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Nata

Client:

LumCAT: 2-2004-M

Luminaire: 92.70.131.00

Report No: GC2019091909

Test No: NATA07

LampCAT: TRIDONIC SLE G7 13MM

Lamp flux(lm): 1835.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 220.4000

Current(A): 0.0710

Power (W): 14.4000

PF: 0.9200

Ballast type: AC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1608.88, Efficiency(%): 87.68% , Luminous Efficacy(lm/W): 111.73

Central intensity(cd): 9395.377, Maximum intensity(cd): 9395.377

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=16.6

[C90/270]Total=16.6

Field angle(10%Imax): [C0/180]Total=37.8

[C90/270]Total=37.8

Maximum s/h(1/2): C0_180=0.29 C90_270=0.29

Maximum s/h(1/4): C0_180=0.29 C90_270=0.29

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.68%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 99.713%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9395.378	0.000	0	.000%	.000%
1.0	9355.239	8.972	8.972	.489%	.558%
2.0	9217.885	26.658	35.63	1.453%	2.215%
3.0	8843.236	43.196	78.826	2.354%	4.899%
4.0	8262.324	57.258	136.084	3.120%	8.458%
5.0	7574.047	68.127	204.211	3.713%	12.693%
6.0	6747.661	75.264	279.475	4.102%	17.371%
7.0	5898.190	78.493	357.968	4.278%	22.250%
8.0	4931.318	77.505	435.473	4.224%	27.067%
9.0	4152.090	73.616	509.089	4.012%	31.642%
10.0	3409.985	68.434	577.523	3.729%	35.896%
11.0	2813.934	62.190	639.712	3.389%	39.761%
12.0	2354.830	56.502	696.214	3.079%	43.273%
13.0	2098.974	52.855	749.07	2.880%	46.558%
14.0	1946.713	51.784	800.854	2.822%	49.777%
15.0	1465.348	46.842	847.697	2.553%	52.689%
16.0	1284.781	40.297	887.994	2.196%	55.193%
17.0	1120.571	37.458	925.451	2.041%	57.521%
18.0	990.462	34.806	960.258	1.897%	59.685%
19.0	932.986	33.464	993.722	1.824%	61.765%
20.0	864.622	32.901	1026.623	1.793%	63.810%
21.0	804.298	32.047	1058.67	1.746%	65.802%
22.0	752.250	31.279	1089.949	1.705%	67.746%
23.0	709.617	30.674	1120.623	1.672%	69.652%
24.0	675.894	30.292	1150.915	1.651%	71.535%
25.0	646.341	30.065	1180.98	1.638%	73.404%
26.0	623.771	29.981	1210.961	1.634%	75.267%
27.0	605.163	30.066	1241.027	1.638%	77.136%
28.0	591.080	30.286	1271.314	1.650%	79.019%
29.0	579.508	30.626	1301.94	1.669%	80.922%
30.0	569.085	31.012	1332.951	1.690%	82.850%
31.0	559.091	31.395	1364.347	1.711%	84.801%
32.0	549.711	31.766	1396.113	1.731%	86.775%
33.0	529.584	31.796	1427.909	1.733%	88.752%
34.0	490.298	30.865	1458.774	1.682%	90.670%
35.0	437.102	28.802	1487.575	1.570%	92.460%
36.0	385.264	26.184	1513.76	1.427%	94.088%
37.0	313.391	22.786	1536.546	1.242%	95.504%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	249.250	18.780	1555.326	1.023%	96.671%
39.0	203.386	15.450	1570.776	.842%	97.632%
40.0	167.881	12.948	1583.724	.706%	98.436%
41.0	73.010	8.578	1592.302	.467%	98.970%
42.0	31.427	3.794	1596.097	.207%	99.205%
43.0	13.492	1.664	1597.761	.091%	99.309%
44.0	9.774	0.878	1598.639	.048%	99.363%
45.0	8.619	0.707	1599.346	.039%	99.407%
46.0	7.320	0.623	1599.969	.034%	99.446%
47.0	6.160	0.536	1600.505	.029%	99.479%
48.0	5.052	0.453	1600.958	.025%	99.508%
49.0	4.217	0.381	1601.339	.021%	99.531%
50.0	3.915	0.339	1601.678	.018%	99.552%
51.0	3.654	0.320	1601.998	.017%	99.572%
52.0	3.399	0.303	1602.301	.016%	99.591%
53.0	3.196	0.287	1602.588	.016%	99.609%
54.0	3.005	0.273	1602.861	.015%	99.626%
55.0	2.848	0.261	1603.122	.014%	99.642%
56.0	2.657	0.249	1603.371	.014%	99.658%
57.0	2.535	0.237	1603.608	.013%	99.672%
58.0	2.390	0.228	1603.836	.012%	99.687%
59.0	2.291	0.219	1604.055	.012%	99.700%
60.0	2.164	0.210	1604.265	.011%	99.713%
61.0	2.053	0.201	1604.467	.011%	99.726%
62.0	1.972	0.194	1604.661	.011%	99.738%
63.0	1.914	0.189	1604.85	.010%	99.750%
64.0	1.839	0.184	1605.034	.010%	99.761%
65.0	1.752	0.178	1605.211	.010%	99.772%
66.0	1.682	0.171	1605.383	.009%	99.783%
67.0	1.636	0.167	1605.55	.009%	99.793%
68.0	1.584	0.163	1605.713	.009%	99.803%
69.0	1.572	0.161	1605.874	.009%	99.813%
70.0	1.508	0.158	1606.032	.009%	99.823%
71.0	1.479	0.154	1606.186	.008%	99.833%
72.0	1.450	0.152	1606.339	.008%	99.842%
73.0	1.433	0.151	1606.489	.008%	99.851%
74.0	1.404	0.149	1606.638	.008%	99.861%
75.0	1.369	0.146	1606.785	.008%	99.870%

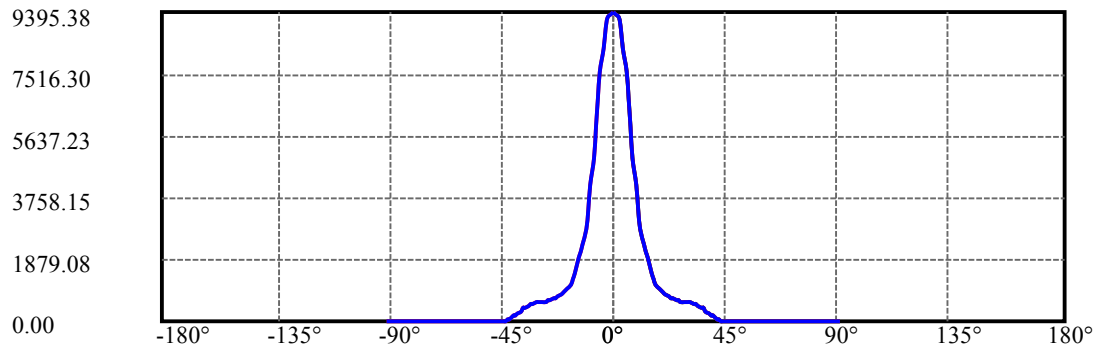
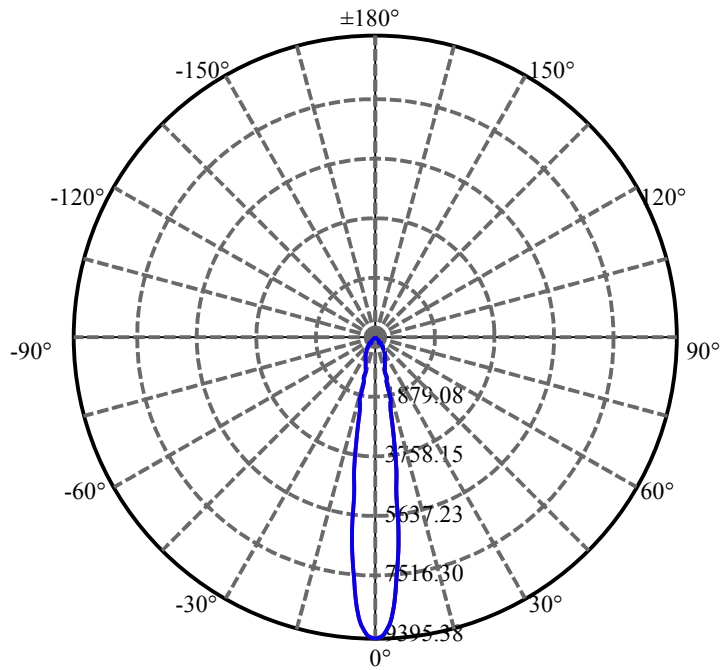
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.351	0.144	1606.929	.008%	99.879%
77.0	1.346	0.144	1607.073	.008%	99.888%
78.0	1.317	0.143	1607.216	.008%	99.897%
79.0	1.299	0.141	1607.356	.008%	99.905%
80.0	1.305	0.140	1607.497	.008%	99.914%
81.0	1.288	0.140	1607.637	.008%	99.923%
82.0	1.259	0.138	1607.775	.008%	99.931%
83.0	1.264	0.137	1607.912	.007%	99.940%
84.0	1.259	0.137	1608.05	.007%	99.948%
85.0	1.247	0.137	1608.186	.007%	99.957%
86.0	1.264	0.137	1608.324	.007%	99.965%
87.0	1.264	0.138	1608.462	.008%	99.974%
88.0	1.253	0.138	1608.6	.008%	99.983%
89.0	1.282	0.139	1608.739	.008%	99.991%
90.0	1.282	0.141	1608.879	.008%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1332.95	72.64%	82.85%
0-40	1583.72	86.31%	98.44%
0-60	1604.27	87.43%	99.71%
0-90	1608.74	87.67%	99.99%
0-120	1608.74	87.67%	99.99%
0-180	1608.88	87.68%	100.00%
60-90	4.68	0.26%	0.29%
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%
0-28.52	1287.10	70.14%	80.00%

ZONAL LUMEN SUMMARY

0-10	577.52
10-20	449.10
20-30	306.33
30-40	250.77
40-50	17.95
50-60	2.59
60-70	1.77
70-80	1.46
80-90	1.24
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: —————

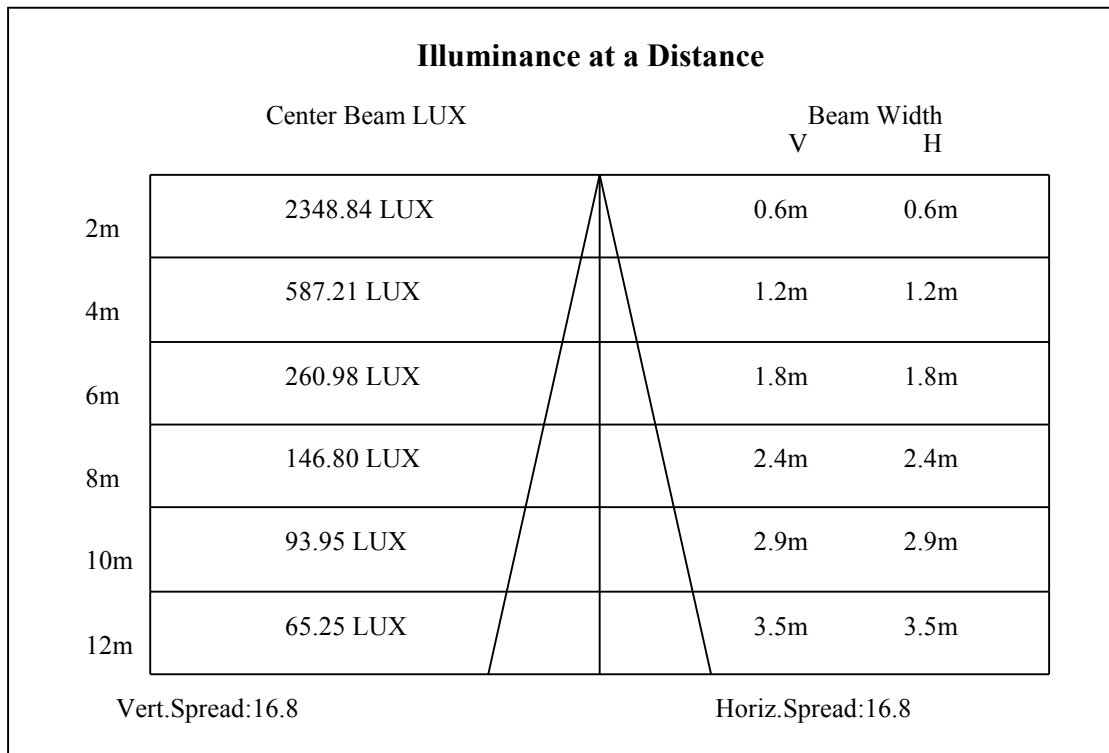
C90/C270: —————

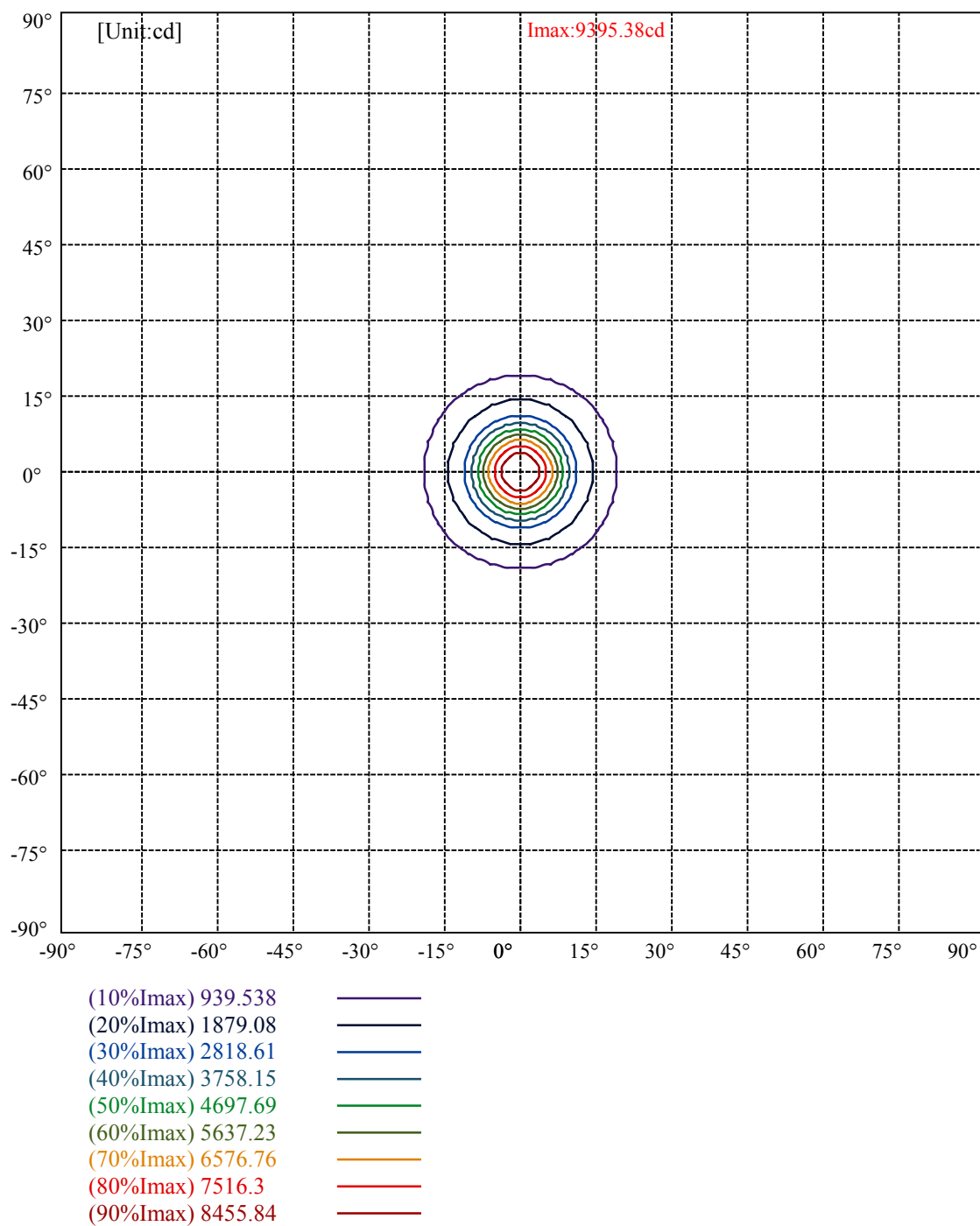
Field angle(10%Imax):C0/180Left:18.9 Right:18.9

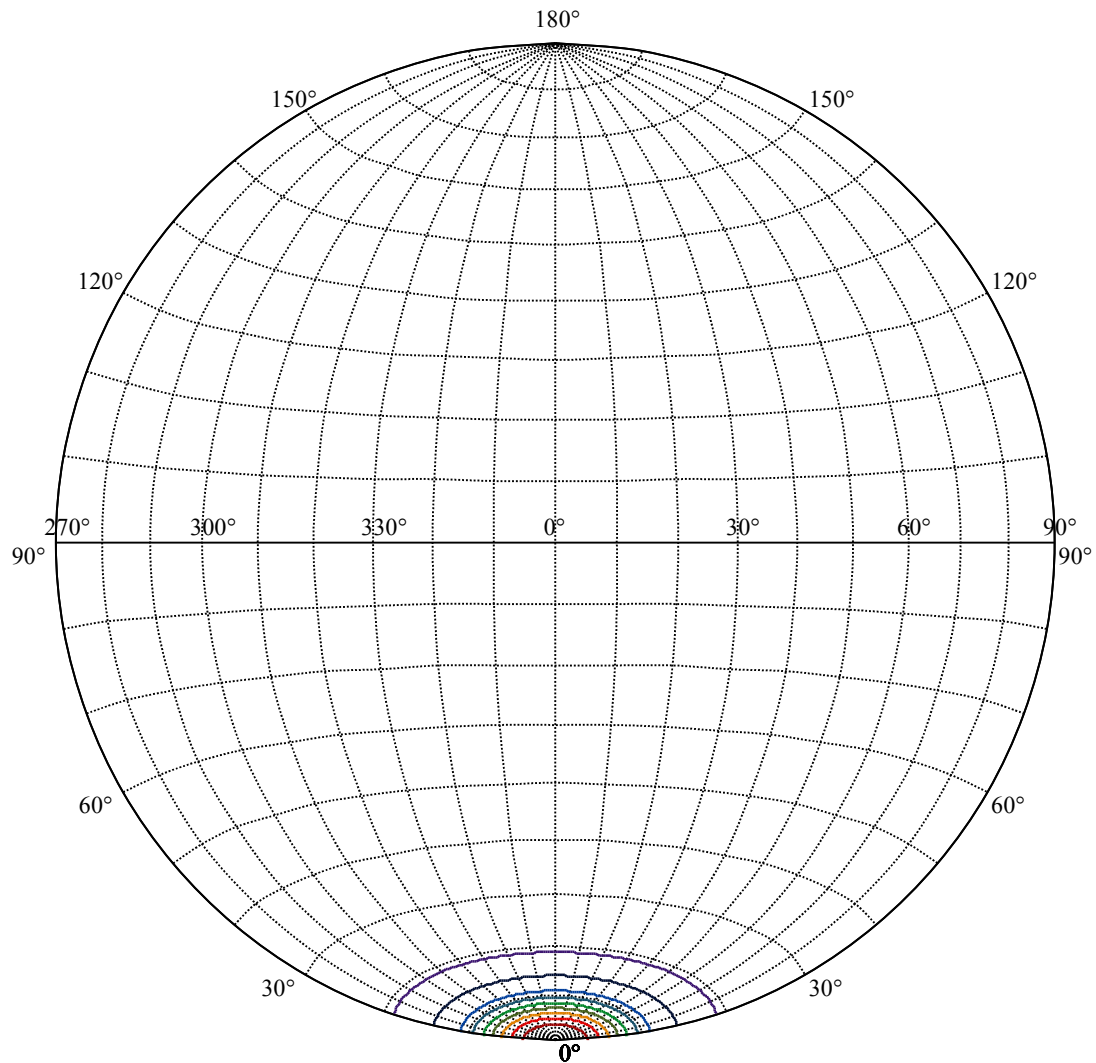
:C90/270Left:18.9 Right:18.9

Beam Angle(50%Imax):C0/180Left:8.3 Right:8.3

:C90/270Left:8.3 Right:8.3







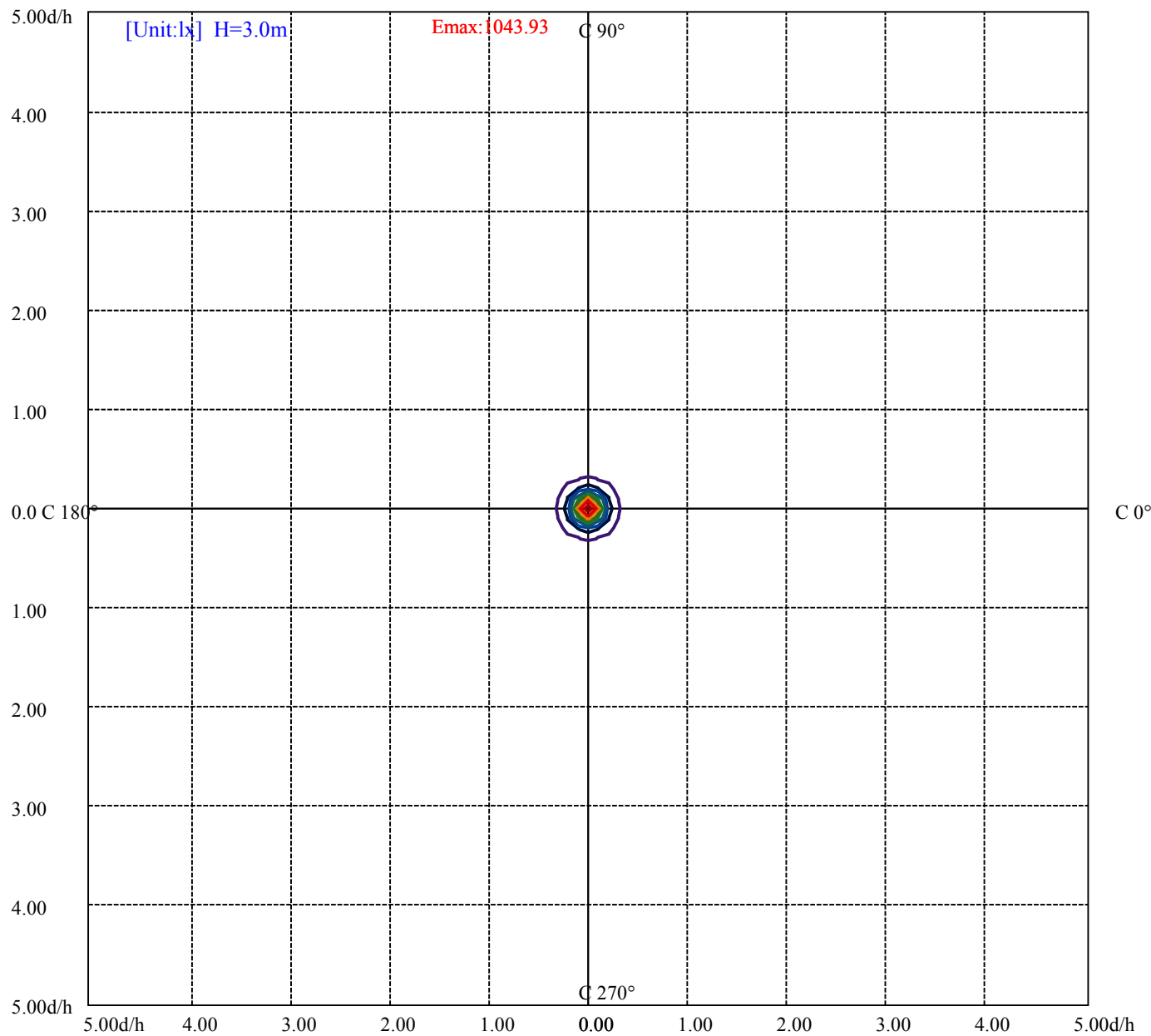
House

[Unit:cd]

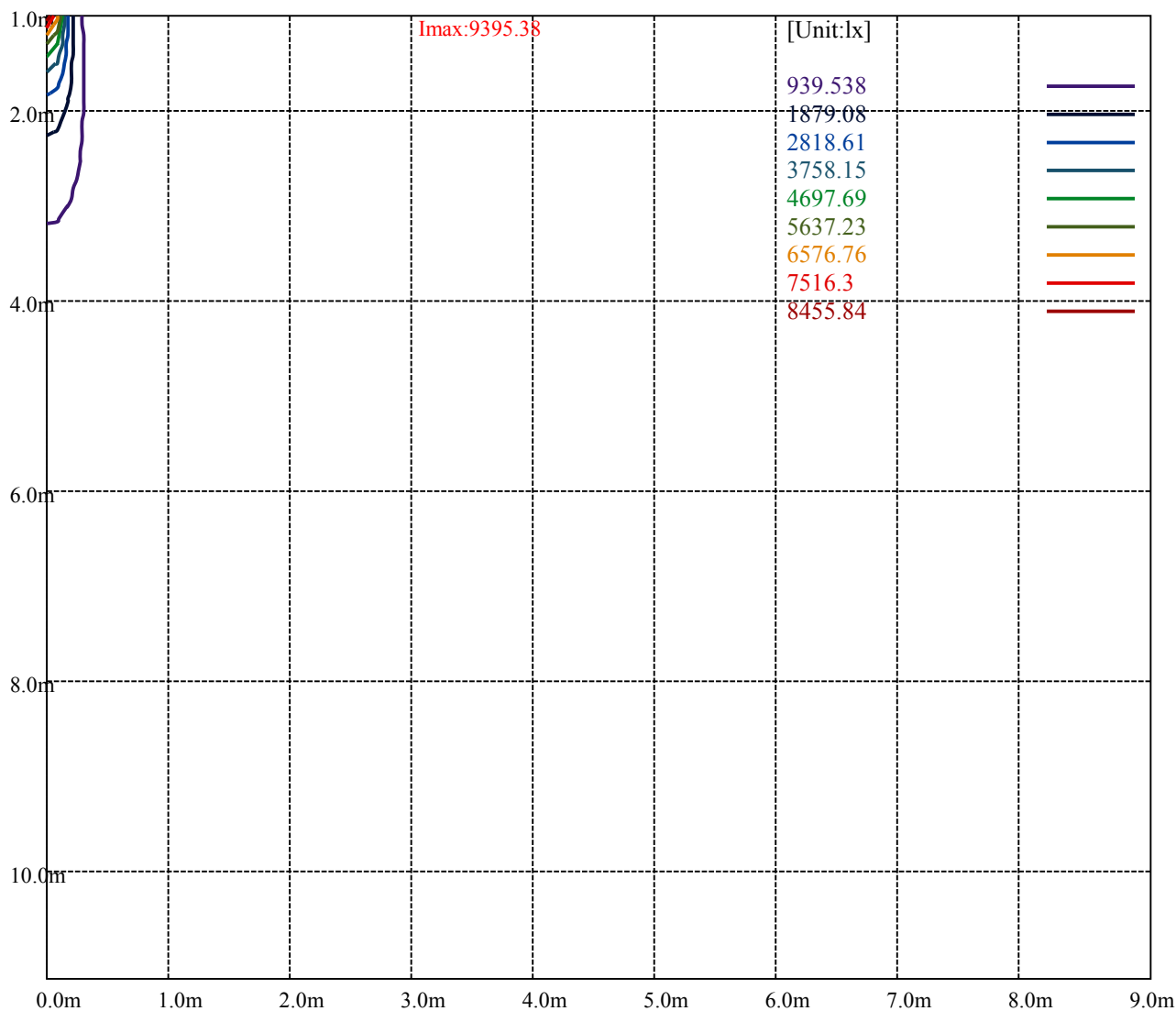
Road

Imax:9395.38

(10%Imax)	939.538	—
(20%Imax)	1879.08	—
(30%Imax)	2818.61	—
(40%Imax)	3758.15	—
(50%Imax)	4697.69	—
(60%Imax)	5637.23	—
(70%Imax)	6576.76	—
(80%Imax)	7516.3	—
(90%Imax)	8455.84	—



(10%Emax)	104.393	
(20%Emax)	208.7856	
(30%Emax)	313.1789	
(40%Emax)	417.5722	
(50%Emax)	521.9656	
(60%Emax)	626.3578	
(70%Emax)	730.7511	
(80%Emax)	835.1444	
(90%Emax)	939.5367	



Luminance Table

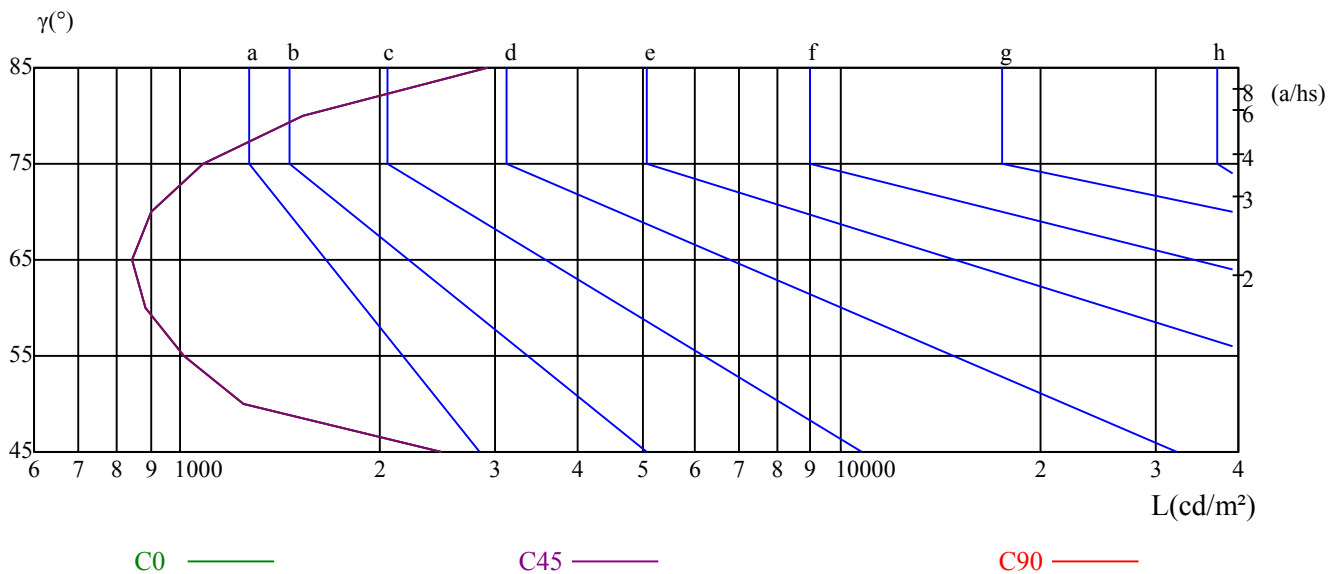
γ	45	50	55	60	65	70	75	80	85
C0	2488	1243	1013	883	846	900	1079	1534	2920
C45	2488	1243	1013	883	846	900	1079	1534	2920
C90	2488	1243	1013	883	846	900	1079	1534	2920

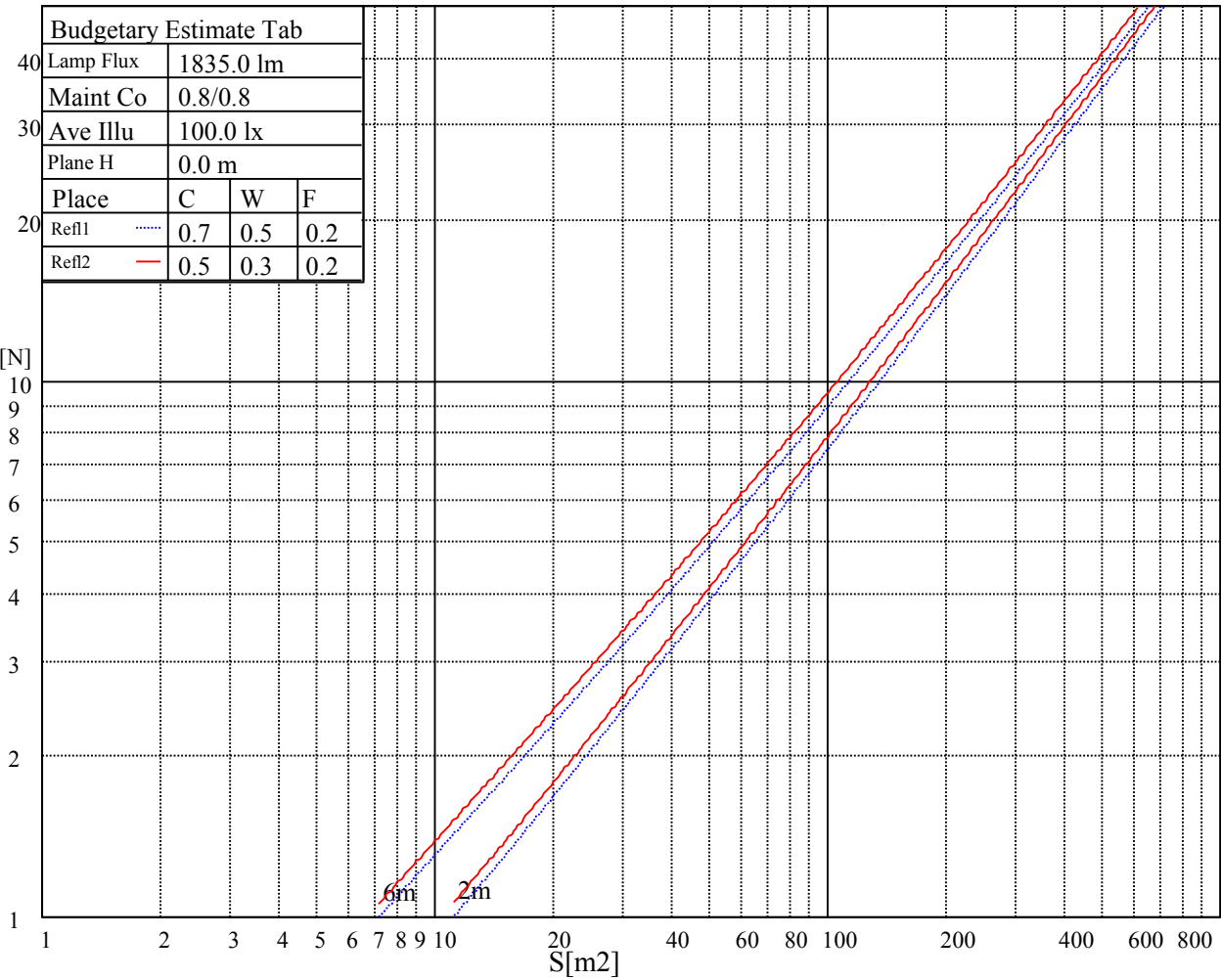
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
846	846	846	1079	1079	1079	2920	2920	2920

Glare Table

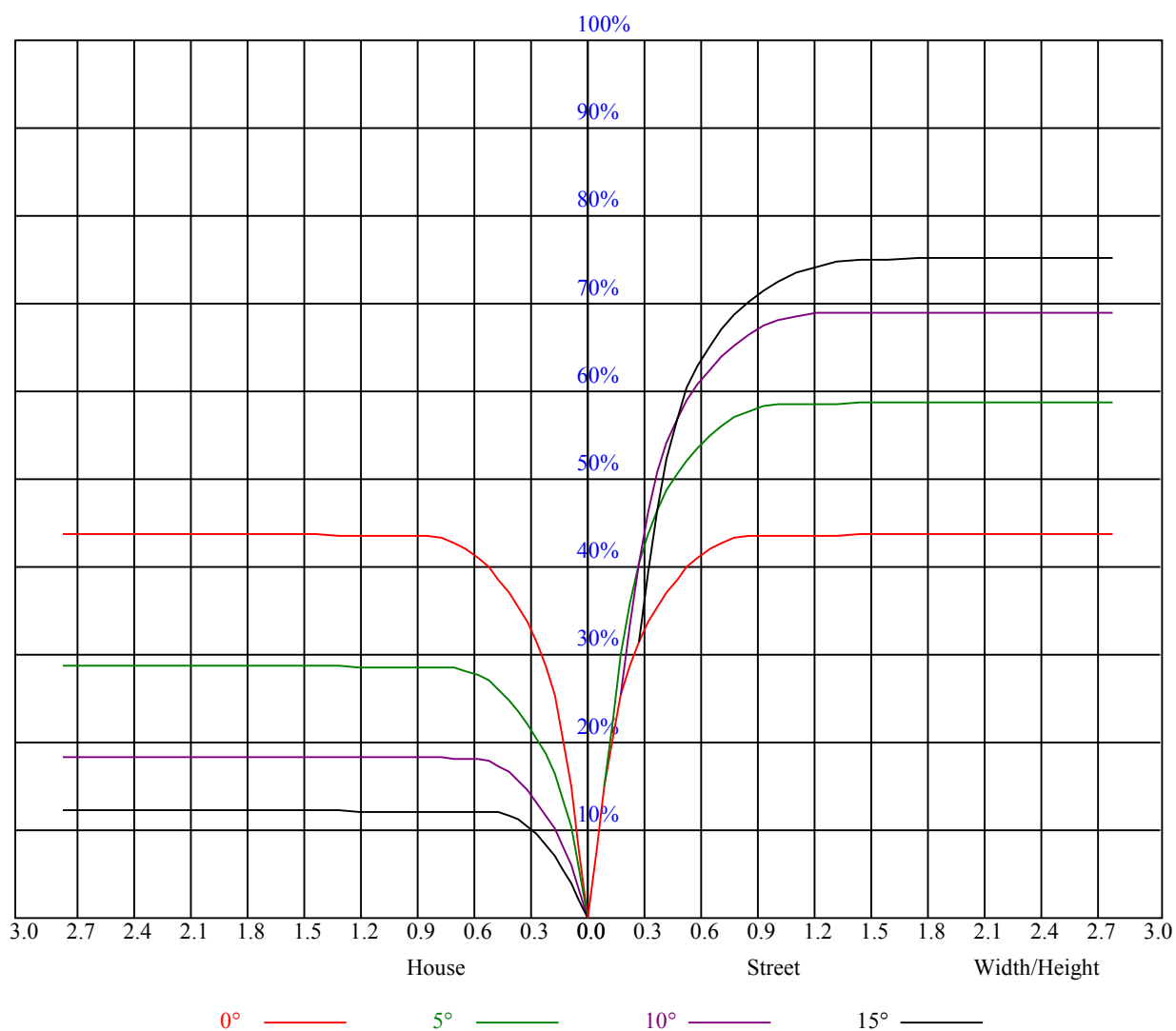
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

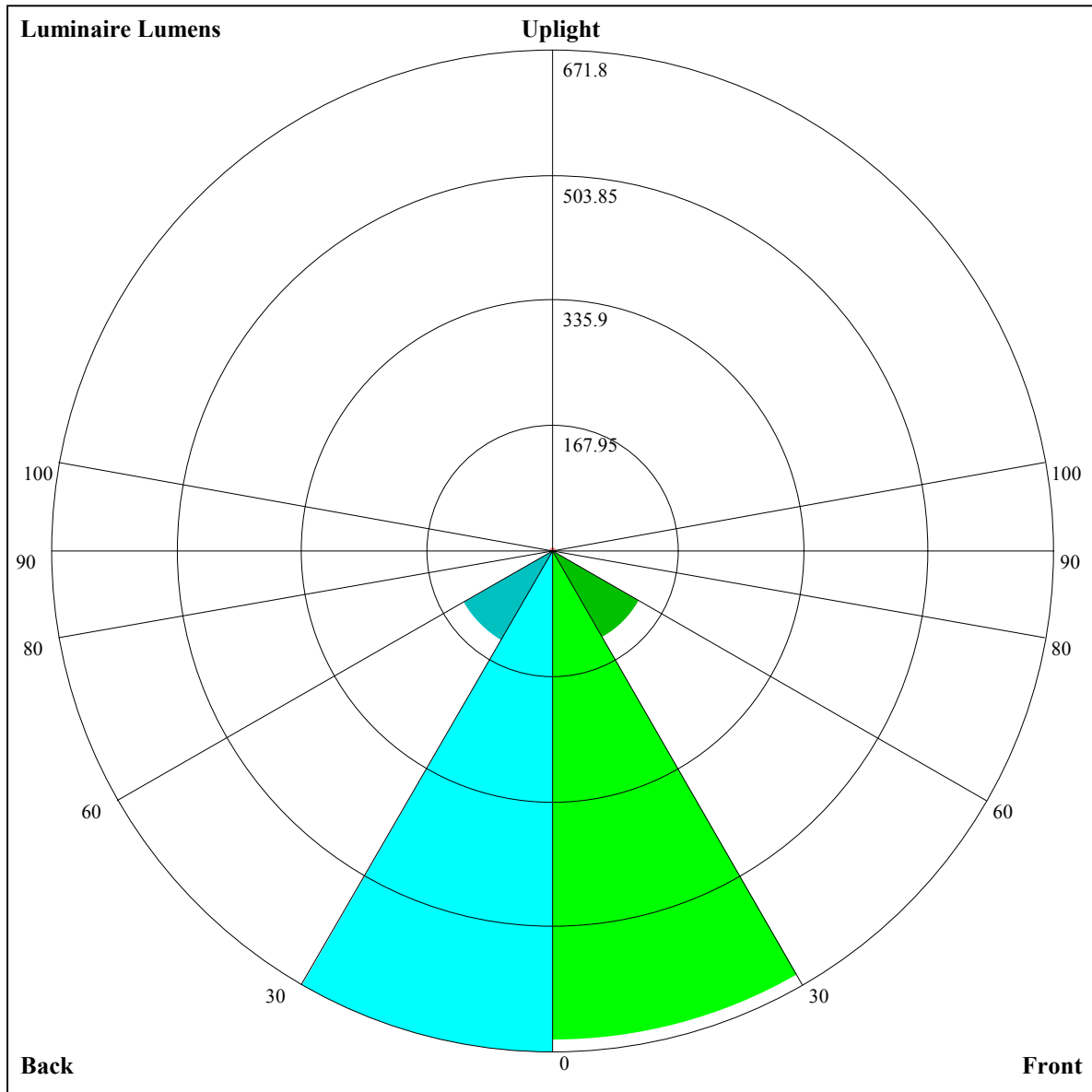
Luminance Limiting Curve





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	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.88
1	0.98	0.97	0.95	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84
2	0.93	0.90	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.83	0.84	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.79	0.81	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.77	0.75	0.73	0.76	0.74	0.72	0.71
6	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.66
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
9	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61
10	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.59





Luminaire Lumens:

FL=656.29,FM=134.69,FH=1.6,FVH=0.69

BL=671.8,BM=139.75,BH=1.62,BVH=0.69

UL=1.4,UH=6.66

BUG Rating:B2-U1-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	9216.68	9137.79	8954.50	8644.06	8003.23	7229.69	6368.44	5453.37	4529.48
45.0	9624.66	9573.61	9350.88	8970.37	8432.09	8033.02	7262.73	6408.91	5499.40
90.0	9129.44	9129.44	8854.27	8523.88	7845.00	7036.19	6148.03	5208.36	4271.47
135.0	9610.74	9596.81	9397.28	9030.69	8506.34	7819.57	6998.23	6107.28	5188.50
180.0	9216.68	9633.94	9517.93	9220.95	8747.63	8116.55	7364.81	6510.99	5596.85
225.0	9624.66	9091.85	9091.85	8580.02	7909.96	7102.08	6212.06	5282.14	4371.71
270.0	9129.44	9629.30	9527.21	9258.07	8812.60	8223.28	7480.82	6622.36	5689.65
315.0	9610.74	9049.16	9049.16	8517.84	7841.75	7032.01	6146.17	5592.11	4303.49
360.0	9216.68	9137.79	8954.50	8644.06	8003.23	7229.69	6368.44	5453.37	4529.48
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3714.63	3062.20	2549.45	2139.24	1811.17	1553.17	1351.31	1194.93	1071.04
45.0	4575.97	3736.07	3063.22	2543.51	2367.17	2283.65	1540.64	1332.75	1203.75
90.0	3489.58	2877.98	2402.35	2022.30	1715.11	1472.89	1284.95	1137.86	902.59
135.0	4631.66	3796.40	2891.53	2589.91	2413.58	2330.05	1579.15	1367.55	1202.36
180.0	4673.42	3838.16	3160.67	2627.03	2450.70	2450.70	1639.48	1409.78	1232.98
225.0	3575.42	2949.44	2643.64	2073.81	1876.13	1599.11	1304.44	1207.00	1028.34
270.0	4743.03	3889.20	3197.79	2659.51	2311.49	2311.49	1663.14	1430.66	1251.54
315.0	3813.01	3130.42	2602.81	2183.32	1846.44	1572.66	1359.66	1197.72	1071.96
360.0	3714.63	3062.20	2549.45	2139.24	1811.17	1553.17	1351.31	1194.93	1071.04
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	886.30	886.30	847.74	789.69	742.55	702.55	669.18	642.69	620.32
45.0	1050.62	954.10	891.92	824.17	769.88	724.87	685.89	654.80	628.81
90.0	902.59	873.64	809.55	757.30	712.20	674.61	645.33	620.88	601.34
135.0	1071.04	968.48	887.74	820.92	766.17	720.23	687.74	650.16	629.74
180.0	1093.77	986.12	903.52	834.38	777.77	730.44	690.53	658.05	633.45
225.0	909.23	894.15	827.14	773.27	728.72	690.34	660.37	635.59	614.98
270.0	1111.87	1002.82	918.83	848.30	789.83	740.64	699.81	666.40	640.88
315.0	898.28	898.28	830.53	786.35	730.90	693.27	668.30	642.18	620.64
360.0	886.30	886.30	847.74	789.69	742.55	702.55	669.18	642.69	620.32
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	604.08	591.87	579.35	569.04	559.30	550.39	517.44	466.35	406.73
45.0	607.93	592.62	580.55	568.95	558.28	549.00	540.18	511.41	464.54
90.0	586.77	575.03	564.54	554.24	545.33	535.73	499.86	447.61	388.77
135.0	607.00	587.98	578.23	566.63	555.96	547.14	538.33	511.41	464.08
180.0	611.64	595.87	583.80	573.13	562.92	554.10	548.07	529.97	466.40
225.0	600.18	590.58	577.72	569.93	560.92	550.71	520.46	469.46	409.14
270.0	618.60	601.90	589.83	579.16	568.49	559.67	554.57	518.37	490.99
315.0	605.10	592.80	582.04	571.60	561.53	550.95	517.77	467.79	406.17
360.0	604.08	591.87	579.35	569.04	559.30	550.39	517.44	466.35	406.73
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	368.35	275.26	235.08	168.91	85.85	55.13	21.44	11.74	10.35
45.0	405.61	342.50	274.29	260.37	260.37	103.67	52.34	19.44	10.12
90.0	348.49	252.34	184.41	146.82	89.88	42.23	15.08	9.23	8.21
135.0	404.68	340.65	273.83	260.83	233.46	106.31	38.47	13.36	10.07
180.0	432.06	368.95	302.13	248.30	248.30	97.12	47.75	16.80	10.35
225.0	345.01	276.94	207.84	144.96	86.91	40.32	12.58	9.56	8.45
270.0	436.24	374.99	307.70	252.48	252.48	99.77	49.93	16.38	10.67
315.0	341.67	275.50	208.72	144.41	85.80	39.54	13.83	11.42	9.98
360.0	368.35	275.26	235.08	168.91	85.85	55.13	21.44	11.74	10.35

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	8.82	7.29	6.03	4.78	4.50	4.22	3.90	3.67	3.43
45.0	9.10	8.03	6.91	5.99	4.41	3.99	3.76	3.48	3.25
90.0	7.33	6.50	5.15	4.04	3.76	3.57	3.34	3.06	2.88
135.0	9.10	8.07	6.96	5.80	4.41	4.13	3.85	3.53	3.34
180.0	9.42	8.40	7.19	6.59	5.29	4.59	4.32	3.85	3.67
225.0	7.05	5.75	4.83	3.94	3.81	3.53	3.25	3.16	2.97
270.0	9.33	7.66	6.59	4.87	3.76	3.67	3.39	3.25	3.06
315.0	8.82	6.87	5.61	4.41	3.81	3.62	3.43	3.20	2.97
360.0	8.82	7.29	6.03	4.78	4.50	4.22	3.90	3.67	3.43
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.20	2.97	2.83	2.69	2.51	2.41	2.27	2.18	2.09
45.0	3.06	2.88	2.74	2.55	2.46	2.37	2.13	2.04	2.00
90.0	2.74	2.64	2.41	2.37	2.23	2.13	2.09	1.90	1.86
135.0	3.16	2.97	2.74	2.64	2.46	2.32	2.18	2.13	2.04
180.0	3.43	3.29	3.02	2.83	2.69	2.60	2.41	2.27	2.13
225.0	2.74	2.64	2.51	2.37	2.23	2.13	2.09	1.95	1.81
270.0	2.88	2.69	2.55	2.46	2.27	2.18	2.09	2.04	1.95
315.0	2.83	2.69	2.46	2.37	2.27	2.18	2.04	1.90	1.90
360.0	3.20	2.97	2.83	2.69	2.51	2.41	2.27	2.18	2.09
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.95	1.90	1.86	1.76	1.67	1.62	1.62	1.53	1.44
45.0	1.95	1.86	1.72	1.72	1.67	1.58	1.58	1.58	1.53
90.0	1.81	1.76	1.72	1.58	1.53	1.53	1.53	1.44	1.44
135.0	2.00	1.86	1.81	1.76	1.67	1.58	1.62	1.58	1.48
180.0	2.13	2.04	1.86	1.81	1.76	1.72	1.67	1.53	1.58
225.0	1.86	1.76	1.62	1.62	1.62	1.58	1.48	1.48	1.39
270.0	1.81	1.81	1.76	1.62	1.58	1.58	1.53	1.48	1.53
315.0	1.81	1.72	1.67	1.58	1.58	1.48	1.53	1.44	1.44
360.0	1.95	1.90	1.86	1.76	1.67	1.62	1.62	1.53	1.44
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.53	1.48	1.39	1.35	1.39	1.39	1.30	1.30	1.35
45.0	1.44	1.39	1.44	1.39	1.35	1.35	1.35	1.35	1.35
90.0	1.39	1.44	1.35	1.30	1.35	1.35	1.30	1.25	1.30
135.0	1.44	1.48	1.48	1.39	1.39	1.39	1.35	1.25	1.30
180.0	1.48	1.48	1.48	1.44	1.35	1.35	1.39	1.35	1.30
225.0	1.44	1.44	1.39	1.35	1.30	1.35	1.30	1.30	1.25
270.0	1.44	1.39	1.39	1.39	1.35	1.30	1.30	1.35	1.30
315.0	1.44	1.35	1.30	1.35	1.35	1.30	1.25	1.25	1.30
360.0	1.53	1.48	1.39	1.35	1.39	1.39	1.30	1.30	1.35
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.30	1.25	1.30	1.30	1.30	1.30	1.25	1.30	1.39
45.0	1.30	1.30	1.25	1.30	1.25	1.25	1.30	1.25	1.25
90.0	1.30	1.25	1.25	1.21	1.25	1.25	1.21	1.21	1.30
135.0	1.35	1.30	1.30	1.25	1.25	1.30	1.25	1.25	1.35
180.0	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
225.0	1.30	1.25	1.25	1.21	1.25	1.25	1.35	1.35	1.30
270.0	1.25	1.25	1.25	1.25	1.25	1.30	1.25	1.25	1.21
315.0	1.25	1.21	1.25	1.30	1.16	1.21	1.25	1.16	1.21
360.0	1.30	1.25	1.30	1.30	1.30	1.30	1.25	1.30	1.39

Intensity data(cd)

Appendix Page: 19 Total:19

C/ $\gamma(^{\circ})$	90.0
0.0	1.39
45.0	1.25
90.0	1.30
135.0	1.35
180.0	1.21
225.0	1.30
270.0	1.25
315.0	1.21
360.0	1.39