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## Nata

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Client:

LumCAT: LM01D05524BH

Luminaire:

Report No:

Voltage(V): 220.5000

Test No: NATA07

Current(A): 0.0420

LampCAT: PHILIPS SLM 1203 G7 L9

Power (W): 8.4200

Lamp flux(lm): 753.0

PF: 0.8980

Number of Lamps: 1

Ballast type: AC

Length(mm): 55

Width(mm): 55

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 684.82, Efficiency(%): 90.95% , Luminous Efficacy(lm/W): 81.33

Central intensity(cd): 2653.853, Maximum intensity(cd): 2653.853

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

Beam Angle(50%Imax): [C0/180]Total=26.6

[C90/270]Total=26.6

Field angle(10%Imax): [C0/180]Total=45.6

[C90/270]Total=45.6

Maximum s/h(1/2): C0\_180=0.45 C90\_270=0.45

Maximum s/h(1/4): C0\_180=0.44 C90\_270=0.44

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.95%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.338%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2653.854	0.000	0	.000%	.000%
1.0	2646.893	2.536	2.536	.337%	.370%
2.0	2622.531	7.563	10.099	1.004%	1.475%
3.0	2580.130	12.443	22.543	1.652%	3.292%
4.0	2527.637	17.097	39.64	2.271%	5.788%
5.0	2458.206	21.449	61.089	2.848%	8.920%
6.0	2368.647	25.366	86.455	3.369%	12.624%
7.0	2261.455	28.739	115.194	3.817%	16.821%
8.0	2146.143	31.544	146.738	4.189%	21.427%
9.0	2014.126	33.717	180.455	4.478%	26.351%
10.0	1870.507	35.155	215.61	4.669%	31.484%
11.0	1716.970	35.846	251.456	4.760%	36.718%
12.0	1557.517	35.795	287.251	4.754%	41.945%
13.0	1397.541	35.069	322.32	4.657%	47.066%
14.0	1187.960	33.094	355.414	4.395%	51.899%
15.0	1029.035	30.436	385.85	4.042%	56.343%
16.0	932.922	28.748	414.598	3.818%	60.541%
17.0	813.219	27.192	441.79	3.611%	64.511%
18.0	699.304	24.938	466.728	3.312%	68.153%
19.0	589.346	22.420	489.148	2.977%	71.427%
20.0	480.710	19.585	508.733	2.601%	74.287%
21.0	401.331	16.937	525.67	2.249%	76.760%
22.0	322.753	14.551	540.221	1.932%	78.885%
23.0	254.766	12.118	552.339	1.609%	80.654%
24.0	221.930	10.422	562.761	1.384%	82.176%
25.0	167.794	8.861	571.623	1.177%	83.470%
26.0	129.407	7.015	578.638	.932%	84.494%
27.0	103.688	5.703	584.341	.757%	85.327%
28.0	81.397	4.686	589.027	.622%	86.011%
29.0	68.016	3.909	592.936	.519%	86.582%
30.0	58.538	3.417	596.353	.454%	87.081%
31.0	51.618	3.065	599.418	.407%	87.529%
32.0	46.751	2.818	602.236	.374%	87.940%
33.0	42.853	2.640	604.876	.351%	88.326%
34.0	39.559	2.494	607.37	.331%	88.690%
35.0	37.308	2.387	609.757	.317%	89.039%
36.0	35.557	2.320	612.077	.308%	89.377%
37.0	34.559	2.287	614.364	.304%	89.711%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	33.845	2.283	616.647	.303%	90.045%
39.0	33.347	2.293	618.941	.305%	90.380%
40.0	33.074	2.317	621.257	.308%	90.718%
41.0	32.813	2.346	623.604	.312%	91.060%
42.0	32.320	2.366	625.97	.314%	91.406%
43.0	31.682	2.371	628.341	.315%	91.752%
44.0	30.887	2.362	630.702	.314%	92.097%
45.0	29.797	2.332	633.035	.310%	92.437%
46.0	28.660	2.286	635.321	.304%	92.771%
47.0	27.384	2.229	637.55	.296%	93.097%
48.0	26.026	2.159	639.709	.287%	93.412%
49.0	24.692	2.083	641.792	.277%	93.716%
50.0	23.347	2.003	643.794	.266%	94.009%
51.0	22.013	1.919	645.714	.255%	94.289%
52.0	20.806	1.837	647.551	.244%	94.557%
53.0	19.663	1.760	649.311	.234%	94.814%
54.0	18.498	1.682	650.993	.223%	95.060%
55.0	17.488	1.606	652.6	.213%	95.294%
56.0	16.549	1.538	654.138	.204%	95.519%
57.0	15.806	1.479	655.617	.196%	95.735%
58.0	15.209	1.434	657.051	.190%	95.944%
59.0	14.489	1.388	658.44	.184%	96.147%
60.0	13.225	1.309	659.749	.174%	96.338%
61.0	12.256	1.216	660.965	.161%	96.516%
62.0	11.380	1.139	662.104	.151%	96.682%
63.0	10.684	1.073	663.177	.143%	96.839%
64.0	10.087	1.019	664.196	.135%	96.988%
65.0	9.501	0.969	665.166	.129%	97.129%
66.0	8.991	0.923	666.088	.123%	97.264%
67.0	8.544	0.882	666.97	.117%	97.393%
68.0	8.132	0.845	667.815	.112%	97.516%
69.0	7.744	0.810	668.625	.108%	97.634%
70.0	7.436	0.780	669.404	.104%	97.748%
71.0	7.187	0.756	670.16	.100%	97.859%
72.0	6.931	0.734	670.894	.097%	97.966%
73.0	6.705	0.713	671.607	.095%	98.070%
74.0	6.485	0.693	672.301	.092%	98.171%
75.0	6.311	0.676	672.977	.090%	98.270%

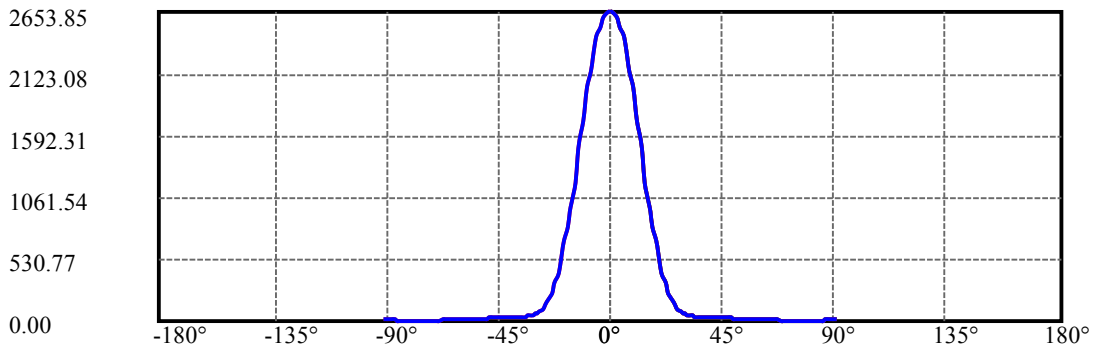
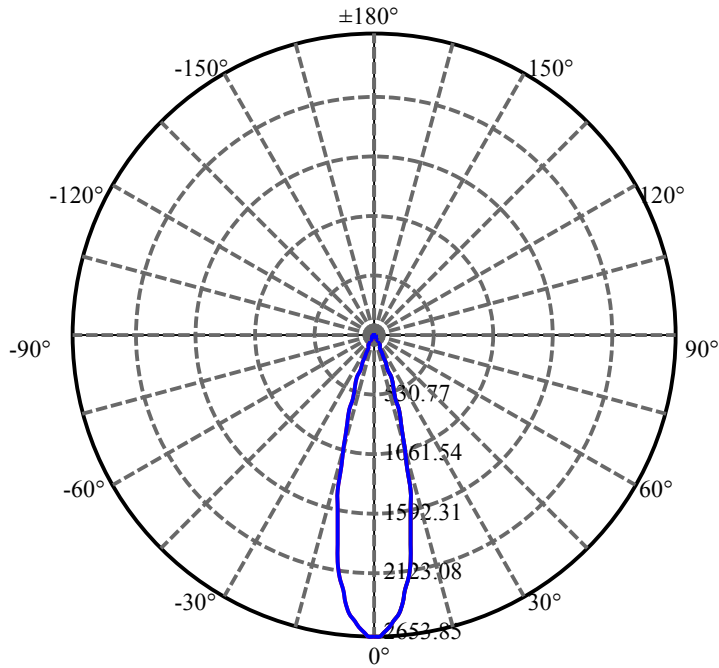
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	6.230	0.666	673.643	.088%	98.367%
77.0	6.114	0.658	674.301	.087%	98.463%
78.0	6.085	0.653	674.954	.087%	98.559%
79.0	6.003	0.649	675.603	.086%	98.653%
80.0	5.986	0.646	676.249	.086%	98.748%
81.0	6.061	0.652	676.901	.087%	98.843%
82.0	6.404	0.676	677.577	.090%	98.942%
83.0	6.972	0.727	678.304	.097%	99.048%
84.0	7.564	0.792	679.096	.105%	99.164%
85.0	8.150	0.858	679.954	.114%	99.289%
86.0	8.625	0.917	680.87	.122%	99.423%
87.0	8.921	0.960	681.831	.128%	99.563%
88.0	9.043	0.984	682.815	.131%	99.707%
89.0	9.165	0.998	683.813	.133%	99.852%
90.0	9.286	1.012	684.824	.134%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	596.35	79.20%	87.08%
0-40	621.26	82.50%	90.72%
0-60	659.75	87.62%	96.34%
0-90	683.81	90.81%	99.85%
0-120	683.81	90.81%	99.85%
0-180	684.82	90.95%	100.00%
60-90	25.37	3.37%	3.71%
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%
0-22.63	547.86	72.76%	80.00%

ZONAL LUMEN SUMMARY

0-10	215.61
10-20	293.12
20-30	87.62
30-40	24.90
40-50	22.54
50-60	15.95
60-70	9.66
70-80	6.85
80-90	7.56
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: ———

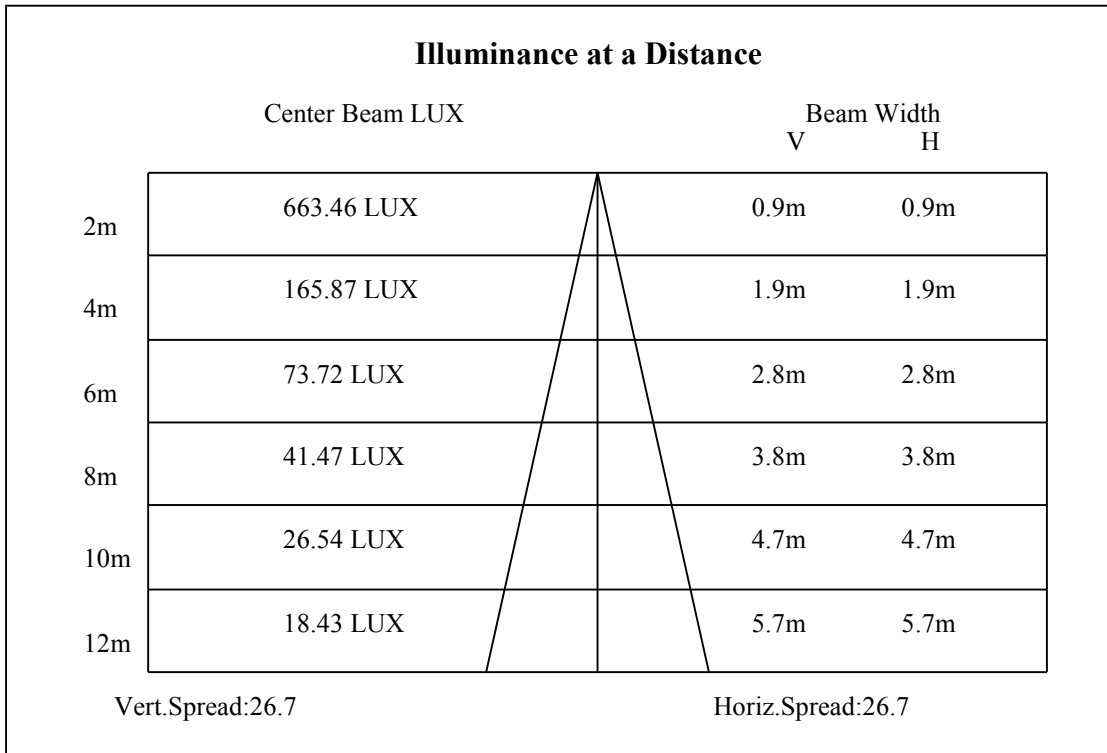
C90/C270: ———

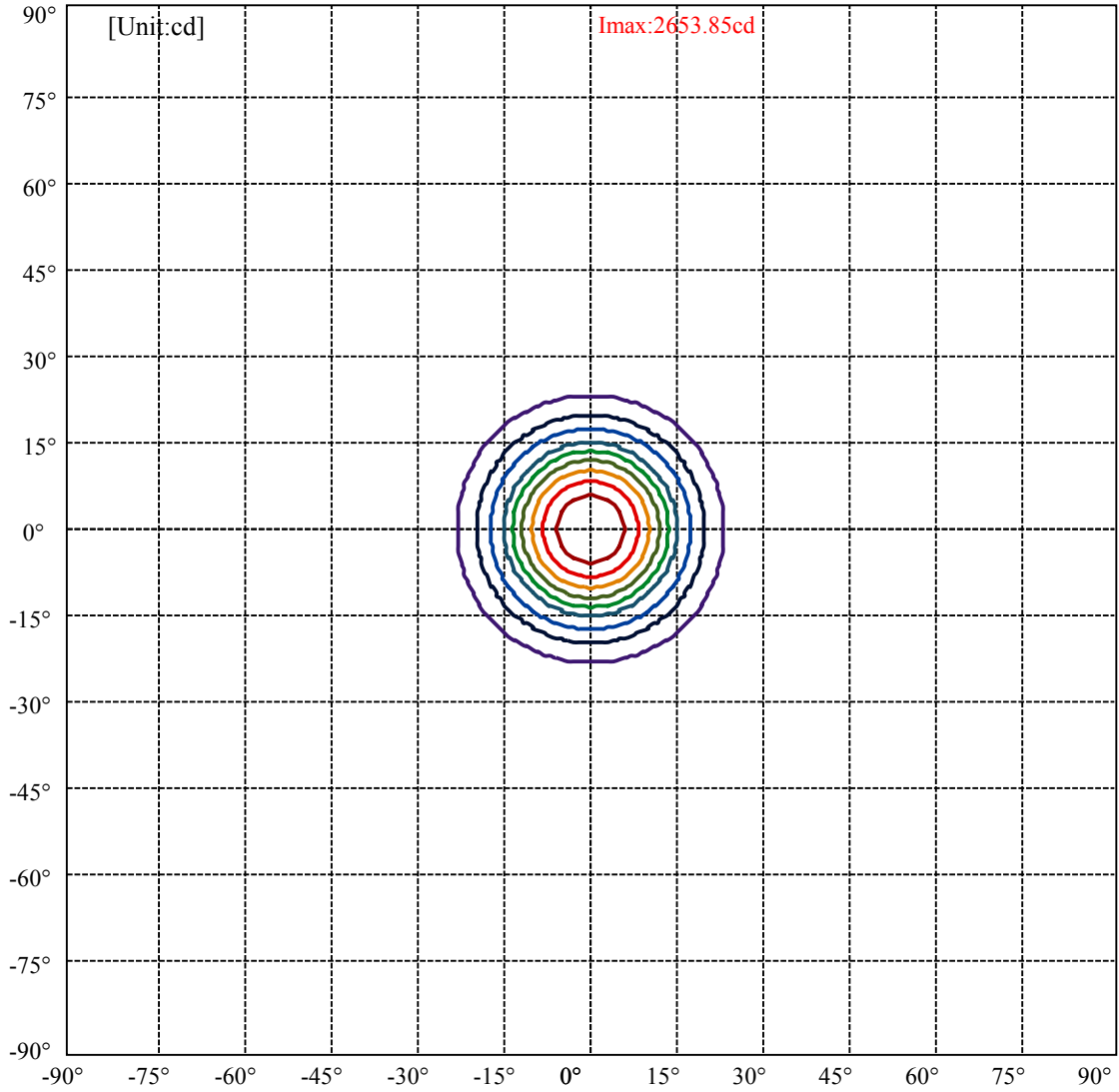
Field angle(10%Imax):C0/180Left:22.8 Right:22.8

:C90/270Left:22.8 Right:22.8

Beam Angle(50%Imax):C0/180Left:13.3 Right:13.3

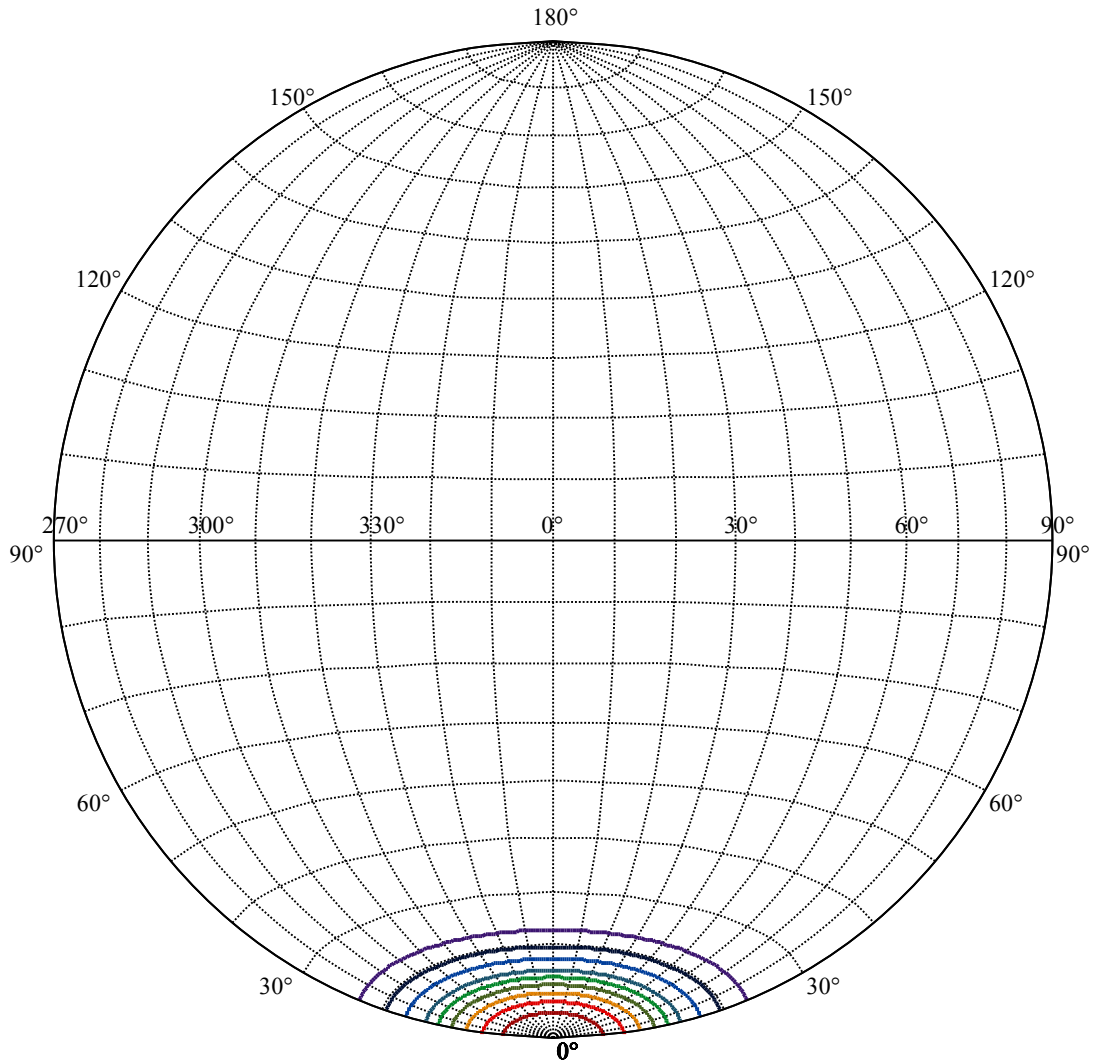
:C90/270Left:13.3 Right:13.3





(10%Imax) 265.385	—
(20%Imax) 530.771	—
(30%Imax) 796.156	—
(40%Imax) 1061.54	—
(50%Imax) 1326.93	—
(60%Imax) 1592.31	—
(70%Imax) 1857.7	—
(80%Imax) 2123.08	—
(90%Imax) 2388.47	—





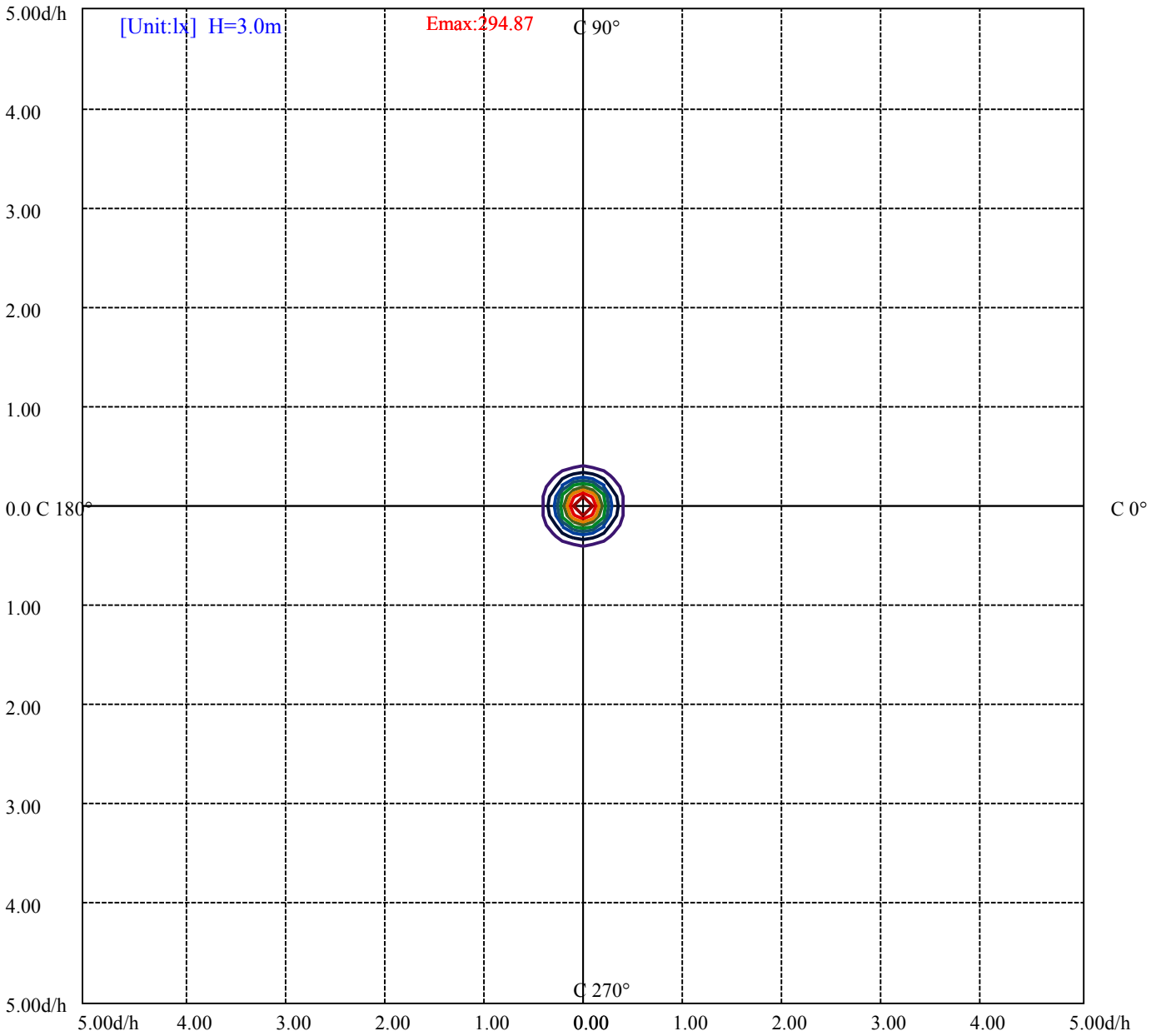
House

[Unit:cd]

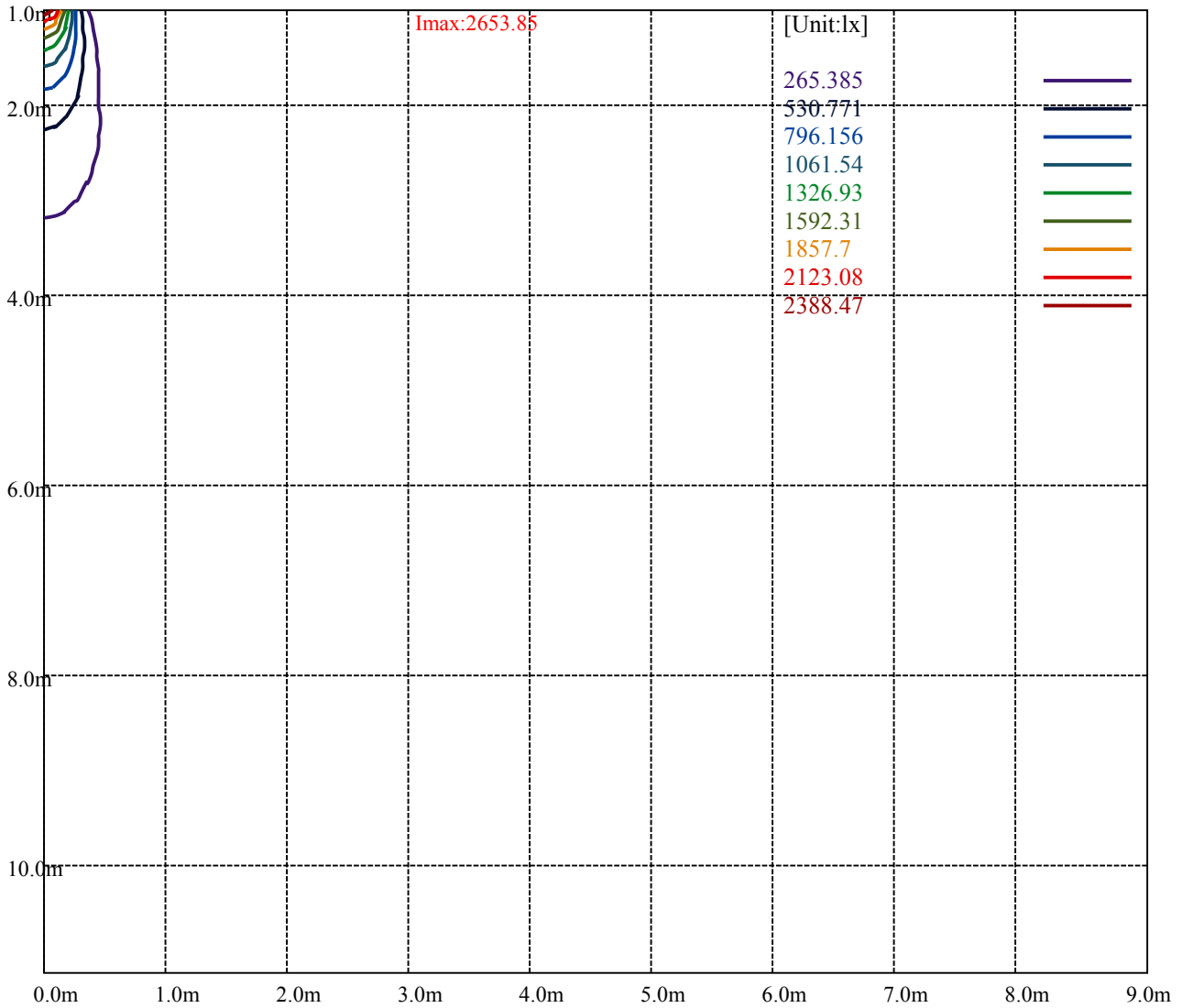
Road

**Imax:2653.85**

(10%Imax) 265.385	—
(20%Imax) 530.771	—
(30%Imax) 796.156	—
(40%Imax) 1061.54	—
(50%Imax) 1326.93	—
(60%Imax) 1592.31	—
(70%Imax) 1857.7	—
(80%Imax) 2123.08	—
(90%Imax) 2388.47	—



(10%Emax) 29.48722	—
(20%Emax) 58.97445	—
(30%Emax) 88.46178	—
(40%Emax) 117.9489	—
(50%Emax) 147.4367	—
(60%Emax) 176.9233	—
(70%Emax) 206.4111	—
(80%Emax) 235.8978	—
(90%Emax) 265.3856	—



Luminance Table

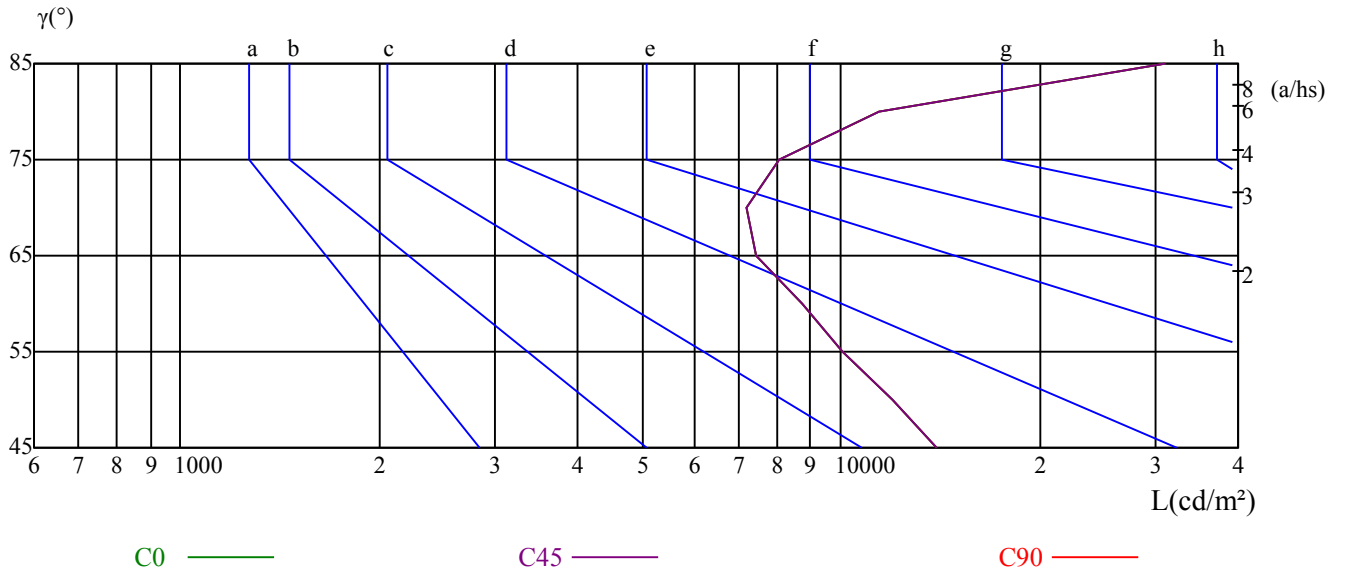
$\gamma$	45	50	55	60	65	70	75	80	85
C0	13930	12007	10079	8744	7432	7187	8061	11396	30911
C45	13930	12007	10079	8744	7432	7187	8061	11396	30911
C90	13930	12007	10079	8744	7432	7187	8061	11396	30911

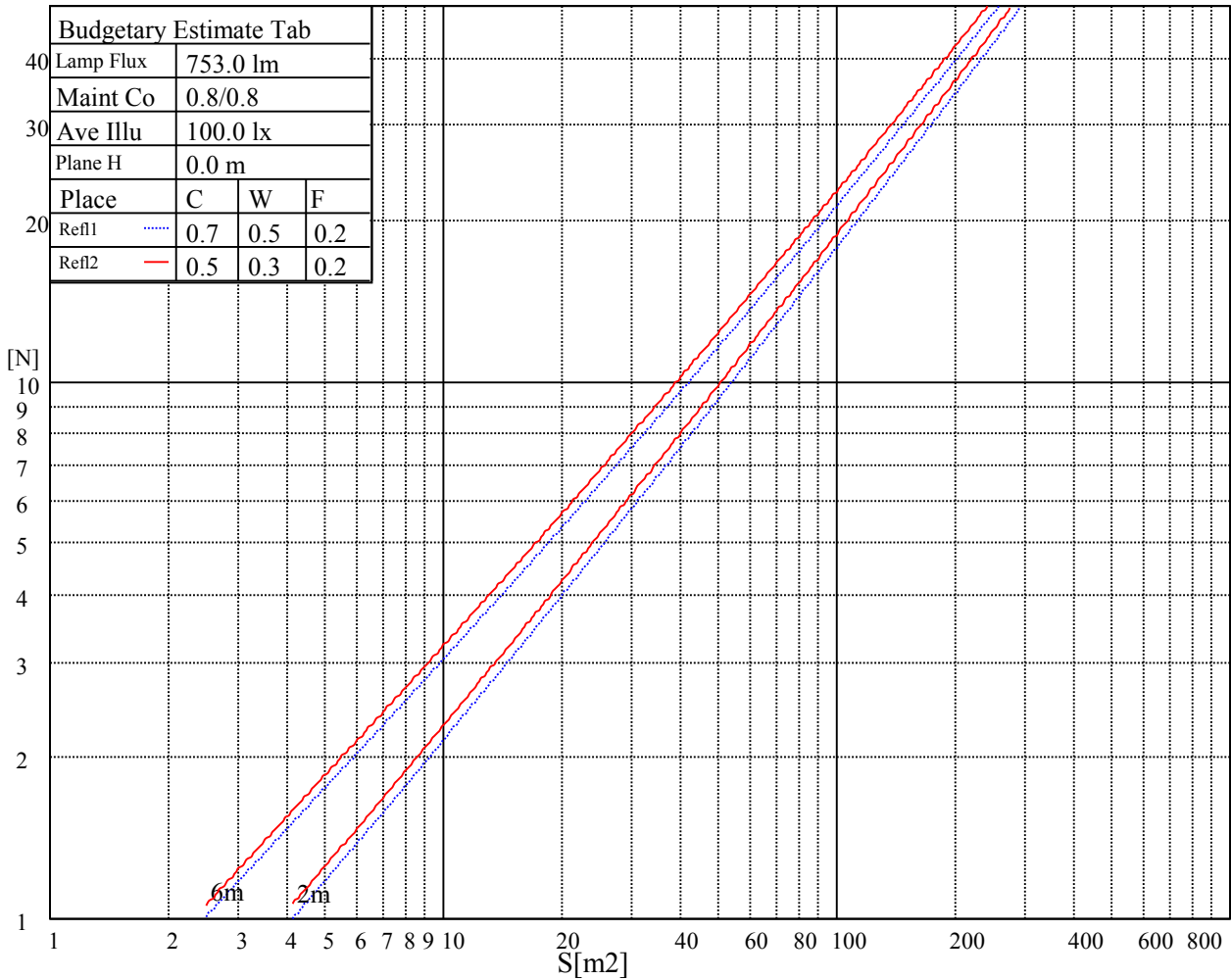
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7432	7432	7432	8061	8061	8061	30911	30911	30911

Glare Table

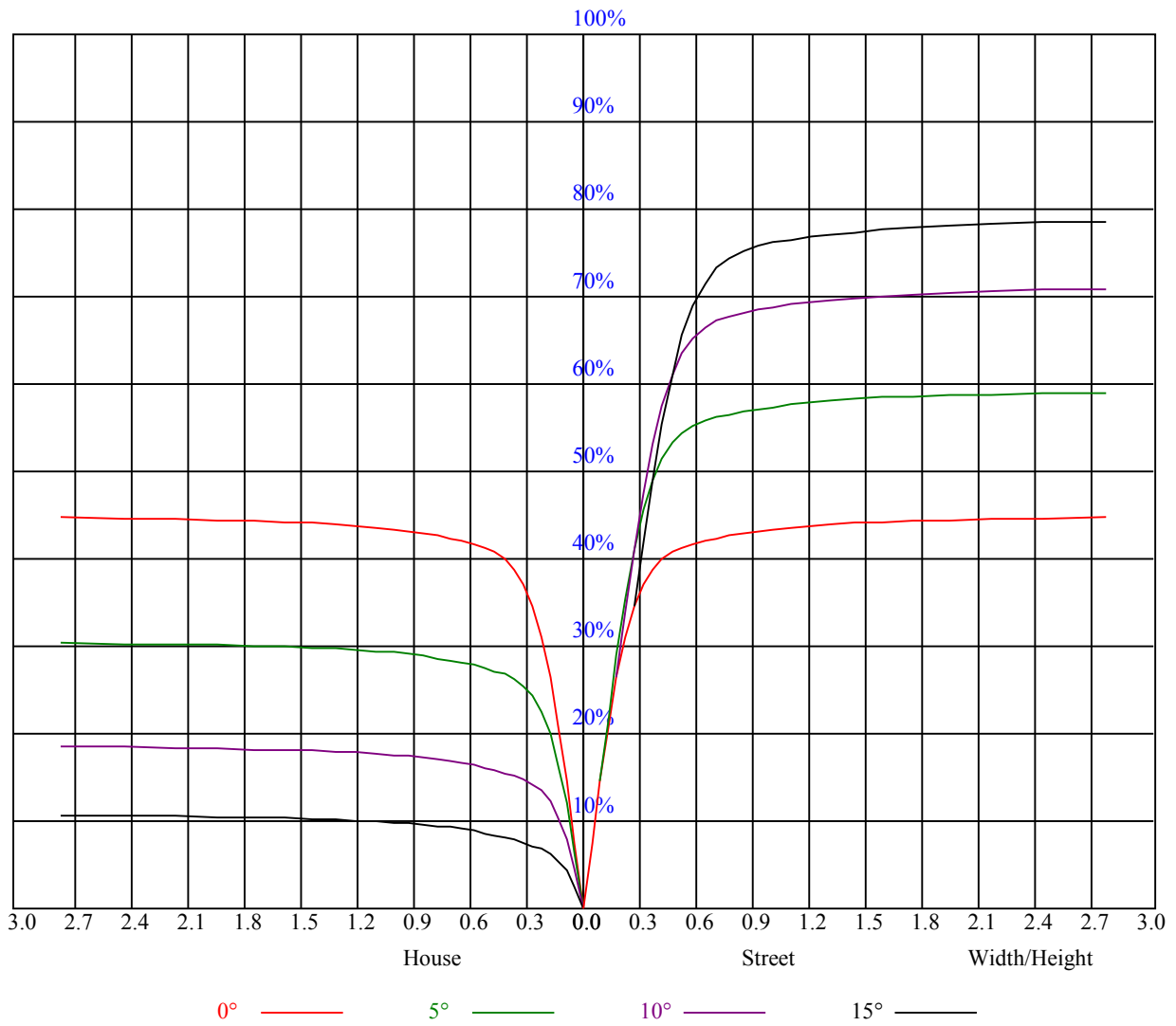
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

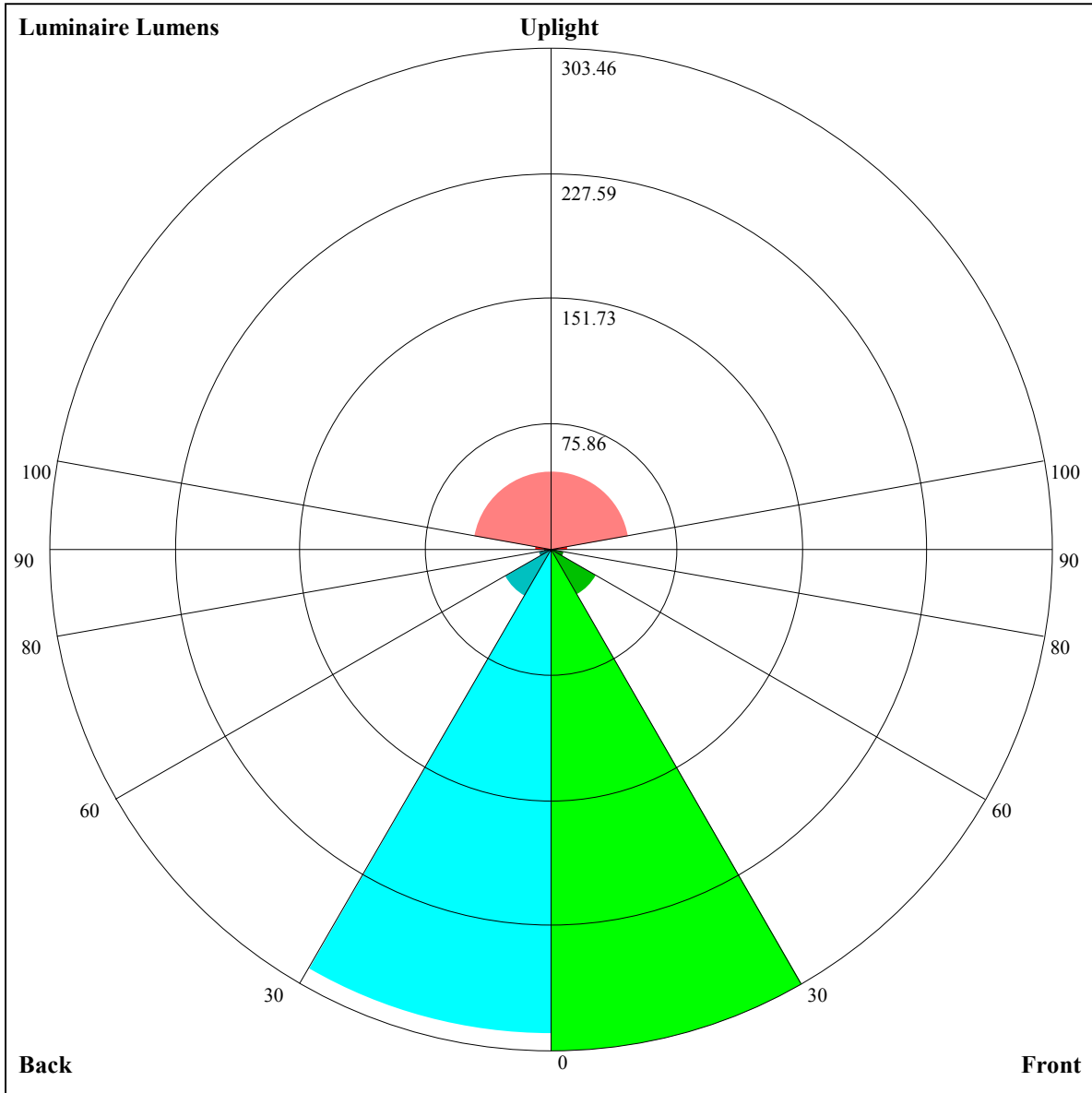
Luminance Limiting Curve





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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
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	0.96	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.87	0.85	0.86	0.84	0.83	0.82
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.79	0.78
4	0.87	0.82	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
5	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
6	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.68	0.67
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
9	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	0.67	0.64	0.63
10	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62





Luminaire Lumens:

FL=303.46,FM=31.65,FH=8.17,FVH=4.26

BL=292.89,BM=32.19,BH=8.31,BVH=4.36

UL=10.13,UH=48.22

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	2661.28	2649.21	2622.76	2581.00	2528.56	2463.60	2377.75	2272.42	2157.34
45.0	2655.71	2655.25	2647.82	2616.73	2579.61	2545.73	2475.66	2392.14	2291.44
90.0	2645.97	2630.19	2590.75	2535.53	2481.23	2395.85	2297.94	2178.68	2039.01
135.0	2652.46	2644.57	2626.48	2593.99	2543.41	2477.98	2392.60	2290.98	2172.19
180.0	2661.28	2656.17	2628.33	2583.78	2527.17	2469.63	2382.39	2256.64	2161.05
225.0	2655.71	2637.15	2593.99	2534.13	2452.46	2358.73	2252.00	2131.82	2006.06
270.0	2645.97	2658.03	2658.03	2638.08	2592.14	2519.28	2426.01	2324.39	2212.09
315.0	2652.46	2644.57	2612.09	2557.80	2516.50	2434.83	2344.81	2244.58	2129.96
360.0	2661.28	2649.21	2622.76	2581.00	2528.56	2463.60	2377.75	2272.42	2157.34
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2025.55	1880.31	1727.18	1561.52	1396.79	1227.88	866.07	866.07	838.93
45.0	2172.65	2035.76	1878.45	1713.72	1539.25	1365.70	1195.40	1037.16	889.13
90.0	1886.81	1719.29	1542.49	1368.48	1212.57	862.55	862.55	780.46	654.98
135.0	2036.23	1887.73	1727.64	1559.66	1393.07	1239.94	1092.38	972.66	805.14
180.0	2031.58	1887.27	1730.89	1572.66	1404.68	1238.09	1079.39	935.07	800.97
225.0	1869.64	1722.07	1569.87	1414.88	1259.90	901.71	848.72	848.72	722.31
270.0	2090.52	1963.37	1836.23	1691.45	1548.06	1398.64	1242.73	1145.74	941.11
315.0	2000.03	1868.25	1723.00	1577.76	1426.02	1269.18	1045.05	877.49	853.17
360.0	2025.55	1880.31	1727.18	1561.52	1396.79	1227.88	866.07	866.07	838.93
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	713.41	596.24	488.44	393.31	312.39	242.88	186.03	142.37	109.42
45.0	750.85	623.24	508.63	411.18	326.26	253.87	253.87	188.49	118.89
90.0	585.29	439.58	349.23	301.71	235.13	182.41	141.02	109.74	87.70
135.0	702.59	587.51	482.18	385.66	302.60	236.70	236.70	139.95	108.86
180.0	676.14	560.13	458.98	370.81	296.10	232.53	232.53	184.27	121.16
225.0	612.15	510.67	418.42	337.68	271.18	216.66	172.34	136.98	110.02
270.0	819.53	753.17	613.50	555.96	466.40	388.91	318.37	255.73	233.92
315.0	734.47	644.22	526.31	454.34	371.97	284.17	234.57	184.82	145.29
360.0	713.41	596.24	488.44	393.31	312.39	242.88	186.03	142.37	109.42
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	86.31	70.90	60.56	53.09	47.66	43.71	40.51	38.33	36.33
45.0	93.46	76.29	65.06	57.31	51.93	47.80	44.59	41.62	39.16
90.0	73.22	62.60	55.45	50.58	46.82	43.76	41.86	40.00	38.42
135.0	87.56	73.27	63.02	55.68	50.30	46.17	44.08	40.32	39.07
180.0	96.15	77.77	64.69	55.27	48.40	43.62	40.05	37.31	35.45
225.0	89.51	74.34	62.32	53.41	46.96	44.04	38.56	36.66	34.34
270.0	189.84	126.22	99.67	80.42	67.24	58.05	51.04	43.67	39.91
315.0	113.46	89.79	73.36	62.55	53.64	46.87	42.13	38.56	35.78
360.0	86.31	70.90	60.56	53.09	47.66	43.71	40.51	38.33	36.33
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	35.13	34.38	33.87	33.46	33.04	32.71	32.06	31.14	30.12
45.0	37.49	36.33	35.78	34.90	34.43	34.11	33.27	32.67	31.51
90.0	37.45	36.98	36.52	35.92	35.31	34.48	33.41	31.83	30.35
135.0	37.35	36.47	36.06	35.87	35.73	35.45	34.99	34.20	33.04
180.0	34.29	33.87	33.69	33.64	33.83	33.97	33.74	33.36	32.81
225.0	32.53	32.20	31.74	31.55	31.46	31.37	31.18	30.72	30.16
270.0	36.43	34.01	31.97	30.95	30.44	30.21	30.12	29.98	29.88
315.0	33.78	32.20	31.14	30.49	30.35	30.21	29.79	29.56	29.23
360.0	35.13	34.38	33.87	33.46	33.04	32.71	32.06	31.14	30.12

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	28.68	27.29	25.85	24.41	23.11	21.76	20.42	19.30	18.24
45.0	29.93	28.31	26.82	25.29	23.76	22.37	20.97	19.72	18.47
90.0	28.91	27.47	25.89	24.22	22.69	21.39	20.14	18.84	17.68
135.0	31.74	30.25	28.54	26.82	25.38	23.90	22.37	21.30	19.77
180.0	31.55	30.53	29.19	27.80	26.50	25.06	23.62	22.37	21.16
225.0	29.37	28.49	27.42	26.22	24.96	23.62	22.32	21.02	20.37
270.0	29.47	28.91	28.31	27.52	26.54	25.38	24.18	23.02	21.86
315.0	28.72	28.03	27.05	25.94	24.59	23.29	22.09	20.88	19.77
360.0	28.68	27.29	25.85	24.41	23.11	21.76	20.42	19.30	18.24
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	17.22	16.24	15.68	14.76	13.97	13.22	12.30	11.88	11.23
45.0	17.40	16.43	15.50	14.62	13.92	13.22	12.34	11.65	11.00
90.0	16.71	15.68	14.66	13.74	12.95	12.16	11.32	10.63	10.02
135.0	18.79	17.73	16.71	15.78	14.66	13.83	12.90	12.06	11.37
180.0	19.86	18.70	17.63	16.57	15.45	14.52	13.78	12.95	12.11
225.0	18.70	17.59	17.03	16.01	15.13	14.15	13.27	12.39	11.51
270.0	20.65	19.91	18.38	17.87	18.10	19.81	16.66	13.97	12.48
315.0	18.65	17.63	16.80	17.12	17.49	14.99	13.22	12.53	11.32
360.0	17.22	16.24	15.68	14.76	13.97	13.22	12.30	11.88	11.23
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.63	10.02	9.51	9.10	8.68	8.21	7.89	7.61	7.38
45.0	10.49	9.88	9.51	9.00	8.58	8.21	7.89	7.52	7.29
90.0	9.42	9.14	8.45	8.17	7.80	7.56	7.29	7.05	6.87
135.0	10.67	10.02	9.37	8.82	8.40	7.98	7.61	7.33	7.15
180.0	11.37	10.72	10.12	9.74	9.19	8.72	8.26	8.12	7.84
225.0	10.72	10.07	9.61	9.05	8.49	8.07	7.70	7.38	7.05
270.0	11.55	10.63	9.93	9.28	8.72	8.26	7.70	7.24	6.91
315.0	10.63	10.21	9.51	8.77	8.49	8.03	7.61	7.24	7.01
360.0	10.63	10.02	9.51	9.10	8.68	8.21	7.89	7.61	7.38
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.05	6.82	6.68	6.45	6.36	6.17	6.22	6.03	5.99
45.0	7.05	6.82	6.54	6.36	6.26	6.22	6.31	6.17	6.08
90.0	6.68	6.40	6.22	6.26	6.77	6.50	6.22	6.40	6.73
135.0	6.91	6.73	6.36	6.17	6.13	6.31	6.45	6.13	5.99
180.0	7.56	7.42	7.19	6.91	6.73	6.64	6.59	6.50	6.40
225.0	6.82	6.64	6.45	6.31	5.99	5.89	5.80	5.80	5.71
270.0	6.64	6.36	6.17	5.99	5.80	5.57	5.52	5.34	5.52
315.0	6.73	6.45	6.26	6.03	5.80	5.61	5.57	5.66	5.48
360.0	7.05	6.82	6.68	6.45	6.36	6.17	6.22	6.03	5.99
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.99	6.40	7.01	7.56	7.84	8.31	8.68	8.86	8.86
45.0	6.13	6.54	7.33	7.93	8.68	9.23	9.56	9.61	9.70
90.0	7.52	8.35	9.23	9.93	10.49	10.63	10.53	10.44	10.86
135.0	6.13	6.96	7.70	8.49	9.10	9.47	9.74	9.74	10.02
180.0	6.36	6.54	7.24	7.80	8.40	9.10	9.47	9.65	9.47
225.0	5.61	5.80	6.13	6.82	7.33	7.84	8.17	8.26	8.17
270.0	5.48	5.29	5.24	5.52	6.22	6.82	7.19	7.42	7.84
315.0	5.29	5.34	5.89	6.45	7.15	7.61	8.03	8.35	8.40
360.0	5.99	6.40	7.01	7.56	7.84	8.31	8.68	8.86	8.86

Intensity data(cd)

C/ $\gamma$ (°)	90.0
0.0	9.00
45.0	9.88
90.0	10.90
135.0	10.44
180.0	9.65
225.0	8.17
270.0	7.84
315.0	8.40
360.0	9.00