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Nata

Client:

LumCAT: 1549-E

Luminaire: 92.76.330.00

Report No:

Voltage(V): 220.5000

Test No: NATA07

Current(A): 0.0420

LampCAT: PHILIPS SLM 1203 G7 L9

Power (W): 8.3800

Lamp flux(lm): 696.0

PF: 0.8970

Number of Lamps: 1

Ballast type: AC

Length(mm): 48

Width(mm): 48

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 609.89, Efficiency(%): 87.63% , Luminous Efficacy(lm/W): 72.78

Central intensity(cd): 3363.708, Maximum intensity(cd): 3363.708

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=14.0

[C90/270]Total=14.0

Field angle(10%Imax): [C0/180]Total=35.4

[C90/270]Total=35.4

Maximum s/h(1/2): C0_180=0.24 C90_270=0.24

Maximum s/h(1/4): C0_180=0.25 C90_270=0.25

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.63%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.766%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3363.709	0.000	0	.000%	.000%
1.0	3324.788	3.200	3.2	.460%	.525%
2.0	3213.304	9.384	12.584	1.348%	2.063%
3.0	3028.213	14.928	27.512	2.145%	4.511%
4.0	2773.980	19.422	46.934	2.790%	7.695%
5.0	2498.866	22.684	69.617	3.259%	11.415%
6.0	2127.524	24.313	93.93	3.493%	15.401%
7.0	1685.758	23.669	117.599	3.401%	19.282%
8.0	1382.640	21.960	139.559	3.155%	22.883%
9.0	1080.484	19.962	159.521	2.868%	26.156%
10.0	886.722	17.802	177.324	2.558%	29.075%
11.0	733.898	16.193	193.517	2.327%	31.730%
12.0	606.347	14.651	208.168	2.105%	34.132%
13.0	521.284	13.382	221.55	1.923%	36.326%
14.0	459.231	12.550	234.101	1.803%	38.384%
15.0	414.480	11.995	246.095	1.723%	40.351%
16.0	380.101	11.643	257.738	1.673%	42.260%
17.0	352.433	11.408	269.146	1.639%	44.130%
18.0	329.499	11.244	280.389	1.615%	45.974%
19.0	311.076	11.145	291.534	1.601%	47.801%
20.0	296.564	11.122	302.656	1.598%	49.625%
21.0	285.514	11.177	313.833	1.606%	51.457%
22.0	276.860	11.301	325.134	1.624%	53.310%
23.0	269.922	11.473	336.607	1.648%	55.192%
24.0	263.826	11.670	348.276	1.677%	57.105%
25.0	258.733	11.882	360.158	1.707%	59.053%
26.0	254.000	12.103	372.261	1.739%	61.038%
27.0	249.186	12.311	384.572	1.769%	63.056%
28.0	244.847	12.508	397.08	1.797%	65.107%
29.0	241.843	12.733	409.813	1.829%	67.195%
30.0	237.208	12.934	422.747	1.858%	69.316%
31.0	234.035	13.114	435.861	1.884%	71.466%
32.0	231.228	13.329	449.19	1.915%	73.651%
33.0	228.357	13.540	462.73	1.945%	75.871%
34.0	225.346	13.730	476.46	1.973%	78.123%
35.0	221.605	13.881	490.341	1.994%	80.399%
36.0	216.628	13.953	504.294	2.005%	82.686%
37.0	208.102	13.852	518.147	1.990%	84.958%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	194.152	13.427	531.573	1.929%	87.159%
39.0	175.376	12.613	544.186	1.812%	89.227%
40.0	153.549	11.472	555.658	1.648%	91.108%
41.0	130.823	10.126	565.784	1.455%	92.769%
42.0	107.134	8.645	574.43	1.242%	94.186%
43.0	82.900	7.039	581.469	1.011%	95.340%
44.0	61.577	5.453	586.922	.783%	96.234%
45.0	41.090	3.946	590.868	.567%	96.881%
46.0	27.390	2.678	593.546	.385%	97.321%
47.0	17.593	1.789	595.335	.257%	97.614%
48.0	12.877	1.232	596.567	.177%	97.816%
49.0	10.783	0.972	597.538	.140%	97.975%
50.0	9.826	0.859	598.398	.123%	98.116%
51.0	8.857	0.790	599.188	.114%	98.246%
52.0	7.622	0.707	599.895	.102%	98.362%
53.0	6.305	0.606	600.501	.087%	98.461%
54.0	4.327	0.469	600.97	.067%	98.538%
55.0	3.208	0.336	601.306	.048%	98.593%
56.0	2.291	0.248	601.554	.036%	98.634%
57.0	2.216	0.206	601.76	.030%	98.667%
58.0	2.181	0.203	601.964	.029%	98.701%
59.0	2.129	0.201	602.165	.029%	98.734%
60.0	2.053	0.198	602.363	.028%	98.766%
61.0	2.001	0.193	602.556	.028%	98.798%
62.0	2.001	0.193	602.749	.028%	98.830%
63.0	1.984	0.194	602.943	.028%	98.861%
64.0	1.908	0.191	603.134	.027%	98.893%
65.0	1.897	0.188	603.322	.027%	98.924%
66.0	1.891	0.189	603.511	.027%	98.954%
67.0	1.879	0.190	603.701	.027%	98.986%
68.0	1.862	0.190	603.89	.027%	99.017%
69.0	1.990	0.196	604.087	.028%	99.049%
70.0	2.413	0.226	604.313	.032%	99.086%
71.0	2.999	0.280	604.593	.040%	99.132%
72.0	3.840	0.356	604.948	.051%	99.190%
73.0	4.611	0.442	605.39	.063%	99.263%
74.0	5.006	0.506	605.896	.073%	99.345%
75.0	4.739	0.515	606.411	.074%	99.430%

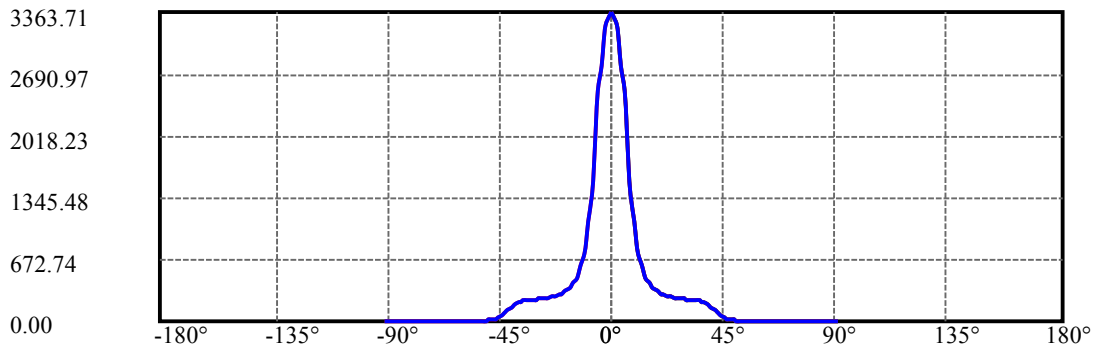
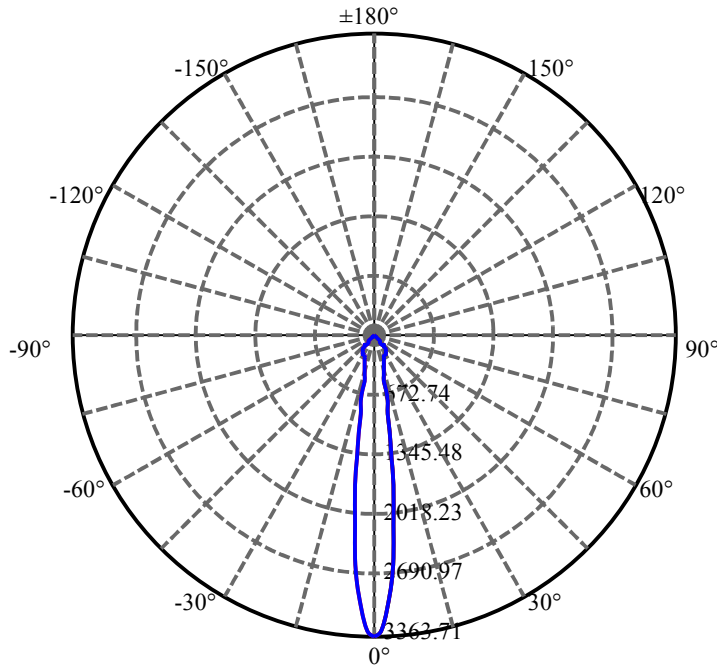
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.229	0.476	606.887	.068%	99.508%
77.0	3.469	0.410	607.297	.059%	99.575%
78.0	2.662	0.328	607.625	.047%	99.629%
79.0	2.117	0.257	607.882	.037%	99.671%
80.0	1.682	0.205	608.087	.029%	99.705%
81.0	1.589	0.177	608.264	.025%	99.734%
82.0	1.566	0.171	608.435	.025%	99.762%
83.0	1.578	0.171	608.606	.025%	99.790%
84.0	1.572	0.172	608.777	.025%	99.818%
85.0	1.584	0.172	608.95	.025%	99.846%
86.0	1.624	0.175	609.125	.025%	99.875%
87.0	1.694	0.182	609.307	.026%	99.905%
88.0	1.752	0.189	609.495	.027%	99.936%
89.0	1.798	0.195	609.69	.028%	99.968%
90.0	1.810	0.198	609.888	.028%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	422.75	60.74%	69.32%
0-40	555.66	79.84%	91.11%
0-60	602.36	86.55%	98.77%
0-90	609.69	87.60%	99.97%
0-120	609.69	87.60%	99.97%
0-180	609.89	87.63%	100.00%
60-90	7.52	1.08%	1.23%
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%
0-34.82	487.91	70.10%	80.00%

ZONAL LUMEN SUMMARY

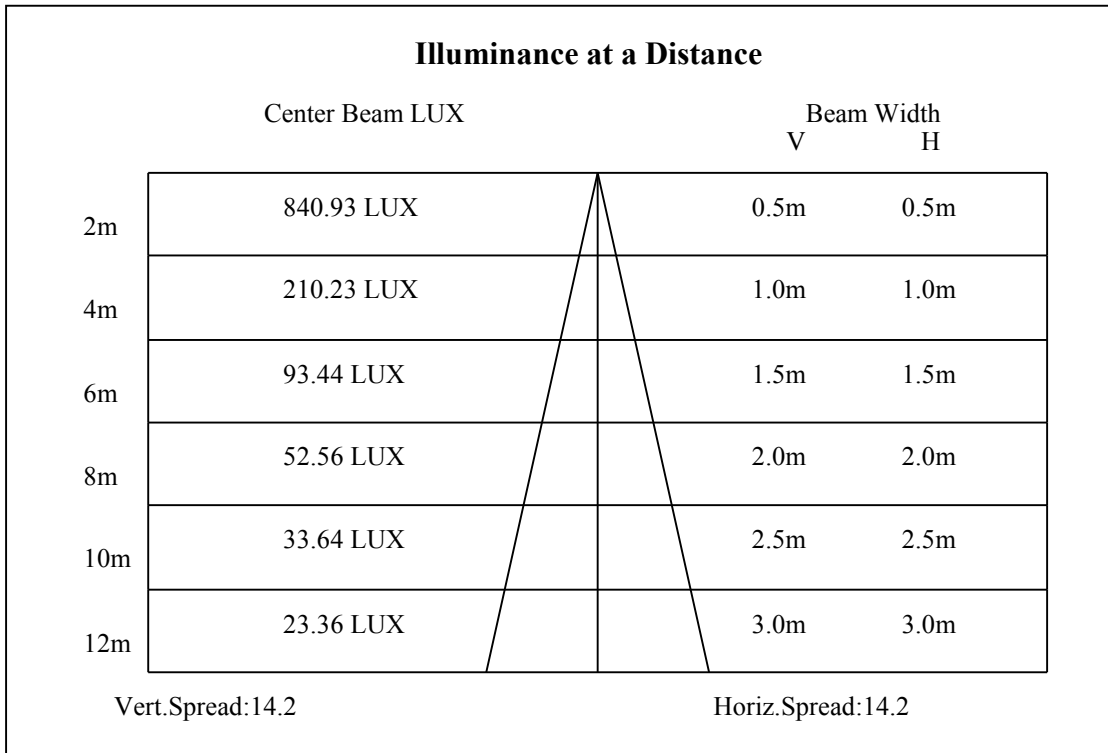
0-10	177.32
10-20	125.33
20-30	120.09
30-40	132.91
40-50	42.74
50-60	3.97
60-70	1.95
70-80	3.77
80-90	1.60
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

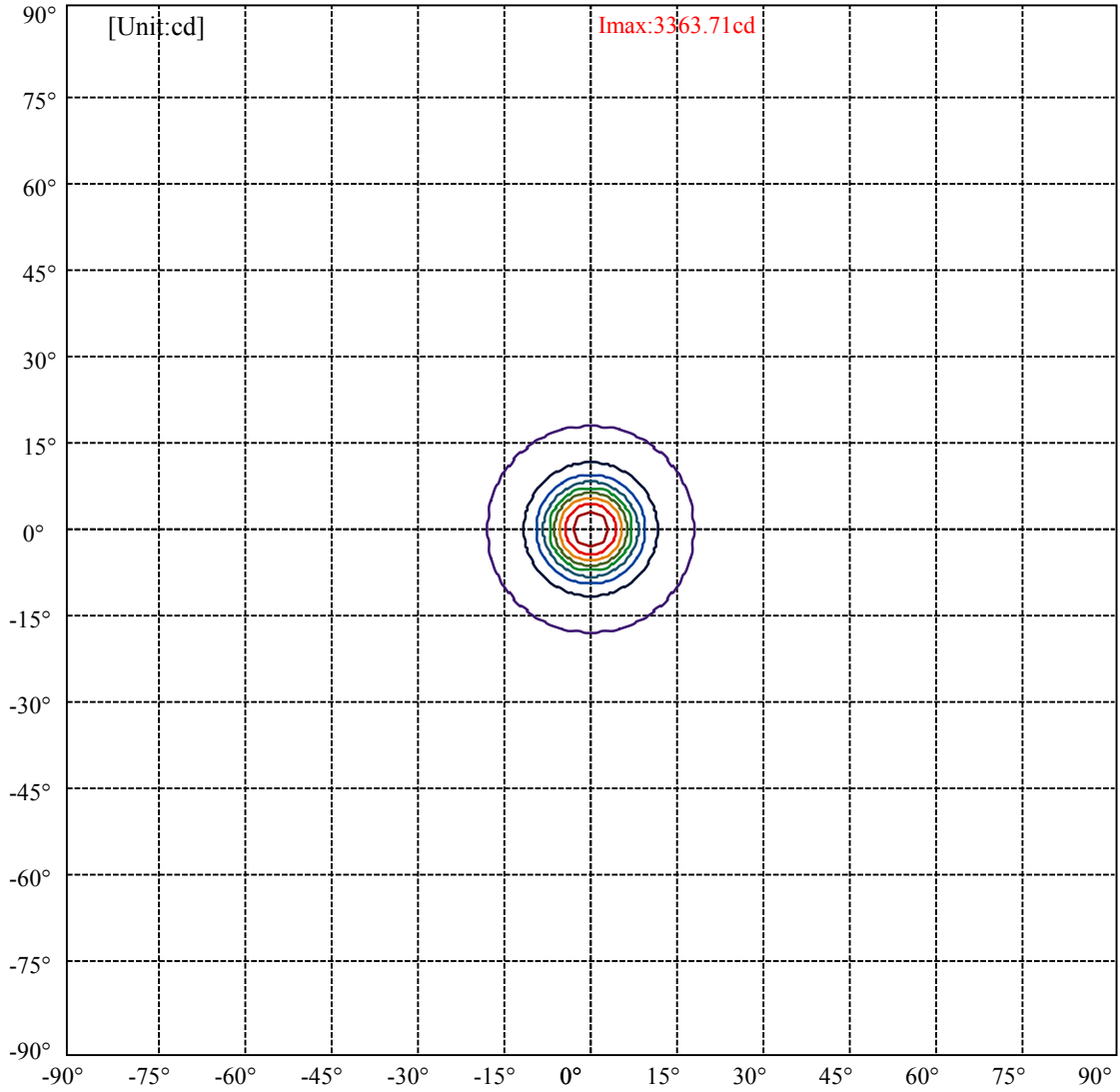


C0(Max): —————
C0/C180: —————
C90/C270: —————

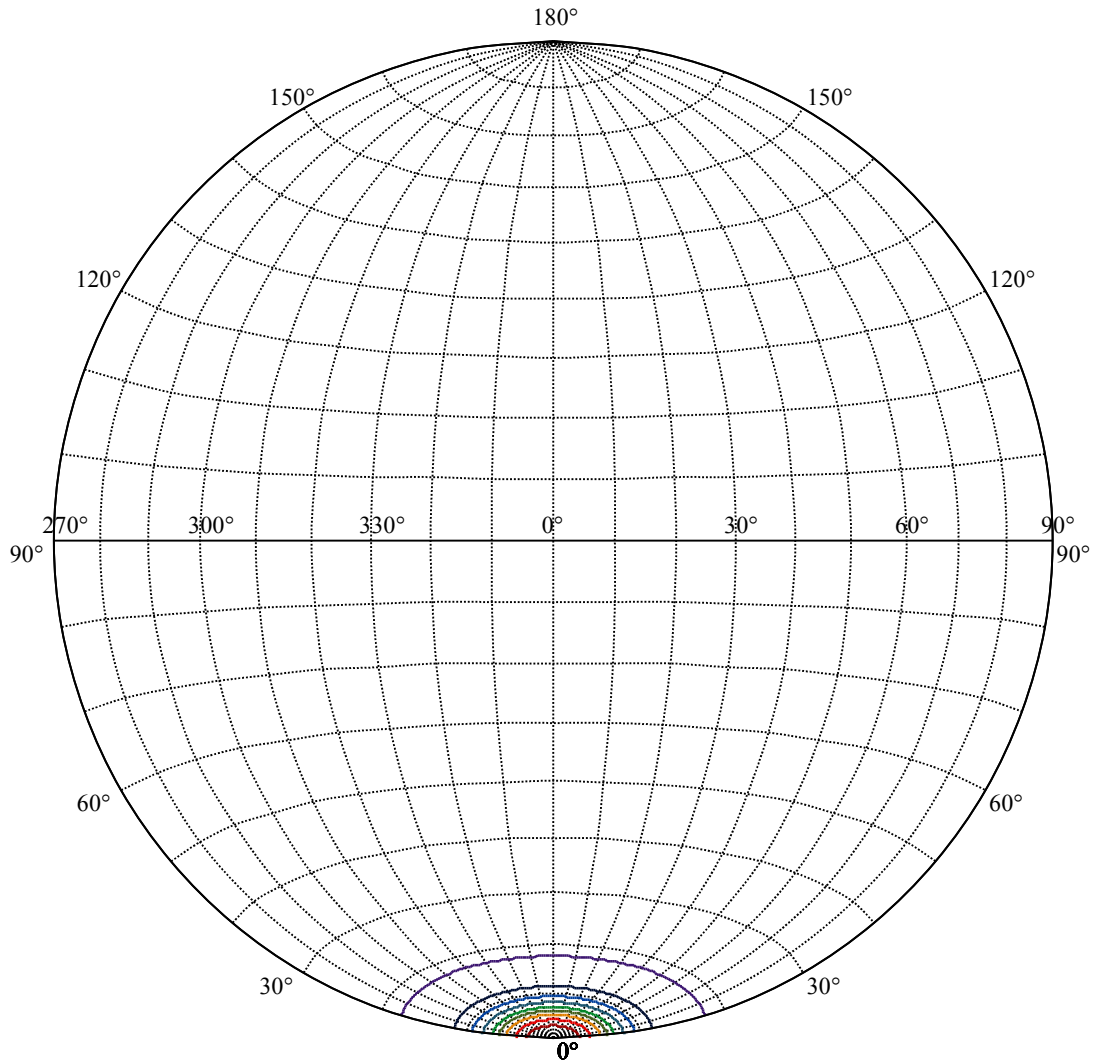
Field angle(10%Imax):C0/180Left:17.7 Right:17.7
:C90/270Left:17.7 Right:17.7

Beam Angle(50%Imax):C0/180Left:7.0 Right:7.0
:C90/270Left:7.0 Right:7.0





(10%Imax) 336.371	—
(20%Imax) 672.742	—
(30%Imax) 1009.11	—
(40%Imax) 1345.48	—
(50%Imax) 1681.85	—
(60%Imax) 2018.23	—
(70%Imax) 2354.6	—
(80%Imax) 2690.97	—
(90%Imax) 3027.34	—



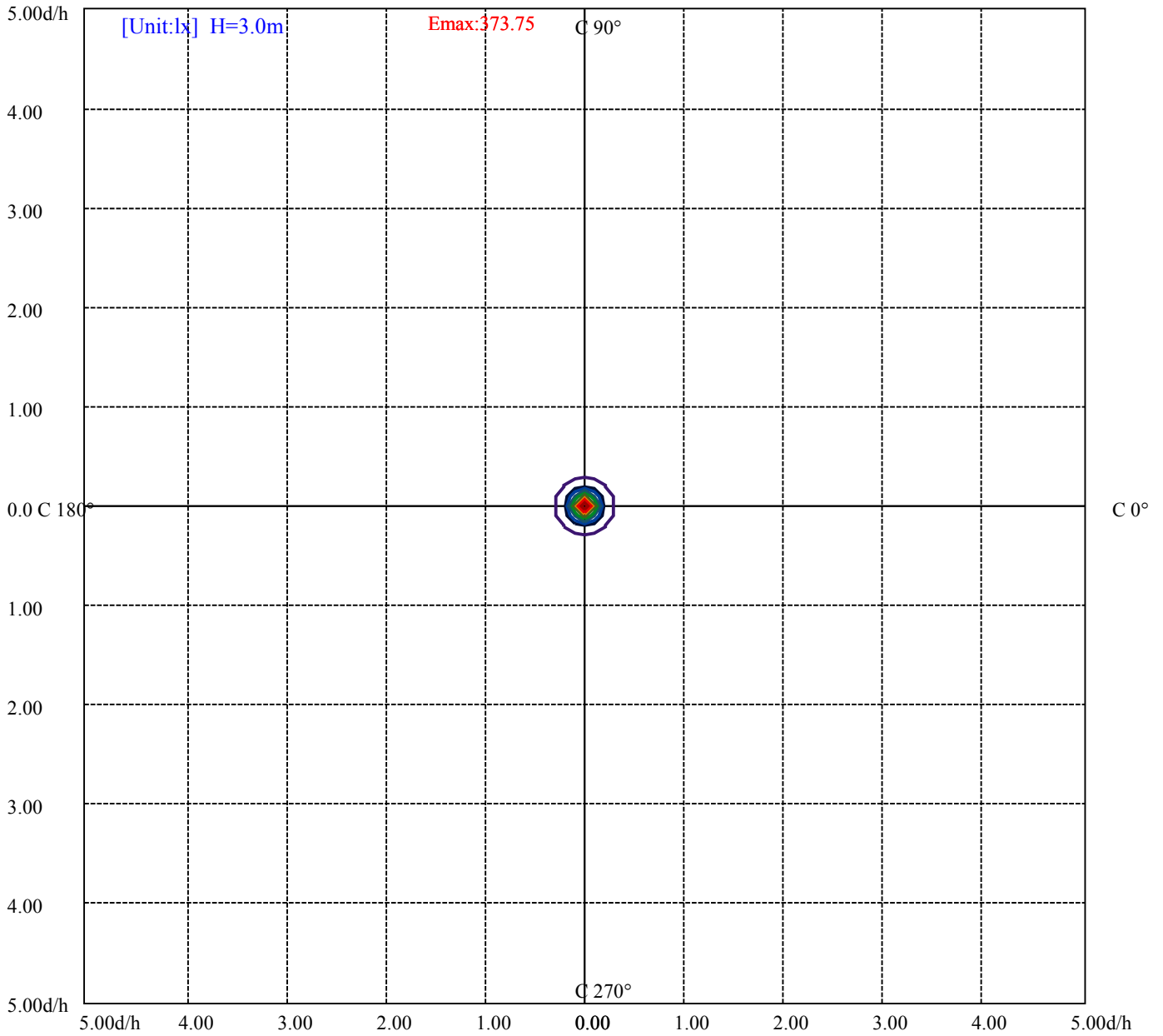
House

[Unit:cd]

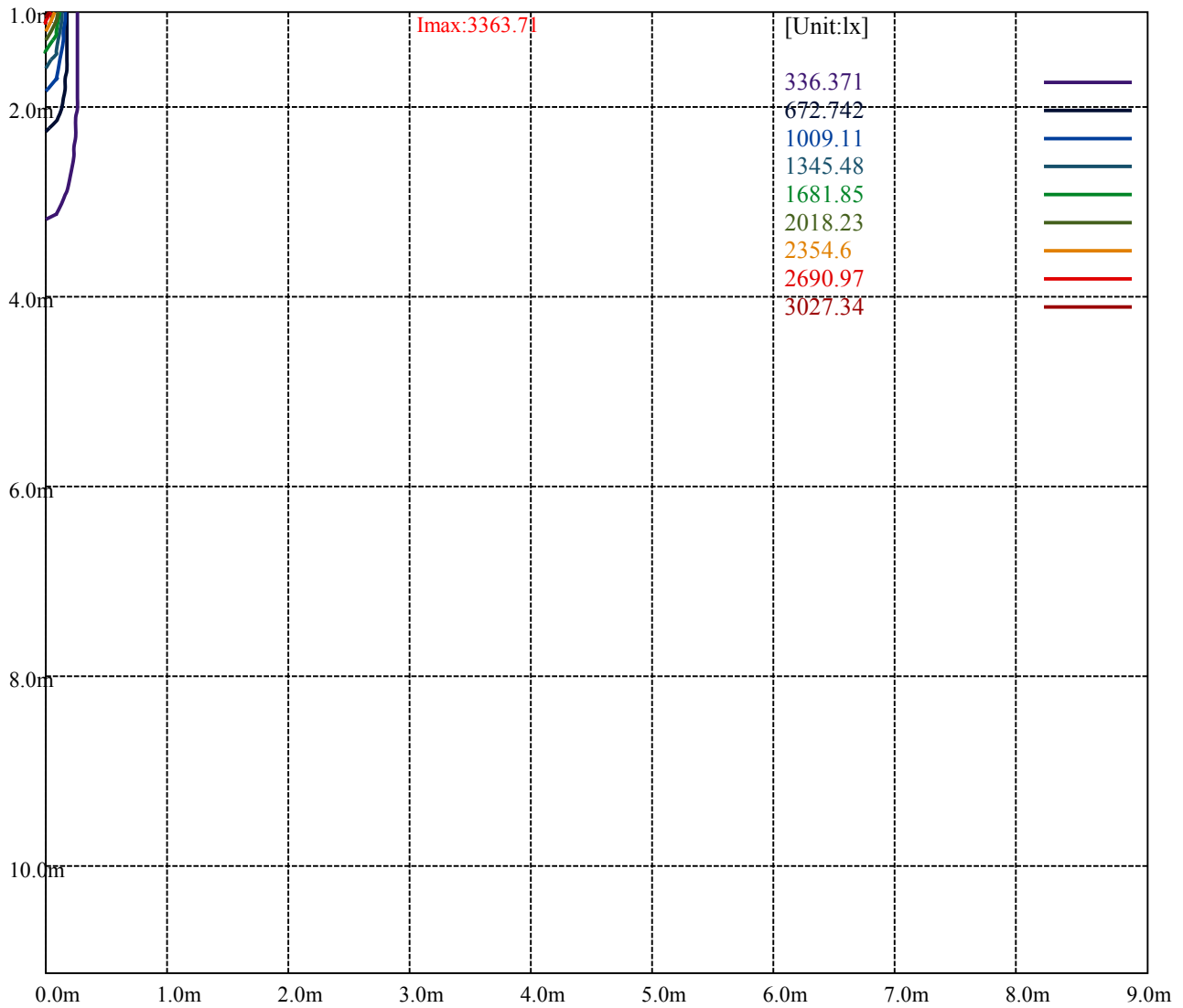
Road

Imax:3363.71

(10%Imax)	336.371	—
(20%Imax)	672.742	—
(30%Imax)	1009.11	—
(40%Imax)	1345.48	—
(50%Imax)	1681.85	—
(60%Imax)	2018.23	—
(70%Imax)	2354.6	—
(80%Imax)	2690.97	—
(90%Imax)	3027.34	—



(10%Emax) 37.37444	—
(20%Emax) 74.749	—
(30%Emax) 112.1233	—
(40%Emax) 149.4978	—
(50%Emax) 186.8722	—
(60%Emax) 224.2467	—
(70%Emax) 261.6211	—
(80%Emax) 298.9955	—
(90%Emax) 336.37	—



Luminance Table

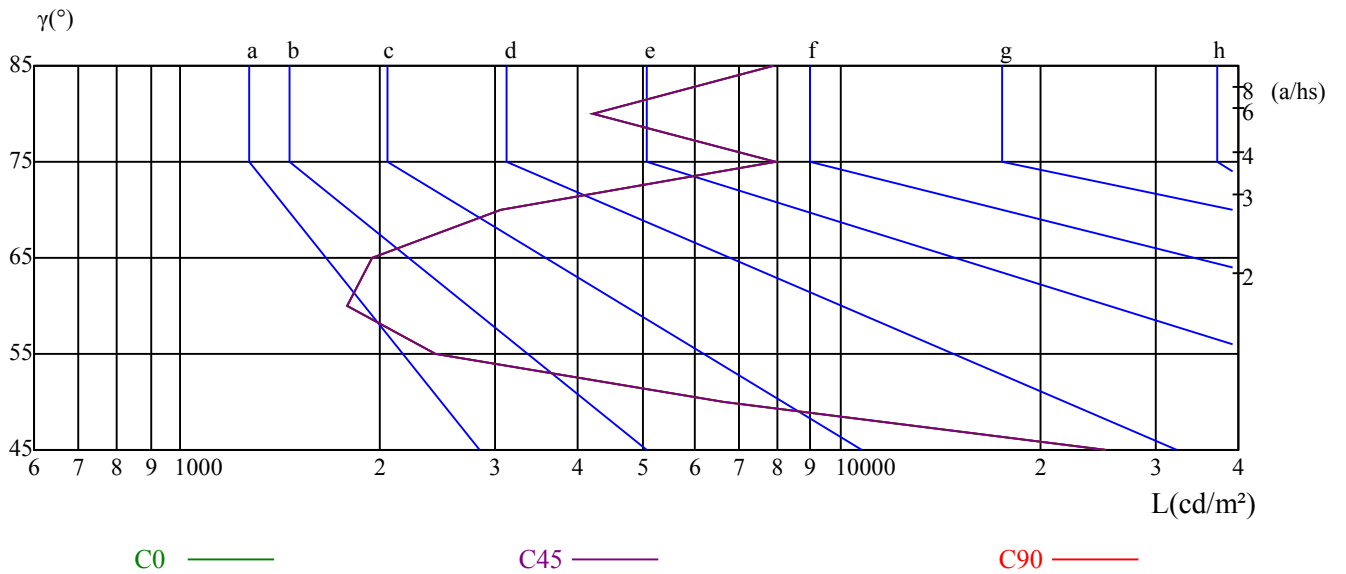
γ	45	50	55	60	65	70	75	80	85
C0	25221	6635	2427	1782	1948	3062	7947	4204	7886
C45	25221	6635	2427	1782	1948	3062	7947	4204	7886
C90	25221	6635	2427	1782	1948	3062	7947	4204	7886

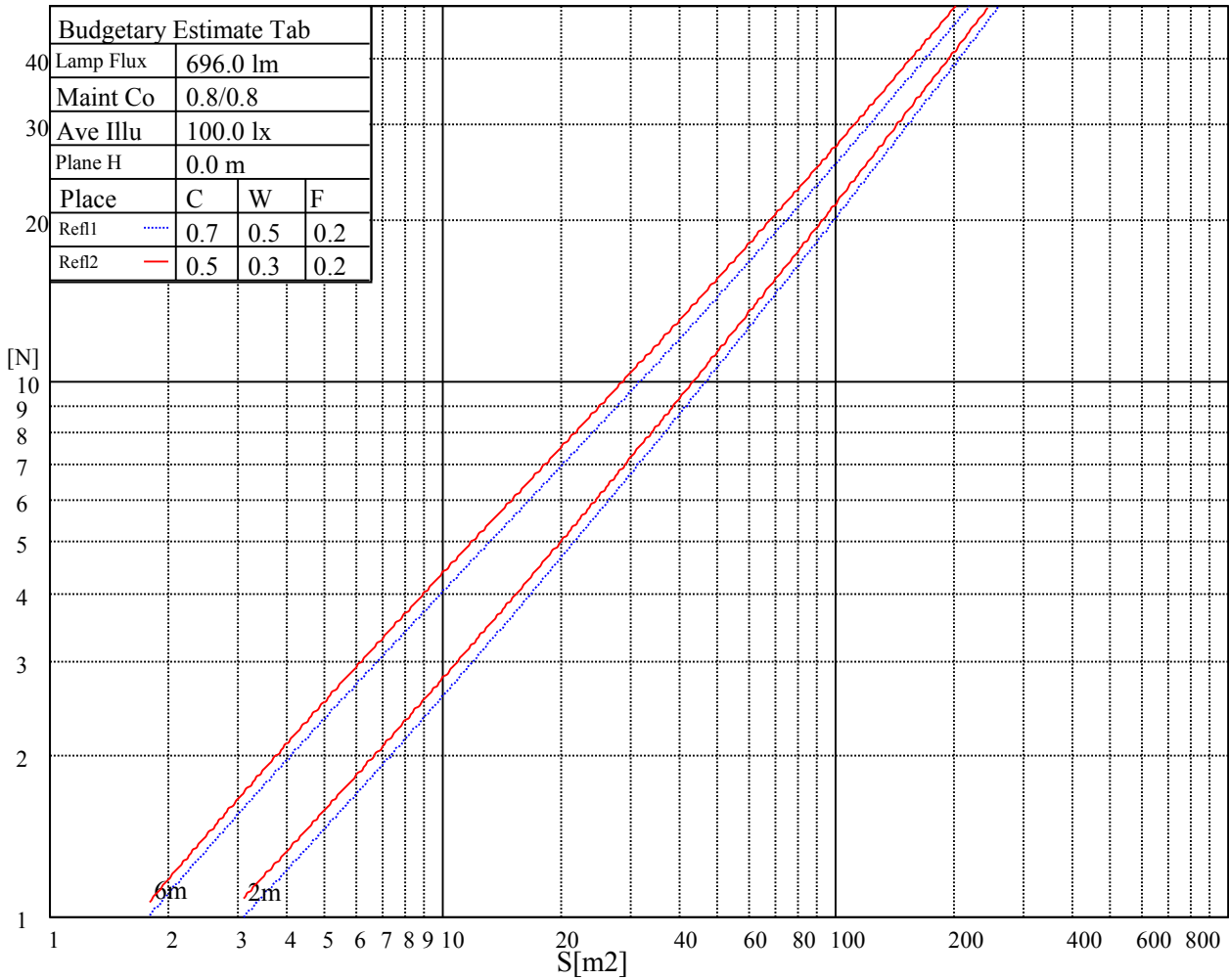
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1948	1948	1948	7947	7947	7947	7886	7886	7886

Glare Table

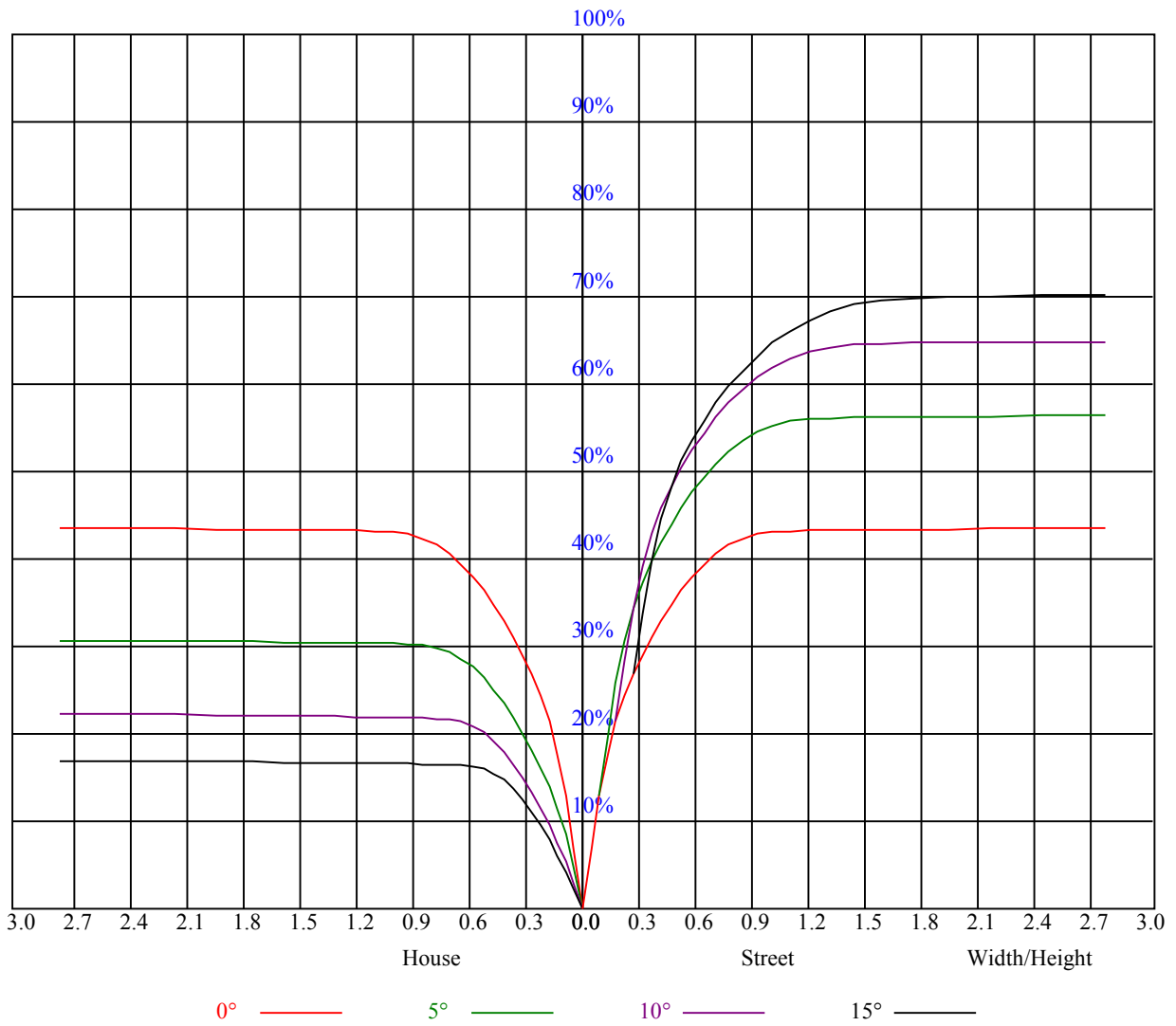
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

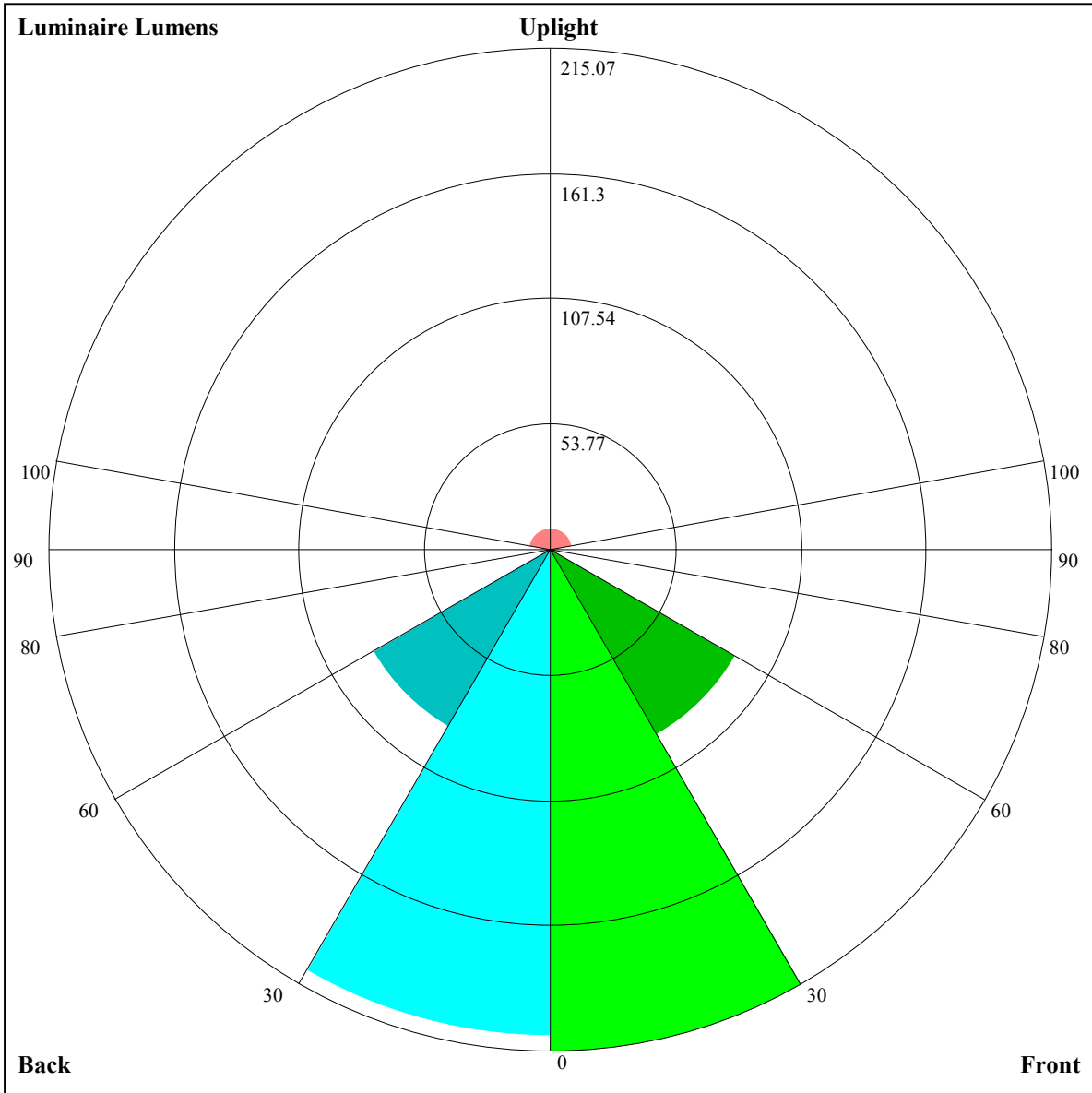
Luminance Limiting Curve





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	0.97	0.95	0.93	0.96	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.82
2	0.91	0.88	0.85	0.90	0.87	0.84	0.87	0.84	0.82	0.84	0.82	0.81	0.82	0.80	0.79	0.78
3	0.86	0.82	0.79	0.85	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.75	0.78	0.76	0.74	0.73
4	0.81	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.76	0.73	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	0.68	0.73	0.70	0.67	0.71	0.69	0.66	0.65
6	0.73	0.68	0.64	0.72	0.68	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.68	0.65	0.63	0.62
7	0.69	0.64	0.61	0.69	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.66	0.62	0.60	0.59
8	0.66	0.61	0.58	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.56
9	0.63	0.58	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.61	0.58	0.55	0.60	0.57	0.55	0.54
10	0.61	0.56	0.53	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.53	0.52





Luminaire Lumens:
FL=215.07,FM=91.44,FH=2.84,FVH=0.92
BL=208.7,BM=87.83,BH=2.8,BVH=0.82
UL=1.97,UH=9.4

BUG Rating:B1-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	3393.52	3365.22	3259.42	3084.48	2835.75	2516.50	2147.59	1749.45	1184.72
45.0	3311.85	3406.52	3426.47	3375.89	3257.10	3155.94	2788.42	2440.86	2207.92
90.0	3406.05	3417.65	3342.48	3197.70	2978.21	2686.80	2332.74	1935.99	1543.42
135.0	3343.41	3369.86	3336.45	3220.90	3028.33	2768.01	2441.33	2074.74	1694.23
180.0	3393.52	3337.37	3219.51	3021.37	2746.66	2549.91	2190.28	1657.11	1441.80
225.0	3311.85	3141.09	2897.01	2590.75	2234.37	1854.79	1492.38	849.18	849.18
270.0	3406.05	3330.88	3179.60	2951.76	2658.96	2387.50	1945.27	1645.04	1299.80
315.0	3343.41	3229.72	3045.50	2782.85	2452.46	2071.49	1682.17	1133.68	840.04
360.0	3393.52	3365.22	3259.42	3084.48	2835.75	2516.50	2147.59	1749.45	1184.72
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	879.02	879.02	704.12	568.12	505.47	447.98	405.38	373.18	345.98
45.0	1802.82	1269.18	1077.53	830.67	664.54	559.67	490.53	441.34	406.08
90.0	843.61	843.61	804.54	648.63	547.23	479.62	431.74	396.10	366.96
135.0	1475.67	1158.27	826.95	727.19	602.36	516.52	456.19	411.18	376.38
180.0	1123.94	876.14	701.20	584.26	508.16	454.80	414.89	382.87	355.96
225.0	713.54	591.92	537.63	446.12	418.00	381.16	351.97	328.03	309.14
270.0	965.24	802.36	652.48	549.00	477.54	426.49	388.44	358.28	332.29
315.0	840.04	673.27	566.72	496.79	446.96	407.61	376.70	349.83	326.68
360.0	879.02	879.02	704.12	568.12	505.47	447.98	405.38	373.18	345.98
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	322.92	305.75	292.06	281.90	274.20	267.98	261.62	256.80	252.29
45.0	376.38	350.39	327.19	308.16	294.71	284.50	276.15	269.19	265.94
90.0	341.39	320.60	304.41	292.34	283.25	275.64	269.28	263.39	257.96
135.0	347.14	323.48	305.84	292.39	282.18	273.83	267.33	261.76	256.66
180.0	332.76	313.27	297.96	287.28	278.47	271.51	265.94	260.37	255.26
225.0	295.36	285.10	276.66	269.56	263.62	258.42	253.55	249.00	245.01
270.0	312.34	297.03	285.43	277.07	269.65	264.08	258.51	253.87	249.23
315.0	307.70	292.99	282.97	275.40	268.81	263.43	258.23	255.50	249.65
360.0	322.92	305.75	292.06	281.90	274.20	267.98	261.62	256.80	252.29
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	247.84	243.57	241.53	236.05	233.32	230.76	226.03	224.08	220.42
45.0	257.58	252.94	250.16	245.52	241.34	237.63	234.38	231.14	229.74
90.0	252.94	248.40	244.13	239.86	236.47	233.46	230.49	226.91	223.52
135.0	252.02	248.30	244.13	239.95	236.70	233.46	230.67	230.21	227.24
180.0	252.02	245.52	242.74	239.02	234.85	232.53	230.21	230.21	223.43
225.0	240.93	237.26	234.75	229.65	225.94	223.62	219.86	215.82	210.76
270.0	245.52	240.88	239.02	233.92	232.06	229.74	229.74	221.99	218.61
315.0	244.64	241.90	238.28	233.69	231.60	228.63	225.47	222.41	219.12
360.0	247.84	243.57	241.53	236.05	233.32	230.76	226.03	224.08	220.42
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	216.43	210.53	195.27	175.73	153.41	128.77	105.85	81.25	58.33
45.0	227.56	222.36	216.66	203.25	185.85	173.87	142.83	128.86	103.99
90.0	220.32	214.75	202.83	184.64	163.85	140.42	115.13	89.79	66.26
135.0	221.07	217.17	209.84	195.50	176.61	153.32	127.98	102.32	77.12
180.0	219.44	210.58	194.57	175.36	153.13	129.09	106.87	81.76	68.17
225.0	200.00	182.50	160.93	138.19	113.18	89.23	66.22	44.96	27.10
270.0	214.62	205.85	188.86	168.26	145.57	120.37	95.17	71.18	49.74
315.0	213.59	201.07	184.27	162.09	136.80	111.51	97.03	63.06	41.90
360.0	216.43	210.53	195.27	175.73	153.41	128.77	105.85	81.25	58.33

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	37.91	21.81	12.85	9.61	8.68	7.47	6.26	4.97	4.08
45.0	81.58	58.93	40.46	24.83	16.80	14.76	14.11	13.04	12.02
90.0	45.20	26.77	15.68	11.14	10.21	9.23	8.58	6.91	5.38
135.0	53.22	33.92	19.40	14.29	9.93	9.37	8.31	6.82	5.99
180.0	38.93	29.05	17.40	13.13	12.71	12.20	11.46	10.81	9.74
225.0	14.34	9.19	8.40	7.56	6.45	5.66	4.27	2.88	2.46
270.0	30.72	19.49	12.62	10.53	10.07	9.37	8.40	7.10	4.78
315.0	26.82	19.95	13.92	11.93	11.42	10.53	9.47	8.45	5.99
360.0	37.91	21.81	12.85	9.61	8.68	7.47	6.26	4.97	4.08
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	2.46	2.37	2.32	2.27	2.27	2.23	2.13	2.09	2.13
45.0	11.32	9.10	2.69	2.32	2.23	2.23	2.13	2.04	2.04
90.0	3.06	2.37	2.23	2.18	2.18	2.13	2.04	2.00	2.00
135.0	4.50	2.46	2.27	2.23	2.23	2.13	2.04	2.04	2.04
180.0	4.64	2.51	2.23	2.23	2.18	2.09	2.04	1.95	1.95
225.0	2.32	2.18	2.13	2.18	2.09	2.00	2.00	2.04	2.00
270.0	2.60	2.37	2.23	2.18	2.18	2.13	2.04	1.95	1.95
315.0	3.71	2.32	2.23	2.13	2.09	2.09	2.00	1.90	1.90
360.0	2.46	2.37	2.32	2.27	2.27	2.23	2.13	2.09	2.13
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	2.13	2.04	2.00	2.04	2.04	1.95	2.04	2.51	3.20
45.0	2.04	1.95	2.00	1.90	1.86	1.95	2.13	2.37	2.69
90.0	2.00	1.90	1.90	1.86	1.95	1.90	1.86	2.60	3.76
135.0	2.00	1.95	1.95	1.95	1.90	1.81	1.81	1.95	2.60
180.0	1.90	1.86	1.81	1.76	1.76	1.81	1.72	1.72	1.72
225.0	1.95	1.90	1.90	1.95	1.90	1.90	2.88	4.69	6.45
270.0	1.95	1.86	1.86	1.86	1.81	1.81	1.76	1.76	1.81
315.0	1.90	1.81	1.76	1.81	1.81	1.76	1.72	1.72	1.76
360.0	2.13	2.04	2.00	2.04	2.04	1.95	2.04	2.51	3.20
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.50	5.61	6.87	8.54	8.72	8.45	7.38	4.78	2.60
45.0	3.34	3.81	4.18	4.50	4.45	3.99	2.64	2.00	1.58
90.0	5.01	6.13	7.19	7.29	5.43	3.43	1.58	1.48	1.39
135.0	3.90	4.97	6.40	7.05	7.75	5.34	3.67	2.74	2.04
180.0	1.76	1.86	1.95	2.00	2.00	1.62	1.44	1.39	1.39
225.0	7.47	8.26	6.73	4.87	2.41	1.90	1.62	1.62	1.62
270.0	2.88	3.94	4.18	2.00	1.58	1.58	1.53	1.48	1.48
315.0	1.86	2.32	2.55	1.67	1.48	1.44	1.44	1.44	1.35
360.0	4.50	5.61	6.87	8.54	8.72	8.45	7.38	4.78	2.60
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.18	2.32	2.46	2.51	2.64	2.92	3.39	3.81	4.22
45.0	1.48	1.35	1.39	1.39	1.30	1.35	1.35	1.30	1.35
90.0	1.44	1.35	1.30	1.30	1.35	1.25	1.25	1.30	1.30
135.0	1.76	1.81	1.86	1.90	1.90	2.00	2.09	2.23	2.32
180.0	1.39	1.35	1.30	1.25	1.30	1.30	1.30	1.25	1.21
225.0	1.62	1.58	1.53	1.53	1.48	1.53	1.48	1.53	1.48
270.0	1.48	1.39	1.44	1.35	1.35	1.35	1.39	1.30	1.25
315.0	1.35	1.39	1.35	1.35	1.35	1.30	1.30	1.30	1.25
360.0	2.18	2.32	2.46	2.51	2.64	2.92	3.39	3.81	4.22

Intensity data(cd)

C/γ(°)	90.0
0.0	4.41
45.0	1.25
90.0	1.25
135.0	2.32
180.0	1.25
225.0	1.48
270.0	1.25
315.0	1.25
360.0	4.41