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Nata

Client:

LumCAT: CR01D07515AR

Luminaire: 92.70.074.00

Report No:

Voltage(V): 34.7000

Test No: GC2019072303

Current(A): 0.2970

LampCAT: CREE CXA1816

Power (W): 10.3100

Lamp flux(lm): 1109.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 75

Width(mm): 75

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 982.97, Efficiency(%): 88.64% , Luminous Efficacy(lm/W): 95.34

Central intensity(cd): 10699.870, Maximum intensity(cd): 10699.870

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=14.4

[C90/270]Total=14.4

Field angle(10%Imax): [C0/180]Total=26.8

[C90/270]Total=26.8

Maximum s/h(1/2): C0_180=0.25 C90_270=0.25

Maximum s/h(1/4): C0_180=0.24 C90_270=0.24

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.64%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.680%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/7/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10699.875	0.000	0	.000%	.000%
1.0	10620.141	10.201	10.201	.920%	1.038%
2.0	10334.602	30.076	40.277	2.712%	4.098%
3.0	9783.633	48.116	88.394	4.339%	8.993%
4.0	9027.492	62.967	151.361	5.678%	15.398%
5.0	8067.656	73.542	224.903	6.631%	22.880%
6.0	6804.984	78.160	303.063	7.048%	30.831%
7.0	5553.984	76.712	379.775	6.917%	38.636%
8.0	4451.273	71.606	451.38	6.457%	45.920%
9.0	3418.734	63.782	515.162	5.751%	52.409%
10.0	2540.883	53.932	569.095	4.863%	57.896%
11.0	1969.629	45.069	614.164	4.064%	62.481%
12.0	1552.507	38.502	652.666	3.472%	66.398%
13.0	1156.887	32.154	684.82	2.899%	69.669%
14.0	937.245	26.805	711.624	2.417%	72.396%
15.0	788.323	23.689	735.314	2.136%	74.806%
16.0	640.849	20.941	756.255	1.888%	76.936%
17.0	521.508	18.101	774.356	1.632%	78.777%
18.0	426.593	15.632	789.988	1.410%	80.368%
19.0	350.346	13.517	803.505	1.219%	81.743%
20.0	279.035	11.519	815.025	1.039%	82.915%
21.0	218.180	9.548	824.572	.861%	83.886%
22.0	176.498	7.931	832.504	.715%	84.693%
23.0	141.982	6.683	839.186	.603%	85.373%
24.0	116.641	5.654	844.841	.510%	85.948%
25.0	98.993	4.903	849.744	.442%	86.447%
26.0	87.286	4.397	854.141	.396%	86.894%
27.0	78.708	4.061	858.202	.366%	87.307%
28.0	71.592	3.805	862.007	.343%	87.694%
29.0	67.493	3.639	865.646	.328%	88.065%
30.0	64.336	3.559	869.205	.321%	88.427%
31.0	61.791	3.510	872.715	.316%	88.784%
32.0	59.337	3.470	876.185	.313%	89.137%
33.0	56.320	3.407	879.593	.307%	89.483%
34.0	52.580	3.296	882.888	.297%	89.819%
35.0	47.313	3.102	885.991	.280%	90.134%
36.0	42.103	2.847	888.838	.257%	90.424%
37.0	36.809	2.574	891.411	.232%	90.686%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	32.618	2.317	893.729	.209%	90.922%
39.0	29.672	2.126	895.855	.192%	91.138%
40.0	28.266	2.021	897.876	.182%	91.343%
41.0	28.167	2.010	899.885	.181%	91.548%
42.0	28.455	2.057	901.942	.186%	91.757%
43.0	29.152	2.134	904.076	.192%	91.974%
44.0	29.974	2.232	906.308	.201%	92.201%
45.0	30.431	2.321	908.629	.209%	92.437%
46.0	30.642	2.388	911.018	.215%	92.680%
47.0	30.642	2.437	913.455	.220%	92.928%
48.0	30.319	2.464	915.919	.222%	93.179%
49.0	29.496	2.456	918.376	.221%	93.429%
50.0	28.343	2.412	920.787	.217%	93.674%
51.0	27.183	2.349	923.137	.212%	93.913%
52.0	25.629	2.266	925.403	.204%	94.144%
53.0	24.188	2.167	927.57	.195%	94.364%
54.0	23.196	2.088	929.658	.188%	94.577%
55.0	21.881	2.012	931.67	.181%	94.782%
56.0	20.602	1.920	933.59	.173%	94.977%
57.0	19.512	1.834	935.424	.165%	95.163%
58.0	18.499	1.758	937.182	.158%	95.342%
59.0	17.655	1.690	938.872	.152%	95.514%
60.0	16.868	1.631	940.503	.147%	95.680%
61.0	16.095	1.573	942.076	.142%	95.840%
62.0	15.567	1.526	943.602	.138%	95.995%
63.0	15.195	1.496	945.098	.135%	96.148%
64.0	14.752	1.469	946.567	.133%	96.297%
65.0	14.414	1.443	948.011	.130%	96.444%
66.0	14.154	1.425	949.436	.129%	96.589%
67.0	13.957	1.413	950.85	.127%	96.733%
68.0	13.880	1.410	952.26	.127%	96.876%
69.0	14.020	1.423	953.683	.128%	97.021%
70.0	14.203	1.450	955.133	.131%	97.168%
71.0	14.323	1.474	956.607	.133%	97.318%
72.0	14.302	1.488	958.095	.134%	97.470%
73.0	14.302	1.496	959.591	.135%	97.622%
74.0	14.597	1.519	961.11	.137%	97.777%
75.0	15.335	1.581	962.692	.143%	97.937%

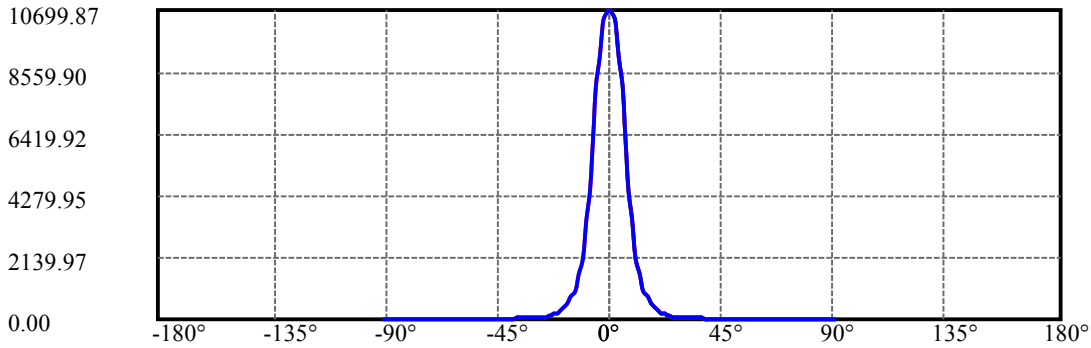
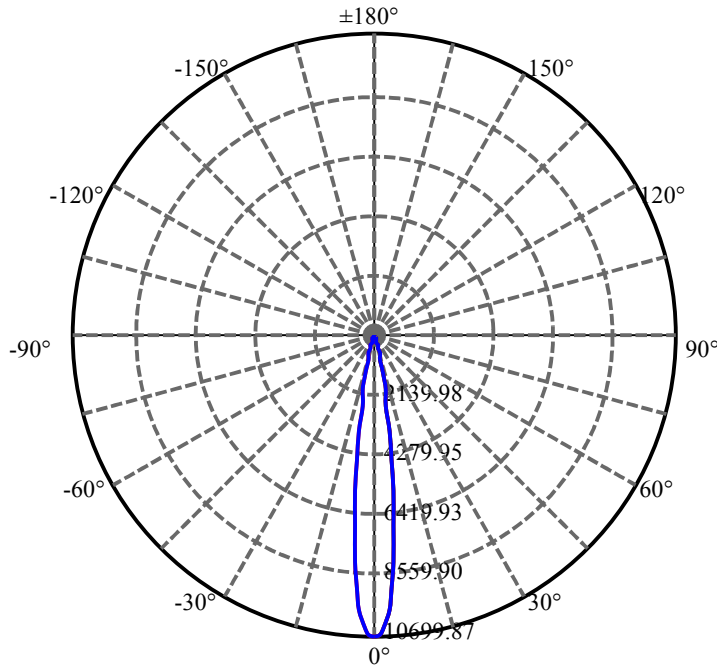
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	16.545	1.692	964.384	.153%	98.110%
77.0	16.263	1.749	966.133	.158%	98.288%
78.0	15.033	1.675	967.809	.151%	98.458%
79.0	13.549	1.536	969.344	.138%	98.614%
80.0	12.649	1.412	970.757	.127%	98.758%
81.0	12.234	1.346	972.102	.121%	98.895%
82.0	11.728	1.299	973.402	.117%	99.027%
83.0	11.201	1.246	974.648	.112%	99.154%
84.0	11.095	1.215	975.863	.110%	99.277%
85.0	11.060	1.209	977.072	.109%	99.400%
86.0	11.243	1.219	978.291	.110%	99.524%
87.0	11.334	1.236	979.527	.111%	99.650%
88.0	11.004	1.224	980.75	.110%	99.775%
89.0	10.041	1.153	981.904	.104%	99.892%
90.0	9.338	1.062	982.966	.096%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	869.21	78.38%	88.43%
0-40	897.88	80.96%	91.34%
0-60	940.50	84.81%	95.68%
0-90	981.90	88.54%	99.89%
0-120	981.90	88.54%	99.89%
0-180	982.97	88.64%	100.00%
60-90	43.03	3.88%	4.38%
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%
0-17.77	786.37	70.91%	80.00%

ZONAL LUMEN SUMMARY

0-10	569.09
10-20	245.93
20-30	54.18
30-40	28.67
40-50	22.91
50-60	19.72
60-70	14.63
70-80	15.62
80-90	11.15
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



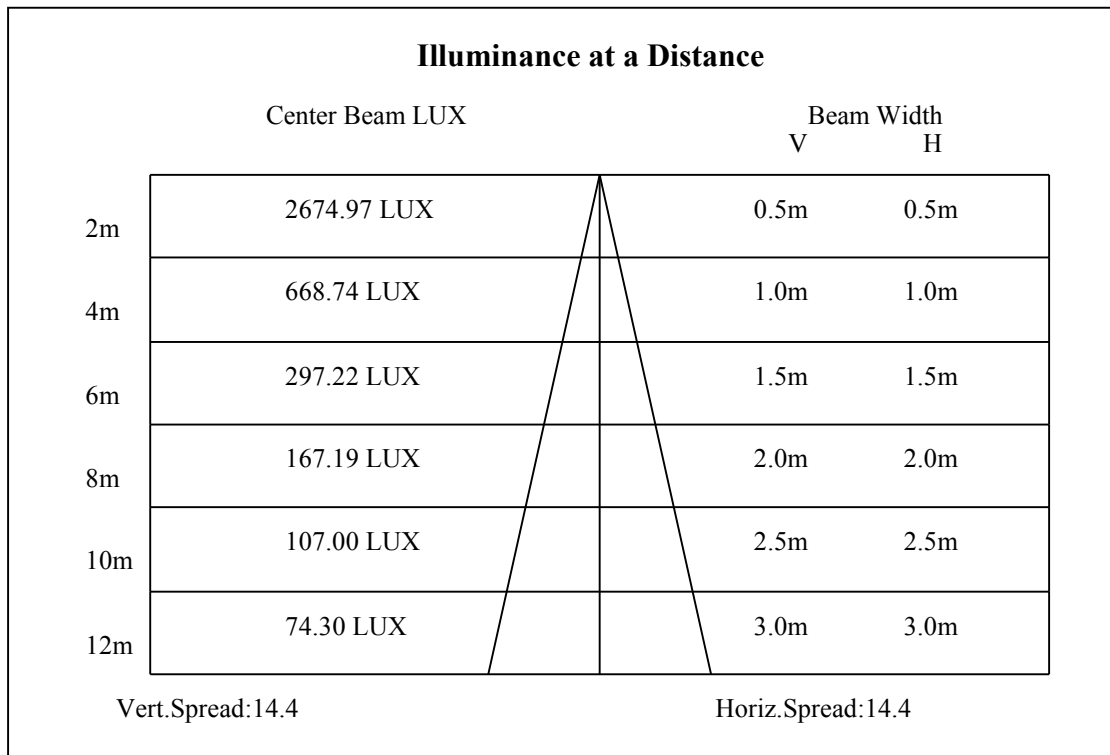
C0(Max): —————

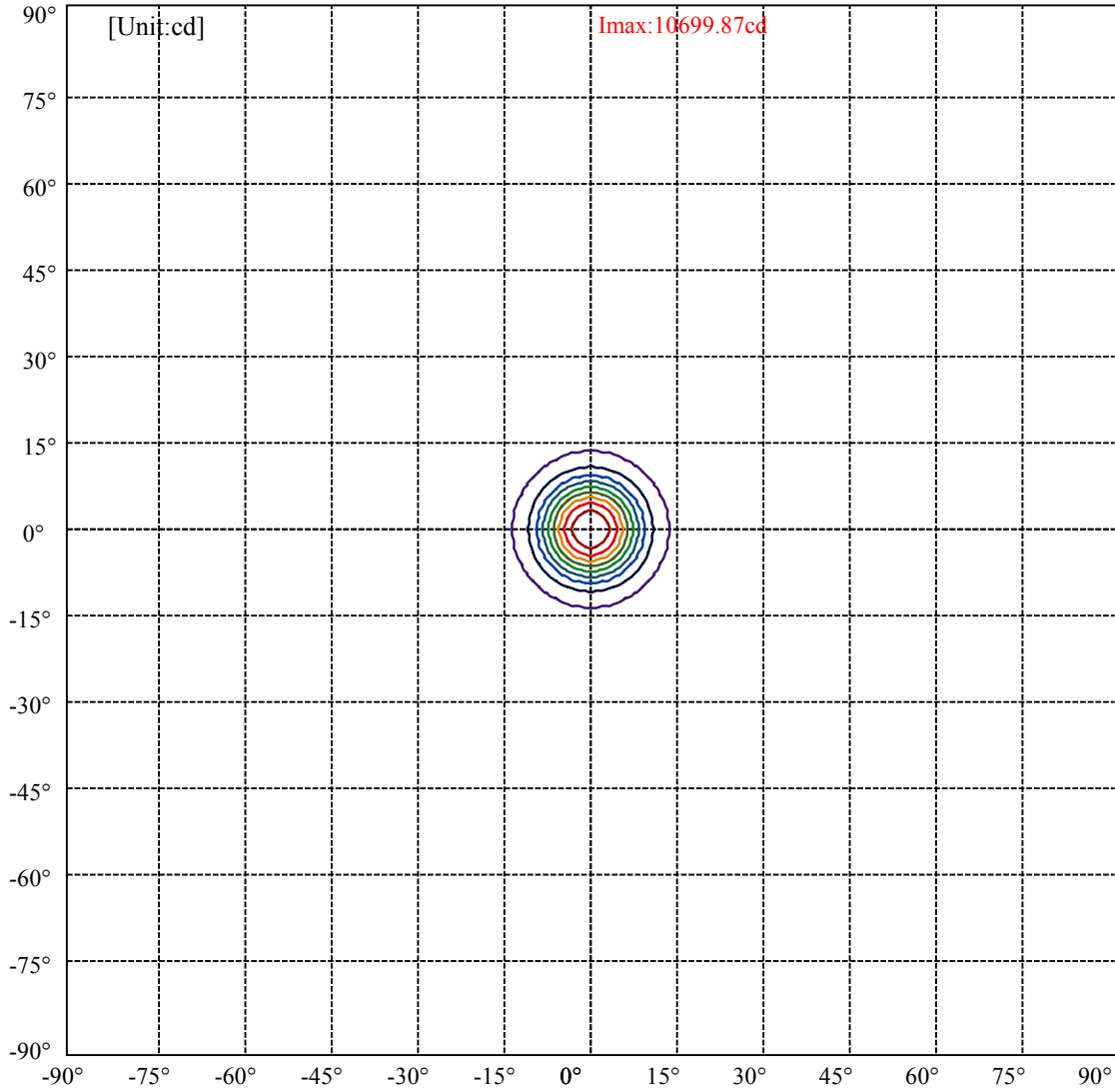
C0/C180: —————

C90/C270: —————

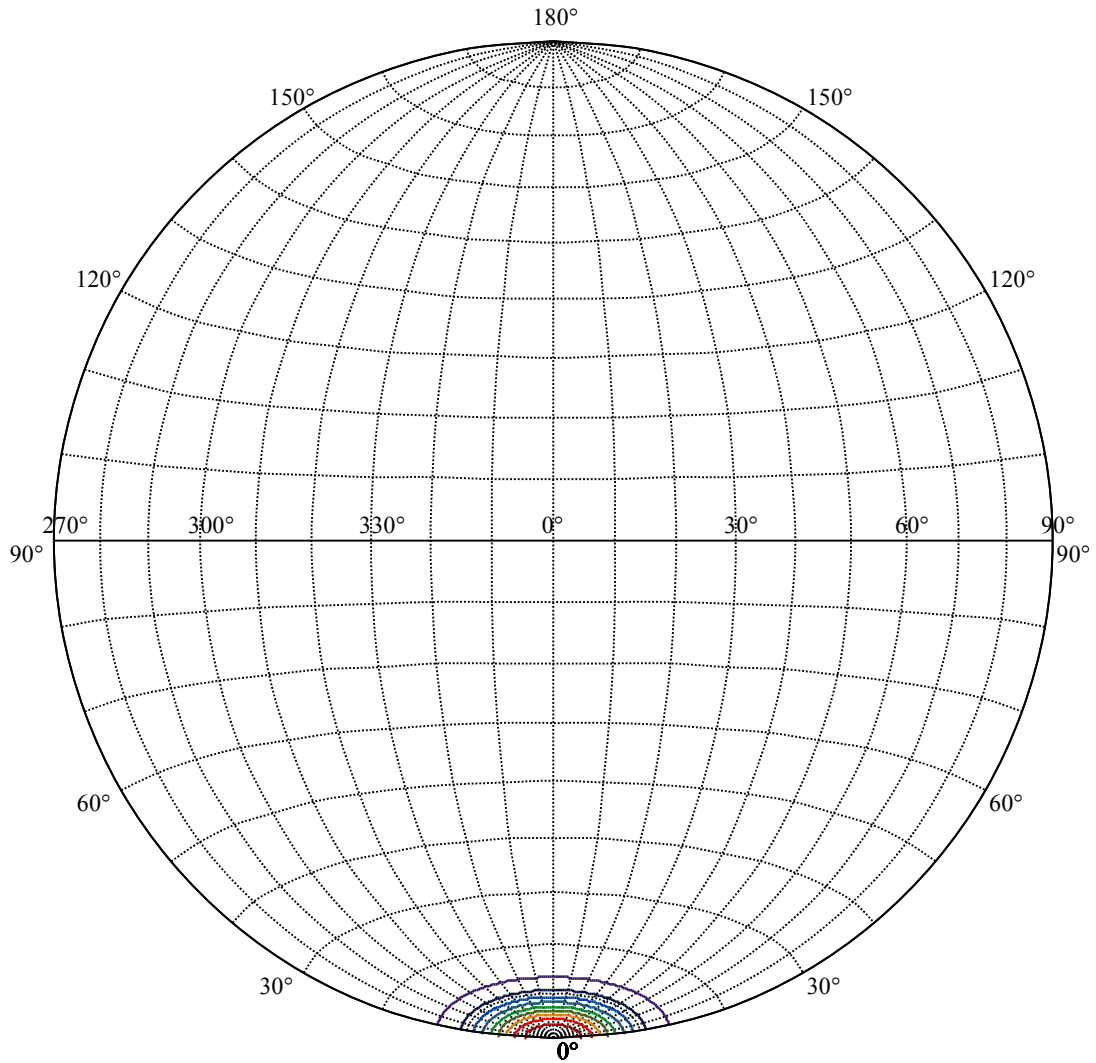
Field angle(10%Imax):C0/180Left:13.4 Right:13.4
:C90/270Left:13.4 Right:13.4

Beam Angle(50%Imax):C0/180Left:7.2 Right:7.2
:C90/270Left:7.2 Right:7.2





(10%Imax) 1069.99	—
(20%Imax) 2139.97	—
(30%Imax) 3209.96	—
(40%Imax) 4279.95	—
(50%Imax) 5349.94	—
(60%Imax) 6419.92	—
(70%Imax) 7489.91	—
(80%Imax) 8559.9	—
(90%Imax) 9629.89	—



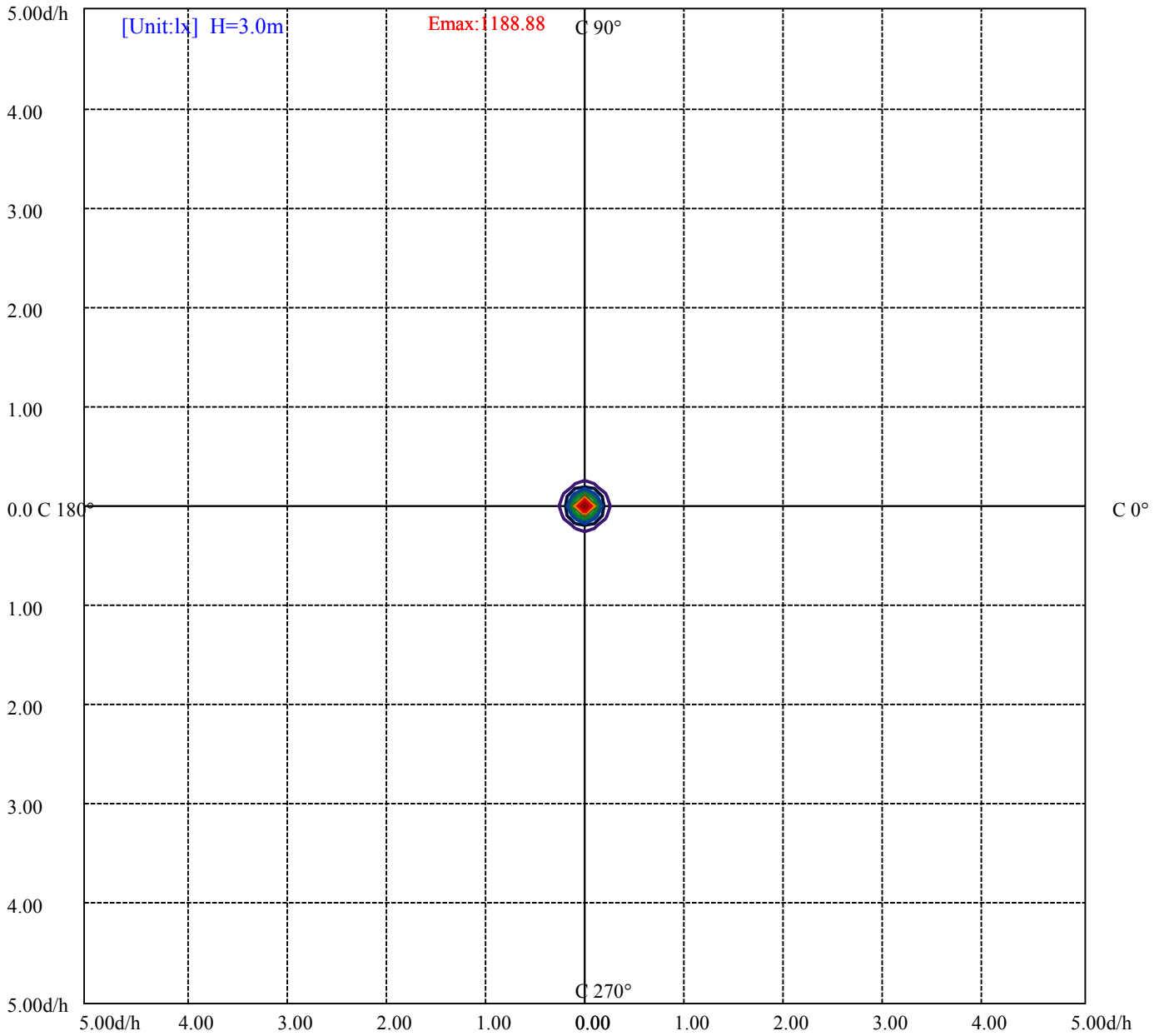
House

[Unit:cd]

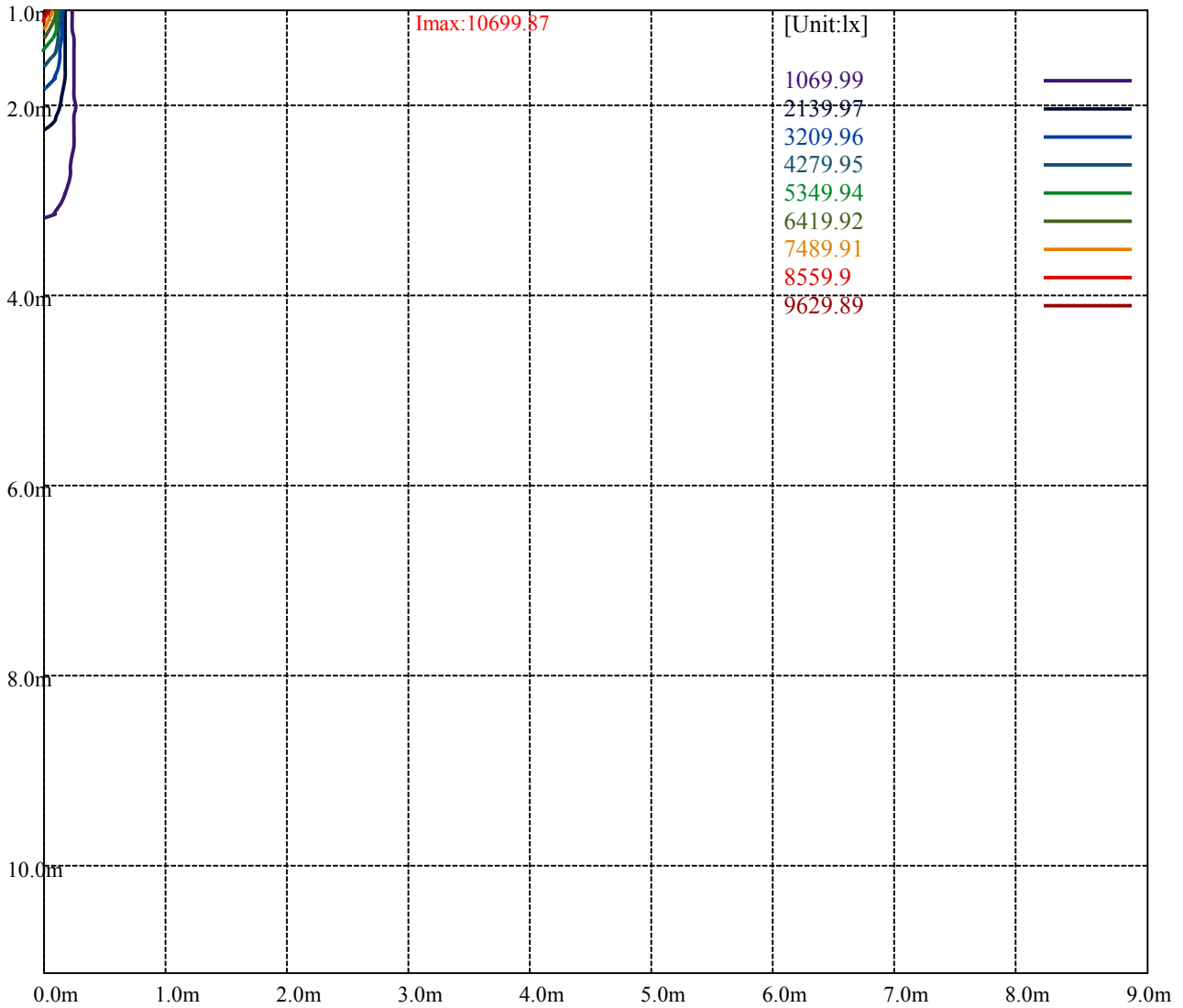
Road

Imax:10699.87

(10%Imax) 1069.99	—
(20%Imax) 2139.97	—
(30%Imax) 3209.96	—
(40%Imax) 4279.95	—
(50%Imax) 5349.94	—
(60%Imax) 6419.92	—
(70%Imax) 7489.91	—
(80%Imax) 8559.9	—
(90%Imax) 9629.89	—



(10%Emax) 118.8878	—
(20%Emax) 237.7744	—
(30%Emax) 356.6622	—
(40%Emax) 475.5489	—
(50%Emax) 594.4367	—
(60%Emax) 713.3245	—
(70%Emax) 832.2111	—
(80%Emax) 951.0989	—
(90%Emax) 1069.987	—



Luminance Table

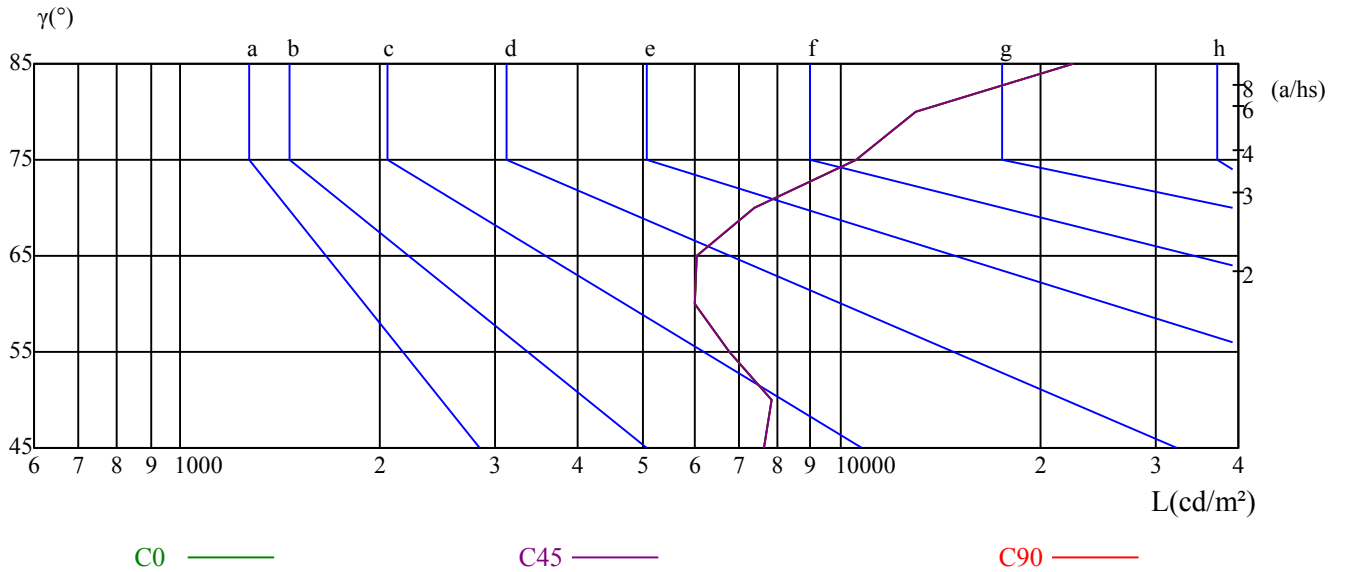
γ	45	50	55	60	65	70	75	80	85
C0	7651	7839	6782	5998	6063	7383	10533	12950	22560
C45	7651	7839	6782	5998	6063	7383	10533	12950	22560
C90	7651	7839	6782	5998	6063	7383	10533	12950	22560

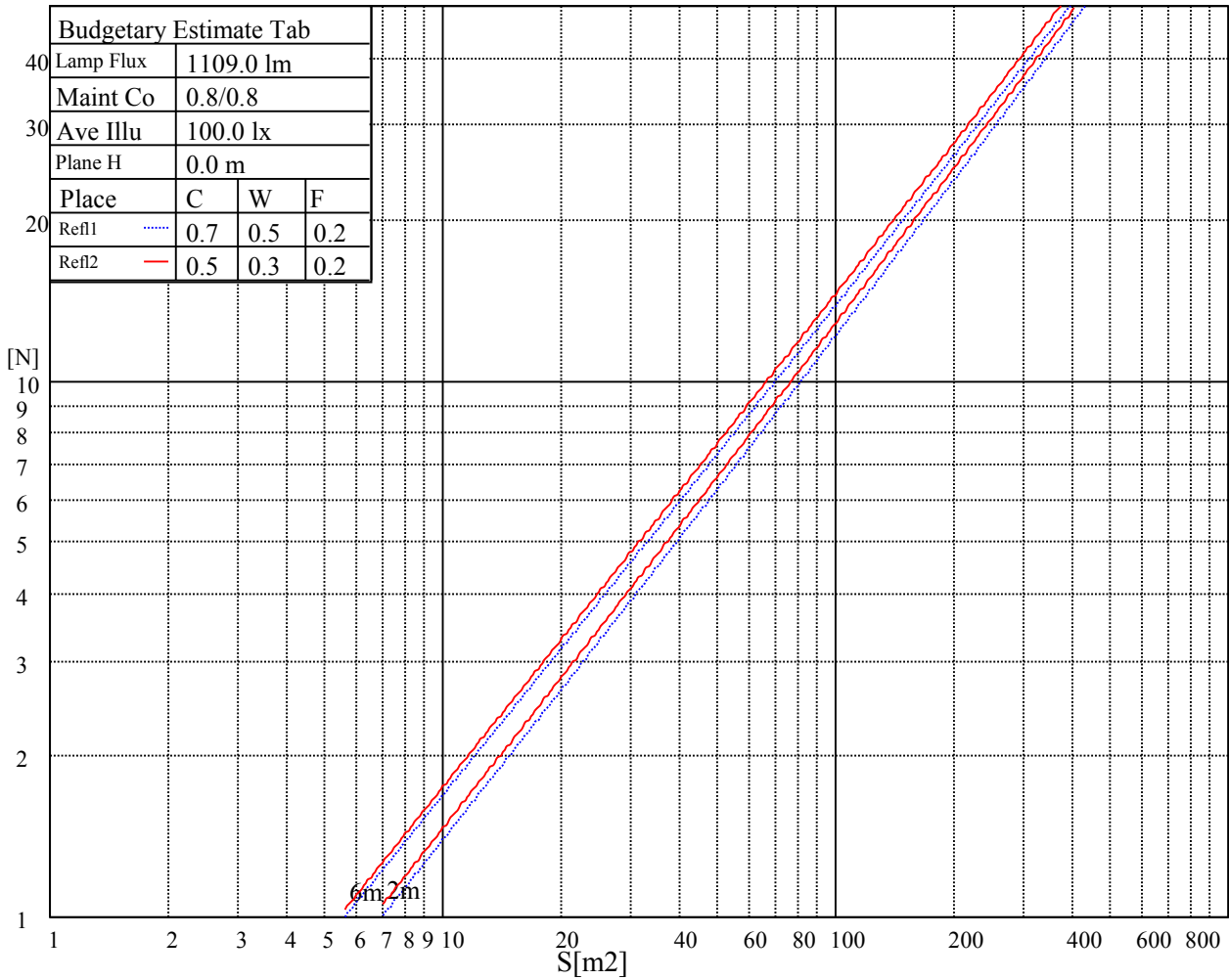
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6063	6063	6063	10533	10533	10533	22560	22560	22560

Glare Table

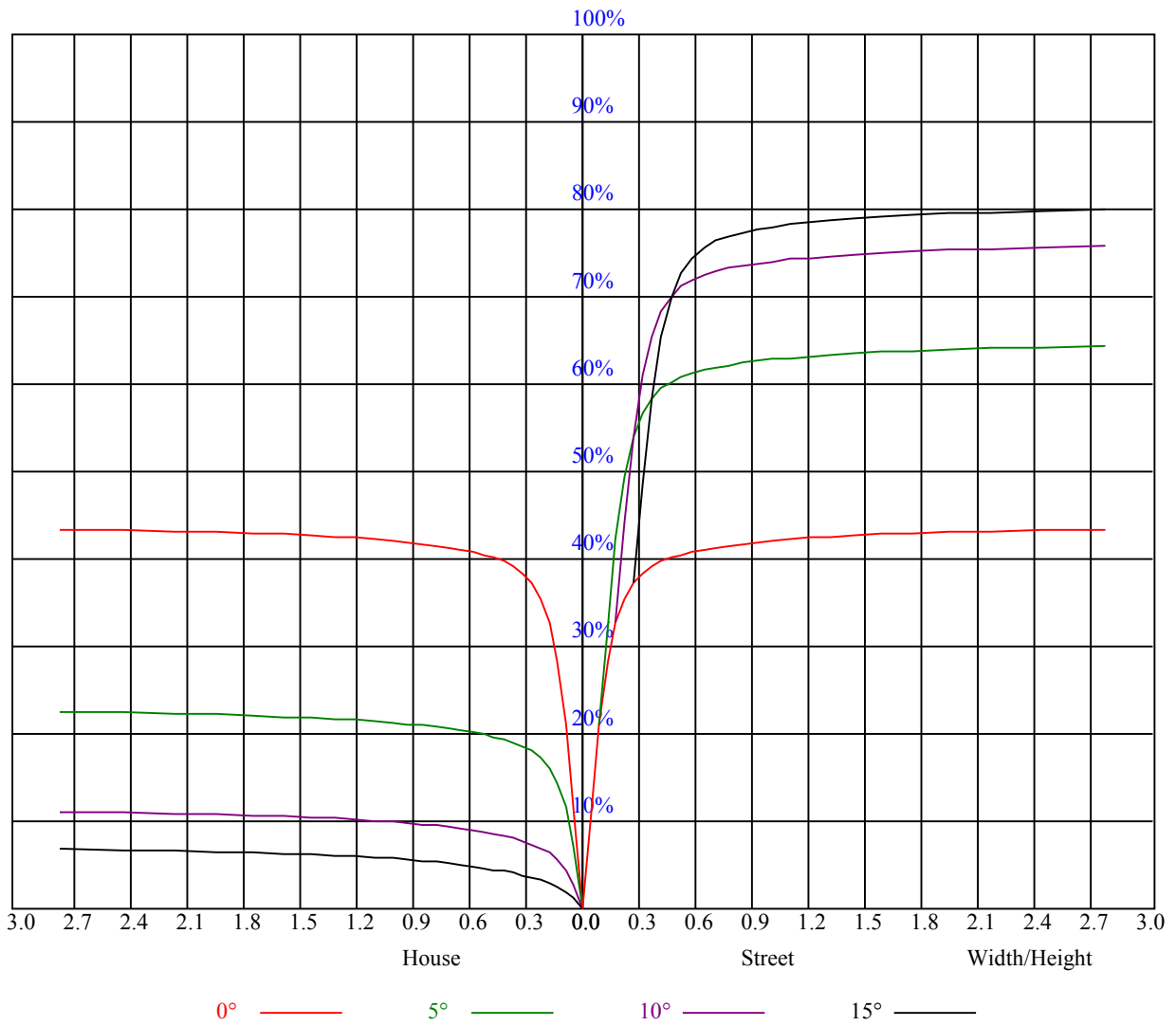
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

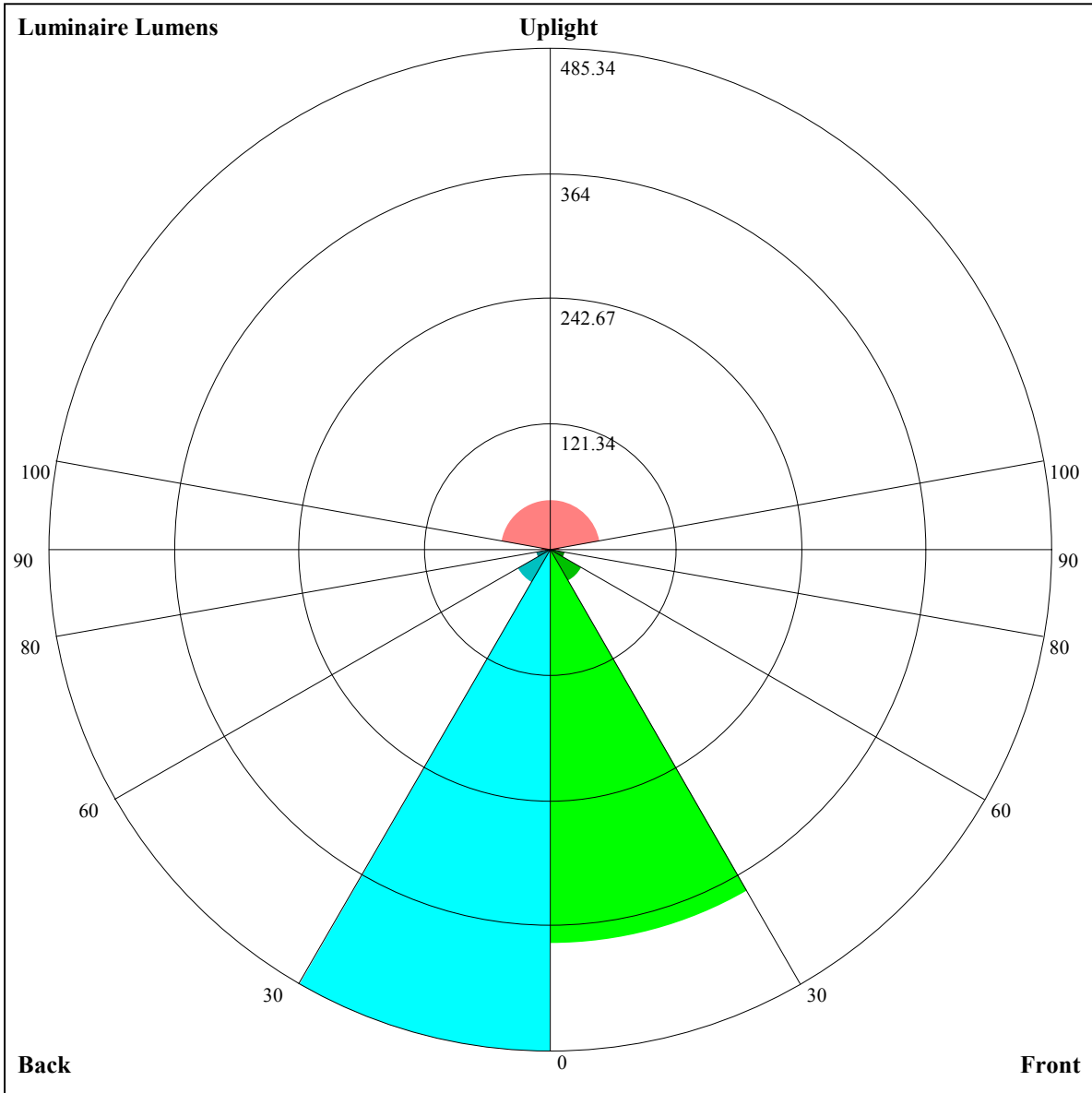
Luminance Limiting Curve





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	1.06	1.06	1.06	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.89
1	0.99	0.97	0.96	0.97	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.95	0.92	0.89	0.93	0.91	0.88	0.90	0.88	0.87	0.88	0.86	0.85	0.85	0.84	0.83	0.82
3	0.91	0.88	0.85	0.90	0.87	0.84	0.87	0.85	0.83	0.85	0.83	0.82	0.84	0.82	0.81	0.79
4	0.88	0.84	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.82	0.80	0.78	0.77
5	0.85	0.82	0.79	0.84	0.81	0.79	0.83	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.77	0.76
6	0.83	0.79	0.77	0.82	0.79	0.76	0.81	0.78	0.76	0.80	0.77	0.76	0.79	0.77	0.75	0.74
7	0.81	0.77	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.78	0.76	0.74	0.78	0.75	0.74	0.73
8	0.79	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.73	0.77	0.75	0.73	0.76	0.74	0.72	0.72
9	0.78	0.74	0.72	0.77	0.74	0.72	0.77	0.74	0.72	0.76	0.73	0.72	0.75	0.73	0.71	0.71
10	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.70





Luminaire Lumens:
FL=380.77,FM=34.8,FH=14.92,FVH=5.88
BL=485.34,BM=36.69,BH=15.28,BVH=6.11
UL=10.19,UH=48.48

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	10749.38	10402.88	9789.19	9010.13	7846.31	6625.69	5221.69	3979.69	3076.31
45.0	10774.13	10673.44	10364.63	9882.56	9070.88	8120.25	6825.94	5401.13	4247.44
90.0	10763.44	10726.88	10554.75	10083.94	9464.63	8614.13	7395.19	5967.00	4736.25
135.0	10530.00	10816.31	10849.50	10740.94	10340.44	9779.63	9040.50	7749.00	6529.50
180.0	10714.50	10878.75	10869.75	10632.94	10217.25	9570.94	8465.63	7305.75	6025.50
225.0	10774.13	10733.06	10506.94	9950.63	9239.63	8272.69	6810.19	5590.69	4439.81
270.0	10763.44	10579.50	10200.94	9642.94	8700.75	7472.81	6242.06	4880.81	3824.44
315.0	10530.00	10150.31	9541.13	8325.00	7340.06	6085.13	4438.69	3557.81	2730.94
360.0	10749.38	10402.88	9789.19	9010.13	7846.31	6625.69	5221.69	3979.69	3076.31
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2295.00	1712.25	1338.19	1097.44	824.06	679.50	577.69	455.63	363.38
45.0	3196.13	2396.25	1858.50	1463.06	1109.25	903.94	746.44	604.69	492.75
90.0	3552.19	2662.88	2082.94	1609.31	1112.29	1031.91	830.42	689.91	577.13
135.0	5290.31	3912.19	3038.63	2387.81	1792.69	1441.69	1181.25	960.75	788.06
180.0	4794.75	3504.38	2729.25	2149.88	1620.56	1104.75	1078.48	881.16	722.42
225.0	3348.56	2526.75	1974.94	1510.88	1115.89	959.46	756.84	640.63	515.36
270.0	2867.63	2128.50	1639.13	1275.19	960.75	777.94	637.31	497.25	401.63
315.0	2005.31	1483.88	1095.47	926.49	719.61	598.78	498.15	396.79	311.34
360.0	2295.00	1712.25	1338.19	1097.44	824.06	679.50	577.69	455.63	363.38
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	301.50	251.55	178.99	145.18	117.28	99.79	86.40	78.86	73.86
45.0	407.25	331.88	290.25	206.78	169.09	132.92	110.76	95.18	83.59
90.0	457.59	374.63	306.11	235.46	189.90	154.35	127.13	104.01	90.17
135.0	661.50	536.63	430.31	355.50	288.00	219.60	175.56	140.06	117.06
180.0	605.08	492.64	407.25	326.19	260.16	209.81	165.94	132.64	111.66
225.0	402.92	334.80	268.88	198.17	163.86	132.41	103.33	91.52	81.96
270.0	326.25	285.19	194.06	153.00	119.98	96.81	83.59	74.48	68.51
315.0	250.65	195.47	156.43	125.16	103.73	90.17	80.44	75.21	71.49
360.0	301.50	251.55	178.99	145.18	117.28	99.79	86.40	78.86	73.86
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	70.37	68.18	66.04	64.13	62.21	59.01	55.35	48.60	40.50
45.0	76.44	71.66	67.33	65.03	62.21	59.57	55.97	53.10	44.83
90.0	80.21	73.29	68.91	66.26	64.58	62.16	60.58	57.54	55.01
135.0	100.18	83.76	75.21	70.76	66.32	65.31	62.89	60.81	57.54
180.0	95.57	79.82	74.87	68.23	65.53	63.56	59.85	58.56	55.29
225.0	73.74	68.74	65.14	62.33	59.85	57.15	53.89	50.40	45.56
270.0	64.01	60.81	58.84	56.31	54.96	52.93	51.41	47.87	43.31
315.0	69.13	66.49	63.62	61.65	58.67	55.01	50.63	43.76	36.45
360.0	70.37	68.18	66.04	64.13	62.21	59.01	55.35	48.60	40.50
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	34.65	30.94	29.98	29.19	28.69	28.86	29.64	30.88	31.67
45.0	38.70	33.30	29.36	27.79	27.06	26.55	26.61	27.45	28.91
90.0	49.16	40.39	33.64	30.43	29.93	29.70	29.53	30.49	31.39
135.0	54.79	50.40	44.49	36.17	29.81	28.74	28.74	28.86	29.81
180.0	51.86	45.39	37.52	30.66	28.18	28.29	28.35	28.58	29.08
225.0	39.04	33.02	28.74	26.94	26.33	26.16	26.44	27.23	27.79
270.0	36.96	31.89	29.25	29.08	29.19	29.42	29.87	30.38	31.11
315.0	31.67	29.14	27.96	27.11	26.94	27.62	28.46	29.36	30.04
360.0	34.65	30.94	29.98	29.19	28.69	28.86	29.64	30.88	31.67

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	32.29	32.29	32.46	31.56	30.60	28.24	26.33	24.98	23.29
45.0	29.42	29.59	29.36	29.48	29.25	27.90	26.38	24.47	22.33
90.0	31.95	32.23	32.06	31.73	30.99	30.77	28.80	26.55	25.31
135.0	30.21	30.60	30.83	30.77	30.60	30.66	30.49	28.13	25.99
180.0	29.59	29.93	29.98	29.81	29.48	29.53	29.19	27.17	25.82
225.0	28.18	28.41	28.69	28.86	28.63	26.66	25.37	24.75	24.58
270.0	31.56	31.73	31.44	31.16	29.36	27.68	26.55	25.71	24.02
315.0	30.26	30.38	30.32	29.19	27.06	25.31	24.36	23.29	22.16
360.0	32.29	32.29	32.46	31.56	30.60	28.24	26.33	24.98	23.29
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	22.22	21.26	20.48	19.63	18.73	17.94	17.10	16.65	16.31
45.0	21.26	20.31	19.01	18.00	17.04	16.43	15.86	15.36	14.79
90.0	24.98	22.11	20.48	19.58	18.51	17.66	16.93	16.09	15.75
135.0	24.75	24.47	22.44	20.93	19.63	18.79	17.66	16.65	15.86
180.0	25.76	23.91	22.73	21.38	20.19	19.35	18.45	17.33	16.54
225.0	23.06	21.49	20.48	19.41	18.51	17.55	16.88	15.92	15.36
270.0	22.95	21.88	20.48	19.41	18.62	17.49	16.76	16.09	15.53
315.0	20.59	19.63	18.73	17.78	16.76	16.03	15.30	14.68	14.40
360.0	22.22	21.26	20.48	19.63	18.73	17.94	17.10	16.65	16.31
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	15.92	15.41	15.30	15.36	15.47	15.81	16.43	16.65	16.26
45.0	14.57	13.95	13.44	13.16	12.99	12.94	13.28	13.50	13.61
90.0	15.47	14.96	14.40	14.01	13.73	13.56	13.67	14.01	14.34
135.0	15.47	15.19	14.96	14.68	14.29	13.78	13.61	13.44	13.61
180.0	16.09	15.58	15.41	15.08	14.79	14.79	14.79	14.85	15.19
225.0	14.91	14.63	14.18	13.84	13.56	13.33	13.11	13.16	13.44
270.0	15.08	14.91	14.46	14.23	14.12	14.01	14.01	14.34	14.63
315.0	14.06	13.39	13.16	12.88	12.71	12.83	13.28	13.67	13.50
360.0	15.92	15.41	15.30	15.36	15.47	15.81	16.43	16.65	16.26
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	15.75	15.64	16.03	16.99	16.99	15.86	14.46	12.83	11.93
45.0	13.78	13.95	14.06	15.64	15.86	16.03	15.02	13.95	12.99
90.0	14.29	14.51	15.02	16.54	16.99	16.37	15.30	14.06	13.44
135.0	13.78	14.12	14.51	14.63	17.66	17.27	16.93	15.02	14.12
180.0	15.53	15.41	15.53	15.75	17.72	18.28	17.21	14.96	13.84
225.0	13.61	13.61	13.50	14.96	16.09	16.03	14.85	14.06	12.94
270.0	14.51	14.23	14.06	14.46	15.92	15.69	14.29	12.83	11.25
315.0	13.16	12.94	14.06	13.73	15.13	14.57	12.21	10.69	10.69
360.0	15.75	15.64	16.03	16.99	16.99	15.86	14.46	12.83	11.93
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	11.76	11.25	10.80	11.19	11.36	11.36	11.31	10.29	9.56
45.0	12.60	11.76	10.97	11.53	12.04	12.32	12.15	11.81	10.29
90.0	13.44	12.38	11.42	11.53	11.53	11.93	12.04	11.98	10.29
135.0	13.39	12.71	12.54	11.64	11.42	11.59	12.04	12.21	11.87
180.0	12.94	12.38	12.26	11.53	10.74	11.14	11.70	11.76	11.08
225.0	12.60	12.32	12.04	11.59	11.70	12.15	12.09	11.81	9.96
270.0	10.35	10.01	8.78	8.44	8.16	7.99	7.93	8.04	7.82
315.0	10.80	11.03	10.80	11.31	11.53	11.48	11.42	10.13	9.45
360.0	11.76	11.25	10.80	11.19	11.36	11.36	11.31	10.29	9.56

Intensity data(cd)

C/γ(°)	90.0
0.0	8.94
45.0	9.96
90.0	9.79
135.0	10.07
180.0	9.68
225.0	9.62
270.0	7.71
315.0	8.94
360.0	8.94