



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

Nata

Client:

LumCAT: 1709-M

Luminaire: 92.70.123.00

Report No:

Voltage(V): 31.5600

Test No: GC20190824010

Current(A): 0.1970

LampCAT: XICATO XOB LES 6MM

Power (W): 6.2200

Lamp flux(lm): 658.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 46

Width(mm): 46

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 602.89, Efficiency(%): 91.63% , Luminous Efficacy(lm/W): 96.93

Central intensity(cd): 2536.313, Maximum intensity(cd): 2536.313

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=15.8

[C90/270]Total=15.8

Field angle(10%Imax): [C0/180]Total=50.0

[C90/270]Total=50.0

Maximum s/h(1/2): C0_180=0.27 C90_270=0.27

Maximum s/h(1/4): C0_180=0.30 C90_270=0.30

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.63%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.268%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2536.313	0.000	0	.000%	.000%
1.0	2516.695	2.418	2.418	.367%	.401%
2.0	2438.508	7.112	9.53	1.081%	1.581%
3.0	2311.805	11.361	20.891	1.727%	3.465%
4.0	2147.484	14.927	35.818	2.268%	5.941%
5.0	1931.695	17.548	53.366	2.667%	8.852%
6.0	1698.609	19.078	72.444	2.899%	12.016%
7.0	1466.290	19.644	92.089	2.985%	15.274%
8.0	1251.788	19.453	111.542	2.956%	18.501%
9.0	1058.941	18.727	130.269	2.846%	21.607%
10.0	901.631	17.742	148.011	2.696%	24.550%
11.0	771.996	16.723	164.734	2.541%	27.324%
12.0	663.272	15.690	180.424	2.384%	29.926%
13.0	574.214	14.686	195.11	2.232%	32.362%
14.0	505.097	13.815	208.925	2.100%	34.654%
15.0	454.830	13.178	222.103	2.003%	36.839%
16.0	415.934	12.759	234.862	1.939%	38.956%
17.0	382.331	12.431	247.293	1.889%	41.018%
18.0	355.563	12.166	259.46	1.849%	43.036%
19.0	334.301	12.002	271.462	1.824%	45.026%
20.0	314.606	11.877	283.339	1.805%	46.996%
21.0	298.884	11.780	295.119	1.790%	48.950%
22.0	288.598	11.806	306.925	1.794%	50.909%
23.0	273.804	11.801	318.725	1.793%	52.866%
24.0	263.257	11.742	330.467	1.785%	54.813%
25.0	253.884	11.759	342.226	1.787%	56.764%
26.0	245.552	11.789	354.015	1.792%	58.719%
27.0	236.981	11.805	365.821	1.794%	60.677%
28.0	230.147	11.827	377.647	1.797%	62.639%
29.0	222.778	11.850	389.497	1.801%	64.605%
30.0	216.520	11.861	401.358	1.803%	66.572%
31.0	210.502	11.883	413.241	1.806%	68.543%
32.0	204.799	11.898	425.139	1.808%	70.516%
33.0	200.032	11.926	437.066	1.813%	72.495%
34.0	195.511	11.970	449.036	1.819%	74.480%
35.0	190.905	12.001	461.037	1.824%	76.471%
36.0	186.553	12.018	473.055	1.826%	78.464%
37.0	182.869	12.048	485.104	1.831%	80.462%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	178.945	12.077	497.18	1.835%	82.466%
39.0	174.375	12.060	509.24	1.833%	84.466%
40.0	168.405	11.955	521.195	1.817%	86.449%
41.0	158.611	11.645	532.84	1.770%	88.380%
42.0	144.766	11.022	543.862	1.675%	90.209%
43.0	129.558	10.162	554.024	1.544%	91.894%
44.0	110.637	9.066	563.09	1.378%	93.398%
45.0	87.420	7.612	570.701	1.157%	94.660%
46.0	65.166	5.967	576.669	.907%	95.650%
47.0	45.359	4.396	581.064	.668%	96.379%
48.0	29.602	3.030	584.095	.461%	96.882%
49.0	18.246	1.965	586.06	.299%	97.208%
50.0	10.772	1.210	587.269	.184%	97.408%
51.0	8.156	0.801	588.07	.122%	97.541%
52.0	7.207	0.659	588.729	.100%	97.650%
53.0	6.258	0.586	589.315	.089%	97.748%
54.0	5.520	0.519	589.834	.079%	97.834%
55.0	5.203	0.479	590.313	.073%	97.913%
56.0	4.922	0.458	590.77	.070%	97.989%
57.0	4.662	0.438	591.209	.067%	98.062%
58.0	4.500	0.424	591.632	.064%	98.132%
59.0	4.352	0.414	592.046	.063%	98.201%
60.0	4.205	0.404	592.45	.061%	98.268%
61.0	4.092	0.396	592.846	.060%	98.333%
62.0	3.973	0.389	593.235	.059%	98.398%
63.0	3.867	0.381	593.616	.058%	98.461%
64.0	3.783	0.375	593.992	.057%	98.523%
65.0	3.713	0.371	594.363	.056%	98.585%
66.0	3.649	0.367	594.73	.056%	98.646%
67.0	3.600	0.365	595.094	.055%	98.706%
68.0	3.579	0.364	595.458	.055%	98.767%
69.0	3.558	0.364	595.822	.055%	98.827%
70.0	3.537	0.364	596.187	.055%	98.887%
71.0	3.530	0.365	596.552	.056%	98.948%
72.0	3.530	0.367	596.919	.056%	99.009%
73.0	3.516	0.368	597.287	.056%	99.070%
74.0	3.459	0.367	597.654	.056%	99.131%
75.0	3.396	0.362	598.016	.055%	99.191%

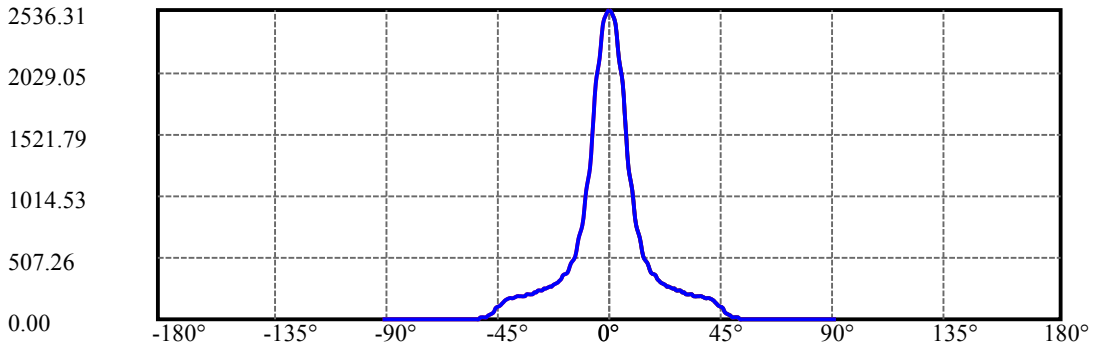
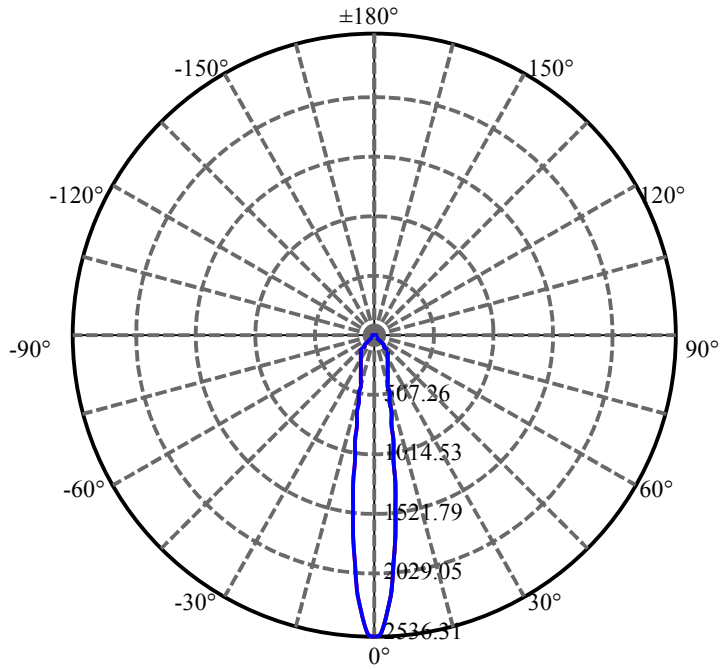
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.347	0.358	598.374	.054%	99.250%
77.0	3.298	0.354	598.728	.054%	99.309%
78.0	3.248	0.350	599.079	.053%	99.367%
79.0	3.185	0.346	599.424	.053%	99.424%
80.0	3.115	0.340	599.764	.052%	99.481%
81.0	3.066	0.334	600.098	.051%	99.536%
82.0	3.009	0.329	600.428	.050%	99.591%
83.0	2.939	0.323	600.751	.049%	99.644%
84.0	2.911	0.319	601.07	.048%	99.697%
85.0	2.876	0.316	601.386	.048%	99.750%
86.0	2.813	0.311	601.697	.047%	99.801%
87.0	2.791	0.307	602.003	.047%	99.852%
88.0	2.756	0.304	602.307	.046%	99.903%
89.0	2.700	0.299	602.606	.045%	99.952%
90.0	2.559	0.288	602.895	.044%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	401.36	61.00%	66.57%
0-40	521.20	79.21%	86.45%
0-60	592.45	90.04%	98.27%
0-90	602.61	91.58%	99.95%
0-120	602.61	91.58%	99.95%
0-180	602.89	91.63%	100.00%
60-90	10.56	1.60%	1.75%
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%
0-36.77	482.32	73.30%	80.00%

ZONAL LUMEN SUMMARY

0-10	148.01
10-20	135.33
20-30	118.02
30-40	119.84
40-50	66.07
50-60	5.18
60-70	3.74
70-80	3.58
80-90	2.84
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



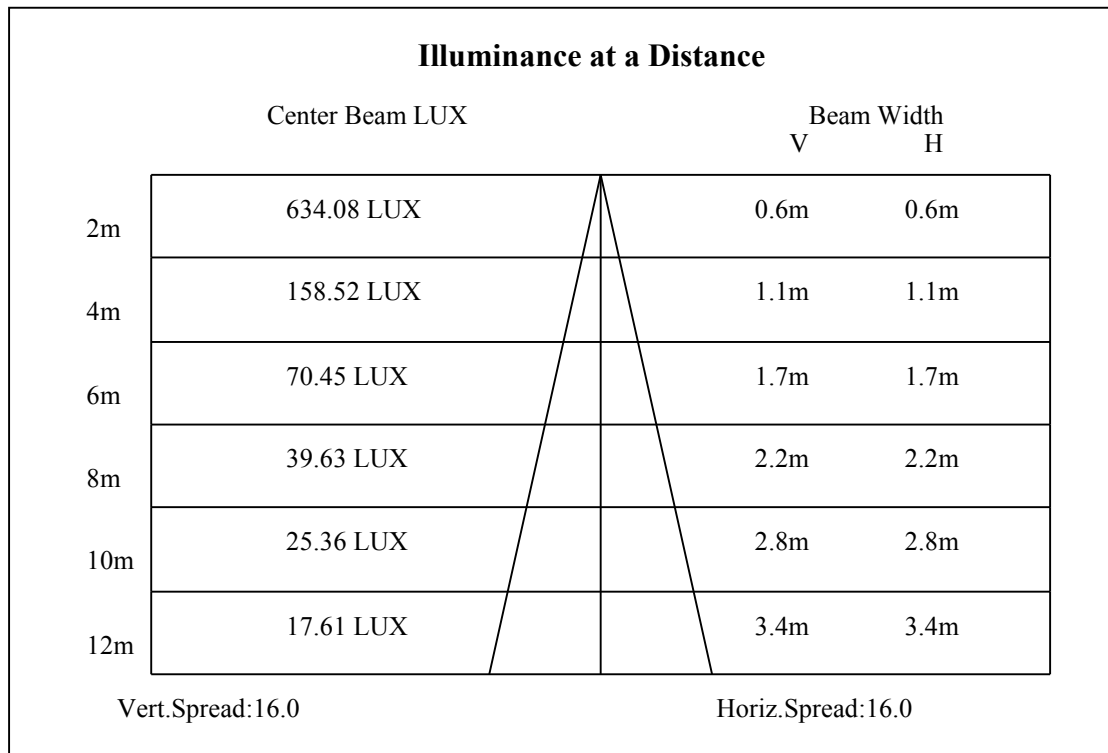
C0(Max): —————

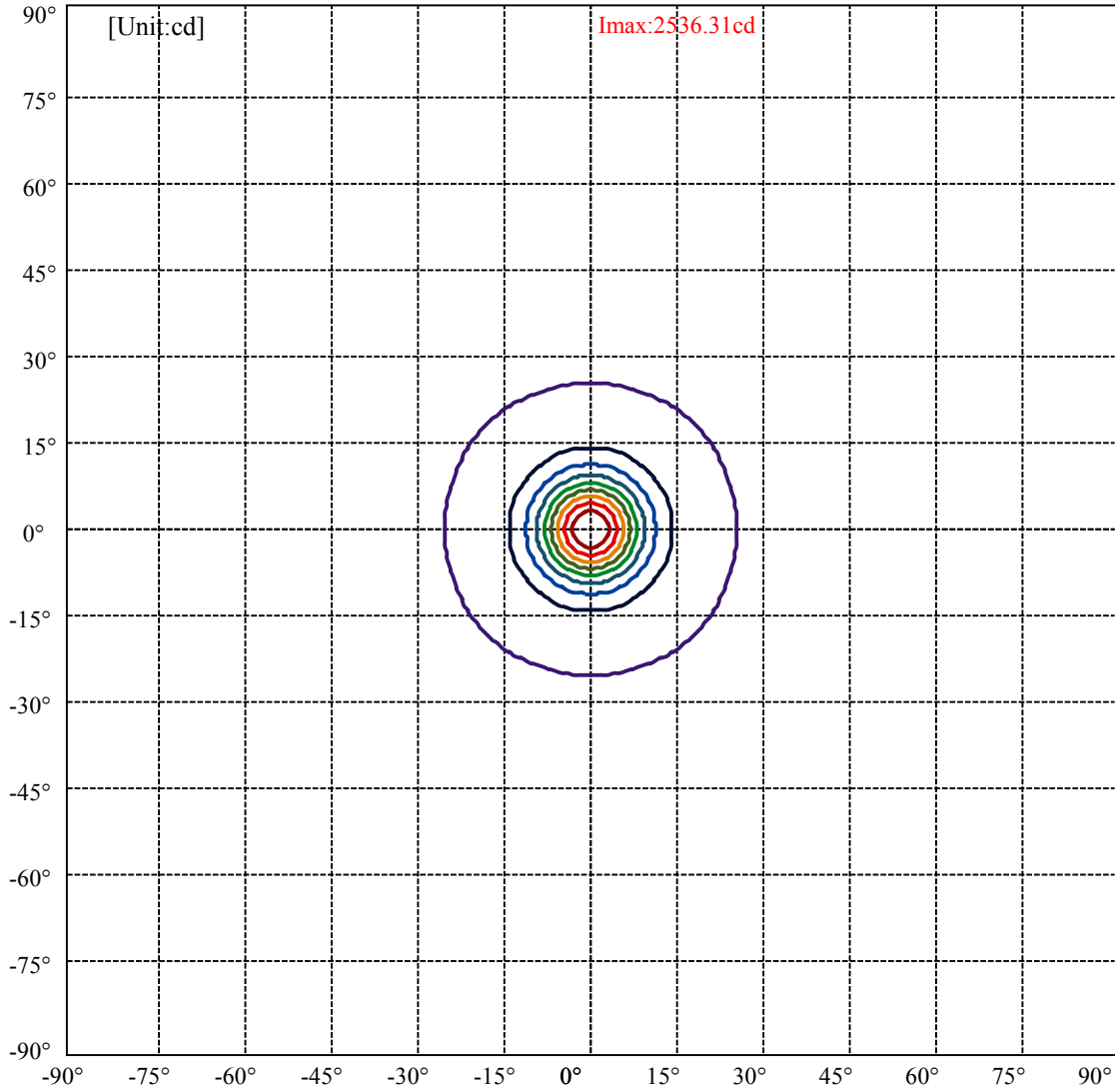
C0/C180: —————

C90/C270: —————

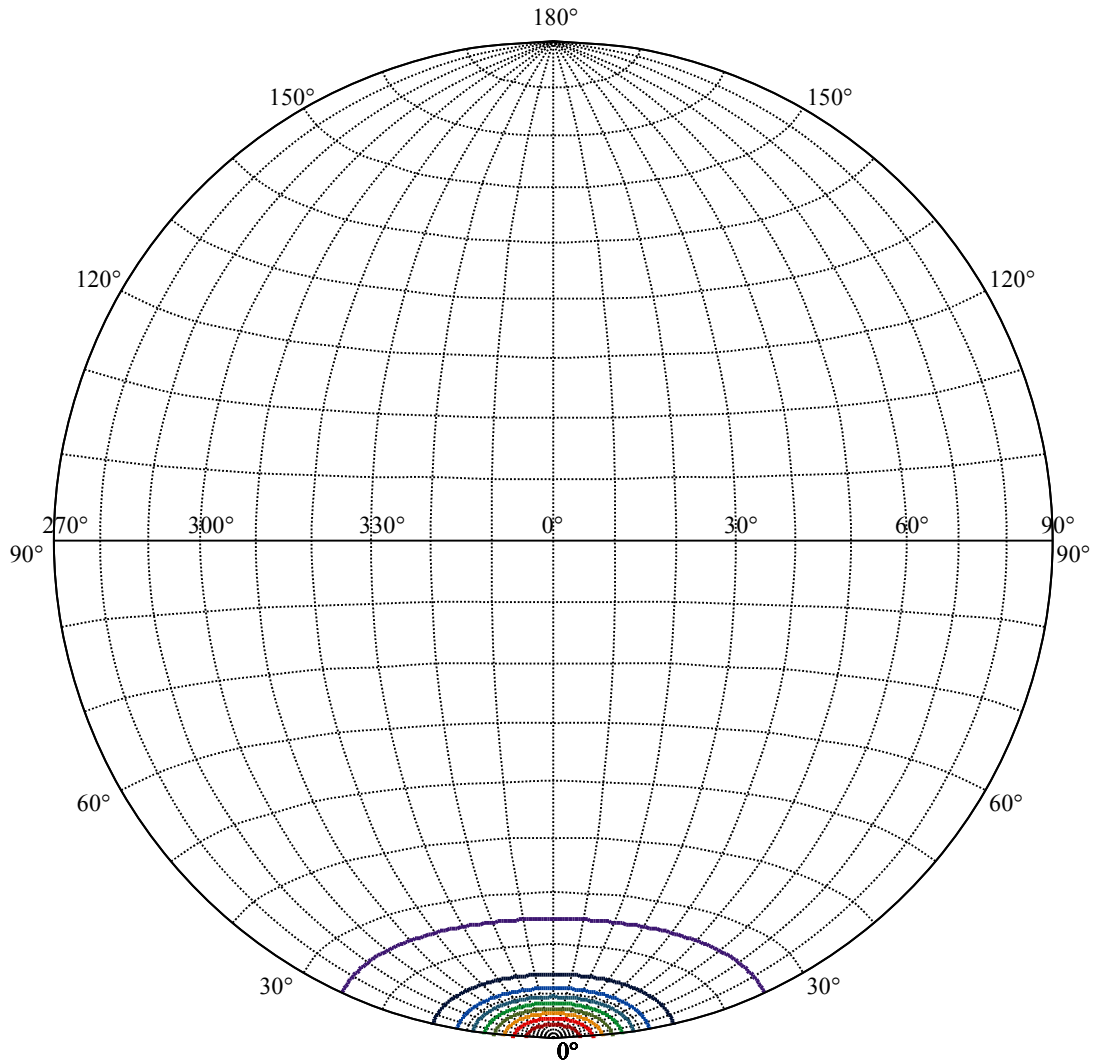
Field angle(10%Imax):C0/180Left:25.0 Right:25.0
:C90/270Left:25.0 Right:25.0

Beam Angle(50%Imax):C0/180Left:7.9 Right:7.9
:C90/270Left:7.9 Right:7.9





(10%Imax) 253.631	—
(20%Imax) 507.263	—
(30%Imax) 760.894	—
(40%Imax) 1014.53	—
(50%Imax) 1268.16	—
(60%Imax) 1521.79	—
(70%Imax) 1775.42	—
(80%Imax) 2029.05	—
(90%Imax) 2282.68	—



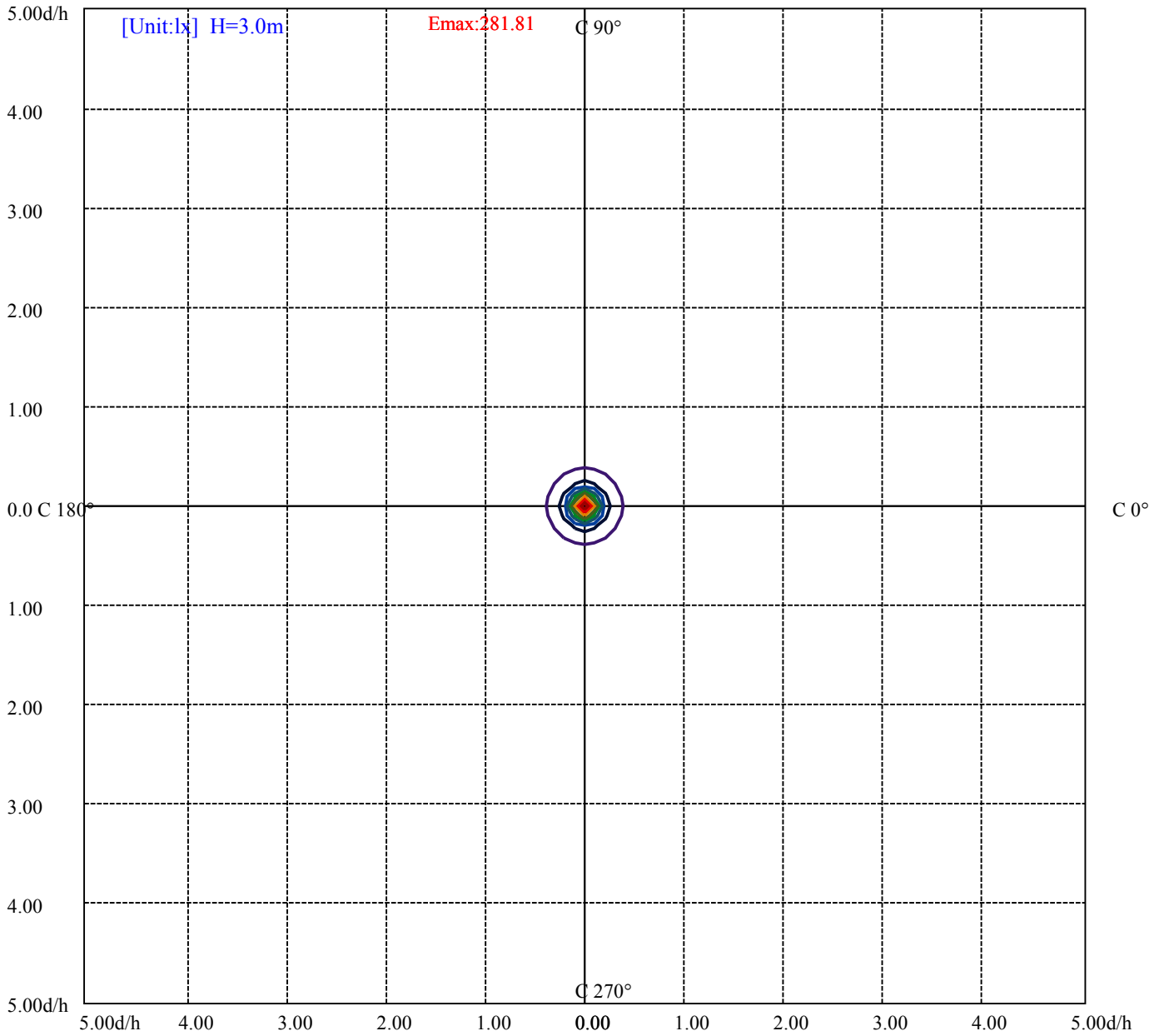
House

[Unit:cd]

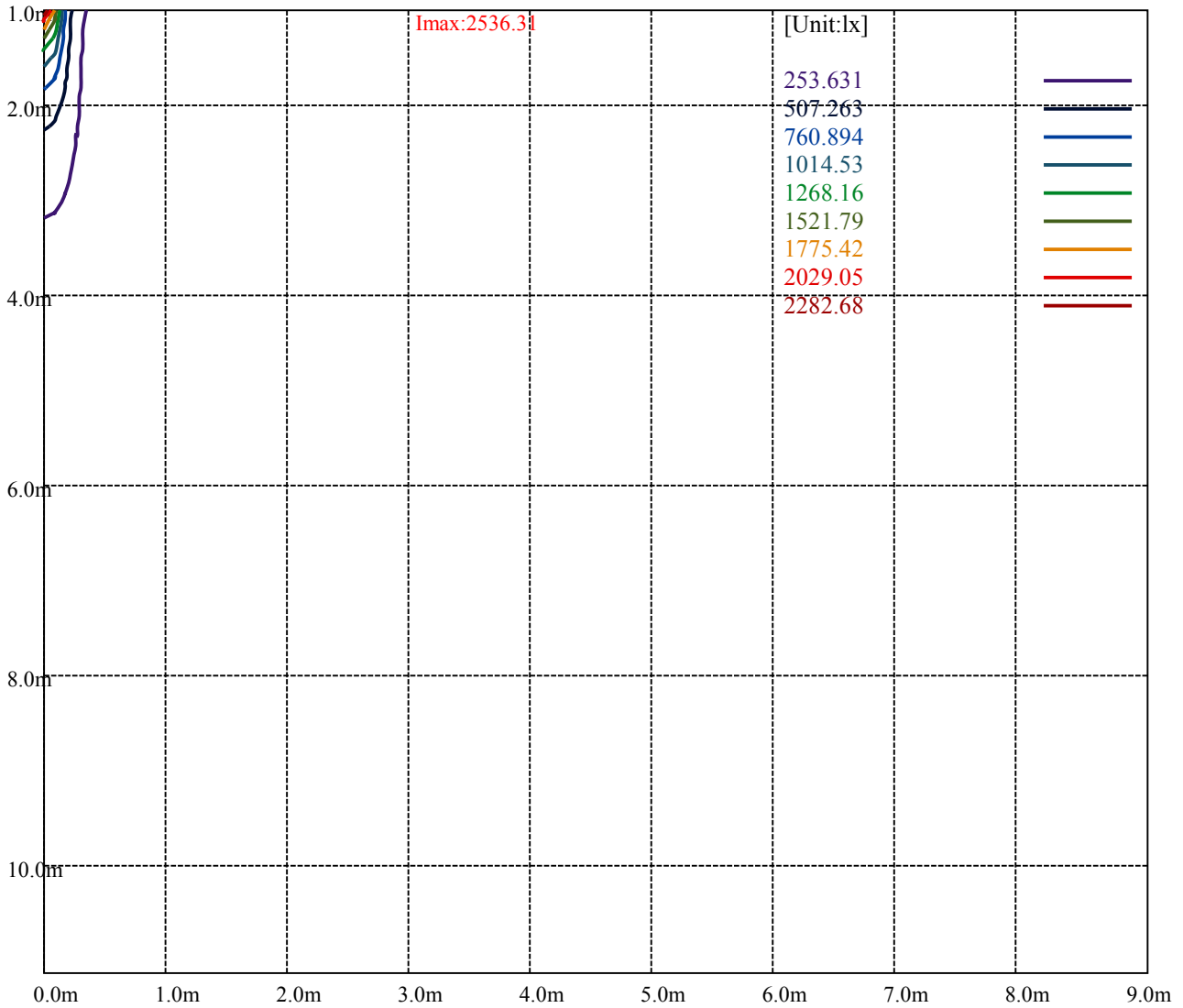
Road

Imax:2536.31

(10%Imax) 253.631	—
(20%Imax) 507.263	—
(30%Imax) 760.894	—
(40%Imax) 1014.53	—
(50%Imax) 1268.16	—
(60%Imax) 1521.79	—
(70%Imax) 1775.42	—
(80%Imax) 2029.05	—
(90%Imax) 2282.68	—



- (10%Emax) 28.18122
- (20%Emax) 56.36244
- (30%Emax) 84.54367
- (40%Emax) 112.7244
- (50%Emax) 140.9056
- (60%Emax) 169.0878
- (70%Emax) 197.2689
- (80%Emax) 225.45
- (90%Emax) 253.6311



Luminance Table

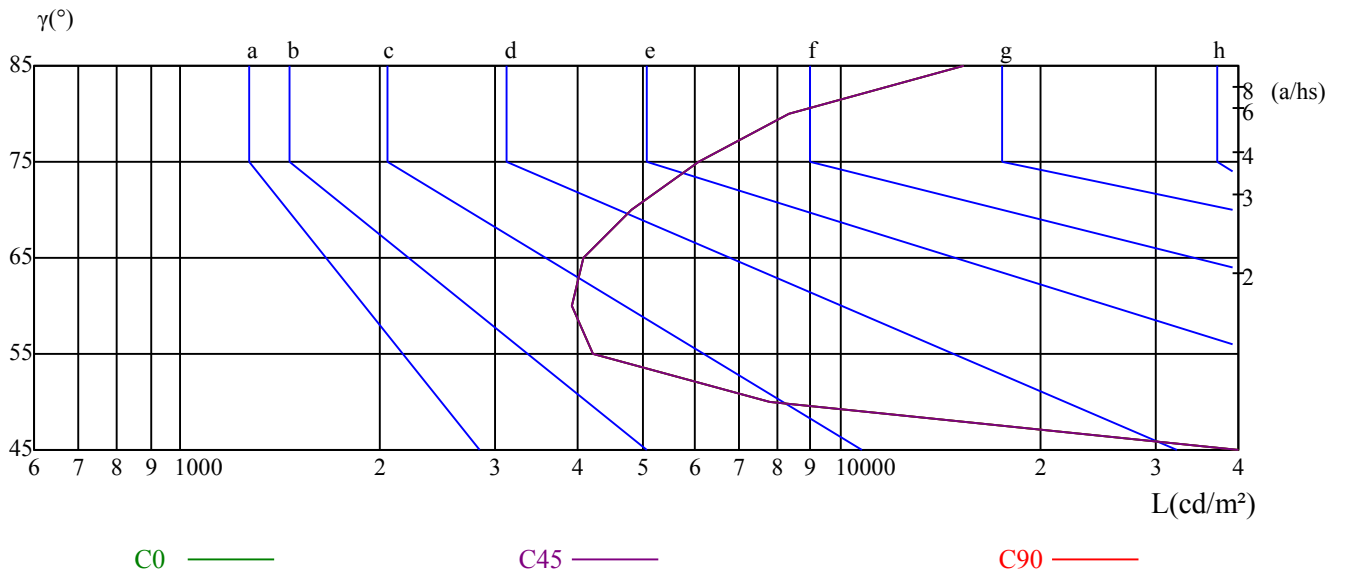
γ	45	50	55	60	65	70	75	80	85
C0	57423	7784	4213	3906	4080	4803	6095	8332	15326
C45	57423	7784	4213	3906	4080	4803	6095	8332	15326
C90	57423	7784	4213	3906	4080	4803	6095	8332	15326

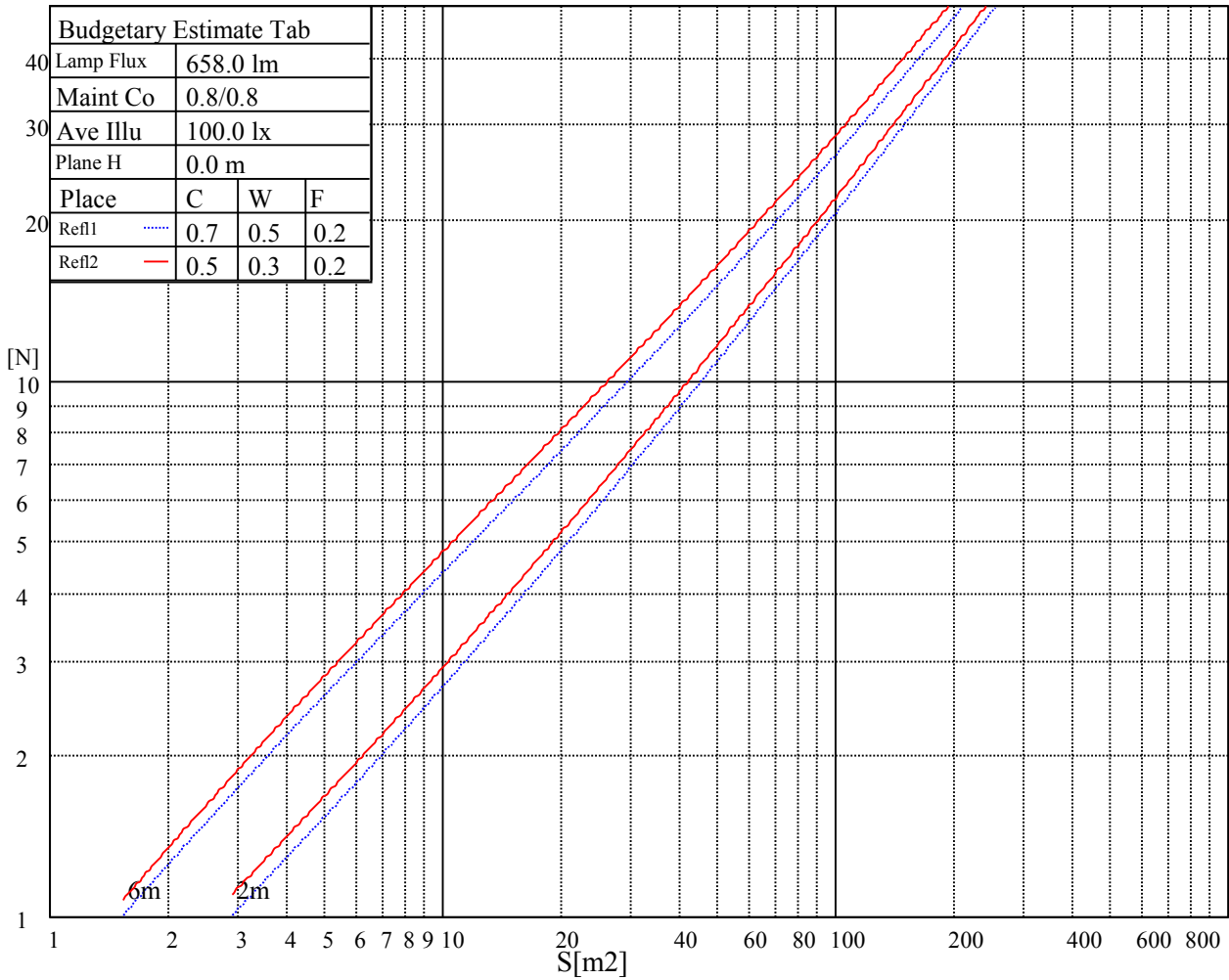
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4080	4080	4080	6095	6095	6095	15326	15326	15326

Glare Table

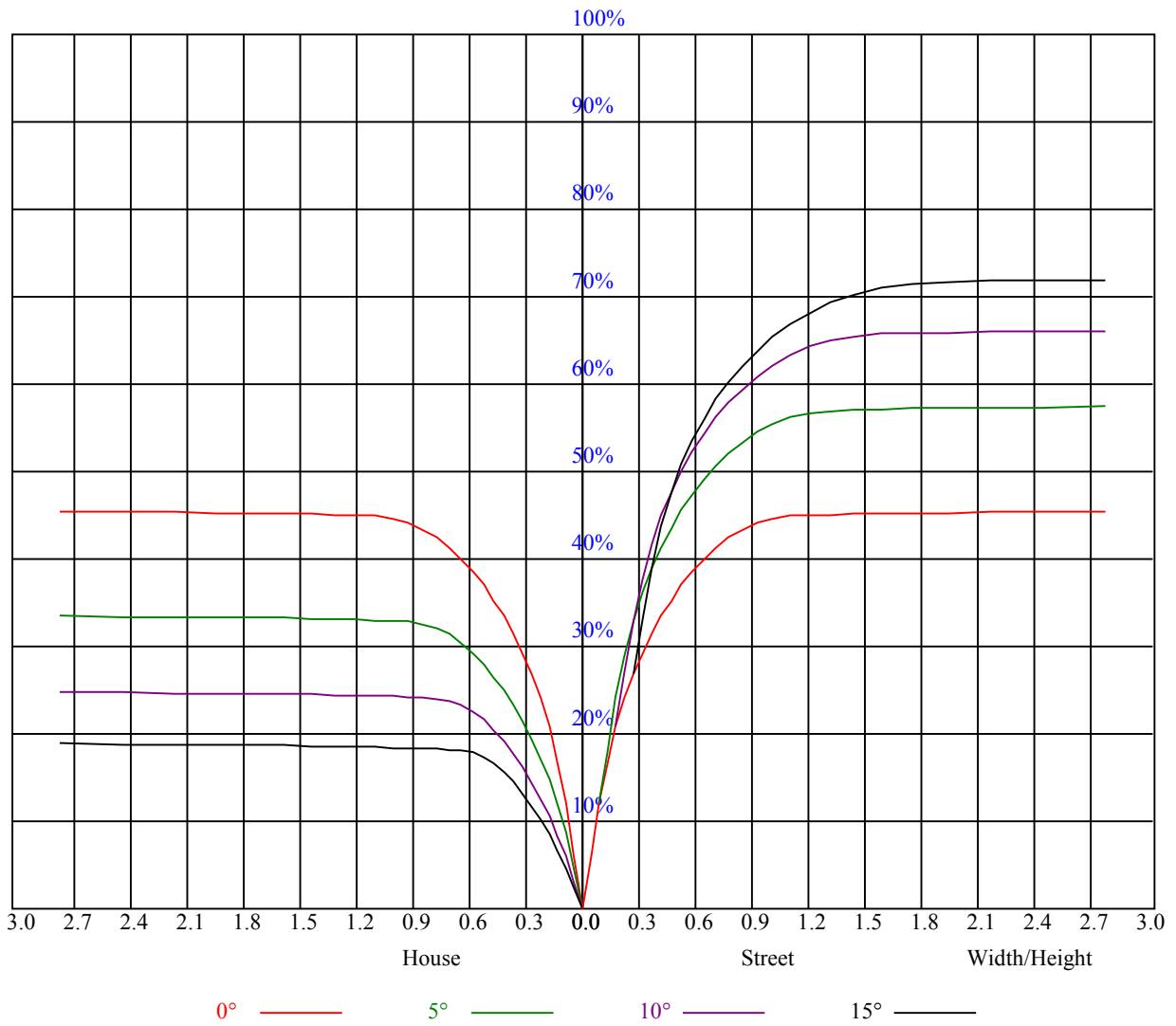
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

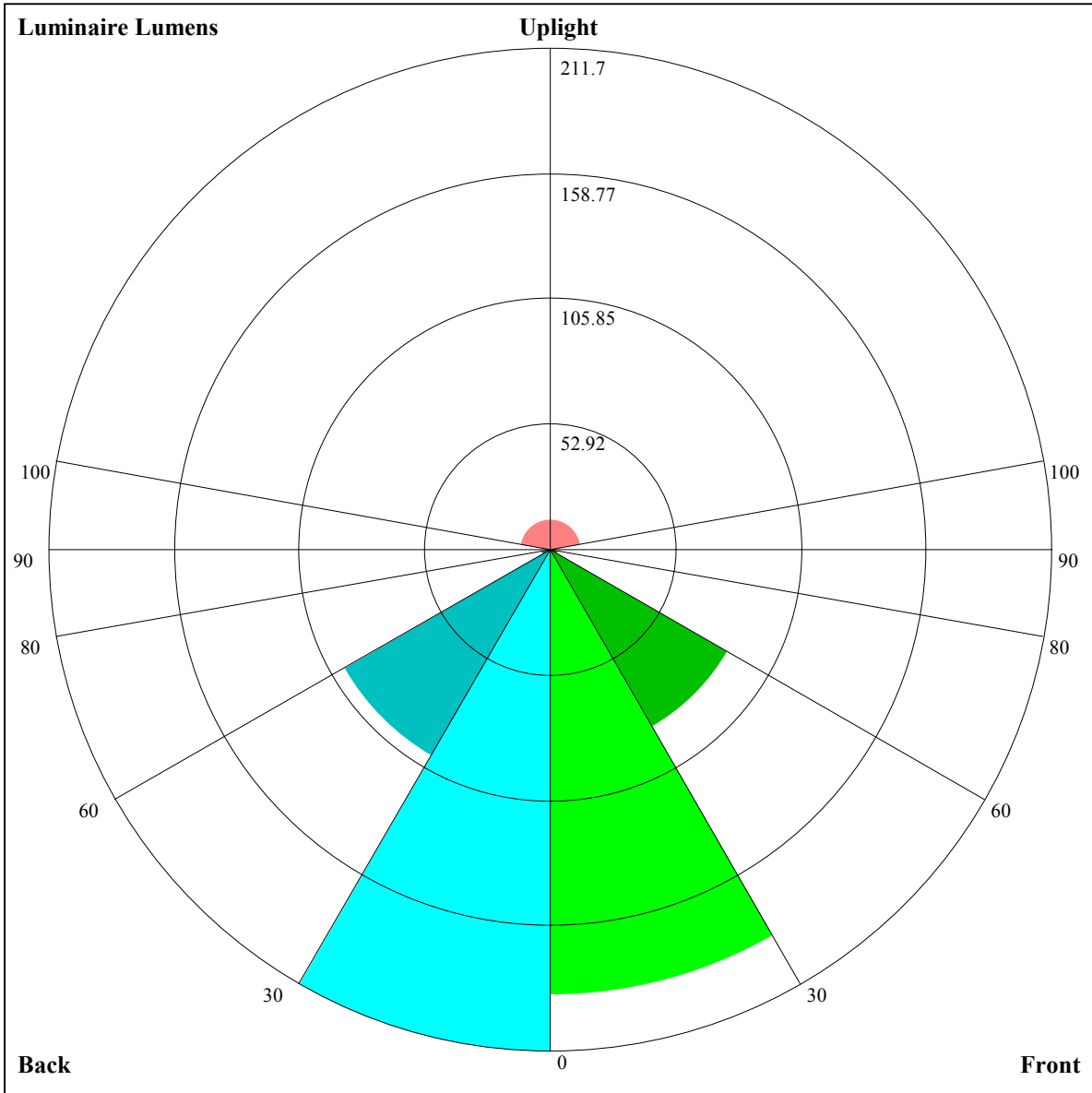
Luminance Limiting Curve





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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.92
1	1.01	0.99	0.97	0.99	0.97	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.95	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	0.81	0.80
3	0.89	0.84	0.81	0.87	0.83	0.80	0.85	0.81	0.79	0.83	0.80	0.77	0.81	0.78	0.76	0.75
4	0.83	0.78	0.74	0.82	0.78	0.74	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.70
5	0.78	0.73	0.69	0.77	0.73	0.69	0.76	0.72	0.68	0.74	0.71	0.68	0.73	0.70	0.67	0.66
6	0.74	0.69	0.65	0.73	0.68	0.65	0.72	0.68	0.64	0.71	0.67	0.64	0.69	0.66	0.64	0.62
7	0.70	0.65	0.61	0.70	0.65	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.59
8	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.56
9	0.64	0.58	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.62	0.57	0.55	0.61	0.57	0.54	0.53
10	0.61	0.56	0.52	0.60	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.55	0.52	0.51





Luminaire Lumens:

FL=187.85,FM=86.68,FH=3.67,FVH=1.58

BL=211.7,BM=100.81,BH=3.84,BVH=1.54

UL=2.79,UH=13.29

BUG Rating:B1-U2-G0

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	2540.25	2512.69	2384.44	2204.44	1971.56	1654.88	1410.75	1193.06	984.94
45.0	2538.56	2549.81	2514.94	2399.06	2229.19	2031.75	1666.69	1383.19	1166.63
90.0	2547.56	2549.81	2503.13	2389.50	2233.13	1996.31	1719.00	1462.50	1115.55
135.0	2518.88	2544.75	2523.38	2459.25	2357.44	2167.31	1981.69	1768.50	1526.63
180.0	2540.25	2536.31	2482.88	2415.38	2304.00	2126.81	1974.94	1761.19	1521.56
225.0	2538.56	2493.00	2411.44	2282.63	2118.94	1948.50	1755.00	1560.38	1386.56
270.0	2547.56	2508.75	2397.38	2261.81	2095.88	1908.56	1667.81	1485.56	1297.13
315.0	2518.88	2438.44	2290.50	2082.38	1869.75	1619.44	1413.00	1115.94	1015.31
360.0	2540.25	2512.69	2384.44	2204.44	1971.56	1654.88	1410.75	1193.06	984.94
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	812.25	687.94	582.75	514.13	457.88	421.88	397.13	376.31	357.19
45.0	892.13	743.06	642.38	532.13	466.31	426.94	384.19	357.19	334.13
90.0	994.78	808.71	668.64	574.99	493.76	441.23	401.91	366.24	340.03
135.0	1305.00	1123.31	937.69	790.31	662.06	561.38	488.81	437.63	397.69
180.0	1358.44	1102.50	990.51	857.98	746.04	631.46	558.39	500.63	456.47
225.0	1121.68	1046.76	895.61	778.84	668.48	584.10	520.26	469.52	417.54
270.0	1118.25	970.31	842.06	717.75	615.94	538.31	480.38	434.25	393.19
315.0	869.01	730.46	616.33	540.06	483.24	435.49	407.59	385.71	362.42
360.0	812.25	687.94	582.75	514.13	457.88	421.88	397.13	376.31	357.19
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	338.06	320.06	298.69	287.44	285.19	265.11	259.65	254.14	246.32
45.0	313.88	298.69	286.31	271.52	263.76	256.50	250.71	246.54	243.56
90.0	320.68	301.44	290.19	281.08	272.53	258.58	242.94	236.59	229.50
135.0	372.94	353.25	329.63	316.13	302.63	290.25	284.06	269.72	265.11
180.0	408.77	376.93	354.09	330.81	316.41	302.06	287.83	273.43	260.44
225.0	382.44	352.97	326.64	304.26	290.53	277.31	263.42	253.58	243.62
270.0	362.25	338.06	314.44	294.19	284.63	263.48	248.79	238.61	228.54
315.0	345.49	333.00	316.86	305.66	293.12	277.14	268.65	258.47	247.33
360.0	338.06	320.06	298.69	287.44	285.19	265.11	259.65	254.14	246.32
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	237.99	231.53	224.55	219.49	213.47	207.45	203.12	198.73	193.33
45.0	240.98	237.15	232.54	226.97	219.99	213.58	208.01	202.61	198.17
90.0	221.91	213.69	206.27	200.59	193.89	185.34	178.59	172.46	168.24
135.0	255.66	249.75	242.16	233.10	224.33	217.35	211.05	205.99	201.32
180.0	244.46	238.89	230.06	221.23	215.21	209.87	205.54	202.22	199.18
225.0	235.52	225.62	218.42	214.26	211.56	208.97	206.61	203.63	199.29
270.0	218.93	211.33	204.53	198.62	194.01	191.03	187.54	183.38	175.84
315.0	240.41	233.21	223.71	217.91	211.56	204.81	199.80	195.08	191.87
360.0	237.99	231.53	224.55	219.49	213.47	207.45	203.12	198.73	193.33
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	188.83	185.23	181.07	175.67	162.34	142.43	111.60	85.89	57.38
45.0	194.12	190.46	186.92	182.03	170.72	155.31	123.75	98.72	73.97
90.0	164.98	161.04	156.09	152.33	146.81	132.69	119.98	101.42	77.18
135.0	197.94	194.74	191.03	187.88	184.67	181.63	175.73	164.76	148.28
180.0	194.85	190.97	188.21	183.71	180.23	177.08	173.64	170.49	164.31
225.0	195.64	191.87	188.72	186.08	184.16	181.97	179.83	176.29	164.36
270.0	167.57	162.68	156.43	148.33	143.89	140.68	137.98	131.34	118.24
315.0	188.49	185.96	183.09	178.99	174.43	157.11	135.62	107.55	81.39
360.0	188.83	185.23	181.07	175.67	162.34	142.43	111.60	85.89	57.38

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	33.08	17.38	9.68	8.33	7.59	6.64	5.96	5.63	5.29
45.0	47.70	26.61	15.13	11.19	10.13	8.89	7.48	6.58	5.96
90.0	60.92	41.96	24.58	17.49	13.73	11.08	9.68	8.33	7.43
135.0	118.24	93.94	72.28	42.92	21.26	10.91	7.88	7.03	5.85
180.0	146.36	123.41	94.05	63.84	38.87	17.89	8.66	7.65	6.58
225.0	142.59	111.04	78.69	50.96	27.68	11.42	9.28	8.10	6.41
270.0	97.54	75.26	55.35	33.41	18.96	12.71	10.80	9.17	7.59
315.0	52.93	31.73	13.11	8.66	7.76	6.64	5.51	5.18	4.95
360.0	33.08	17.38	9.68	8.33	7.59	6.64	5.96	5.63	5.29
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.01	4.78	4.50	4.28	4.11	3.99	3.83	3.71	3.60
45.0	5.46	5.18	4.89	4.56	4.33	4.16	3.99	3.94	3.83
90.0	6.81	6.36	5.96	5.63	5.40	5.18	4.95	4.78	4.61
135.0	4.78	4.56	4.39	4.22	4.11	3.99	3.88	3.88	3.77
180.0	5.06	4.73	4.50	4.22	4.16	4.05	3.94	3.83	3.71
225.0	5.34	5.01	4.78	4.61	4.50	4.44	4.44	4.39	4.33
270.0	6.92	6.41	5.85	5.46	5.18	4.95	4.73	4.50	4.39
315.0	4.78	4.61	4.50	4.33	4.22	4.05	3.88	3.71	3.54
360.0	5.01	4.78	4.50	4.28	4.11	3.99	3.83	3.71	3.60
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.43	3.38	3.32	3.26	3.26	3.26	3.21	3.15	3.09
45.0	3.66	3.54	3.49	3.38	3.32	3.32	3.26	3.21	3.21
90.0	4.50	4.33	4.22	4.05	3.99	3.99	3.99	3.94	3.94
135.0	3.71	3.71	3.60	3.54	3.49	3.43	3.43	3.38	3.32
180.0	3.66	3.54	3.49	3.43	3.38	3.38	3.38	3.32	3.32
225.0	4.28	4.22	4.11	4.11	3.99	3.88	3.83	3.83	3.83
270.0	4.22	4.16	4.16	4.16	4.11	4.11	4.11	4.16	4.22
315.0	3.49	3.38	3.32	3.26	3.26	3.26	3.26	3.32	3.32
360.0	3.43	3.38	3.32	3.26	3.26	3.26	3.21	3.15	3.09
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.04	2.98	2.93	2.87	2.87	2.87	2.81	2.81	2.81
45.0	3.15	3.09	3.04	3.04	3.04	2.98	2.98	2.93	2.87
90.0	3.99	3.99	3.94	3.94	3.88	3.83	3.77	3.66	3.49
135.0	3.32	3.32	3.38	3.43	3.43	3.43	3.38	3.21	3.04
180.0	3.26	3.21	3.09	3.04	2.98	2.93	2.87	2.87	2.81
225.0	3.94	4.05	3.99	3.71	3.54	3.49	3.49	3.43	3.38
270.0	4.28	4.22	4.11	3.88	3.71	3.54	3.38	3.26	3.15
315.0	3.26	3.26	3.21	3.26	3.32	3.32	3.32	3.32	3.38
360.0	3.04	2.98	2.93	2.87	2.87	2.87	2.81	2.81	2.81
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.81	2.76	2.76	2.76	2.76	2.70	2.76	2.70	2.70
45.0	2.81	2.81	2.76	2.76	2.70	2.64	2.64	2.59	2.59
90.0	3.38	3.21	3.04	2.93	2.87	2.81	2.81	2.87	2.81
135.0	2.93	2.87	2.87	2.81	2.76	2.76	2.76	2.70	2.64
180.0	2.81	2.81	2.76	2.76	2.76	2.76	2.76	2.76	2.76
225.0	3.38	3.26	3.09	3.04	2.93	2.76	2.64	2.53	2.48
270.0	2.98	2.93	2.81	2.76	2.70	2.64	2.53	2.48	2.42
315.0	3.43	3.43	3.43	3.49	3.54	3.43	3.43	3.43	3.21
360.0	2.81	2.76	2.76	2.76	2.76	2.70	2.76	2.70	2.70

Intensity data(cd)

C/ γ (°)	90.0
0.0	2.59
45.0	2.53
90.0	2.53
135.0	2.64
180.0	2.81
225.0	2.42
270.0	2.42
315.0	2.53
360.0	2.59