
Nata

LumCAT: 3-1920-E
Luminaire: 99.02.73.181+92.76.323.00
Report No: GC2017032008
Test No: NT-0010
LampCAT: LUXEON CoB 1208
Lamp flux(lm): 2607.0
Number of Lamps: 1
Length(mm): 76
Phm Type: C

Voltage(V): 217.8000
Current(A): 0.1360
Power (W): 28.0000
PF: 0.9420
Ballast type: DC
Width(mm): 76
Height(mm): 0

Photometric Results

Lumens(lm): 2333.44
Efficiency(%): 89.51%
Lumens(lm)/Power(W): 83.34
Central intensity(cd): 3050.813
Maximum intensity(cd): 3050.813
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=56.6
[C90/270]Total=56.6
Field angle(10%Imax): [C0/180]Total=76.9
[C90/270]Total=76.9
Maximum s/h(1/2): C0_180=0.87 C90_270=0.87
Maximum s/h(1/4): C0_180=0.85 C90_270=0.85
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.51%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.645%

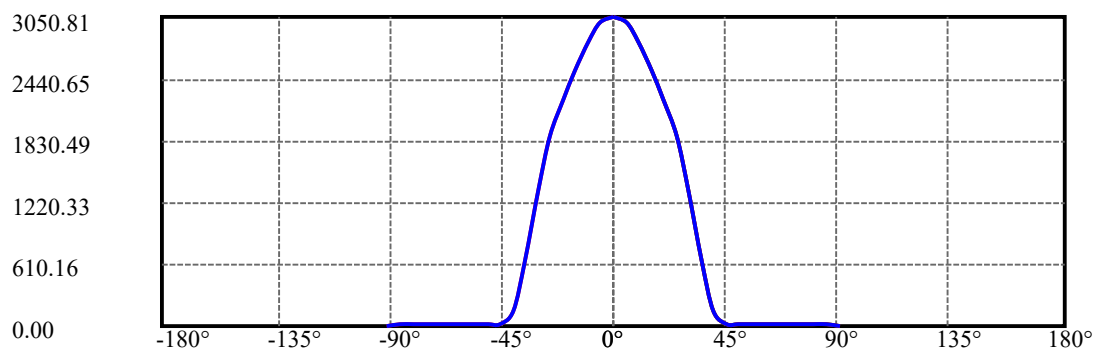
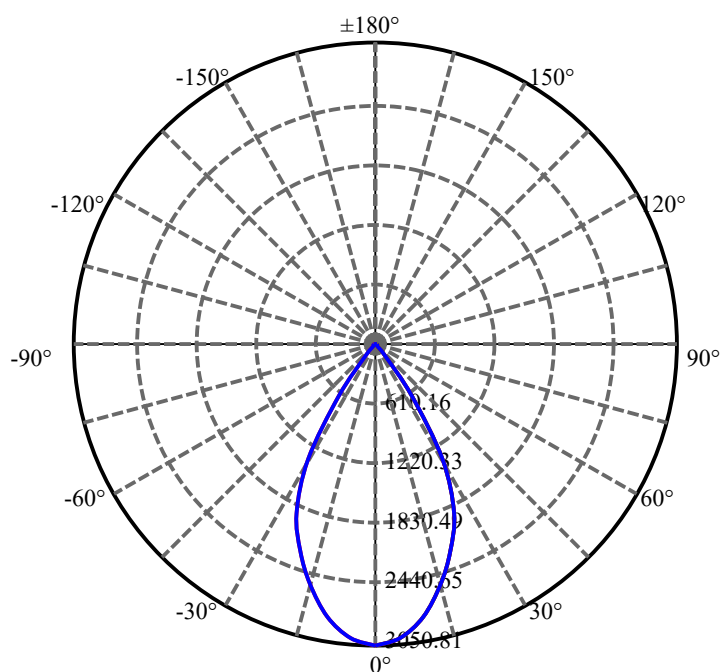
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3050.813	0.000	0	.000%	.000%
5.0	2988.393	72.197	72.197	2.769%	3.094%
10.0	2810.354	207.439	279.636	7.957%	11.984%
15.0	2516.697	315.997	595.633	12.121%	25.526%
20.0	2228.890	391.103	986.736	15.002%	42.287%
25.0	1878.180	430.756	1417.492	16.523%	60.747%
30.0	1345.716	407.987	1825.479	15.650%	78.231%
35.0	647.856	293.567	2119.046	11.261%	90.812%
40.0	148.632	132.888	2251.934	5.097%	96.507%
45.0	21.795	31.556	2283.49	1.210%	97.859%
50.0	13.881	7.209	2290.699	.277%	98.168%
55.0	12.236	5.679	2296.378	.218%	98.412%
60.0	11.314	5.444	2301.822	.209%	98.645%
65.0	10.681	5.347	2307.169	.205%	98.874%
70.0	10.268	5.304	2312.473	.203%	99.101%
75.0	9.993	5.296	2317.769	.203%	99.328%
80.0	9.738	5.279	2323.048	.203%	99.555%
85.0	9.490	5.225	2328.273	.200%	99.779%
90.0	9.380	5.167	2333.44	.198%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1825.48	70.02%	78.23%
0-40	2251.93	86.38%	96.51%
0-60	2301.82	88.29%	98.64%
0-90	2328.27	89.31%	99.78%
0-120	2328.27	89.31%	99.78%
0-180	2333.44	89.51%	100.00%
60-90	31.90	1.22%	1.37%
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%
0-30.70	1866.75	71.61%	80.00%

ZONAL LUMEN SUMMARY

0-10	279.64
10-20	707.10
20-30	838.74
30-40	426.46
40-50	38.76
50-60	11.12
60-70	10.65
70-80	10.58
80-90	5.22
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: —————

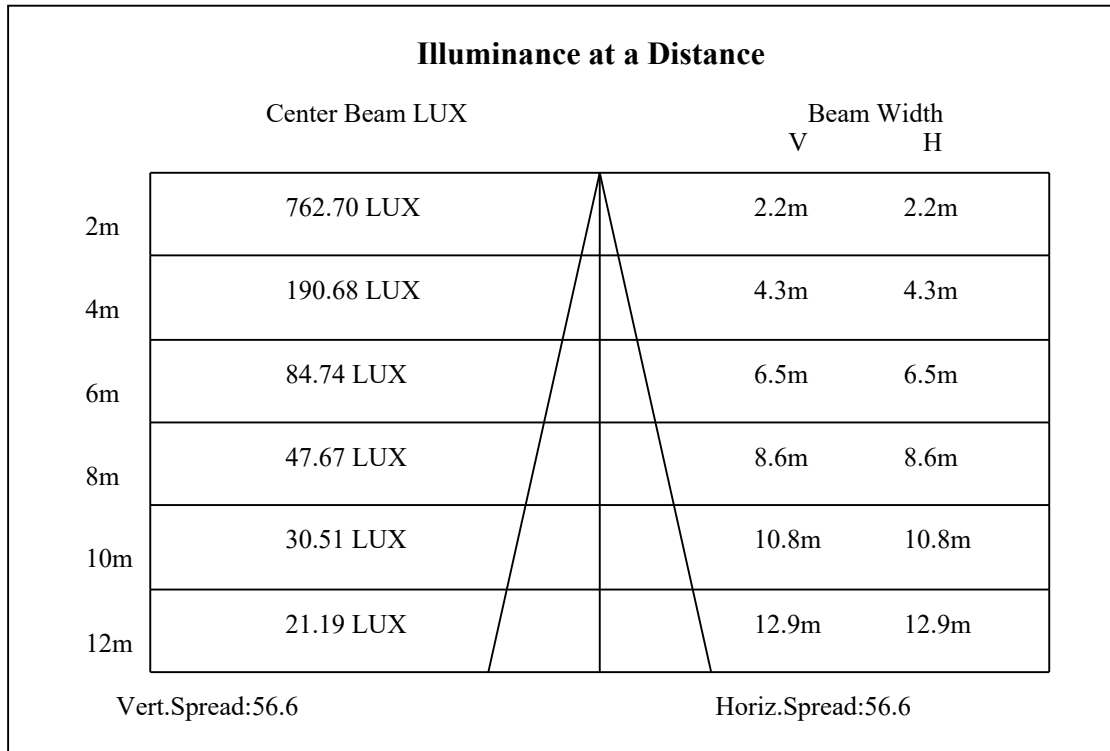
C90/C270: —————

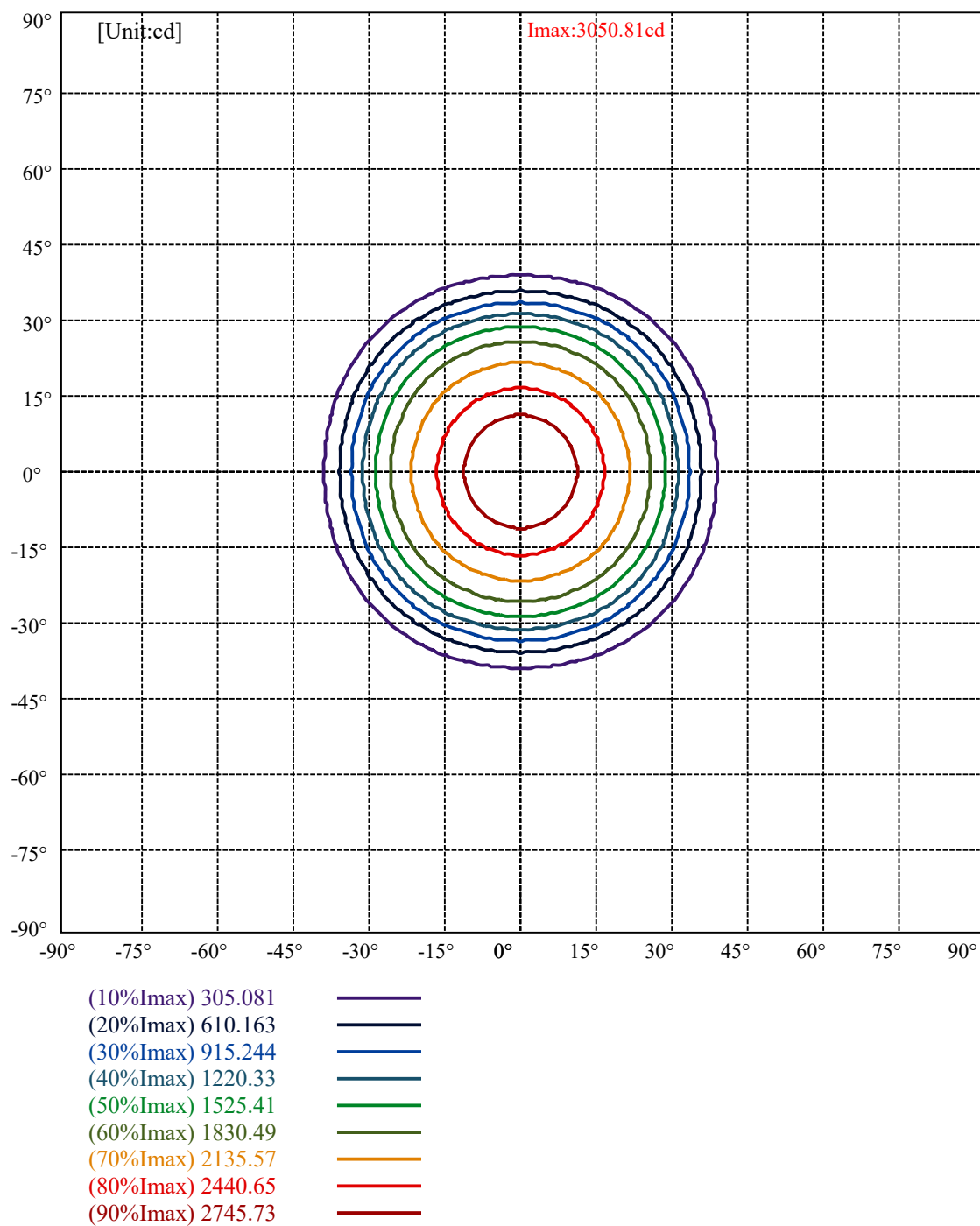
Field angle(10%Imax):C0/180Left:38.4 Right:38.4

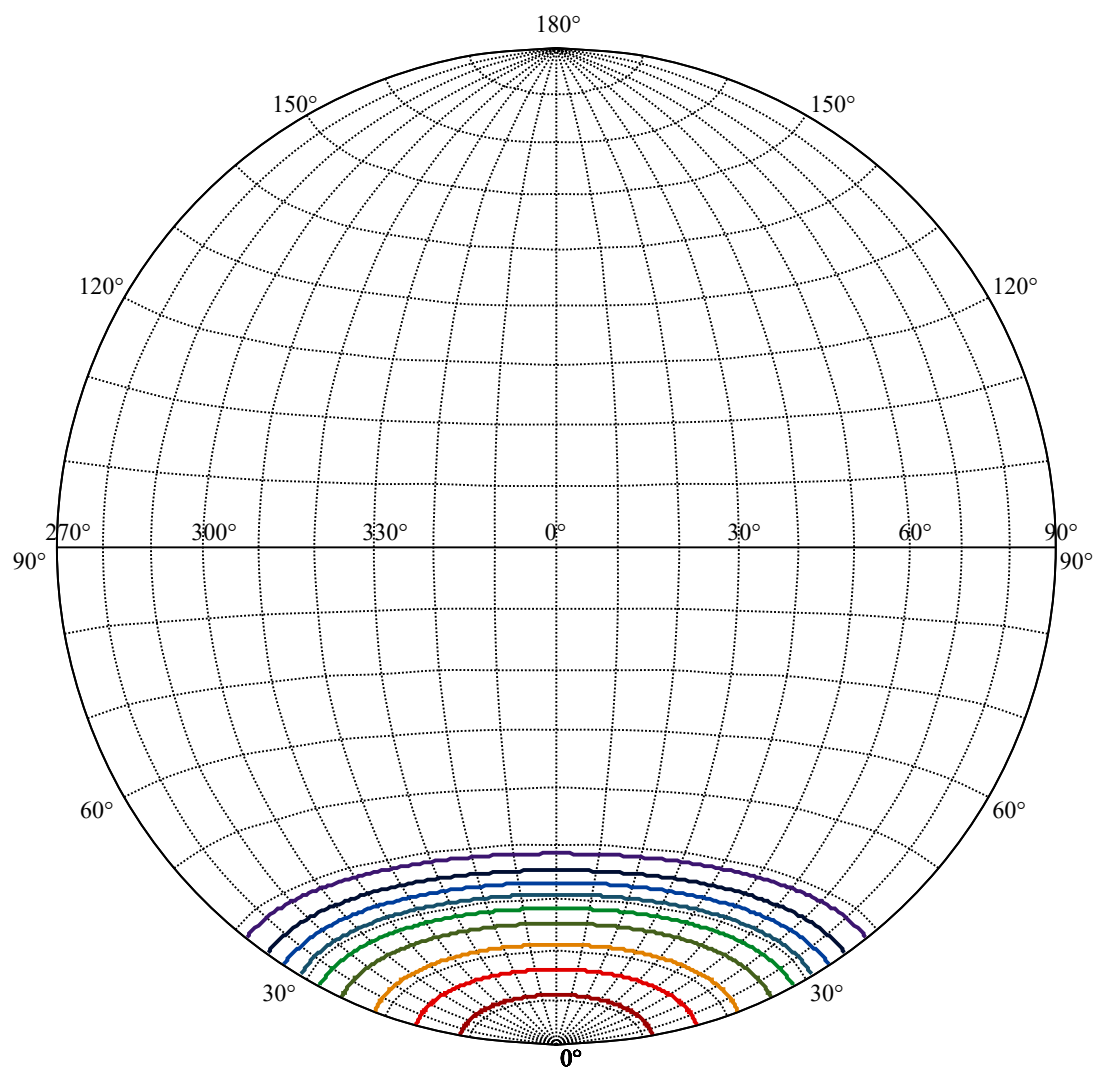
:C90/270Left:38.4 Right:38.4

Beam Angle(50%Imax):C0/180Left:28.3 Right:28.3

:C90/270Left:28.3 Right:28.3







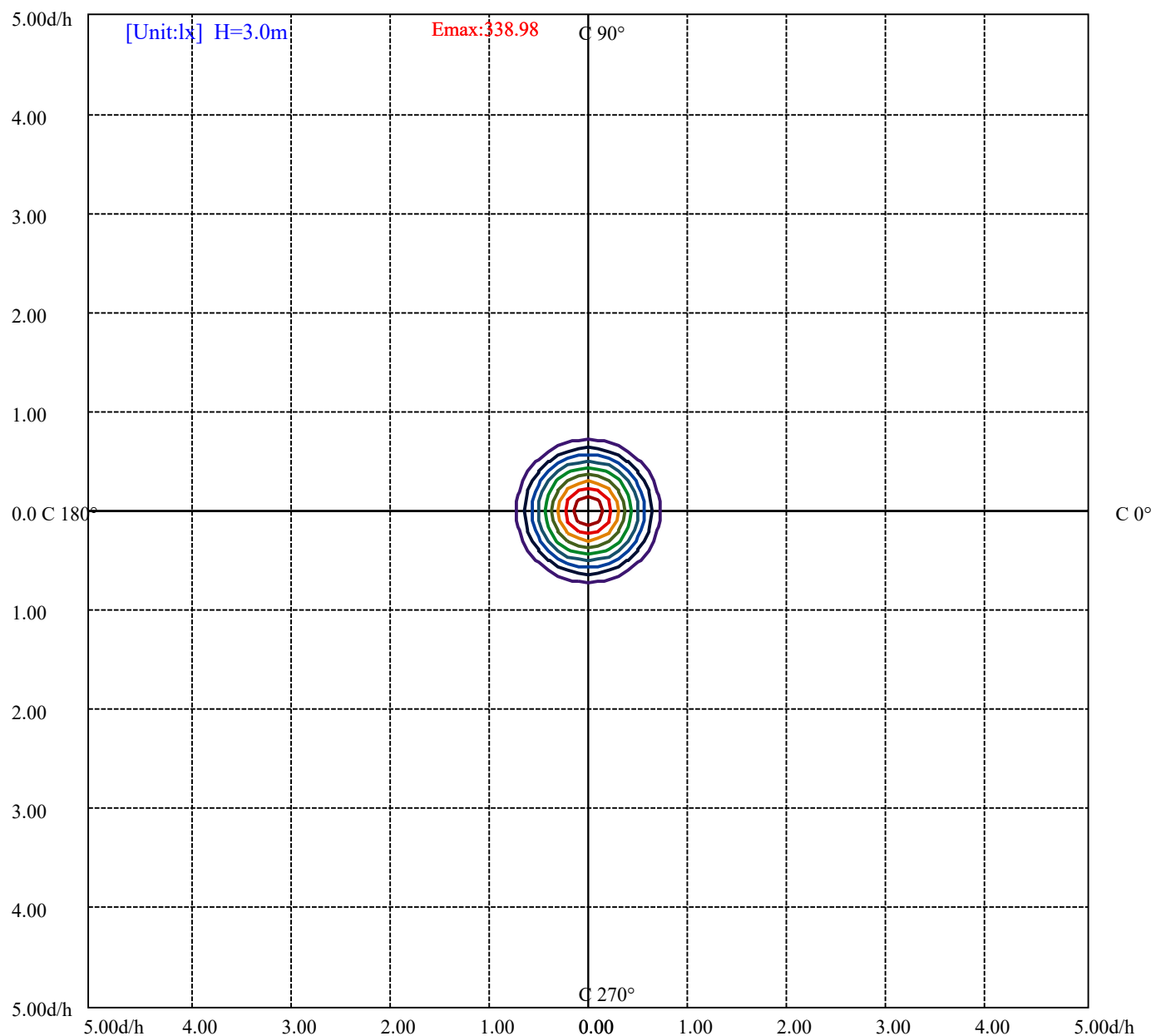
House

[Unit:cd]

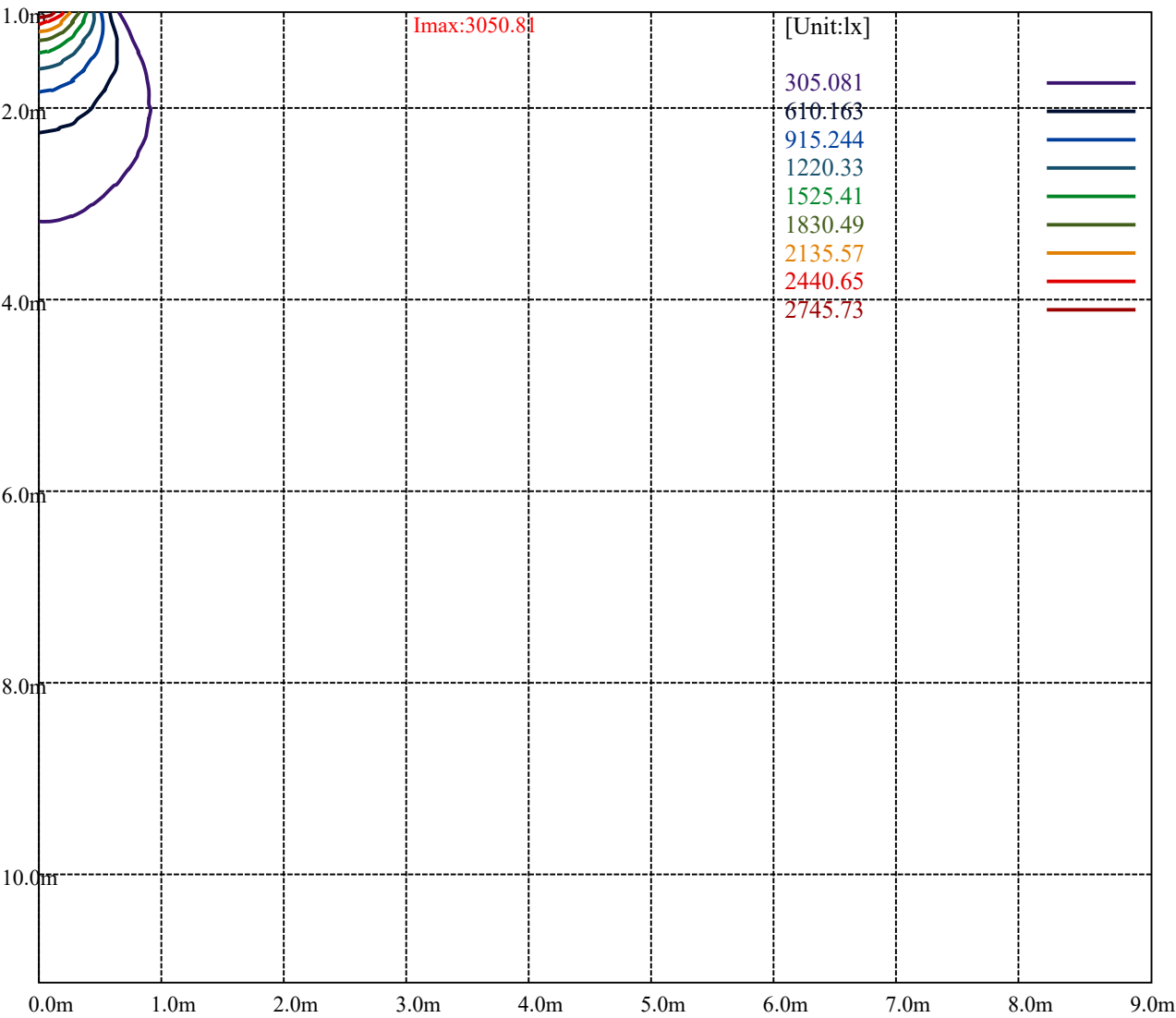
Road

Imax:3050.81

(10%Imax)	305.081	—
(20%Imax)	610.163	—
(30%Imax)	915.244	—
(40%Imax)	1220.33	—
(50%Imax)	1525.41	—
(60%Imax)	1830.49	—
(70%Imax)	2135.57	—
(80%Imax)	2440.65	—
(90%Imax)	2745.73	—



(10%E _{max}) 33.89789	—
(20%E _{max}) 67.79578	—
(30%E _{max}) 101.6937	—
(40%E _{max}) 135.5911	—
(50%E _{max}) 169.49	—
(60%E _{max}) 203.3878	—
(70%E _{max}) 237.2856	—
(80%E _{max}) 271.1833	—
(90%E _{max}) 305.0811	—



Luminance Table

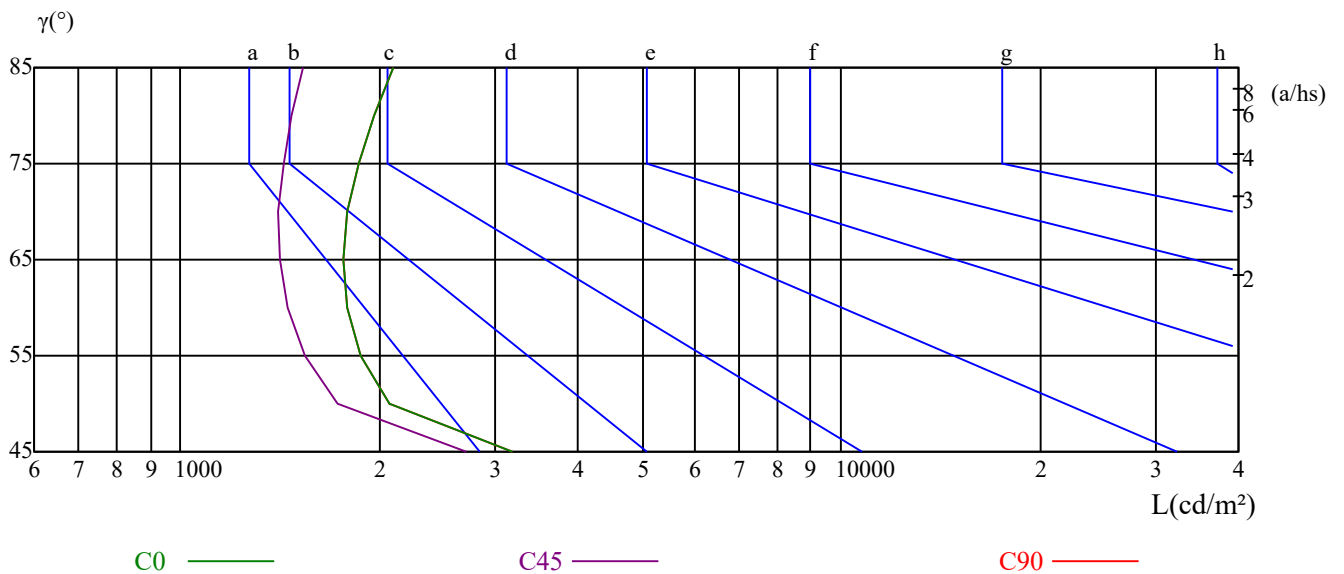
γ	45	50	55	60	65	70	75	80	85
C0	3186	2066	1870	1790	1766	1792	1862	1961	2097
C45	2715	1734	1545	1456	1411	1405	1430	1472	1532
C90	3186	2066	1870	1790	1766	1792	1862	1961	2097

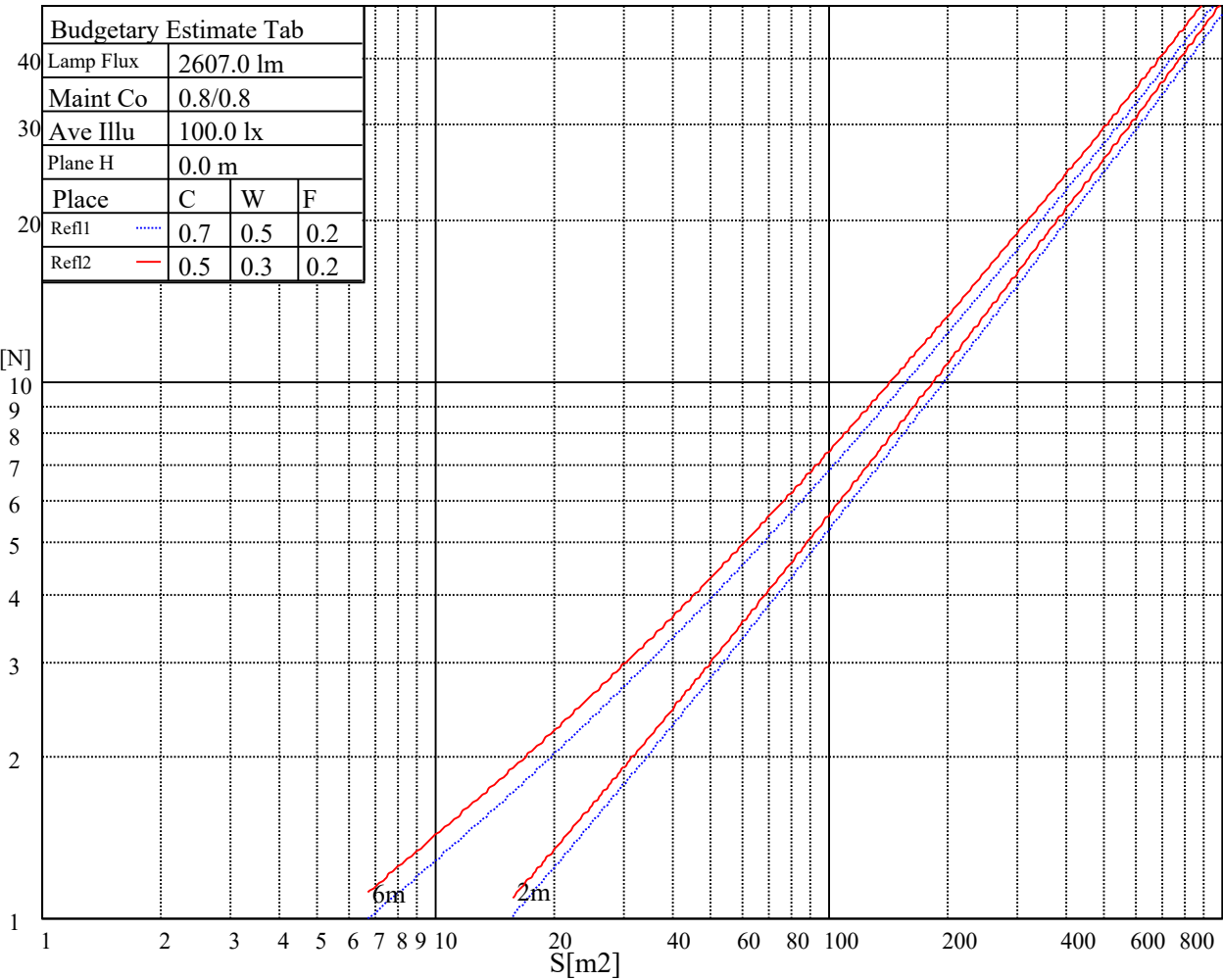
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4493	4493	4493	6864	6864	6864	19358	19358	19358

Glare Table

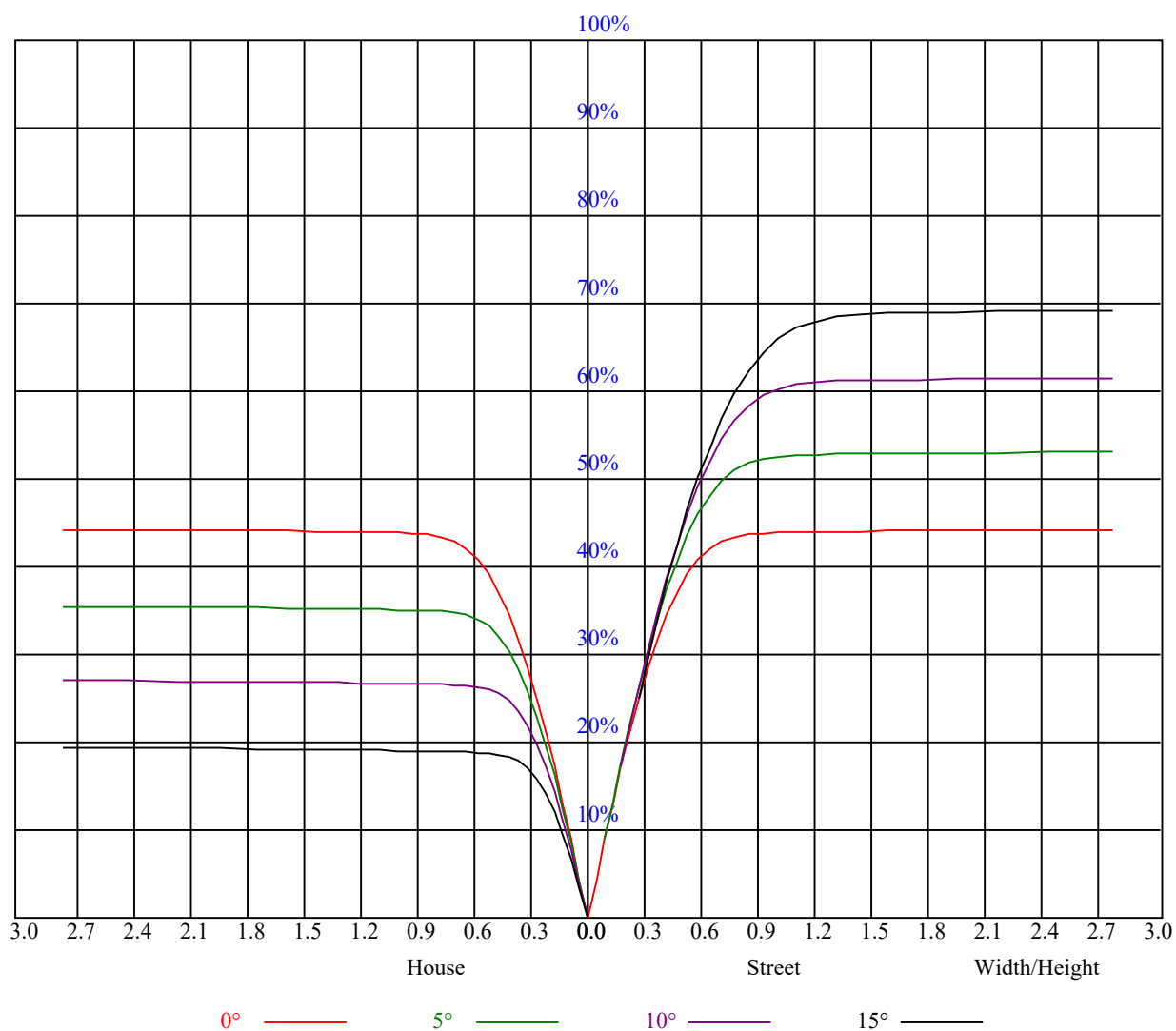
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	0.99	0.97	0.95	0.97	0.95	0.93	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84
2	0.93	0.89	0.86	0.91	0.88	0.85	0.88	0.86	0.83	0.86	0.83	0.82	0.83	0.81	0.80	0.78
3	0.87	0.82	0.79	0.86	0.82	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.73
4	0.81	0.77	0.73	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.69
5	0.77	0.72	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.71	0.68	0.66	0.65
6	0.72	0.67	0.64	0.72	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.61
7	0.68	0.63	0.60	0.68	0.63	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.57
8	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.61	0.58	0.55	0.54
9	0.61	0.56	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.52	0.59	0.55	0.52	0.51
10	0.58	0.53	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.56	0.52	0.49	0.48



Nata 3-1920-E

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	3047.92	3039.66	2905.88	2672.99	2370.18	2045.90	1587.83	945.32	299.51		
45.0	3048.47	2990.11	2812.28	2518.28	2241.35	1906.60	1448.53	671.69	162.58		
90.0	3049.02	2915.24	2671.89	2357.52	2097.65	1699.59	1072.61	378.62	48.78		
135.0	3057.83	2954.33	2739.61	2398.26	2123.53	1742.54	1207.94	423.93	55.94		
180.0	3047.92	2947.17	2723.09	2380.64	2094.35	1712.80	1064.68	394.86	46.80		
225.0	3048.47	2977.45	2818.89	2505.62	2190.14	1859.81	1264.09	575.01	74.55		
270.0	3049.02	3042.97	2919.09	2665.28	2360.27	2053.05	1613.15	923.30	309.97		
315.0	3057.83	3040.21	2892.11	2635.00	2353.66	2005.15	1506.89	870.11	190.94		
360.0	3047.92	3039.66	2905.88	2672.99	2370.18	2045.90	1587.83	945.32	299.51		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	30.01	14.65	12.50	11.51	10.85	10.35	10.02	9.80	9.52		
45.0	20.43	13.82	12.17	11.34	10.63	10.19	9.86	9.63	9.41		
90.0	17.07	13.27	11.84	11.07	10.52	10.13	9.86	9.58	9.41		
135.0	17.23	13.32	12.00	11.18	10.63	10.41	10.41	9.97	9.63		
180.0	16.41	12.99	11.89	11.07	10.52	10.19	9.91	9.69	9.47		
225.0	20.10	13.65	12.17	11.23	10.63	10.13	9.91	9.74	9.41		
270.0	29.35	14.81	12.77	11.67	10.90	10.41	10.02	9.74	9.52		
315.0	23.78	14.53	12.55	11.45	10.79	10.35	9.97	9.74	9.52		
360.0	30.01	14.65	12.50	11.51	10.85	10.35	10.02	9.80	9.52		
C/ γ (°)	90.0										
0.0	9.41										
45.0	9.30										
90.0	9.41										
135.0	9.41										
180.0	9.41										
225.0	9.36										
270.0	9.36										
315.0	9.36										
360.0	9.41										