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Nata

Client:

LumCAT: 3-2322-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): 78

Phm Type: C

Voltage(V): 220.5000

Current(A): 0.0700

Power (W): 14.3800

PF: 0.9200

Ballast type: AC

Width(mm): 78

Height(mm): 0

Photometric Results

Lumens(lm): 1584.87, Efficiency(%): 86.37% , Luminous Efficacy(lm/W): 110.21

Central intensity(cd): 12354.330, Maximum intensity(cd): 12354.330

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=14.8

[C90/270]Total=14.8

Field angle(10%Imax): [C0/180]Total=30.2

[C90/270]Total=30.2

Maximum s/h(1/2): C0_180=0.26 C90_270=0.26

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(%): 86.37%

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	12354.333	0.000	0	.000%	.000%
1.0	12251.086	11.773	11.773	.642%	.743%
2.0	11940.764	34.722	46.496	1.892%	2.934%
3.0	11181.825	55.302	101.797	3.014%	6.423%
4.0	9962.659	70.777	172.575	3.857%	10.889%
5.0	9300.251	82.868	255.443	4.516%	16.118%
6.0	8111.571	91.504	346.946	4.987%	21.891%
7.0	6710.306	91.999	438.946	5.014%	27.696%
8.0	5376.384	86.502	525.448	4.714%	33.154%
9.0	4247.623	77.997	603.445	4.251%	38.075%
10.0	3352.154	68.775	672.22	3.748%	42.415%
11.0	2686.034	60.334	732.554	3.288%	46.222%
12.0	2212.488	53.548	786.102	2.918%	49.600%
13.0	2020.204	50.231	836.333	2.737%	52.770%
14.0	1580.556	46.089	882.423	2.512%	55.678%
15.0	1263.250	39.041	921.464	2.128%	58.141%
16.0	1064.968	34.115	955.579	1.859%	60.294%
17.0	970.886	31.704	987.282	1.728%	62.294%
18.0	893.067	30.733	1018.015	1.675%	64.233%
19.0	820.446	29.812	1047.827	1.625%	66.114%
20.0	760.133	28.929	1076.756	1.577%	67.940%
21.0	715.261	28.331	1105.086	1.544%	69.727%
22.0	678.127	28.001	1133.087	1.526%	71.494%
23.0	650.656	27.881	1160.968	1.519%	73.253%
24.0	628.539	27.968	1188.936	1.524%	75.018%
25.0	610.923	28.183	1217.119	1.536%	76.796%
26.0	597.803	28.532	1245.651	1.555%	78.596%
27.0	587.501	28.999	1274.65	1.580%	80.426%
28.0	577.896	29.505	1304.155	1.608%	82.288%
29.0	569.676	30.024	1334.179	1.636%	84.182%
30.0	559.810	30.496	1364.675	1.662%	86.106%
31.0	550.750	30.905	1395.58	1.684%	88.056%
32.0	531.753	31.012	1426.592	1.690%	90.013%
33.0	490.338	30.111	1456.703	1.641%	91.913%
34.0	429.550	27.839	1484.542	1.517%	93.670%
35.0	358.327	24.469	1509.011	1.333%	95.213%
36.0	282.678	20.410	1529.42	1.112%	96.501%
37.0	212.626	16.154	1545.574	.880%	97.520%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	174.639	12.926	1558.501	.704%	98.336%
39.0	92.290	9.111	1567.612	.497%	98.911%
40.0	33.573	4.390	1572.001	.239%	99.188%
41.0	13.614	1.680	1573.682	.092%	99.294%
42.0	9.478	0.839	1574.521	.046%	99.347%
43.0	8.034	0.649	1575.169	.035%	99.388%
44.0	6.792	0.560	1575.729	.030%	99.423%
45.0	5.638	0.478	1576.206	.026%	99.453%
46.0	4.739	0.406	1576.612	.022%	99.479%
47.0	4.292	0.359	1576.972	.020%	99.502%
48.0	4.020	0.336	1577.308	.018%	99.523%
49.0	3.776	0.320	1577.628	.017%	99.543%
50.0	3.556	0.306	1577.933	.017%	99.562%
51.0	3.329	0.291	1578.225	.016%	99.581%
52.0	3.115	0.277	1578.501	.015%	99.598%
53.0	2.941	0.263	1578.765	.014%	99.615%
54.0	2.784	0.252	1579.017	.014%	99.631%
55.0	2.628	0.242	1579.259	.013%	99.646%
56.0	2.471	0.230	1579.489	.013%	99.660%
57.0	2.372	0.221	1579.71	.012%	99.674%
58.0	2.262	0.214	1579.925	.012%	99.688%
59.0	2.146	0.206	1580.131	.011%	99.701%
60.0	2.048	0.198	1580.329	.011%	99.713%
61.0	1.990	0.193	1580.522	.010%	99.726%
62.0	1.891	0.187	1580.709	.010%	99.737%
63.0	1.821	0.181	1580.889	.010%	99.749%
64.0	1.752	0.175	1581.064	.010%	99.760%
65.0	1.700	0.171	1581.235	.009%	99.771%
66.0	1.659	0.168	1581.403	.009%	99.781%
67.0	1.584	0.163	1581.566	.009%	99.791%
68.0	1.566	0.160	1581.725	.009%	99.801%
69.0	1.537	0.158	1581.884	.009%	99.811%
70.0	1.485	0.155	1582.039	.008%	99.821%
71.0	1.433	0.151	1582.19	.008%	99.831%
72.0	1.433	0.149	1582.339	.008%	99.840%
73.0	1.433	0.150	1582.488	.008%	99.850%
74.0	1.386	0.148	1582.637	.008%	99.859%
75.0	1.346	0.144	1582.781	.008%	99.868%

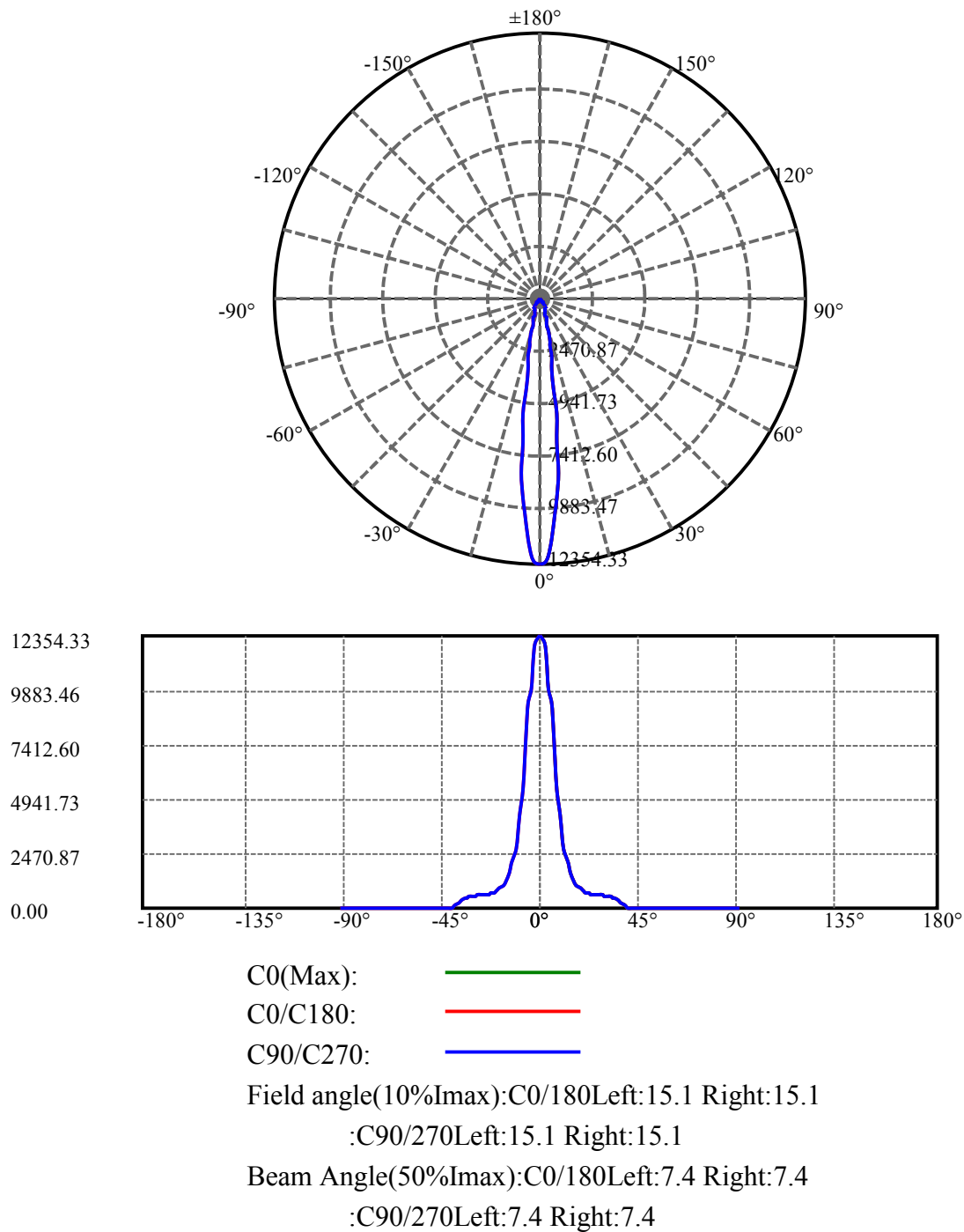
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.340	0.143	1582.924	.008%	99.877%
77.0	1.357	0.144	1583.067	.008%	99.886%
78.0	1.317	0.143	1583.211	.008%	99.895%
79.0	1.288	0.140	1583.35	.008%	99.904%
80.0	1.293	0.139	1583.49	.008%	99.913%
81.0	1.282	0.139	1583.629	.008%	99.922%
82.0	1.264	0.138	1583.767	.008%	99.930%
83.0	1.264	0.137	1583.904	.007%	99.939%
84.0	1.259	0.137	1584.042	.007%	99.948%
85.0	1.241	0.136	1584.178	.007%	99.956%
86.0	1.247	0.136	1584.314	.007%	99.965%
87.0	1.247	0.137	1584.451	.007%	99.973%
88.0	1.270	0.138	1584.589	.008%	99.982%
89.0	1.282	0.140	1584.729	.008%	99.991%
90.0	1.322	0.143	1584.871	.008%	100.000%

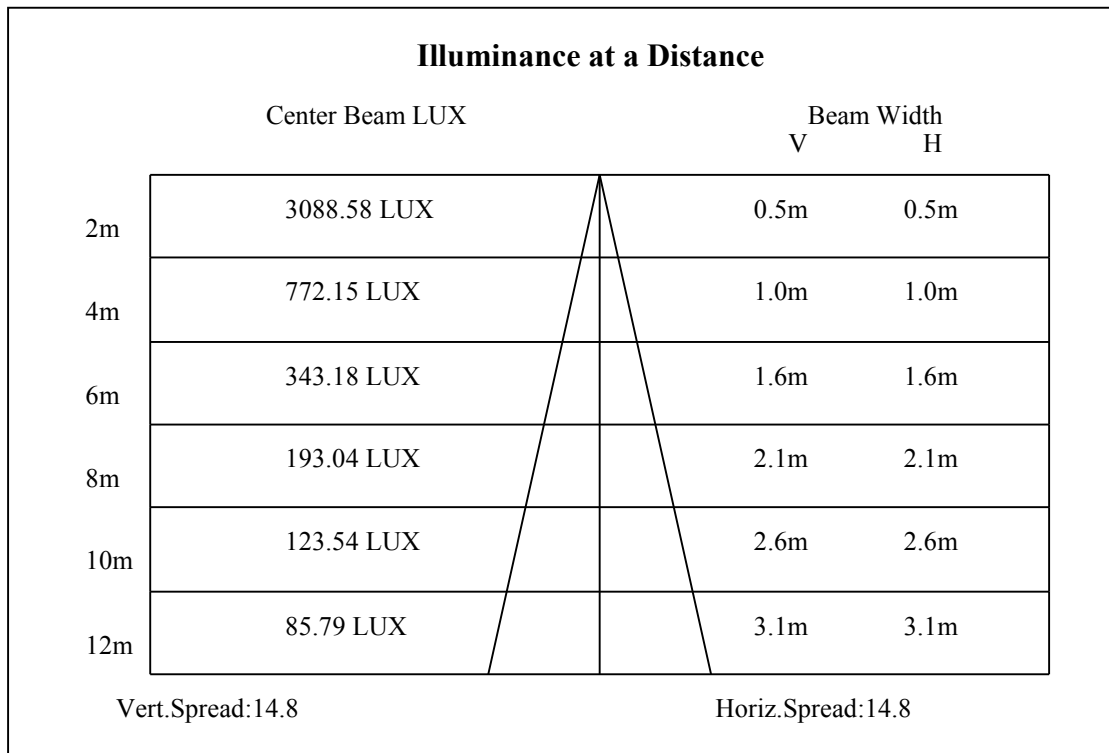
ZONAL LUMEN SUMMARY

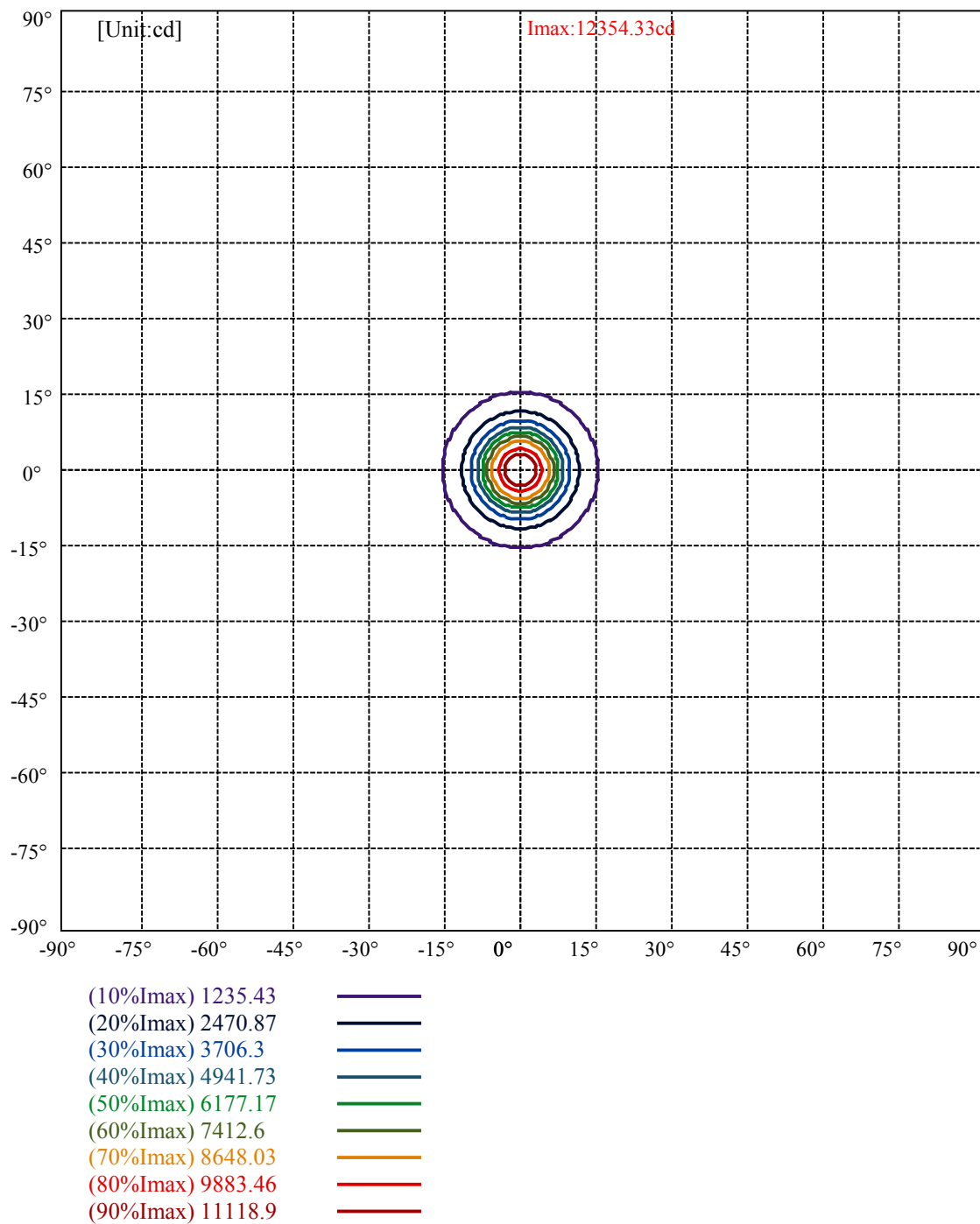
Zone	Lumens	%Lamp	%Fixt
0-30	1364.67	74.37%	86.11%
0-40	1572.00	85.67%	99.19%
0-60	1580.33	86.12%	99.71%
0-90	1584.73	86.36%	99.99%
0-120	1584.73	86.36%	99.99%
0-180	1584.87	86.37%	100.00%
60-90	4.60	0.25%	0.29%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.77	1267.90	69.10%	80.00%

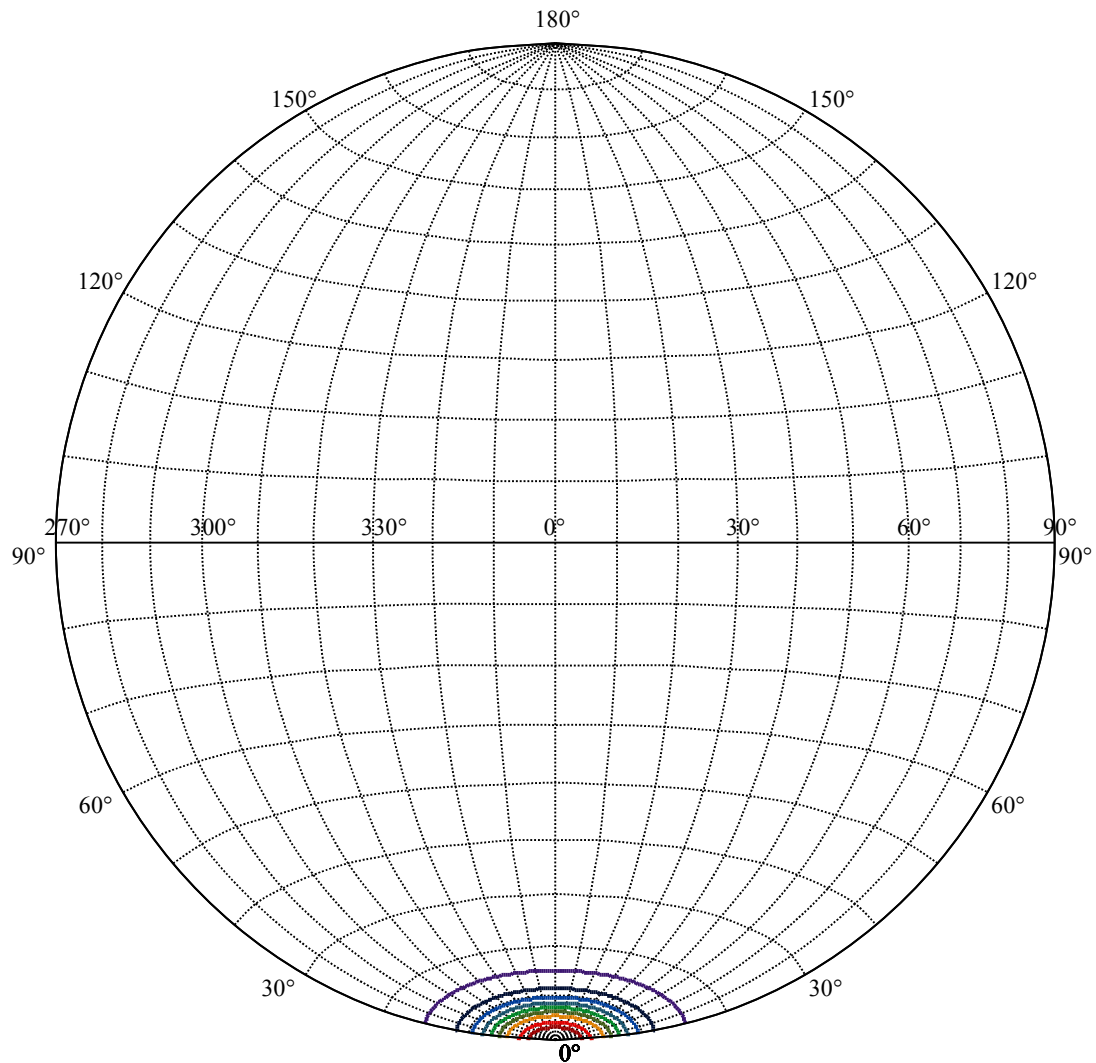
ZONAL LUMEN SUMMARY

0-10	672.22
10-20	404.54
20-30	287.92
30-40	207.33
40-50	5.93
50-60	2.40
60-70	1.71
70-80	1.45
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









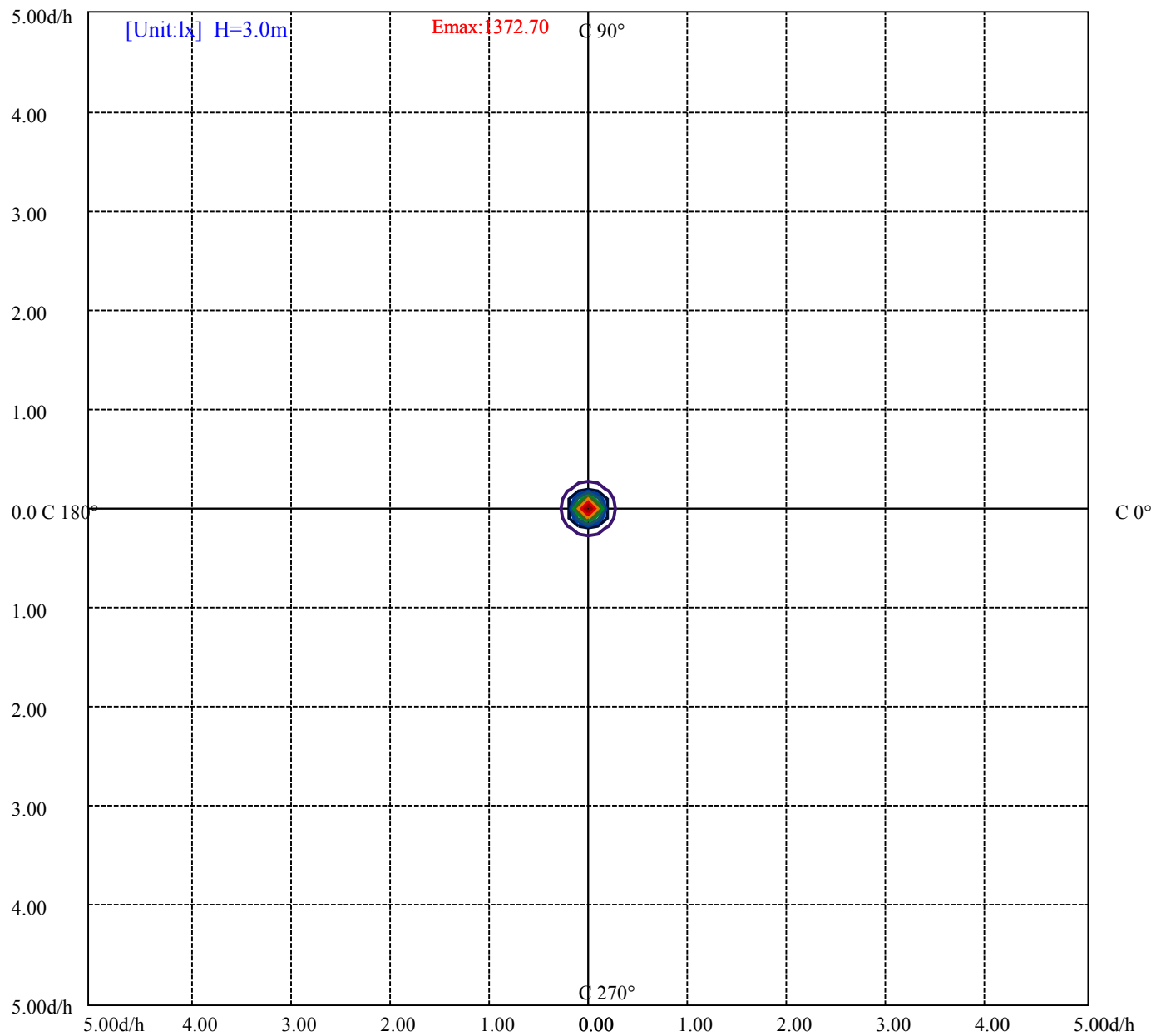
House

[Unit:cd]

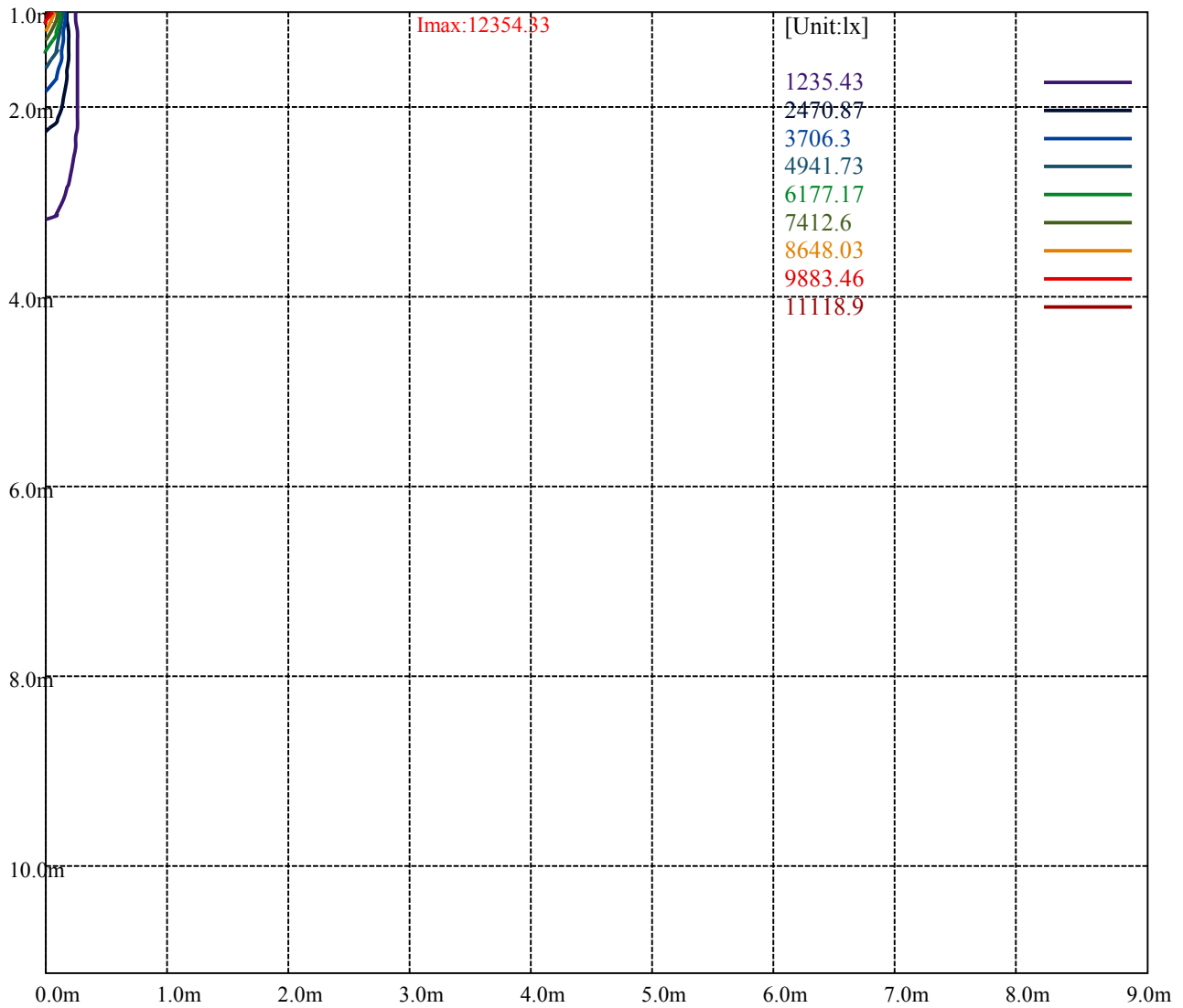
Road

Imax:12354.33

(10%Imax)	1235.43	—
(20%Imax)	2470.87	—
(30%Imax)	3706.3	—
(40%Imax)	4941.73	—
(50%Imax)	6177.17	—
(60%Imax)	7412.6	—
(70%Imax)	8648.03	—
(80%Imax)	9883.46	—
(90%Imax)	11118.9	—



(10%Emax)	137.27	
(20%Emax)	274.54	
(30%Emax)	411.81	
(40%Emax)	549.0811	
(50%Emax)	686.3511	
(60%Emax)	823.6211	
(70%Emax)	960.8911	
(80%Emax)	1098.161	
(90%Emax)	1235.433	



Luminance Table

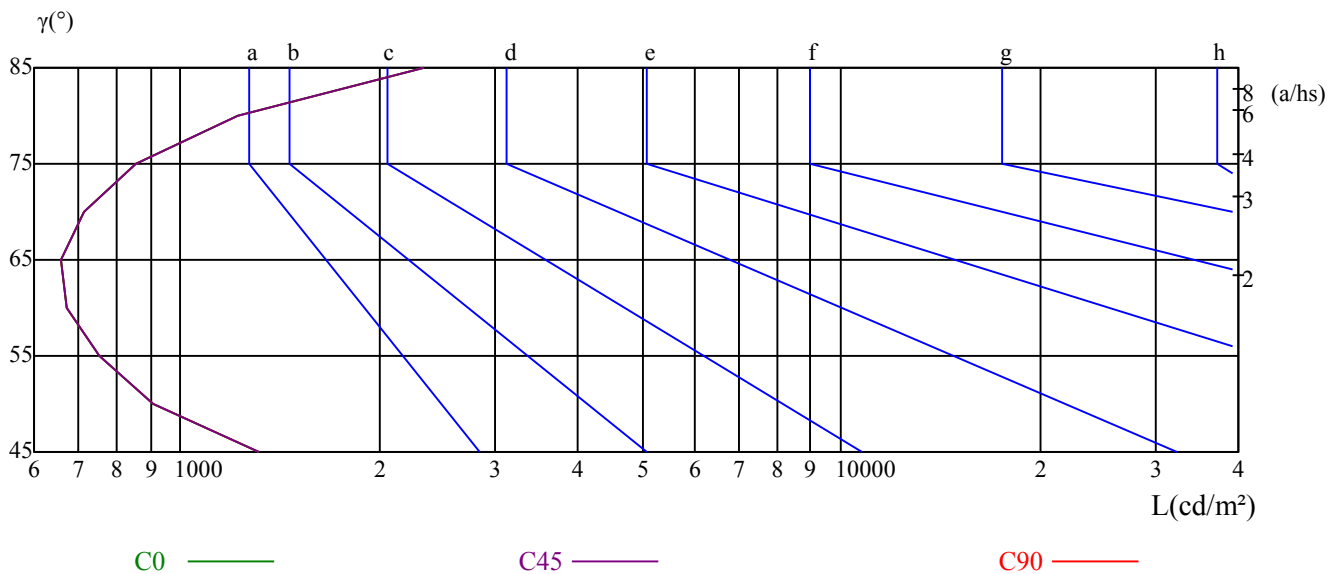
γ	45	50	55	60	65	70	75	80	85
C0	1311	909	753	673	661	714	855	1224	2341
C45	1311	909	753	673	661	714	855	1224	2341
C90	1311	909	753	673	661	714	855	1224	2341

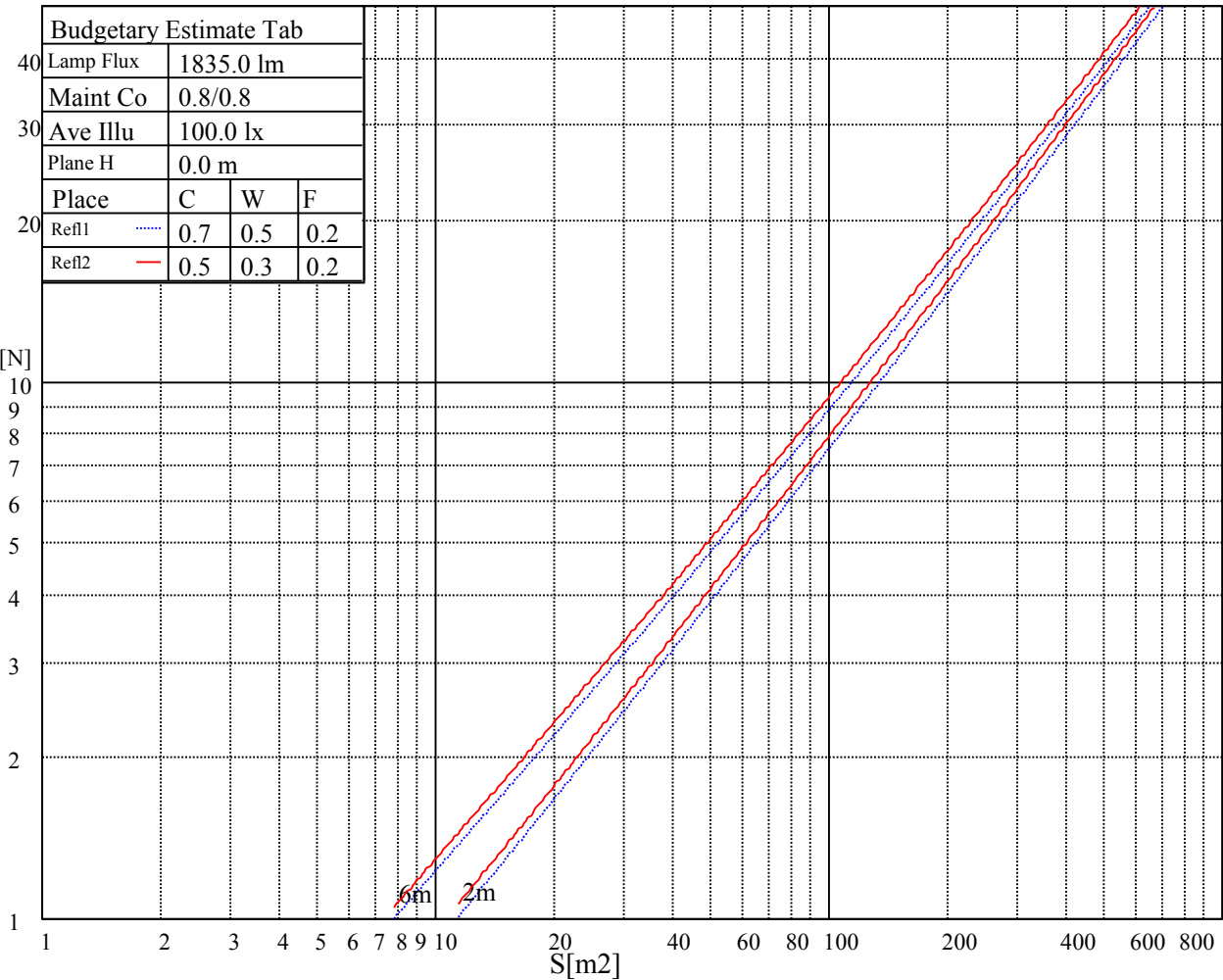
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
661	661	661	855	855	855	2341	2341	2341

Glare Table

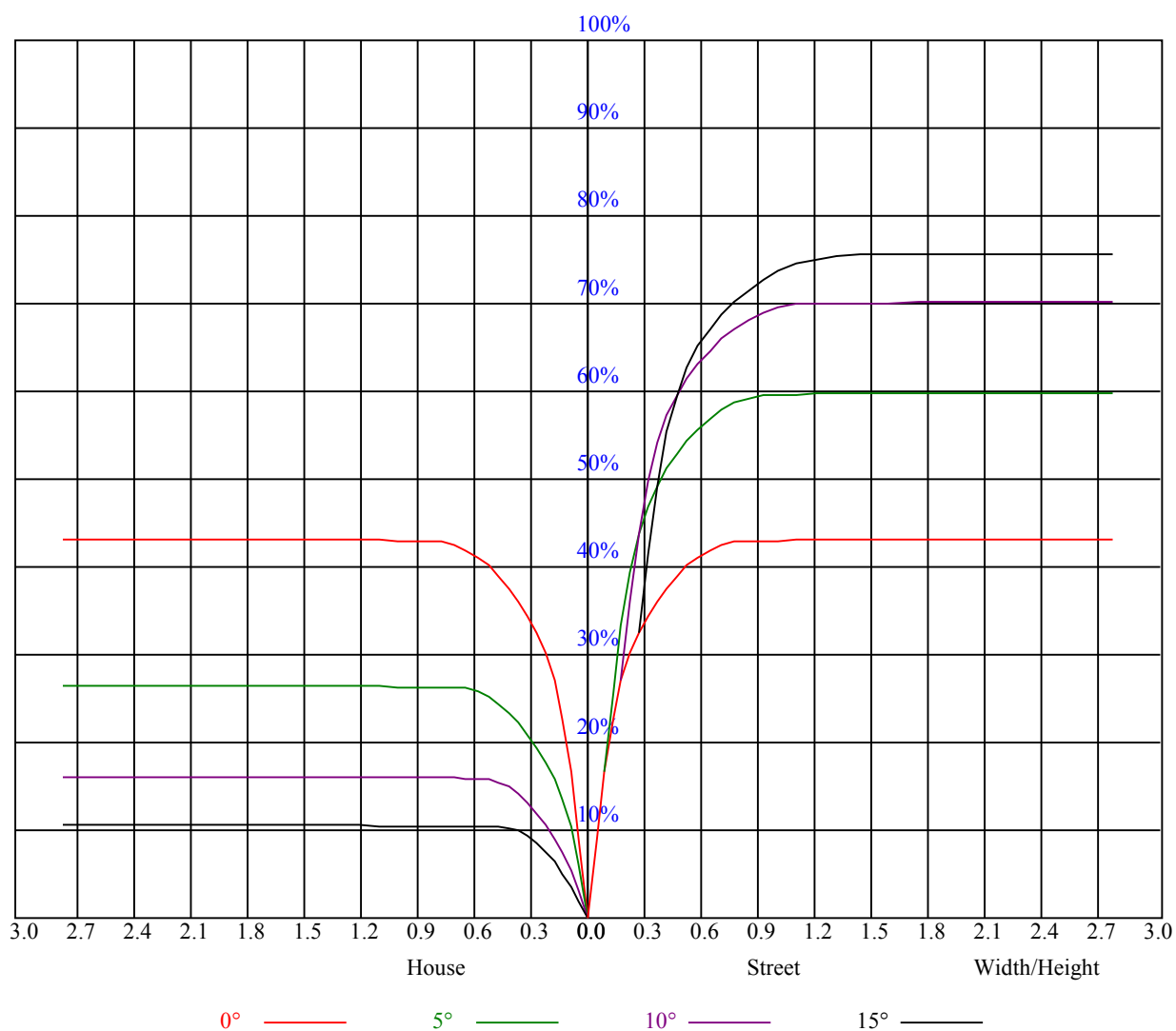
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

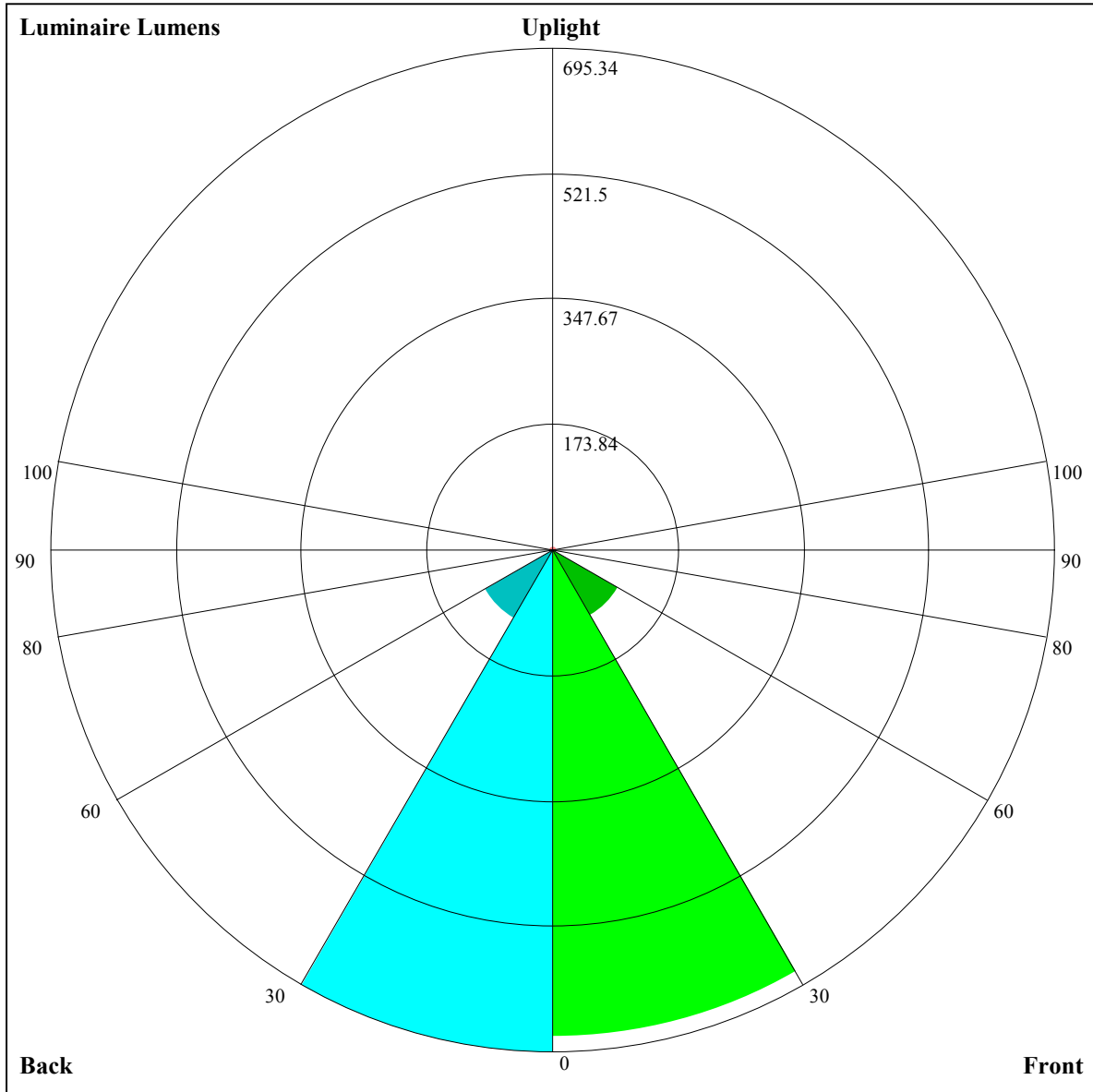
Luminance Limiting Curve





RHOC	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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.97	0.96	0.94	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.83
2	0.93	0.90	0.88	0.91	0.89	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.84	0.82	0.81	0.80
3	0.88	0.85	0.83	0.87	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	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.77	0.75	0.73	0.72
6	0.78	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.73	0.70	0.68	0.67
8	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.71	0.68	0.66	0.65
9	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.63	0.62





Luminaire Lumens:

FL=674.11,FM=105.46,FH=1.57,FVH=0.69

BL=695.34,BM=109.64,BH=1.59,BVH=0.69

UL=1.44,UH=6.87

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	12343.89	12121.16	11671.04	10636.25	8877.47	8593.48	7419.94	5981.44	4727.62
45.0	12390.30	12325.33	12130.44	11578.24	11002.84	9991.24	8385.69	7207.04	5801.02
90.0	12269.65	11916.98	11341.58	9219.00	9219.00	8073.76	6606.03	5267.29	4150.83
135.0	12413.50	12320.69	12028.35	11508.63	10715.14	9587.53	8190.79	7304.49	5903.11
180.0	12343.89	12376.38	12186.12	11782.41	11128.13	10176.86	8919.33	7462.26	6023.76
225.0	12390.30	12227.88	11861.30	11258.05	8463.55	8463.55	7566.11	6118.33	4845.02
270.0	12269.65	12408.86	12334.61	12065.47	11564.32	10784.74	9666.42	8237.20	6724.45
315.0	12413.50	12311.41	11972.67	11406.55	8730.84	8730.84	8138.26	6104.41	4835.27
360.0	12343.89	12121.16	11671.04	10636.25	8877.47	8593.48	7419.94	5981.44	4727.62
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3719.27	2938.77	2352.70	1915.11	1593.07	1355.02	1175.91	897.63	897.63
45.0	4594.53	3620.06	2859.05	2292.93	2292.93	1562.45	1324.86	1144.82	1008.39
90.0	3276.59	2603.74	2099.80	1722.07	1441.80	1235.30	925.24	906.12	871.97
135.0	4274.35	3703.59	2924.01	2548.15	2548.15	1581.94	1342.03	1159.20	1022.31
180.0	4775.51	3759.27	2961.14	2580.63	2580.63	1641.33	1380.08	1187.04	1041.80
225.0	3795.84	2980.07	2370.33	1919.75	1587.04	1428.34	1221.85	919.53	919.53
270.0	5360.19	4227.95	3323.08	2627.03	2395.02	2395.02	1495.63	1276.60	1110.94
315.0	4184.70	2983.78	2598.17	2094.23	1723.00	1445.05	1240.41	1028.81	894.52
360.0	3719.27	2938.77	2352.70	1915.11	1593.07	1355.02	1175.91	897.63	897.63
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	848.39	781.39	729.69	703.61	657.44	642.22	621.57	605.84	593.82
45.0	903.98	853.40	783.33	729.51	687.28	653.87	629.74	609.32	594.47
90.0	825.65	763.57	714.01	675.77	646.49	623.24	605.56	592.52	581.81
135.0	917.90	836.70	771.27	720.69	688.21	651.09	632.52	612.11	596.79
180.0	931.83	847.84	782.87	732.29	691.92	660.37	636.70	616.28	601.90
225.0	853.50	787.09	736.84	697.02	666.26	642.18	622.64	608.16	596.93
270.0	983.80	888.21	813.03	756.42	713.27	678.93	652.01	630.67	613.96
315.0	879.48	805.38	750.02	706.77	674.15	653.36	627.56	612.48	602.73
360.0	848.39	781.39	729.69	703.61	657.44	642.22	621.57	605.84	593.82
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	583.85	574.98	565.89	556.47	547.79	519.25	463.01	394.43	320.83
45.0	583.80	574.06	565.70	556.42	547.61	539.25	509.56	456.19	387.98
90.0	572.43	563.62	553.78	545.38	534.89	490.34	428.35	356.52	278.70
135.0	586.12	576.84	568.02	557.35	549.46	539.25	500.74	441.81	370.81
180.0	594.94	581.02	572.66	567.10	554.10	549.00	523.01	470.11	402.36
225.0	587.56	578.97	573.17	559.81	554.71	529.79	476.52	407.51	332.80
270.0	600.97	590.30	584.26	572.20	562.45	556.89	543.89	499.81	438.09
315.0	590.34	583.38	573.92	563.75	554.98	530.25	477.63	410.02	335.03
360.0	583.85	574.98	565.89	556.47	547.79	519.25	463.01	394.43	320.83
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	244.36	169.19	99.30	52.71	13.55	10.16	8.63	6.82	5.85
45.0	312.34	249.23	249.23	101.39	44.55	13.41	8.54	7.56	6.50
90.0	200.79	129.33	67.15	28.58	9.37	7.93	7.10	6.22	5.15
135.0	293.78	248.30	248.30	102.64	46.17	14.11	9.70	7.98	7.29
180.0	328.12	252.48	252.48	105.38	48.49	14.62	9.79	8.91	7.98
225.0	254.71	178.51	109.14	50.81	14.80	10.12	8.91	7.33	5.85
270.0	368.49	290.07	258.51	243.20	74.57	26.08	12.20	10.72	8.77
315.0	258.84	183.90	112.99	53.60	17.08	12.48	10.95	8.72	6.96
360.0	244.36	169.19	99.30	52.71	13.55	10.16	8.63	6.82	5.85

Intensity data(cd)										Appendix Page: 18 Total:19	
C/ γ (°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0		
0.0	4.92	4.55	4.22	3.99	3.76	3.53	3.25	3.02	2.88		
45.0	5.71	4.55	4.08	3.81	3.62	3.39	3.25	2.97	2.78		
90.0	4.41	4.04	3.85	3.67	3.39	3.16	2.97	2.88	2.64		
135.0	6.26	5.24	4.92	4.59	4.27	3.99	3.81	3.53	3.29		
180.0	6.77	5.57	4.59	4.32	4.08	3.81	3.53	3.29	3.16		
225.0	4.50	3.99	3.85	3.62	3.34	3.25	2.97	2.83	2.74		
270.0	6.96	5.29	4.36	3.94	3.76	3.57	3.39	3.16	2.92		
315.0	5.57	4.69	4.45	4.22	3.99	3.76	3.48	3.25	3.11		
360.0	4.92	4.55	4.22	3.99	3.76	3.53	3.25	3.02	2.88		
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	2.74	2.55	2.41	2.32	2.23	2.13	2.00	1.90	1.86		
45.0	2.69	2.55	2.37	2.32	2.23	2.09	2.04	2.00	1.86		
90.0	2.51	2.41	2.32	2.13	2.04	2.00	1.90	1.90	1.76		
135.0	3.06	2.92	2.78	2.60	2.41	2.32	2.27	2.18	2.04		
180.0	2.97	2.74	2.60	2.55	2.37	2.23	2.09	2.09	2.00		
225.0	2.55	2.41	2.27	2.23	2.13	2.00	1.95	1.90	1.81		
270.0	2.83	2.69	2.46	2.37	2.32	2.23	2.04	1.95	1.90		
315.0	2.92	2.74	2.55	2.46	2.37	2.18	2.09	2.00	1.90		
360.0	2.74	2.55	2.41	2.32	2.23	2.13	2.00	1.90	1.86		
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	1.81	1.72	1.62	1.67	1.58	1.58	1.53	1.48	1.44		
45.0	1.76	1.76	1.72	1.62	1.53	1.53	1.53	1.48	1.39		
90.0	1.72	1.67	1.58	1.58	1.48	1.53	1.48	1.44	1.39		
135.0	1.95	1.86	1.86	1.81	1.67	1.62	1.62	1.58	1.48		
180.0	1.90	1.76	1.76	1.72	1.67	1.62	1.58	1.53	1.48		
225.0	1.72	1.67	1.67	1.58	1.48	1.53	1.48	1.39	1.39		
270.0	1.86	1.76	1.67	1.67	1.62	1.53	1.48	1.48	1.44		
315.0	1.86	1.81	1.72	1.62	1.62	1.58	1.58	1.48	1.44		
360.0	1.81	1.72	1.62	1.67	1.58	1.58	1.53	1.48	1.44		
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	1.39	1.44	1.44	1.35	1.30	1.39	1.35	1.25	1.30		
45.0	1.44	1.44	1.39	1.30	1.35	1.35	1.35	1.30	1.25		
90.0	1.39	1.39	1.30	1.35	1.39	1.35	1.25	1.30	1.30		
135.0	1.44	1.48	1.44	1.39	1.35	1.35	1.35	1.35	1.30		
180.0	1.53	1.44	1.39	1.39	1.35	1.39	1.30	1.30	1.35		
225.0	1.35	1.39	1.39	1.30	1.30	1.35	1.35	1.25	1.25		
270.0	1.48	1.44	1.35	1.35	1.39	1.35	1.30	1.30	1.35		
315.0	1.44	1.44	1.39	1.35	1.30	1.35	1.30	1.25	1.25		
360.0	1.39	1.44	1.44	1.35	1.30	1.39	1.35	1.25	1.30		
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	1.30	1.25	1.21	1.25	1.30	1.25	1.48		
45.0	1.25	1.30	1.25	1.30	1.30	1.30	1.30	1.25	1.21		
90.0	1.25	1.21	1.25	1.30	1.21	1.21	1.25	1.30	1.30		
135.0	1.25	1.30	1.25	1.30	1.25	1.25	1.25	1.25	1.35		
180.0	1.30	1.25	1.30	1.25	1.25	1.25	1.21	1.21	1.21		
225.0	1.30	1.21	1.25	1.21	1.25	1.25	1.25	1.44	1.25		
270.0	1.30	1.25	1.25	1.25	1.21	1.21	1.21	1.21	1.21		
315.0	1.30	1.30	1.25	1.21	1.25	1.25	1.21	1.25	1.25		
360.0	1.30	1.30	1.30	1.25	1.21	1.25	1.30	1.25	1.48		

Intensity data(cd)

Appendix Page: 19 Total:19

C/ $\gamma(^{\circ})$	90.0
0.0	1.72
45.0	1.21
90.0	1.25
135.0	1.35
180.0	1.30
225.0	1.21
270.0	1.25
315.0	1.30
360.0	1.72