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Nata

LumCAT: 3-1944-E
Luminaire: BJB 47.319.2011
Report No: NATA0100 Voltage(V): 35.9800
Test No: GC2019112012 Current(A): 0.3970
LampCAT: LUMILEDS LUXEON CoB 1204 LES13 Power (W): 14.2800
Lamp flux(lm): 1930.0 PF: 1.0000
Number of Lamps: 1 Ballast type: DC
Length(mm): 0 Width(mm): 0
Phm Type: C Height(mm): 0

Photometric Results

Lumens(lm): 1731.16
Efficiency(%): 89.70%
Lumens(lm)/Power(W): 121.23
Central intensity(cd): 3639.797
Maximum intensity(cd): 3681.070
Angle of maximum intensity: C=0.0 γ =5.0
Beam Angle(50%Imax): [C0/180]Total=37.3
[C90/270]Total=37.3
Field angle(10%Imax): [C0/180]Total=68.5
[C90/270]Total=68.5
Maximum s/h(1/2): C0_180=0.64 C90_270=0.64
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(%): 89.70%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.471%

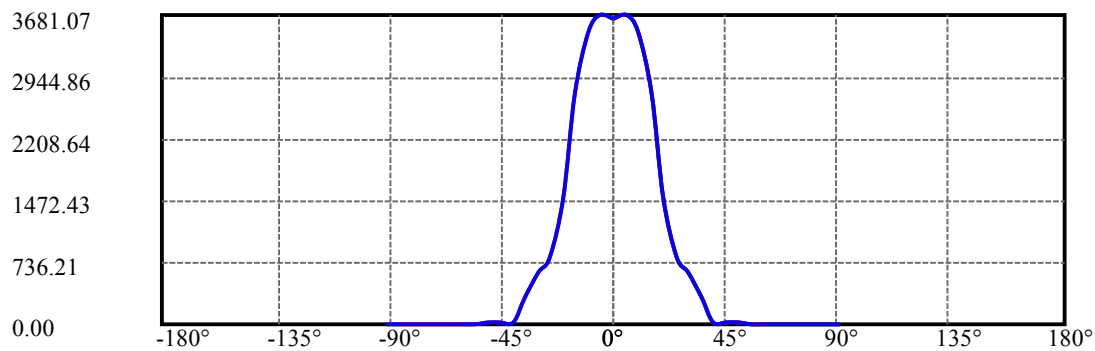
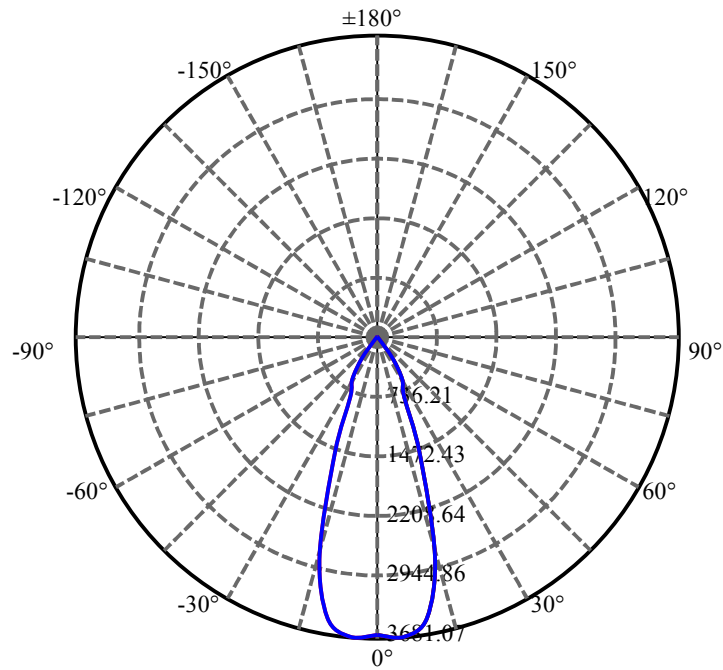
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3639.797	0.000	0	.000%	.000%
5.0	3681.070	87.519	87.519	4.535%	5.055%
10.0	3478.008	256.103	343.622	13.270%	19.849%
15.0	2751.820	369.549	713.171	19.148%	41.196%
20.0	1503.070	350.663	1063.834	18.169%	61.452%
25.0	804.340	242.005	1305.838	12.539%	75.431%
30.0	607.261	178.639	1484.478	9.256%	85.750%
35.0	324.267	137.174	1621.652	7.107%	93.674%
40.0	31.830	59.412	1681.064	3.078%	97.106%
45.0	14.738	8.622	1689.686	.447%	97.604%
50.0	12.023	5.407	1695.094	.280%	97.916%
55.0	10.589	4.917	1700.01	.255%	98.200%
60.0	9.682	4.686	1704.696	.243%	98.471%
65.0	9.028	4.548	1709.245	.236%	98.734%
70.0	8.578	4.458	1713.703	.231%	98.991%
75.0	8.276	4.405	1718.108	.228%	99.246%
80.0	8.072	4.374	1722.482	.227%	99.498%
85.0	7.945	4.352	1726.834	.226%	99.750%
90.0	7.868	4.330	1731.164	.224%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1484.48	76.92%	85.75%
0-40	1681.06	87.10%	97.11%
0-60	1704.70	88.33%	98.47%
0-90	1726.83	89.47%	99.75%
0-120	1726.83	89.47%	99.75%
0-180	1731.16	89.70%	100.00%
60-90	26.82	1.39%	1.55%
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%
0-27.21	1384.93	71.76%	80.00%

ZONAL LUMEN SUMMARY

0-10	343.62
10-20	720.21
20-30	420.64
30-40	196.59
40-50	14.03
50-60	9.60
60-70	9.01
70-80	8.78
80-90	4.35
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: —————

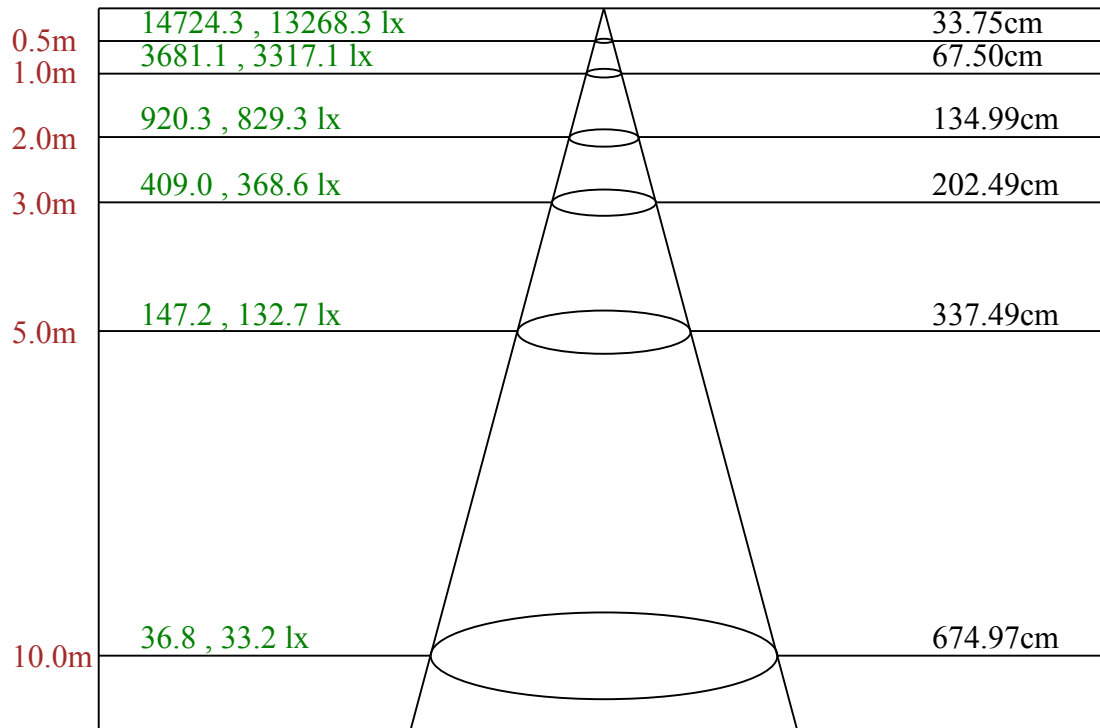
C90/C270: —————

Field angle(10%Imax):C0/180Left:39.2 Right:29.2

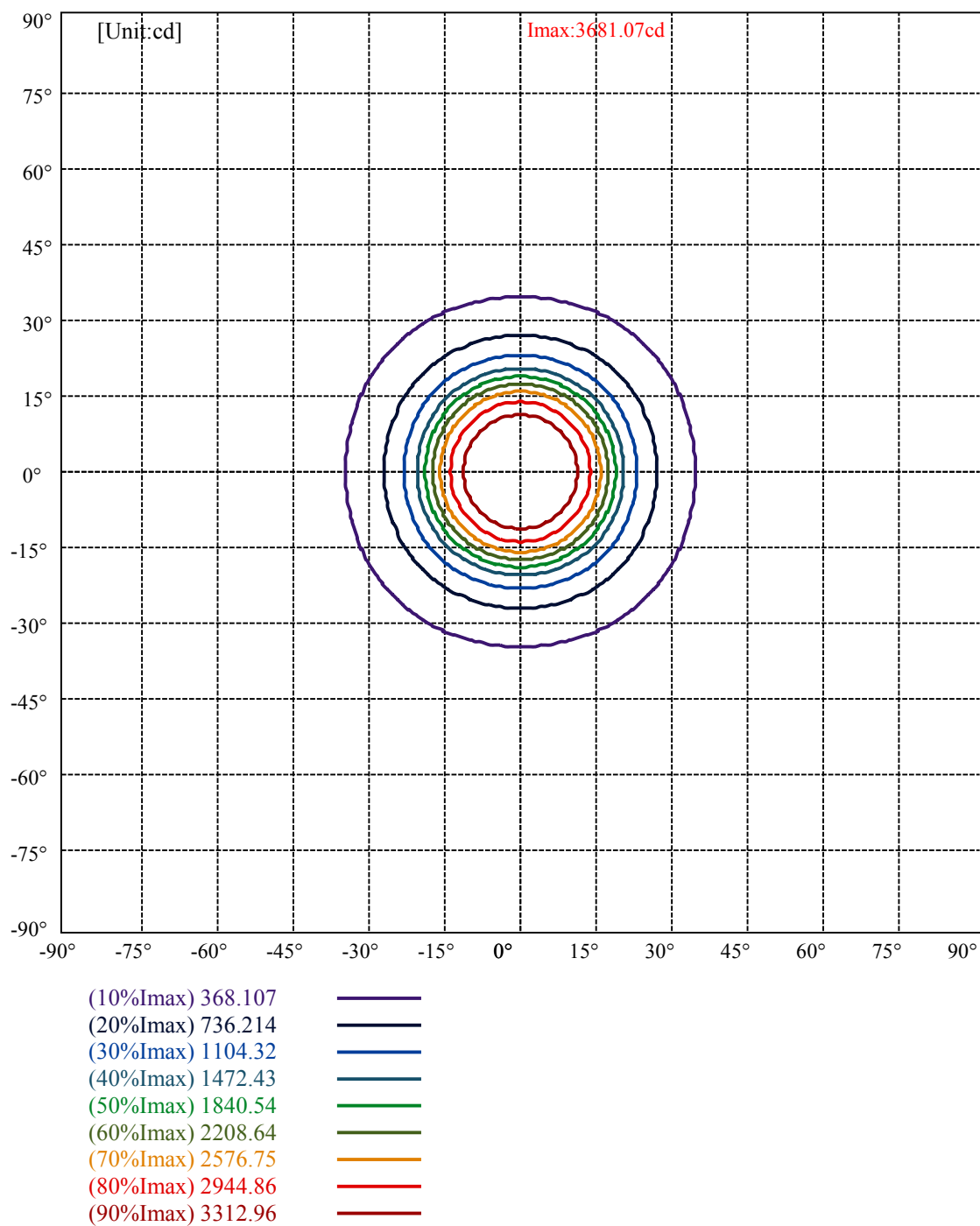
:C90/270Left:39.2 Right:29.2

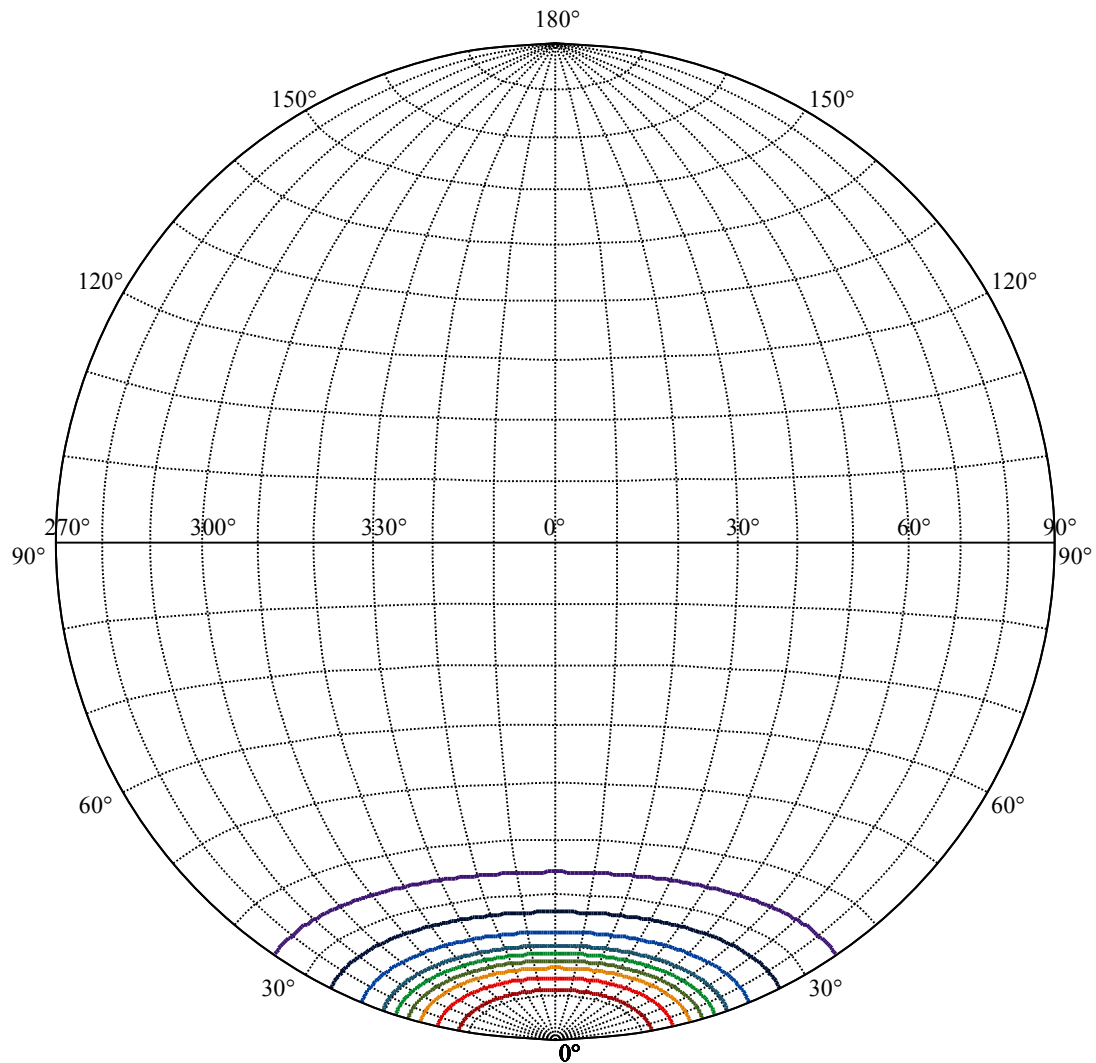
Beam Angle(50%Imax):C0/180Left:23.6 Right:13.6

:C90/270Left:23.6 Right:13.6



Max , Ave Beam angle of C0 plane 37.30





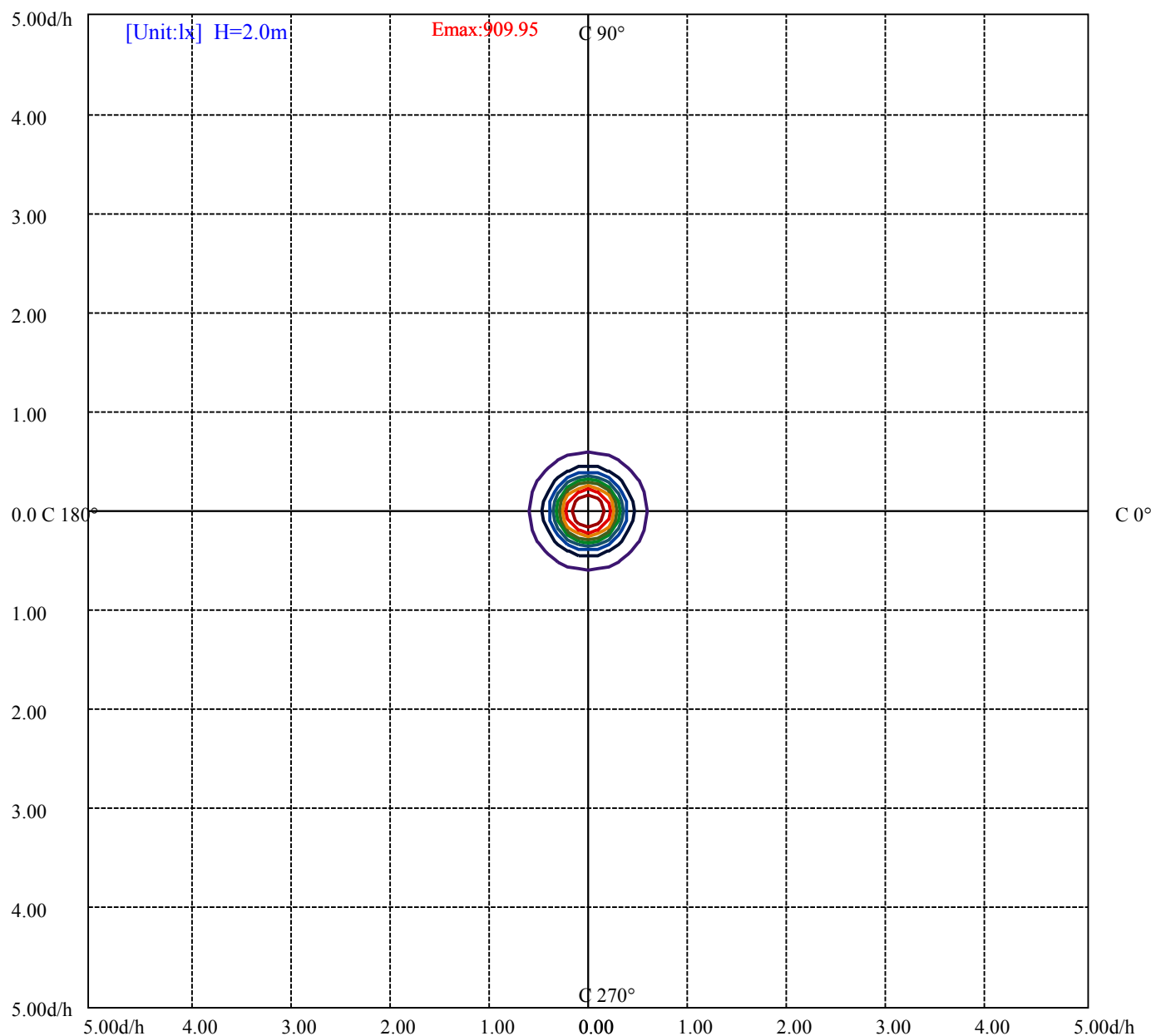
House

[Unit:cd]

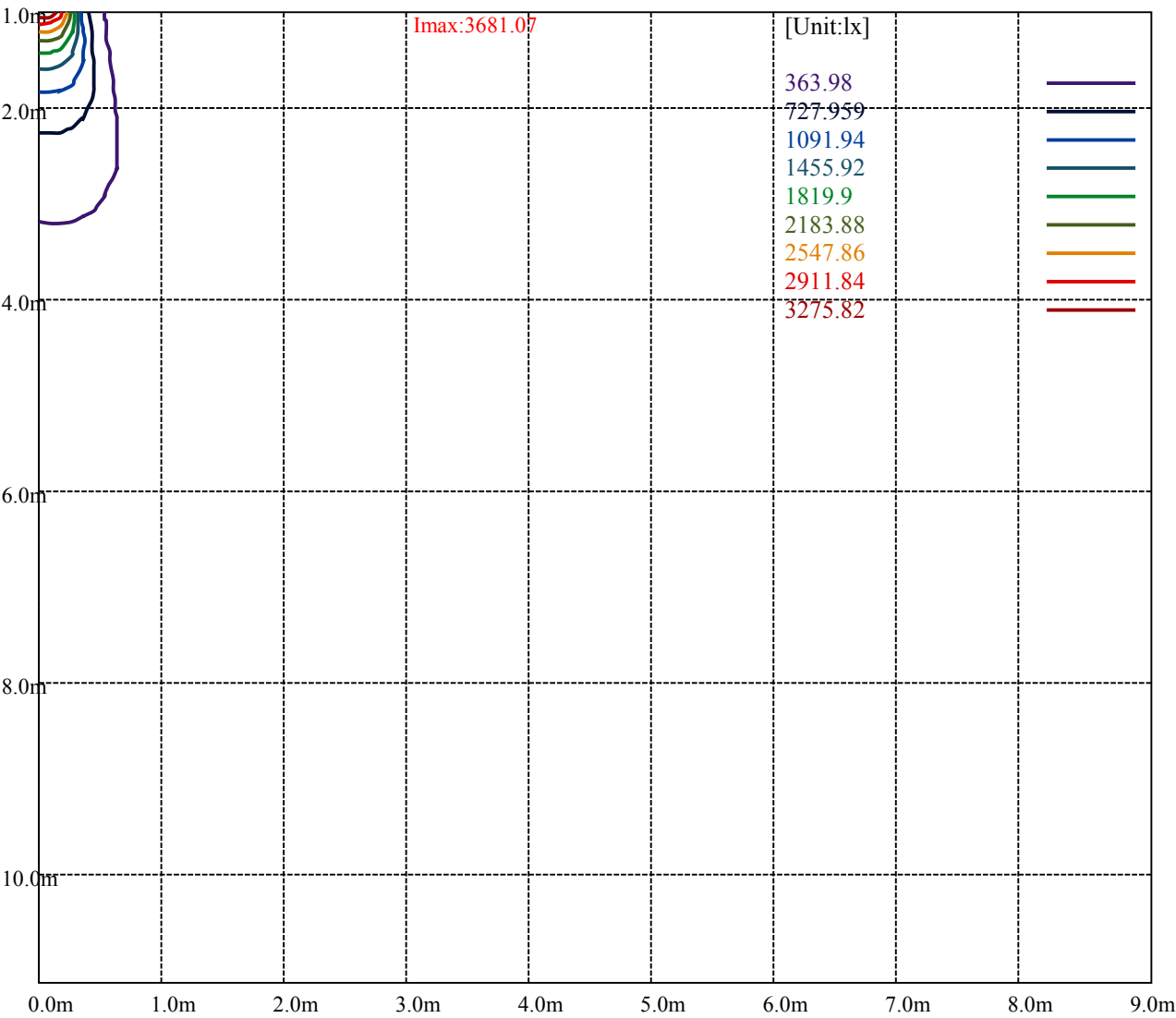
Road

Imax:3681.07

(10%Imax)	368.107	—
(20%Imax)	736.214	—
(30%Imax)	1104.32	—
(40%Imax)	1472.43	—
(50%Imax)	1840.54	—
(60%Imax)	2208.64	—
(70%Imax)	2576.75	—
(80%Imax)	2944.86	—
(90%Imax)	3312.96	—



(10%Emax)	90.995	—
(20%Emax)	181.99	—
(30%Emax)	272.985	—
(40%Emax)	363.98	—
(50%Emax)	454.975	—
(60%Emax)	545.97	—
(70%Emax)	636.965	—
(80%Emax)	727.96	—
(90%Emax)	818.955	—



Luminance Table

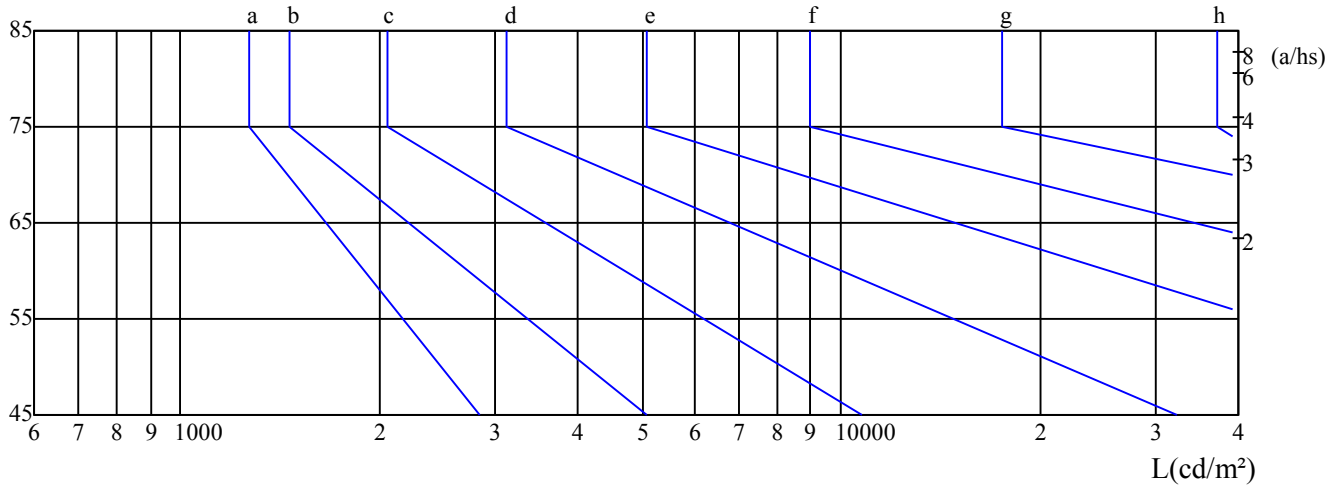
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

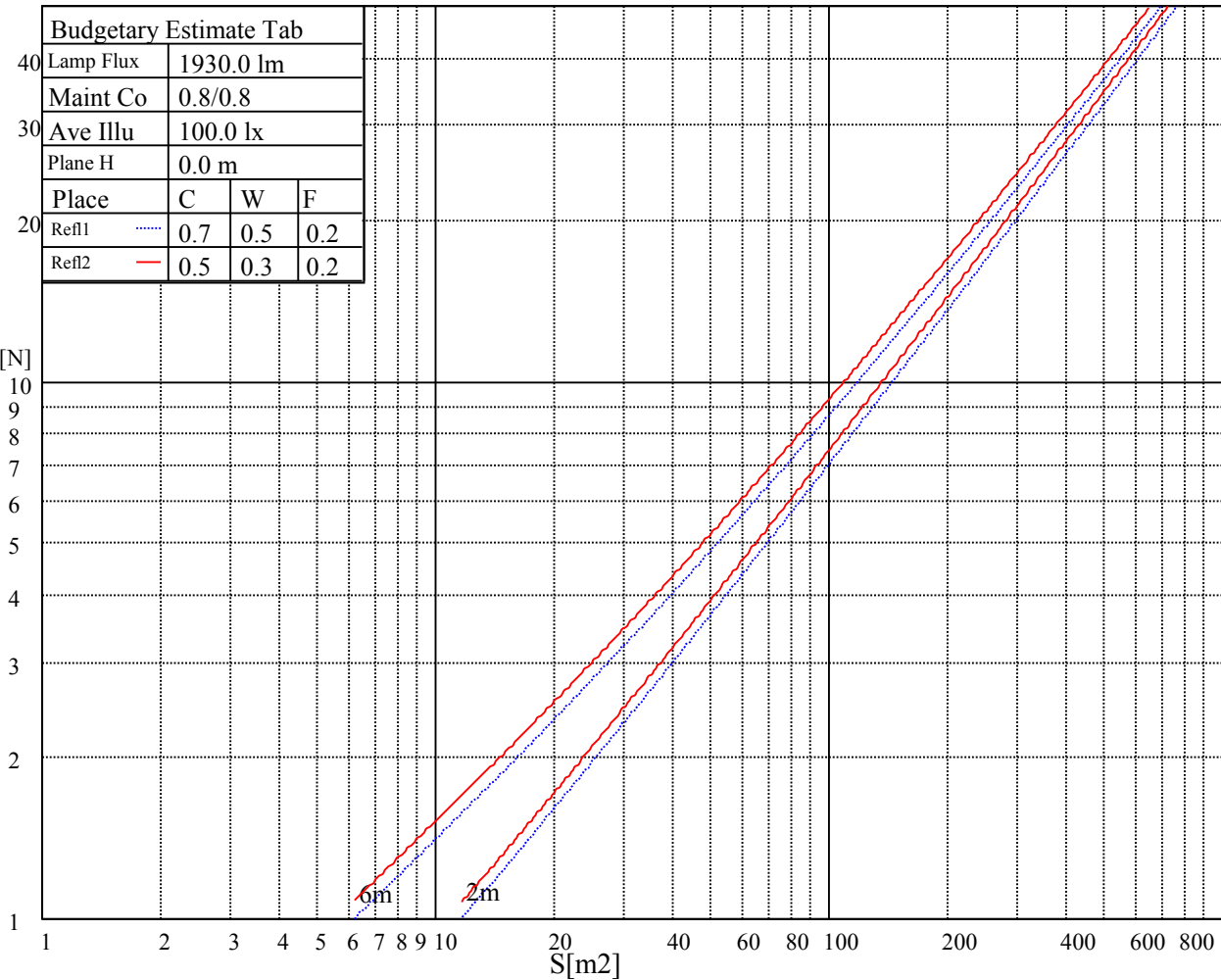
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

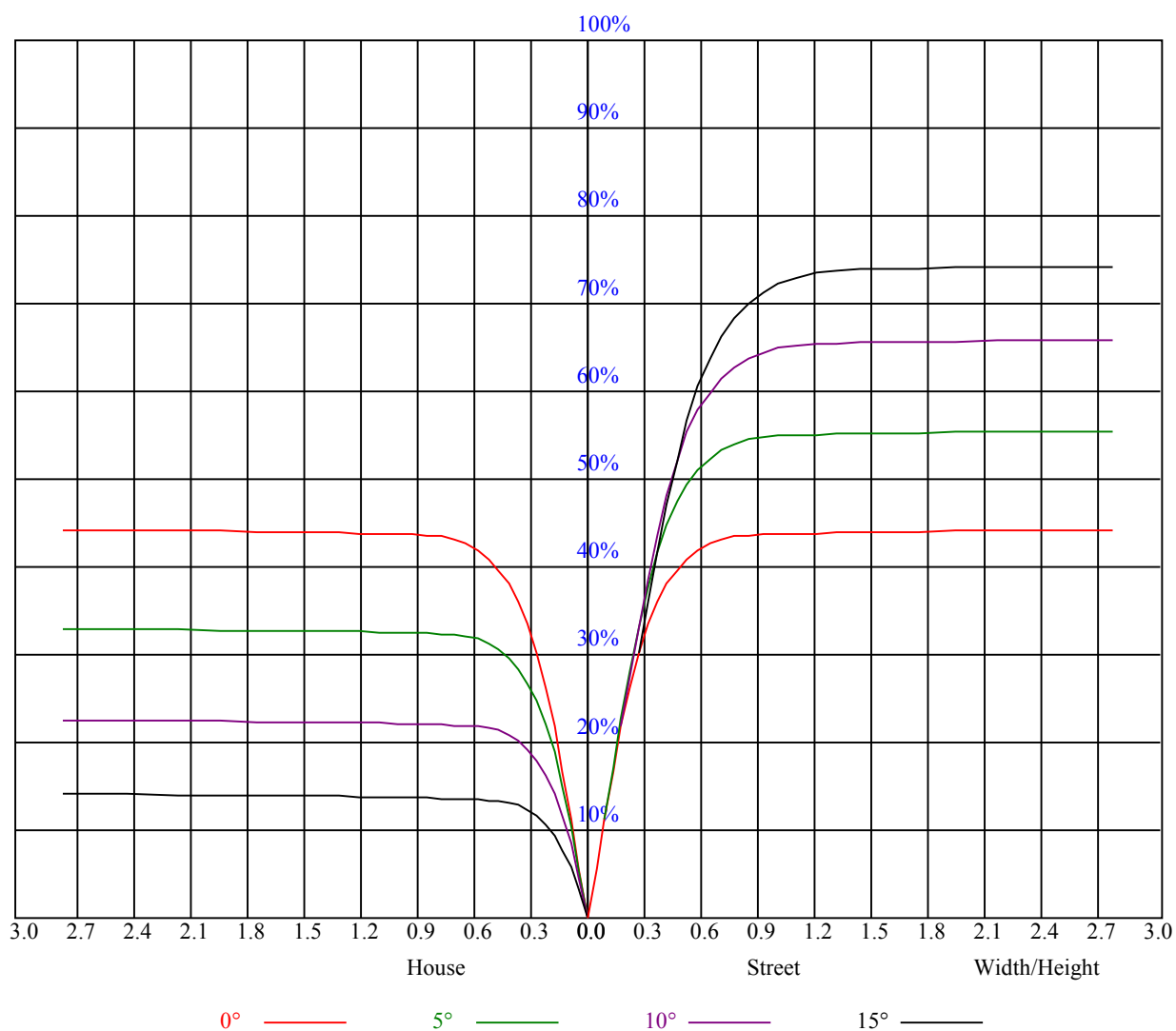
C0 ———

C45 ———

C90 ———



RHOC	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 RHOF=20 CU															
0	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.95	0.95	0.95	0.92	0.92	0.92	0.90
1	1.00	0.98	0.96	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.84	0.85	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.83	0.81	0.79	0.82	0.79	0.78	0.76
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	0.78	0.76	0.74	0.73
5	0.80	0.76	0.73	0.80	0.75	0.72	0.78	0.74	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	0.72	0.70	0.67	0.66
7	0.73	0.69	0.66	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	0.63	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61
9	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.65	0.61	0.59	0.58
10	0.65	0.60	0.57	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.56



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	3661.88	3643.88	3587.63	3065.63	2079.00	975.94	649.69	503.44	75.88		
45.0	3634.88	3647.25	3539.25	2980.69	1806.19	865.69	625.50	394.88	32.23		
90.0	3625.88	3669.19	3403.13	2617.88	1094.96	743.74	592.54	230.06	20.93		
135.0	3636.56	3694.50	3446.44	2622.38	1395.56	750.38	591.75	287.44	22.44		
180.0	3661.88	3697.88	3273.75	2314.13	1077.47	678.71	552.88	171.96	20.48		
225.0	3634.88	3698.44	3398.06	2535.19	1054.07	726.08	594.56	229.89	23.34		
270.0	3625.88	3712.50	3619.69	2953.69	1782.56	866.81	629.44	402.75	31.11		
315.0	3636.56	3684.94	3556.13	2925.00	1734.75	827.38	621.73	373.73	28.24		
360.0	3661.88	3643.88	3587.63	3065.63	2079.00	975.94	649.69	503.44	75.88		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	17.21	12.77	11.03	9.90	9.23	8.66	8.38	8.16	7.99		
45.0	15.13	11.93	10.52	9.62	8.94	8.49	8.27	8.10	7.93		
90.0	13.05	11.25	10.07	9.34	8.83	8.44	8.21	7.99	7.93		
135.0	13.67	11.59	10.29	9.51	8.89	8.55	8.21	8.04	7.93		
180.0	13.39	11.81	10.46	9.62	9.06	8.61	8.27	8.10	7.99		
225.0	14.06	12.04	10.69	9.79	9.06	8.61	8.21	8.04	7.93		
270.0	16.31	12.54	10.91	9.96	9.17	8.66	8.33	8.04	7.93		
315.0	15.08	12.26	10.74	9.73	9.06	8.61	8.33	8.10	7.93		
360.0	17.21	12.77	11.03	9.90	9.23	8.66	8.38	8.16	7.99		
C/ γ (°)	90.0										
0.0	7.88										
45.0	7.88										
90.0	7.82										
135.0	7.88										
180.0	7.93										
225.0	7.88										
270.0	7.82										
315.0	7.88										
360.0	7.88										