60	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.56



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	3662.99	3227.24	2385.23	1295.01	656.13	495.86	439.65	402.92	327.23		
45.0	3620.14	2910.02	1964.50	959.43	562.08	469.14	421.28	386.22	281.60		
90.0	3588.42	2894.44	1813.69	880.80	553.23	460.46	412.99	379.99	250.15		
135.0	3649.08	3203.31	2264.46	1213.20	626.64	473.04	422.40	384.55	311.65		
180.0	3662.99	3238.37	2280.60	1068.68	619.18	481.05	423.62	388.39	306.92		
225.0	3620.14	3496.03	2612.29	1541.55	757.20	500.31	439.20	399.86	363.35		
270.0	3588.42	3502.16	2688.53	1569.93	800.83	519.23	447.44	406.81	372.87		
315.0	3649.08	3275.65	2329.02	1098.40	661.81	491.96	434.31	394.07	327.12		
360.0	3662.99	3227.24	2385.23	1295.01	656.13	495.86	439.65	402.92	327.23		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	123.38	13.30	5.23	4.95	4.73	4.73	4.73	4.62	4.62		
45.0	57.43	8.90	5.18	4.90	4.79	4.67	4.67	4.67	4.62		
90.0	51.48	9.24	5.12	4.84	4.79	4.73	4.73	4.67	4.62		
135.0	113.42	13.02	5.18	4.90	4.84	4.67	4.67	4.62	4.62		
180.0	109.58	12.91	5.51	4.90	4.79	4.67	4.67	4.62	4.56		
225.0	189.27	23.82	6.90	5.06	4.90	4.73	4.67	4.62	4.56		
270.0	281.04	38.07	6.62	5.12	4.90	4.79	4.73	4.73	4.73		
315.0	118.98	13.75	6.23	4.95	4.79	4.67	4.67	4.62	4.62		
360.0	123.38	13.30	5.23	4.95	4.73	4.73	4.73	4.62	4.62		
C/γ(°)	90.0										
0.0	4.62										
45.0	4.56										
90.0	4.56										
135.0	4.62										
180.0	4.62										
225.0	4.56										
270.0	4.62										
315.0	4.56										
360.0	4.62										