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## Nata

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Client: NT

LumCAT: 1-1892-A

Luminaire: 92.70.481.00

Report No: 20260324-B004

Ballast type: DC

Test No: 20260324-C004

Voltage(V): 31.510

LampCAT: CITIZEN CLU703

Current(A): 0.353

Lamp flux(lm): 1177.4

Power (W): 11.120

Number of Lamps: 1

PF: 0.000

Length(mm): 35

Width(mm): 35

Phm Type: C

Height(mm): 14

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## Photometric Results

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Lumens(lm): 1059.12, Efficiency(%): 89.95% , Luminous Efficacy(lm/W): 95.24

Central intensity(cd): 1788.532, Maximum intensity(cd): 1788.532

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

Beam Angle(50%Imax): [C0/180]Total=38.6

[C90/270]Total=38.6

Field angle(10%Imax): [C0/180]Total=83.6

[C90/270]Total=83.6

Maximum s/h(1/2): C0\_180=0.61 C90\_270=0.61

Maximum s/h(1/4): C0\_180=0.67 C90\_270=0.67

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.95%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 99.282%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1788.532	0.000	0	0.00%	0.00%
1.0	1783.078	1.709	1.709	0.15%	0.16%
2.0	1767.870	5.097	6.806	0.43%	0.64%
3.0	1743.548	8.398	15.204	0.71%	1.44%
4.0	1714.380	11.575	26.779	0.98%	2.53%
5.0	1693.058	14.659	41.437	1.24%	3.91%
6.0	1665.453	17.650	59.087	1.50%	5.58%
7.0	1626.458	20.433	79.52	1.74%	7.51%
8.0	1583.141	22.970	102.49	1.95%	9.68%
9.0	1525.383	25.193	127.683	2.14%	12.06%
10.0	1467.540	27.085	154.768	2.30%	14.61%
11.0	1404.968	28.702	183.47	2.44%	17.32%
12.0	1338.410	29.989	213.459	2.55%	20.15%
13.0	1271.390	30.972	244.431	2.63%	23.08%
14.0	1204.559	31.692	276.123	2.69%	26.07%
15.0	1143.455	32.235	308.358	2.74%	29.11%
16.0	1077.421	32.542	340.9	2.76%	32.19%
17.0	1023.009	32.709	373.609	2.78%	35.28%
18.0	962.775	32.741	406.35	2.78%	38.37%
19.0	910.890	32.598	438.948	2.77%	41.44%
20.0	859.571	32.404	471.353	2.75%	44.50%
21.0	807.791	32.017	503.369	2.72%	47.53%
22.0	756.315	31.431	534.801	2.67%	50.49%
23.0	707.366	30.712	565.513	2.61%	53.39%
24.0	661.575	29.930	595.443	2.54%	56.22%
25.0	613.140	28.984	624.427	2.46%	58.96%
26.0	568.607	27.895	652.322	2.37%	61.59%
27.0	525.427	26.766	679.088	2.27%	64.12%
28.0	487.334	25.641	704.729	2.18%	66.54%
29.0	461.659	24.828	729.557	2.11%	68.88%
30.0	434.925	24.208	753.765	2.06%	71.17%
31.0	413.770	23.618	777.383	2.01%	73.40%
32.0	398.069	23.258	800.641	1.98%	75.59%
33.0	389.773	23.210	823.851	1.97%	77.79%
34.0	377.806	23.229	847.08	1.97%	79.98%
35.0	362.535	22.992	870.073	1.95%	82.15%
36.0	350.463	22.702	892.775	1.93%	84.29%
37.0	332.497	22.274	915.049	1.89%	86.40%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	309.685	21.435	936.484	1.82%	88.42%
39.0	280.685	20.151	956.635	1.71%	90.32%
40.0	245.906	18.366	975.001	1.56%	92.06%
41.0	208.977	16.198	991.199	1.38%	93.59%
42.0	169.961	13.768	1004.966	1.17%	94.89%
43.0	133.284	11.233	1016.199	0.95%	95.95%
44.0	99.344	8.780	1024.979	0.75%	96.78%
45.0	68.834	6.463	1031.443	0.55%	97.39%
46.0	46.075	4.494	1035.937	0.38%	97.81%
47.0	29.545	3.008	1038.944	0.26%	98.10%
48.0	21.343	2.057	1041.001	0.17%	98.29%
49.0	16.529	1.555	1042.557	0.13%	98.44%
50.0	14.725	1.303	1043.86	0.11%	98.56%
51.0	13.362	1.188	1045.048	0.10%	98.67%
52.0	12.072	1.091	1046.139	0.09%	98.77%
53.0	10.792	0.995	1047.134	0.08%	98.87%
54.0	9.471	0.893	1048.027	0.08%	98.95%
55.0	8.338	0.795	1048.822	0.07%	99.03%
56.0	7.153	0.700	1049.522	0.06%	99.09%
57.0	6.136	0.608	1050.13	0.05%	99.15%
58.0	5.213	0.525	1050.654	0.04%	99.20%
59.0	4.510	0.455	1051.109	0.04%	99.24%
60.0	4.038	0.404	1051.513	0.03%	99.28%
61.0	3.692	0.369	1051.882	0.03%	99.32%
62.0	3.535	0.348	1052.23	0.03%	99.35%
63.0	3.398	0.337	1052.567	0.03%	99.38%
64.0	3.262	0.327	1052.894	0.03%	99.41%
65.0	3.157	0.318	1053.212	0.03%	99.44%
66.0	3.073	0.311	1053.522	0.03%	99.47%
67.0	3.021	0.306	1053.829	0.03%	99.50%
68.0	2.905	0.300	1054.129	0.03%	99.53%
69.0	2.853	0.294	1054.423	0.02%	99.56%
70.0	2.769	0.289	1054.711	0.02%	99.58%
71.0	2.695	0.282	1054.994	0.02%	99.61%
72.0	2.633	0.277	1055.271	0.02%	99.64%
73.0	2.570	0.272	1055.543	0.02%	99.66%
74.0	2.475	0.265	1055.808	0.02%	99.69%
75.0	2.423	0.259	1056.067	0.02%	99.71%

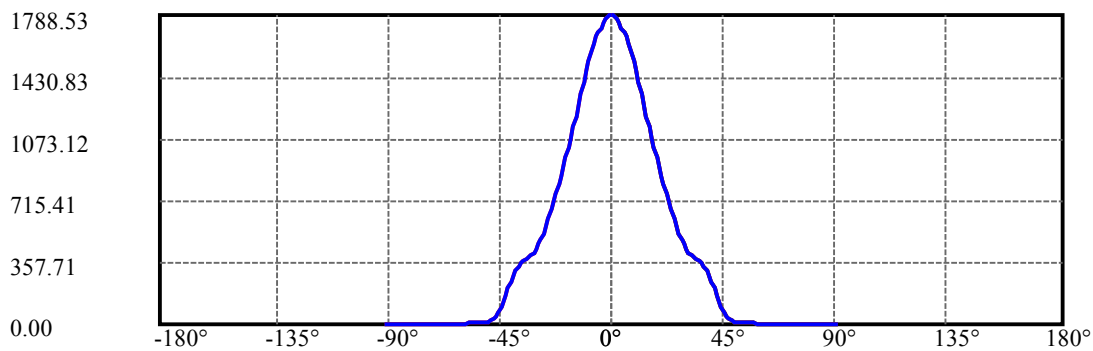
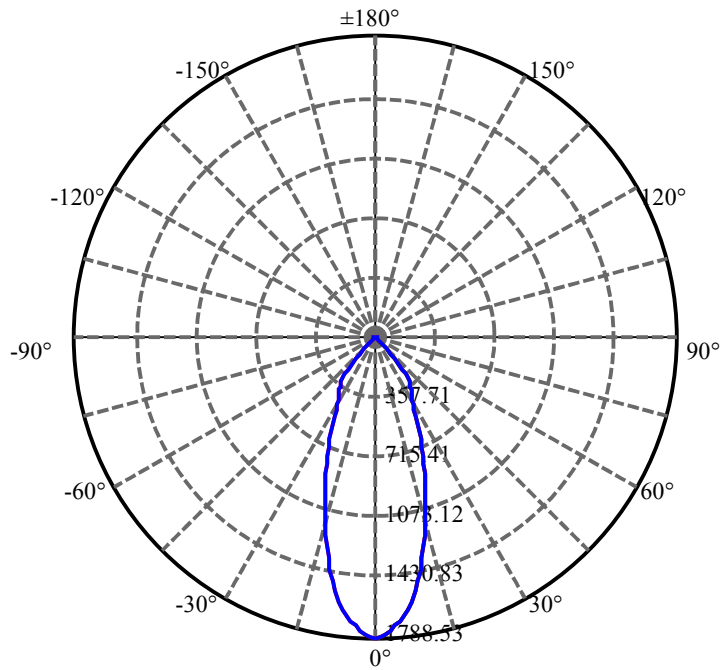
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.360	0.254	1056.321	0.02%	99.74%
77.0	2.286	0.248	1056.569	0.02%	99.76%
78.0	2.234	0.242	1056.811	0.02%	99.78%
79.0	2.150	0.236	1057.046	0.02%	99.80%
80.0	2.119	0.230	1057.276	0.02%	99.83%
81.0	2.024	0.224	1057.5	0.02%	99.85%
82.0	1.951	0.216	1057.716	0.02%	99.87%
83.0	1.919	0.210	1057.926	0.02%	99.89%
84.0	1.825	0.204	1058.13	0.02%	99.91%
85.0	1.668	0.191	1058.321	0.02%	99.92%
86.0	1.552	0.176	1058.497	0.01%	99.94%
87.0	1.479	0.166	1058.663	0.01%	99.96%
88.0	1.426	0.159	1058.822	0.01%	99.97%
89.0	1.363	0.153	1058.975	0.01%	99.99%
90.0	1.290	0.145	1059.12	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	753.76	64.02%	71.17%
0-40	975.00	82.81%	92.06%
0-60	1051.51	89.31%	99.28%
0-90	1058.97	89.94%	99.99%
0-120	1058.97	89.94%	99.99%
0-180	1059.12	89.95%	100.00%
60-90	7.46	0.63%	0.70%
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%
0-34.01	847.30	71.96%	80.00%

ZONAL LUMEN SUMMARY

0-10	154.77
10-20	316.58
20-30	282.41
30-40	221.24
40-50	68.86
50-60	7.65
60-70	3.20
70-80	2.56
80-90	1.70
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



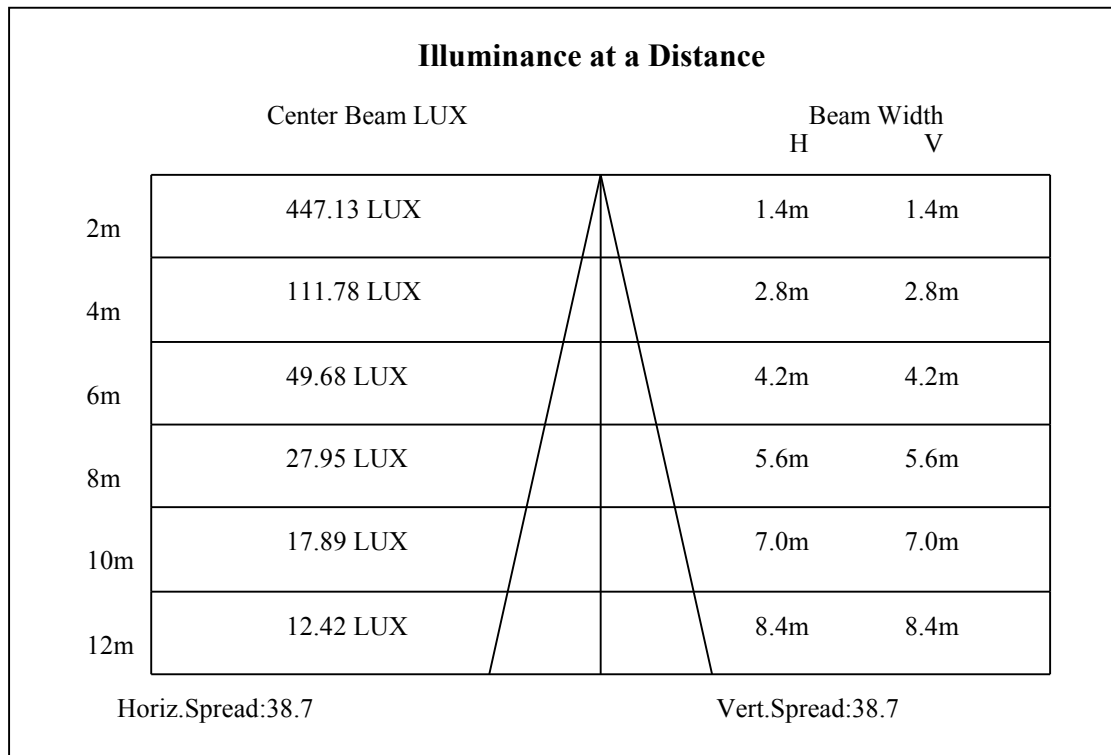
C0(Max): —————

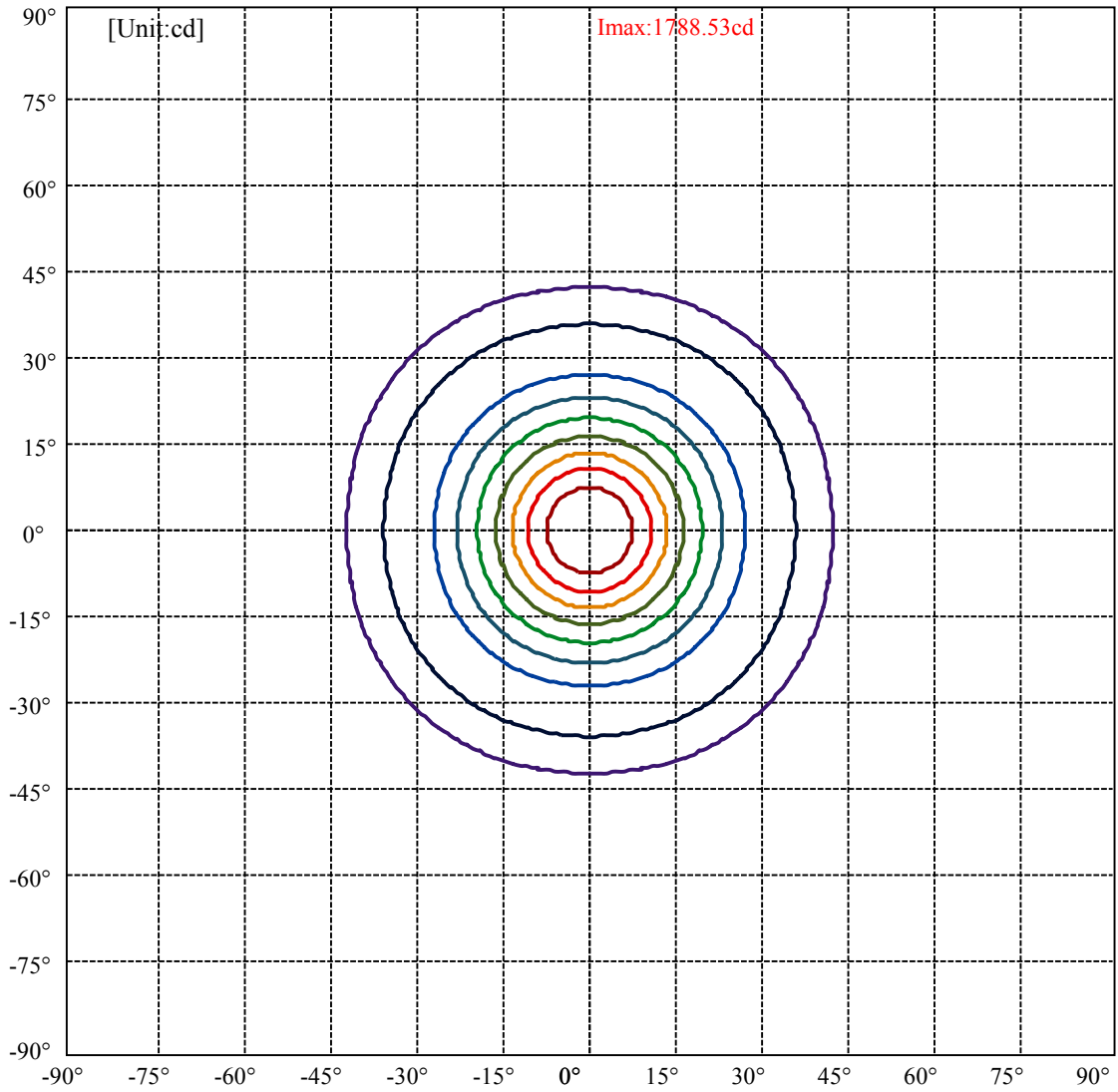
C0/C180: —————

C90/C270: —————

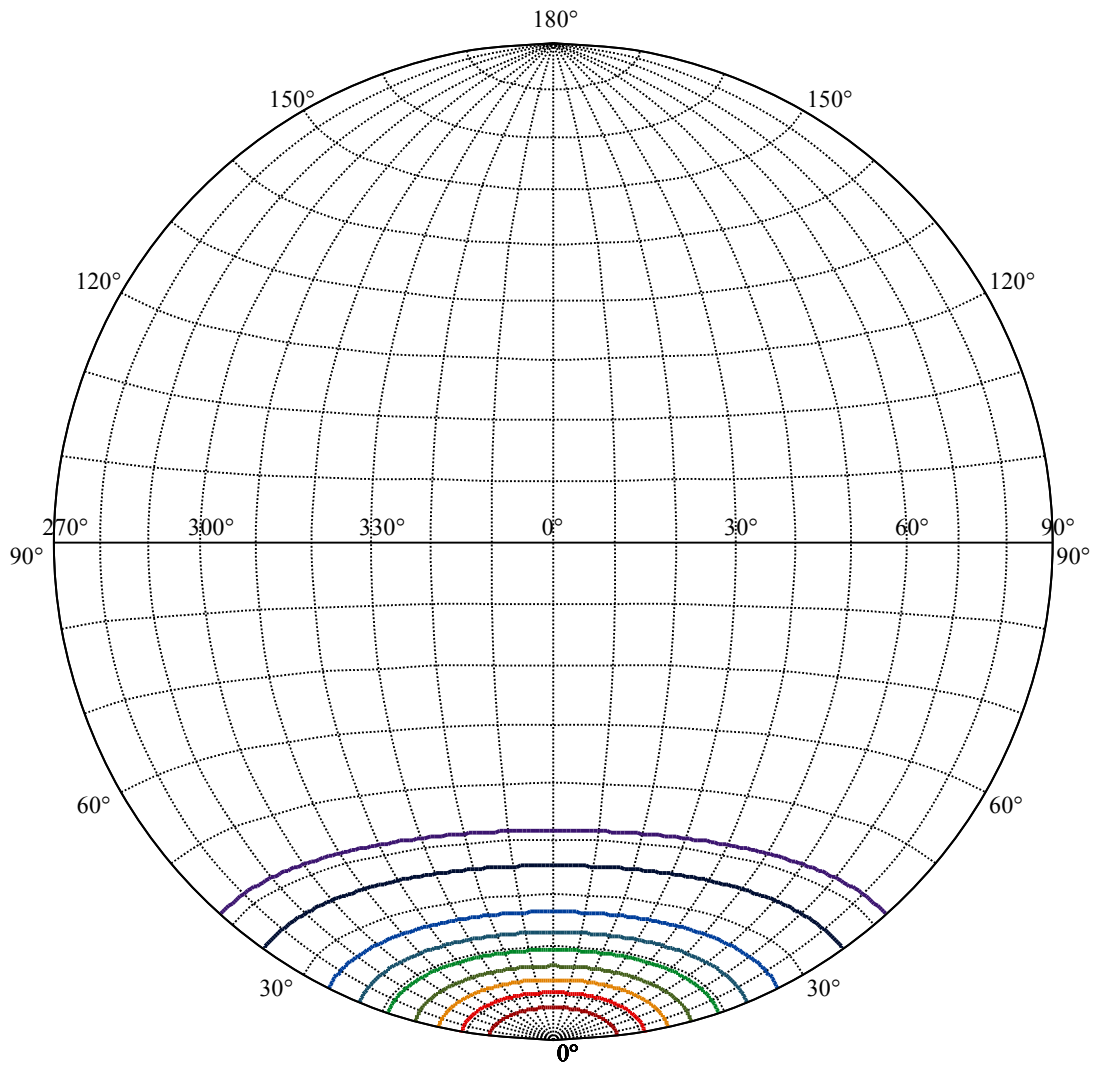
Field angle(10%Imax):C0/180Left:41.8 Right:41.8  
:C90/270Left:41.8 Right:41.8

Beam Angle(50%Imax):C0/180Left:19.3 Right:19.3  
:C90/270Left:19.3 Right:19.3





(10%Imax) 178.853	—
(20%Imax) 357.706	—
(30%Imax) 536.56	—
(40%Imax) 715.413	—
(50%Imax) 894.266	—
(60%Imax) 1073.12	—
(70%Imax) 1251.97	—
(80%Imax) 1430.83	—
(90%Imax) 1609.68	—



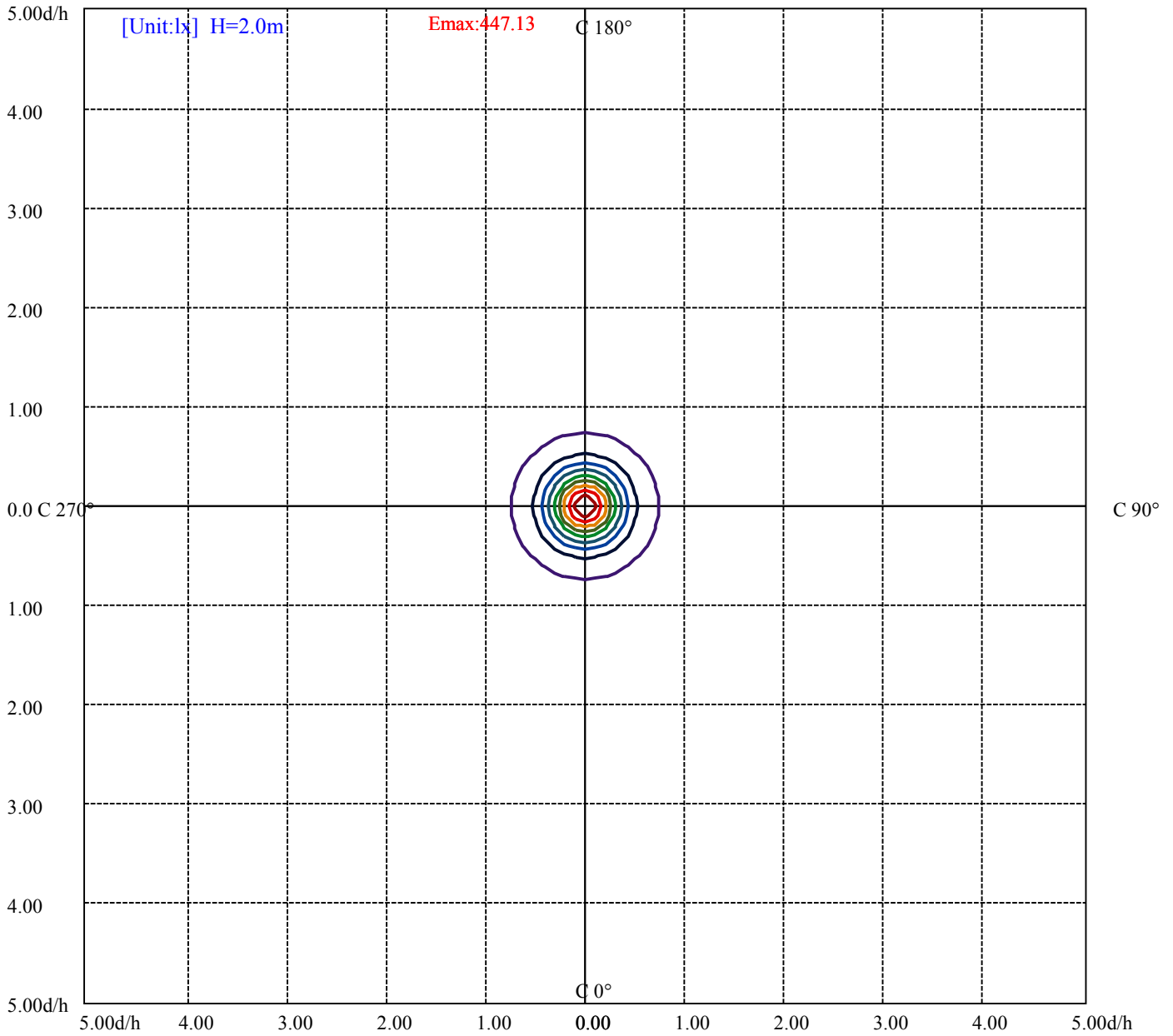
House

[Unit:cd]

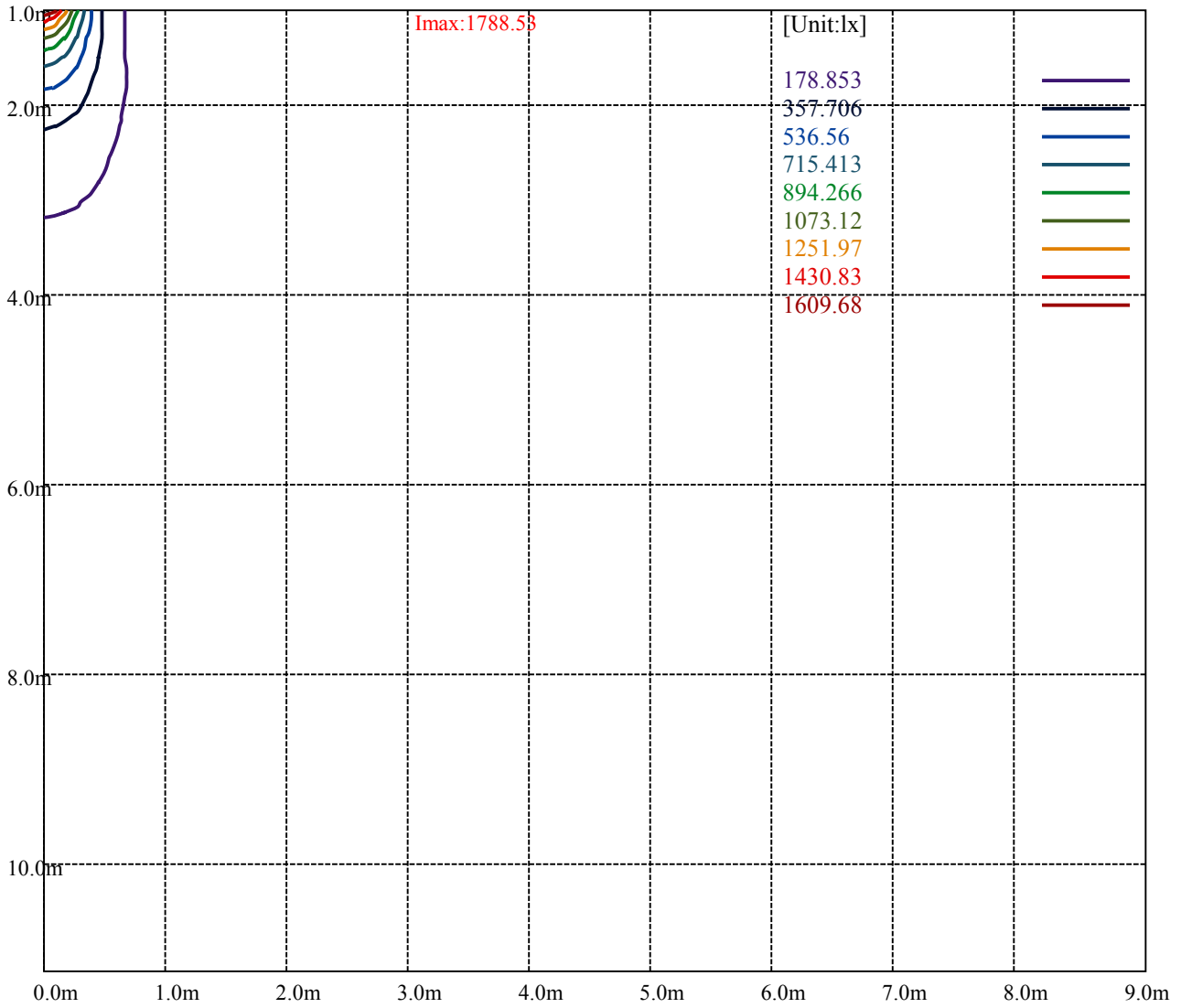
Road

Imax:1788.53

(10%Imax) 178.853	—
(20%Imax) 357.706	—
(30%Imax) 536.56	—
(40%Imax) 715.413	—
(50%Imax) 894.266	—
(60%Imax) 1073.12	—
(70%Imax) 1251.97	—
(80%Imax) 1430.83	—
(90%Imax) 1609.68	—



- (10%Emax) 44.71325
- (20%Emax) 89.4265
- (30%Emax) 134.1398
- (40%Emax) 178.853
- (50%Emax) 223.5663
- (60%Emax) 268.28
- (70%Emax) 312.9925
- (80%Emax) 357.705
- (90%Emax) 402.42



Luminance Table

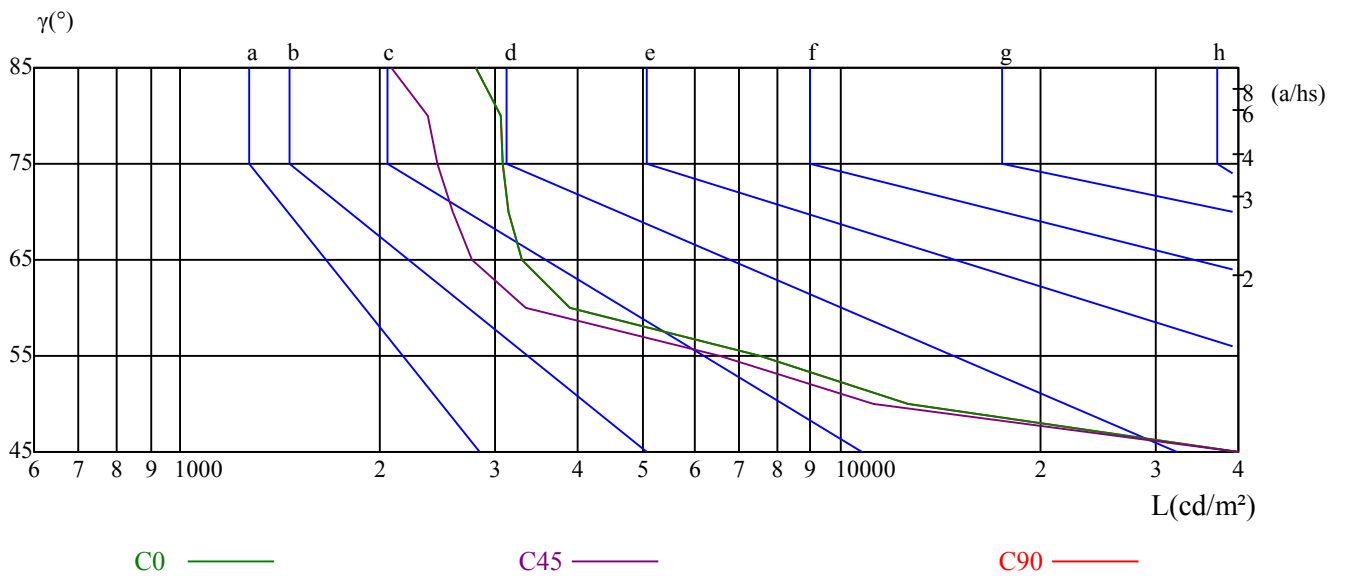
$\gamma$	45	50	55	60	65	70	75	80	85
C0	56762	12664	7553	3894	3282	3149	3065	3047	2803
C45	50755	11170	6564	3330	2755	2587	2456	2367	2092
C90	56762	12664	7553	3894	3282	3149	3065	3047	2803

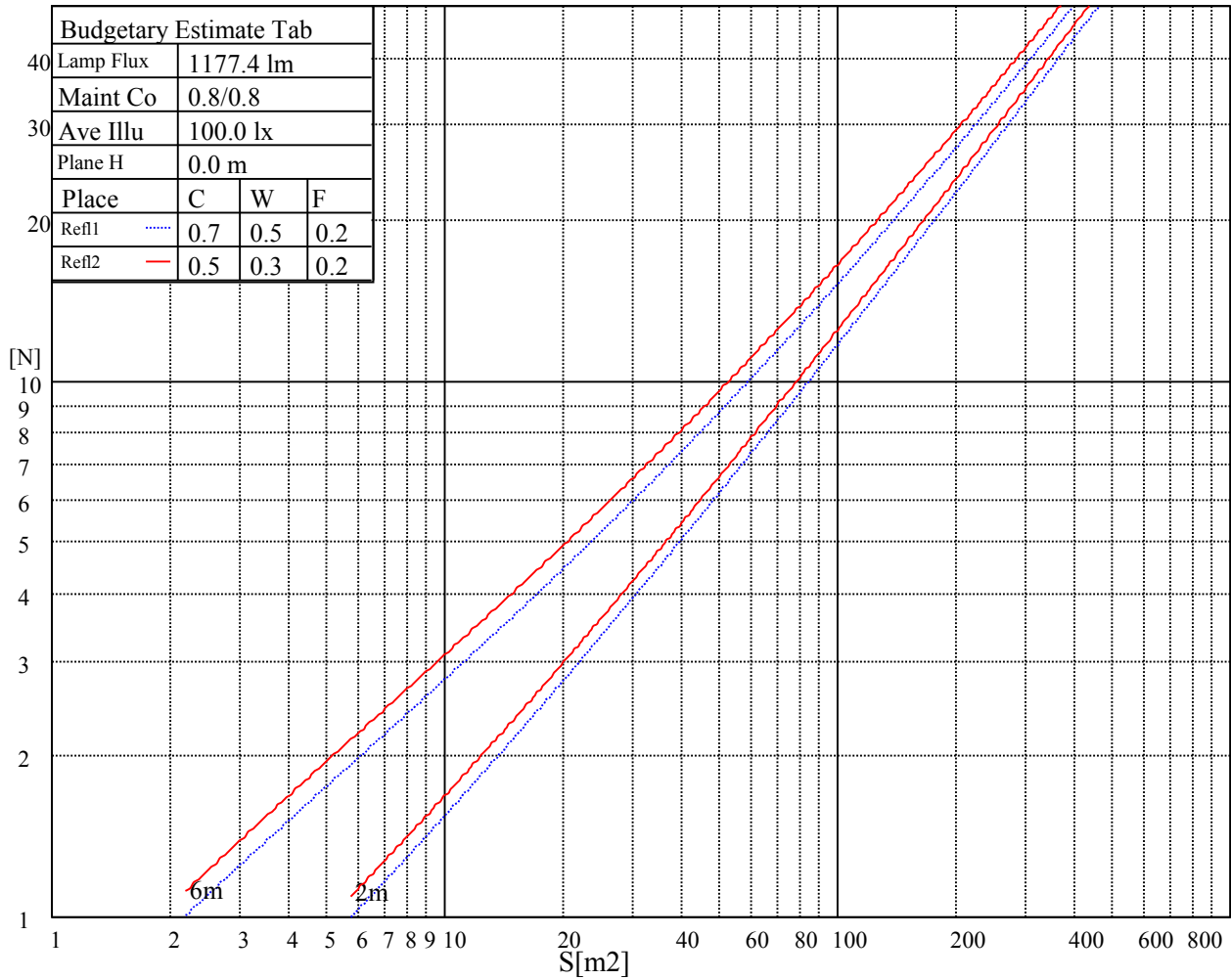
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6098	6098	6098	7642	7642	7642	15619	15619	15619

Glare Table

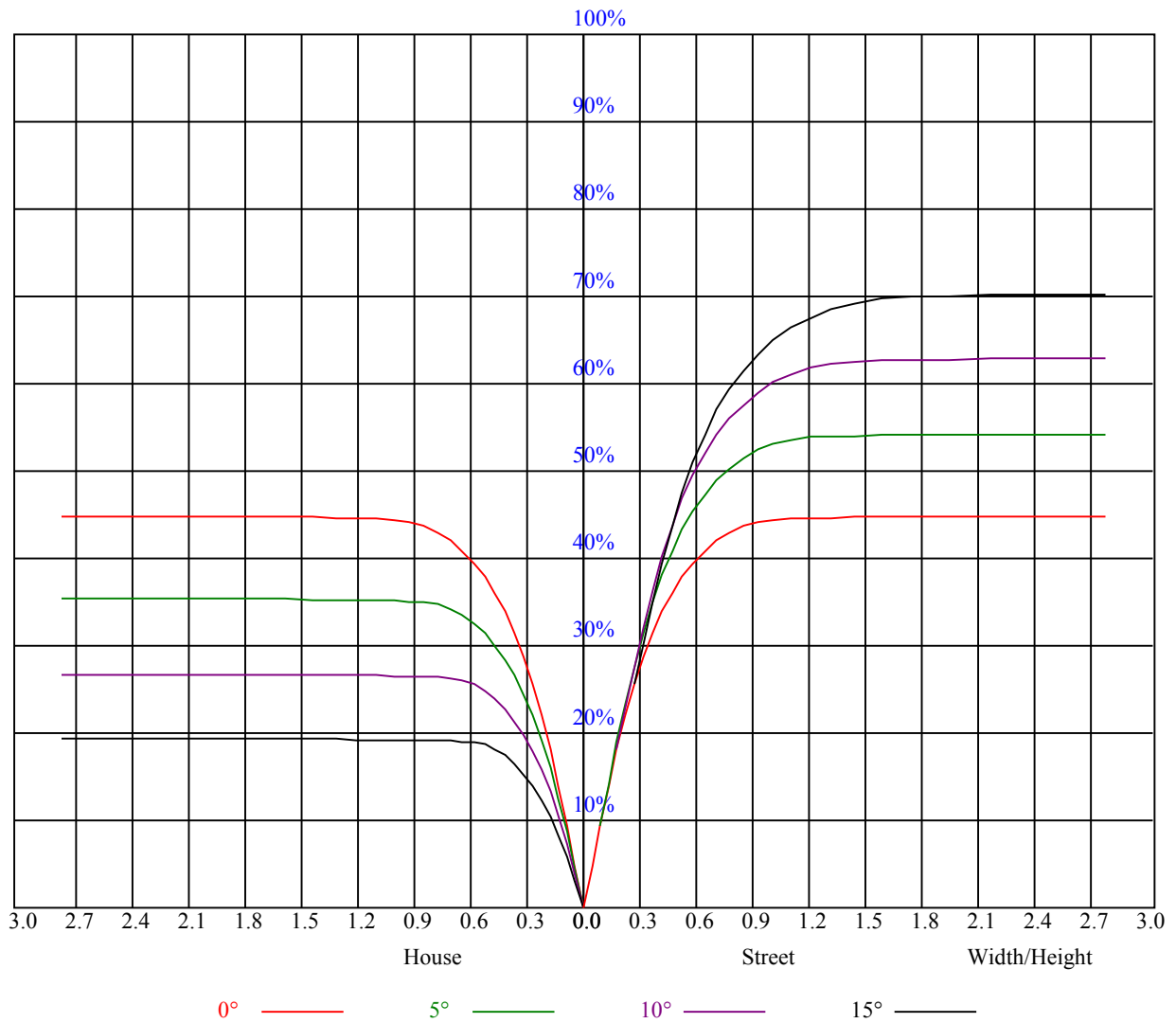
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

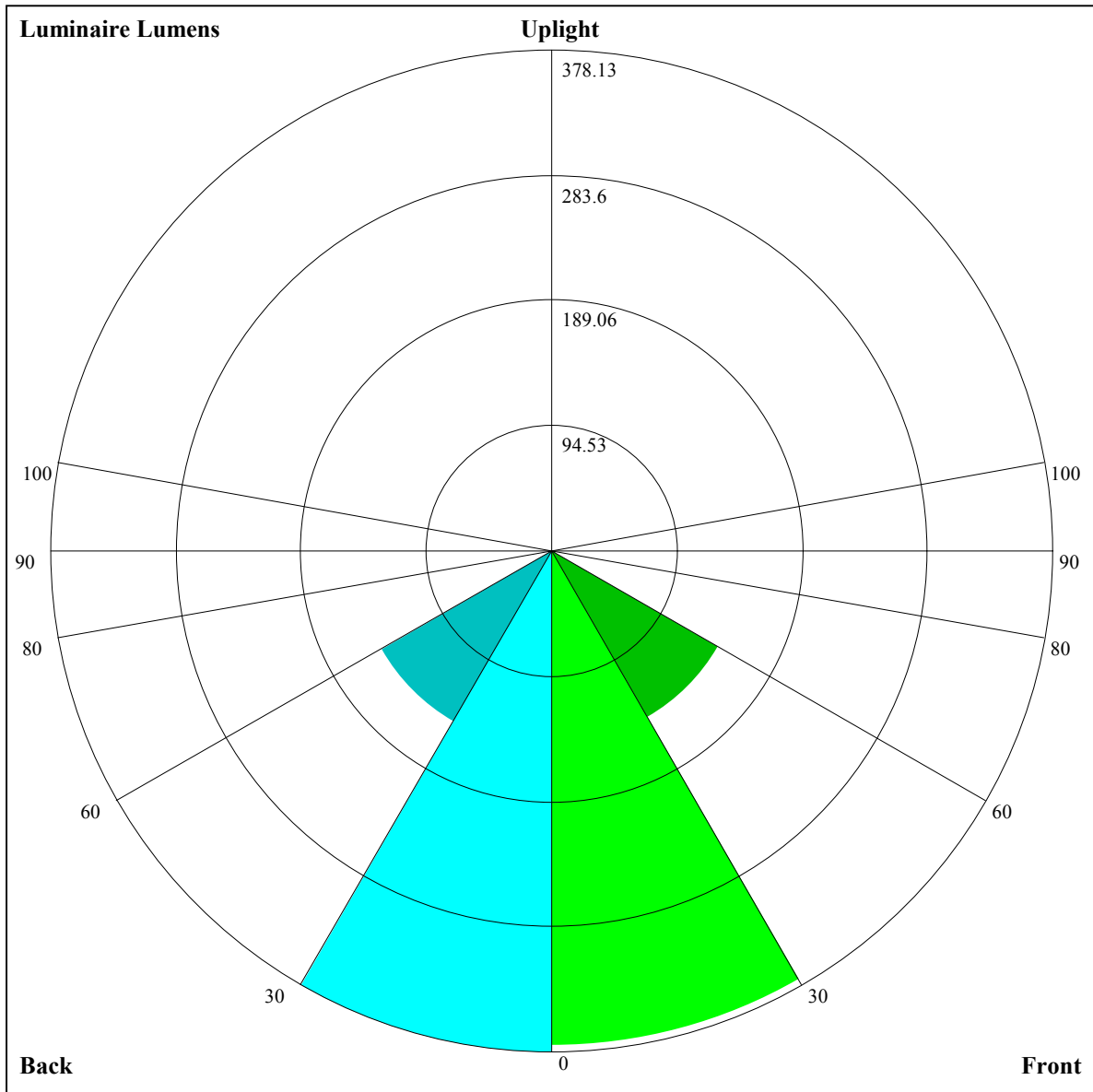
Luminance Limiting Curve





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	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.98	0.96	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.88	0.88	0.87	0.86	0.84
2	0.93	0.89	0.87	0.91	0.88	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.83	0.82	0.80	0.79
3	0.87	0.83	0.79	0.86	0.82	0.79	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
4	0.82	0.77	0.73	0.81	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.69
5	0.77	0.72	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.66	0.64
6	0.72	0.67	0.63	0.71	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.64	0.62	0.61
7	0.68	0.63	0.59	0.68	0.63	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.57
8	0.64	0.59	0.56	0.64	0.59	0.56	0.63	0.59	0.55	0.62	0.58	0.55	0.61	0.58	0.55	0.54
9	0.61	0.56	0.53	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.55	0.52	0.51
10	0.58	0.53	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.49	0.56	0.52	0.49	0.48





Luminaire Lumens:

FL=373.12,FM=145.25,FH=2.89,FVH=0.91

BL=378.13,BM=149.47,BH=3.01,BVH=0.94

UL=0,UH=0

BUG Rating:B1-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	1786.43	1777.20	1757.91	1738.61	1673.25	1673.25	1641.45	1598.49	1548.56
45.0	1788.95	1793.15	1783.08	1760.42	1738.61	1708.40	1684.07	1652.19	1624.50
90.0	1797.34	1788.11	1773.85	1751.19	1726.86	1665.78	1665.78	1638.59	1605.53
135.0	1781.40	1791.47	1791.47	1783.08	1760.42	1736.93	1712.60	1679.03	1652.19
180.0	1786.43	1787.27	1778.04	1763.78	1743.64	1726.86	1708.40	1679.03	1637.08
225.0	1788.95	1769.65	1750.35	1729.38	1672.99	1672.99	1636.33	1578.10	1523.73
270.0	1797.34	1793.99	1773.01	1752.03	1729.38	1714.28	1680.71	1640.44	1586.74
315.0	1781.40	1763.78	1735.25	1669.89	1669.89	1645.98	1594.29	1545.79	1486.81
360.0	1786.43	1777.20	1757.91	1738.61	1673.25	1673.25	1641.45	1598.49	1548.56
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1478.16	1417.92	1357.59	1297.68	1219.74	1163.02	1112.08	1048.48	1000.24
45.0	1587.58	1543.95	1477.66	1416.41	1335.02	1270.41	1210.84	1137.00	1080.79
90.0	1544.45	1497.46	1435.62	1352.39	1277.97	1209.83	1156.81	1101.85	1048.40
135.0	1618.62	1580.87	1517.10	1465.91	1405.50	1339.22	1257.83	1189.87	1125.26
180.0	1574.99	1516.26	1456.69	1378.65	1314.88	1251.12	1187.35	1112.67	1056.46
225.0	1464.91	1390.90	1331.08	1267.23	1204.13	1124.92	1067.78	1011.82	955.77
270.0	1511.22	1449.13	1377.81	1301.46	1240.21	1178.96	1114.35	1040.51	988.49
315.0	1423.12	1343.83	1286.19	1227.54	1173.67	1099.00	1040.60	977.16	928.67
360.0	1478.16	1417.92	1357.59	1297.68	1219.74	1163.02	1112.08	1048.48	1000.24
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	945.36	901.31	859.70	822.44	773.78	730.65	685.09	639.70	585.41
45.0	1030.44	981.78	922.21	875.22	831.59	787.12	734.26	689.79	646.16
90.0	974.90	920.61	868.09	819.51	759.60	716.39	674.35	630.30	580.21
135.0	1053.10	995.20	944.86	883.61	837.46	792.15	747.68	693.14	647.84
180.0	991.01	938.99	892.00	834.94	787.12	739.29	690.63	632.73	587.42
225.0	889.32	840.40	791.90	727.04	673.26	610.75	564.60	522.40	485.06
270.0	935.63	881.93	820.68	769.50	704.89	656.23	610.92	553.02	508.55
315.0	882.44	826.89	777.13	730.06	682.82	626.36	585.07	544.04	508.22
360.0	945.36	901.31	859.70	822.44	773.78	730.65	685.09	639.70	585.41
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	543.46	506.37	476.08	446.04	427.33	408.96	396.96	386.80	374.47
45.0	587.42	544.63	509.39	470.79	447.30	428.84	424.65	405.43	389.15
90.0	540.35	494.12	463.91	440.50	415.42	398.64	385.46	372.29	359.45
135.0	603.37	548.83	511.91	480.86	454.85	429.68	422.13	422.13	391.76
180.0	544.63	511.07	477.51	454.01	435.55	422.13	422.13	394.02	382.36
225.0	447.80	422.38	402.66	386.47	371.95	362.22	355.68	349.38	336.96
270.0	467.44	427.16	427.16	394.86	364.32	352.32	341.33	331.51	323.96
315.0	468.95	444.11	424.65	405.85	393.43	381.77	369.86	360.88	342.17
360.0	543.46	506.37	476.08	446.04	427.33	408.96	396.96	386.80	374.47
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	359.70	339.82	312.72	271.60	235.86	199.53	163.87	119.23	86.34
45.0	381.94	369.86	352.74	329.25	301.64	258.09	221.93	185.93	143.39
90.0	347.54	334.28	314.48	281.50	251.47	218.15	176.62	144.74	112.52
135.0	383.70	375.56	364.32	347.70	320.69	279.24	242.49	203.22	164.37
180.0	373.72	357.86	329.67	300.80	266.74	228.64	182.24	146.25	110.50
225.0	320.86	291.74	265.06	233.26	194.49	162.36	128.04	94.98	60.75
270.0	314.31	295.26	275.46	251.97	214.55	180.40	136.01	103.20	73.00
315.0	321.95	295.60	263.04	229.40	181.82	145.41	108.49	68.72	43.88
360.0	359.70	339.82	312.72	271.60	235.86	199.53	163.87	119.23	86.34

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	57.64	36.00	20.81	16.53	15.02	13.84	12.50	11.33	10.15
45.0	109.08	76.44	44.47	27.35	16.78	14.94	13.84	12.84	11.58
90.0	76.10	52.11	30.71	22.40	17.96	16.19	14.68	13.17	11.91
135.0	117.55	82.73	54.79	34.57	21.14	16.36	14.77	13.68	12.59
180.0	78.62	45.90	29.70	20.39	16.45	15.35	13.93	12.75	11.41
225.0	38.93	25.76	18.88	16.78	15.35	14.10	12.42	11.08	9.73
270.0	44.13	29.62	20.72	17.54	15.69	14.35	13.17	11.83	10.32
315.0	28.61	20.05	16.28	15.19	13.84	12.67	11.58	9.90	8.64
360.0	57.64	36.00	20.81	16.53	15.02	13.84	12.50	11.33	10.15
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.98	7.55	6.46	5.54	4.70	3.94	3.61	3.44	3.36
45.0	10.32	9.15	8.05	6.80	5.79	4.95	4.20	3.52	3.36
90.0	10.66	9.48	7.97	6.96	6.04	5.20	4.61	4.20	3.94
135.0	11.08	9.90	8.89	7.72	6.46	5.45	4.70	3.94	3.52
180.0	9.82	8.64	7.47	6.38	5.20	4.53	3.94	3.69	3.61
225.0	8.31	7.30	6.04	5.20	4.53	4.03	3.78	3.61	3.52
270.0	9.15	8.22	7.05	6.04	5.12	4.53	4.20	4.03	3.94
315.0	7.47	6.46	5.29	4.45	3.86	3.44	3.27	3.10	3.02
360.0	8.98	7.55	6.46	5.54	4.70	3.94	3.61	3.44	3.36
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.27	3.19	3.02	2.94	2.94	2.85	2.85	2.77	2.68
45.0	3.19	3.10	3.02	2.85	2.85	2.77	2.68	2.60	2.52
90.0	3.78	3.61	3.52	3.44	3.36	3.19	3.10	3.02	2.94
135.0	3.44	3.27	3.19	3.02	3.02	2.85	2.85	2.77	2.68
180.0	3.44	3.36	3.19	3.10	3.10	3.02	2.94	2.94	2.85
225.0	3.36	3.19	3.10	3.10	2.94	2.85	2.77	2.60	2.52
270.0	3.78	3.61	3.52	3.44	3.36	3.19	3.19	3.10	3.02
315.0	2.94	2.77	2.68	2.68	2.60	2.52	2.43	2.35	2.35
360.0	3.27	3.19	3.02	2.94	2.94	2.85	2.85	2.77	2.68
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.60	2.52	2.52	2.43	2.35	2.27	2.27	2.18	2.10
45.0	2.52	2.52	2.35	2.35	2.27	2.27	2.18	2.18	2.10
90.0	2.94	2.85	2.68	2.68	2.52	2.43	2.43	2.27	2.27
135.0	2.60	2.52	2.43	2.43	2.43	2.27	2.27	2.18	2.10
180.0	2.68	2.68	2.60	2.52	2.52	2.43	2.35	2.27	2.27
225.0	2.52	2.43	2.43	2.27	2.18	2.10	2.10	2.01	2.01
270.0	2.94	2.85	2.68	2.60	2.60	2.52	2.35	2.27	2.27
315.0	2.27	2.18	2.10	2.10	2.01	2.01	1.93	1.85	1.85
360.0	2.60	2.52	2.52	2.43	2.35	2.27	2.27	2.18	2.10
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.01	1.93	1.93	1.85	1.68	1.51	1.43	1.43	1.43
45.0	2.01	1.93	1.93	1.85	1.76	1.76	1.59	1.51	1.43
90.0	2.10	2.10	2.01	1.93	1.85	1.59	1.51	1.43	1.34
135.0	2.01	1.93	1.93	1.93	1.85	1.68	1.59	1.51	1.43
180.0	2.18	2.10	2.10	2.01	1.76	1.59	1.59	1.59	1.51
225.0	1.93	1.85	1.76	1.59	1.51	1.43	1.43	1.34	1.26
270.0	2.10	2.01	1.93	1.76	1.51	1.43	1.34	1.26	1.26
315.0	1.85	1.76	1.76	1.68	1.43	1.43	1.34	1.34	1.26
360.0	2.01	1.93	1.93	1.85	1.68	1.51	1.43	1.43	1.43

Intensity data(cd)

C/γ(°)	90.0
0.0	1.26
45.0	1.34
90.0	1.34
135.0	1.43
180.0	1.26
225.0	1.26
270.0	1.26
315.0	1.17
360.0	1.26