
Nata

Client:

LumCAT: 3-2018-A

Luminaire: 92.70.045.00+92.70.089.00

Report No: NT2018031903

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): 1911.21, Efficiency(%): 81.16% , Luminous Efficacy(lm/W): 66.36

Central intensity(cd): 3719.473, Maximum intensity(cd): 3719.473

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=39.6

[C90/270]Total=39.6

Field angle(10%Imax): [C0/180]Total=68.8

[C90/270]Total=68.8

Maximum s/h(1/2): C0_180=0.64 C90_270=0.64

Maximum s/h(1/4): C0_180=0.64 C90_270=0.64

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 82.02%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.762%

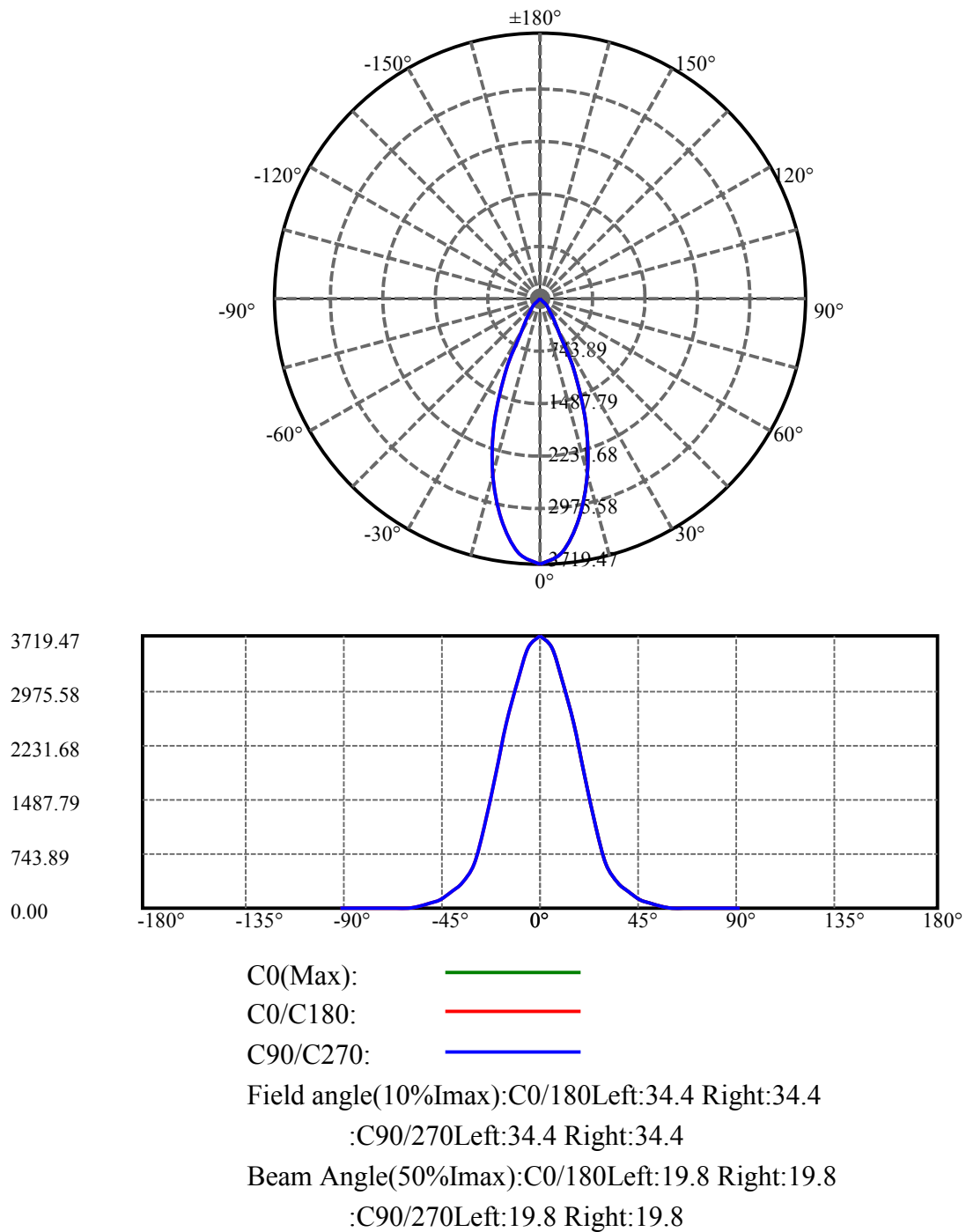
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3719.473	22.243	22.243	.945%	1.164%
5.0	3568.136	170.462	192.705	7.238%	10.083%
10.0	3124.726	297.421	490.126	12.629%	25.645%
15.0	2518.004	357.225	847.351	15.169%	44.336%
20.0	1837.920	344.562	1191.913	14.631%	62.364%
25.0	1100.639	254.966	1446.88	10.827%	75.705%
30.0	589.358	161.525	1608.404	6.859%	84.156%
35.0	342.644	107.727	1716.131	4.574%	89.793%
40.0	232.737	82.002	1798.133	3.482%	94.083%
45.0	123.278	47.782	1845.914	2.029%	96.583%
50.0	63.108	26.499	1872.413	1.125%	97.970%
55.0	25.587	11.489	1883.902	.488%	98.571%
60.0	9.497	4.508	1888.411	.191%	98.807%
65.0	8.018	3.983	1892.394	.169%	99.015%
70.0	7.866	4.052	1896.445	.172%	99.227%
75.0	7.832	4.147	1900.592	.176%	99.444%
80.0	7.866	4.246	1904.838	.180%	99.667%
85.0	7.880	4.303	1909.141	.183%	99.892%
90.0	7.556	2.071	1911.212	.088%	100.000%

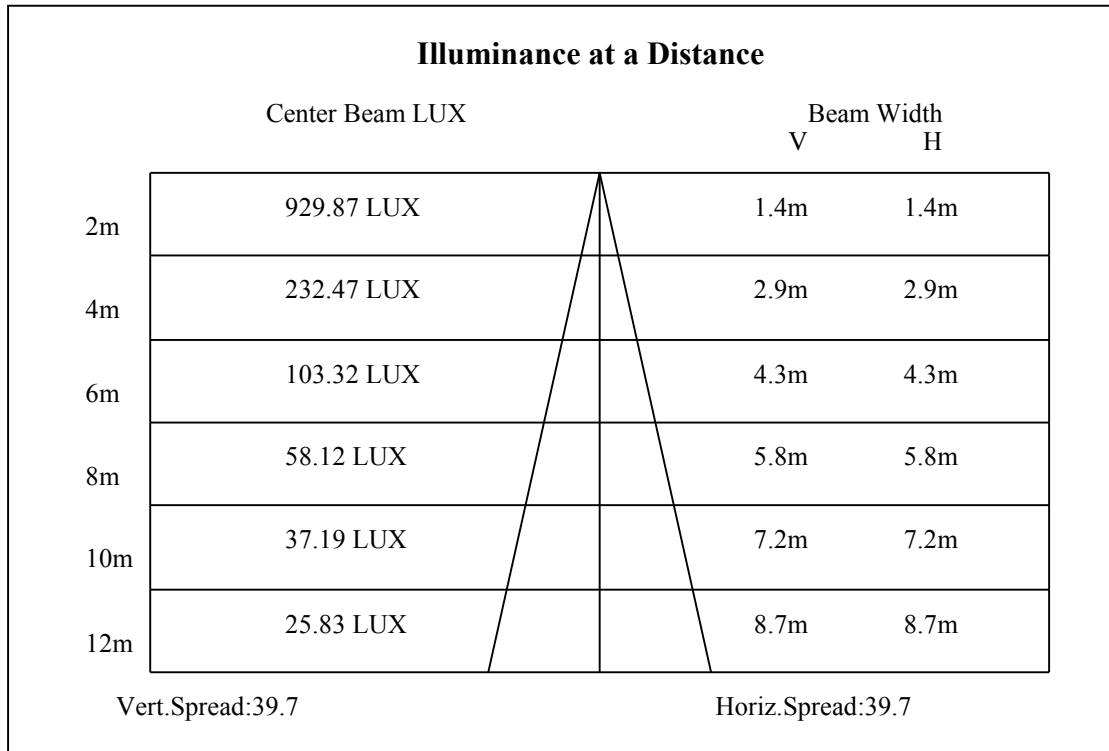
ZONAL LUMEN SUMMARY

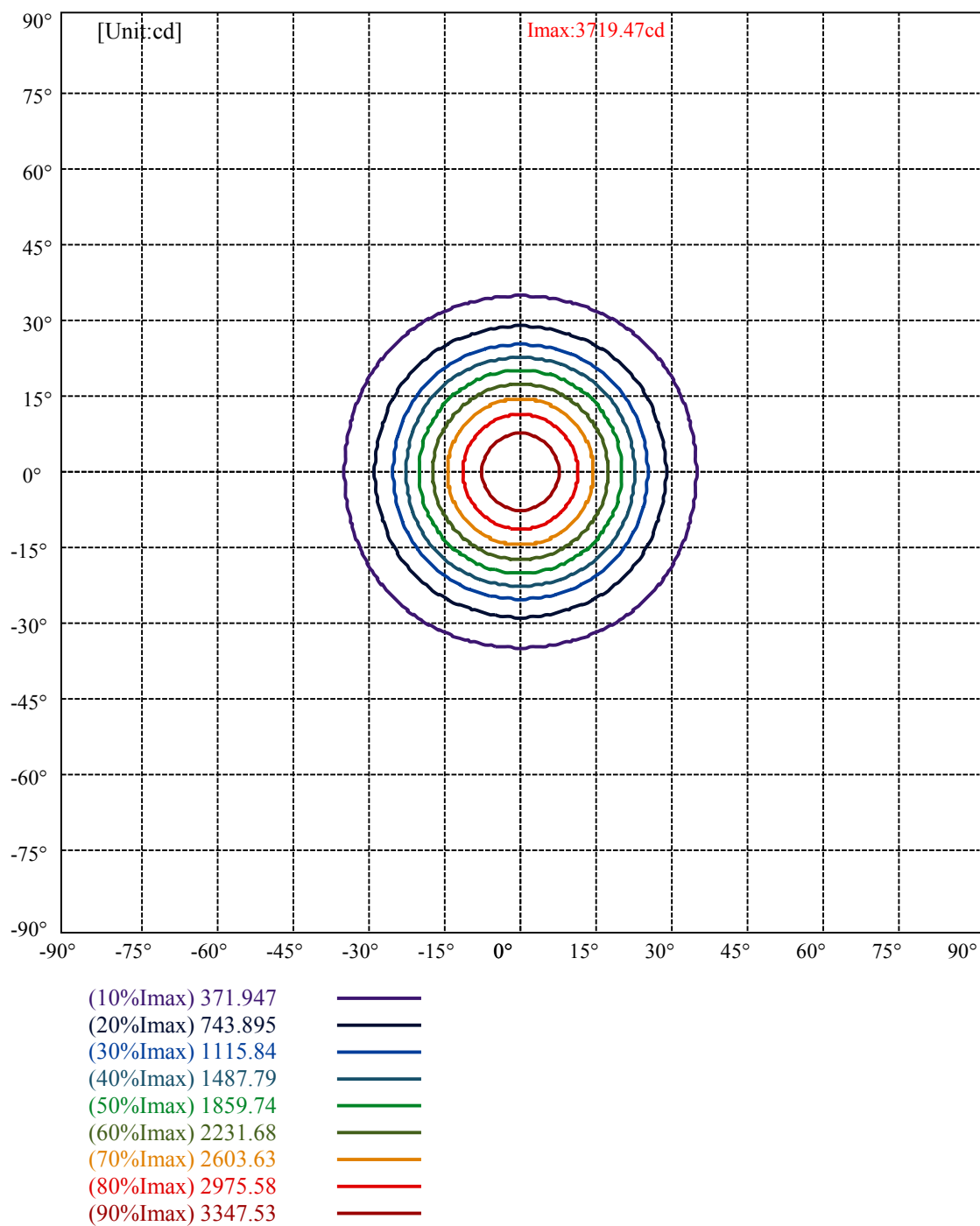
Zone	Lumens	%Lamp	%Fixt
0-30	1608.40	68.30%	84.16%
0-40	1798.13	76.35%	94.08%
0-60	1888.41	80.19%	98.81%
0-90	1909.14	81.07%	99.89%
0-120	1909.14	81.07%	99.89%
0-180	1911.21	81.16%	100.00%
60-90	25.24	1.07%	1.32%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.54	1528.97	64.92%	80.00%

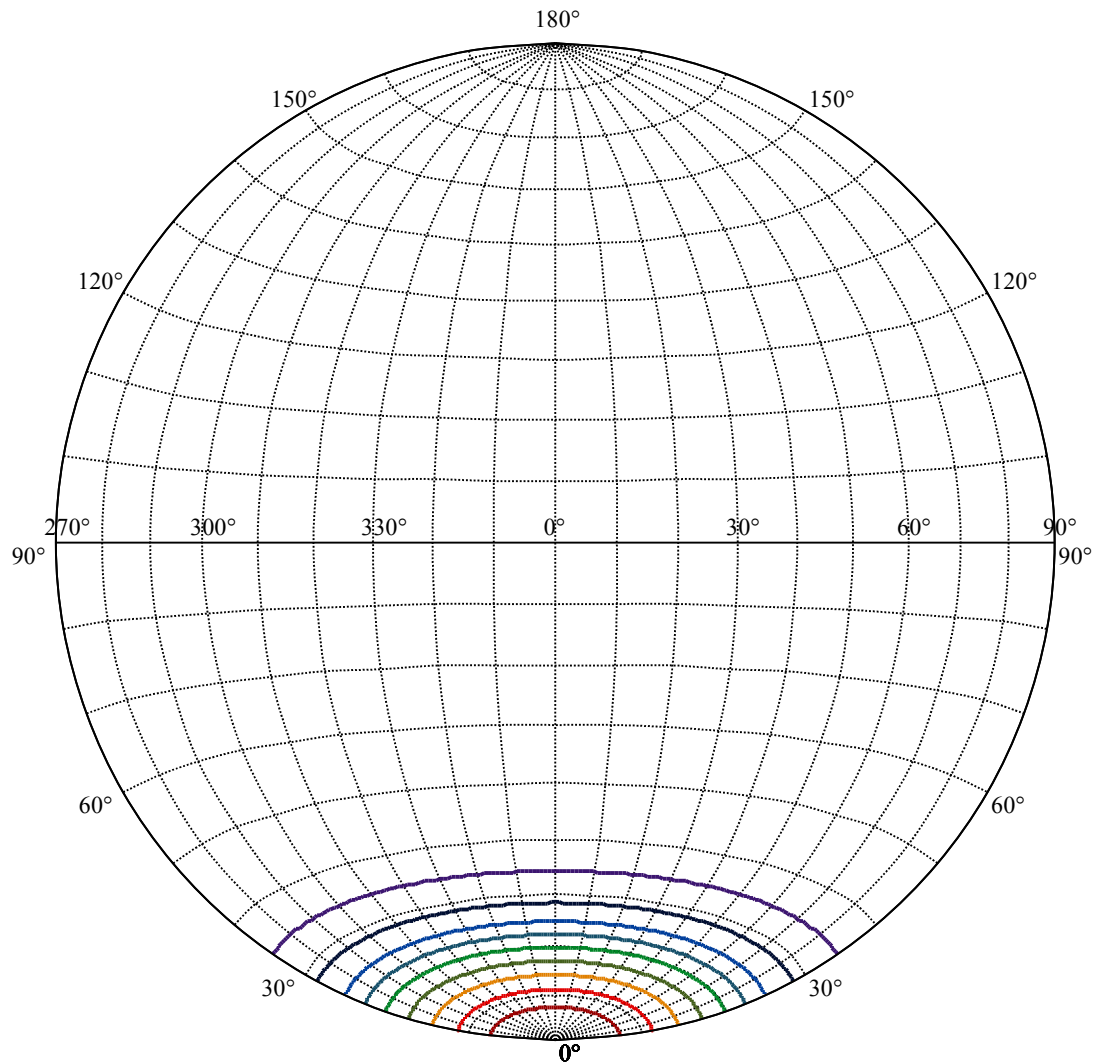
ZONAL LUMEN SUMMARY

0-10	490.13
10-20	701.79
20-30	416.49
30-40	189.73
40-50	74.28
50-60	16.00
60-70	8.03
70-80	8.39
80-90	4.30
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









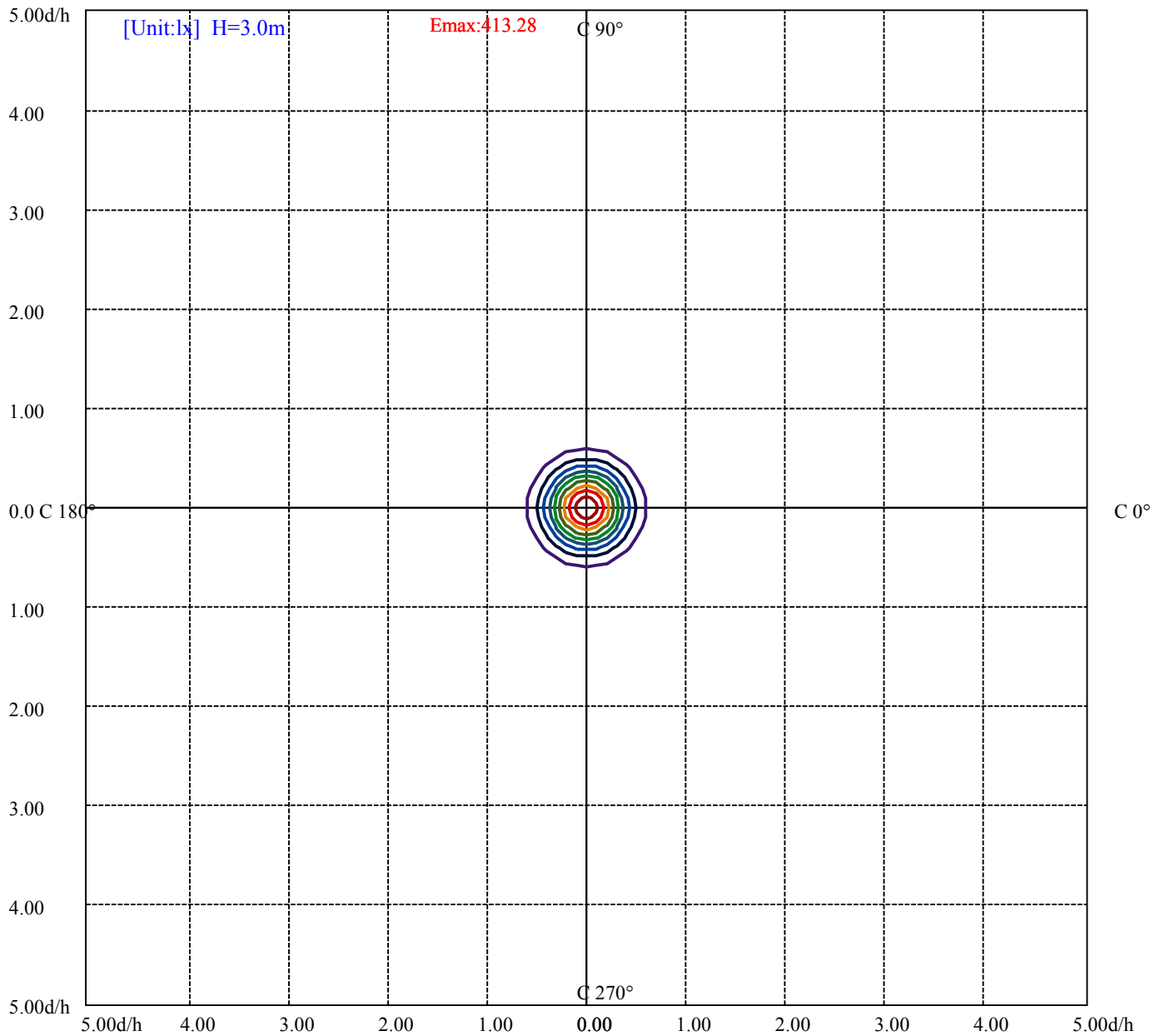
House

[Unit:cd]

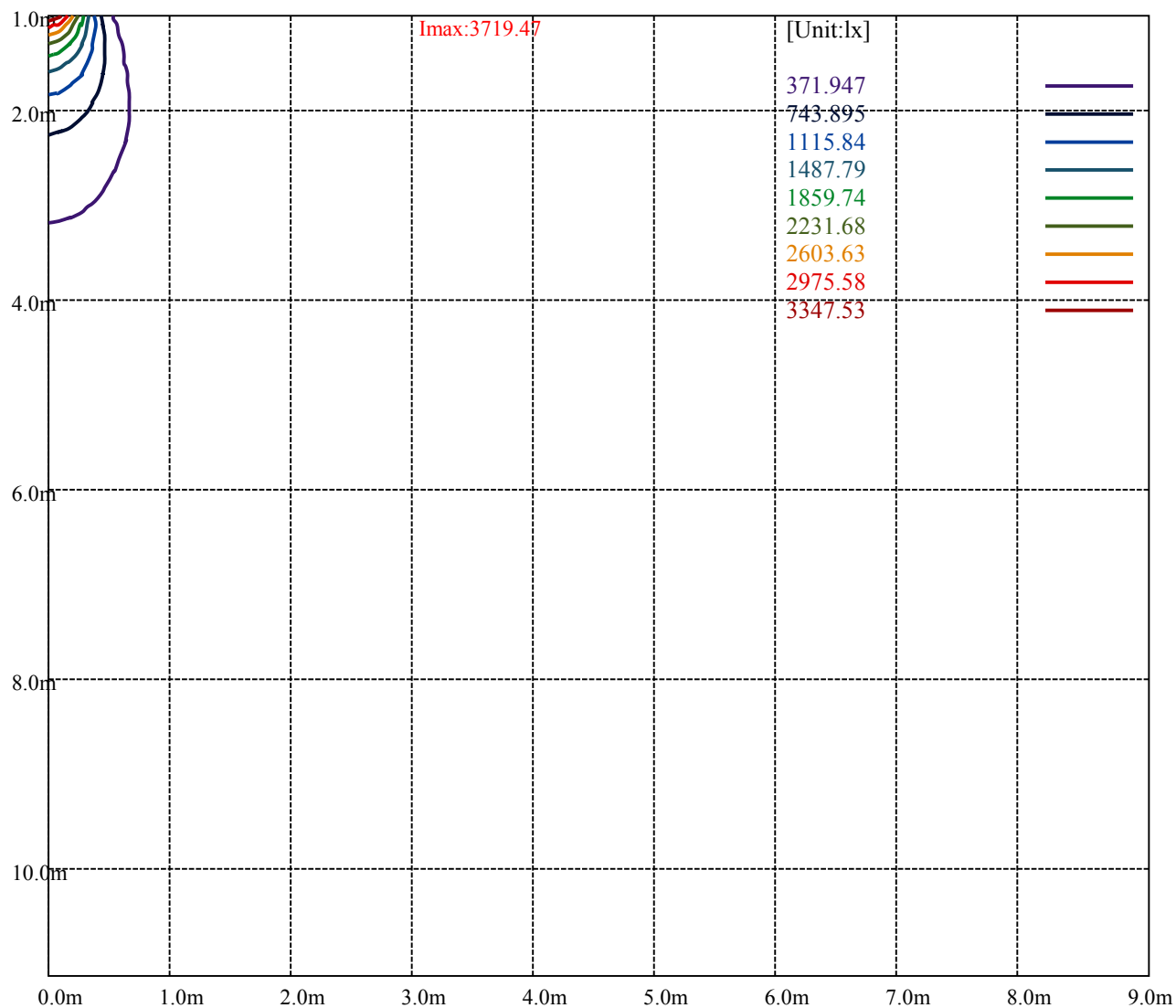
Road

Imax:3719.47

(10%Imax)	371.947	—
(20%Imax)	743.895	—
(30%Imax)	1115.84	—
(40%Imax)	1487.79	—
(50%Imax)	1859.74	—
(60%Imax)	2231.68	—
(70%Imax)	2603.63	—
(80%Imax)	2975.58	—
(90%Imax)	3347.53	—



(10%Emax) 41.32744	—
(20%Emax) 82.65488	—
(30%Emax) 123.9822	—
(40%Emax) 165.31	—
(50%Emax) 206.6367	—
(60%Emax) 247.9644	—
(70%Emax) 289.2922	—
(80%Emax) 330.6189	—
(90%Emax) 371.9467	—



Luminance Table

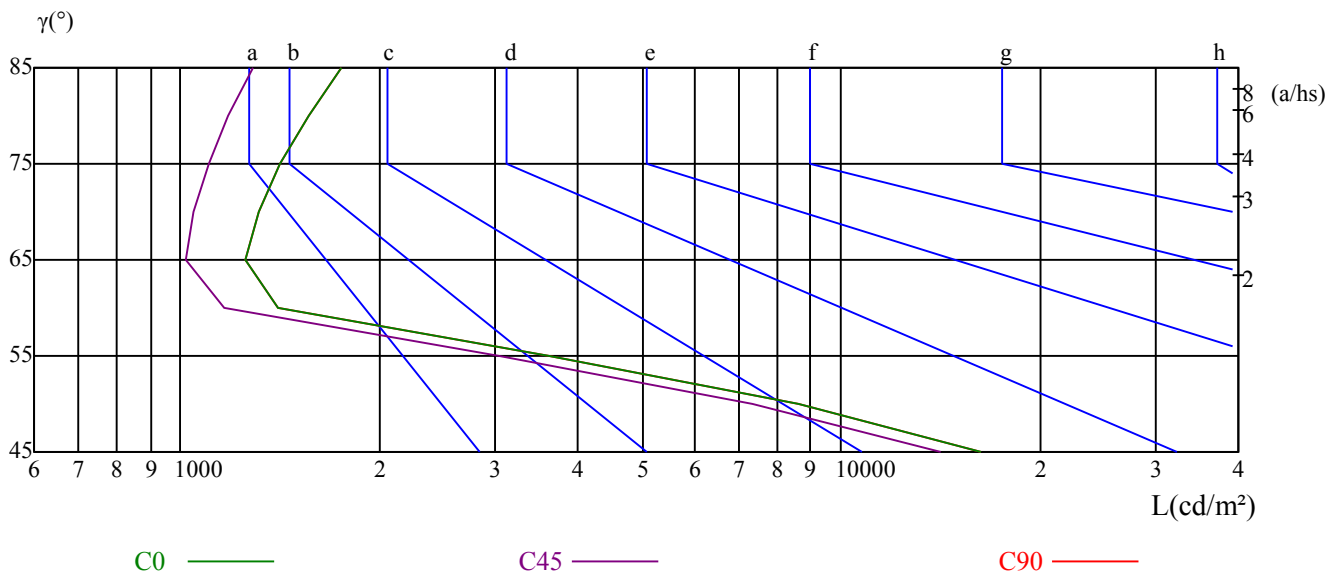
γ	45	50	55	60	65	70	75	80	85
C0	16355	8601	3614	1403	1251	1311	1413	1560	1748
C45	14185	7350	3040	1161	1017	1045	1100	1183	1285
C90	16355	8601	3614	1403	1251	1311	1413	1560	1748

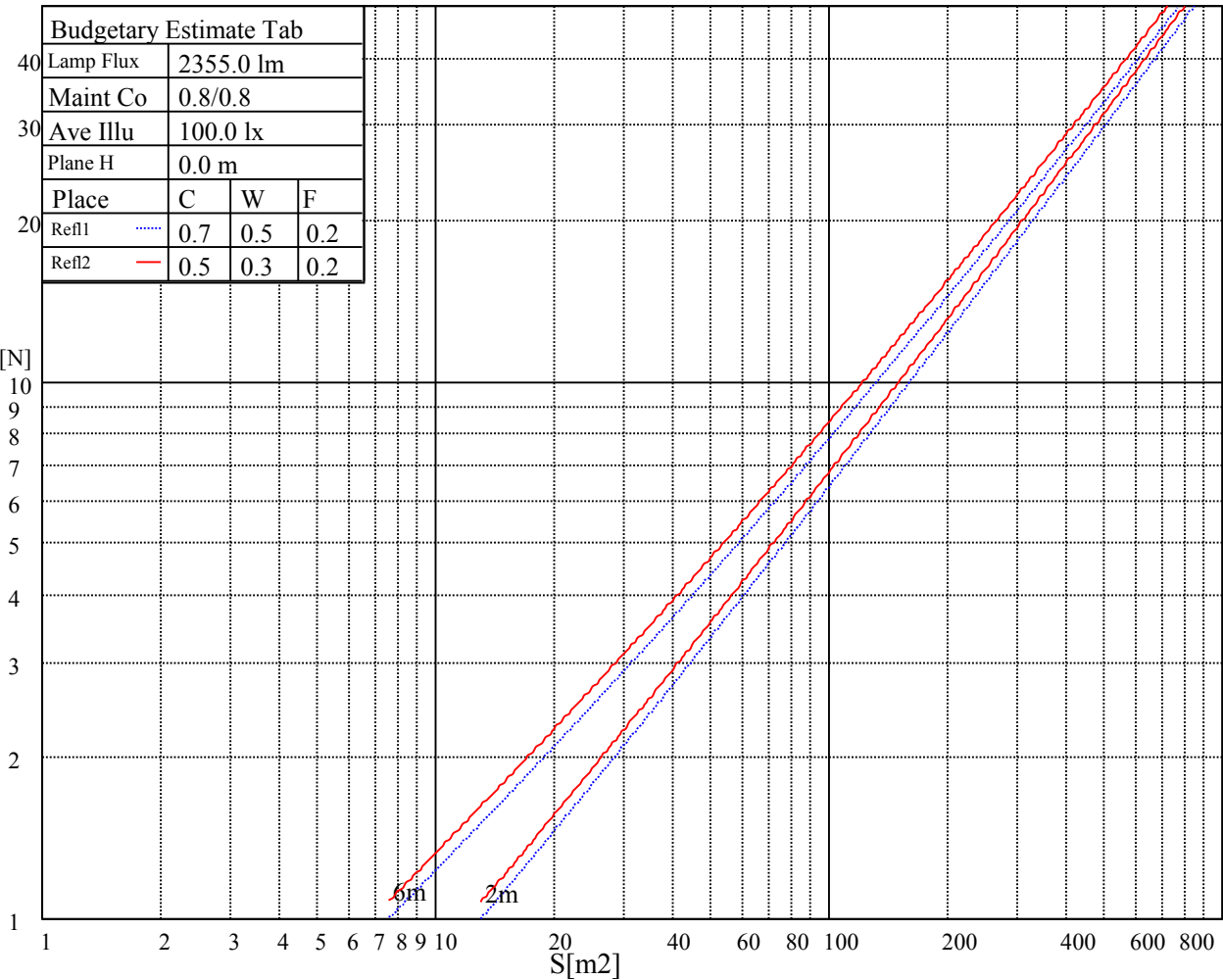
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2821	2821	2821	4500	4500	4500	13446	13446	13446

Glare Table

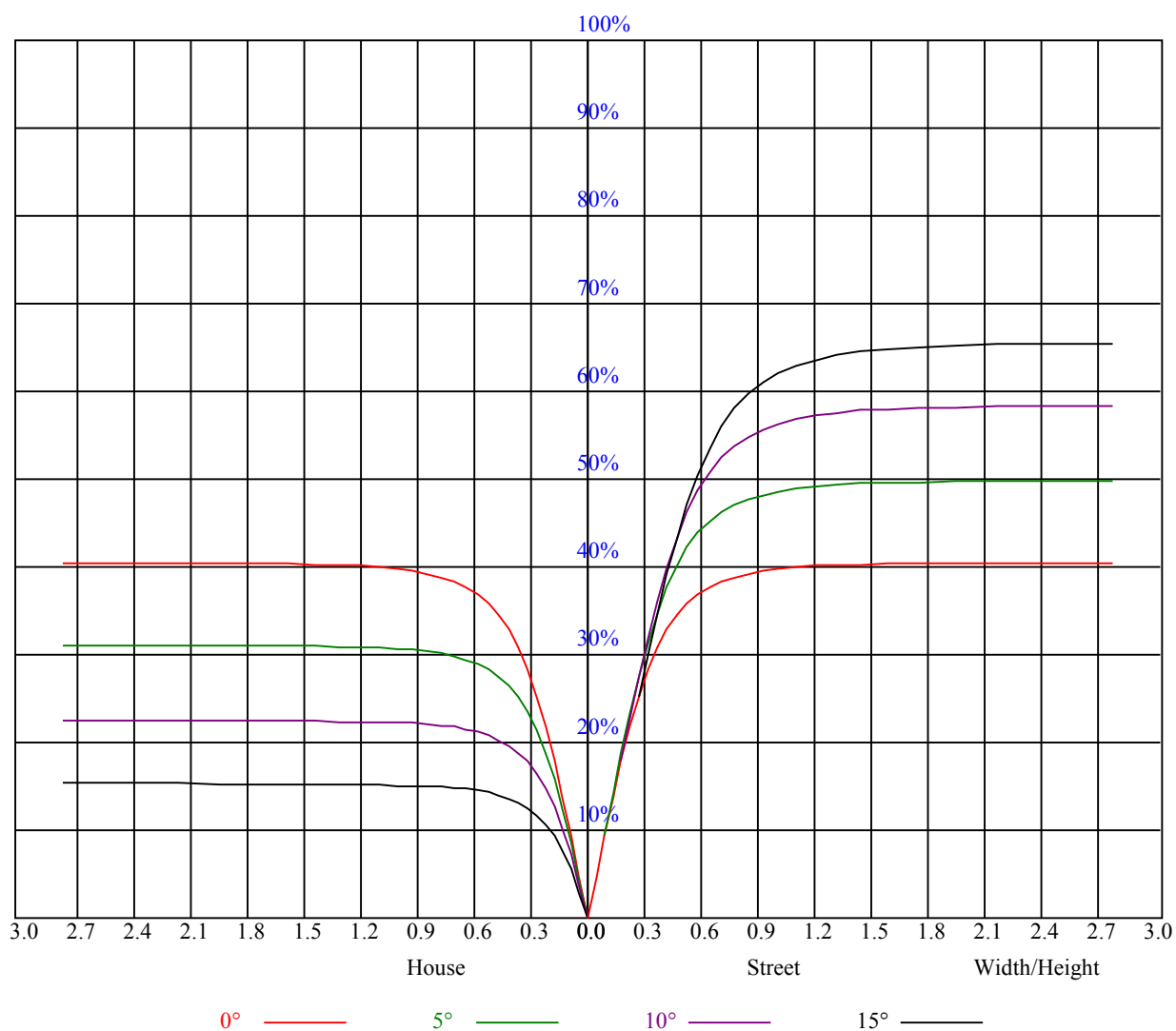
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

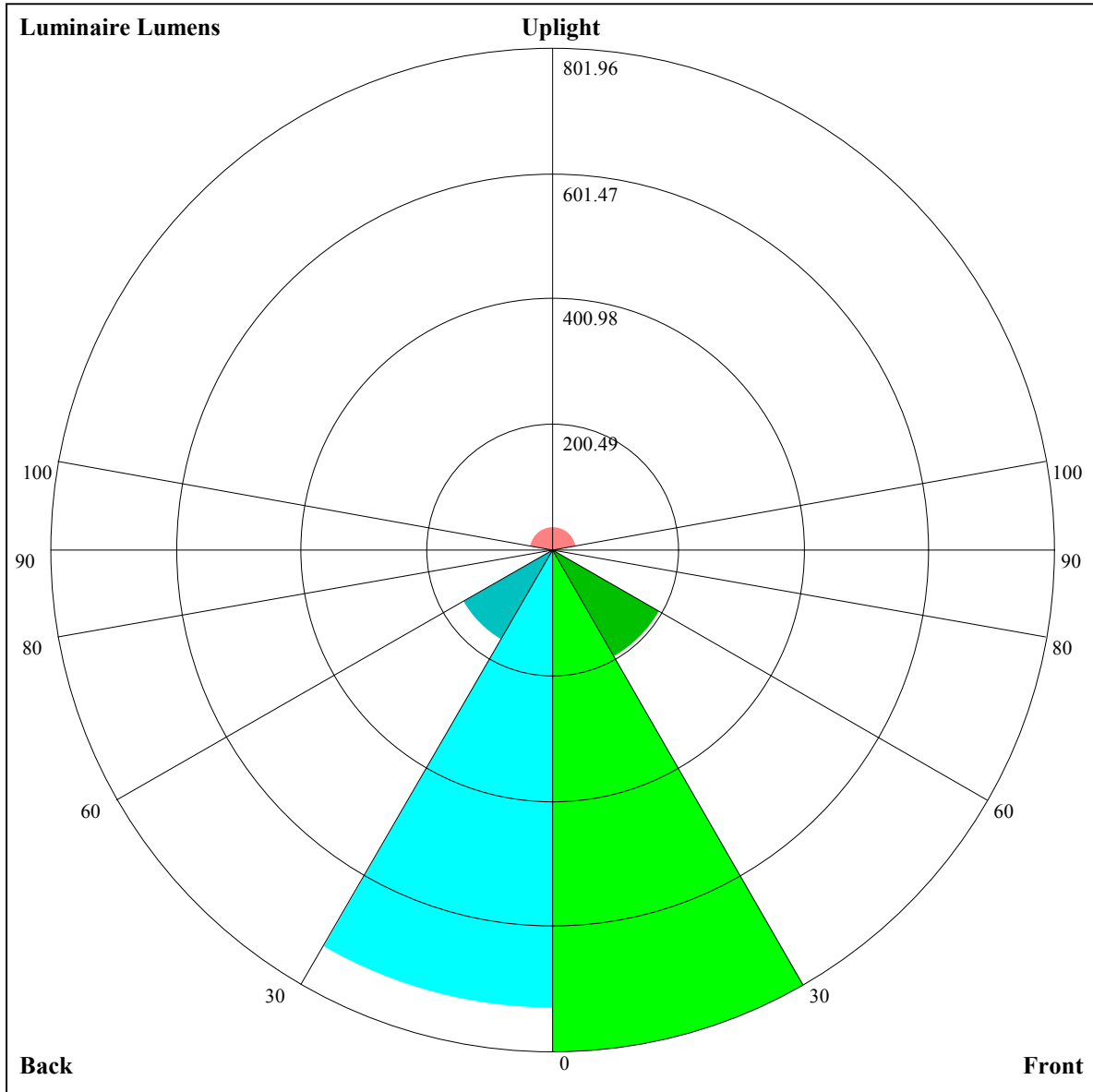
Luminance Limiting Curve





RHOC	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	0.98	0.98	0.98	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.82
1	0.90	0.88	0.86	0.89	0.87	0.85	0.85	0.84	0.82	0.82	0.81	0.80	0.79	0.78	0.78	0.76
2	0.85	0.82	0.79	0.84	0.81	0.78	0.81	0.79	0.77	0.79	0.77	0.75	0.76	0.75	0.73	0.72
3	0.80	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.73	0.71	0.70	0.69
4	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.68	0.72	0.69	0.67	0.71	0.68	0.66	0.65
5	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62
6	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.60
7	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.57
8	0.64	0.59	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.55
9	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.53
10	0.59	0.55	0.52	0.58	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.52	0.57	0.54	0.52	0.51





Luminaire Lumens:

FL=801.96,FM=197.21,FH=8.33,FVH=4.23

BL=731.59,BM=165.52,BH=8.21,BVH=4.27

UL=8.24,UH=39.23

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	3699.79	3685.48	3332.56	2794.66	2156.01	1402.29	786.21	427.79	284.64		
45.0	3728.97	3623.81	3220.25	2611.33	1913.21	1196.93	627.64	358.97	282.99		
90.0	3721.26	3501.59	3025.35	2446.71	1745.29	1013.48	544.62	319.82	202.44		
135.0	3727.87	3518.10	3049.57	2404.86	1735.38	1005.33	519.18	317.68	201.67		
180.0	3699.79	3398.63	2843.66	2185.19	1483.22	842.14	451.57	276.11	173.98		
225.0	3728.97	3529.67	3077.65	2421.38	1711.70	1013.09	527.72	316.85	201.23		
270.0	3721.26	3651.34	3235.11	2679.59	2015.06	1242.07	650.22	365.02	278.03		
315.0	3727.87	3636.48	3213.64	2600.31	1943.49	1089.79	607.71	358.91	236.91		
360.0	3699.79	3685.48	3332.56	2794.66	2156.01	1402.29	786.21	427.79	284.64		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	162.53	85.78	37.49	13.98	8.09	7.87	7.76	7.76	7.87		
45.0	131.69	69.54	28.79	9.74	8.09	7.87	7.82	7.82	7.76		
90.0	109.45	56.05	20.54	8.42	8.04	7.87	7.87	7.87	7.87		
135.0	111.38	57.20	22.19	8.53	8.15	7.98	7.98	8.09	8.15		
180.0	92.22	43.11	15.31	8.37	8.04	7.98	8.04	8.09	7.82		
225.0	114.08	56.32	21.36	8.37	7.93	7.82	7.76	7.87	7.93		
270.0	134.50	69.10	29.35	9.30	7.93	7.76	7.71	7.71	7.82		
315.0	130.37	67.77	29.68	9.25	7.87	7.76	7.71	7.71	7.82		
360.0	162.53	85.78	37.49	13.98	8.09	7.87	7.76	7.76	7.87		
C/γ(°)	90.0										
0.0	7.54										
45.0	7.60										
90.0	7.54										
135.0	7.54										
180.0	7.54										
225.0	7.60										
270.0	7.54										
315.0	7.54										
360.0	7.54										