
Nata

LumCAT: 1678-A

Luminaire: 92.70.064.00+92.70.147.00

Report No: NT2017092607

Voltage(V): 34.5000

Test No: GC2017092607

Current(A): 0.3000

LampCAT: SEOUL SAWx10

Power (W): 10.3500

Lamp flux(lm): 1461.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 46

Width(mm): 46

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1221.96

Efficiency(%): 83.64%

Lumens(lm)/Power(W): 118.06

Central intensity(cd): 2291.723

Maximum intensity(cd): 2291.723

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=39.9

[C90/270]Total=39.9

Field angle(10%Imax): [C0/180]Total=69.8

[C90/270]Total=69.8

Maximum s/h(1/2): C0_180=0.65 C90_270=0.65

Maximum s/h(1/4): C0_180=0.63 C90_270=0.63

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 83.64%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.799%

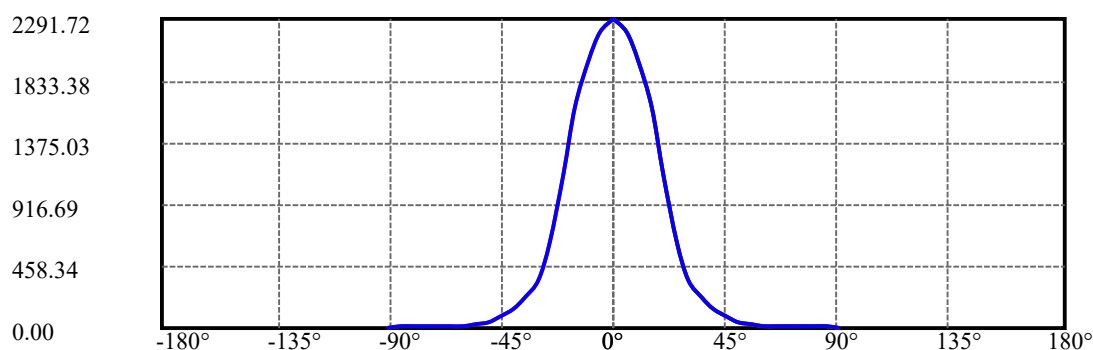
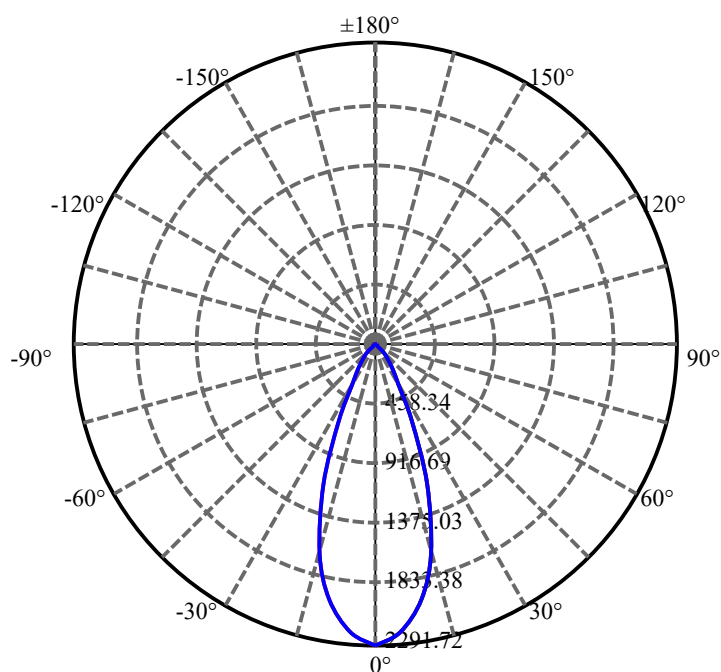
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2291.723	0.000	0	.000%	.000%
5.0	2193.585	53.621	53.621	3.670%	4.388%
10.0	1977.970	149.230	202.85	10.214%	16.600%
15.0	1643.089	214.799	417.649	14.702%	34.179%
20.0	1140.321	229.392	647.041	15.701%	52.951%
25.0	641.214	186.850	833.891	12.789%	68.242%
30.0	352.492	125.754	959.646	8.607%	78.533%
35.0	226.020	85.190	1044.836	5.831%	85.505%
40.0	136.616	60.503	1105.339	4.141%	90.456%
45.0	80.678	40.234	1145.572	2.754%	93.749%
50.0	46.633	25.725	1171.297	1.761%	95.854%
55.0	24.920	15.558	1186.855	1.065%	97.127%
60.0	10.605	8.212	1195.067	.562%	97.799%
65.0	8.141	4.557	1199.624	.312%	98.172%
70.0	8.066	4.104	1203.728	.281%	98.508%
75.0	8.431	4.312	1208.04	.295%	98.861%
80.0	9.566	4.815	1212.855	.330%	99.255%
85.0	9.442	5.165	1218.02	.354%	99.677%
90.0	4.955	3.942	1221.962	.270%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	959.65	65.68%	78.53%
0-40	1105.34	75.66%	90.46%
0-60	1195.07	81.80%	97.80%
0-90	1218.02	83.37%	99.68%
0-120	1218.02	83.37%	99.68%
0-180	1221.96	83.64%	100.00%
60-90	31.16	2.13%	2.55%
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%
0-31.05	977.57	66.91%	80.00%

ZONAL LUMEN SUMMARY

0-10	202.85
10-20	444.19
20-30	312.60
30-40	145.69
40-50	65.96
50-60	23.77
60-70	8.66
70-80	9.13
80-90	5.16
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:

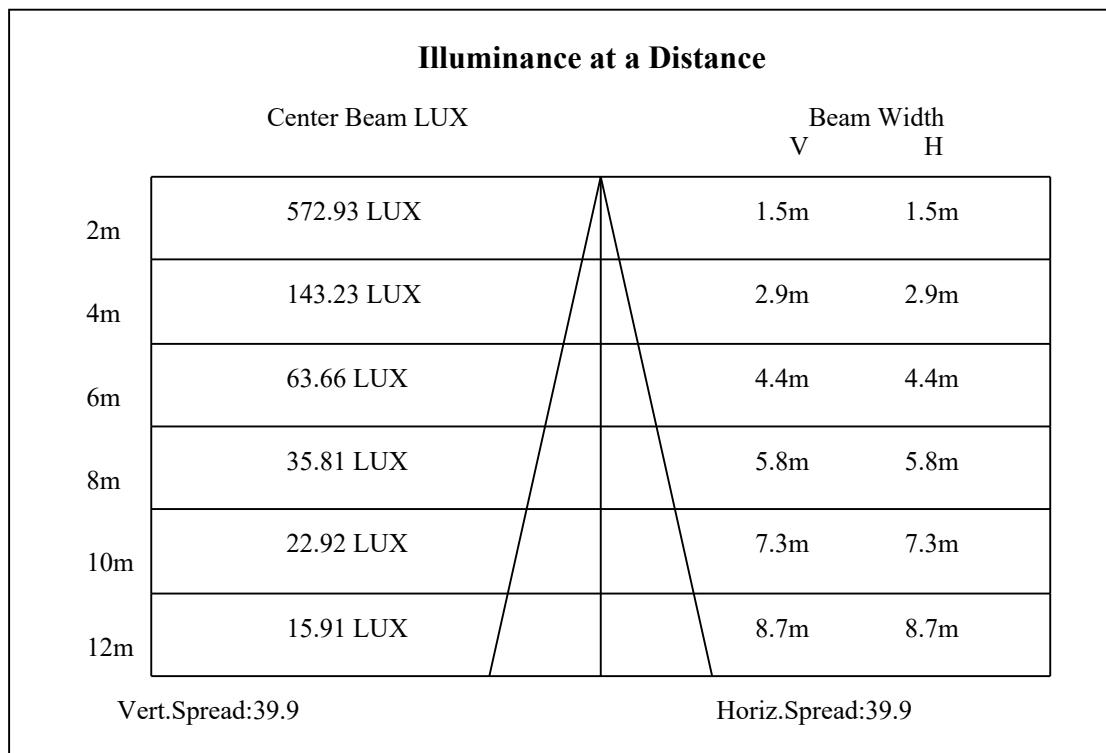
C90/C270:

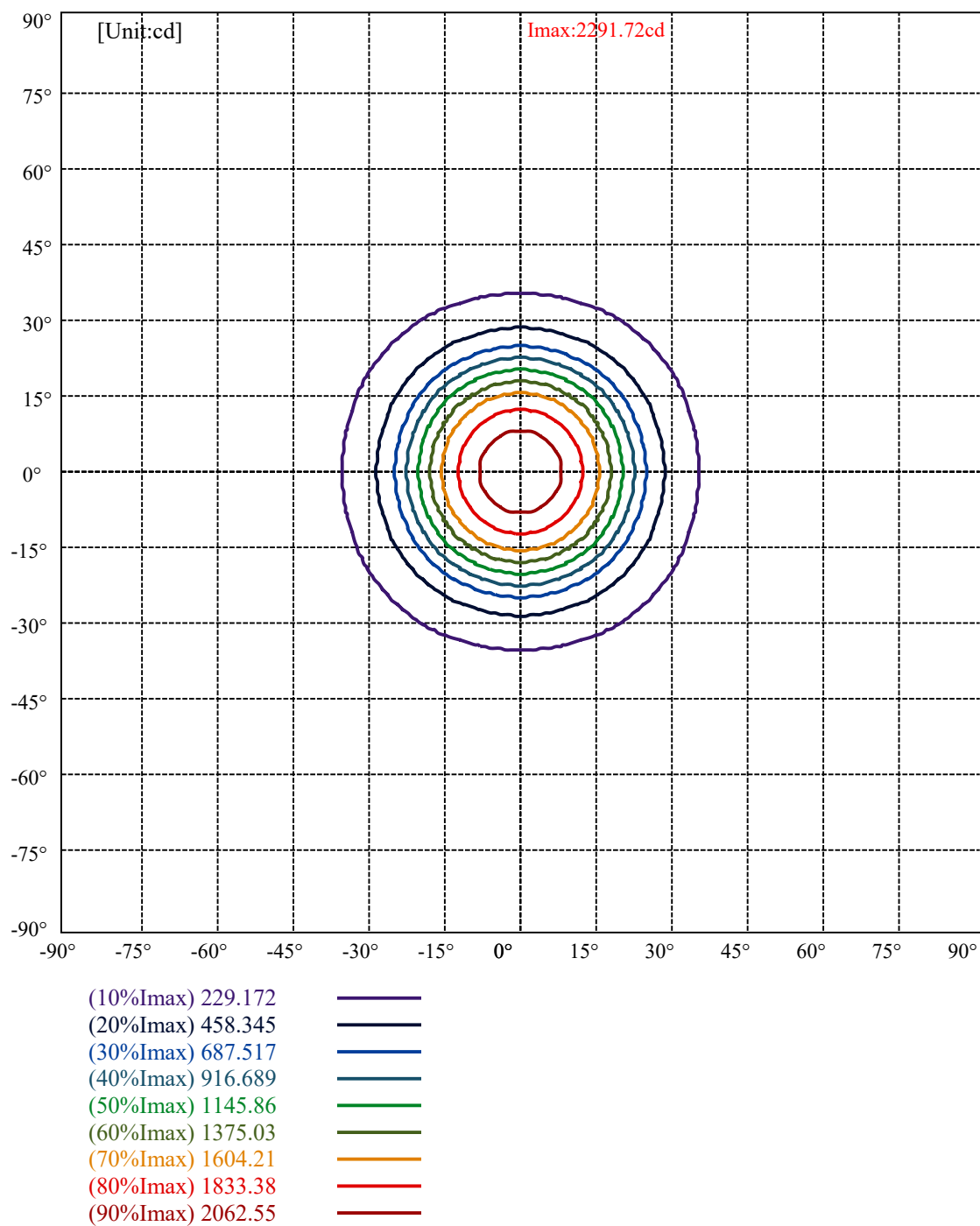
Field angle(10%Imax):C0/180Left:34.9 Right:34.9

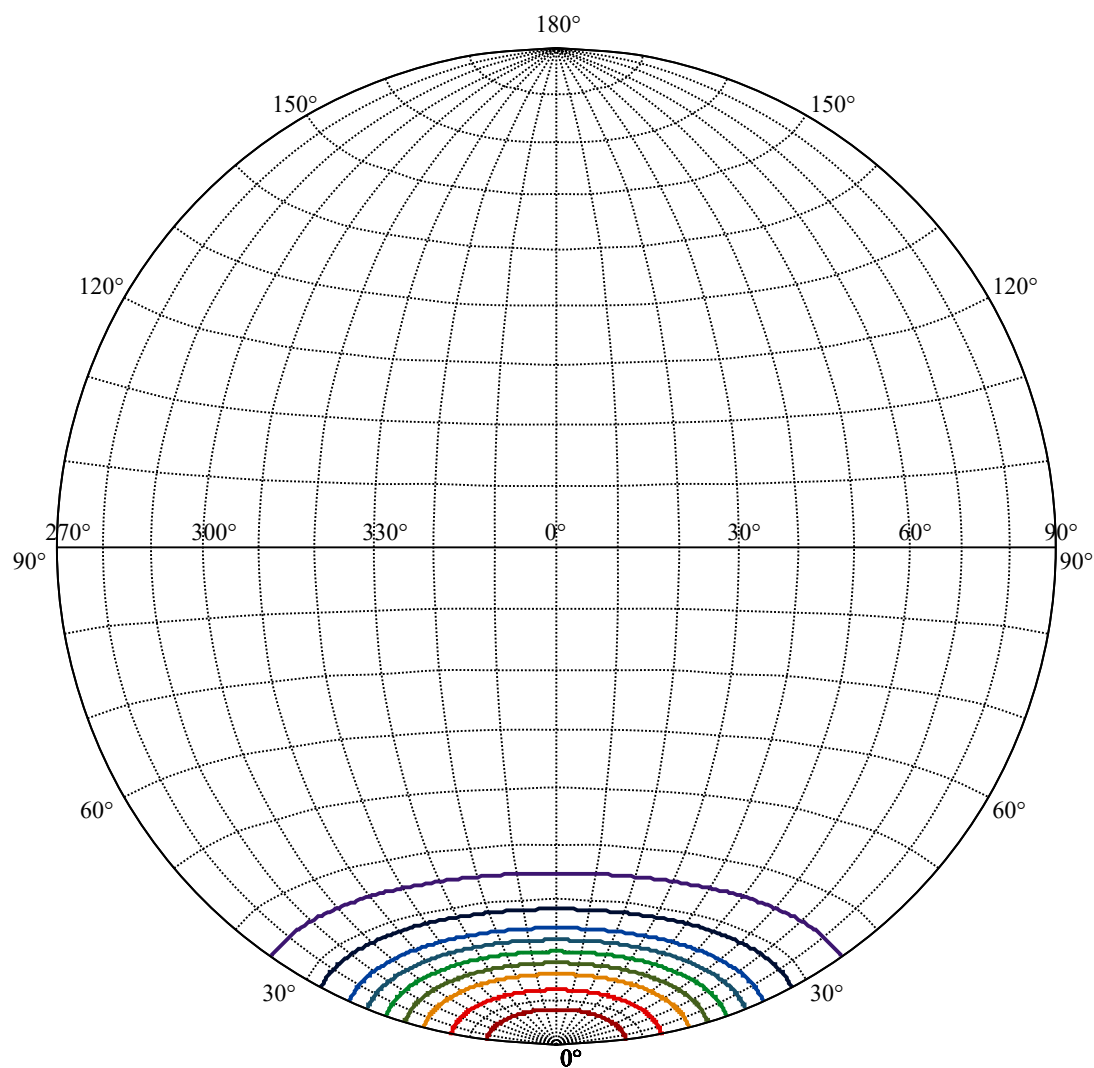
:C90/270Left:34.9 Right:34.9

Beam Angle(50%Imax):C0/180Left:19.9 Right:19.9

:C90/270Left:19.9 Right:19.9







House

[Unit:cd]

Road

Imax:2291.72

(10%Imax) 229.172

(20%Imax) 458.345

(30%Imax) 687.517

(40%Imax) 916.689

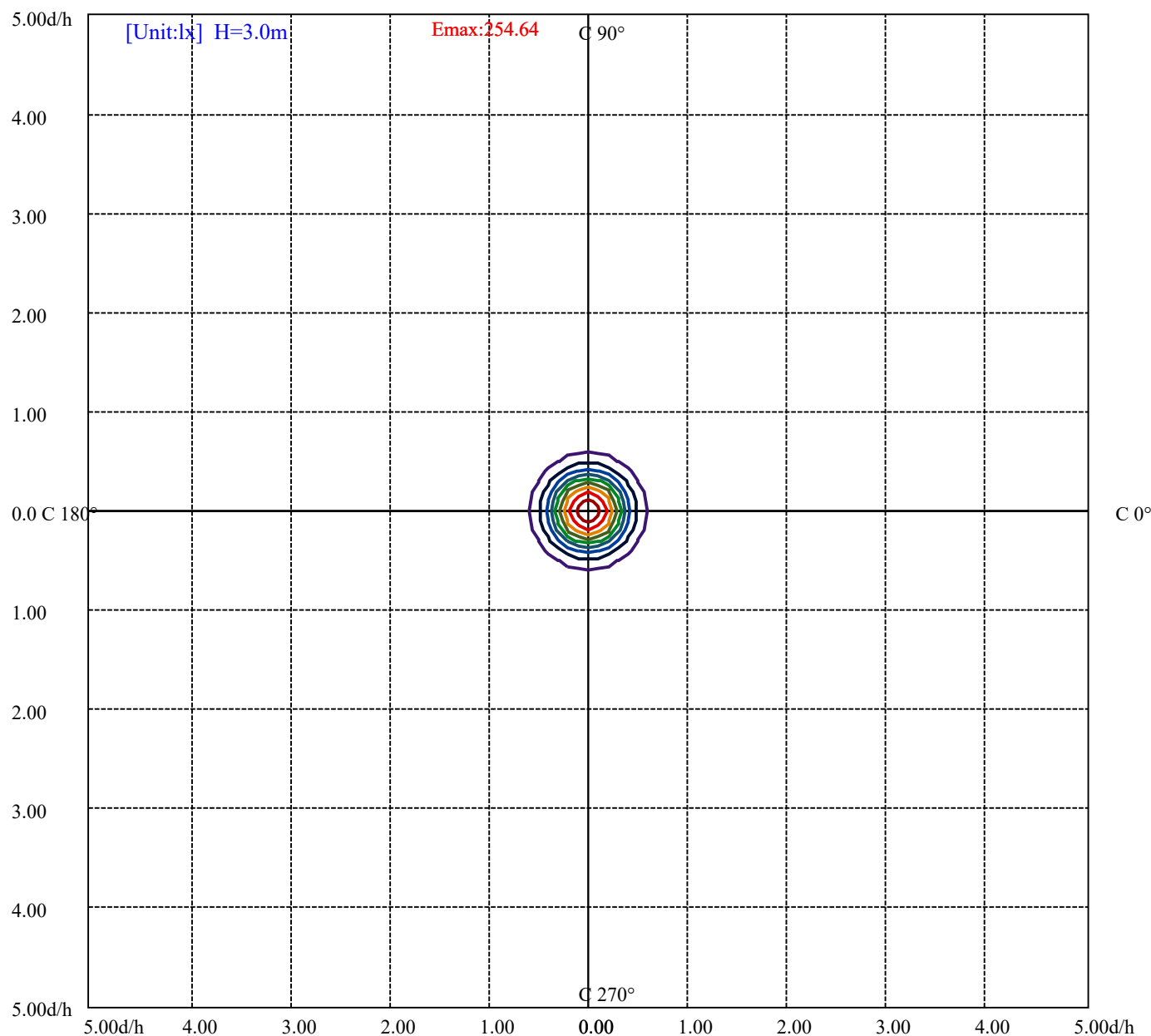
(50%Imax) 1145.86

(60%Imax) 1375.03

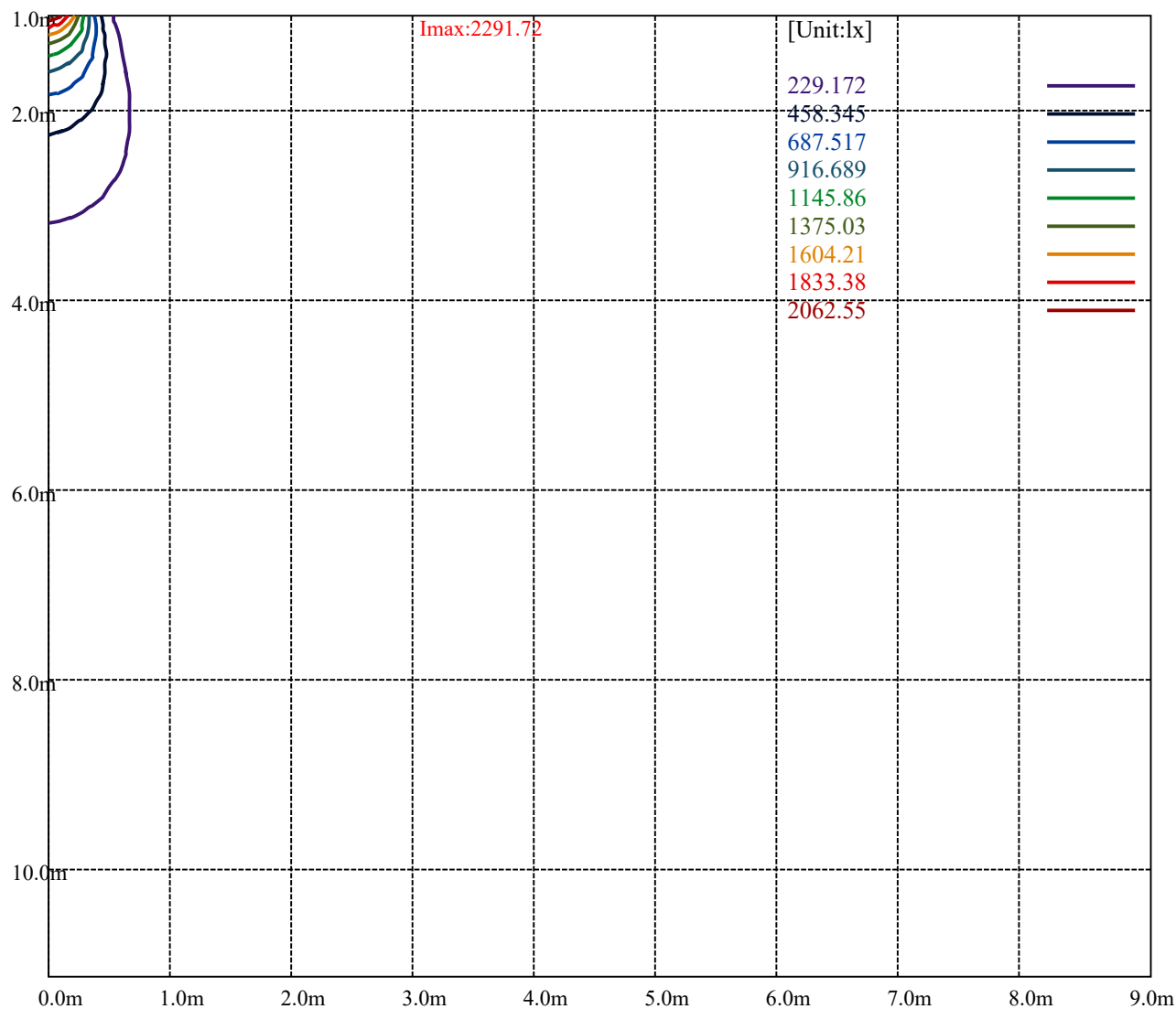
(70%Imax) 1604.21

(80%Imax) 1833.38

(90%Imax) 2062.55



(10%Emax) 25.46355	—
(20%Emax) 50.92711	—
(30%Emax) 76.39066	—
(40%Emax) 101.8542	—
(50%Emax) 127.3178	—
(60%Emax) 152.7811	—
(70%Emax) 178.2444	—
(80%Emax) 203.7089	—
(90%Emax) 229.1722	—



Luminance Table

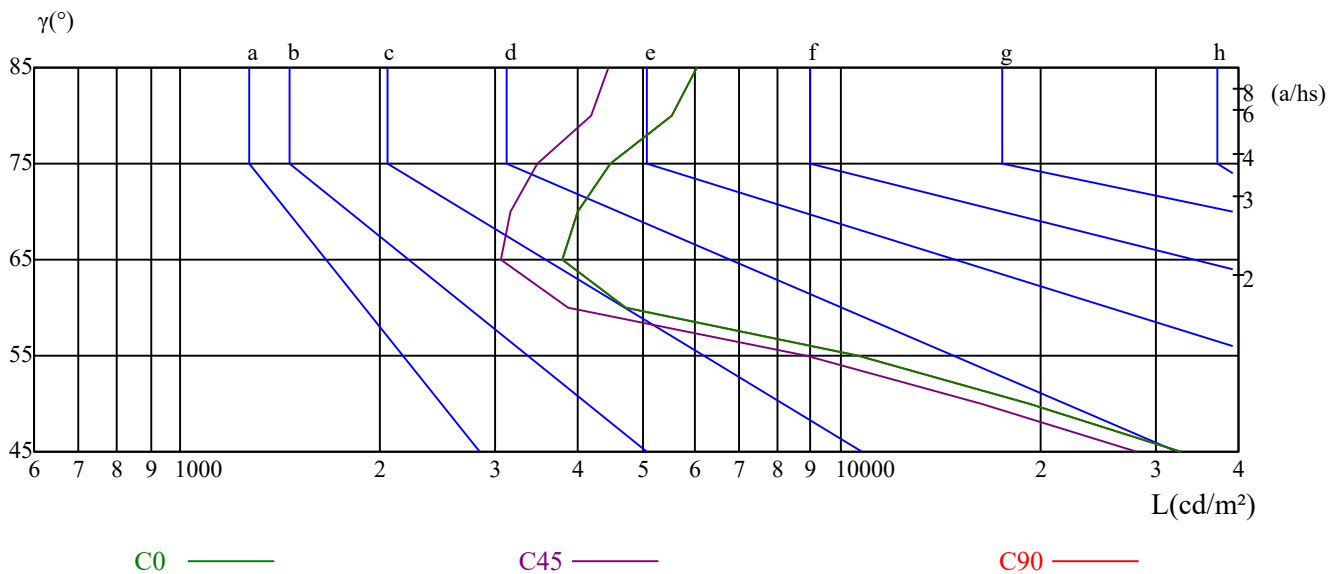
γ	45	50	55	60	65	70	75	80	85
C0	32636	19291	10631	4707	3796	3992	4483	5541	6056
C45	28050	16333	8861	3859	3057	3154	3465	4178	4436
C90	32636	19291	10631	4707	3796	3992	4483	5541	6056

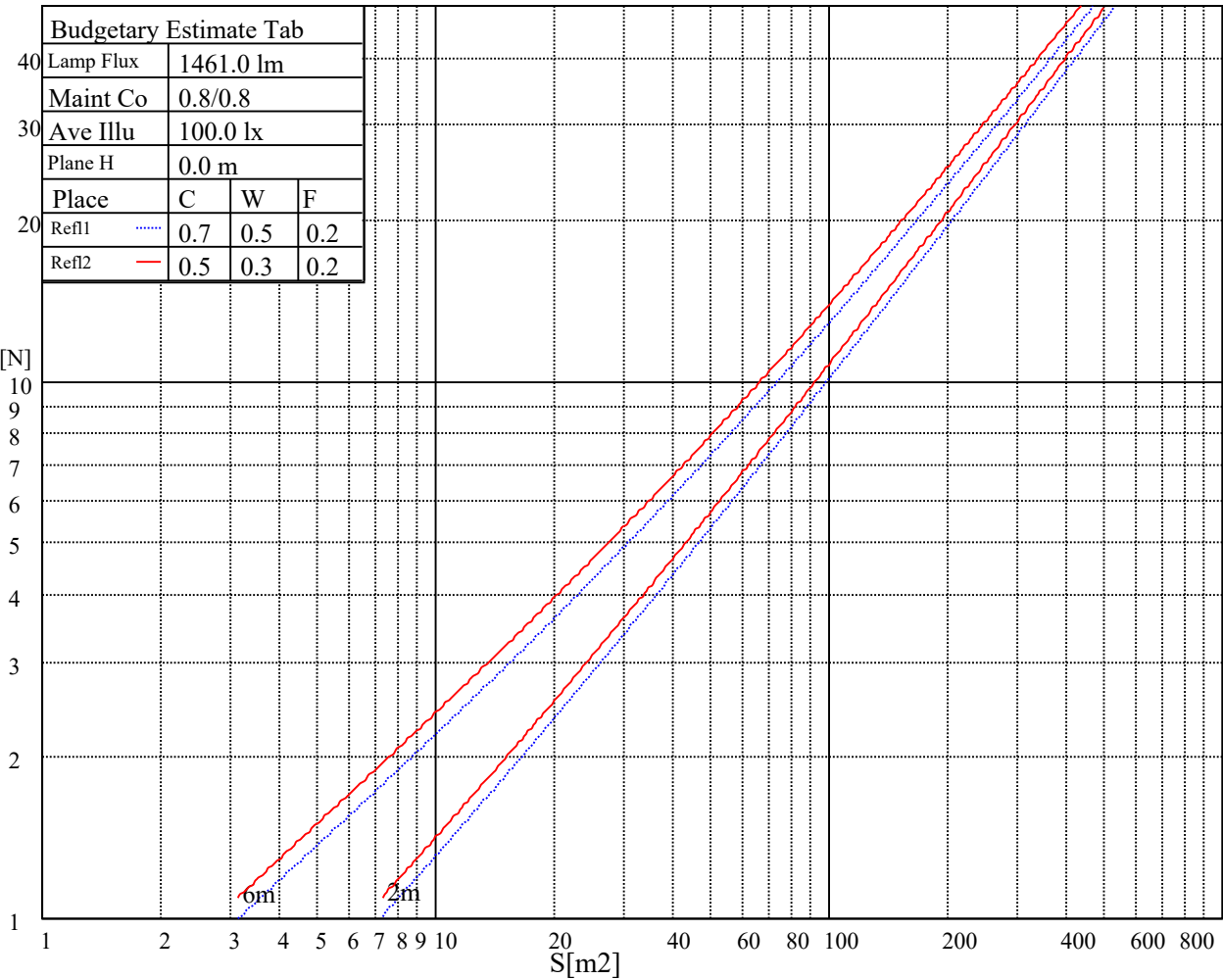
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9104	9104	9104	15394	15394	15394	51199	51199	51199

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	1.00	1.00	1.00	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.84
1	0.93	0.91	0.89	0.91	0.89	0.87	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.78
2	0.87	0.83	0.81	0.85	0.82	0.80	0.82	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.75	0.73
3	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.69
4	0.77	0.72	0.69	0.76	0.72	0.68	0.74	0.70	0.68	0.72	0.69	0.67	0.71	0.68	0.66	0.65
5	0.72	0.68	0.64	0.72	0.67	0.64	0.70	0.66	0.63	0.69	0.65	0.63	0.67	0.65	0.62	0.61
6	0.68	0.64	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.58
7	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.62	0.59	0.56	0.62	0.58	0.56	0.55
8	0.62	0.57	0.54	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.53	0.52
9	0.59	0.54	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.54	0.51	0.56	0.53	0.51	0.50
10	0.56	0.52	0.49	0.56	0.52	0.49	0.55	0.51	0.49	0.55	0.51	0.49	0.54	0.51	0.49	0.48

Nata 1678-A

Intensity data(cd)										Appendix Page: 13 Total:13	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	2287.04	2276.03	2091.59	1783.83	1315.30	781.80	408.52	287.39	158.73		
45.0	2288.14	2211.07	2001.30	1691.33	1206.84	661.78	359.52	224.80	143.81		
90.0	2291.45	2140.04	1909.91	1549.84	1035.01	563.50	311.34	189.34	122.83		
135.0	2300.26	2170.32	1956.70	1594.98	1097.27	579.74	327.59	199.69	124.10		
180.0	2287.04	2129.03	1863.66	1504.69	996.30	523.31	304.41	191.05	120.13		
225.0	2288.14	2154.36	1918.72	1564.70	1071.40	587.29	332.05	210.10	134.28		
270.0	2291.45	2228.13	2030.48	1741.98	1303.18	742.71	408.52	281.89	150.58		
315.0	2300.26	2239.69	2051.40	1713.36	1097.27	689.58	368.00	223.91	138.47		
360.0	2287.04	2276.03	2091.59	1783.83	1315.30	781.80	408.52	287.39	158.73		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	96.57	55.17	30.45	13.05	8.26	8.09	8.31	9.74	9.91		
45.0	85.06	51.70	26.37	10.13	7.82	7.82	8.15	9.14	8.70		
90.0	69.70	39.26	21.25	9.08	7.82	7.76	8.26	9.69	9.30		
135.0	73.78	42.83	23.07	9.47	7.76	7.60	7.60	9.25	9.80		
180.0	68.99	40.47	20.21	8.86	7.98	7.98	8.31	9.14	8.53		
225.0	78.01	45.59	24.28	10.74	9.19	9.36	10.68	11.23	10.46		
270.0	91.06	50.93	27.75	12.61	8.42	8.26	8.37	9.19	9.14		
315.0	82.25	47.13	25.99	10.90	7.87	7.65	7.76	9.14	9.69		
360.0	96.57	55.17	30.45	13.05	8.26	8.09	8.31	9.74	9.91		
C/γ(°)	90.0										
0.0	5.01										
45.0	4.96										
90.0	4.90										
135.0	4.96										
180.0	4.96										
225.0	4.96										
270.0	4.96										
315.0	4.96										
360.0	5.01										