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## Nata

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Client:

LumCAT: 1669-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): 8.3700

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

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## Photometric Results

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Lumens(lm): 607.22, Efficiency(%): 87.24% , Luminous Efficacy(lm/W): 72.55

Central intensity(cd): 1607.342, Maximum intensity(cd): 1607.342

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

Beam Angle(50%Imax): [C0/180]Total=25.2

[C90/270]Total=25.2

Field angle(10%Imax): [C0/180]Total=79.4

[C90/270]Total=79.4

Maximum s/h(1/2): C0\_180=0.42 C90\_270=0.42

Maximum s/h(1/4): C0\_180=0.45 C90\_270=0.45

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.24%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 99.284%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1607.342	0.000	0	.000%	.000%
1.0	1604.152	1.537	1.537	.221%	.253%
2.0	1589.883	4.584	6.121	.659%	1.008%
3.0	1561.693	7.538	13.659	1.083%	2.249%
4.0	1515.696	10.301	23.96	1.480%	3.946%
5.0	1456.473	12.786	36.746	1.837%	6.051%
6.0	1389.073	14.954	51.7	2.149%	8.514%
7.0	1304.966	16.722	68.422	2.403%	11.268%
8.0	1194.364	17.887	86.309	2.570%	14.214%
9.0	1096.818	18.569	104.878	2.668%	17.272%
10.0	983.867	18.829	123.707	2.705%	20.373%
11.0	924.610	19.070	142.777	2.740%	23.513%
12.0	853.259	19.435	162.211	2.792%	26.714%
13.0	767.529	19.235	181.446	2.764%	29.881%
14.0	695.865	18.731	200.177	2.691%	32.966%
15.0	623.899	18.118	218.296	2.603%	35.950%
16.0	555.431	17.280	235.576	2.483%	38.796%
17.0	501.023	16.452	252.028	2.364%	41.505%
18.0	447.346	15.637	267.664	2.247%	44.080%
19.0	403.320	14.800	282.464	2.126%	46.518%
20.0	366.714	14.094	296.558	2.025%	48.839%
21.0	334.458	13.464	310.022	1.934%	51.056%
22.0	313.072	13.012	323.034	1.870%	53.199%
23.0	294.302	12.744	335.779	1.831%	55.298%
24.0	279.580	12.547	348.326	1.803%	57.364%
25.0	269.714	12.490	360.816	1.795%	59.421%
26.0	261.146	12.531	373.347	1.800%	61.484%
27.0	254.105	12.606	385.952	1.811%	63.560%
28.0	248.397	12.722	398.675	1.828%	65.656%
29.0	243.496	12.869	411.544	1.849%	67.775%
30.0	239.198	13.033	424.576	1.873%	69.921%
31.0	235.190	13.202	437.778	1.897%	72.095%
32.0	231.680	13.375	451.153	1.922%	74.298%
33.0	228.502	13.557	464.71	1.948%	76.531%
34.0	225.393	13.736	478.447	1.974%	78.793%
35.0	221.785	13.888	492.334	1.995%	81.080%
36.0	216.251	13.947	506.281	2.004%	83.377%
37.0	207.986	13.836	520.118	1.988%	85.655%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	192.034	13.352	533.47	1.918%	87.854%
39.0	174.877	12.524	545.993	1.799%	89.917%
40.0	153.392	11.449	557.442	1.645%	91.802%
41.0	128.984	10.055	567.498	1.445%	93.458%
42.0	107.000	8.574	576.071	1.232%	94.870%
43.0	81.792	6.993	583.065	1.005%	96.022%
44.0	59.994	5.351	588.416	.769%	96.903%
45.0	40.644	3.868	592.284	.556%	97.540%
46.0	25.423	2.584	594.867	.371%	97.966%
47.0	16.427	1.664	596.532	.239%	98.240%
48.0	11.752	1.139	597.671	.164%	98.427%
49.0	10.110	0.898	598.569	.129%	98.575%
50.0	9.078	0.800	599.369	.115%	98.707%
51.0	8.057	0.725	600.094	.104%	98.826%
52.0	6.943	0.644	600.737	.092%	98.932%
53.0	5.650	0.548	601.285	.079%	99.023%
54.0	3.538	0.405	601.69	.058%	99.089%
55.0	2.732	0.280	601.97	.040%	99.135%
56.0	1.984	0.213	602.183	.031%	99.170%
57.0	1.903	0.178	602.361	.026%	99.200%
58.0	1.868	0.174	602.535	.025%	99.228%
59.0	1.792	0.171	602.706	.025%	99.257%
60.0	1.729	0.166	602.873	.024%	99.284%
61.0	1.705	0.164	603.036	.024%	99.311%
62.0	1.676	0.163	603.199	.023%	99.338%
63.0	1.647	0.162	603.361	.023%	99.364%
64.0	1.589	0.159	603.52	.023%	99.391%
65.0	1.572	0.156	603.676	.022%	99.416%
66.0	1.560	0.156	603.833	.022%	99.442%
67.0	1.520	0.155	603.987	.022%	99.468%
68.0	1.473	0.152	604.139	.022%	99.493%
69.0	1.444	0.149	604.288	.021%	99.517%
70.0	1.456	0.149	604.437	.021%	99.542%
71.0	1.433	0.149	604.586	.021%	99.566%
72.0	1.386	0.147	604.733	.021%	99.590%
73.0	1.369	0.144	604.877	.021%	99.614%
74.0	1.369	0.144	605.021	.021%	99.638%
75.0	1.369	0.145	605.165	.021%	99.662%

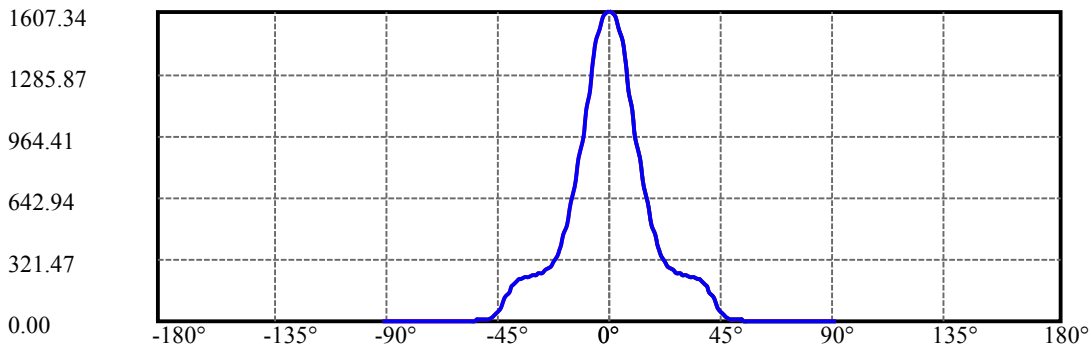
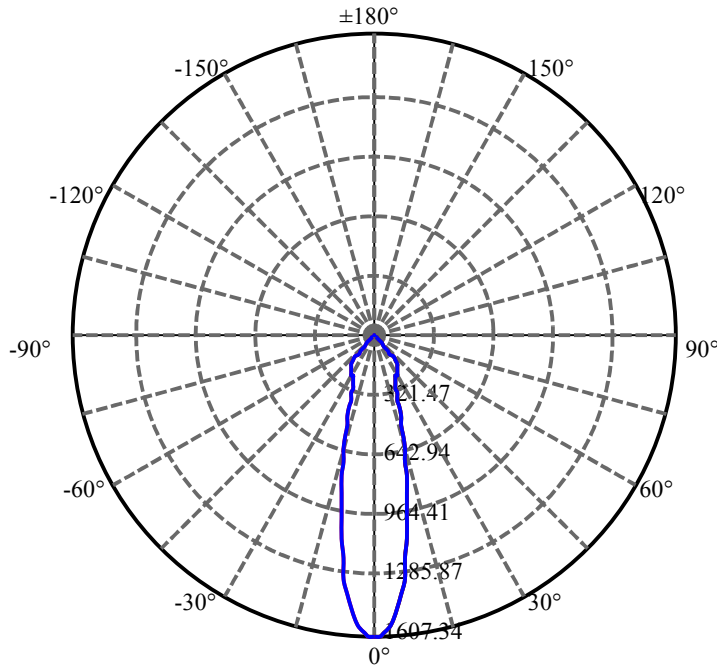
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.357	0.145	605.31	.021%	99.685%
77.0	1.322	0.143	605.453	.021%	99.709%
78.0	1.328	0.142	605.595	.020%	99.732%
79.0	1.305	0.141	605.736	.020%	99.756%
80.0	1.264	0.139	605.875	.020%	99.778%
81.0	1.253	0.136	606.011	.020%	99.801%
82.0	1.270	0.137	606.148	.020%	99.823%
83.0	1.241	0.137	606.284	.020%	99.846%
84.0	1.230	0.135	606.419	.019%	99.868%
85.0	1.247	0.135	606.554	.019%	99.890%
86.0	1.235	0.136	606.69	.019%	99.913%
87.0	1.224	0.135	606.824	.019%	99.935%
88.0	1.224	0.134	606.959	.019%	99.957%
89.0	1.177	0.132	607.09	.019%	99.979%
90.0	1.201	0.130	607.221	.019%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	424.58	61.00%	69.92%
0-40	557.44	80.09%	91.80%
0-60	602.87	86.62%	99.28%
0-90	607.09	87.23%	99.98%
0-120	607.09	87.23%	99.98%
0-180	607.22	87.24%	100.00%
60-90	4.38	0.63%	0.72%
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%
0-34.53	485.78	69.80%	80.00%

ZONAL LUMEN SUMMARY

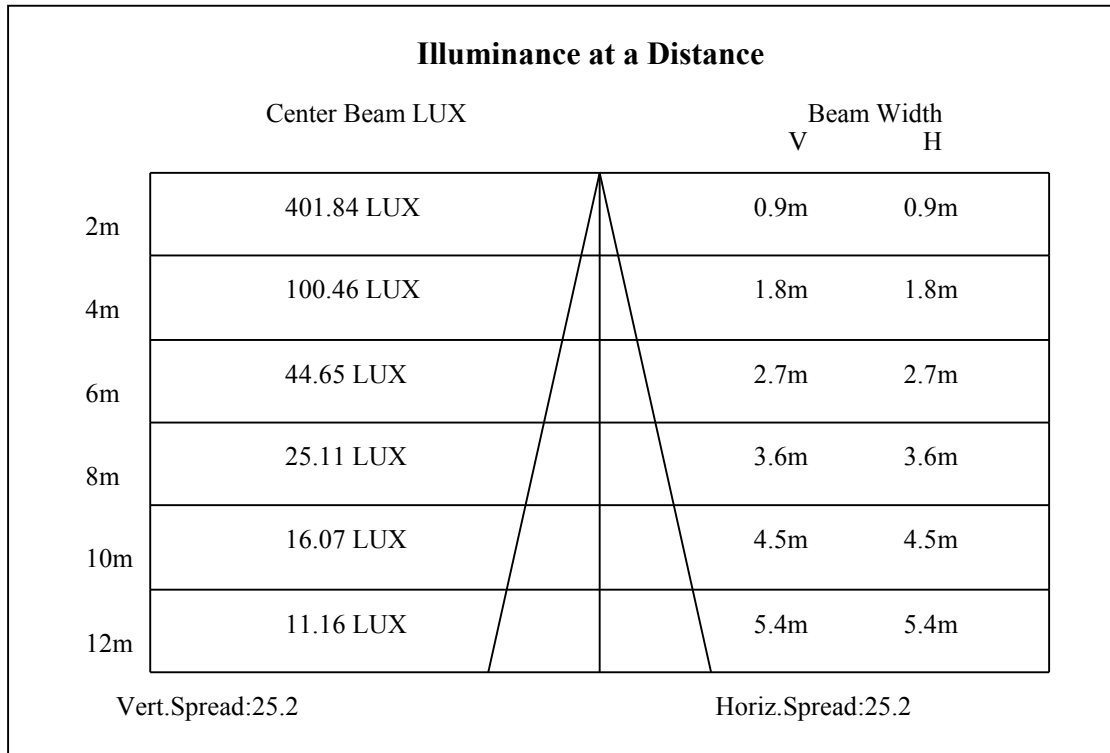
0-10	123.71
10-20	172.85
20-30	128.02
30-40	132.87
40-50	41.93
50-60	3.50
60-70	1.56
70-80	1.44
80-90	1.22
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

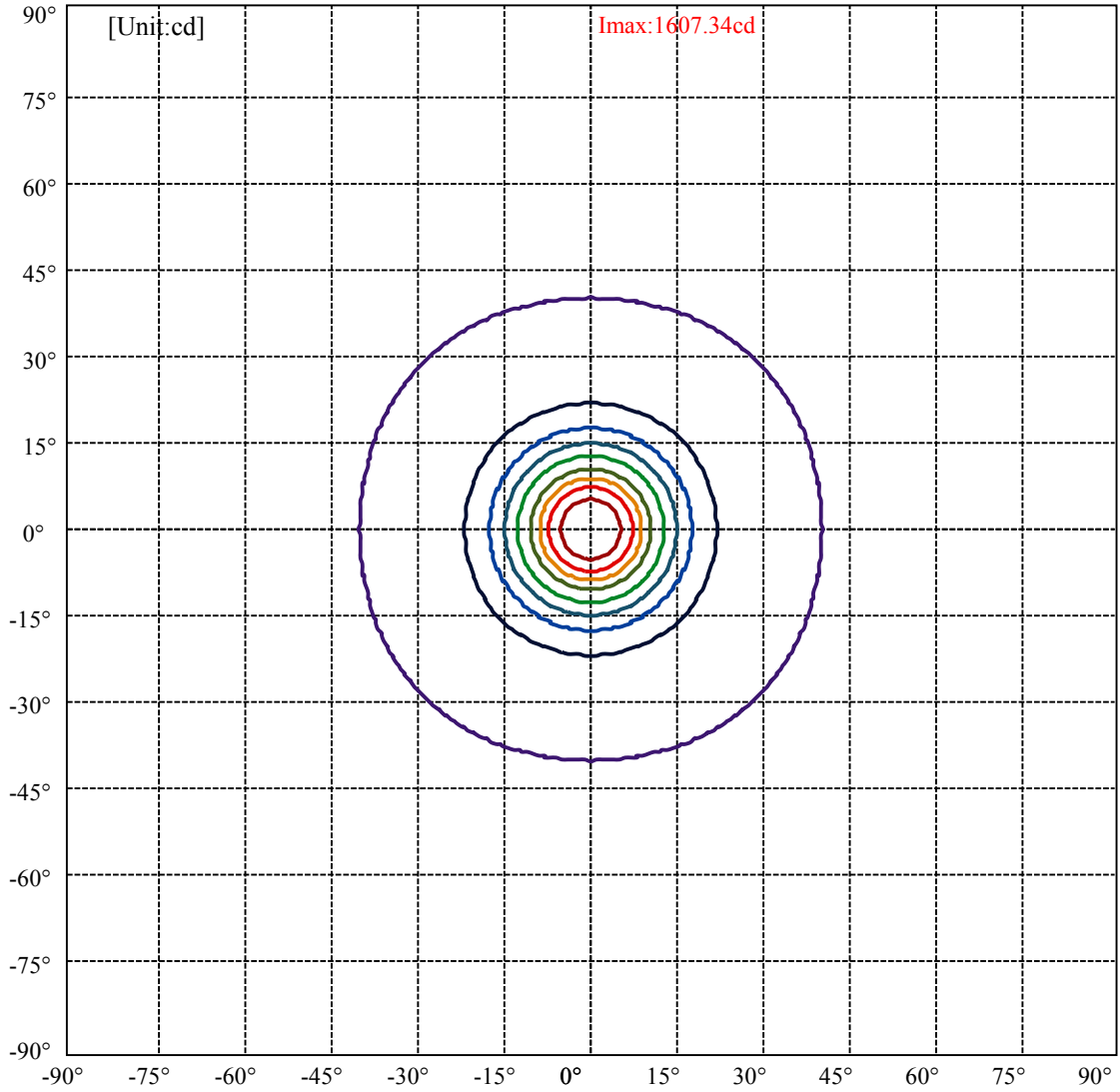


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

Field angle(10%Imax):C0/180Left:39.7 Right:39.7  
:C90/270Left:39.7 Right:39.7

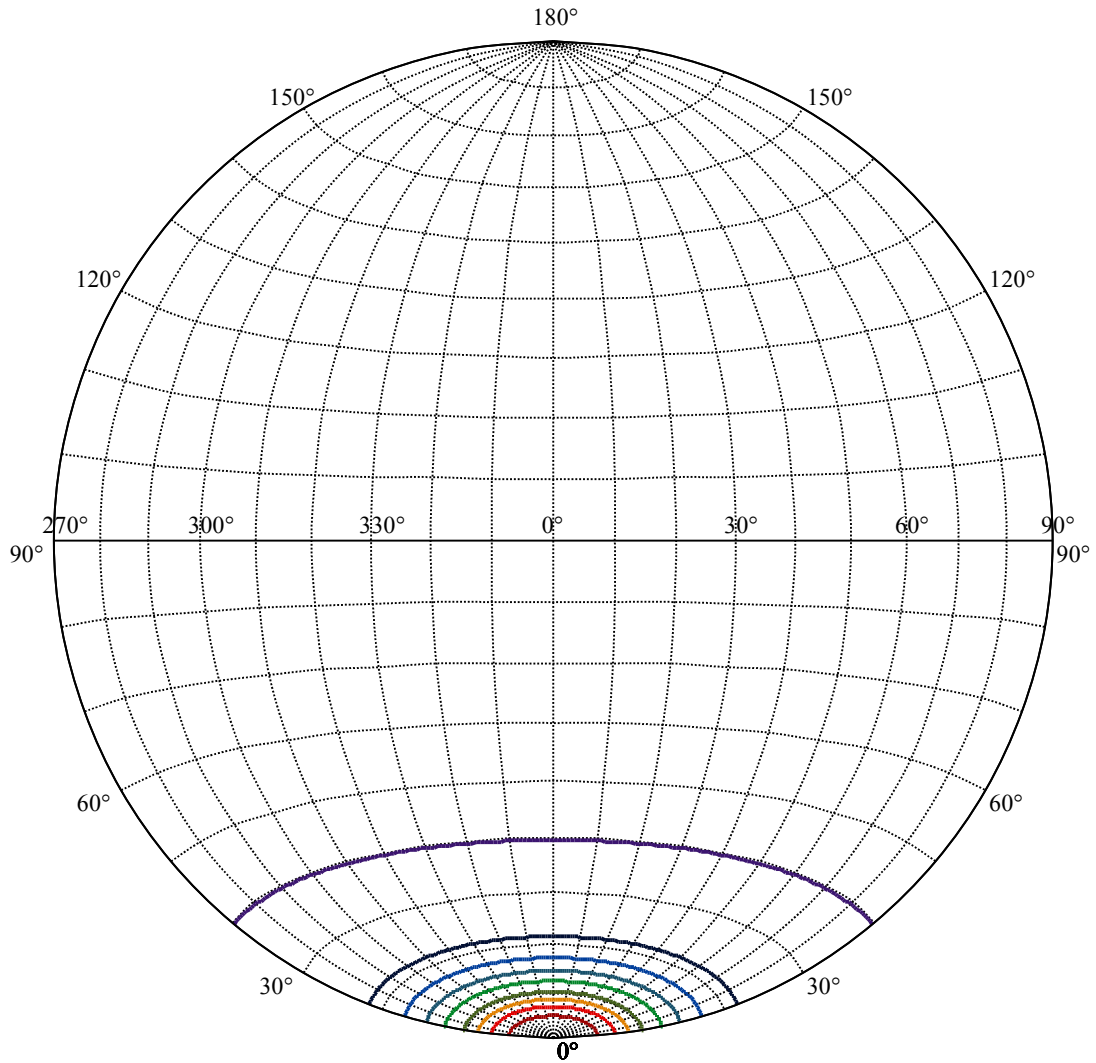
Beam Angle(50%Imax):C0/180Left:12.6 Right:12.6  
:C90/270Left:12.6 Right:12.6





(10%Imax) 160.734	—
(20%Imax) 321.468	—
(30%Imax) 482.203	—
(40%Imax) 642.937	—
(50%Imax) 803.671	—
(60%Imax) 964.405	—
(70%Imax) 1125.14	—
(80%Imax) 1285.87	—
(90%Imax) 1446.61	—





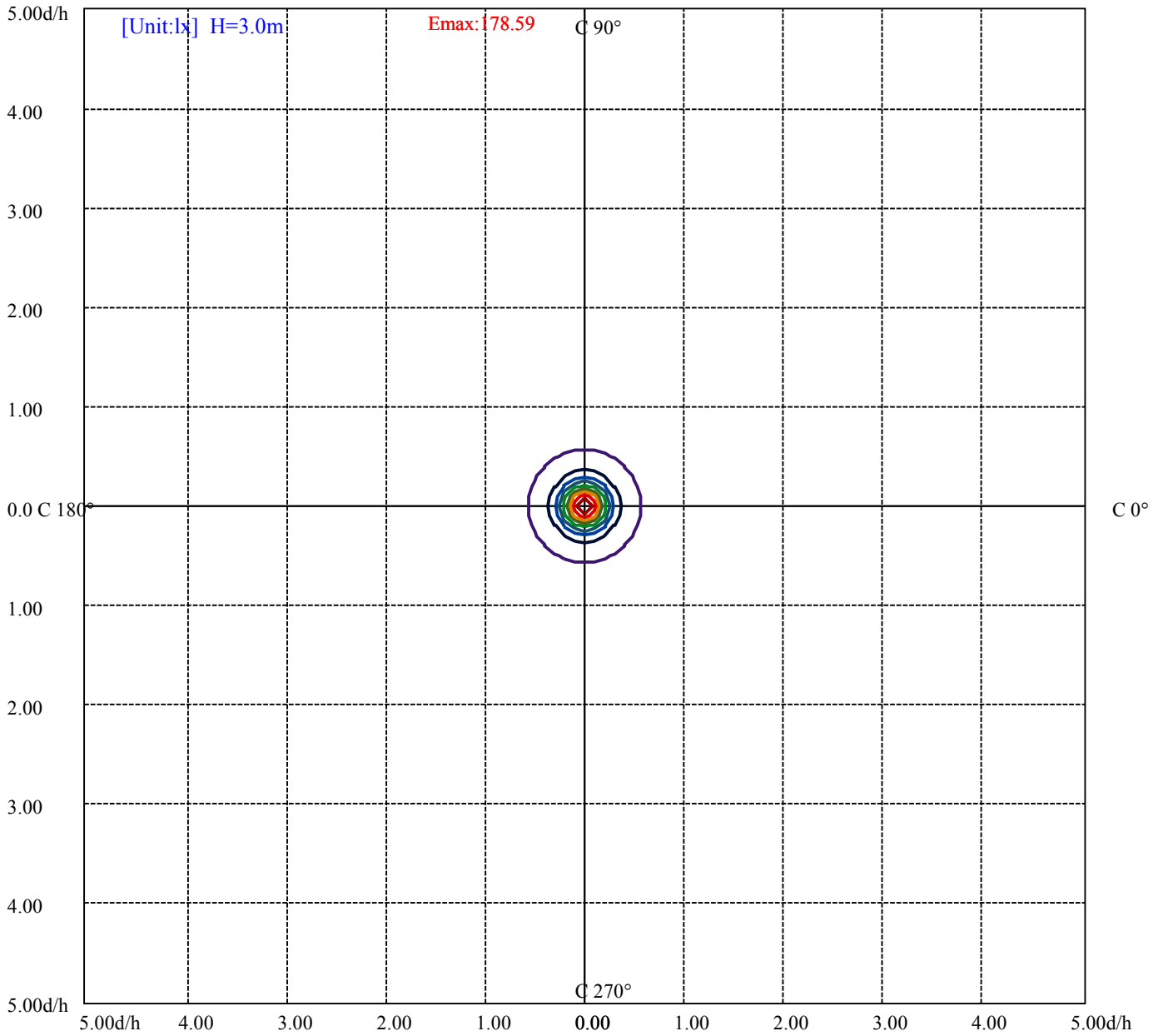
House

[Unit:cd]

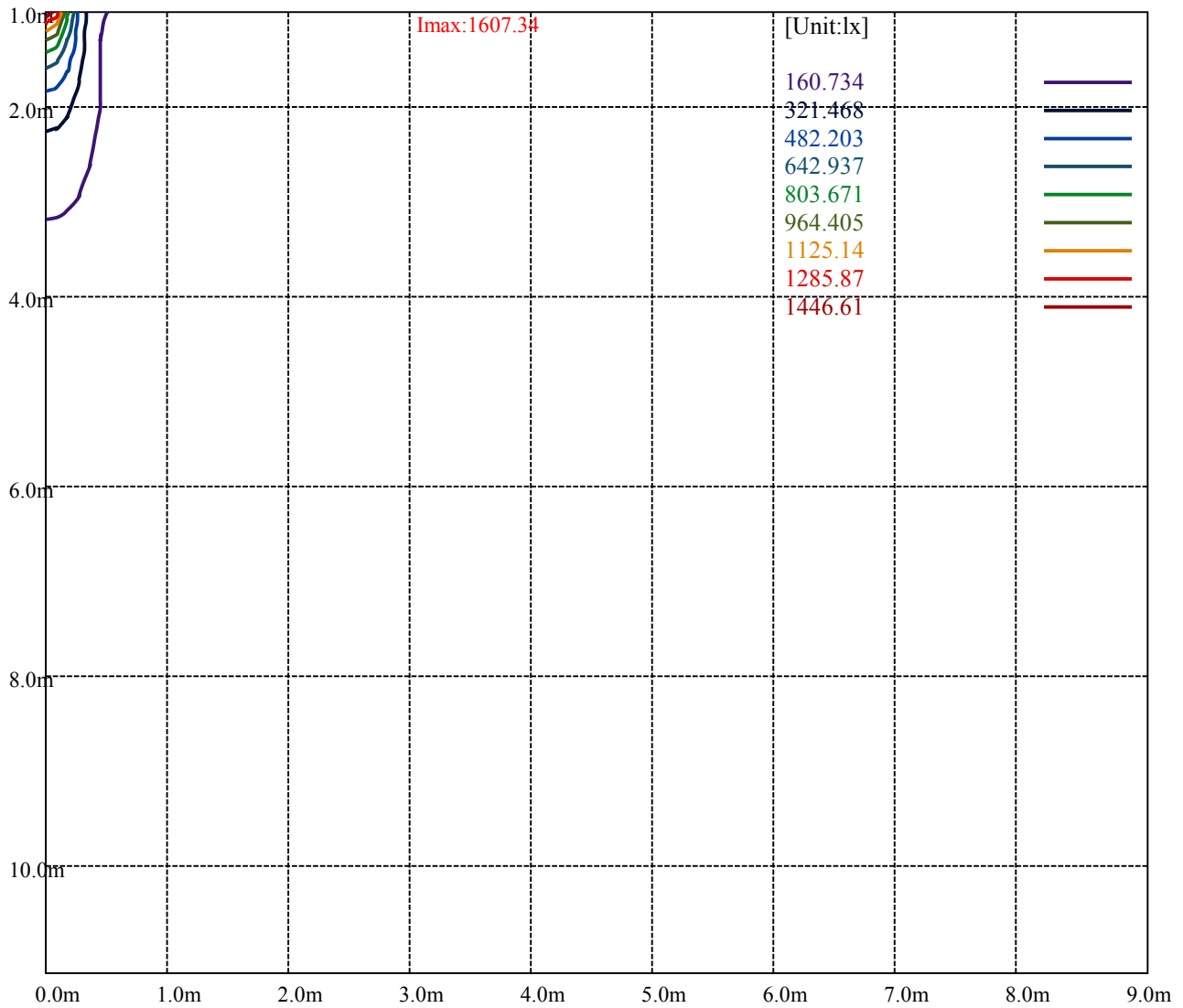
Road

Imax:1607.34

(10%Imax)	160.734	—
(20%Imax)	321.468	—
(30%Imax)	482.203	—
(40%Imax)	642.937	—
(50%Imax)	803.671	—
(60%Imax)	964.405	—
(70%Imax)	1125.14	—
(80%Imax)	1285.87	—
(90%Imax)	1446.61	—



(10%Emax) 17.85933	—
(20%Emax) 35.71867	—
(30%Emax) 53.578	—
(40%Emax) 71.43745	—
(50%Emax) 89.29678	—
(60%Emax) 107.1561	—
(70%Emax) 125.0156	—
(80%Emax) 142.8745	—
(90%Emax) 160.7344	—



Luminance Table

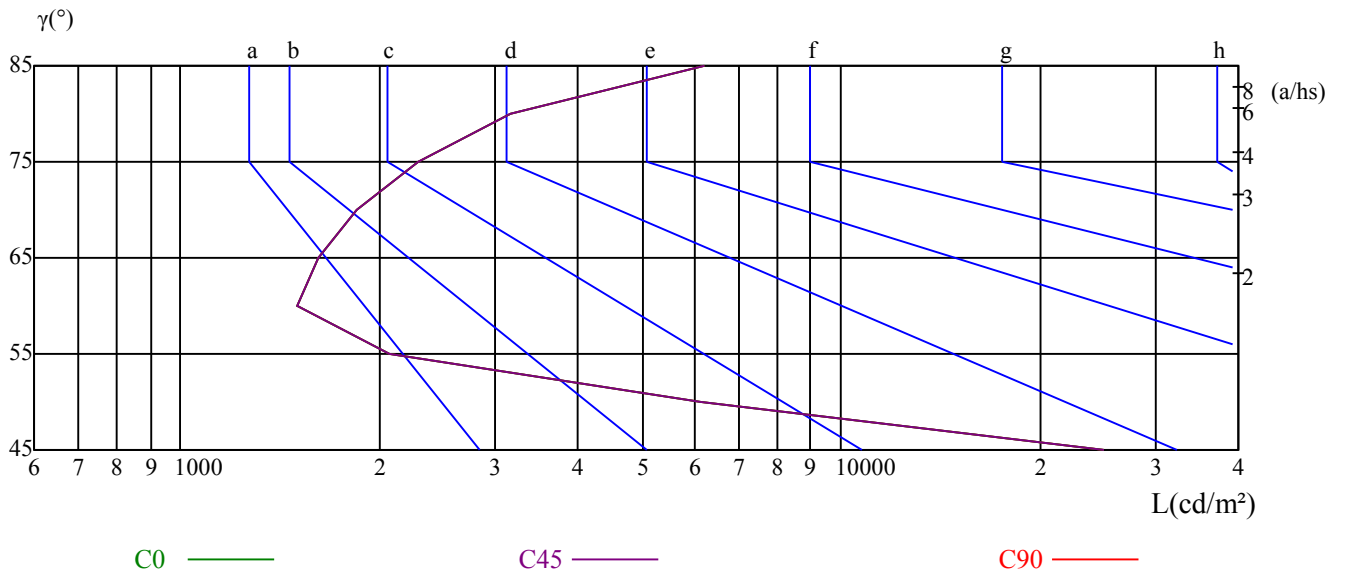
$\gamma$	45	50	55	60	65	70	75	80	85
C0	24947	6129	2067	1500	1614	1848	2296	3161	6210
C45	24947	6129	2067	1500	1614	1848	2296	3161	6210
C90	24947	6129	2067	1500	1614	1848	2296	3161	6210

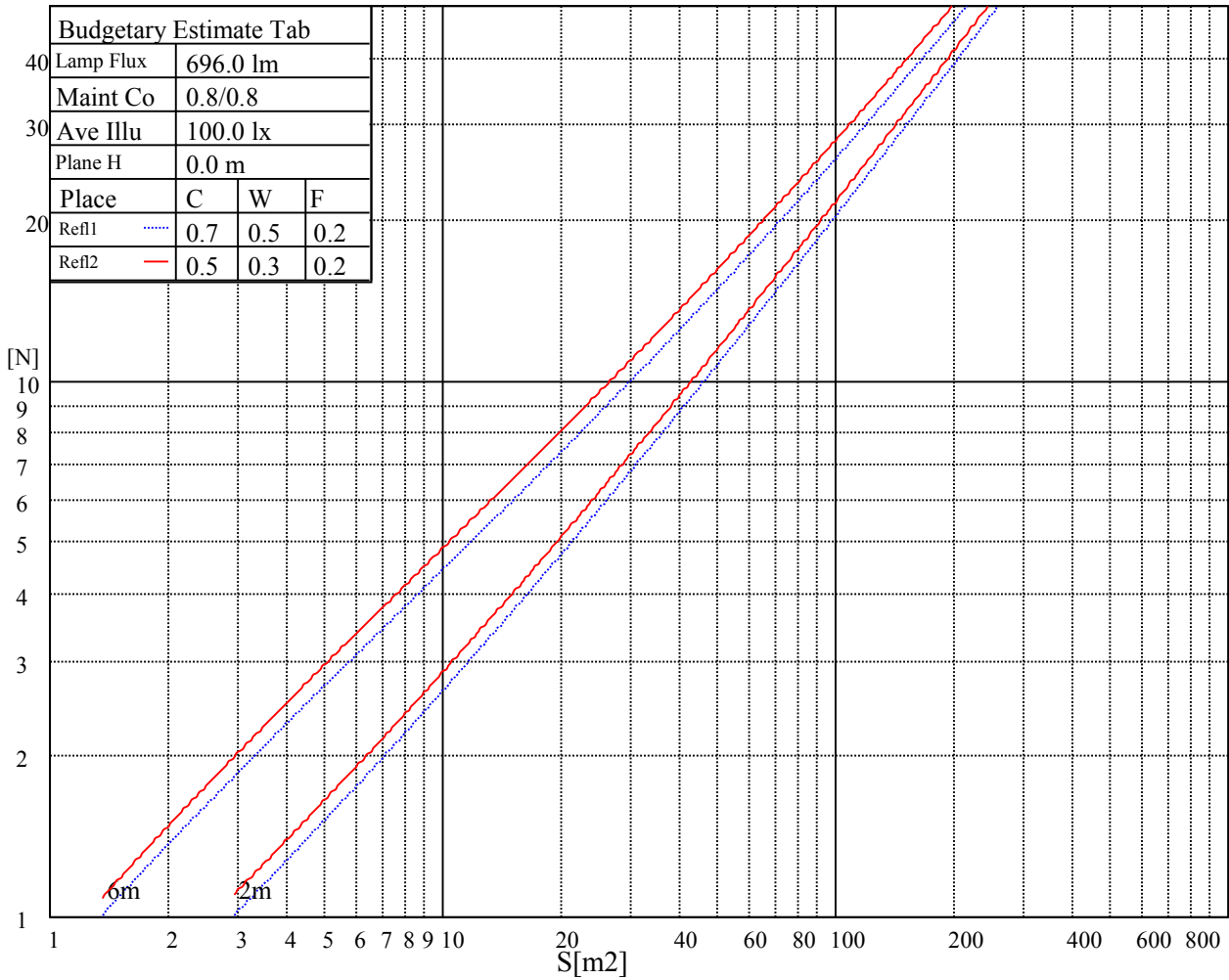
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1614	1614	1614	2296	2296	2296	6210	6210	6210

Glare Table

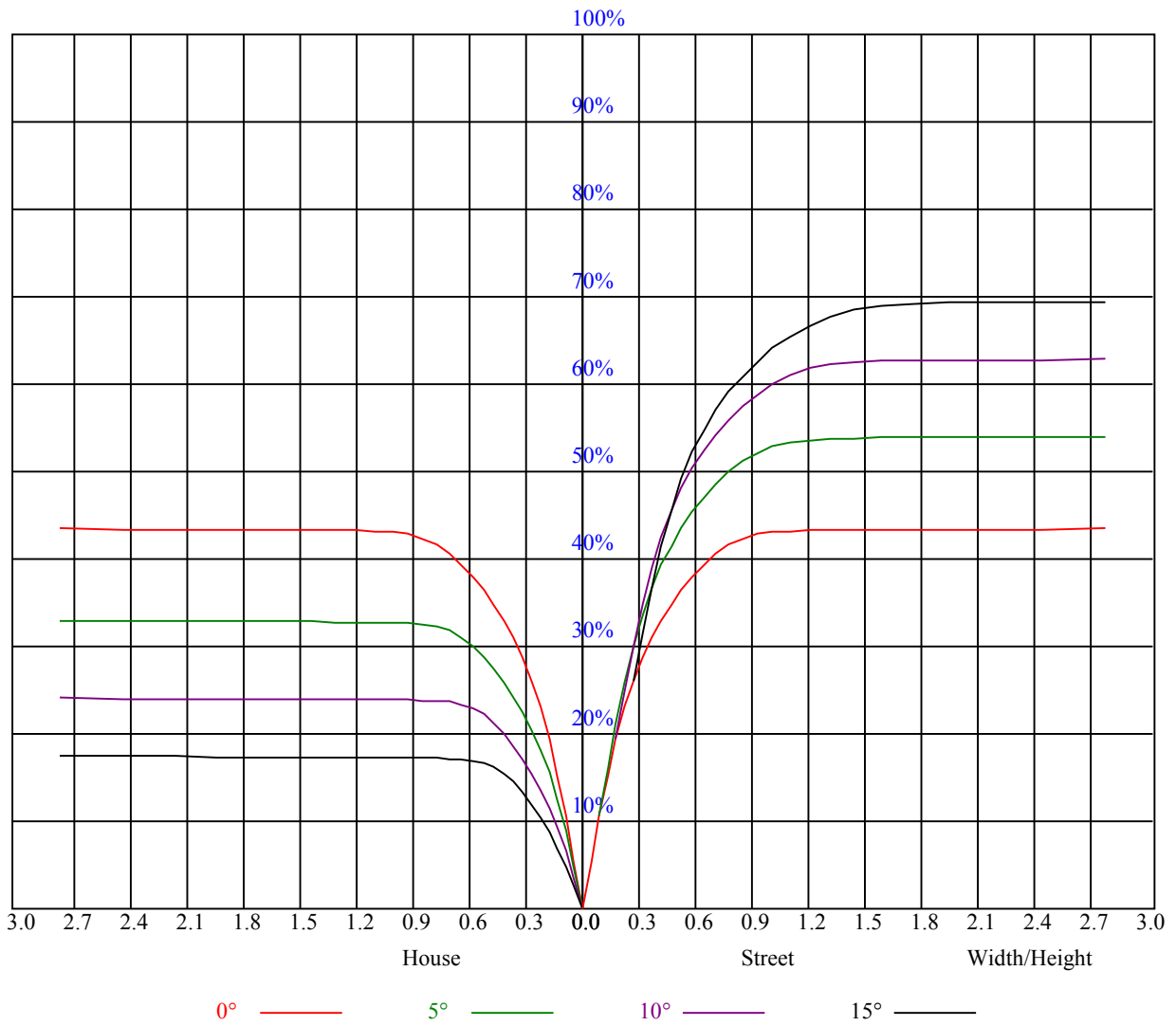
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

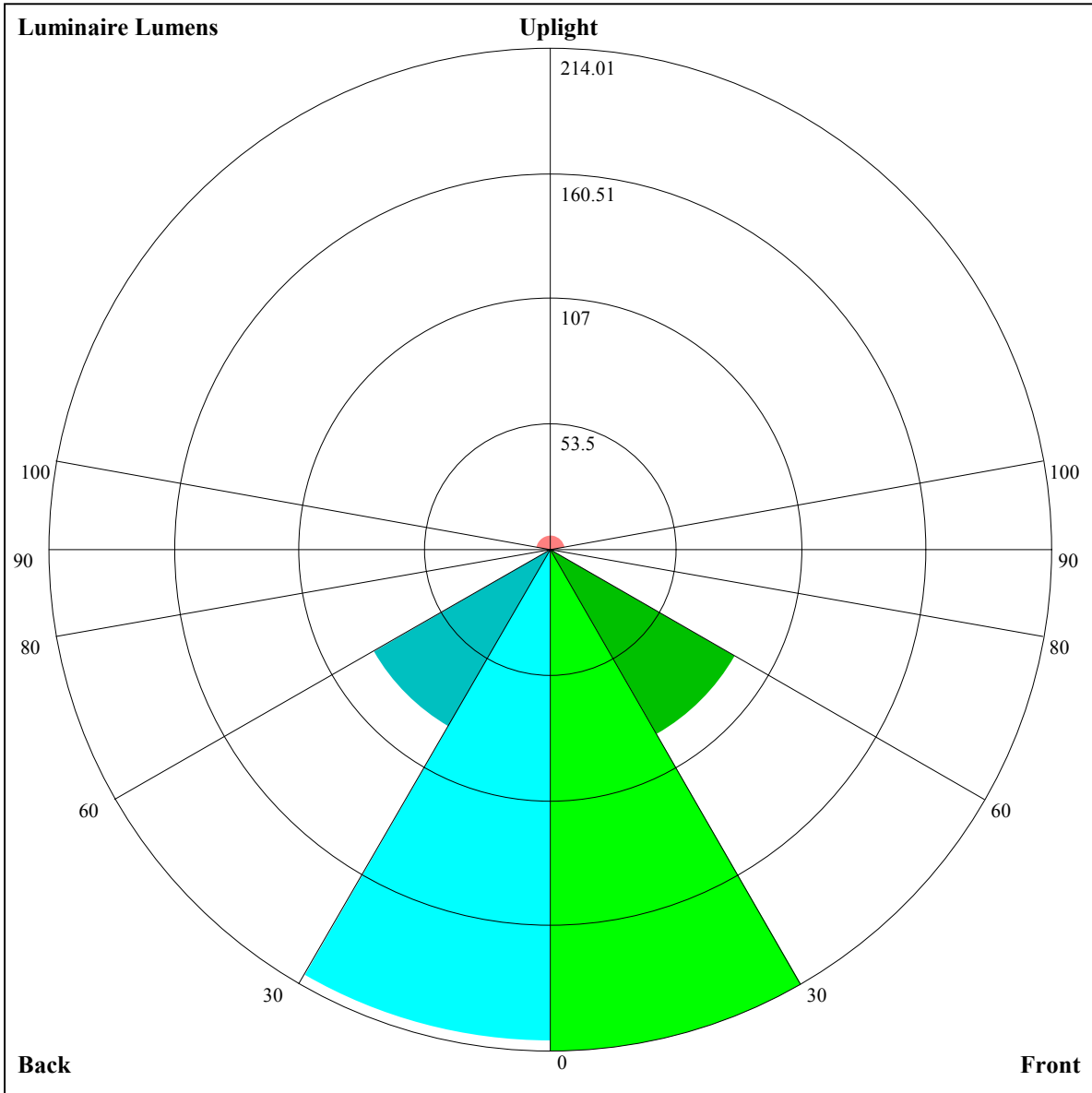
Luminance Limiting Curve





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	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.97	0.95	0.93	0.95	0.93	0.91	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.84	0.82
2	0.91	0.87	0.84	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.81	0.80	0.78	0.77
3	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.78	0.76	0.79	0.77	0.75	0.77	0.75	0.73	0.72
4	0.80	0.75	0.72	0.79	0.75	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.74	0.71	0.69	0.68
5	0.75	0.71	0.67	0.75	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.66	0.70	0.67	0.65	0.64
6	0.71	0.66	0.63	0.71	0.66	0.63	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60
7	0.67	0.63	0.59	0.67	0.62	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	0.56	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	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.52	0.51
10	0.58	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.49





Luminaire Lumens:

FL=214.01,FM=91.25,FH=1.52,FVH=0.68

BL=210.05,BM=87.21,BH=1.48,BVH=0.67

UL=1.31,UH=6.23

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	1614.88	1617.67	1607.92	1579.62	1536.93	1473.82	1394.47	1304.91	1207.00
45.0	1590.75	1610.71	1618.13	1615.35	1601.43	1553.17	1522.08	1458.04	1381.94
90.0	1614.88	1616.74	1609.31	1587.04	1554.56	1503.05	1430.20	1342.96	1265.93
135.0	1608.85	1609.78	1604.21	1591.68	1566.62	1529.50	1474.74	1402.82	1314.19
180.0	1614.88	1604.21	1592.15	1548.06	1498.87	1463.14	1394.47	1316.51	1227.41
225.0	1590.75	1572.66	1526.72	1468.71	1395.86	1307.23	1214.89	1123.01	906.40
270.0	1614.88	1602.82	1585.18	1550.85	1499.34	1428.81	1343.42	1248.76	1148.53
315.0	1608.85	1598.64	1575.44	1552.24	1471.96	1393.07	1338.32	1242.73	1103.52
360.0	1614.88	1617.67	1607.92	1579.62	1536.93	1473.82	1394.47	1304.91	1207.00

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1109.09	894.05	894.05	842.73	763.06	702.87	632.85	568.44	510.48
45.0	1295.16	1202.82	1107.23	1011.64	920.22	833.91	751.32	671.97	599.58
90.0	1147.14	920.74	920.74	884.82	798.93	717.35	643.01	575.54	514.52
135.0	1217.21	1119.30	1019.53	927.19	839.48	759.21	683.57	614.89	565.24
180.0	1135.07	1043.19	952.24	865.47	781.48	700.27	608.86	539.25	476.61
225.0	906.40	854.70	775.21	702.04	633.54	570.34	523.71	469.83	422.46
270.0	1051.55	960.13	870.57	819.99	710.95	666.86	599.58	516.52	484.96
315.0	912.94	876.00	857.30	772.20	692.57	616.10	548.30	487.00	434.34
360.0	1109.09	894.05	894.05	842.73	763.06	702.87	632.85	568.44	510.48

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	457.86	411.88	372.80	340.93	316.42	297.31	283.25	271.32	262.04
45.0	532.29	473.36	422.78	378.23	349.93	316.52	299.81	283.57	271.51
90.0	460.00	413.13	371.78	339.21	322.64	302.69	282.18	275.91	266.87
135.0	497.95	458.51	412.57	373.13	340.65	316.52	297.49	282.64	271.51
180.0	422.78	376.38	352.71	310.95	297.49	281.71	267.33	263.15	256.19
225.0	382.13	348.35	321.53	301.11	285.57	273.13	263.25	254.94	249.00
270.0	437.17	394.94	358.74	329.51	307.70	291.00	277.07	266.87	258.51
315.0	388.58	350.02	320.79	302.60	284.17	275.54	266.26	259.30	253.55
360.0	457.86	411.88	372.80	340.93	316.42	297.31	283.25	271.32	262.04

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	254.52	248.44	243.34	238.84	234.85	231.32	227.28	223.11	220.42
45.0	262.69	255.26	250.16	245.06	240.88	237.17	233.46	230.67	230.67
90.0	259.39	253.08	247.61	243.57	239.49	235.31	231.04	227.89	224.36
135.0	262.23	254.80	248.30	243.20	238.10	234.85	230.67	229.28	229.28
180.0	251.09	246.91	242.74	239.02	235.78	232.53	230.21	230.21	223.57
225.0	243.62	239.53	234.85	231.04	227.01	222.64	218.88	216.24	207.33
270.0	251.09	245.52	240.88	236.70	232.53	230.21	230.21	222.78	218.98
315.0	248.21	243.62	240.09	236.15	232.90	229.42	226.26	222.97	219.67
360.0	254.52	248.44	243.34	238.84	234.85	231.32	227.28	223.11	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	210.21	195.59	175.92	153.32	129.33	105.99	81.62	58.51
45.0	224.73	221.39	215.91	208.35	191.83	172.39	149.98	127.33	102.23
90.0	220.28	214.29	201.48	182.55	160.56	136.70	111.28	86.12	67.28
135.0	221.25	216.70	206.26	191.18	169.93	145.75	120.88	95.41	70.12
180.0	219.44	212.53	193.27	173.41	156.24	127.19	109.47	84.83	62.27
225.0	199.86	182.60	151.18	137.77	113.13	89.19	66.40	45.06	27.24
270.0	214.94	206.73	190.81	170.21	148.12	122.69	97.82	73.55	52.25
315.0	213.08	199.44	181.76	159.63	134.01	108.63	94.20	60.42	40.05
360.0	216.43	210.21	195.59	175.92	153.32	129.33	105.99	81.62	58.51

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	38.00	21.48	12.30	8.86	7.98	6.82	5.61	4.36	3.57
45.0	79.77	57.08	38.19	22.51	14.48	12.30	11.55	10.63	9.74
90.0	41.72	24.04	14.99	9.47	8.86	7.93	6.87	5.85	4.64
135.0	46.77	29.23	16.38	10.21	9.19	7.98	7.33	6.26	5.10
180.0	41.07	24.78	15.27	12.44	12.06	11.51	10.81	10.26	9.19
225.0	14.15	8.86	8.07	7.24	6.22	5.34	4.13	2.60	2.04
270.0	32.85	18.98	12.62	11.04	10.49	10.02	8.63	7.38	6.13
315.0	30.81	18.93	13.60	12.25	11.60	10.72	9.51	8.21	4.78
360.0	38.00	21.48	12.30	8.86	7.98	6.82	5.61	4.36	3.57
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	2.13	2.09	2.00	1.95	1.95	1.90	1.76	1.72	1.72
45.0	9.10	7.80	2.46	2.09	2.04	1.86	1.86	1.86	1.76
90.0	3.06	2.13	2.04	1.95	1.86	1.86	1.81	1.81	1.67
135.0	3.25	2.13	2.00	1.95	1.95	1.90	1.81	1.76	1.76
180.0	3.67	2.00	1.95	1.90	1.81	1.72	1.72	1.62	1.62
225.0	1.86	1.86	1.81	1.76	1.76	1.67	1.62	1.62	1.62
270.0	2.09	1.95	1.81	1.81	1.81	1.72	1.62	1.62	1.62
315.0	3.16	1.90	1.81	1.81	1.76	1.72	1.62	1.62	1.62
360.0	2.13	2.09	2.00	1.95	1.95	1.90	1.76	1.72	1.72
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.67	1.62	1.53	1.58	1.53	1.48	1.44	1.44	1.44
45.0	1.76	1.67	1.72	1.67	1.58	1.53	1.58	1.58	1.44
90.0	1.67	1.67	1.62	1.58	1.53	1.58	1.53	1.48	1.48
135.0	1.72	1.62	1.58	1.62	1.58	1.53	1.44	1.53	1.48
180.0	1.53	1.53	1.53	1.53	1.48	1.39	1.39	1.44	1.44
225.0	1.58	1.48	1.53	1.48	1.44	1.35	1.39	1.39	1.35
270.0	1.62	1.53	1.53	1.53	1.53	1.44	1.39	1.39	1.44
315.0	1.62	1.58	1.53	1.48	1.48	1.48	1.39	1.39	1.39
360.0	1.67	1.62	1.53	1.58	1.53	1.48	1.44	1.44	1.44
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.44	1.35	1.35	1.39	1.44	1.44	1.44	1.44	1.39
45.0	1.44	1.48	1.53	1.53	1.58	1.44	1.35	1.30	1.30
90.0	1.39	1.39	1.35	1.39	1.35	1.30	1.30	1.30	1.30
135.0	1.39	1.44	1.39	1.39	1.35	1.39	1.39	1.30	1.25
180.0	1.35	1.30	1.35	1.30	1.25	1.25	1.30	1.25	1.21
225.0	1.30	1.35	1.35	1.30	1.30	1.25	1.30	1.30	1.21
270.0	1.39	1.35	1.35	1.30	1.30	1.30	1.30	1.25	1.21
315.0	1.39	1.30	1.30	1.35	1.30	1.21	1.25	1.30	1.25
360.0	1.44	1.35	1.35	1.39	1.44	1.44	1.44	1.44	1.39
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.30	1.30	1.35	1.30	1.39	1.39	1.39	1.39	1.39
45.0	1.25	1.30	1.21	1.30	1.21	1.21	1.25	1.25	1.16
90.0	1.30	1.25	1.25	1.21	1.21	1.25	1.21	1.21	1.16
135.0	1.30	1.35	1.30	1.25	1.35	1.35	1.35	1.35	1.25
180.0	1.21	1.25	1.21	1.21	1.21	1.16	1.16	1.16	1.11
225.0	1.21	1.25	1.21	1.21	1.16	1.16	1.11	1.11	1.11
270.0	1.25	1.21	1.25	1.16	1.25	1.21	1.21	1.16	1.11
315.0	1.21	1.25	1.16	1.21	1.21	1.16	1.11	1.16	1.11
360.0	1.30	1.30	1.35	1.30	1.39	1.39	1.39	1.39	1.39

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>1.35</b>
<b>45.0</b>	<b>1.21</b>
<b>90.0</b>	<b>1.16</b>
<b>135.0</b>	<b>1.30</b>
<b>180.0</b>	<b>1.16</b>
<b>225.0</b>	<b>1.11</b>
<b>270.0</b>	<b>1.16</b>
<b>315.0</b>	<b>1.16</b>
<b>360.0</b>	<b>1.35</b>