
Nata

Client:

LumCAT: 2-1650-A

Luminaire: 92.70.131.00+92.70.148.00

Report No: NT2018031207

Test No: nata-0100

LampCAT: LUMINUS CXM-14

Lamp flux(lm): 1820.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 34.0000

Current(A): 0.5000

Power (W): 17.0000

PF: 0.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1577.00, Efficiency(%): 86.65% , Luminous Efficacy(lm/W): 92.76

Central intensity(cd): 8060.670, Maximum intensity(cd): 8060.670

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=19.6

[C90/270]Total=19.6

Field angle(10%Imax): [C0/180]Total=43.2

[C90/270]Total=43.2

Maximum s/h(1/2): C0_180=0.34 C90_270=0.34

Maximum s/h(1/4): C0_180=0.35 C90_270=0.35

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.21%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.466%

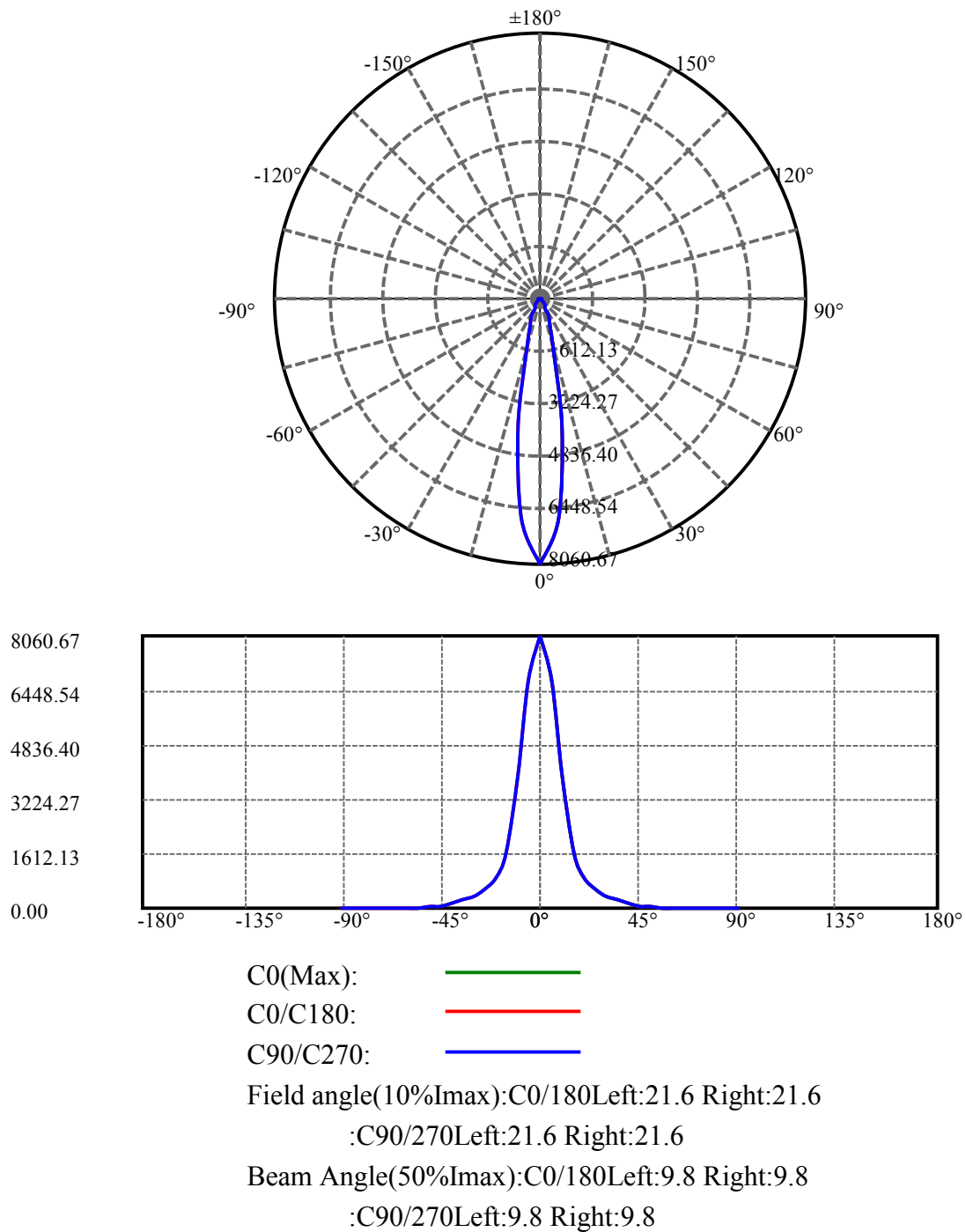
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8060.670	48.204	48.204	2.649%	3.057%
5.0	6718.188	320.950	369.155	17.635%	23.409%
10.0	3937.290	374.763	743.918	20.591%	47.173%
15.0	1649.813	234.056	977.974	12.860%	62.015%
20.0	922.298	172.907	1150.881	9.500%	72.979%
25.0	568.574	131.712	1282.593	7.237%	81.331%
30.0	358.892	98.361	1380.954	5.404%	87.568%
35.0	228.752	71.919	1452.874	3.952%	92.129%
40.0	127.641	44.973	1497.846	2.471%	94.981%
45.0	69.646	26.994	1524.841	1.483%	96.692%
50.0	34.176	14.351	1539.191	.788%	97.602%
55.0	14.246	6.396	1545.588	.351%	98.008%
60.0	9.483	4.502	1550.089	.247%	98.294%
65.0	9.325	4.633	1554.722	.255%	98.587%
70.0	9.174	4.725	1559.447	.260%	98.887%
75.0	9.435	4.996	1564.443	.274%	99.204%
80.0	11.011	5.944	1570.387	.327%	99.581%
85.0	8.788	4.799	1575.186	.264%	99.885%
90.0	6.621	1.814	1577	.100%	100.000%

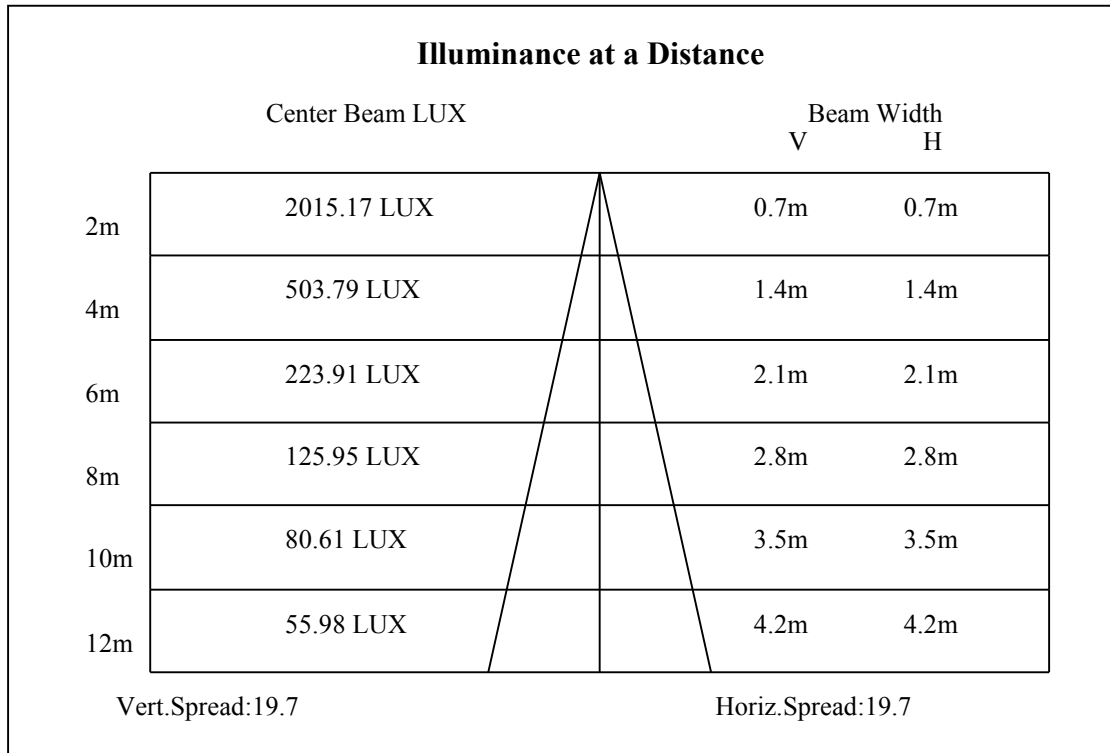
ZONAL LUMEN SUMMARY

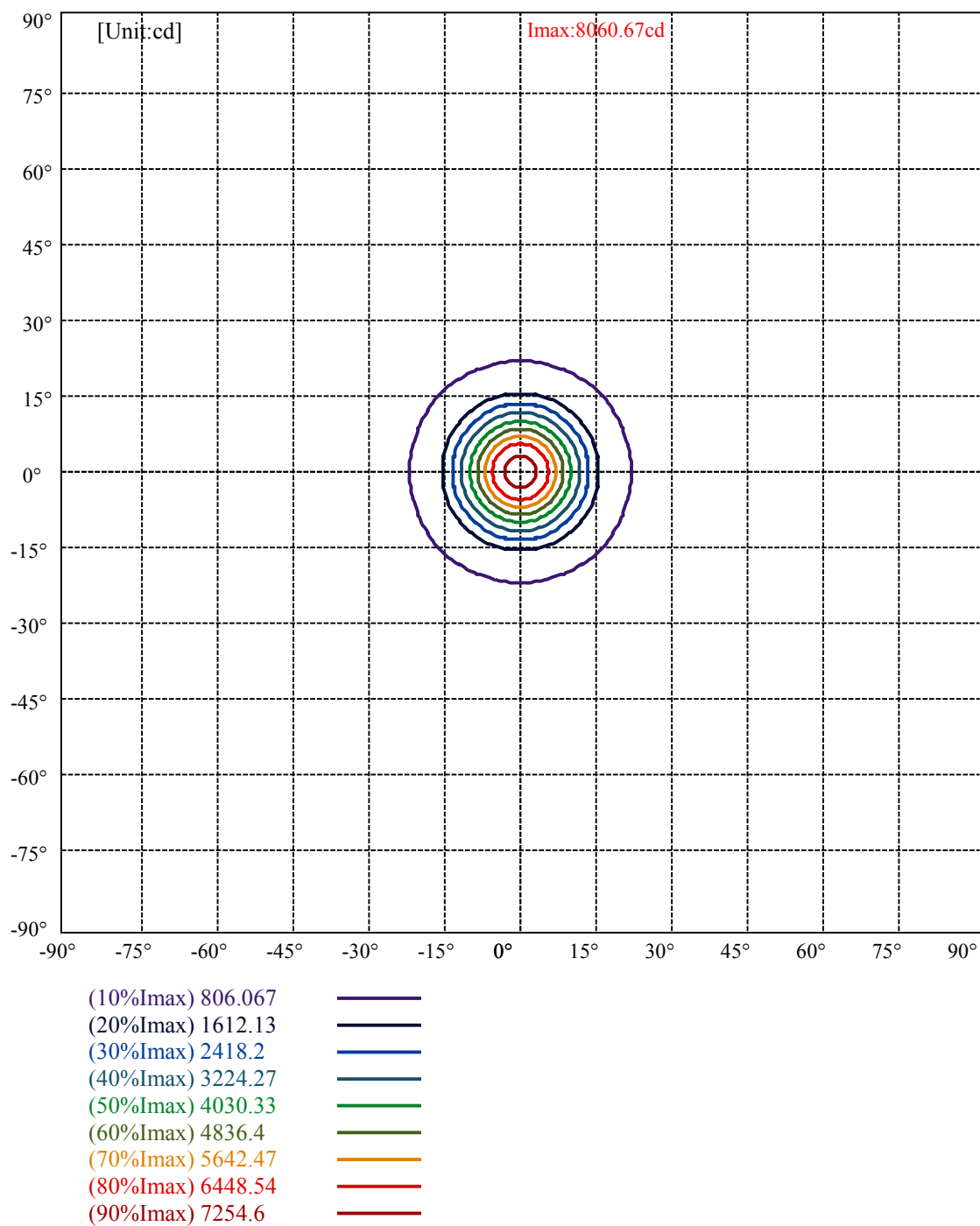
Zone	Lumens	%Lamp	%Fixt
0-30	1380.95	75.88%	87.57%
0-40	1497.85	82.30%	94.98%
0-60	1550.09	85.17%	98.29%
0-90	1575.19	86.55%	99.88%
0-120	1575.19	86.55%	99.88%
0-180	1577.00	86.65%	100.00%
60-90	29.60	1.63%	1.88%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.20	1261.60	69.32%	80.00%

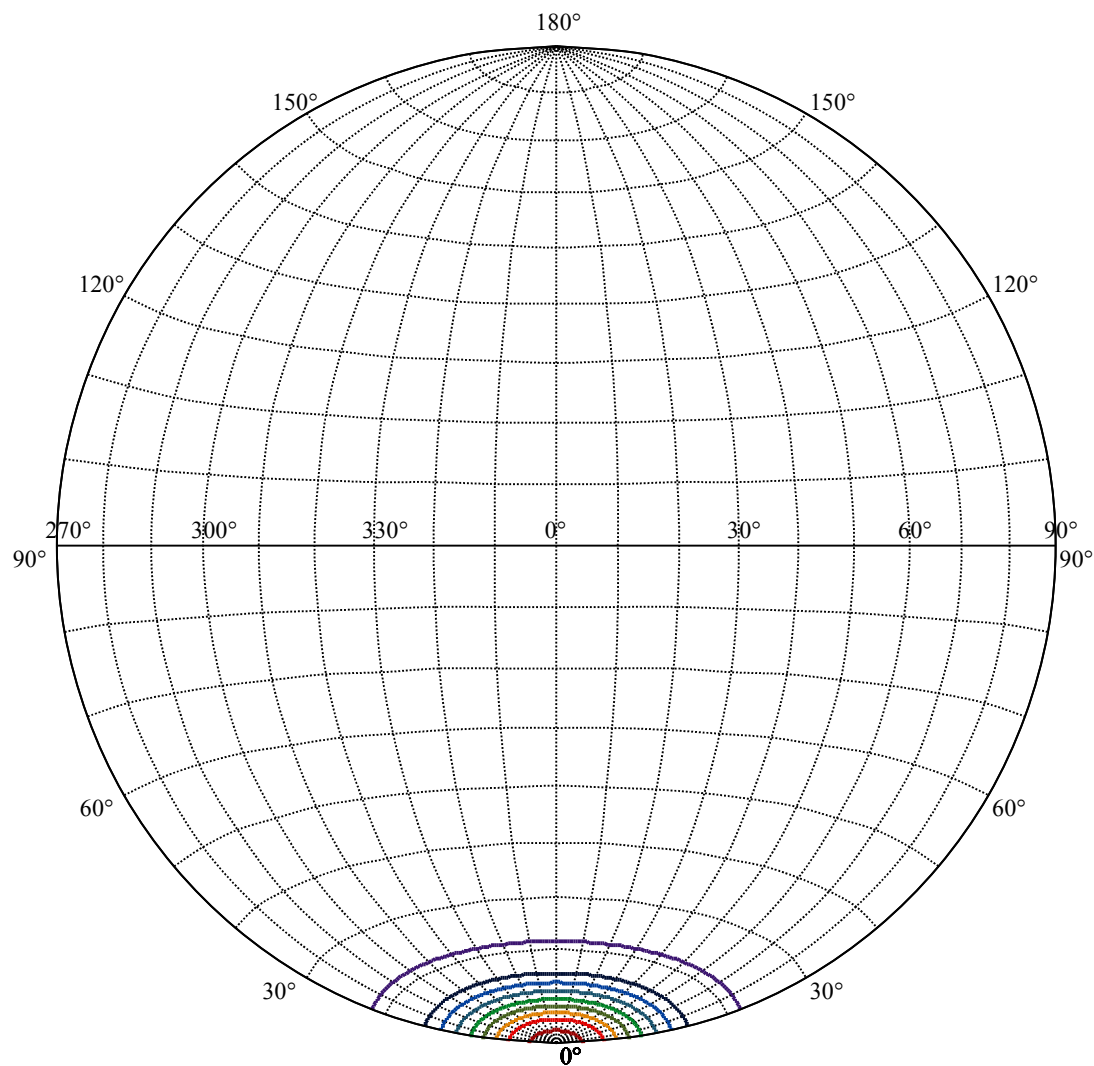
ZONAL LUMEN SUMMARY

0-10	743.92
10-20	406.96
20-30	230.07
30-40	116.89
40-50	41.34
50-60	10.90
60-70	9.36
70-80	10.94
80-90	4.80
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







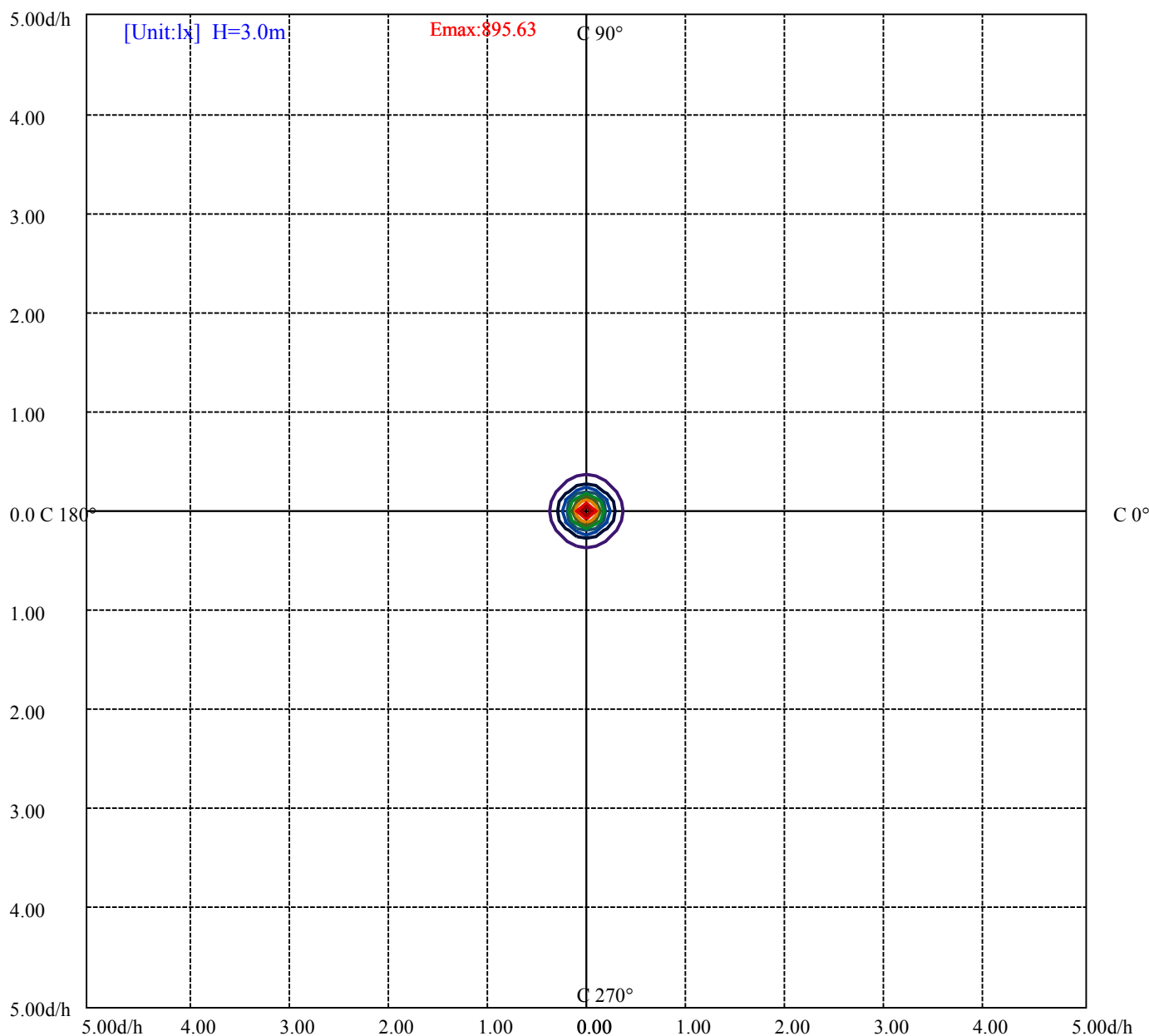


House

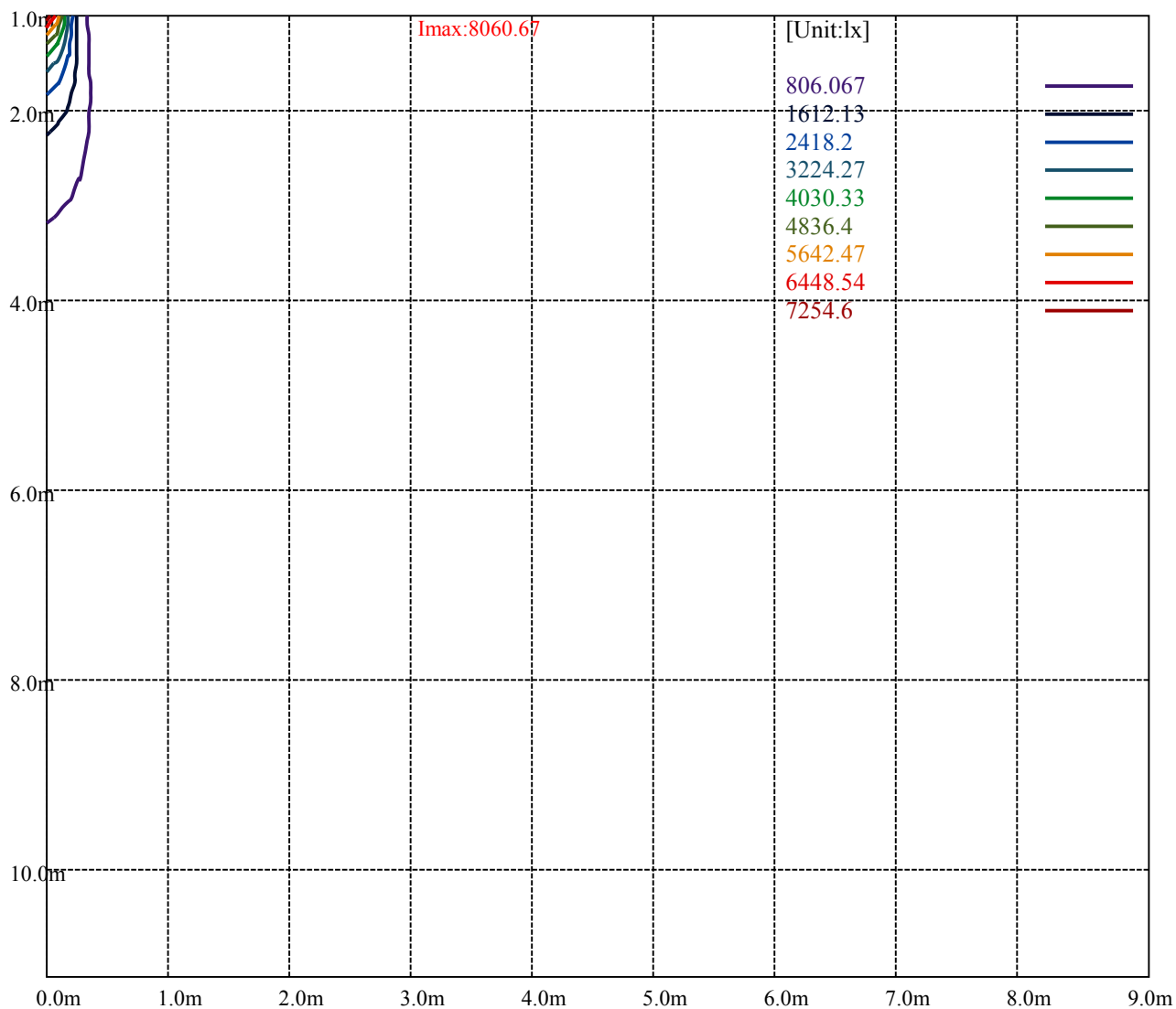
[Unit:cd]

Road

Imax:8060.67	
(10%Imax) 806.067	
(20%Imax) 1612.13	
(30%Imax) 2418.2	
(40%Imax) 3224.27	
(50%Imax) 4030.33	
(60%Imax) 4836.4	
(70%Imax) 5642.47	
(80%Imax) 6448.54	
(90%Imax) 7254.6	



(10%Emax)	89.56255	—
(20%Emax)	179.1255	—
(30%Emax)	268.6878	—
(40%Emax)	358.25	—
(50%Emax)	447.8122	—
(60%Emax)	537.3755	—
(70%Emax)	626.9377	—
(80%Emax)	716.5	—
(90%Emax)	806.0633	—



Luminance Table

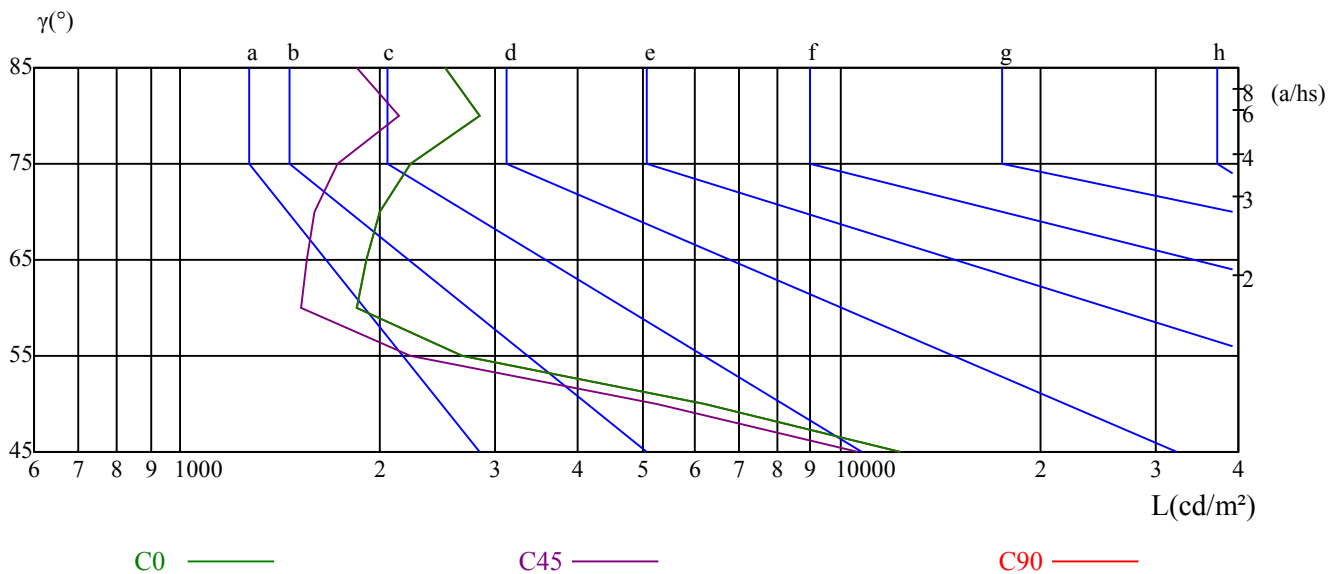
γ	45	50	55	60	65	70	75	80	85
C0	12343	6204	2671	1853	1918	2007	2224	2835	2514
C45	10641	5269	2233	1524	1549	1590	1723	2142	1844
C90	12343	6204	2671	1853	1918	2007	2224	2835	2514

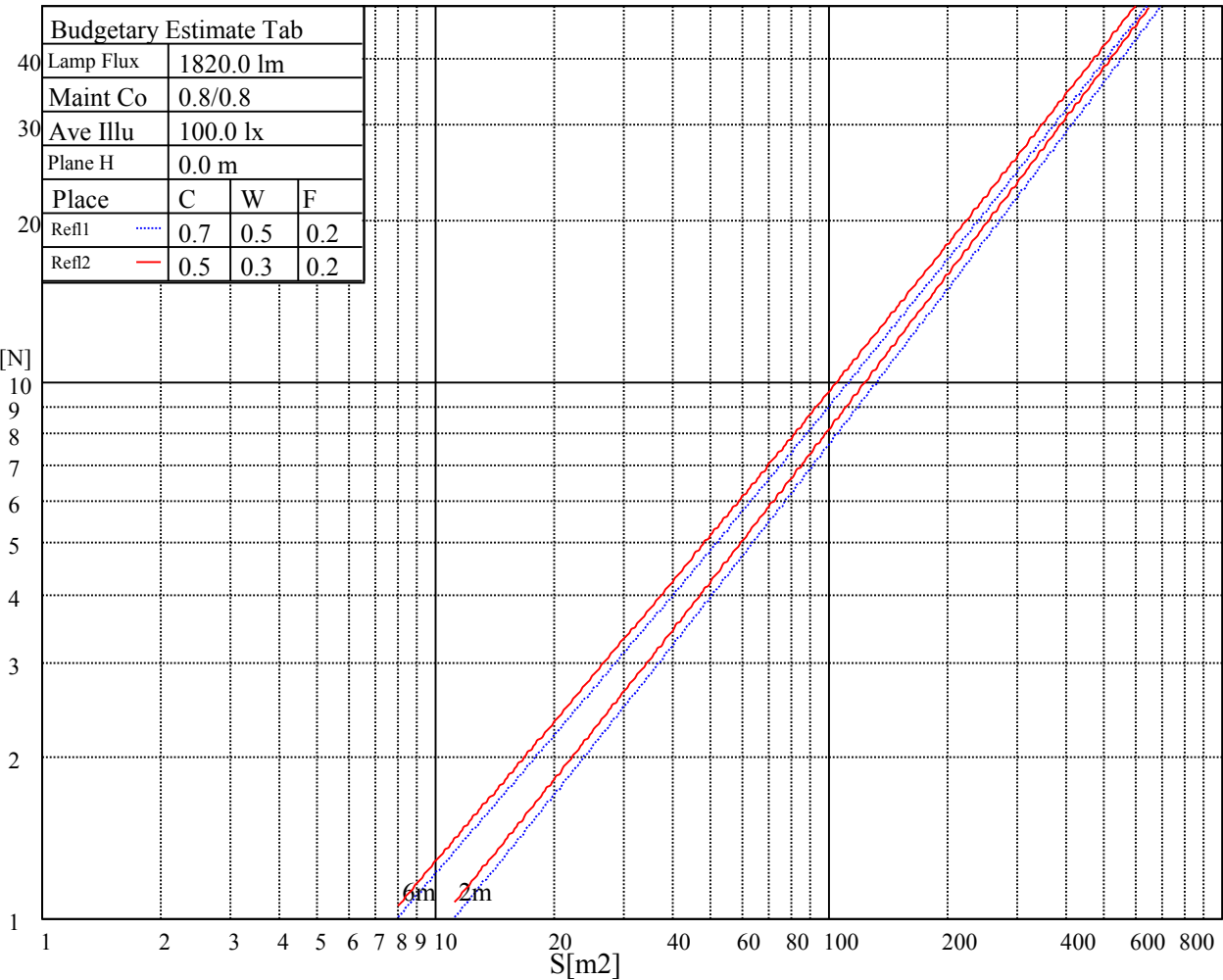
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4503	4503	4503	7440	7440	7440	20579	20579	20579

Glare Table

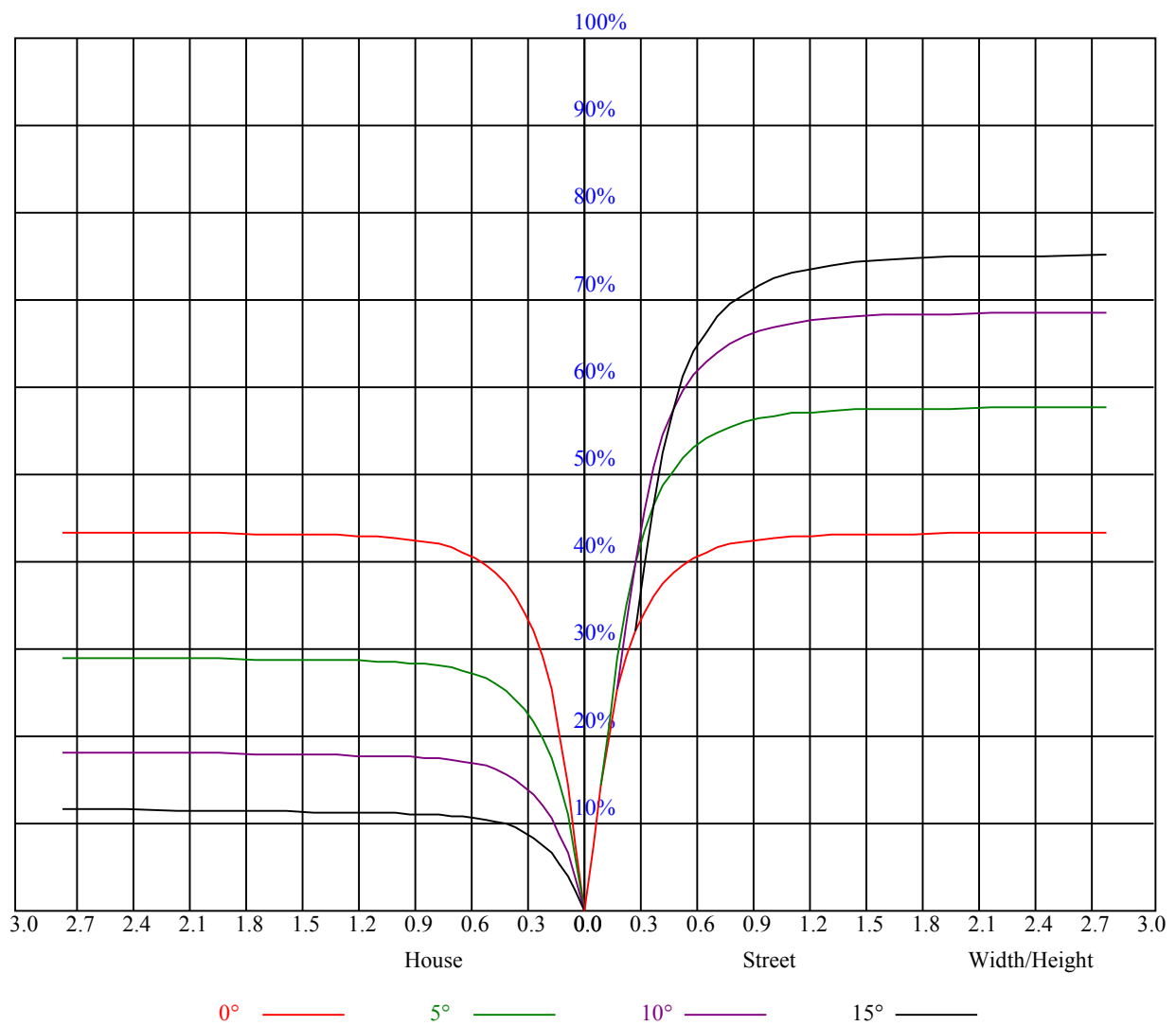
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

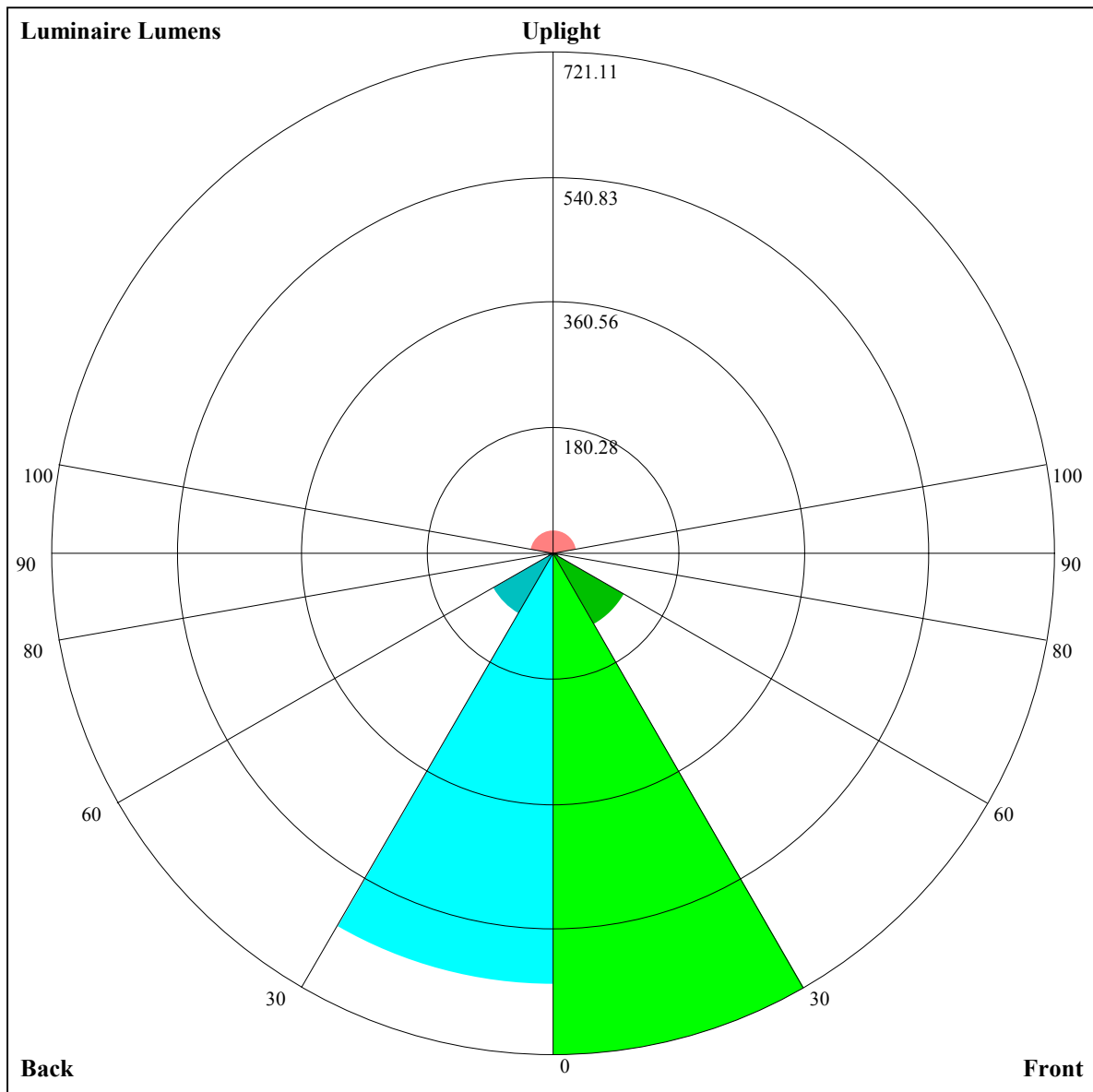
Luminance Limiting Curve





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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.97	0.94	0.92	0.95	0.92	0.90	0.91	0.89	0.87	0.88	0.86	0.85	0.85	0.83	0.82	0.81
2	0.92	0.88	0.85	0.90	0.87	0.84	0.87	0.85	0.82	0.85	0.82	0.81	0.82	0.80	0.79	0.77
3	0.88	0.83	0.80	0.86	0.83	0.80	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
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	0.81	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
6	0.78	0.74	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63
10	0.69	0.65	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61





Luminaire Lumens:

FL=721.11,FM=118.3,FH=9.75,FVH=4.82

BL=620.09,BM=100.37,BH=9.8,BVH=4.76

UL=7.22,UH=34.37

BUG Rating:B2-U2-G0

Nata 2-1650-A

Intensity data(cd)										Appendix Page: 15 Total:15	
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	7920.41	7578.51	5153.28	2271.08	1127.00	691.51	438.80	279.69	162.20		
45.0	8122.47	7180.46	4514.62	1887.88	1010.84	601.22	383.19	280.24	134.45		
90.0	8089.44	6580.34	3536.82	1501.94	852.55	525.18	325.38	192.42	115.67		
135.0	8110.36	6453.71	3941.49	1579.57	877.05	539.55	340.25	200.07	119.36		
180.0	7920.41	5785.88	2741.81	1080.59	729.50	466.11	296.81	172.05	99.93		
225.0	8122.47	6346.90	3315.50	1276.21	845.67	526.78	326.54	197.43	116.83		
270.0	8089.44	6919.49	4164.47	1889.54	997.62	614.43	381.54	284.09	137.37		
315.0	8110.36	6900.22	4130.33	1711.70	938.16	583.82	378.62	224.02	135.33		
360.0	7920.41	7578.51	5153.28	2271.08	1127.00	691.51	438.80	279.69	162.20		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	91.12	46.30	20.65	9.74	9.47	9.36	9.19	15.25	8.97		
45.0	73.61	37.11	16.08	9.58	9.47	9.30	9.14	8.97	8.86		
90.0	63.09	30.78	12.94	9.41	9.30	9.19	9.03	8.92	8.75		
135.0	67.11	32.81	12.83	9.30	9.19	8.97	10.19	15.69	8.81		
180.0	51.37	23.56	10.13	9.25	9.08	8.92	8.81	8.64	8.04		
225.0	60.89	29.35	12.06	9.41	9.25	9.14	10.68	10.08	9.03		
270.0	76.20	37.93	15.36	9.58	9.41	9.30	9.41	11.73	9.30		
315.0	73.78	35.57	13.93	9.58	9.41	9.19	9.03	8.81	8.53		
360.0	91.12	46.30	20.65	9.74	9.47	9.36	9.19	15.25	8.97		
C/ γ (°)	90.0										
0.0	8.09										
45.0	6.55										
90.0	6.22										
135.0	6.17										
180.0	6.22										
225.0	6.33										
270.0	6.61										
315.0	6.77										
360.0	8.09										