
Nata

LumCAT: 2-1676-M	
Luminaire: 92.70.131.00	
Report No: NT2017071902	Voltage(V): 34.7600
Test No: GC2017071902	Current(A): 0.6000
LampCAT: SEOUL SAWx15	Power (W): 20.8560
Lamp flux(lm): 2937.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2641.24
Efficiency(%): 89.93%
Lumens(lm)/Power(W): 126.64
Central intensity(cd): 5781.228
Maximum intensity(cd): 5781.228
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=35.8
[C90/270]Total=35.8
Field angle(10%Imax): [C0/180]Total=70.5
[C90/270]Total=70.5
Maximum s/h(1/2): C0_180=0.59 C90_270=0.59
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(%): 89.93%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.674%

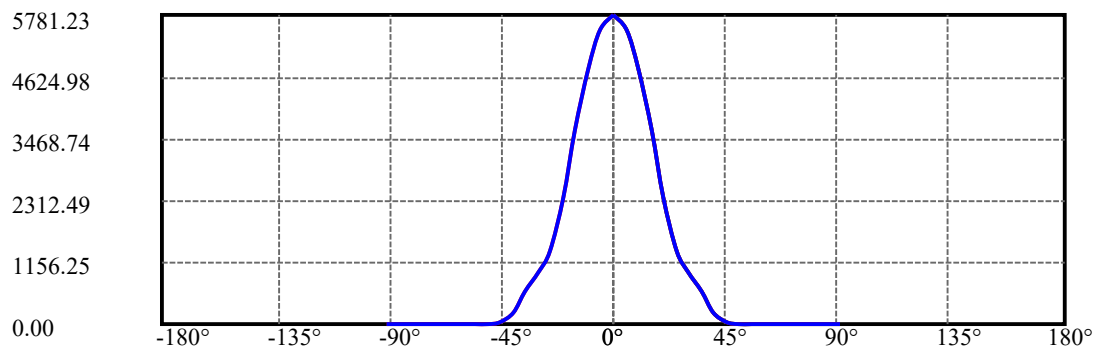
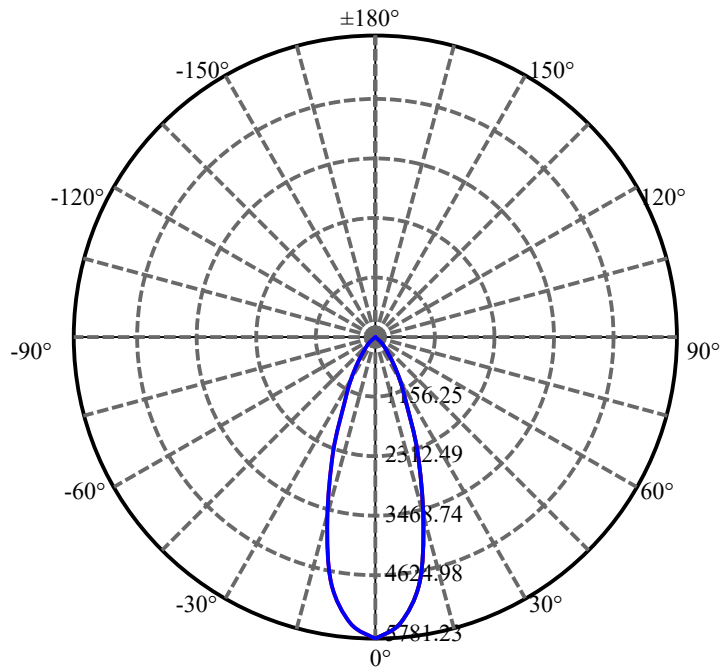
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5781.227	0.000	0	.000%	.000%
5.0	5493.856	134.790	134.79	4.589%	5.103%
10.0	4773.029	367.279	502.069	12.505%	19.009%
15.0	3619.789	497.856	999.926	16.951%	37.858%
20.0	2369.993	493.642	1493.568	16.808%	56.548%
25.0	1365.635	391.798	1885.366	13.340%	71.382%
30.0	971.287	295.739	2181.106	10.069%	82.579%
35.0	598.874	231.217	2412.323	7.873%	91.333%
40.0	201.744	133.577	2545.9	4.548%	96.390%
45.0	21.405	41.318	2587.218	1.407%	97.955%
50.0	14.330	7.221	2594.438	.246%	98.228%
55.0	12.995	5.941	2600.38	.202%	98.453%
60.0	12.195	5.822	2606.202	.198%	98.673%
65.0	11.666	5.801	2612.003	.197%	98.893%
70.0	11.318	5.820	2617.823	.198%	99.113%
75.0	11.054	5.848	2623.67	.199%	99.335%
80.0	10.880	5.869	2629.539	.200%	99.557%
85.0	10.706	5.865	2635.404	.200%	99.779%
90.0	10.602	5.834	2641.239	.199%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2181.11	74.26%	82.58%
0-40	2545.90	86.68%	96.39%
0-60	2606.20	88.74%	98.67%
0-90	2635.40	89.73%	99.78%
0-120	2635.40	89.73%	99.78%
0-180	2641.24	89.93%	100.00%
60-90	35.02	1.19%	1.33%
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%
0-28.85	2112.99	71.94%	80.00%

ZONAL LUMEN SUMMARY

0-10	502.07
10-20	991.50
20-30	687.54
30-40	364.79
40-50	48.54
50-60	11.76
60-70	11.62
70-80	11.72
80-90	5.87
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: —————

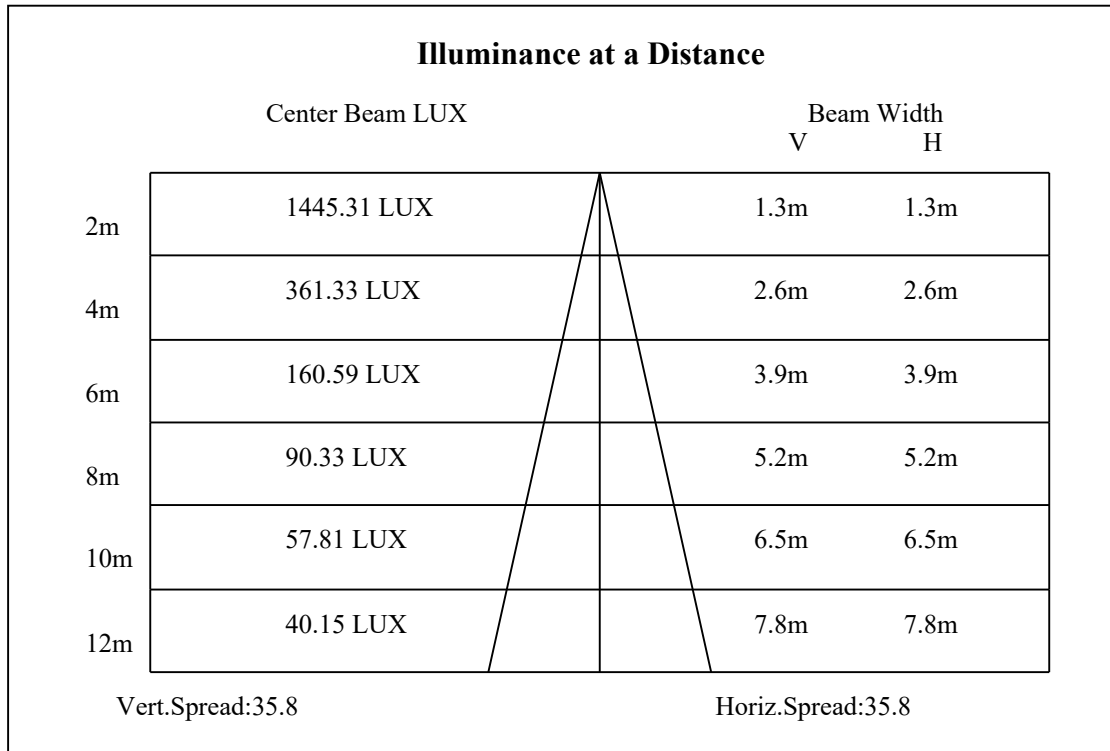
C90/C270: —————

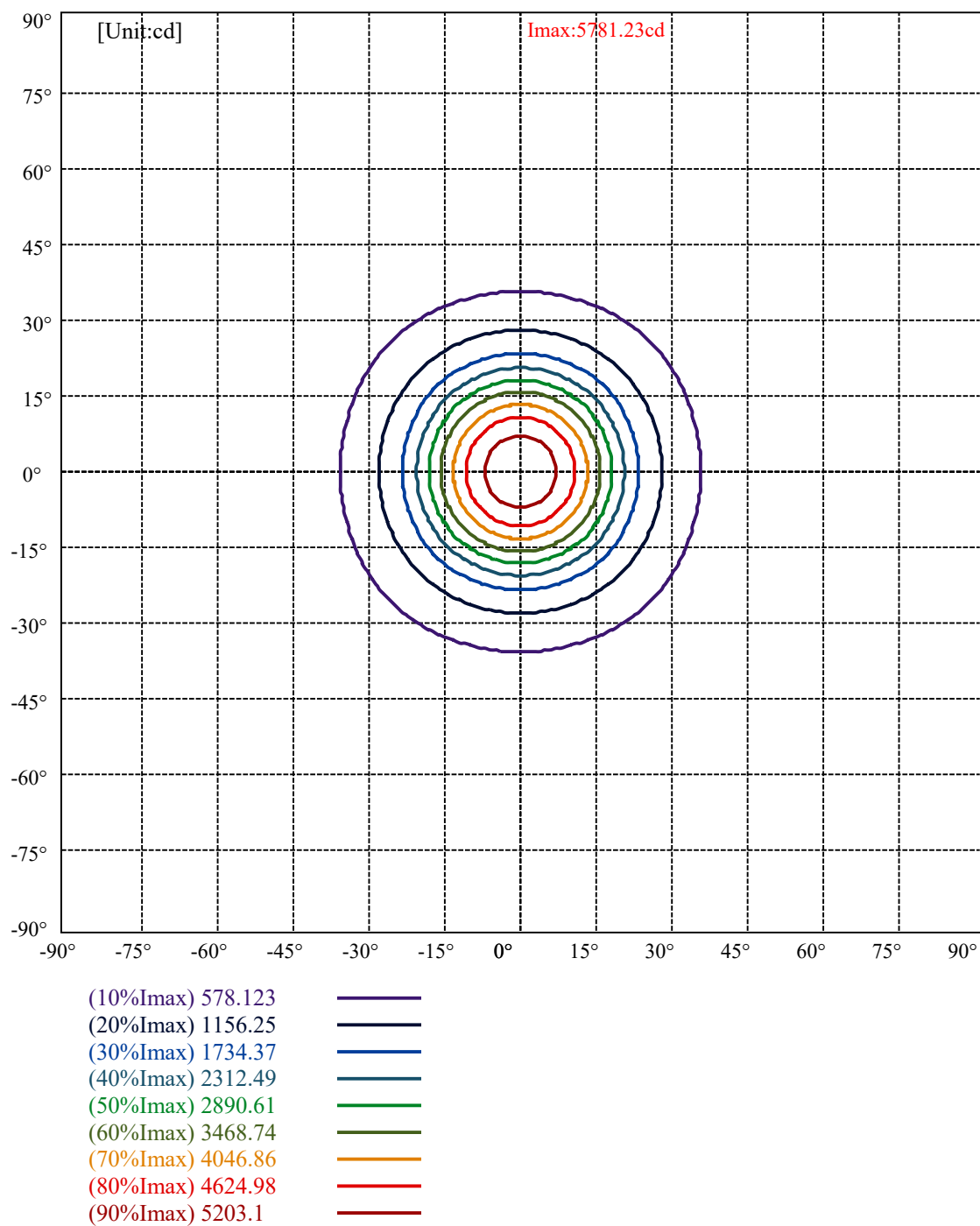
Field angle(10%Imax):C0/180Left:35.3 Right:35.3

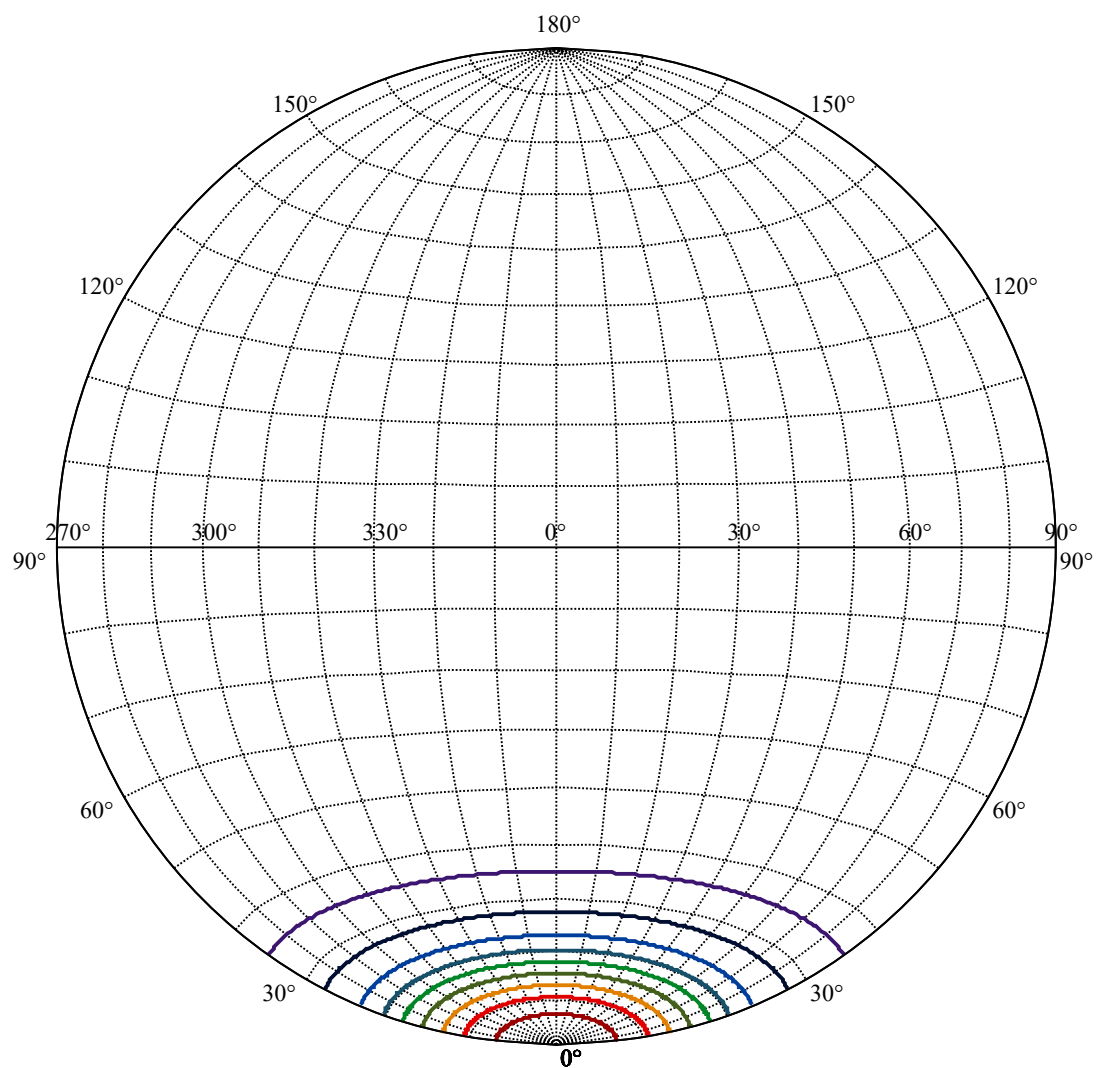
:C90/270Left:35.3 Right:35.3

Beam Angle(50%Imax):C0/180Left:17.9 Right:17.9

:C90/270Left:17.9 Right:17.9







House

[Unit:cd]

Road

Imax:5781.23

(10%Imax) 578.123

(20%Imax) 1156.25

(30%Imax) 1734.37

(40%Imax) 2312.49

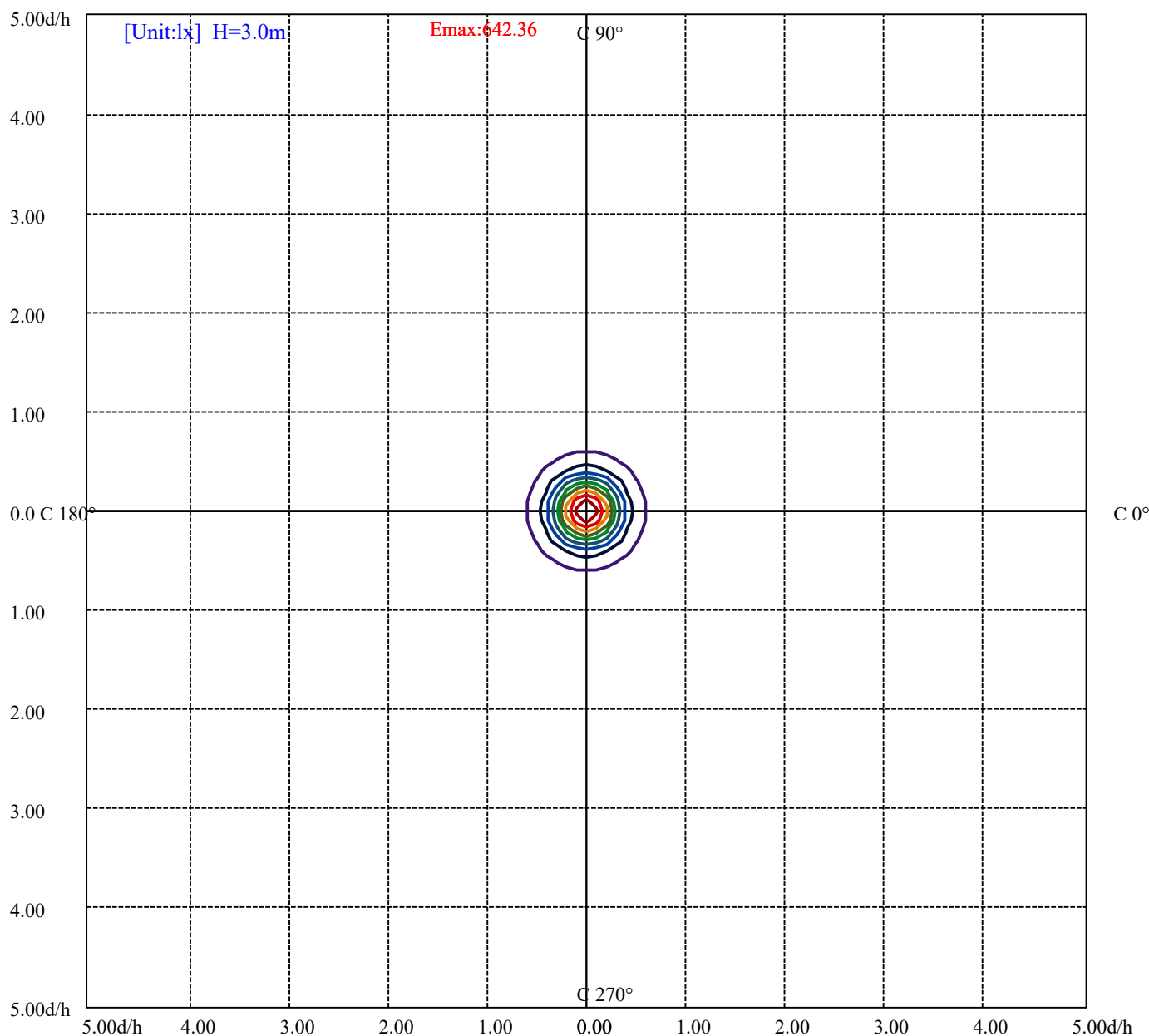
(50%Imax) 2890.61

(60%Imax) 3468.74

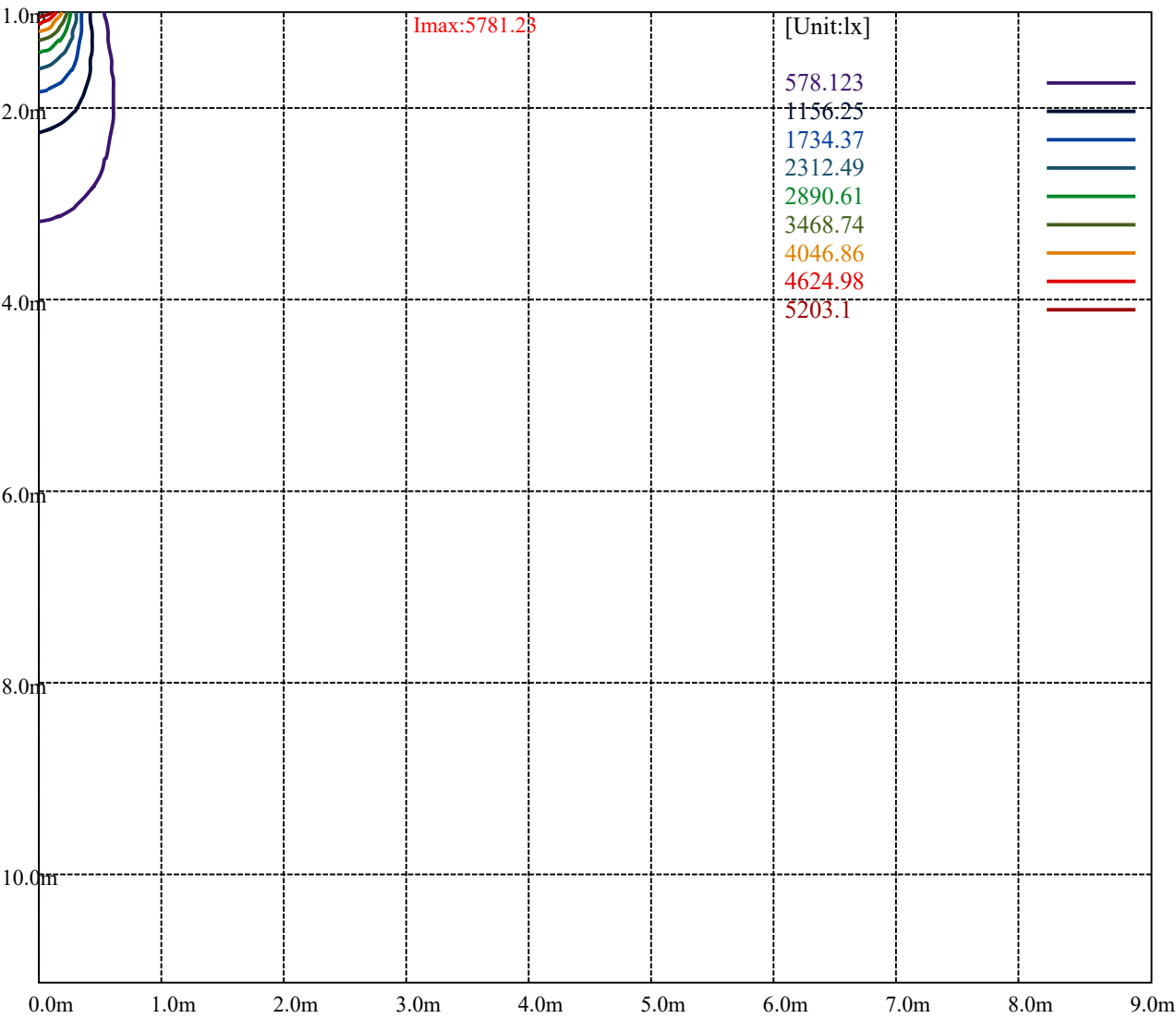
(70%Imax) 4046.86

(80%Imax) 4624.98

(90%Imax) 5203.1



(10%Emax)	64.23578	—
(20%Emax)	128.4711	—
(30%Emax)	192.7078	—
(40%Emax)	256.9433	—
(50%Emax)	321.1789	—
(60%Emax)	385.4144	—
(70%Emax)	449.65	—
(80%Emax)	513.8867	—
(90%Emax)	578.1223	—



Luminance Table

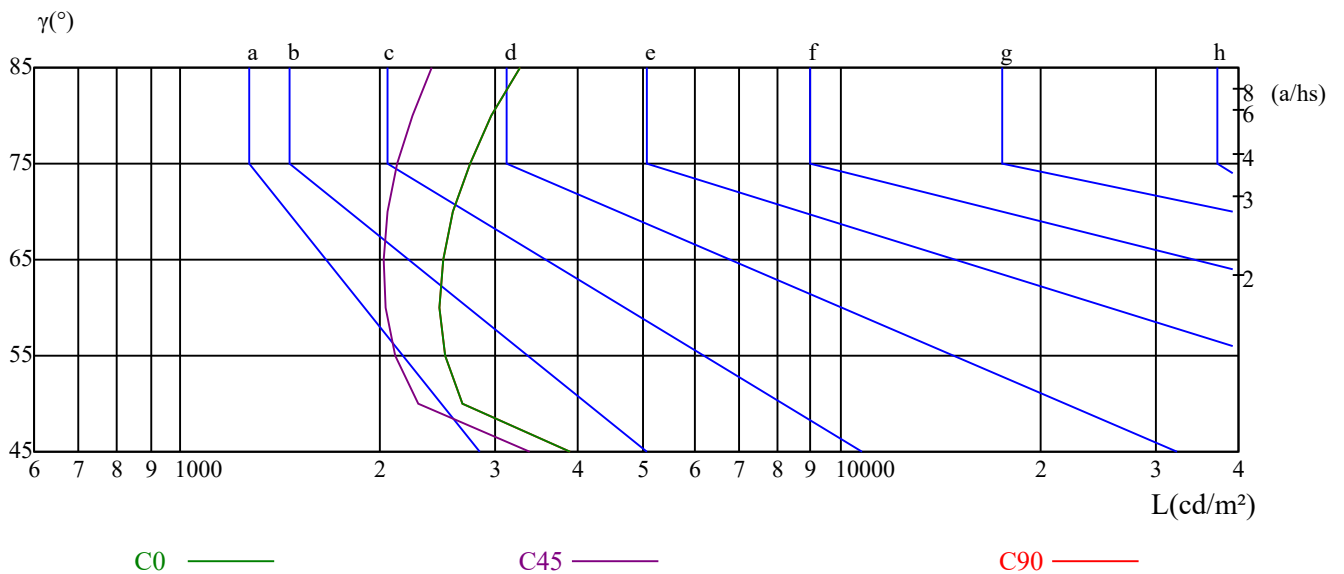
γ	45	50	55	60	65	70	75	80	85
C0	3896	2679	2518	2471	2497	2588	2736	2959	3258
C45	3379	2290	2118	2044	2029	2062	2130	2244	2395
C90	3896	2679	2518	2471	2497	2588	2736	2959	3258

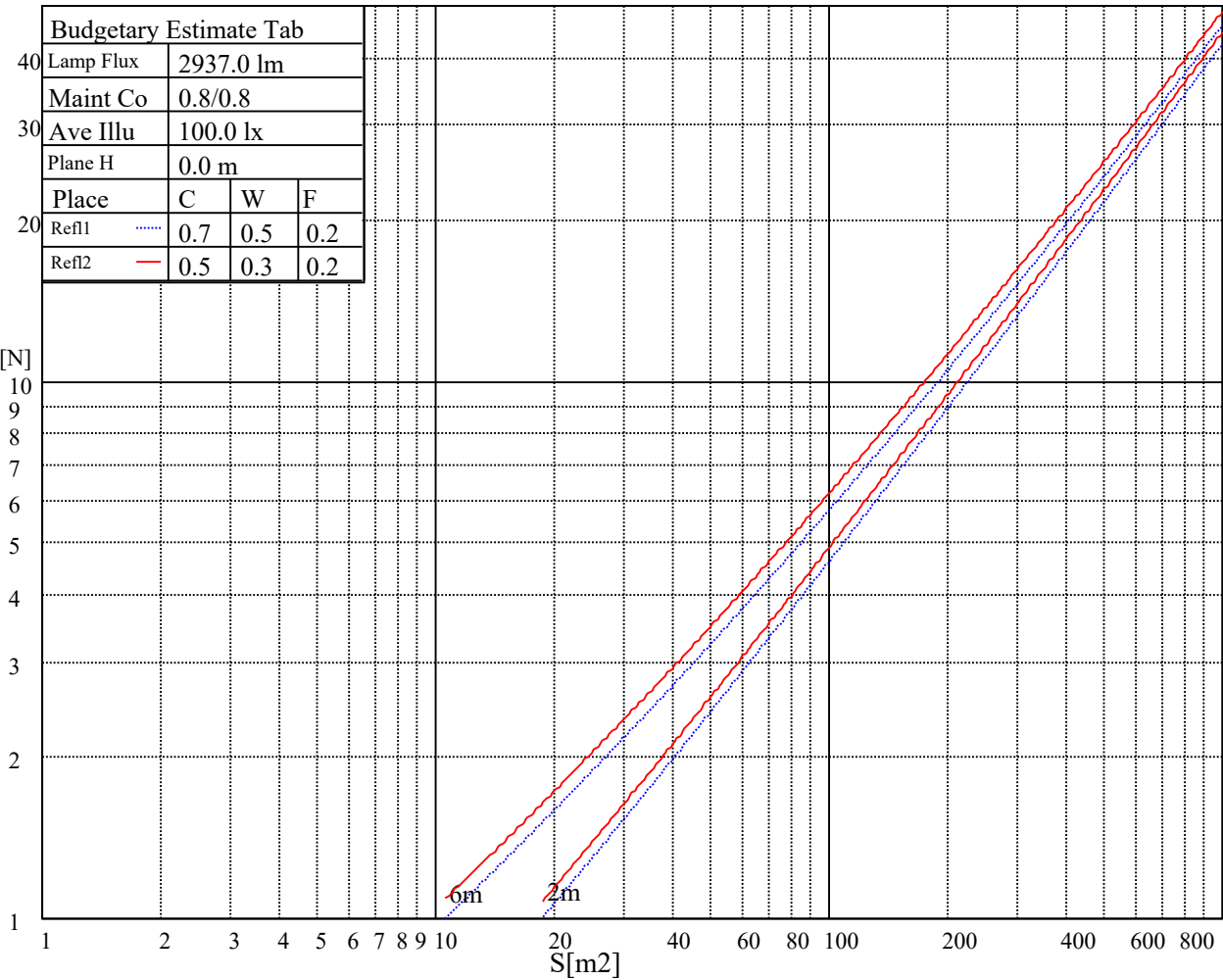
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5633	5633	5633	8716	8716	8716	25069	25069	25069

Glare Table

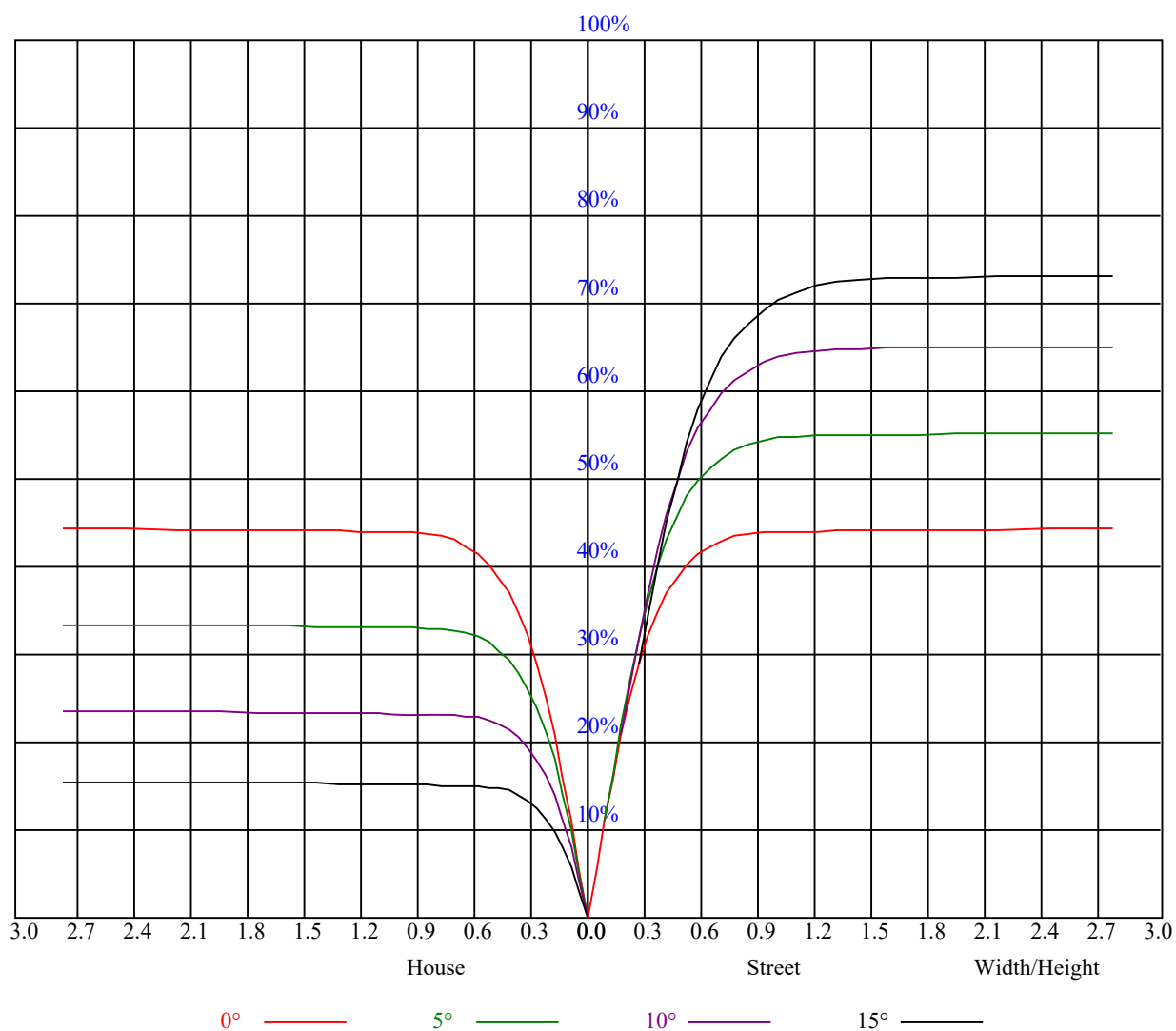
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	0.96	0.98	0.96	0.95	0.95	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	0.83	0.85	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.76
4	0.84	0.80	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.68
6	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.65
7	0.72	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.62
8	0.69	0.64	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.59
9	0.66	0.61	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.57
10	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.58	0.55	0.54



Nata 2-1676-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	5755.49	5807.80	5334.21	4339.16	3026.89	1815.91	1143.08	814.74	363.96
45.0	5800.01	5542.90	4824.99	3675.79	2420.84	1336.19	982.25	609.39	301.08
90.0	5764.39	5225.13	4304.09	2999.62	1794.76	1093.83	866.33	446.33	58.04
135.0	5805.02	5305.82	4451.57	3161.57	1947.25	1164.79	888.76	438.53	61.77
180.0	5755.49	5188.96	4323.02	3120.94	1829.27	1091.16	821.86	314.15	27.05
225.0	5800.01	5437.16	4720.37	3558.36	2391.35	1353.45	973.68	581.61	135.73
270.0	5764.39	5687.59	5092.12	4040.86	2824.32	1564.92	1049.59	804.17	360.07
315.0	5805.02	5755.49	5133.86	4062.01	2725.26	1504.82	1044.75	782.07	306.25
360.0	5755.49	5807.80	5334.21	4339.16	3026.89	1815.91	1143.08	814.74	363.96

C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	28.99	15.42	13.69	12.74	12.08	11.63	11.35	11.07	10.91
45.0	19.20	14.47	13.13	12.30	11.74	11.41	11.13	10.85	10.63
90.0	15.30	13.58	12.47	11.91	11.52	11.13	10.96	10.91	10.63
135.0	17.14	13.75	12.80	12.02	11.52	11.24	11.02	10.85	10.74
180.0	16.03	13.80	12.80	12.08	11.52	11.24	11.02	10.85	10.69
225.0	19.48	14.19	12.74	12.02	11.52	11.19	10.85	10.74	10.63
270.0	28.33	14.69	13.08	12.24	11.63	11.30	10.96	10.85	10.69
315.0	26.77	14.75	13.25	12.24	11.80	11.41	11.13	10.91	10.74
360.0	28.99	15.42	13.69	12.74	12.08	11.63	11.35	11.07	10.91

C/ γ (°)	90.0
0.0	10.74
45.0	10.52
90.0	10.52
135.0	10.69
180.0	10.74
225.0	10.46
270.0	10.57
315.0	10.57
360.0	10.74