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Nata

LumCAT: 3-1940-M
Luminaire: BJB 47.319.2011
Report No: NATA0100
Test No: GC2019112009
LampCAT: LUMILEDS LUXEON CoB 1204 LES13
Lamp flux(lm): 1930.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 35.9100
Current(A): 0.3970
Power (W): 14.2500
PF: 1.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1739.34
Efficiency(%): 90.12%
Lumens(lm)/Power(W): 122.06
Central intensity(cd): 4033.688
Maximum intensity(cd): 4033.688
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=34.8
 [C90/270]Total=34.8
Field angle(10%Imax): [C0/180]Total=66.8
 [C90/270]Total=66.8
Maximum s/h(1/2): C0_180=0.57 C90_270=0.57
Maximum s/h(1/4): C0_180=0.59 C90_270=0.59
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.12%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.488%

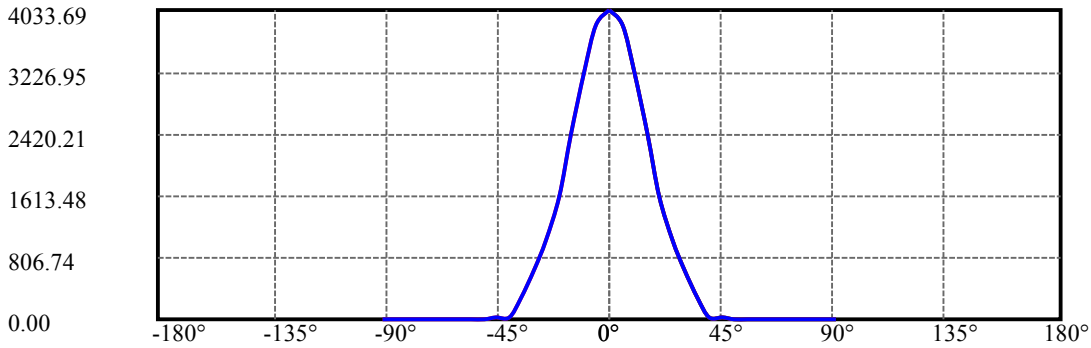
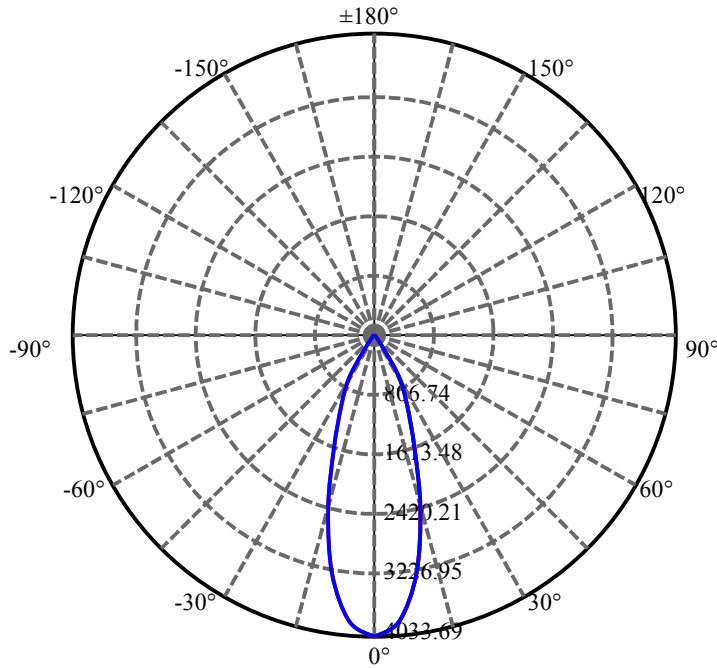
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4033.688	0.000	0	.000%	.000%
5.0	3841.523	94.146	94.146	4.878%	5.413%
10.0	3244.008	253.472	347.618	13.133%	19.986%
15.0	2405.602	335.131	682.749	17.364%	39.253%
20.0	1603.688	330.422	1013.17	17.120%	58.250%
25.0	1016.346	274.793	1287.964	14.238%	74.049%
30.0	663.237	212.553	1500.516	11.013%	86.269%
35.0	278.529	138.682	1639.198	7.186%	94.243%
40.0	29.538	51.399	1690.596	2.663%	97.198%
45.0	14.583	8.169	1698.766	.423%	97.667%
50.0	11.180	5.206	1703.972	.270%	97.967%
55.0	9.984	4.602	1708.573	.238%	98.231%
60.0	9.323	4.463	1713.036	.231%	98.488%
65.0	8.838	4.415	1717.451	.229%	98.742%
70.0	8.529	4.397	1721.849	.228%	98.994%
75.0	8.290	4.396	1726.245	.228%	99.247%
80.0	8.107	4.387	1730.632	.227%	99.499%
85.0	7.959	4.366	1734.998	.226%	99.750%
90.0	7.896	4.341	1739.339	.225%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1500.52	77.75%	86.27%
0-40	1690.60	87.60%	97.20%
0-60	1713.04	88.76%	98.49%
0-90	1735.00	89.90%	99.75%
0-120	1735.00	89.90%	99.75%
0-180	1739.34	90.12%	100.00%
60-90	26.42	1.37%	1.52%
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%
0-27.43	1391.47	72.10%	80.00%

ZONAL LUMEN SUMMARY

0-10	347.62
10-20	665.55
20-30	487.35
30-40	190.08
40-50	13.38
50-60	9.06
60-70	8.81
70-80	8.78
80-90	4.37
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: —————

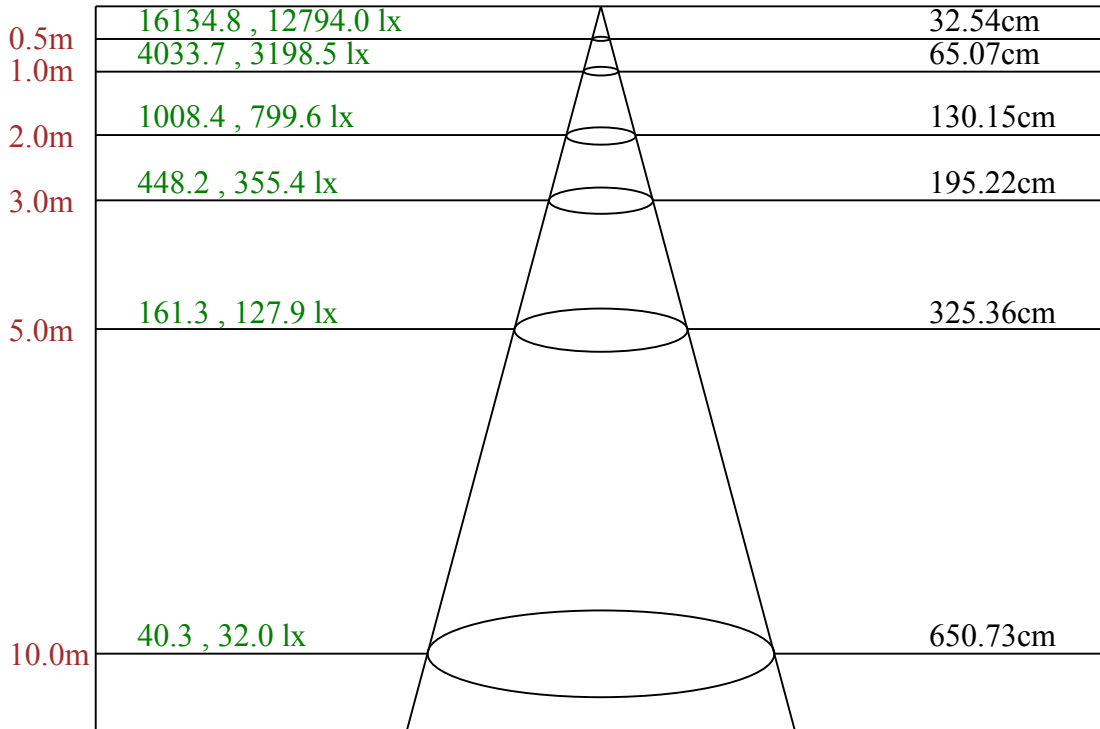
C90/C270: —————

Field angle(10%Imax):C0/180Left:33.4 Right:33.4

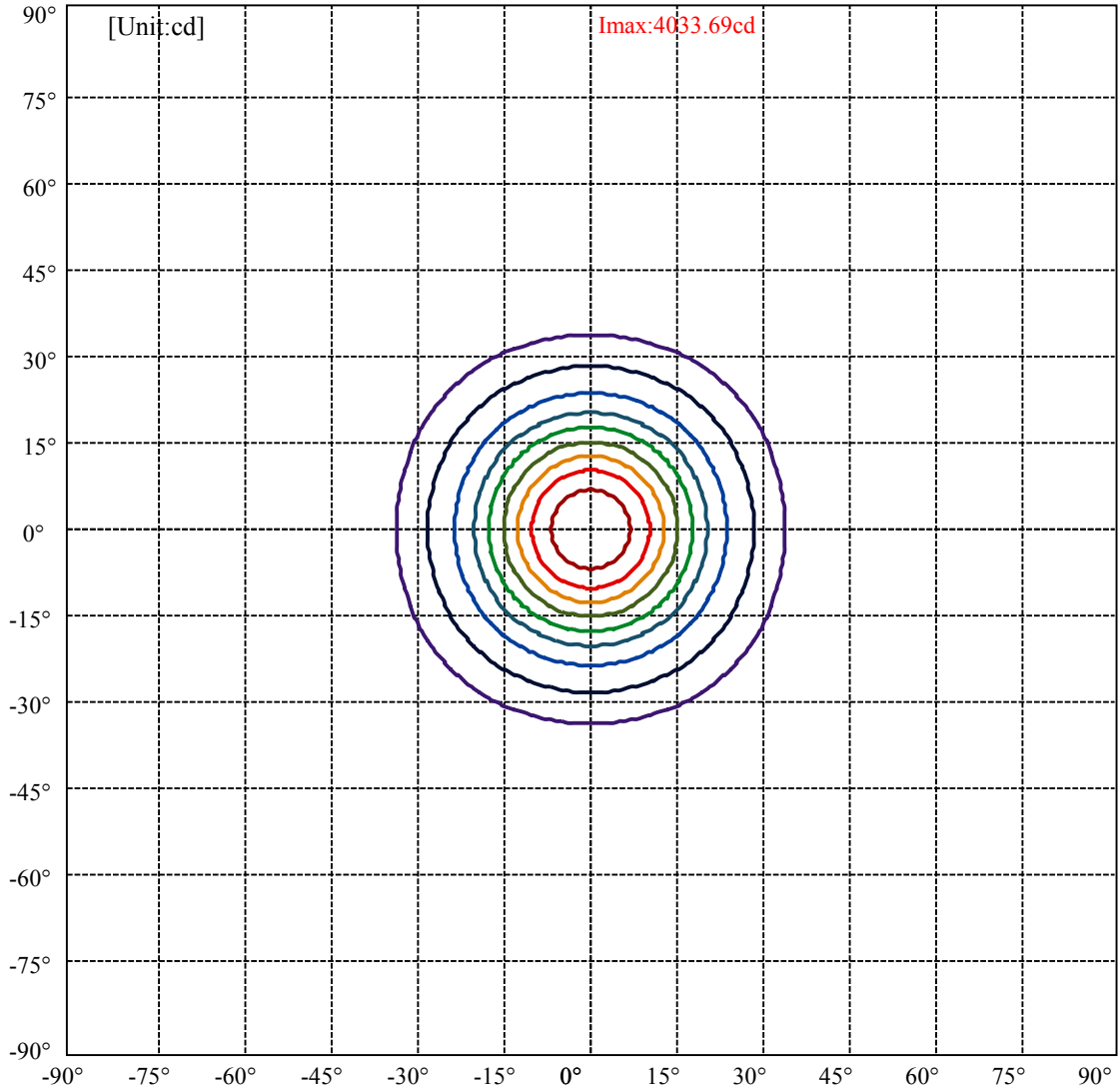
:C90/270Left:33.4 Right:33.4

Beam Angle(50%Imax):C0/180Left:17.4 Right:17.4

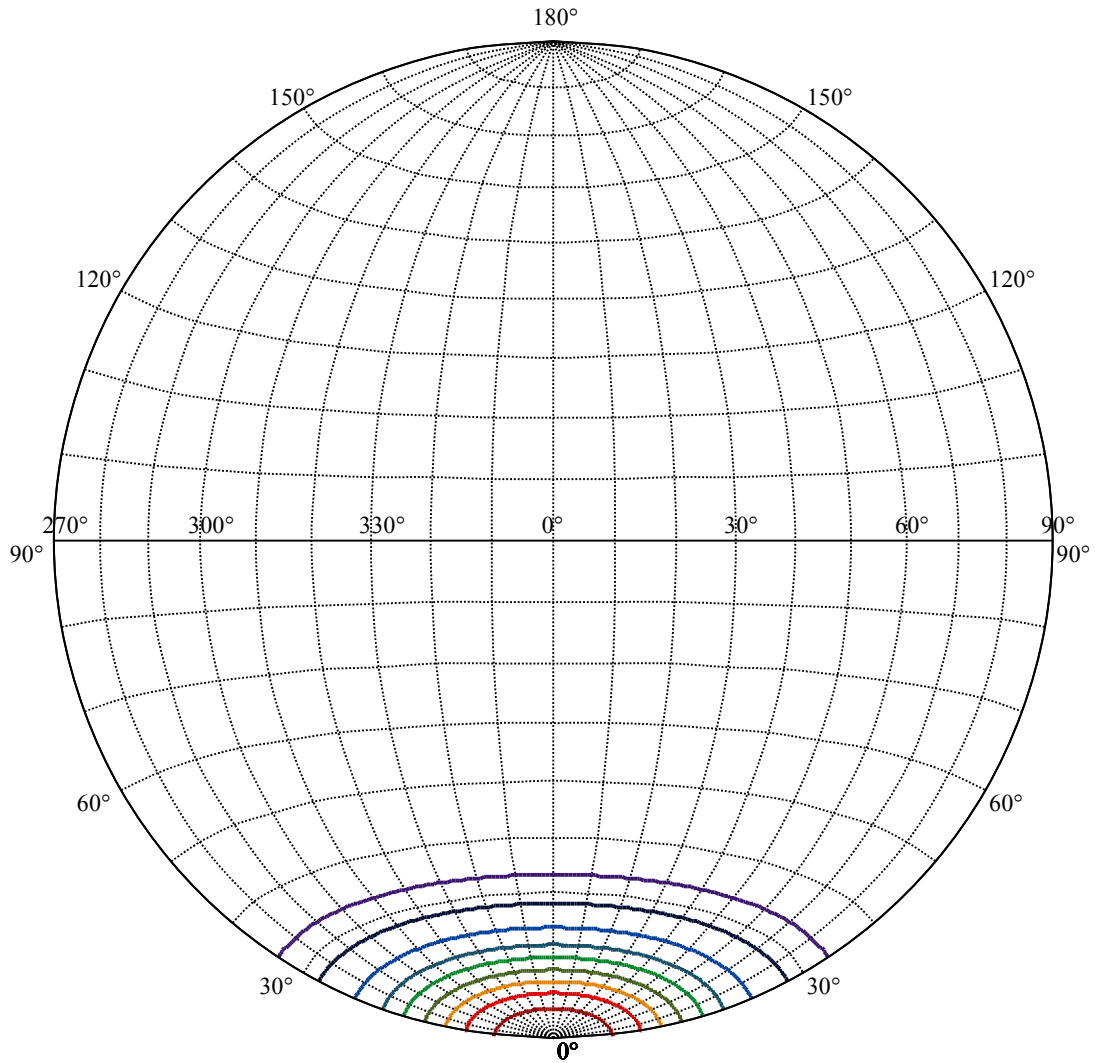
:C90/270Left:17.4 Right:17.4



Max , Ave Beam angle of C0 plane 36.05



(10%Imax) 403.369	—
(20%Imax) 806.738	—
(30%Imax) 1210.11	—
(40%Imax) 1613.48	—
(50%Imax) 2016.84	—
(60%Imax) 2420.21	—
(70%Imax) 2823.58	—
(80%Imax) 3226.95	—
(90%Imax) 3630.32	—



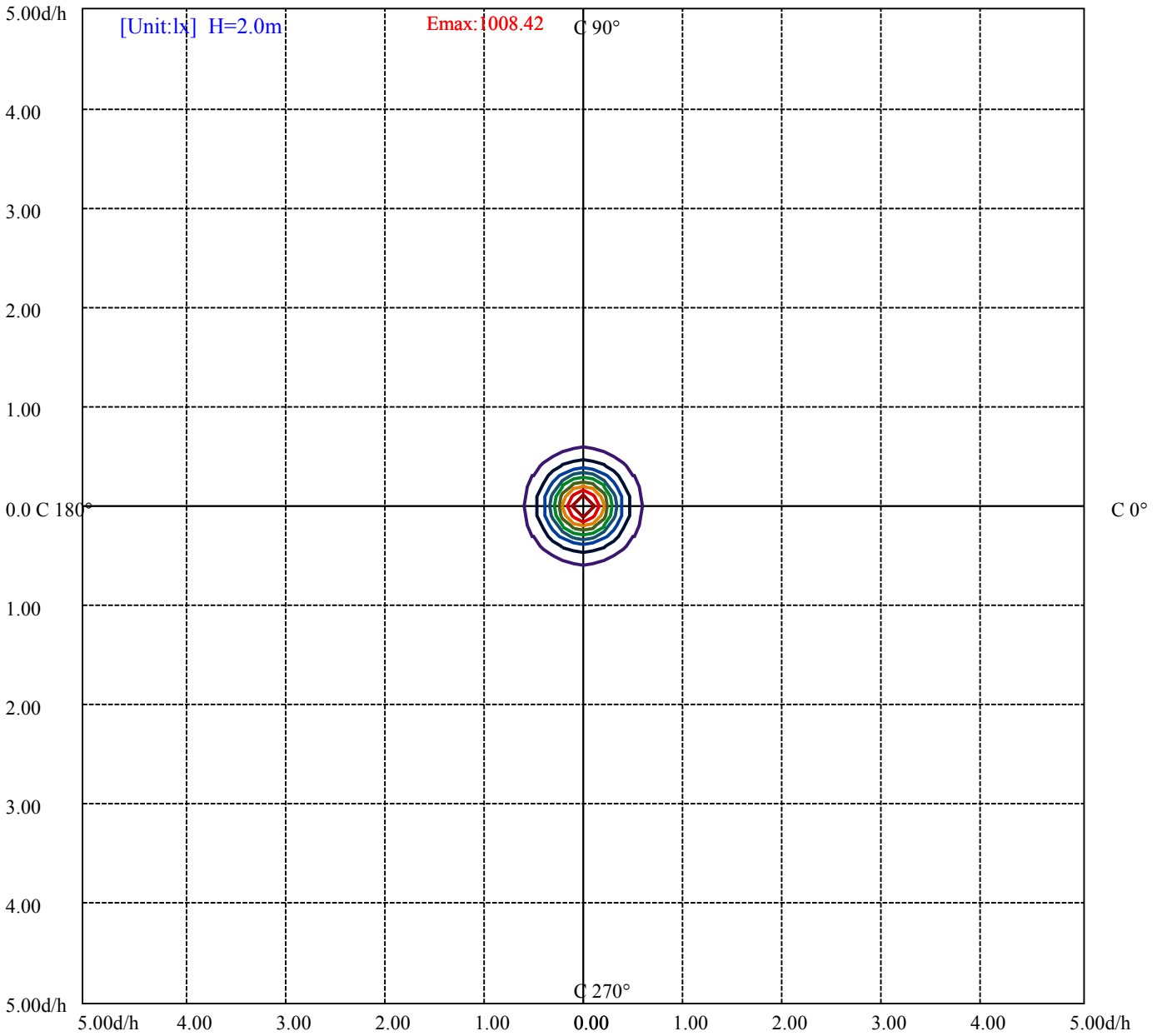
House

[Unit:cd]

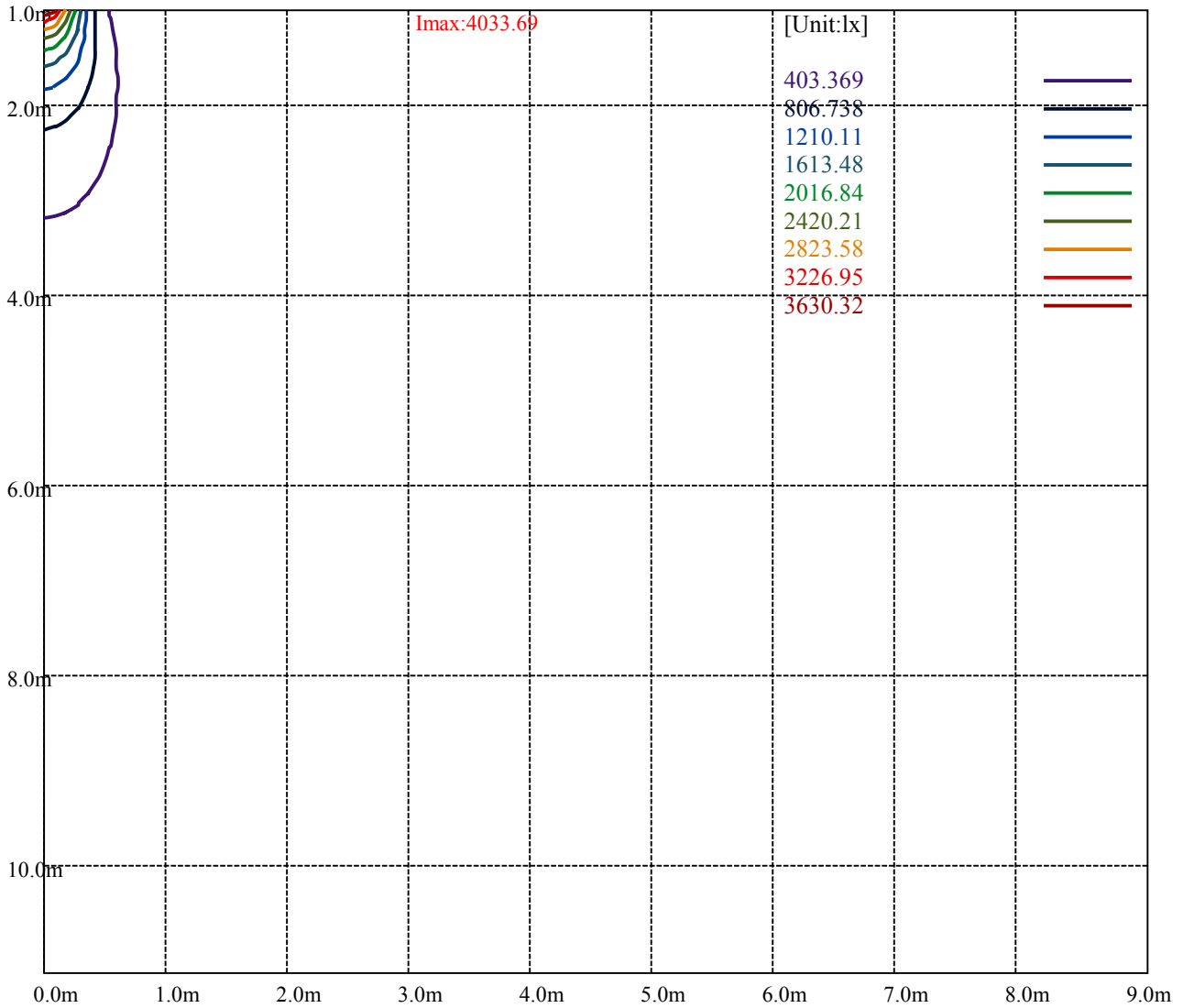
Road

I_{max}:4033.69

(10%I _{max}) 403.369	—
(20%I _{max}) 806.738	—
(30%I _{max}) 1210.11	—
(40%I _{max}) 1613.48	—
(50%I _{max}) 2016.84	—
(60%I _{max}) 2420.21	—
(70%I _{max}) 2823.58	—
(80%I _{max}) 3226.95	—
(90%I _{max}) 3630.32	—



- (10%Emax) 100.842
- (20%Emax) 201.684
- (30%Emax) 302.525
- (40%Emax) 403.3675
- (50%Emax) 504.21
- (60%Emax) 605.0525
- (70%Emax) 705.895
- (80%Emax) 806.7375
- (90%Emax) 907.5775



Luminance Table

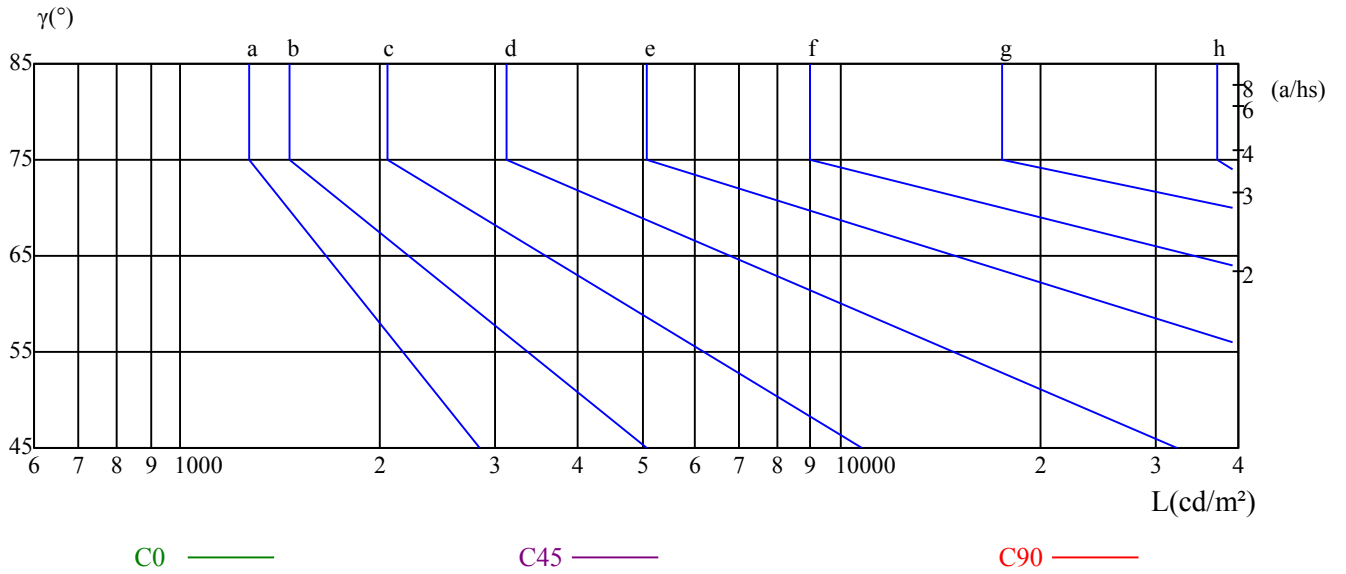
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

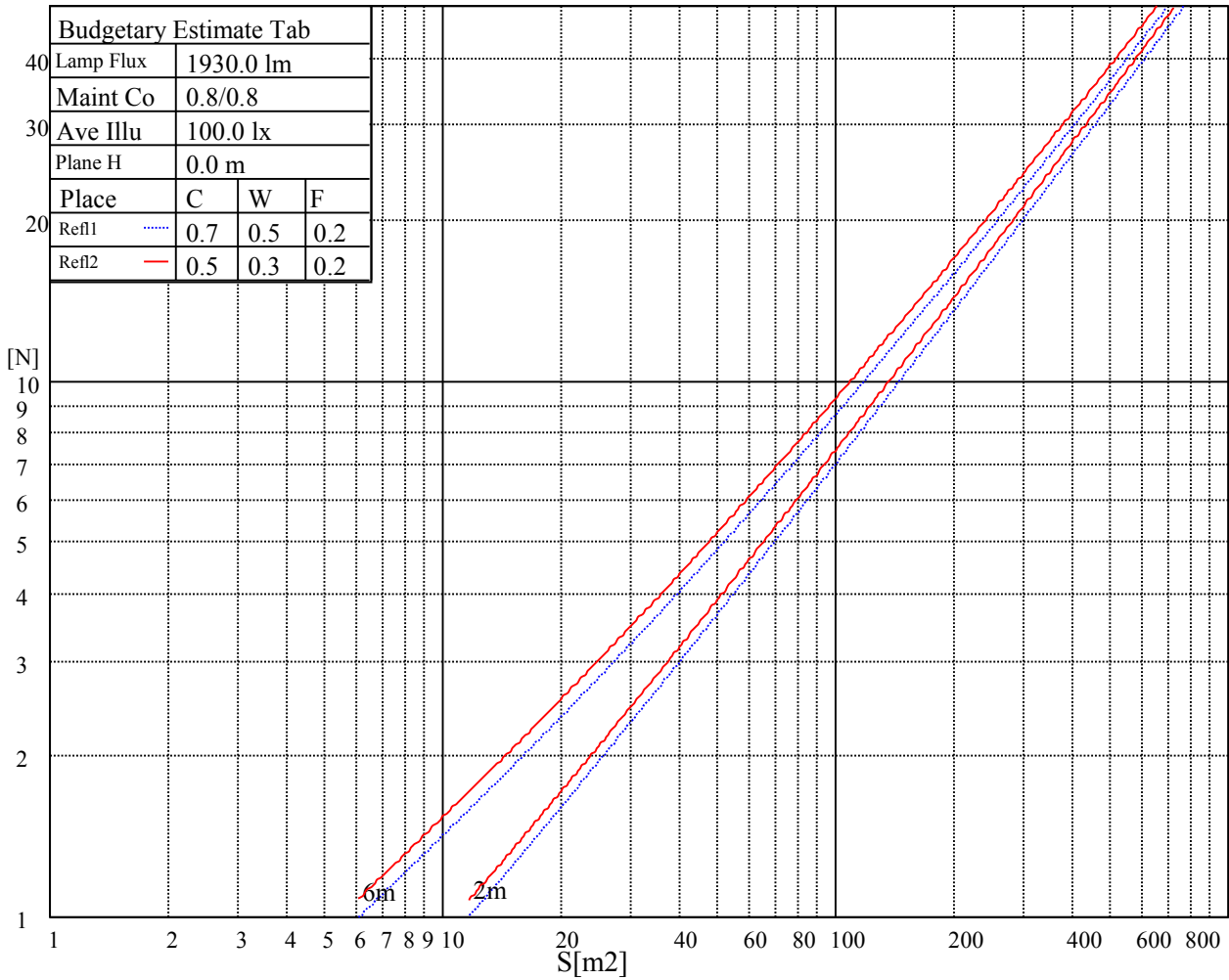
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

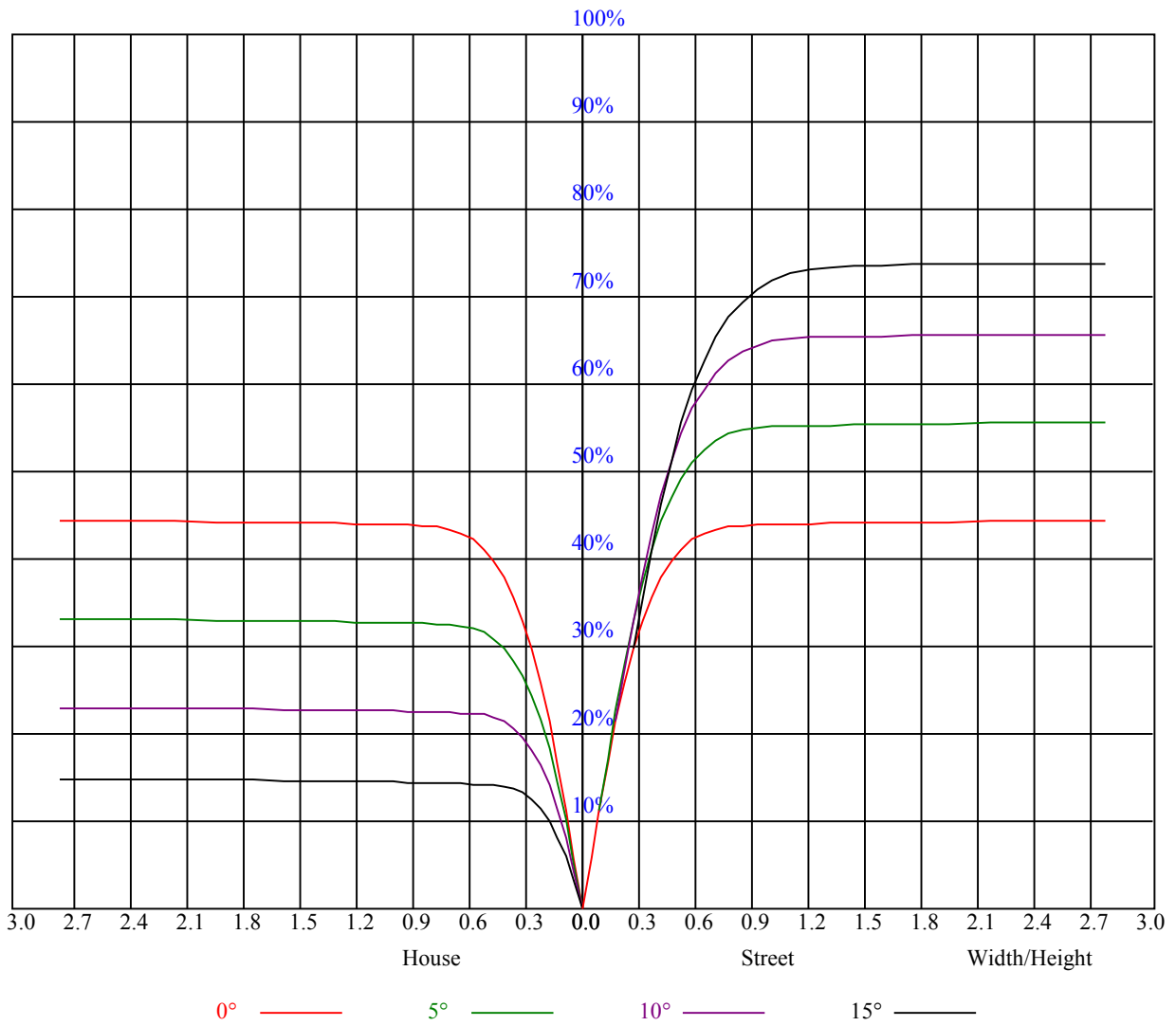
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.98	0.97	0.99	0.97	0.95	0.95	0.93	0.92	0.92	0.90	0.89	0.88	0.88	0.87	0.85
2	0.95	0.91	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.89	0.85	0.82	0.88	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.85	0.80	0.77	0.84	0.80	0.77	0.82	0.78	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.73
5	0.81	0.76	0.73	0.80	0.76	0.72	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.69
6	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
7	0.73	0.69	0.65	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.63
8	0.70	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.60
9	0.67	0.63	0.60	0.67	0.62	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.65	0.61	0.59	0.58
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.56



Nata 3-1940-M

Intensity data(cd)

C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	4032.56	3971.25	3557.81	2747.25	1840.50	1176.19	759.38	418.50	59.40
45.0	4027.50	3885.75	3399.19	2555.44	1730.81	1133.44	717.75	345.38	33.69
90.0	4028.06	3755.81	3105.56	2291.06	1521.56	960.13	627.47	223.26	22.89
135.0	4046.63	3811.50	3169.13	2374.31	1541.25	987.19	664.88	291.38	24.53
180.0	4032.56	3672.00	2972.81	2073.94	1369.13	883.69	566.83	144.39	20.98
225.0	4027.50	3780.00	3066.19	2212.31	1459.69	885.38	616.73	194.51	22.44
270.0	4028.06	3934.69	3354.19	2543.63	1701.00	1067.06	682.31	321.19	27.00
315.0	4046.63	3921.19	3327.19	2446.88	1665.56	1037.70	670.56	289.63	25.37
360.0	4032.56	3971.25	3557.81	2747.25	1840.50	1176.19	759.38	418.50	59.40
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	17.72	12.04	10.46	9.62	9.06	8.66	8.38	8.21	8.04
45.0	15.41	11.36	10.07	9.39	8.89	8.55	8.27	8.16	7.93
90.0	13.33	10.86	9.79	9.17	8.72	8.44	8.21	8.04	7.93
135.0	14.01	11.08	9.90	9.28	8.83	8.55	8.27	8.10	7.93
180.0	12.94	10.91	9.79	9.28	8.83	8.55	8.27	8.10	7.99
225.0	13.44	10.80	9.73	9.17	8.72	8.44	8.21	8.04	7.93
270.0	15.30	11.19	10.07	9.34	8.83	8.49	8.27	8.04	7.93
315.0	14.51	11.19	10.07	9.34	8.83	8.55	8.44	8.16	7.99
360.0	17.72	12.04	10.46	9.62	9.06	8.66	8.38	8.21	8.04
C/ γ (°)	90.0								
0.0	7.93								
45.0	7.88								
90.0	7.93								
135.0	7.88								
180.0	7.93								
225.0	7.88								
270.0	7.88								
315.0	7.88								
360.0	7.93								