



NATA LIGHTING CO.,LTD.  
www.nata.cn  
Email:info@nata.cn  
Tel:+86-750-3770000 Fax:+86-750-3771111  
Address:380 JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

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## NATA

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Client:

LumCAT: 2-1102-A

Luminaire: H42135AC

Report No: nata-0100

Test No:

LampCAT: ParagonLED CBAC-83-30135

Lamp flux(lm): 688.6

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 219.8000

Current(A): 0.0540

Power (W): 10.6000

PF: 0.8930

Ballast type:

Width(mm): 70

Height(mm): 0

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## Photometric Results

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Lumens(lm): 641.81, Efficiency(%): 93.20% , Luminous Efficacy(lm/W): 60.55

Central intensity(cd): 4698.101, Maximum intensity(cd): 4698.101

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=12.6

[C90/270]Total=12.6

Field angle(10%Imax): [C0/180]Total=29.0

[C90/270]Total=29.0

Maximum s/h(1/2): C0\_180=0.22 C90\_270=0.22

Maximum s/h(1/4): C0\_180=0.23 C90\_270=0.23

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 94.20%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.850%

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Equipment: gms1980  
Temperature(°C): 25.0

Date: 2016/4/27  
Humidity(%): 60.0%

Operator: Jaye  
Distance(m): 7.42

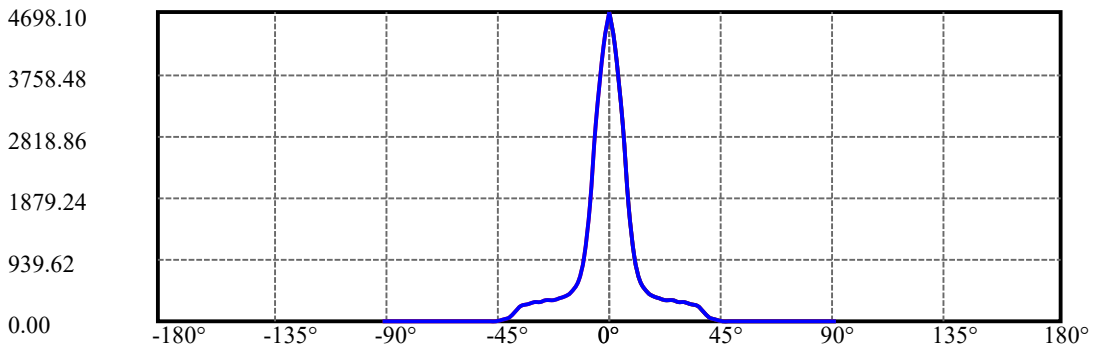
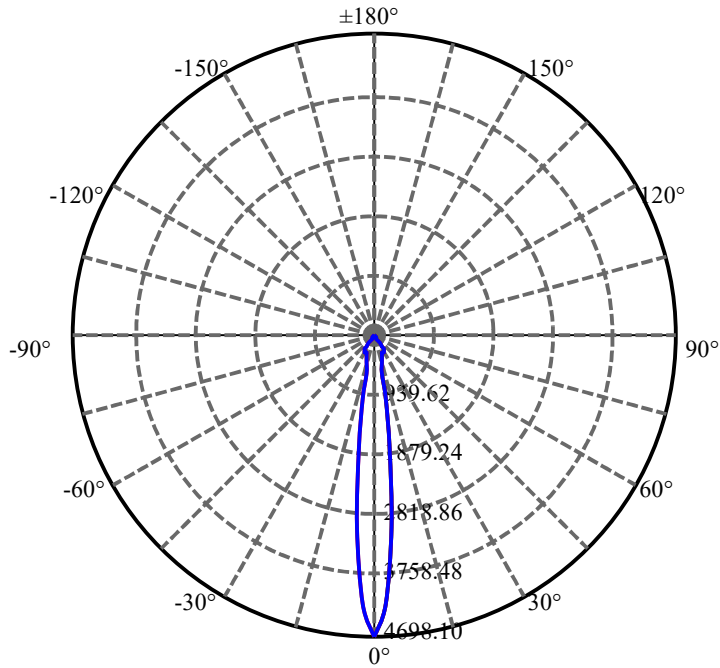
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4698.100	7.025	7.025	1.020%	1.095%
2.5	4179.813	49.980	57.005	7.258%	8.882%
5.0	3011.048	71.941	128.946	10.447%	20.091%
7.5	1776.739	63.575	192.521	9.232%	29.997%
10.0	997.154	47.467	239.988	6.893%	37.393%
12.5	608.910	36.129	276.117	5.247%	43.022%
15.0	434.450	30.825	306.942	4.476%	47.825%
17.5	370.296	30.525	337.466	4.433%	52.581%
20.0	346.566	32.494	369.96	4.719%	57.644%
22.5	328.535	34.465	404.426	5.005%	63.014%
25.0	311.014	36.032	440.458	5.233%	68.628%
27.5	294.153	37.234	477.692	5.407%	74.429%
30.0	279.219	38.272	515.964	5.558%	80.392%
32.5	261.545	38.524	554.487	5.594%	86.395%
35.0	224.616	35.318	589.805	5.129%	91.898%
37.5	145.624	24.302	614.107	3.529%	95.684%
40.0	66.962	11.799	625.907	1.714%	97.523%
42.5	23.619	4.374	630.281	.635%	98.204%
45.0	4.487	0.870	631.151	.126%	98.340%
47.5	3.028	0.612	631.763	.089%	98.435%
50.0	2.822	0.593	632.355	.086%	98.528%
52.5	2.725	0.593	632.948	.086%	98.620%
55.0	2.615	0.587	633.535	.085%	98.711%
57.5	2.574	0.595	634.13	.086%	98.804%
60.0	2.533	0.601	634.732	.087%	98.898%
62.5	2.450	0.596	635.327	.087%	98.991%
65.0	2.409	0.598	635.926	.087%	99.084%
67.5	2.395	0.607	636.532	.088%	99.178%
70.0	2.381	0.613	637.146	.089%	99.274%
72.5	2.367	0.619	637.765	.090%	99.370%
75.0	2.326	0.616	638.381	.089%	99.466%
77.5	2.326	0.623	639.003	.090%	99.563%
80.0	2.299	0.621	639.624	.090%	99.660%
82.5	2.312	0.628	640.252	.091%	99.758%
85.0	2.285	0.624	640.876	.091%	99.855%
87.5	2.257	0.618	641.494	.090%	99.951%
90.0	2.271	0.311	641.806	.045%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	515.96	74.93%	80.39%
0-40	625.91	90.90%	97.52%
0-60	634.73	92.18%	98.90%
0-90	641.49	93.16%	99.95%
0-120	641.49	93.16%	99.95%
0-180	641.81	93.20%	100.00%
60-90	7.36	1.07%	1.15%
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%
0-29.84	513.44	74.56%	80.00%

ZONAL LUMEN SUMMARY

0-10	239.99
10-20	129.97
20-30	146.00
30-40	109.94
40-50	6.45
50-60	2.38
60-70	2.41
70-80	2.48
80-90	1.87
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



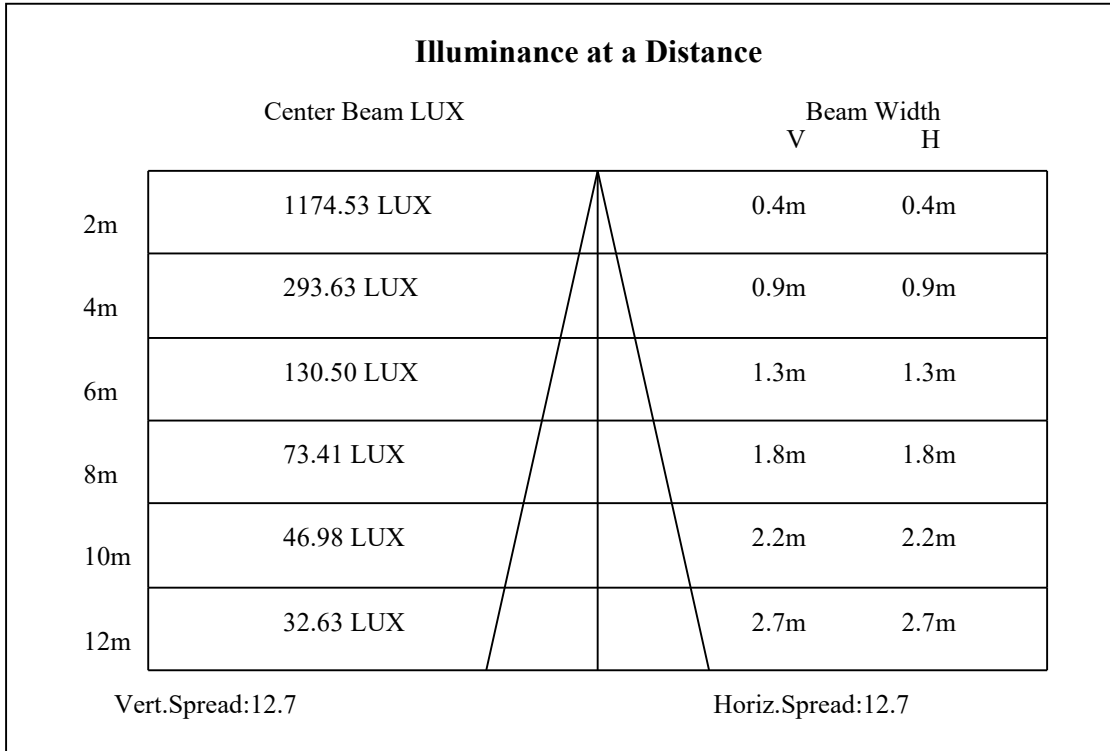
C0(Max): —————

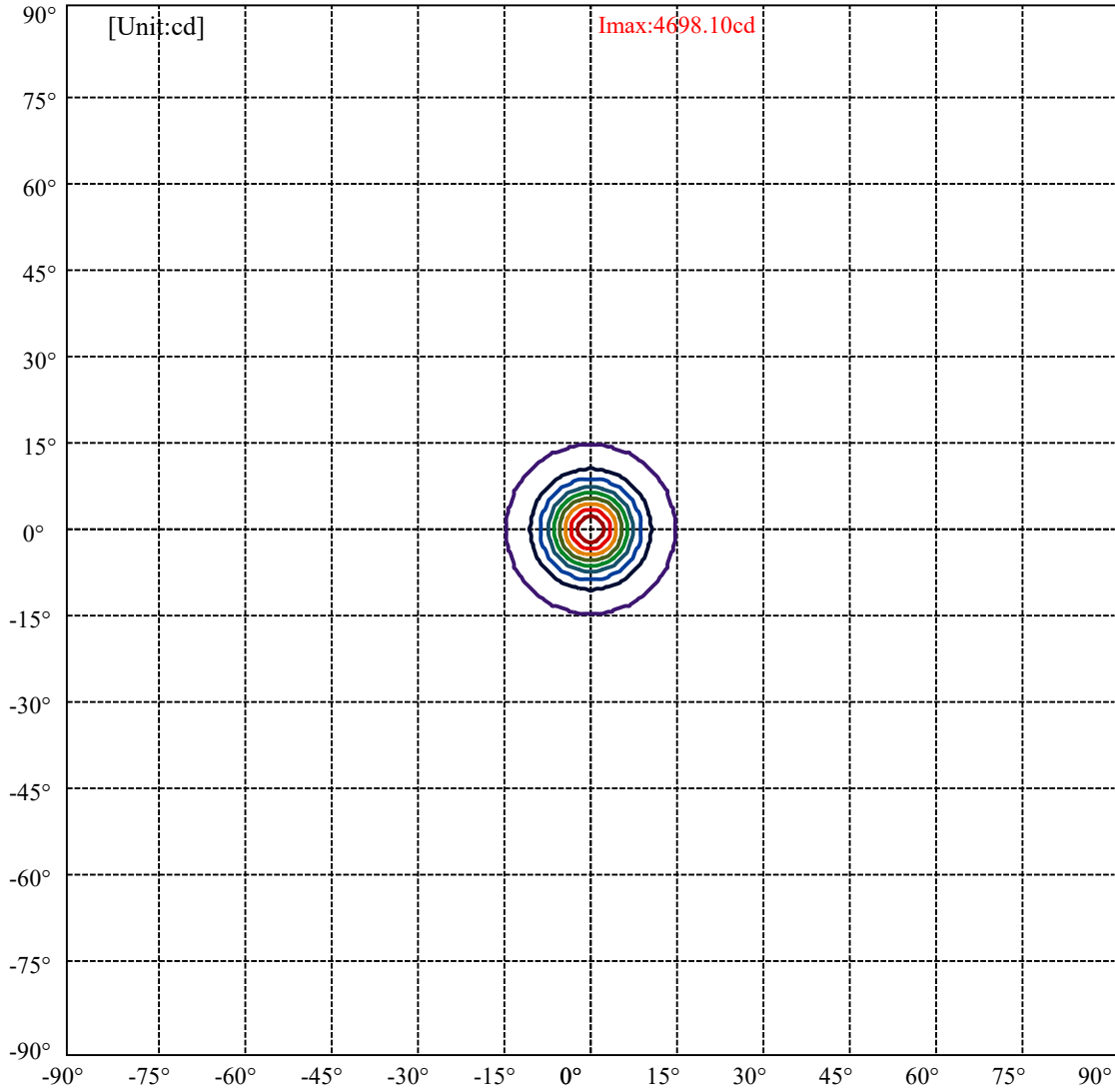
C0/C180: —————

C90/C270: —————

Field angle(10%Imax):C0/180Left:14.5 Right:14.5  
:C90/270Left:14.5 Right:14.5

Beam Angle(50%Imax):C0/180Left:6.3 Right:6.3  
:C90/270Left:6.3 Right:6.3



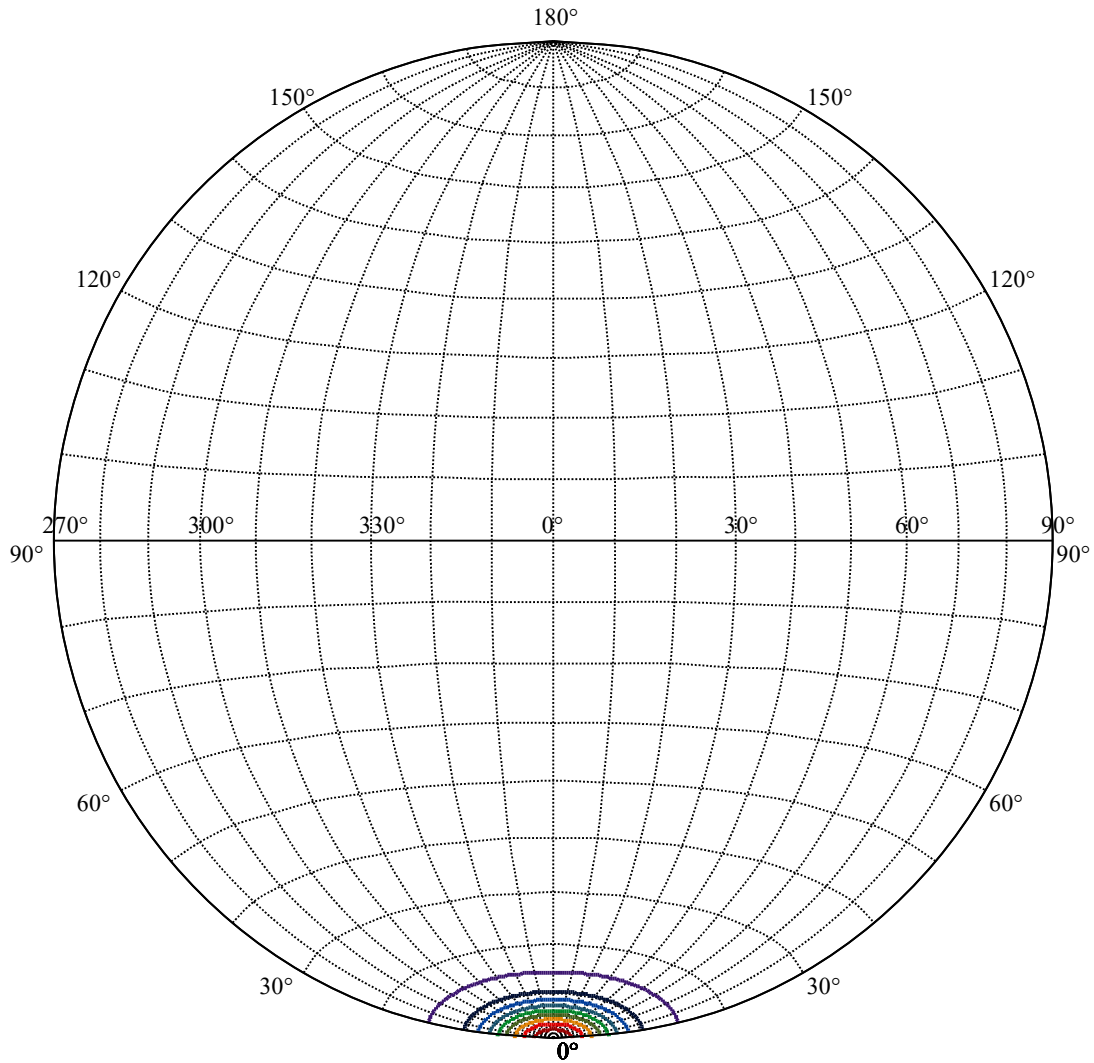


(10%Imax) 469.81	—
(20%Imax) 939.62	—
(30%Imax) 1409.43	—
(40%Imax) 1879.24	—
(50%Imax) 2349.05	—
(60%Imax) 2818.86	—
(70%Imax) 3288.67	—
(80%Imax) 3758.48	—
(90%Imax) 4228.29	—

Equipment: gms1980  
Temperature(°C): 25.0

Date: 2016/4/27  
Humidity(%): 60.0%

Operator: Jaye  
Distance(m): 7.42



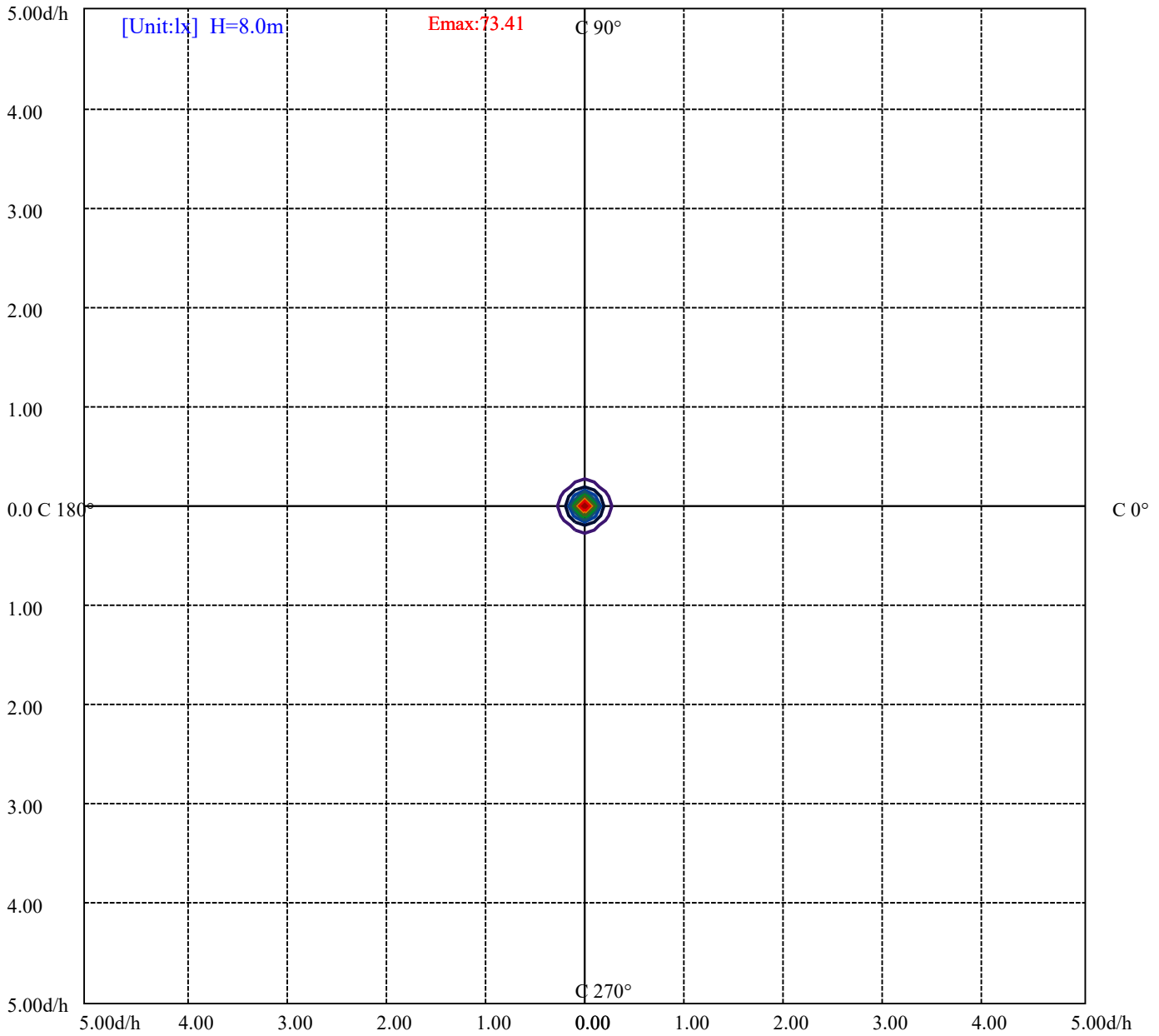
House

[Unit:cd]

Road

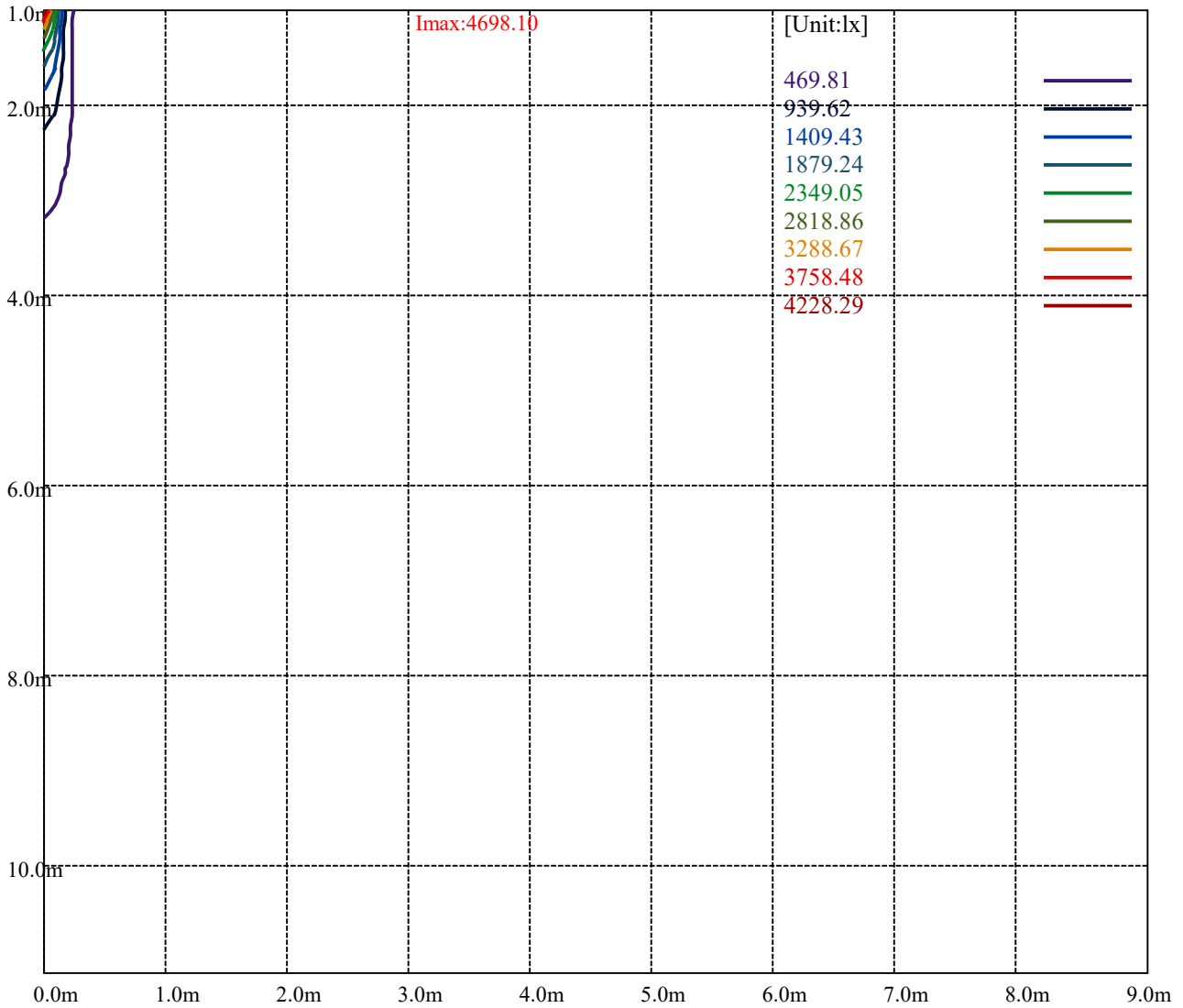
Imax:4698.10

(10%Imax) 469.81	—
(20%Imax) 939.62	—
(30%Imax) 1409.43	—
(40%Imax) 1879.24	—
(50%Imax) 2349.05	—
(60%Imax) 2818.86	—
(70%Imax) 3288.67	—
(80%Imax) 3758.48	—
(90%Imax) 4228.29	—



(10%Emax) 7.340734	—
(20%Emax) 14.68147	—
(30%Emax) 22.02219	—
(40%Emax) 29.36297	—
(50%Emax) 36.70359	—
(60%Emax) 44.04438	—
(70%Emax) 51.38515	—
(80%Emax) 58.72594	—
(90%Emax) 66.06656	—





Luminance Table

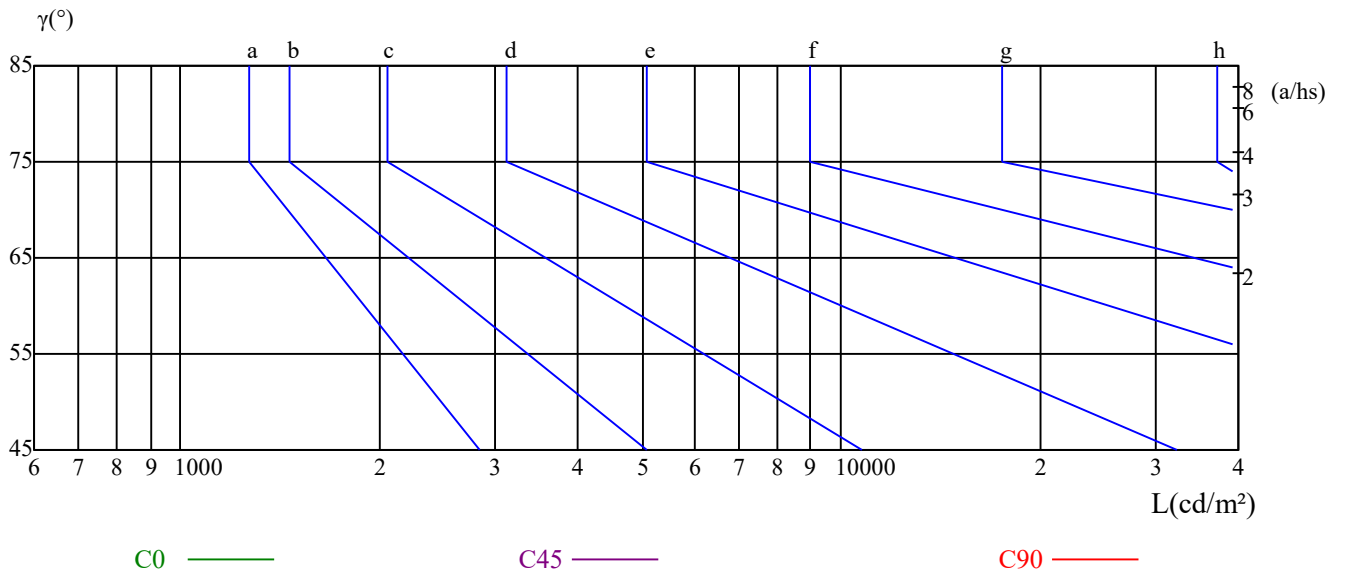
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

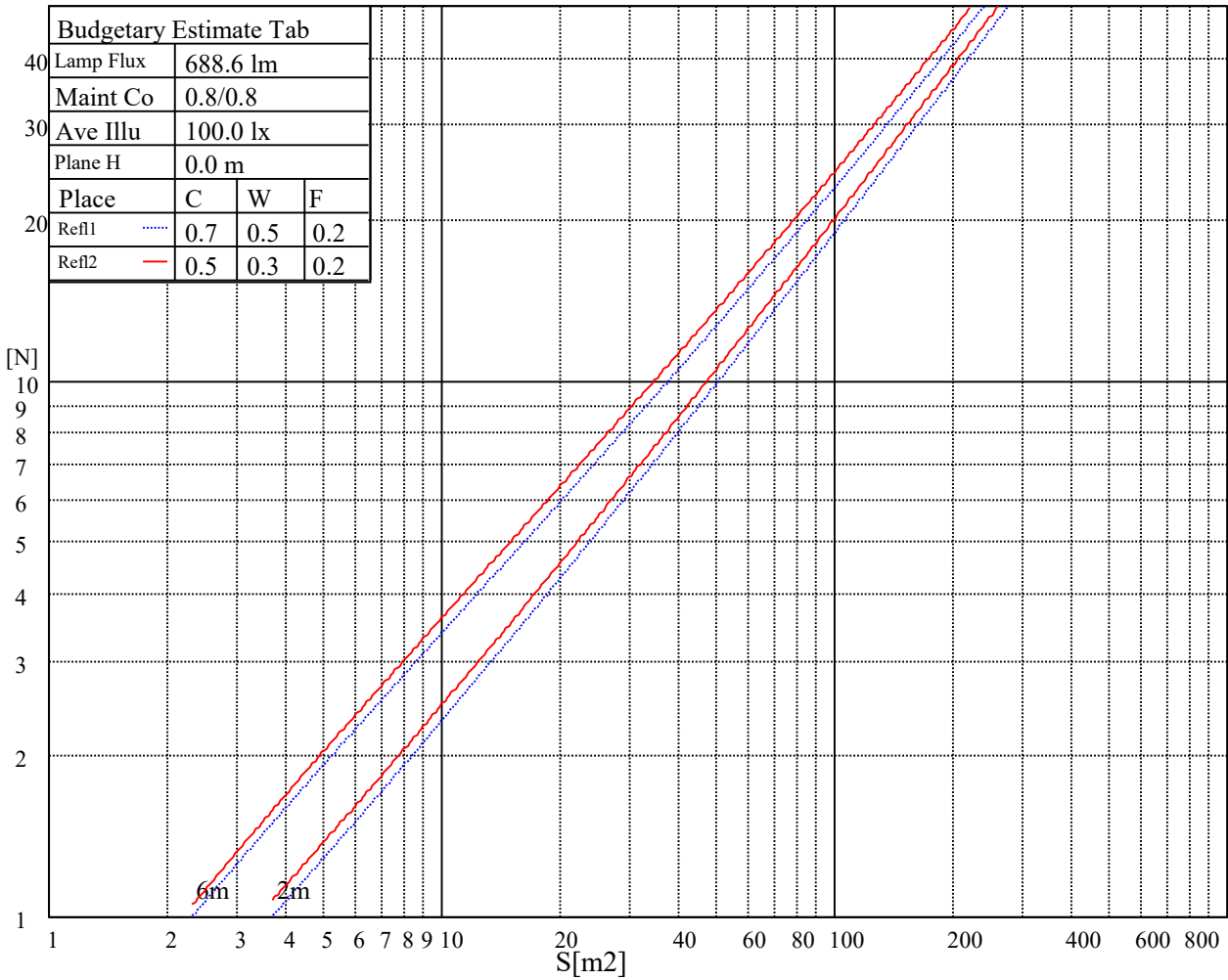
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

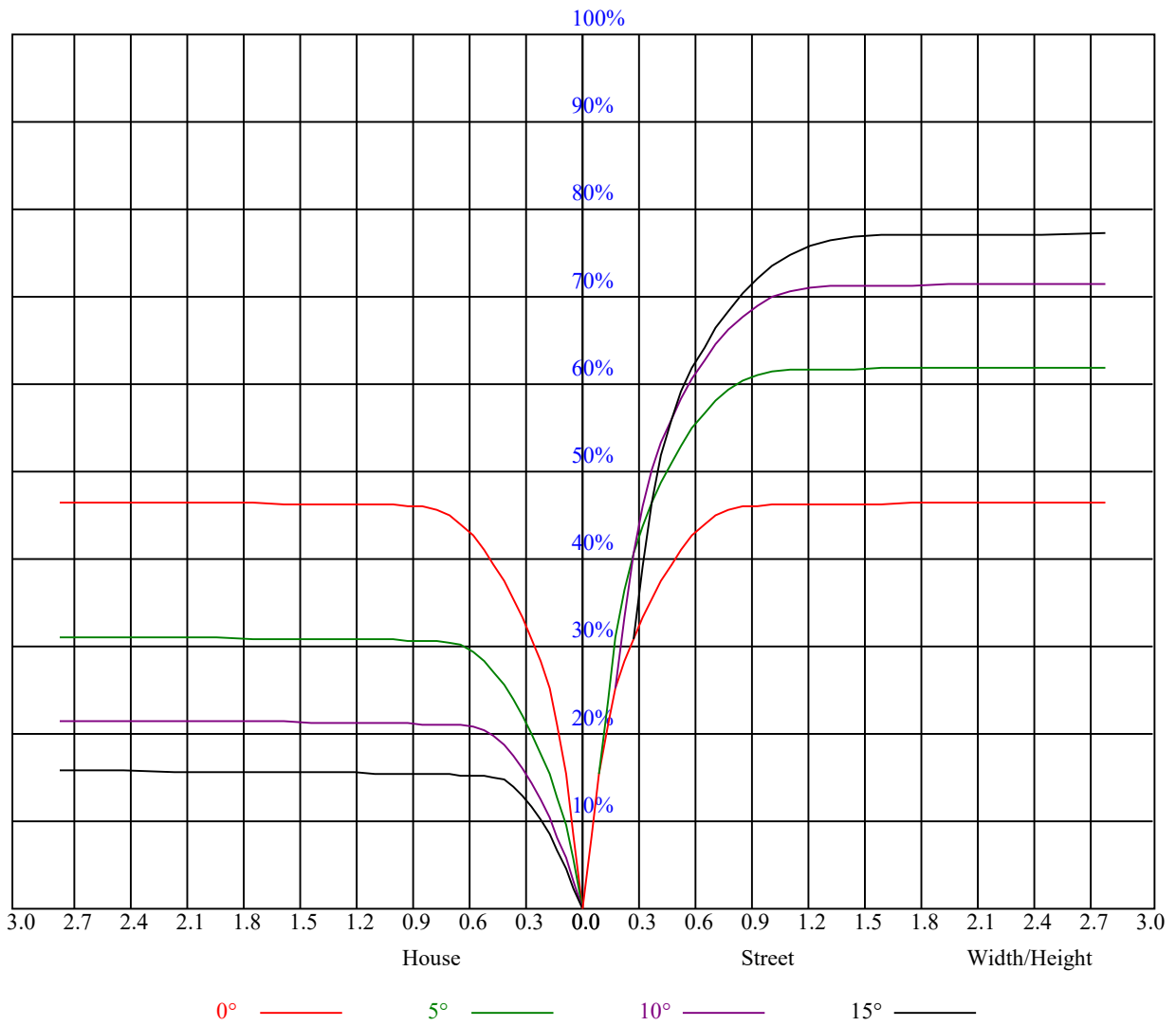
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

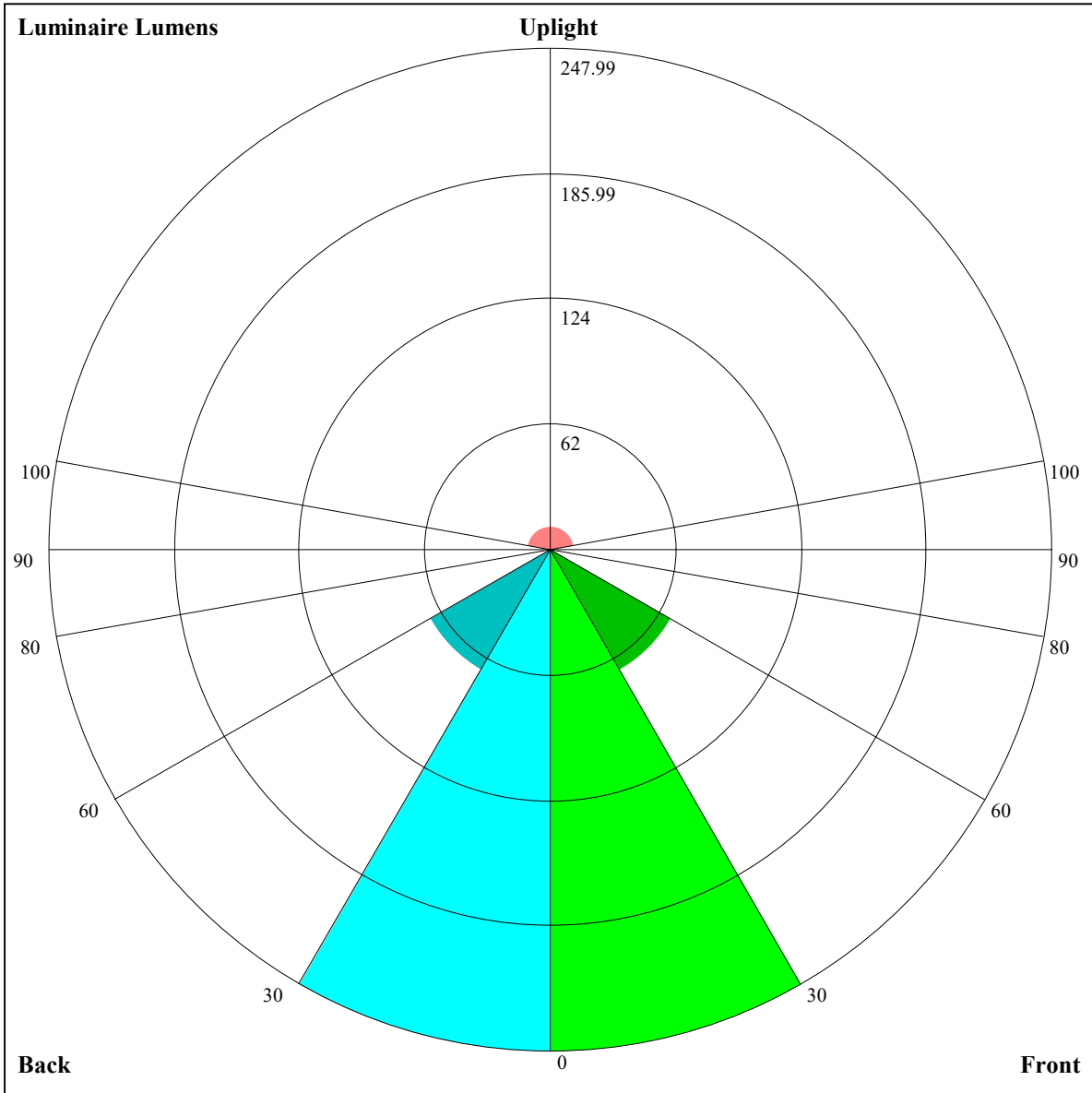
Luminance Limiting Curve





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	1.12	1.12	1.12	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.04	1.02	1.00	1.02	1.00	0.98	0.98	0.97	0.95	0.95	0.93	0.92	0.91	0.90	0.89	0.88
2	0.98	0.95	0.92	0.97	0.93	0.91	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.87	0.85	0.84
3	0.93	0.89	0.86	0.92	0.88	0.85	0.89	0.86	0.84	0.87	0.85	0.82	0.85	0.83	0.81	0.80
4	0.89	0.84	0.81	0.88	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.78	0.76
5	0.85	0.80	0.77	0.84	0.79	0.76	0.82	0.78	0.76	0.81	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.70
7	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.67
8	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.72	0.68	0.66	0.65
9	0.72	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
10	0.70	0.65	0.62	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61





Luminaire Lumens:

FL=247.99,FM=68.85,FH=2.44,FVH=1.25

BL=247.99,BM=68.85,BH=2.44,BVH=1.25

UL=2.48,UH=11.79

BUG Rating:B1-U2-G0

Intensity data(cd)

C/γ(°)	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0
0.0	4688.05	4165.57	3050.68	1802.27	1013.97	625.17	437.70	372.24	347.68
45.0	4692.46	4186.76	3006.80	1775.57	992.78	601.66	433.62	369.32	345.97
90.0	4675.94	4180.16	2979.93	1753.55	989.09	607.16	432.85	370.31	346.64
135.0	4735.95	4186.76	3006.80	1775.57	992.78	601.66	433.62	369.32	345.97
180.0	4688.05	4165.57	3050.68	1802.27	1013.97	625.17	437.70	372.24	347.68
225.0	4692.46	4186.76	3006.80	1775.57	992.78	601.66	433.62	369.32	345.97
270.0	4675.94	4180.16	2979.93	1753.55	989.09	607.16	432.85	370.31	346.64
315.0	4735.95	4186.76	3006.80	1775.57	992.78	601.66	433.62	369.32	345.97
360.0	4688.05	4165.57	3050.68	1802.27	1013.97	625.17	437.70	372.24	347.68
C/γ(°)	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5
0.0	329.68	312.67	294.77	277.87	263.44	222.59	146.78	71.68	24.56
45.0	327.97	310.41	294.22	280.79	261.35	224.46	146.17	66.51	23.67
90.0	328.52	310.57	293.40	277.43	260.03	226.94	143.37	63.15	22.57
135.0	327.97	310.41	294.22	280.79	261.35	224.46	146.17	66.51	23.67
180.0	329.68	312.67	294.77	277.87	263.44	222.59	146.78	71.68	24.56
225.0	327.97	310.41	294.22	280.79	261.35	224.46	146.17	66.51	23.67
270.0	328.52	310.57	293.40	277.43	260.03	226.94	143.37	63.15	22.57
315.0	327.97	310.41	294.22	280.79	261.35	224.46	146.17	66.51	23.67
360.0	329.68	312.67	294.77	277.87	263.44	222.59	146.78	71.68	24.56
C/γ(°)	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0
0.0	5.18	3.03	2.86	2.75	2.64	2.64	2.53	2.48	2.42
45.0	4.29	3.03	2.81	2.70	2.59	2.53	2.53	2.42	2.37
90.0	4.18	3.03	2.81	2.75	2.64	2.59	2.53	2.48	2.48
135.0	4.29	3.03	2.81	2.70	2.59	2.53	2.53	2.42	2.37
180.0	5.18	3.03	2.86	2.75	2.64	2.64	2.53	2.48	2.42
225.0	4.29	3.03	2.81	2.70	2.59	2.53	2.53	2.42	2.37
270.0	4.18	3.03	2.81	2.75	2.64	2.59	2.53	2.48	2.48
315.0	4.29	3.03	2.81	2.70	2.59	2.53	2.53	2.42	2.37
360.0	5.18	3.03	2.86	2.75	2.64	2.64	2.53	2.48	2.42
C/γ(°)	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5
0.0	2.42	2.42	2.37	2.37	2.31	2.31	2.31	2.31	2.26
45.0	2.37	2.37	2.37	2.31	2.31	2.31	2.31	2.26	2.26
90.0	2.42	2.37	2.37	2.31	2.37	2.26	2.31	2.31	2.26
135.0	2.37	2.37	2.37	2.31	2.31	2.31	2.31	2.26	2.26
180.0	2.42	2.42	2.37	2.37	2.31	2.31	2.31	2.31	2.26
225.0	2.37	2.37	2.37	2.31	2.31	2.31	2.31	2.26	2.26
270.0	2.42	2.37	2.37	2.31	2.37	2.26	2.31	2.31	2.26
315.0	2.37	2.37	2.37	2.31	2.31	2.31	2.31	2.26	2.26
360.0	2.42	2.42	2.37	2.37	2.31	2.31	2.31	2.31	2.26
C/γ(°)	90.0								
0.0	2.26								
45.0	2.26								
90.0	2.31								
135.0	2.26								
180.0	2.26								
225.0	2.26								
270.0	2.31								
315.0	2.26								
360.0	2.26								