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## Nata

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Client: NT

LumCAT: 1-1894-A

Luminaire: 92.70.481.00

Report No: 20260323-B002

Ballast type: DC

Test No: 20260330-C002

Voltage(V): 35.340

LampCAT: CITIZEN CLU028

Current(A): 0.363

Lamp flux(lm): 1607.0

Power (W): 12.820

Number of Lamps: 1

PF: 0.000

Length(mm): 45

Width(mm): 45

Phm Type: C

Height(mm): 19

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## Photometric Results

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Lumens(lm): 1474.32, Efficiency(%): 91.74% , Luminous Efficacy(lm/W): 115.00

Central intensity(cd): 5877.461, Maximum intensity(cd): 5877.461

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

Beam Angle(50%Imax): [C0/180]Total=18.8

[C90/270]Total=18.8

Field angle(10%Imax): [C0/180]Total=51.0

[C90/270]Total=51.0

Maximum s/h(1/2): C0\_180=0.32 C90\_270=0.32

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(%): 91.74%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 99.319%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5877.461	0.000	0	0.00%	0.00%
1.0	5838.131	5.606	5.606	0.35%	0.38%
2.0	5704.091	16.566	22.172	1.03%	1.50%
3.0	5509.326	26.819	48.991	1.67%	3.32%
4.0	5241.142	35.985	84.976	2.24%	5.76%
5.0	4916.323	43.697	128.673	2.72%	8.73%
6.0	4515.359	49.566	178.239	3.08%	12.09%
7.0	4054.298	53.192	231.431	3.31%	15.70%
8.0	3622.603	54.942	286.373	3.42%	19.42%
9.0	3169.408	55.046	341.418	3.43%	23.16%
10.0	2641.464	52.586	394.005	3.27%	26.72%
11.0	2301.866	49.394	443.399	3.07%	30.07%
12.0	1912.282	46.067	489.465	2.87%	33.20%
13.0	1690.834	42.760	532.225	2.66%	36.10%
14.0	1478.836	40.572	572.797	2.52%	38.85%
15.0	1274.946	37.805	610.602	2.35%	41.42%
16.0	1121.881	35.120	645.722	2.19%	43.80%
17.0	994.586	32.959	678.681	2.05%	46.03%
18.0	894.067	31.140	709.821	1.94%	48.15%
19.0	813.916	29.715	739.536	1.85%	50.16%
20.0	750.001	28.624	768.16	1.78%	52.10%
21.0	701.367	27.869	796.03	1.73%	53.99%
22.0	664.197	27.442	823.471	1.71%	55.85%
23.0	635.396	27.269	850.74	1.70%	57.70%
24.0	612.049	27.274	878.014	1.70%	59.55%
25.0	594.628	27.437	905.451	1.71%	61.41%
26.0	580.910	27.749	933.2	1.73%	63.30%
27.0	568.754	28.127	961.327	1.75%	65.20%
28.0	559.210	28.558	989.884	1.78%	67.14%
29.0	551.679	29.064	1018.948	1.81%	69.11%
30.0	544.652	29.601	1048.549	1.84%	71.12%
31.0	536.744	30.094	1078.643	1.87%	73.16%
32.0	527.147	30.479	1109.122	1.90%	75.23%
33.0	516.754	30.754	1139.876	1.91%	77.32%
34.0	505.940	30.950	1170.825	1.93%	79.41%
35.0	492.295	31.001	1201.827	1.93%	81.52%
36.0	475.105	30.802	1232.629	1.92%	83.61%
37.0	450.049	30.173	1262.802	1.88%	85.65%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	423.744	29.166	1291.968	1.81%	87.63%
39.0	385.378	27.618	1319.586	1.72%	89.50%
40.0	357.574	25.912	1345.497	1.61%	91.26%
41.0	310.598	23.793	1369.291	1.48%	92.88%
42.0	254.465	20.530	1389.82	1.28%	94.27%
43.0	211.201	17.250	1407.07	1.07%	95.44%
44.0	167.035	14.276	1421.346	0.89%	96.41%
45.0	126.257	11.272	1432.617	0.70%	97.17%
46.0	90.807	8.489	1441.106	0.53%	97.75%
47.0	61.366	6.052	1447.158	0.38%	98.16%
48.0	40.296	4.110	1451.268	0.26%	98.44%
49.0	27.175	2.771	1454.039	0.17%	98.62%
50.0	20.641	1.994	1456.032	0.12%	98.76%
51.0	16.886	1.588	1457.62	0.10%	98.87%
52.0	13.928	1.322	1458.942	0.08%	98.96%
53.0	11.401	1.102	1460.044	0.07%	99.03%
54.0	9.219	0.909	1460.953	0.06%	99.09%
55.0	7.698	0.755	1461.708	0.05%	99.14%
56.0	6.366	0.636	1462.344	0.04%	99.19%
57.0	5.559	0.545	1462.889	0.03%	99.22%
58.0	5.055	0.491	1463.38	0.03%	99.26%
59.0	4.751	0.458	1463.838	0.03%	99.29%
60.0	4.499	0.437	1464.275	0.03%	99.32%
61.0	4.332	0.421	1464.697	0.03%	99.35%
62.0	4.185	0.410	1465.107	0.03%	99.38%
63.0	4.059	0.401	1465.508	0.02%	99.40%
64.0	3.933	0.392	1465.9	0.02%	99.43%
65.0	3.839	0.385	1466.285	0.02%	99.45%
66.0	3.723	0.377	1466.662	0.02%	99.48%
67.0	3.660	0.371	1467.033	0.02%	99.51%
68.0	3.597	0.368	1467.401	0.02%	99.53%
69.0	3.535	0.364	1467.765	0.02%	99.56%
70.0	3.451	0.359	1468.124	0.02%	99.58%
71.0	3.409	0.355	1468.478	0.02%	99.60%
72.0	3.356	0.352	1468.83	0.02%	99.63%
73.0	3.304	0.348	1469.178	0.02%	99.65%
74.0	3.241	0.344	1469.522	0.02%	99.67%
75.0	3.188	0.340	1469.862	0.02%	99.70%

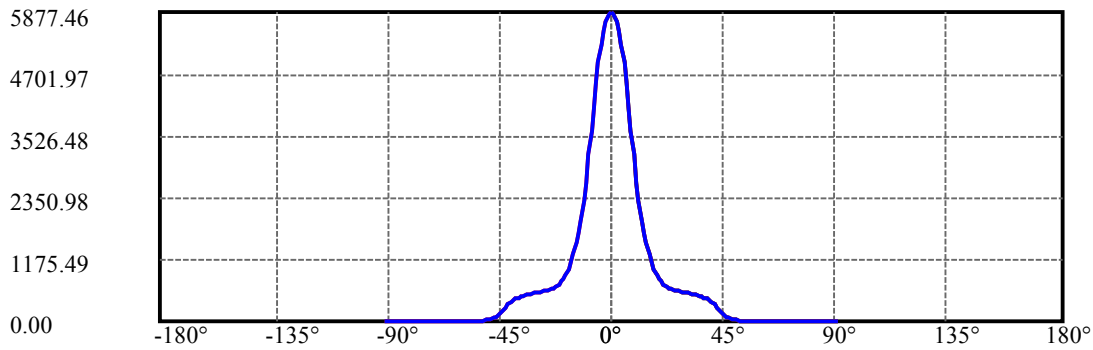
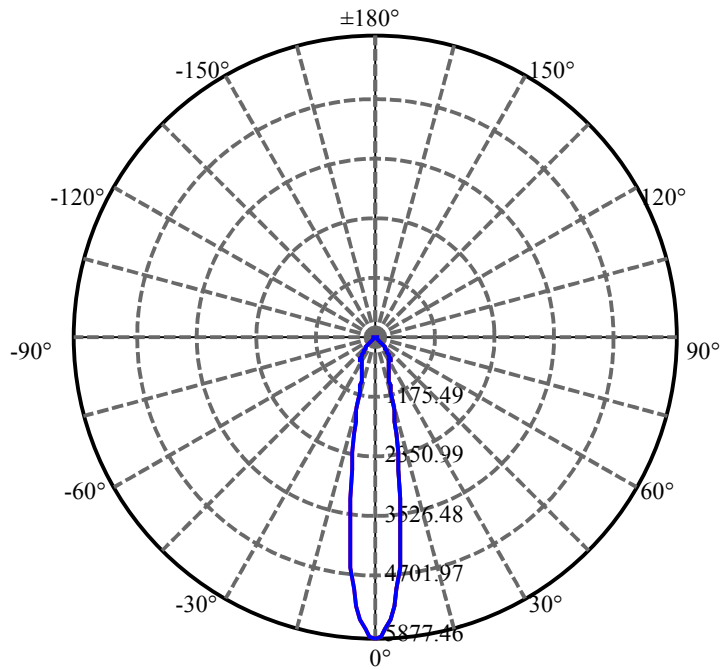
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.157	0.337	1470.199	0.02%	99.72%
77.0	3.105	0.334	1470.533	0.02%	99.74%
78.0	3.073	0.331	1470.863	0.02%	99.77%
79.0	3.031	0.328	1471.191	0.02%	99.79%
80.0	2.968	0.323	1471.515	0.02%	99.81%
81.0	2.926	0.319	1471.834	0.02%	99.83%
82.0	2.863	0.314	1472.148	0.02%	99.85%
83.0	2.790	0.307	1472.455	0.02%	99.87%
84.0	2.674	0.298	1472.753	0.02%	99.89%
85.0	2.549	0.285	1473.038	0.02%	99.91%
86.0	2.444	0.273	1473.31	0.02%	99.93%
87.0	2.360	0.263	1473.573	0.02%	99.95%
88.0	2.297	0.255	1473.828	0.02%	99.97%
89.0	2.255	0.249	1474.078	0.02%	99.98%
90.0	2.182	0.243	1474.321	0.02%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1048.55	65.25%	71.12%
0-40	1345.50	83.73%	91.26%
0-60	1464.28	91.12%	99.32%
0-90	1474.08	91.73%	99.98%
0-120	1474.08	91.73%	99.98%
0-180	1474.32	91.74%	100.00%
60-90	9.80	0.61%	0.66%
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%
0-34.28	1179.46	73.39%	80.00%

ZONAL LUMEN SUMMARY

0-10	394.00
10-20	374.16
20-30	280.39
30-40	296.95
40-50	110.54
50-60	8.24
60-70	3.85
70-80	3.39
80-90	2.56
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



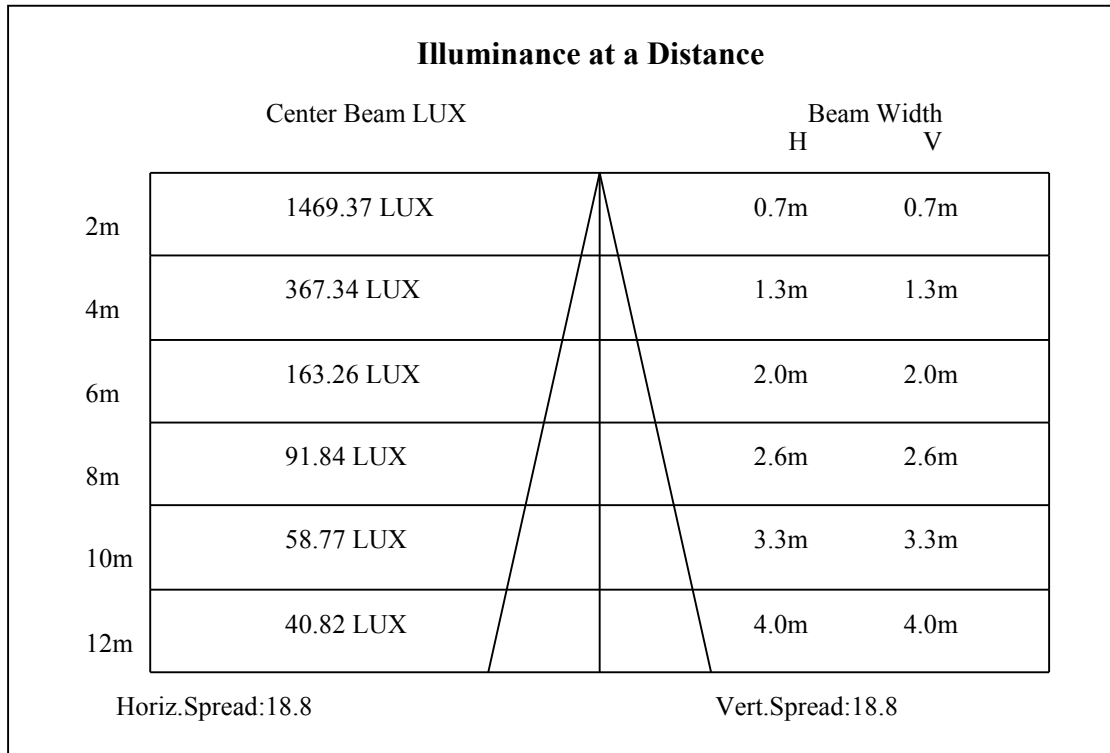
C0(Max): —————

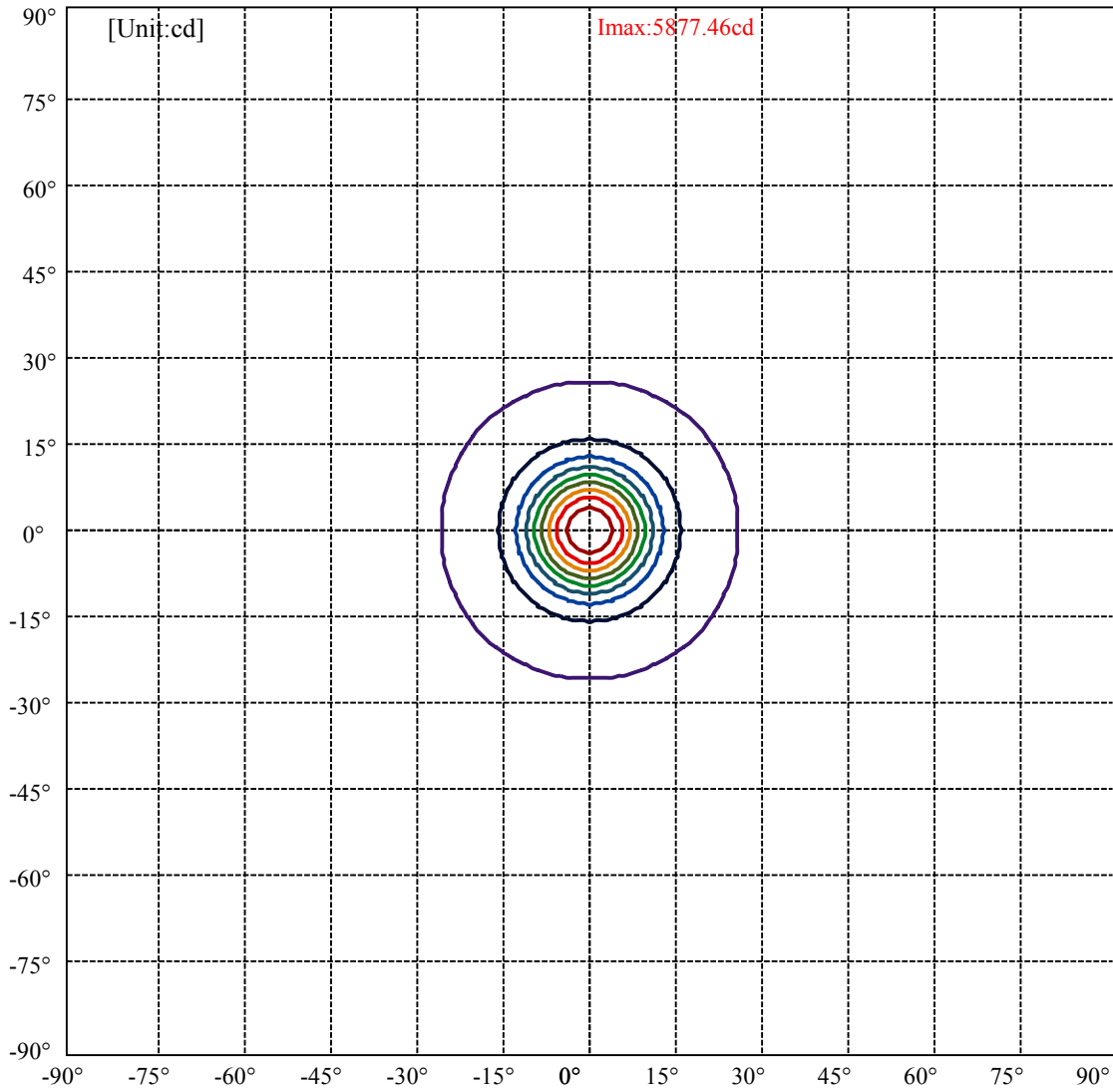
C0/C180: —————

C90/C270: —————

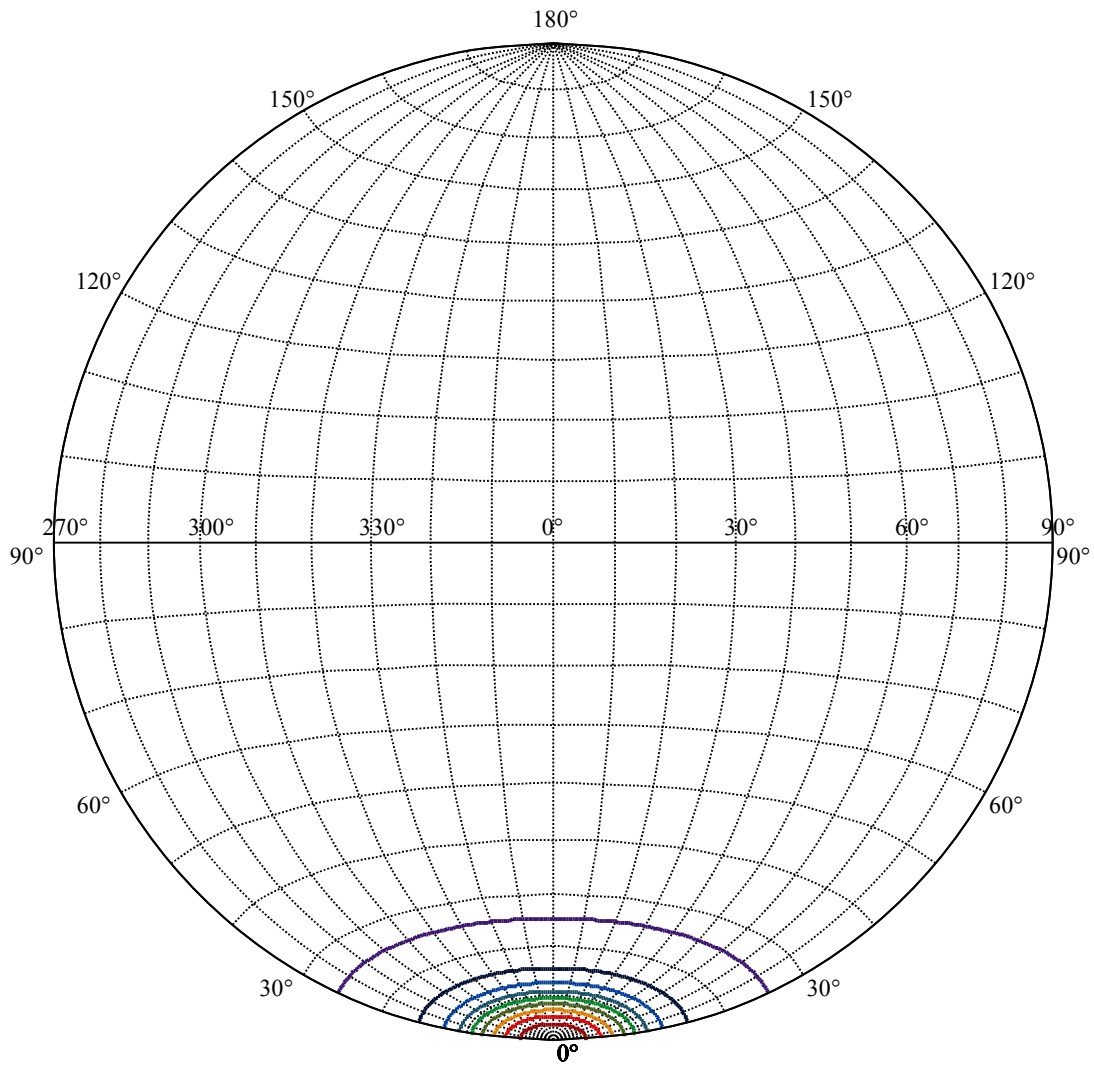
Field angle(10%Imax):C0/180Left:25.5 Right:25.5  
:C90/270Left:25.5 Right:25.5

Beam Angle(50%Imax):C0/180Left:9.4 Right:9.4  
:C90/270Left:9.4 Right:9.4





(10%Imax) 587.746	—
(20%Imax) 1175.49	—
(30%Imax) 1763.24	—
(40%Imax) 2350.98	—
(50%Imax) 2938.73	—
(60%Imax) 3526.48	—
(70%Imax) 4114.22	—
(80%Imax) 4701.97	—
(90%Imax) 5289.72	—



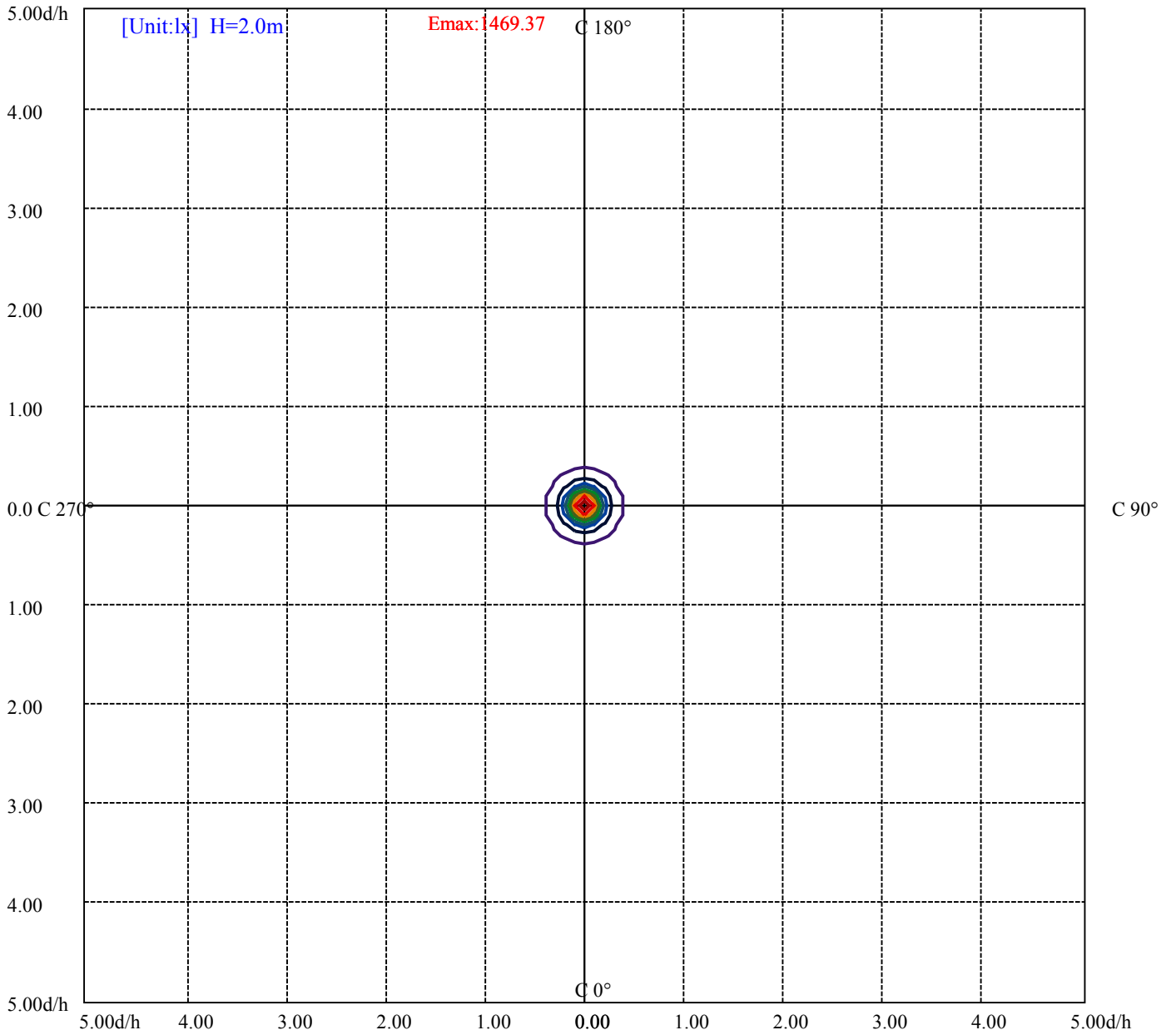
House

[Unit:cd]

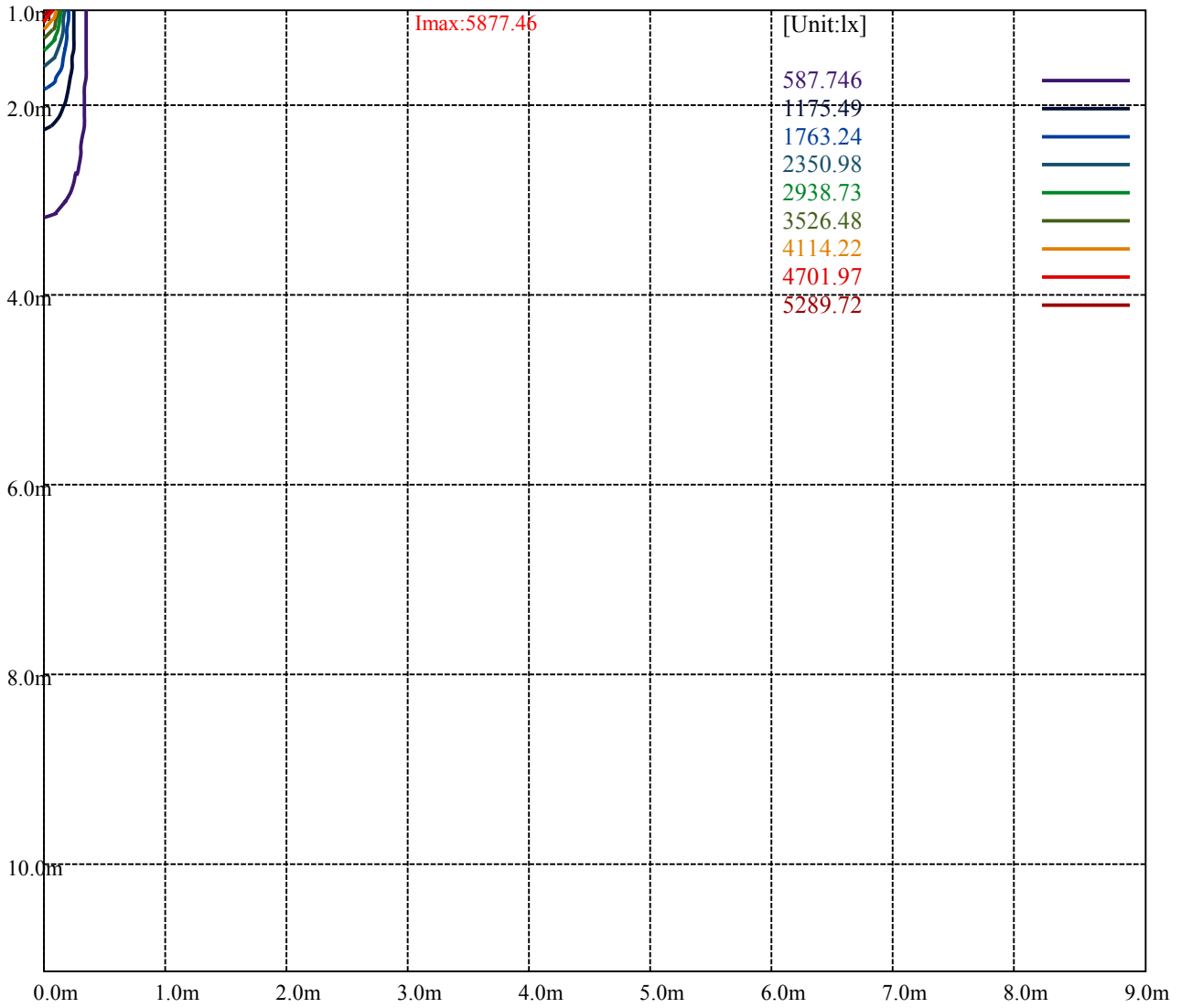
Road

**Imax:5877.46**

(10%Imax) 587.746	—
(20%Imax) 1175.49	—
(30%Imax) 1763.24	—
(40%Imax) 2350.98	—
(50%Imax) 2938.73	—
(60%Imax) 3526.48	—
(70%Imax) 4114.22	—
(80%Imax) 4701.97	—
(90%Imax) 5289.72	—



(10%Emax) 146.9365	—
(20%Emax) 293.8725	—
(30%Emax) 440.81	—
(40%Emax) 587.745	—
(50%Emax) 734.6825	—
(60%Emax) 881.6175	—
(70%Emax) 1028.555	—
(80%Emax) 1175.49	—
(90%Emax) 1322.427	—



Luminance Table

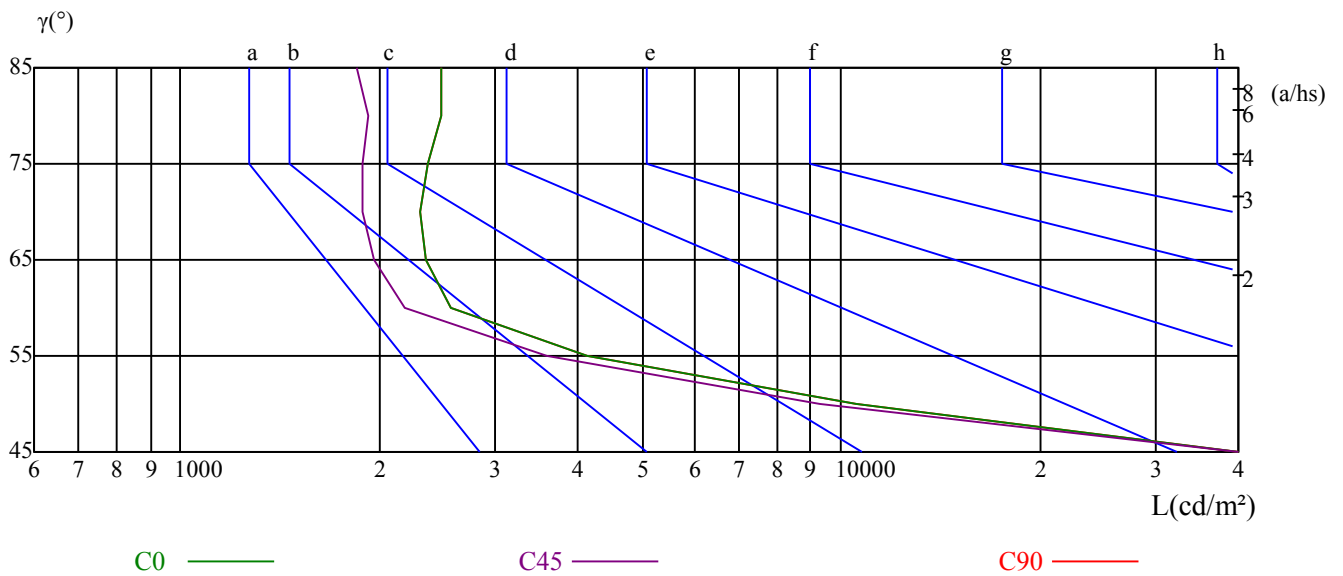
$\gamma$	45	50	55	60	65	70	75	80	85
C0	61998	10549	4135	2567	2354	2307	2362	2487	2479
C45	55209	9265	3577	2185	1967	1887	1884	1924	1845
C90	61998	10549	4135	2567	2354	2307	2362	2487	2479

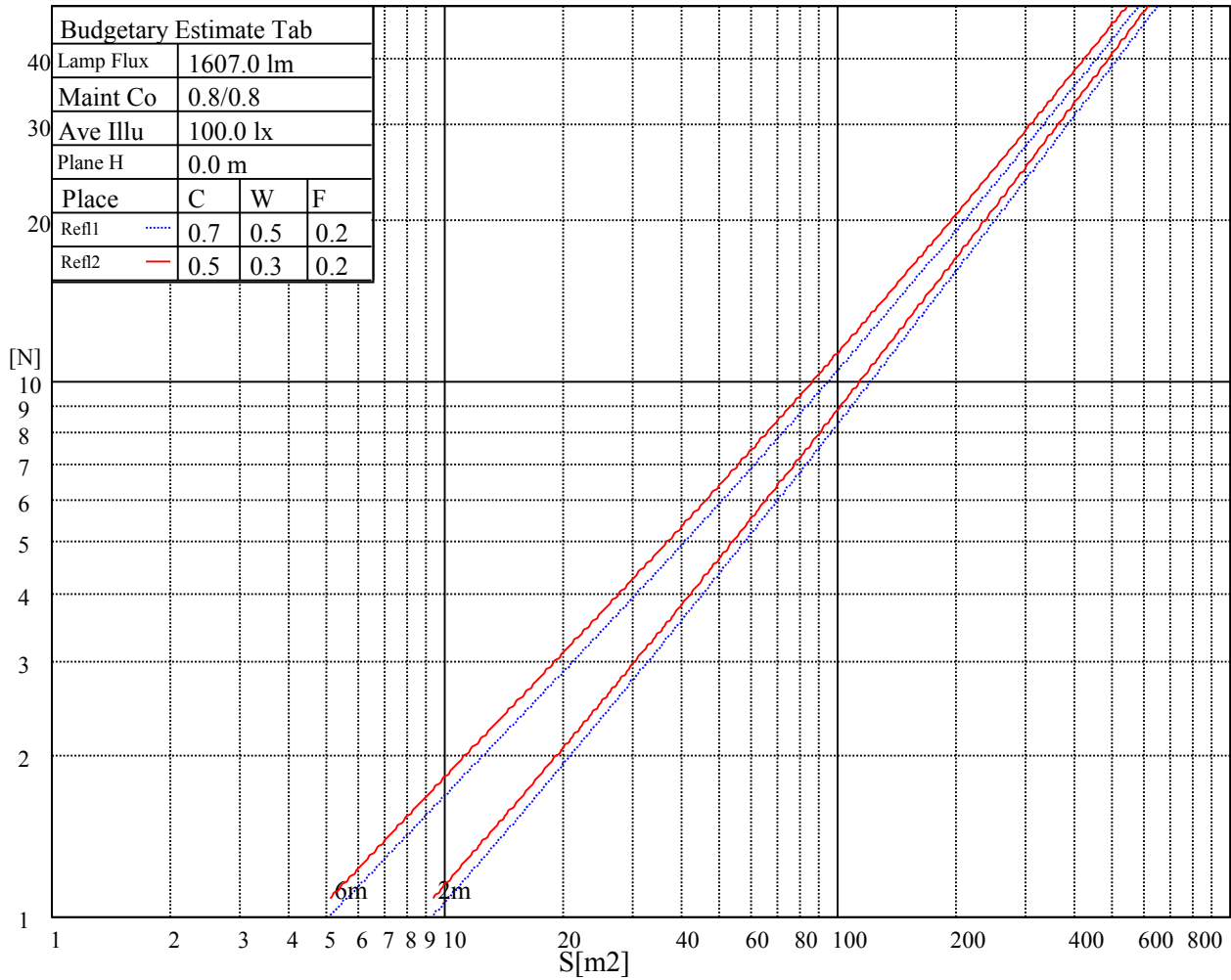
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4485	4485	4485	6083	6083	6083	14441	14441	14441

Glare Table

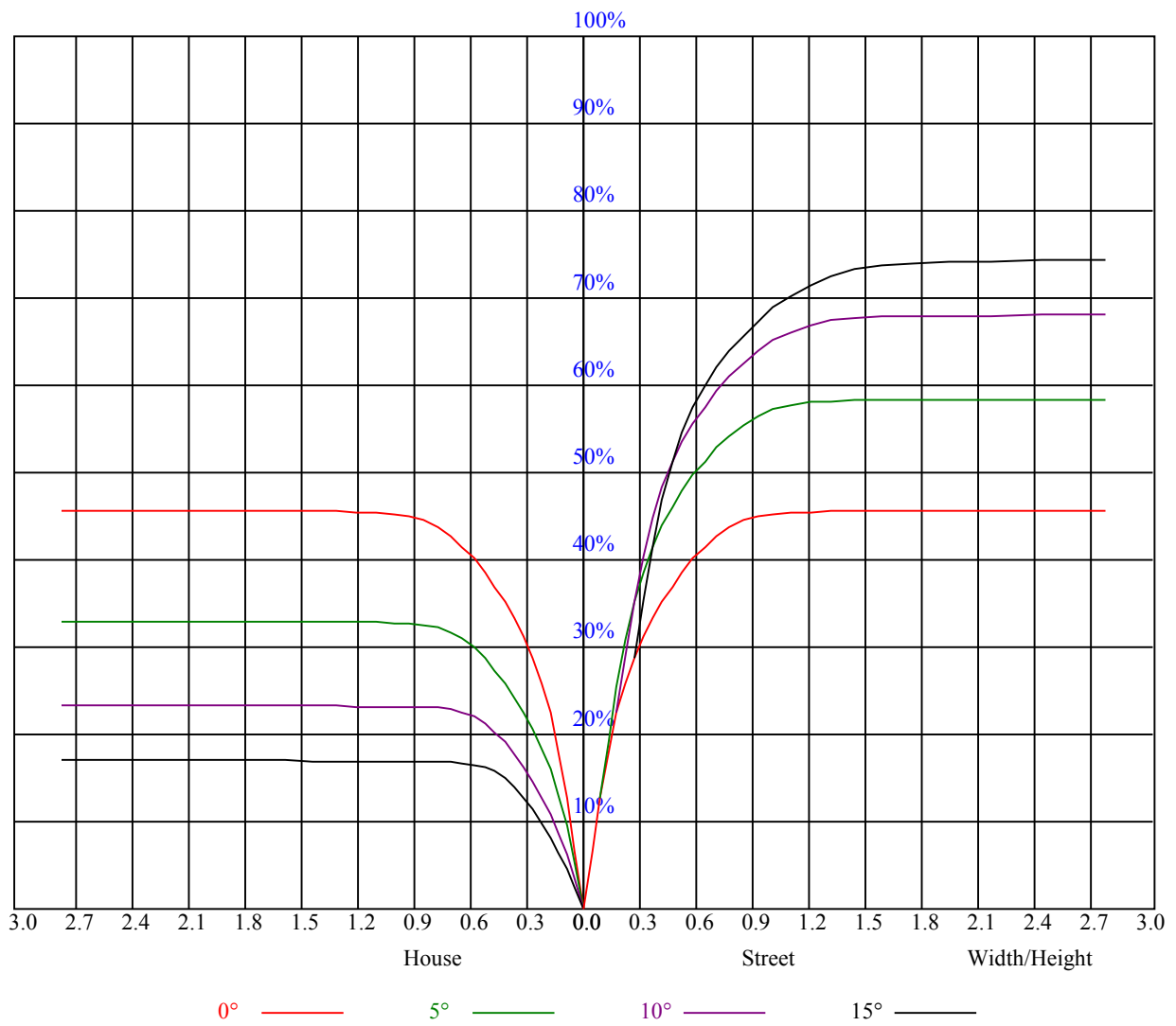
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

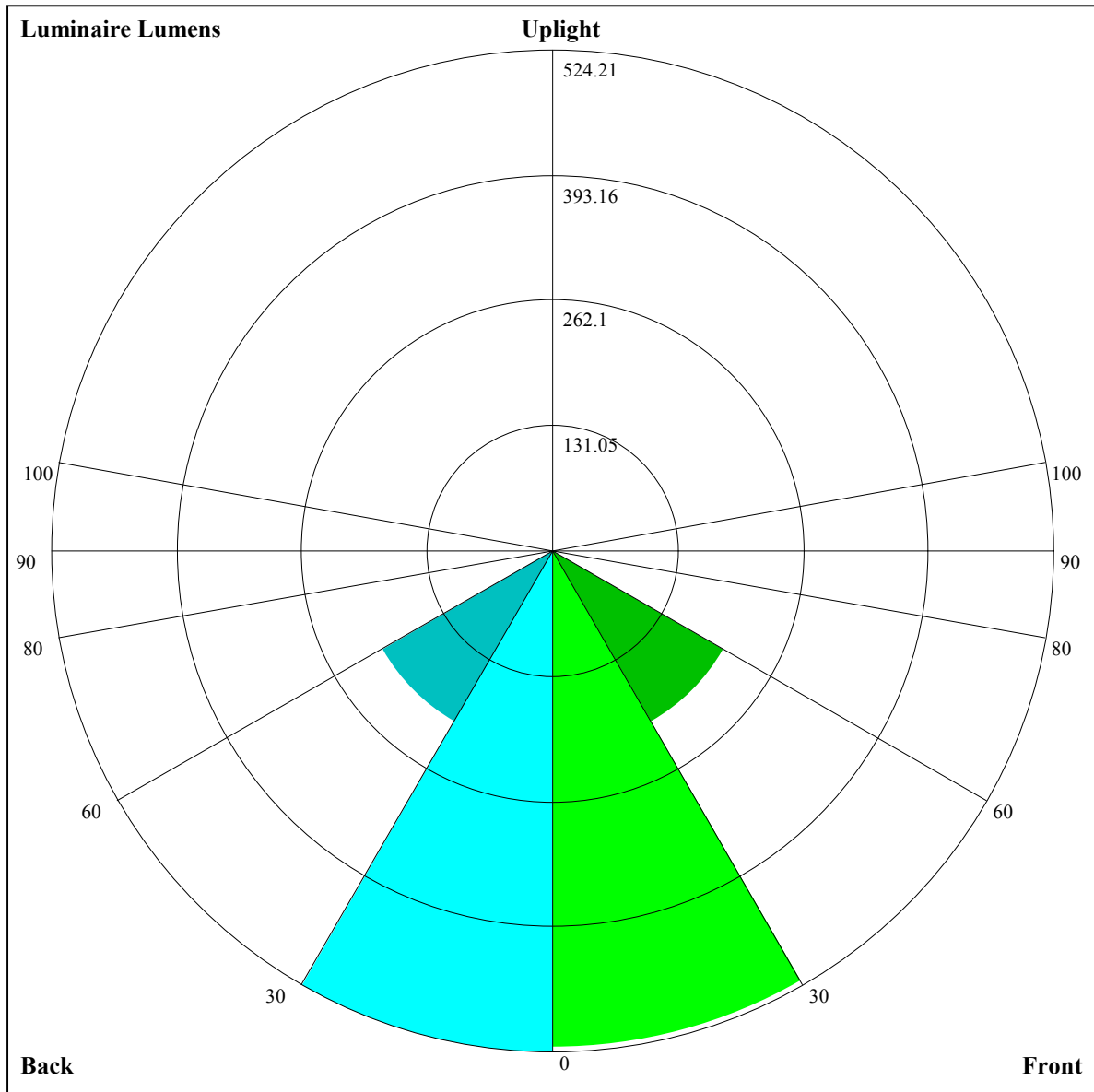
Luminance Limiting Curve





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	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.02	1.00	0.98	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
2	0.96	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.84	0.83	0.82
3	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.79	0.82	0.80	0.78	0.77
4	0.85	0.80	0.77	0.84	0.80	0.76	0.82	0.78	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.73
5	0.80	0.76	0.72	0.80	0.75	0.72	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.70	0.69
6	0.76	0.71	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.65
7	0.73	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.62
8	0.69	0.64	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.59
9	0.66	0.61	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.64	0.60	0.58	0.56
10	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.58	0.55	0.54





Luminaire Lumens:

FL=520.3,FM=205.95,FH=3.7,FVH=1.41

BL=524.21,BM=207.02,BH=3.69,BVH=1.41

UL=0,UH=0

BUG Rating:B2-U0-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	5910.39	5815.58	5675.46	5469.89	5129.23	4781.02	4408.48	3894.98	3480.49
45.0	5844.95	5912.07	5891.94	5760.20	5579.81	5335.64	4949.68	4576.30	4180.26
90.0	5917.11	5902.00	5762.72	5595.75	5354.10	5049.52	4588.88	4185.30	3762.41
135.0	5837.40	5923.82	5919.62	5844.11	5663.71	5453.11	5154.40	4702.99	4302.76
180.0	5910.39	5885.22	5785.38	5618.40	5320.54	5017.64	4671.95	4250.74	3705.36
225.0	5844.95	5732.51	5477.44	5212.30	4893.46	4521.76	3983.92	3534.19	3097.88
270.0	5917.11	5839.91	5697.27	5437.17	5174.54	4848.15	4468.06	3945.33	3515.73
315.0	5837.40	5693.92	5422.90	5136.78	4813.75	4323.74	3897.50	3344.56	2935.94
360.0	5910.39	5815.58	5675.46	5469.89	5129.23	4781.02	4408.48	3894.98	3480.49
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2981.25	2607.03	2263.86	1643.88	1643.88	1435.21	1265.04	1127.52	1011.31
45.0	3666.76	3246.39	2847.84	2396.43	2077.59	1789.79	1552.34	1306.49	1152.11
90.0	3321.07	2806.73	2443.41	1631.12	1631.12	1514.66	1325.88	1166.12	1007.20
135.0	3871.49	3315.19	2890.63	2503.83	2071.71	1777.20	1480.18	1291.39	1135.33
180.0	3267.37	2827.70	2345.25	2014.66	1673.16	1445.78	1263.70	1119.38	975.07
225.0	2596.12	1990.32	1657.30	1599.74	1384.86	1212.27	1043.62	934.54	846.27
270.0	3097.04	2690.10	2318.40	1916.49	1654.70	1428.16	1208.32	1074.08	959.96
315.0	2554.17	1648.24	1648.24	1592.11	1389.64	1227.62	1060.48	955.52	869.43
360.0	2981.25	2607.03	2263.86	1643.88	1643.88	1435.21	1265.04	1127.52	1011.31
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	904.50	836.54	781.66	726.54	694.32	668.39	641.04	625.35	607.31
45.0	1027.09	932.28	838.30	779.57	717.48	683.08	654.55	626.86	613.43
90.0	907.86	807.51	743.74	694.15	653.04	615.11	590.78	571.06	557.47
135.0	1007.79	905.43	808.93	747.68	697.34	660.42	627.70	605.04	587.42
180.0	882.77	811.45	756.07	700.70	670.49	642.80	622.66	607.56	595.81
225.0	773.19	706.40	666.80	636.00	611.76	587.59	574.00	562.25	551.34
270.0	848.37	777.89	712.44	673.01	640.28	614.27	589.94	574.00	559.73
315.0	800.96	733.84	692.05	653.29	628.87	611.50	595.73	584.91	574.75
360.0	904.50	836.54	781.66	726.54	694.32	668.39	641.04	625.35	607.31
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	591.79	583.40	572.99	563.43	554.36	543.71	530.87	516.61	502.51
45.0	600.01	585.74	576.52	572.32	563.09	557.22	548.83	537.92	527.85
90.0	538.42	529.11	522.14	512.16	505.78	497.98	489.25	482.79	473.14
135.0	574.84	563.09	553.86	549.67	545.47	537.92	531.21	523.65	515.26
180.0	584.91	578.19	574.00	565.61	559.73	547.99	532.05	520.30	507.71
225.0	544.38	537.00	531.63	527.51	517.45	507.96	500.25	490.34	470.54
270.0	549.67	537.92	529.53	521.98	515.26	502.68	492.61	478.35	464.92
315.0	566.03	559.23	552.77	544.55	532.80	521.73	508.97	497.56	476.42
360.0	591.79	583.40	572.99	563.43	554.36	543.71	530.87	516.61	502.51
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	486.23	453.93	423.97	386.89	339.15	296.94	255.07	200.87	160.34
45.0	514.43	496.81	469.96	432.20	423.81	423.81	306.17	264.89	223.27
90.0	453.76	428.93	402.16	361.13	326.56	290.98	253.31	206.91	169.82
135.0	507.71	490.93	467.44	437.23	429.68	387.06	310.45	268.33	214.88
180.0	490.09	459.89	429.68	422.13	422.13	295.43	253.14	210.85	156.74
225.0	446.55	420.12	388.40	341.24	303.23	260.61	208.34	168.06	129.21
270.0	448.98	425.49	425.49	357.44	321.78	277.73	240.31	202.55	164.20
315.0	453.09	424.31	382.86	344.77	294.26	252.22	208.92	167.14	117.80
360.0	486.23	453.93	423.97	386.89	339.15	296.94	255.07	200.87	160.34

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	121.08	86.25	51.18	32.05	21.23	16.28	13.76	11.83	10.07
45.0	173.85	135.59	99.68	69.22	40.44	26.85	20.14	17.28	13.68
90.0	133.75	100.94	65.61	44.30	31.21	23.33	19.38	15.02	12.42
135.0	171.75	123.01	88.69	60.41	36.50	26.18	21.65	18.63	14.94
180.0	119.99	78.37	50.34	32.72	22.40	18.12	15.94	13.84	11.83
225.0	85.75	57.98	37.34	24.16	20.39	17.37	14.35	11.16	9.06
270.0	120.07	88.27	62.01	36.33	26.09	20.72	16.36	13.17	10.66
315.0	83.82	56.05	36.08	23.16	19.13	16.28	13.51	10.49	8.56
360.0	121.08	86.25	51.18	32.05	21.23	16.28	13.76	11.83	10.07
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.14	6.88	5.71	5.20	4.95	4.53	4.28	4.11	4.03
45.0	11.24	9.23	7.13	6.04	5.03	4.78	4.53	4.36	4.20
90.0	10.24	8.64	7.05	6.29	5.79	5.37	5.03	4.87	4.61
135.0	12.33	10.24	8.47	6.80	5.87	5.29	4.95	4.70	4.53
180.0	9.57	8.22	6.88	5.79	5.12	4.78	4.45	4.28	4.11
225.0	7.30	5.96	5.03	4.70	4.53	4.36	4.11	3.94	3.86
270.0	8.39	7.05	5.96	5.29	4.95	4.78	4.61	4.45	4.36
315.0	6.54	5.37	4.70	4.36	4.20	4.11	4.03	3.94	3.78
360.0	8.14	6.88	5.71	5.20	4.95	4.53	4.28	4.11	4.03
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.86	3.69	3.52	3.44	3.44	3.27	3.27	3.19	3.19
45.0	4.11	4.03	3.94	3.78	3.78	3.69	3.61	3.52	3.52
90.0	4.53	4.36	4.28	4.20	4.03	3.94	3.86	3.86	3.78
135.0	4.28	4.20	4.03	3.86	3.78	3.69	3.61	3.44	3.36
180.0	3.86	3.69	3.61	3.52	3.44	3.44	3.36	3.27	3.27
225.0	3.78	3.69	3.61	3.52	3.44	3.44	3.27	3.19	3.19
270.0	4.28	4.20	4.11	4.03	3.94	3.94	3.94	3.86	3.78
315.0	3.78	3.61	3.61	3.44	3.44	3.36	3.36	3.27	3.19
360.0	3.86	3.69	3.52	3.44	3.44	3.27	3.27	3.19	3.19
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.19	3.10	3.10	3.02	3.02	2.94	2.85	2.77	2.77
45.0	3.44	3.36	3.36	3.27	3.27	3.27	3.19	3.19	3.19
90.0	3.69	3.61	3.52	3.44	3.36	3.27	3.27	3.19	3.10
135.0	3.27	3.27	3.10	3.10	3.02	3.02	2.94	2.94	2.85
180.0	3.19	3.19	3.10	3.02	3.02	2.94	2.94	2.94	2.85
225.0	3.10	3.02	3.02	2.94	2.94	2.85	2.85	2.85	2.77
270.0	3.78	3.69	3.61	3.61	3.61	3.52	3.52	3.44	3.44
315.0	3.19	3.19	3.10	3.10	3.02	3.02	3.02	2.94	2.77
360.0	3.19	3.10	3.10	3.02	3.02	2.94	2.85	2.77	2.77
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.77	2.77	2.77	2.77	2.60	2.52	2.43	2.43	2.27
45.0	3.10	3.02	2.85	2.77	2.68	2.52	2.35	2.35	2.35
90.0	3.10	3.02	2.94	2.77	2.60	2.43	2.27	2.18	2.18
135.0	2.85	2.77	2.77	2.68	2.60	2.43	2.43	2.35	2.27
180.0	2.85	2.77	2.77	2.68	2.52	2.52	2.52	2.52	2.52
225.0	2.77	2.68	2.60	2.43	2.43	2.35	2.35	2.27	2.18
270.0	3.27	3.27	3.02	2.85	2.60	2.43	2.27	2.18	2.18
315.0	2.68	2.60	2.60	2.43	2.35	2.35	2.27	2.10	2.10
360.0	2.77	2.77	2.77	2.77	2.60	2.52	2.43	2.43	2.27

Intensity data(cd)

C/ $\gamma$ ( $^{\circ}$ )	90.0
0.0	2.27
45.0	2.18
90.0	2.18
135.0	2.27
180.0	2.18
225.0	2.18
270.0	2.10
315.0	2.10
360.0	2.27