
Nata

Client:

LumCAT: 3-2016-A

Luminaire: 92.70.045.00+92.70.089.00

Report No: NT2018031901

Test No: nata-0100

LampCAT: CREE CXA2520

Lamp flux(lm): 2355.0

Number of Lamps: 1

Length(mm): 82

Phm Type: C

Voltage(V): 36.0000

Current(A): 0.8000

Power (W): 28.8000

PF: 0.0000

Ballast type: DC

Width(mm): 82

Height(mm): 0

Photometric Results

Lumens(lm): 1926.74, Efficiency(%): 81.82% , Luminous Efficacy(lm/W): 66.90

Central intensity(cd): 10359.830, Maximum intensity(cd): 10359.830

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=20.0

[C90/270]Total=20.0

Field angle(10%Imax): [C0/180]Total=39.0

[C90/270]Total=39.0

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

Maximum s/h(1/4): C0_180=0.34 C90_270=0.34

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 84.37%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.824%

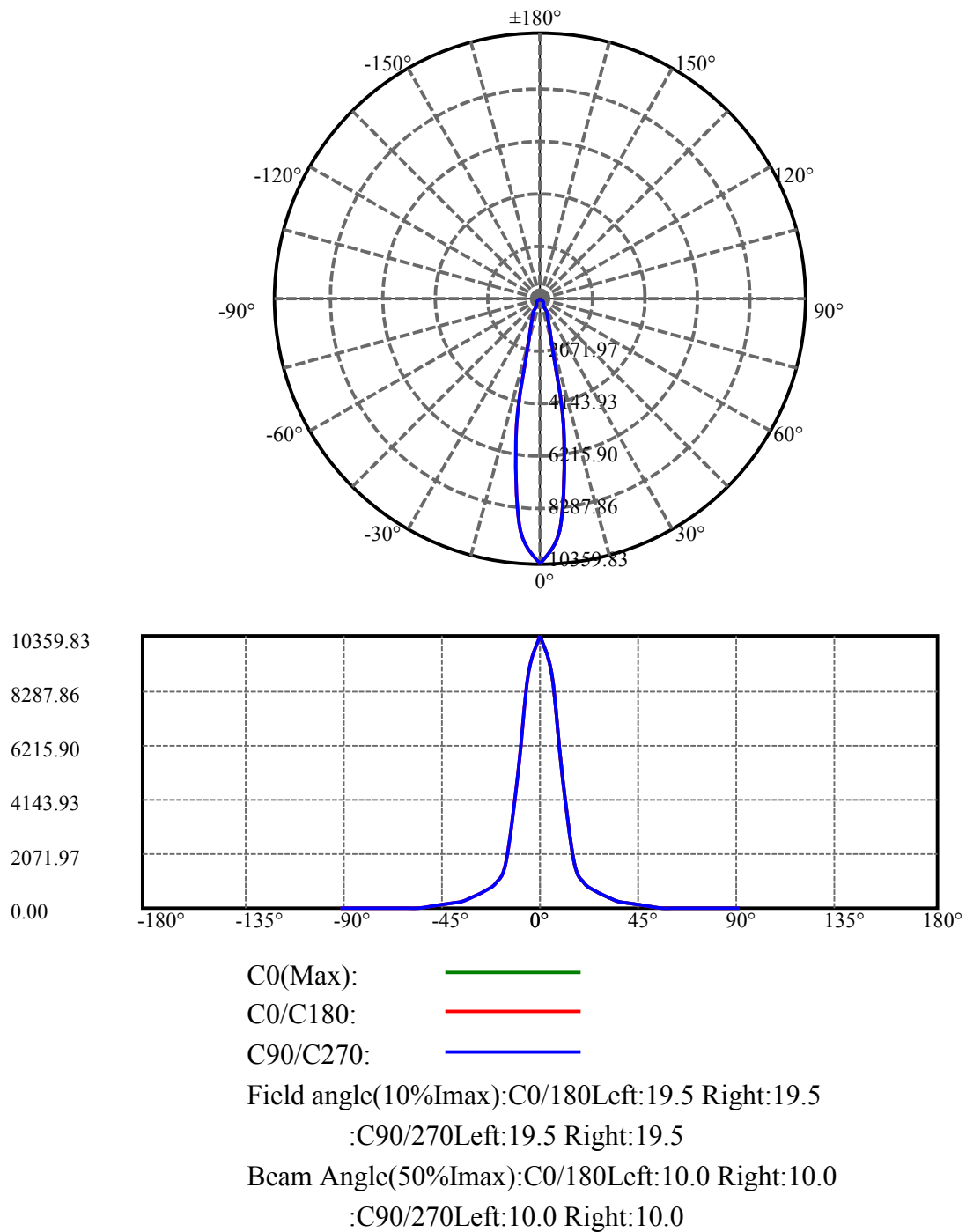
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10359.825	61.954	61.954	2.631%	3.215%
5.0	8909.846	425.653	487.607	18.074%	25.307%
10.0	5154.311	490.603	978.21	20.832%	50.770%
15.0	1817.405	257.832	1236.042	10.948%	64.152%
20.0	956.915	179.397	1415.439	7.618%	73.463%
25.0	614.072	142.251	1557.69	6.040%	80.846%
30.0	421.126	115.418	1673.108	4.901%	86.836%
35.0	286.101	89.950	1763.057	3.820%	91.505%
40.0	185.382	65.317	1828.374	2.774%	94.895%
45.0	100.471	38.942	1867.316	1.654%	96.916%
50.0	52.895	22.211	1889.527	.943%	98.068%
55.0	22.456	10.083	1899.61	.428%	98.592%
60.0	9.036	4.289	1903.899	.182%	98.814%
65.0	8.011	3.980	1907.879	.169%	99.021%
70.0	7.873	4.055	1911.934	.172%	99.231%
75.0	7.852	4.158	1916.091	.177%	99.447%
80.0	7.887	4.257	1920.349	.181%	99.668%
85.0	7.907	4.318	1924.667	.183%	99.892%
90.0	7.577	2.077	1926.743	.088%	100.000%

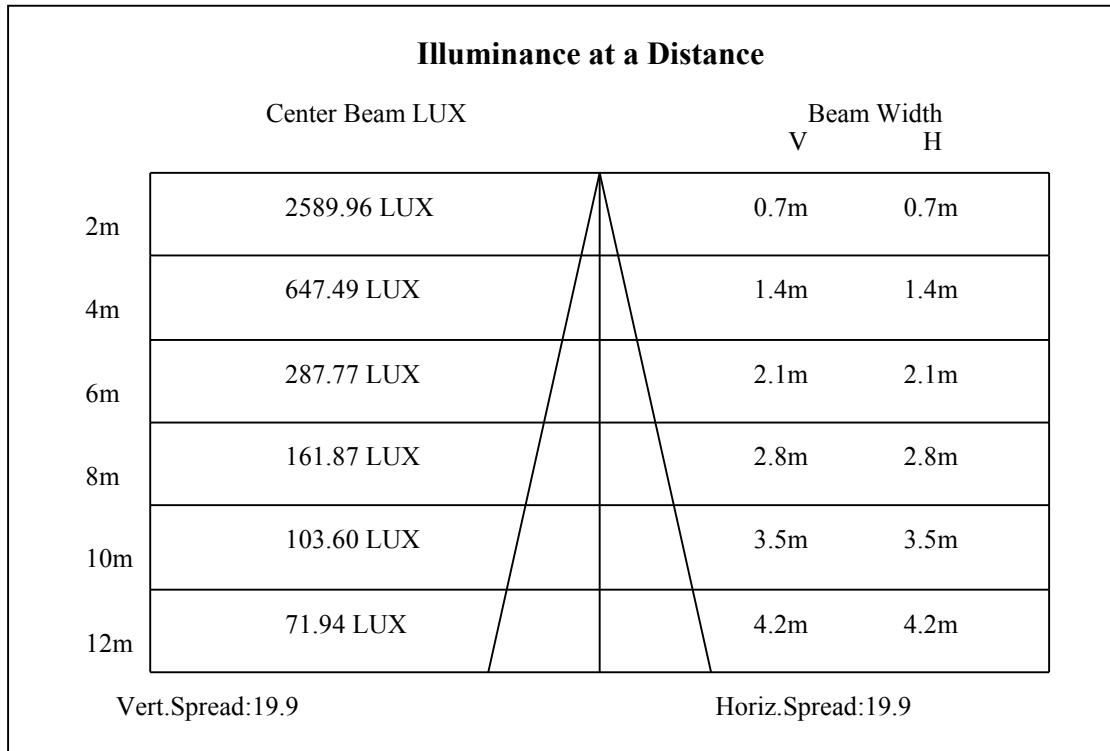
ZONAL LUMEN SUMMARY

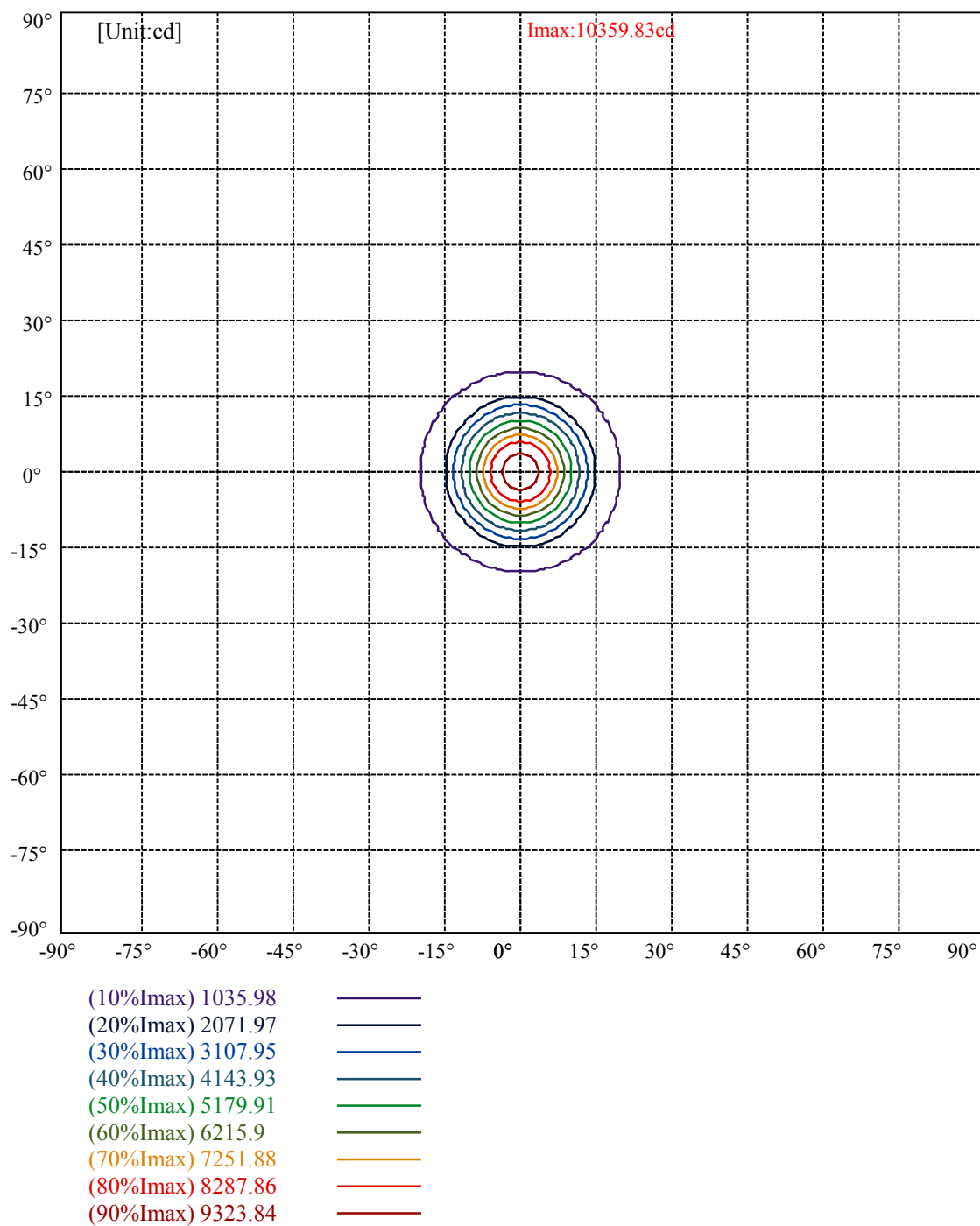
Zone	Lumens	%Lamp	%Fixt
0-30	1673.11	71.04%	86.84%
0-40	1828.37	77.64%	94.89%
0-60	1903.90	80.84%	98.81%
0-90	1924.67	81.73%	99.89%
0-120	1924.67	81.73%	99.89%
0-180	1926.74	81.82%	100.00%
60-90	25.06	1.06%	1.30%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.43	1541.40	65.45%	80.00%

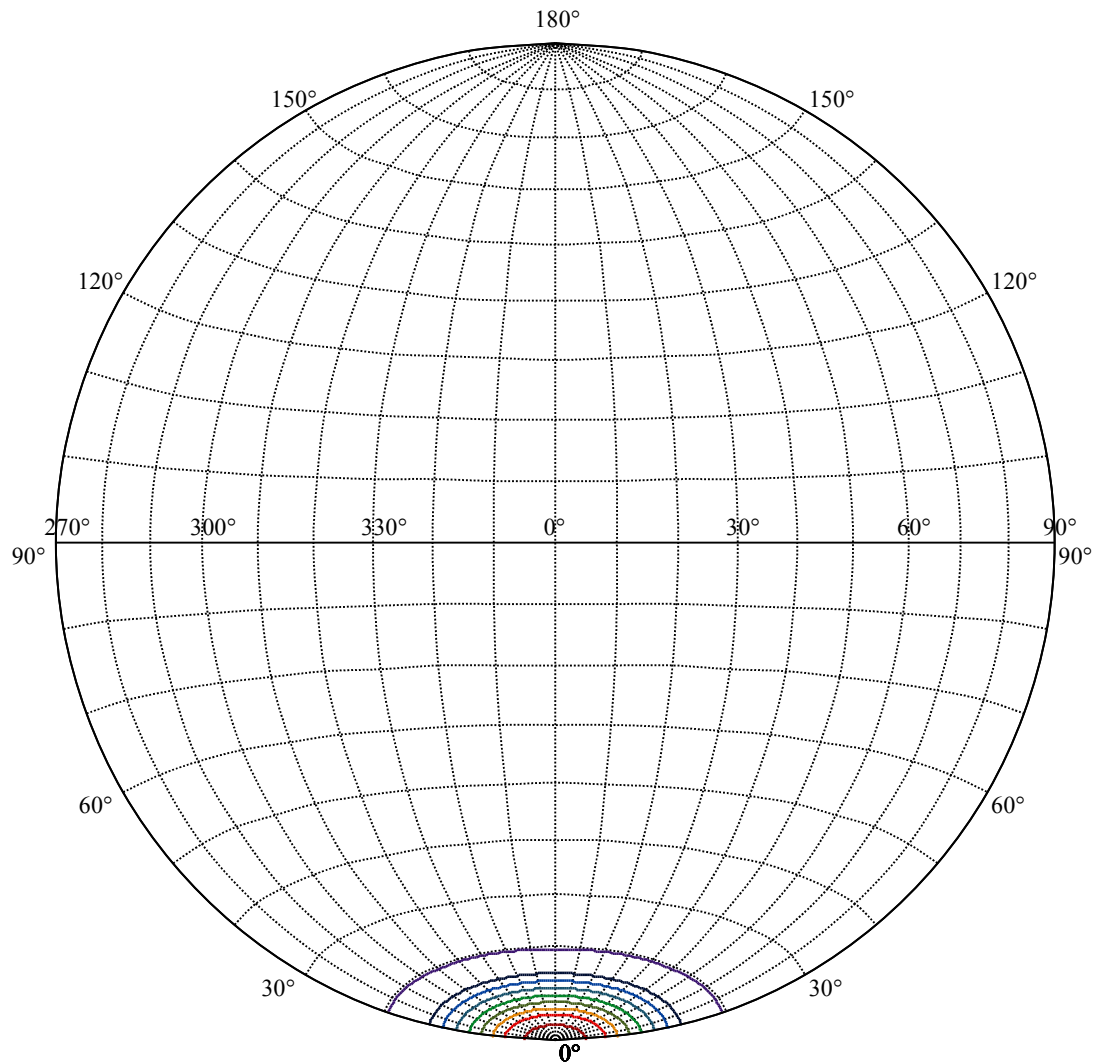
ZONAL LUMEN SUMMARY

0-10	978.21
10-20	437.23
20-30	257.67
30-40	155.27
40-50	61.15
50-60	14.37
60-70	8.03
70-80	8.41
80-90	4.32
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









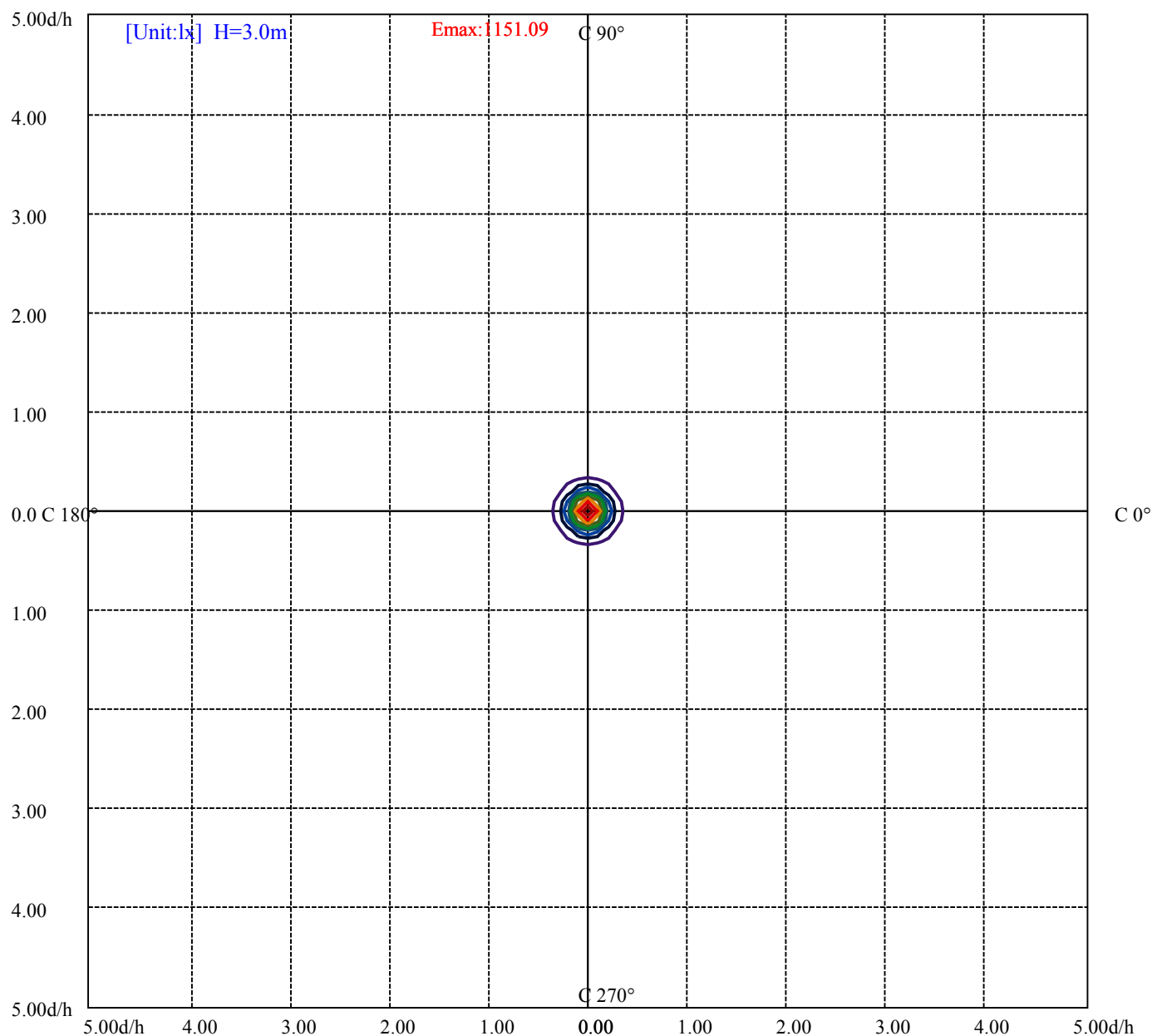
House

[Unit:cd]

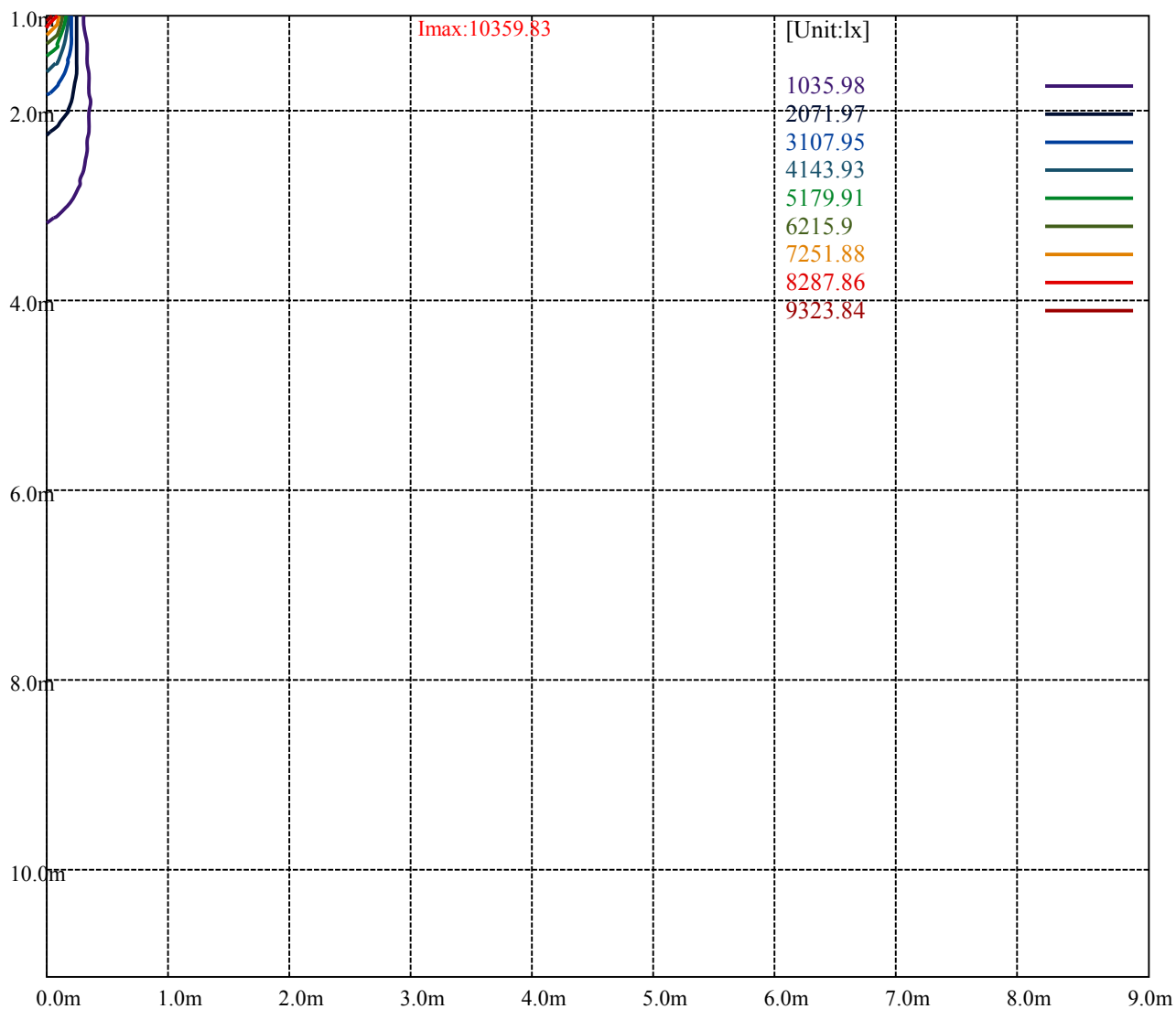
Road

Imax:10359.83

(10%Imax)	1035.98	—
(20%Imax)	2071.97	—
(30%Imax)	3107.95	—
(40%Imax)	4143.93	—
(50%Imax)	5179.91	—
(60%Imax)	6215.9	—
(70%Imax)	7251.88	—
(80%Imax)	8287.86	—
(90%Imax)	9323.84	—



(10%Emax)	115.1089	—
(20%Emax)	230.2178	—
(30%Emax)	345.3256	—
(40%Emax)	460.4344	—
(50%Emax)	575.5433	—
(60%Emax)	690.6522	—
(70%Emax)	805.7611	—
(80%Emax)	920.87	—
(90%Emax)	1035.978	—



Luminance Table

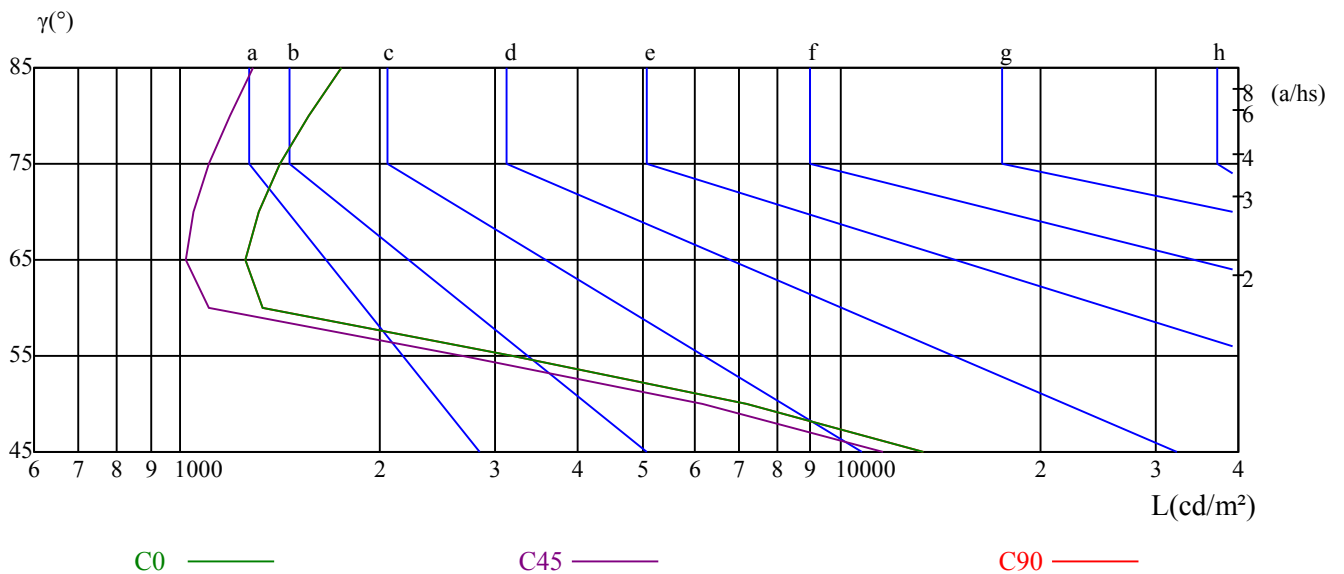
γ	45	50	55	60	65	70	75	80	85
C0	13329	7209	3171	1335	1250	1313	1417	1564	1754
C45	11561	6161	2668	1104	1016	1046	1103	1186	1290
C90	13329	7209	3171	1335	1250	1313	1417	1564	1754

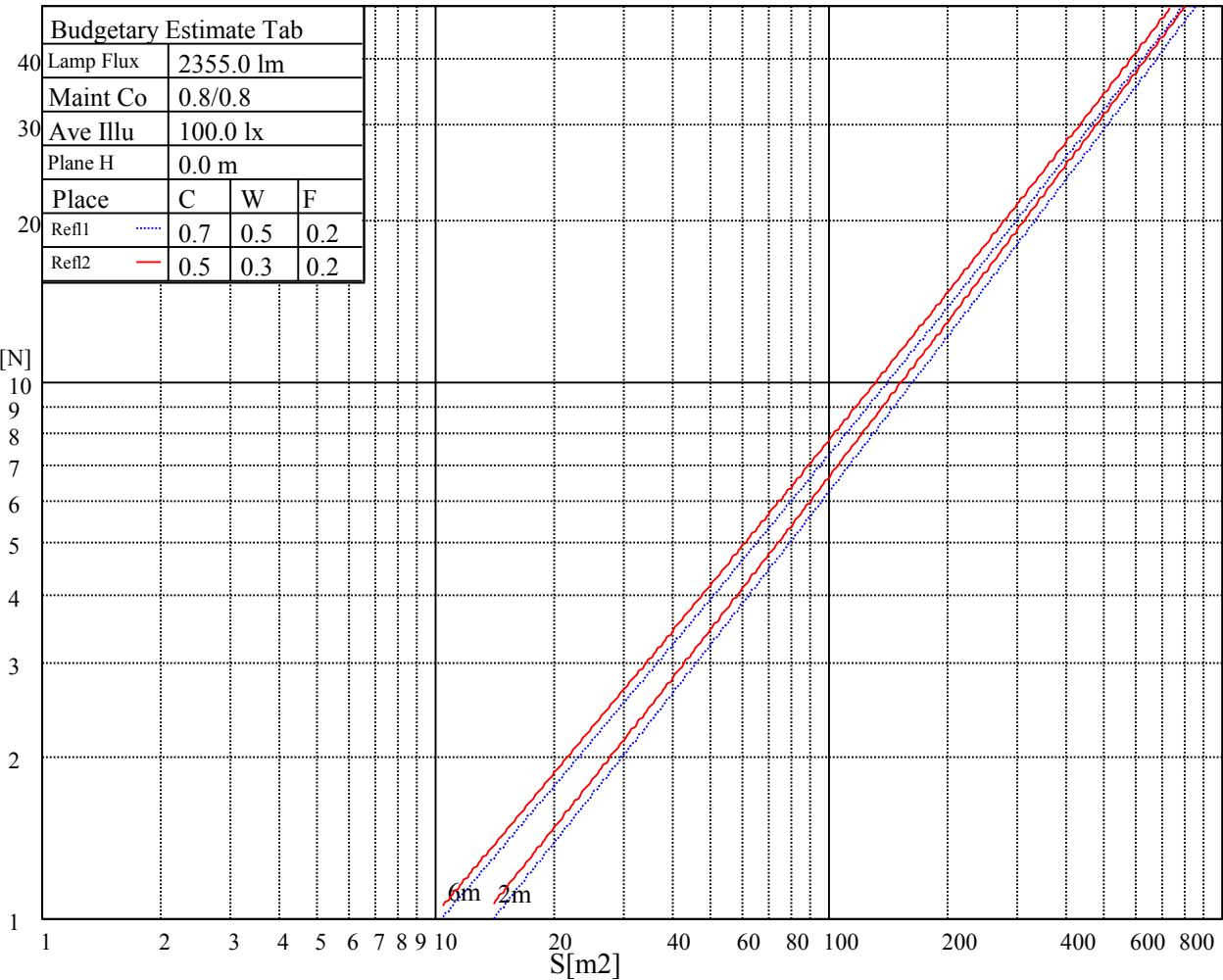
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2819	2819	2819	4512	4512	4512	13493	13493	13493

Glare Table

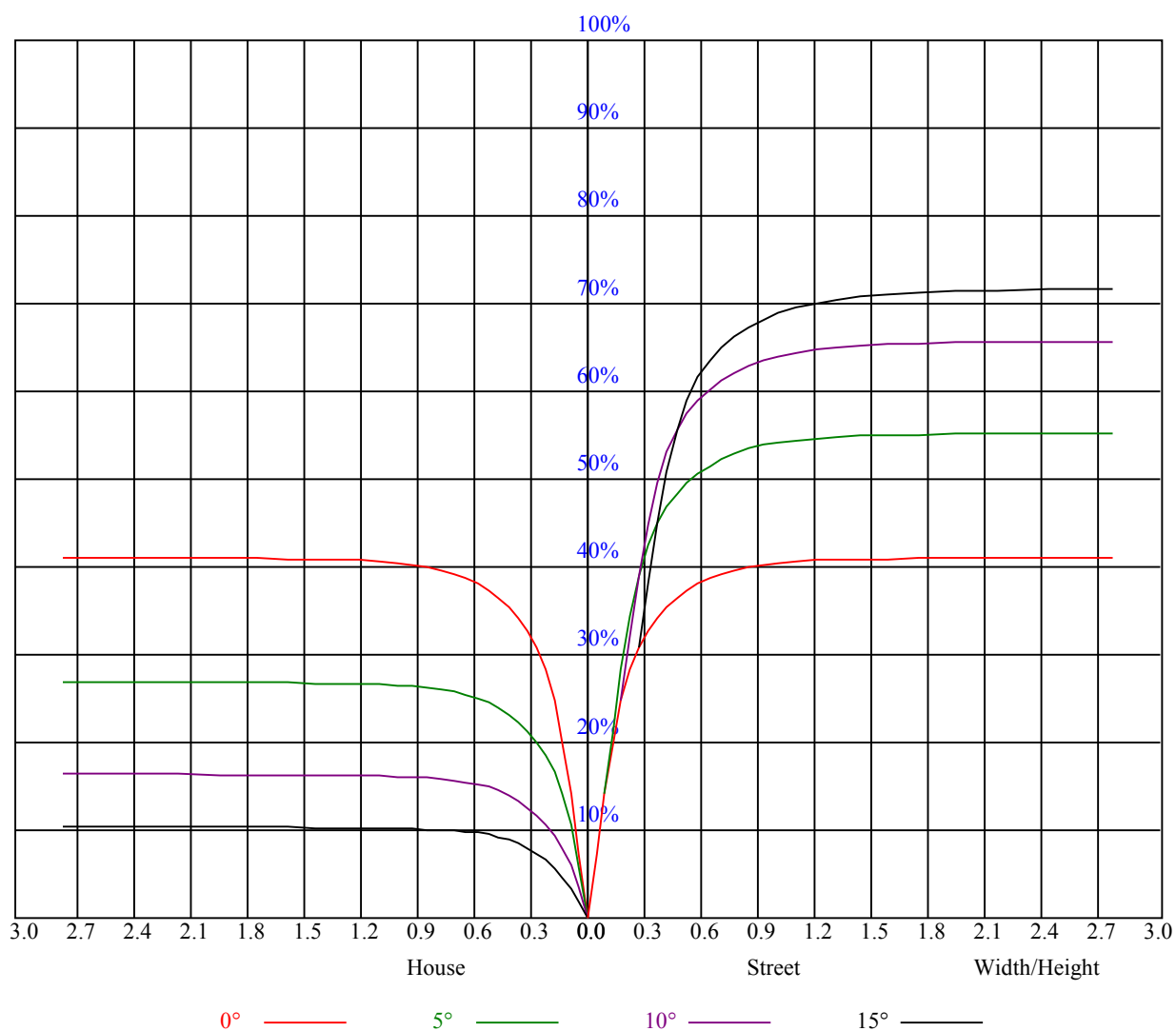
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

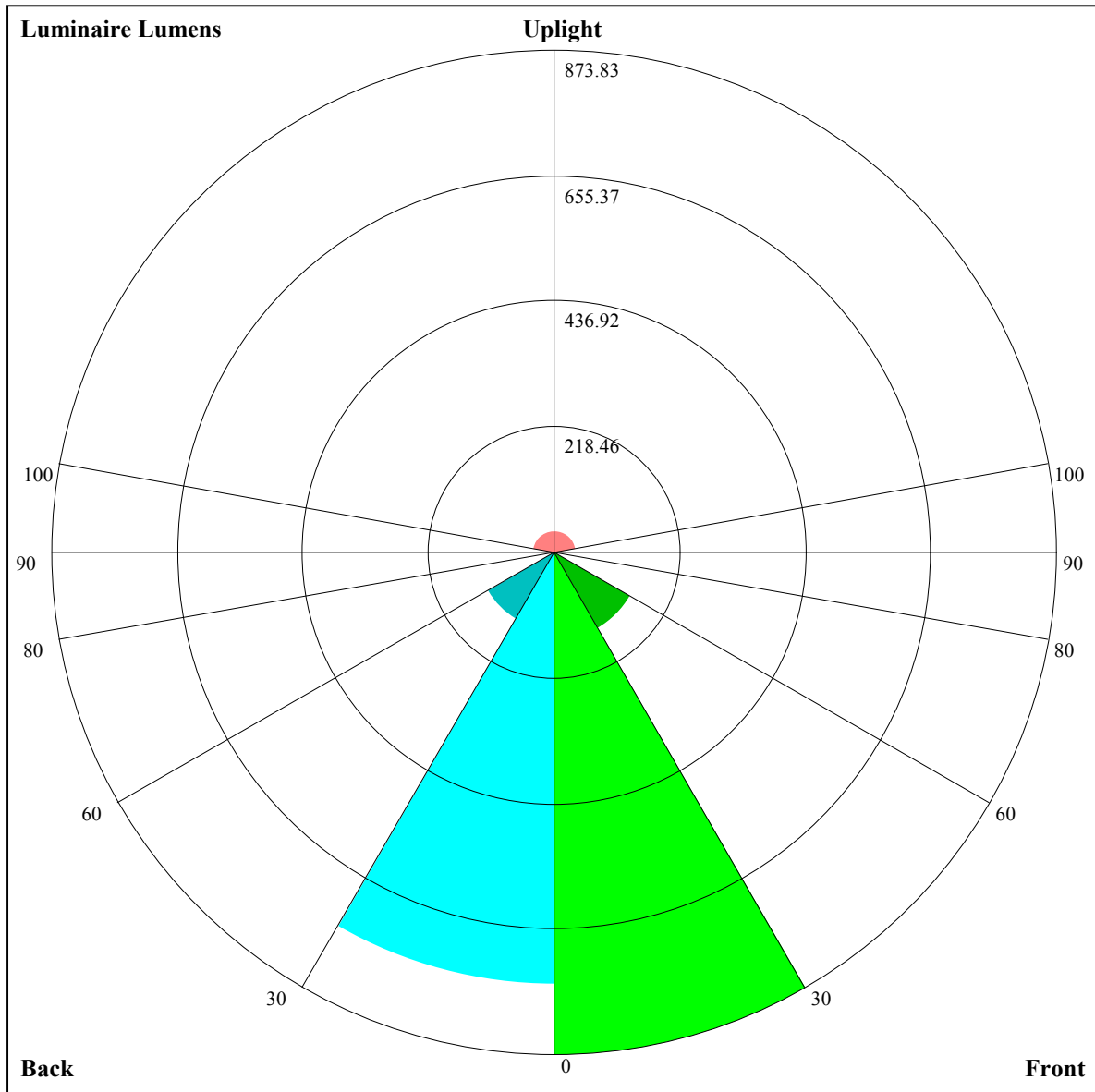
Luminance Limiting Curve





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	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.84
1	0.92	0.89	0.87	0.90	0.87	0.85	0.86	0.84	0.83	0.83	0.81	0.80	0.80	0.79	0.78	0.76
2	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.75	0.73
3	0.83	0.79	0.76	0.82	0.78	0.76	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.71
4	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.75	0.73	0.70	0.74	0.72	0.70	0.69
5	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.72	0.69	0.68	0.66
6	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65
7	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63
8	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61
9	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.60
10	0.66	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.64	0.61	0.59	0.59





Luminaire Lumens:

FL=873.83,FM=153.97,FH=8.3,FVH=4.28

BL=753.04,BM=135.14,BH=8.16,BVH=4.26

UL=8.27,UH=39.34

BUG Rating:B2-U2-G0

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	10225.63	9943.74	6860.58	2692.26	1114.89	747.12	509.27	351.26	247.20
45.0	10423.83	9743.33	6078.23	2201.15	1049.93	668.94	445.41	301.16	196.17
90.0	10412.82	8850.87	4960.58	1718.31	959.63	594.33	409.95	280.40	187.30
135.0	10377.03	8937.86	5147.22	1751.89	922.19	581.95	404.11	281.89	174.86
180.0	10225.63	7677.61	3448.18	1079.05	800.13	528.32	376.81	247.15	142.16
225.0	10423.83	8210.01	4346.15	1470.56	871.49	559.65	382.09	257.72	160.49
270.0	10412.82	9151.47	5217.70	1851.00	995.42	618.28	424.48	294.00	189.89
315.0	10377.03	8763.88	5175.85	1775.02	941.63	613.99	416.89	275.23	184.99
360.0	10225.63	9943.74	6860.58	2692.26	1114.89	747.12	509.27	351.26	247.20
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	122.12	67.77	32.26	11.78	7.98	7.82	7.82	7.82	7.98
45.0	108.68	61.77	26.70	10.08	8.31	8.15	8.09	8.09	8.04
90.0	97.84	48.56	21.58	8.64	8.20	8.04	7.98	7.98	8.04
135.0	97.73	50.87	20.98	8.42	7.98	7.87	7.82	7.93	7.98
180.0	79.45	37.49	14.15	8.15	7.98	7.87	7.87	7.98	7.60
225.0	89.80	46.08	18.55	8.15	7.93	7.87	7.87	7.87	7.98
270.0	104.06	55.88	23.12	8.48	7.87	7.71	7.71	7.76	7.87
315.0	104.11	54.73	22.30	8.59	7.82	7.65	7.65	7.65	7.76
360.0	122.12	67.77	32.26	11.78	7.98	7.82	7.82	7.82	7.98
C/γ(°)	90.0								
0.0	7.60								
45.0	7.82								
90.0	7.76								
135.0	7.38								
180.0	7.49								
225.0	7.65								
270.0	7.49								
315.0	7.43								
360.0	7.60								