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Nata

Client:

LumCAT: 2-2006-M

Luminaire: 92.70.131.00

Report No: GC2019091909

Test No: NATA07

LampCAT: BRIDGELEX V13B

Lamp flux(lm): 1760.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 220.5000

Current(A): 0.0690

Power (W): 14.0300

PF: 0.9160

Ballast type: AC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1546.73, Efficiency(%): 87.88% , Luminous Efficacy(lm/W): 110.24

Central intensity(cd): 5336.894, Maximum intensity(cd): 5336.894

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=25.8

[C90/270]Total=25.8

Field angle(10%Imax): [C0/180]Total=63.4

[C90/270]Total=63.4

Maximum s/h(1/2): C0_180=0.44 C90_270=0.44

Maximum s/h(1/4): C0_180=0.42 C90_270=0.42

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.88%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 99.676%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5336.895	0.000	0	.000%	.000%
1.0	5322.916	5.101	5.101	.290%	.330%
2.0	5277.673	15.215	20.315	.864%	1.313%
3.0	5197.453	25.053	45.369	1.423%	2.933%
4.0	5086.027	34.422	79.791	1.956%	5.159%
5.0	4948.499	43.168	122.959	2.453%	7.950%
6.0	4758.825	51.015	173.973	2.899%	11.248%
7.0	4531.797	57.667	231.64	3.277%	14.976%
8.0	4289.282	63.131	294.771	3.587%	19.058%
9.0	3996.418	67.151	361.922	3.815%	23.399%
10.0	3688.474	69.545	431.467	3.951%	27.896%
11.0	3350.542	70.334	501.801	3.996%	32.443%
12.0	2986.798	69.276	571.078	3.936%	36.922%
13.0	2627.114	66.623	637.701	3.785%	41.229%
14.0	2289.819	62.936	700.637	3.576%	45.298%
15.0	1947.827	58.176	758.813	3.305%	49.059%
16.0	1643.711	52.626	811.439	2.990%	52.462%
17.0	1411.102	47.572	859.011	2.703%	55.537%
18.0	1202.084	43.086	902.097	2.448%	58.323%
19.0	1049.910	39.180	941.277	2.226%	60.856%
20.0	921.356	36.080	977.356	2.050%	63.189%
21.0	836.937	33.763	1011.119	1.918%	65.372%
22.0	766.026	32.212	1043.331	1.830%	67.454%
23.0	708.086	30.931	1074.262	1.757%	69.454%
24.0	665.006	30.021	1104.283	1.706%	71.395%
25.0	634.154	29.540	1133.823	1.678%	73.305%
26.0	612.188	29.420	1163.243	1.672%	75.207%
27.0	593.528	29.498	1192.741	1.676%	77.114%
28.0	580.065	29.713	1222.454	1.688%	79.035%
29.0	568.453	30.048	1252.503	1.707%	80.978%
30.0	556.811	30.382	1282.884	1.726%	82.942%
31.0	544.201	30.640	1313.524	1.741%	84.923%
32.0	528.586	30.734	1344.258	1.746%	86.910%
33.0	501.626	30.350	1374.609	1.724%	88.872%
34.0	461.736	29.154	1403.763	1.656%	90.757%
35.0	411.505	27.120	1430.882	1.541%	92.510%
36.0	355.496	24.421	1455.304	1.388%	94.089%
37.0	292.863	21.146	1476.45	1.201%	95.456%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	241.558	17.838	1494.288	1.014%	96.610%
39.0	187.116	14.632	1508.92	.831%	97.556%
40.0	128.729	11.016	1519.935	.626%	98.268%
41.0	80.806	7.461	1527.397	.424%	98.750%
42.0	38.927	4.350	1531.747	.247%	99.032%
43.0	23.608	2.316	1534.063	.132%	99.181%
44.0	13.341	1.395	1535.458	.079%	99.271%
45.0	9.605	0.882	1536.34	.050%	99.328%
46.0	7.697	0.677	1537.016	.038%	99.372%
47.0	6.375	0.560	1537.576	.032%	99.408%
48.0	5.249	0.470	1538.046	.027%	99.439%
49.0	4.611	0.405	1538.451	.023%	99.465%
50.0	4.275	0.370	1538.821	.021%	99.489%
51.0	3.979	0.349	1539.17	.020%	99.511%
52.0	3.776	0.333	1539.503	.019%	99.533%
53.0	3.561	0.319	1539.822	.018%	99.554%
54.0	3.370	0.306	1540.128	.017%	99.573%
55.0	3.184	0.293	1540.421	.017%	99.592%
56.0	3.016	0.280	1540.701	.016%	99.610%
57.0	2.883	0.270	1540.97	.015%	99.628%
58.0	2.744	0.260	1541.231	.015%	99.645%
59.0	2.593	0.249	1541.48	.014%	99.661%
60.0	2.483	0.240	1541.72	.014%	99.676%
61.0	2.384	0.232	1541.952	.013%	99.691%
62.0	2.280	0.225	1542.177	.013%	99.706%
63.0	2.169	0.216	1542.393	.012%	99.720%
64.0	2.106	0.210	1542.603	.012%	99.733%
65.0	2.013	0.204	1542.807	.012%	99.747%
66.0	1.920	0.196	1543.003	.011%	99.759%
67.0	1.856	0.190	1543.193	.011%	99.772%
68.0	1.810	0.186	1543.379	.011%	99.784%
69.0	1.734	0.181	1543.559	.010%	99.795%
70.0	1.659	0.174	1543.734	.010%	99.807%
71.0	1.630	0.170	1543.904	.010%	99.817%
72.0	1.595	0.168	1544.071	.010%	99.828%
73.0	1.543	0.164	1544.235	.009%	99.839%
74.0	1.485	0.159	1544.395	.009%	99.849%
75.0	1.462	0.156	1544.55	.009%	99.859%

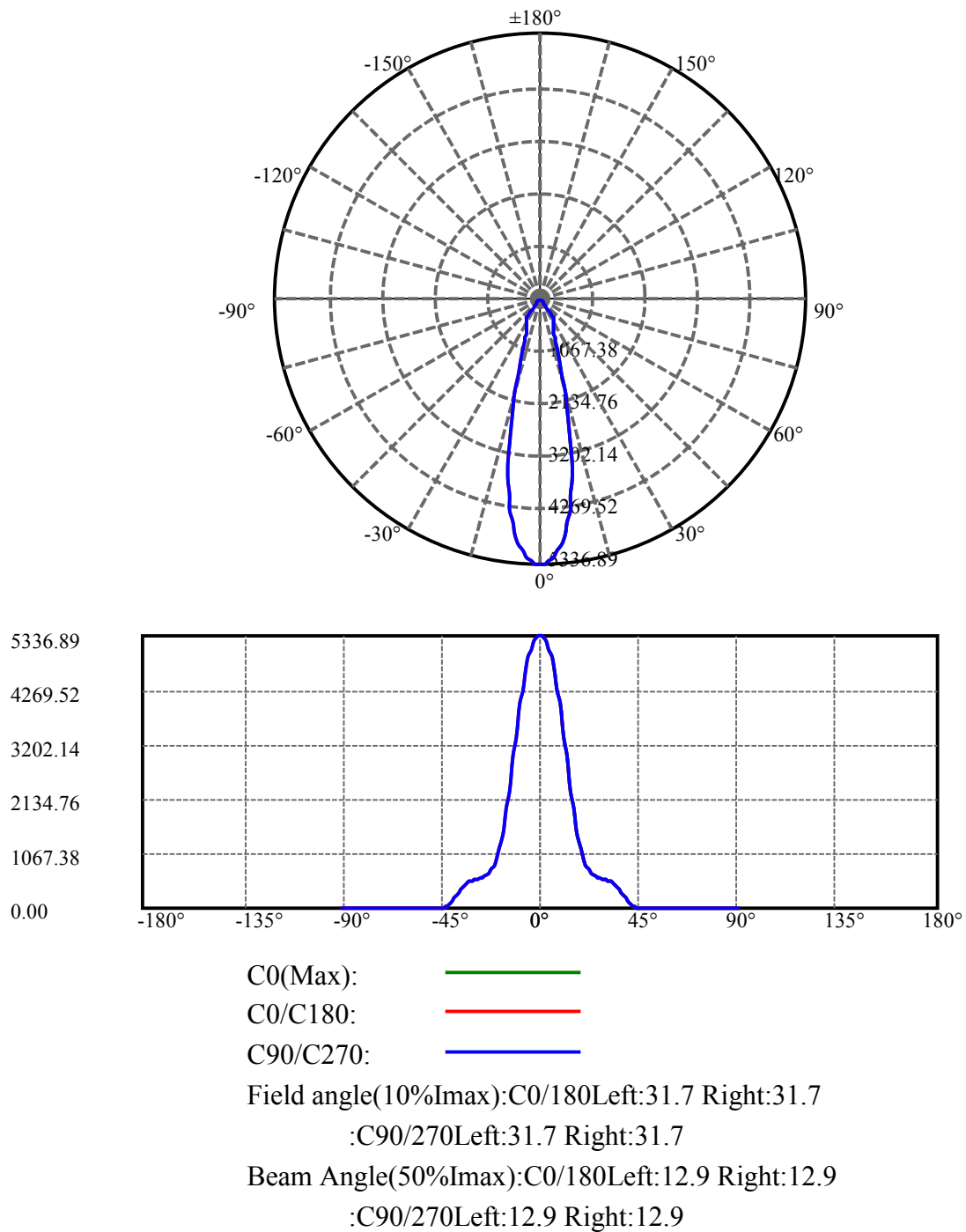
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.462	0.155	1544.705	.009%	99.869%
77.0	1.410	0.153	1544.859	.009%	99.879%
78.0	1.375	0.149	1545.008	.008%	99.889%
79.0	1.363	0.147	1545.155	.008%	99.898%
80.0	1.351	0.146	1545.301	.008%	99.908%
81.0	1.351	0.146	1545.447	.008%	99.917%
82.0	1.288	0.143	1545.59	.008%	99.927%
83.0	1.322	0.142	1545.732	.008%	99.936%
84.0	1.276	0.142	1545.874	.008%	99.945%
85.0	1.288	0.140	1546.014	.008%	99.954%
86.0	1.282	0.140	1546.154	.008%	99.963%
87.0	1.299	0.141	1546.295	.008%	99.972%
88.0	1.322	0.144	1546.439	.008%	99.981%
89.0	1.299	0.144	1546.583	.008%	99.991%
90.0	1.322	0.144	1546.727	.008%	100.000%

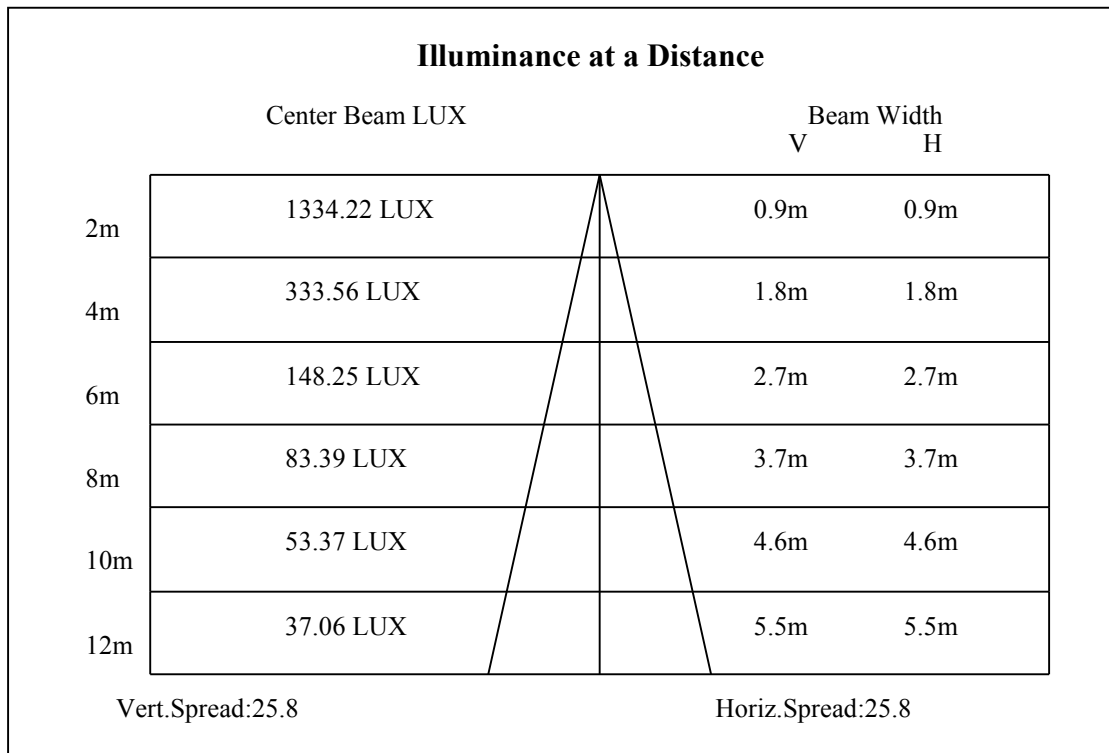
ZONAL LUMEN SUMMARY

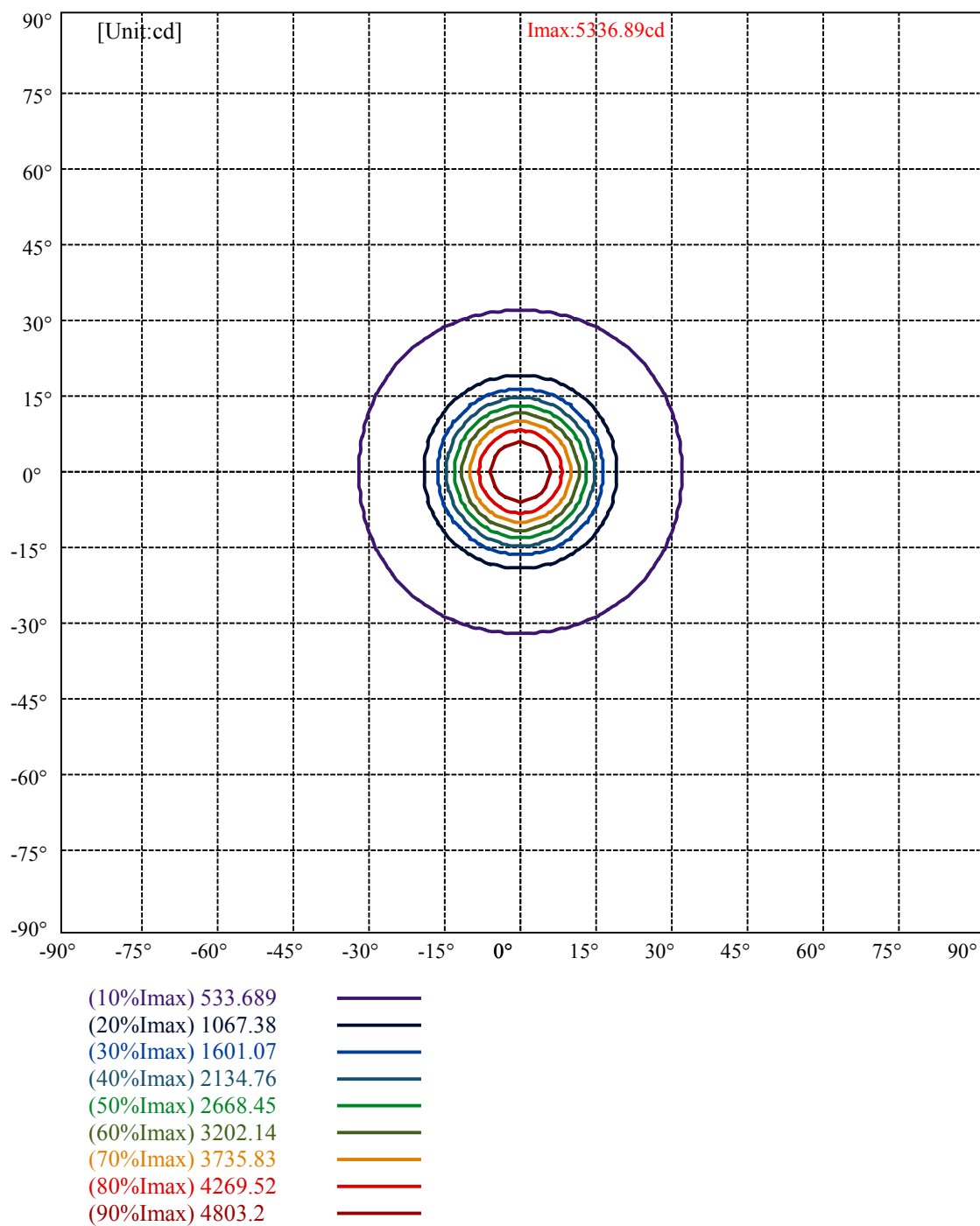
Zone	Lumens	%Lamp	%Fixt
0-30	1282.88	72.89%	82.94%
0-40	1519.94	86.36%	98.27%
0-60	1541.72	87.60%	99.68%
0-90	1546.58	87.87%	99.99%
0-120	1546.58	87.87%	99.99%
0-180	1546.73	87.88%	100.00%
60-90	5.10	0.29%	0.33%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.50	1237.38	70.31%	80.00%

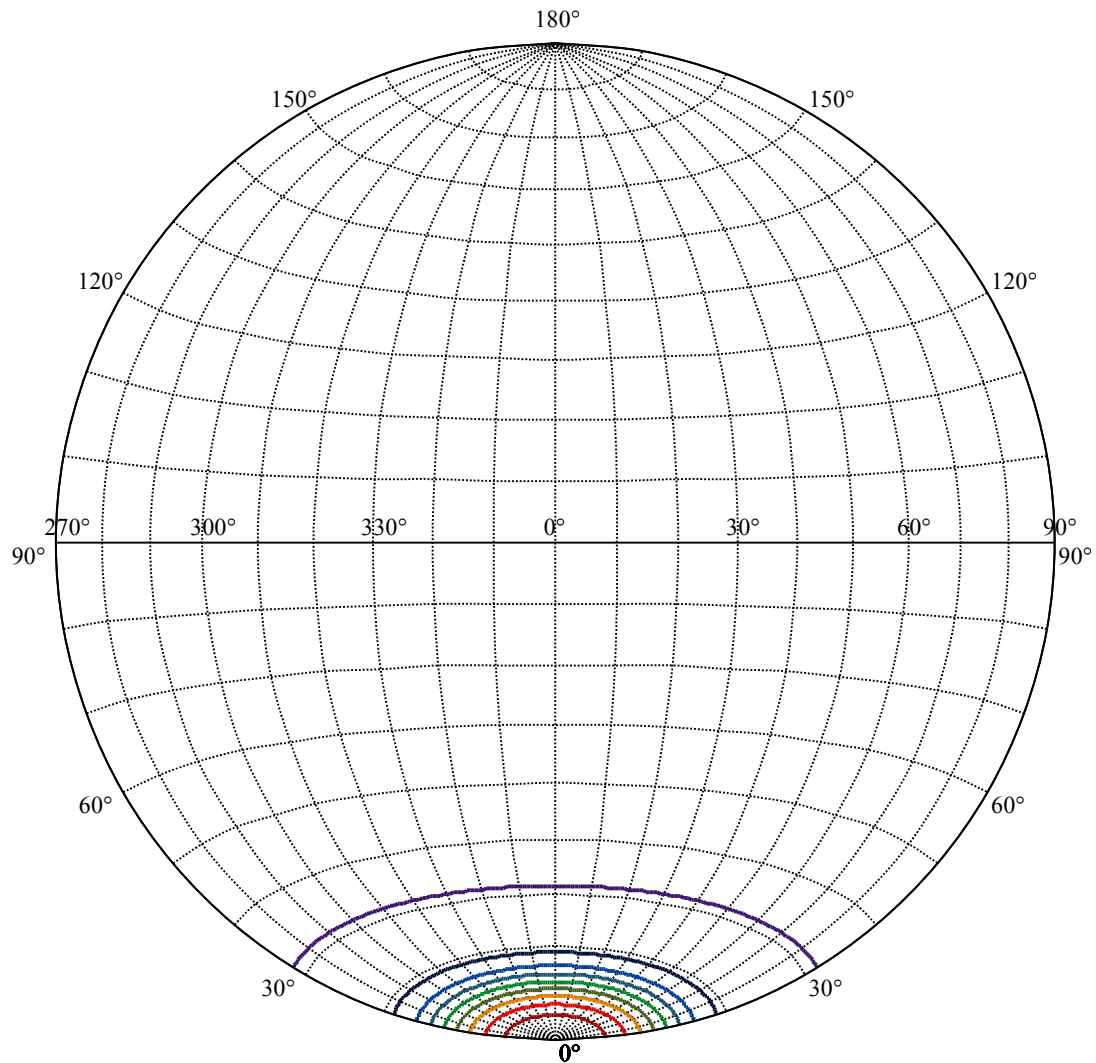
ZONAL LUMEN SUMMARY

0-10	431.47
10-20	545.89
20-30	305.53
30-40	237.05
40-50	18.89
50-60	2.90
60-70	2.01
70-80	1.57
80-90	1.28
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









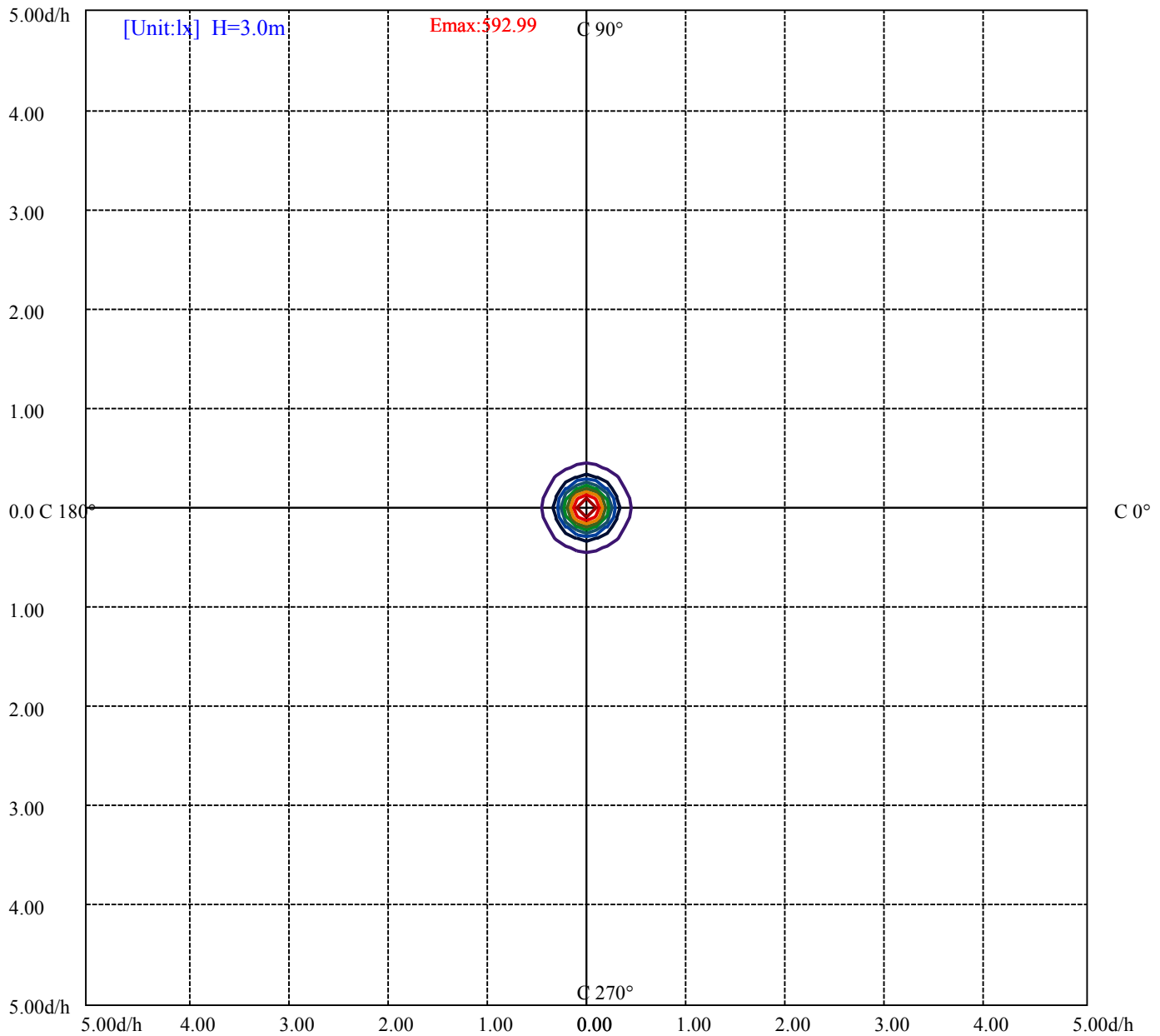
House

[Unit:cd]

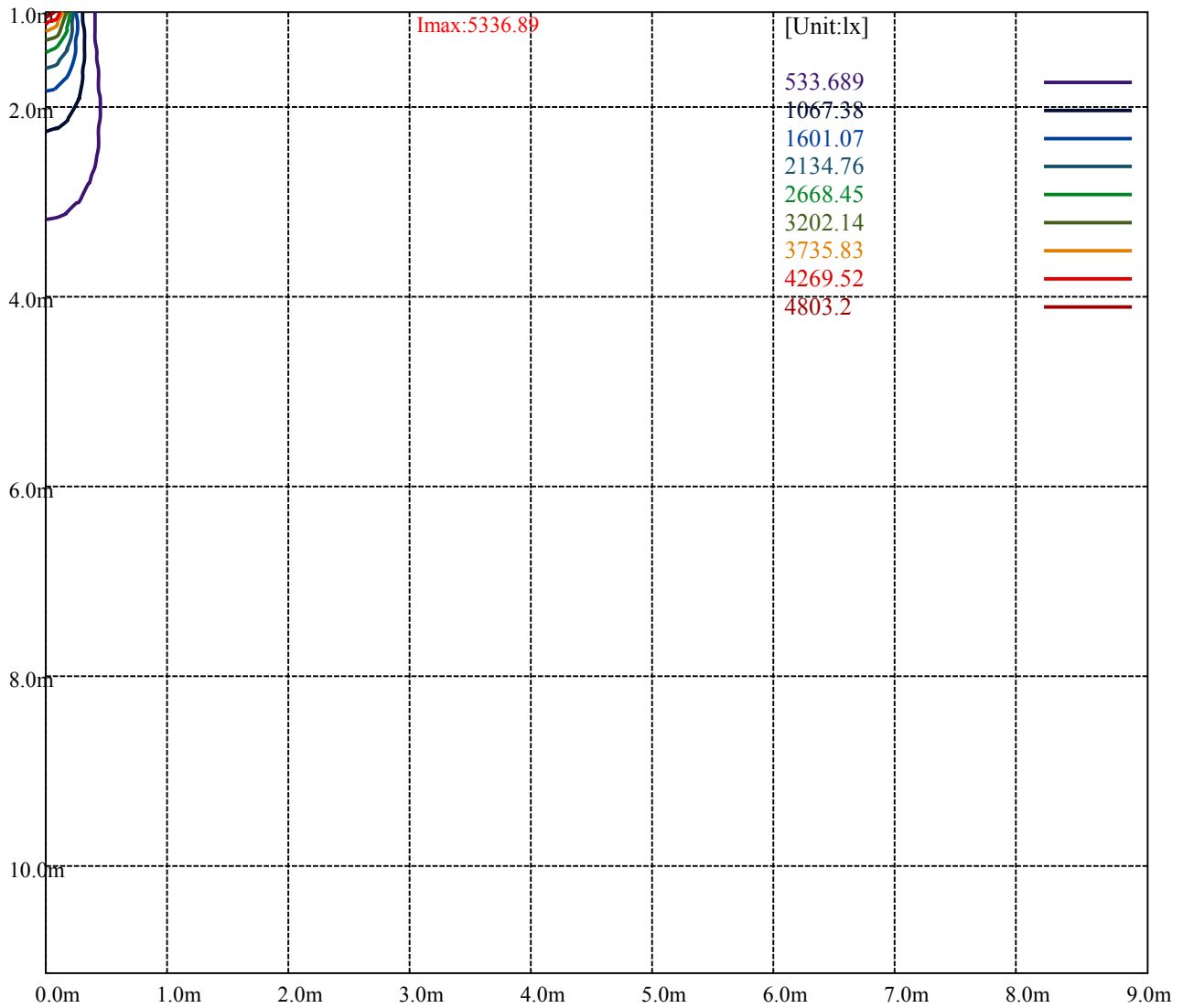
Road

Imax:5336.89

(10%Imax)	533.689	—
(20%Imax)	1067.38	—
(30%Imax)	1601.07	—
(40%Imax)	2134.76	—
(50%Imax)	2668.45	—
(60%Imax)	3202.14	—
(70%Imax)	3735.83	—
(80%Imax)	4269.52	—
(90%Imax)	4803.2	—



(10%Emax) 59.29878	—
(20%Emax) 118.5978	—
(30%Emax) 177.8967	—
(40%Emax) 237.1956	—
(50%Emax) 296.4944	—
(60%Emax) 355.7933	—
(70%Emax) 415.0911	—
(80%Emax) 474.39	—
(90%Emax) 533.6889	—



Luminance Table

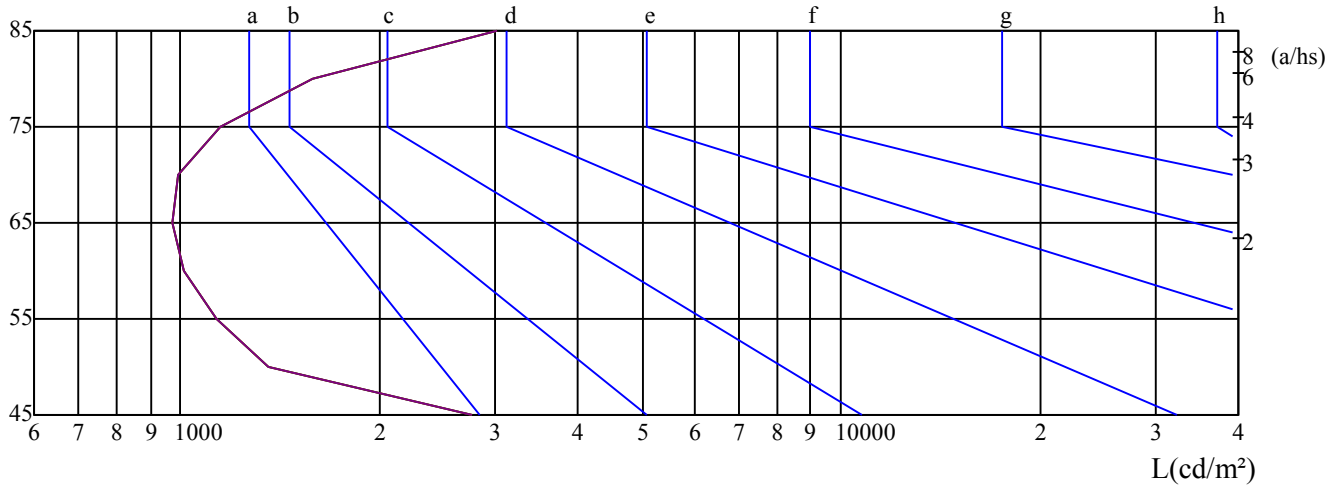
γ	45	50	55	60	65	70	75	80	85
C0	2772	1357	1133	1013	972	990	1153	1588	3015
C45	2772	1357	1133	1013	972	990	1153	1588	3015
C90	2772	1357	1133	1013	972	990	1153	1588	3015

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
972	972	972	1153	1153	1153	3015	3015	3015

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

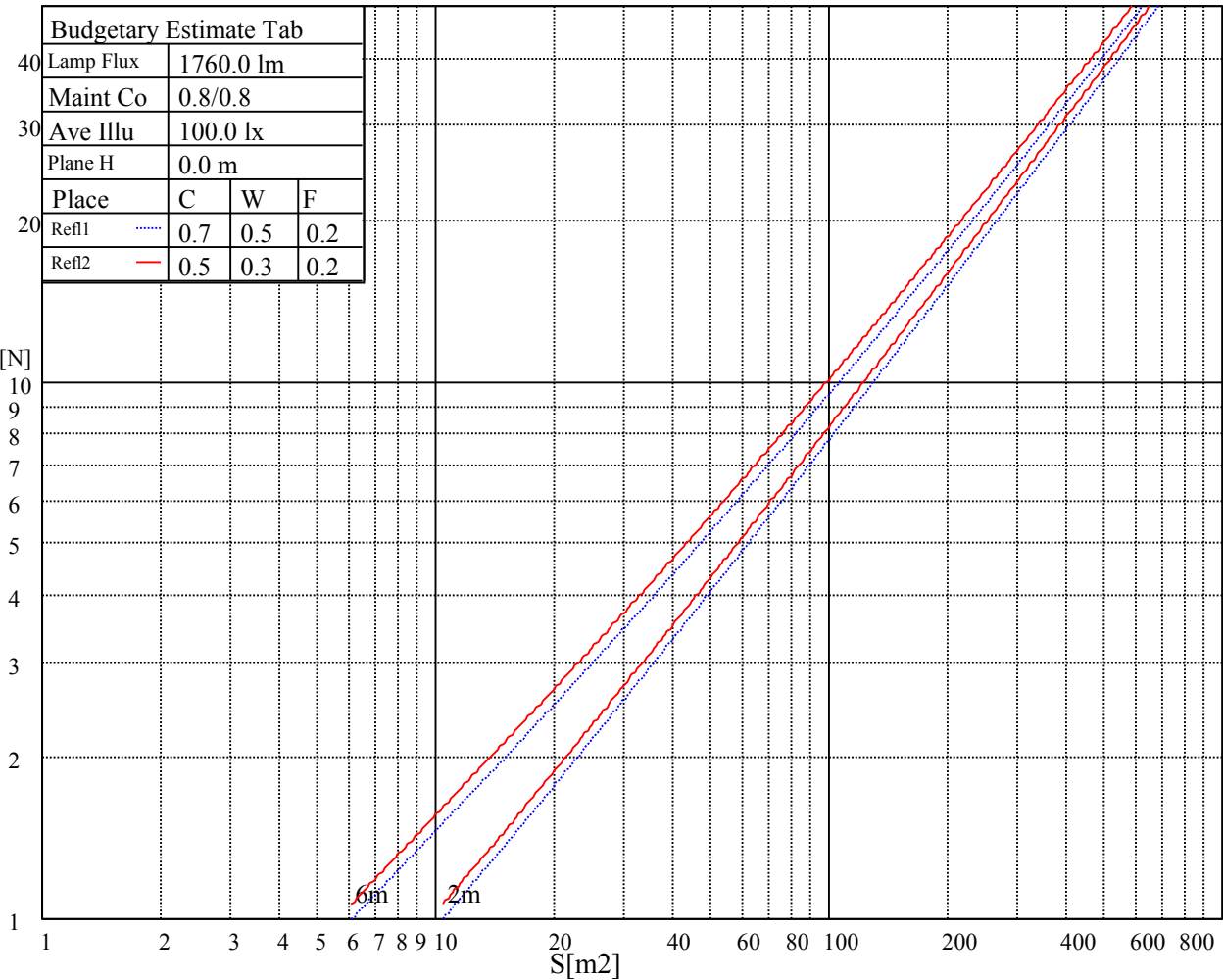
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

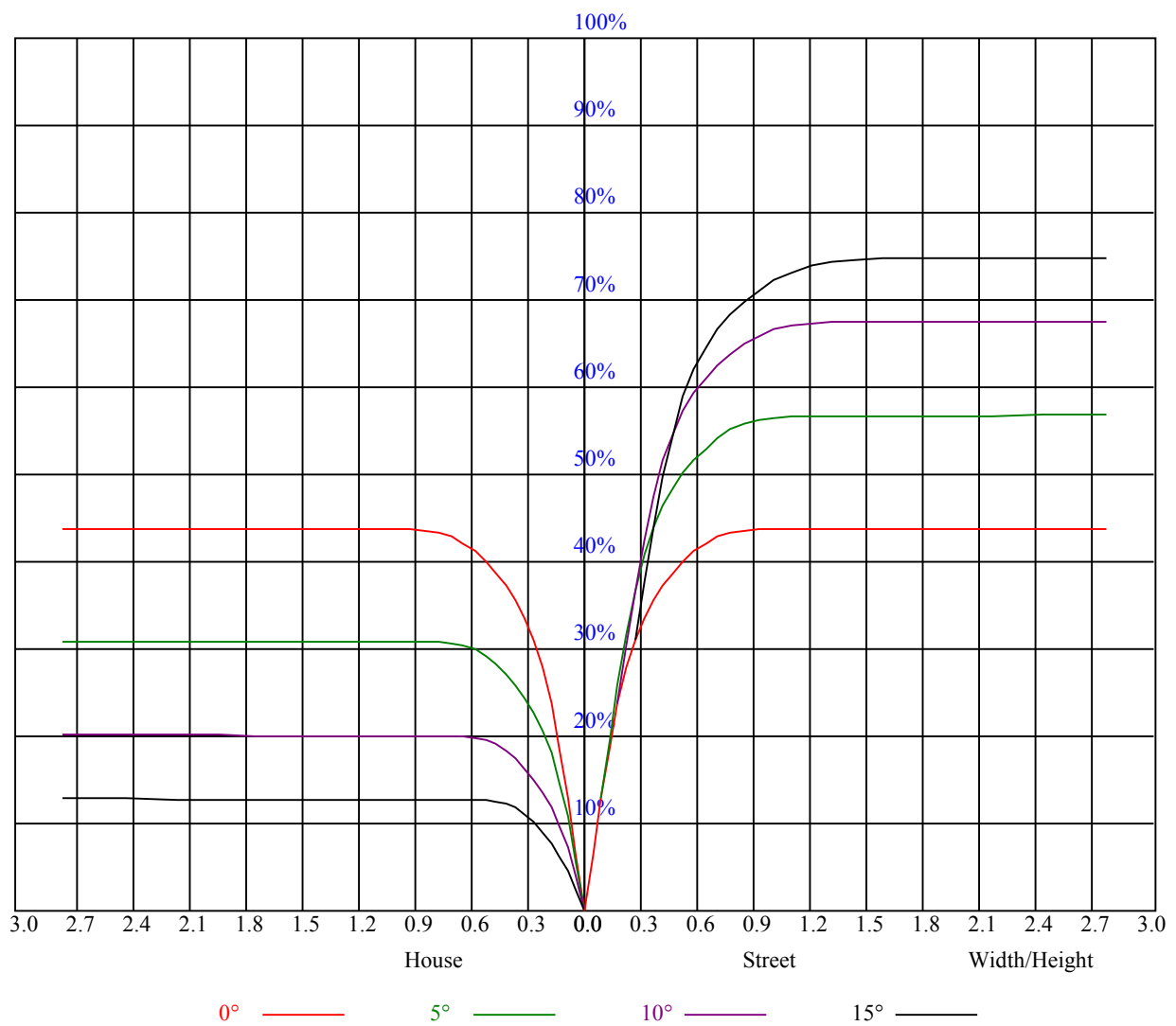
C0 ———

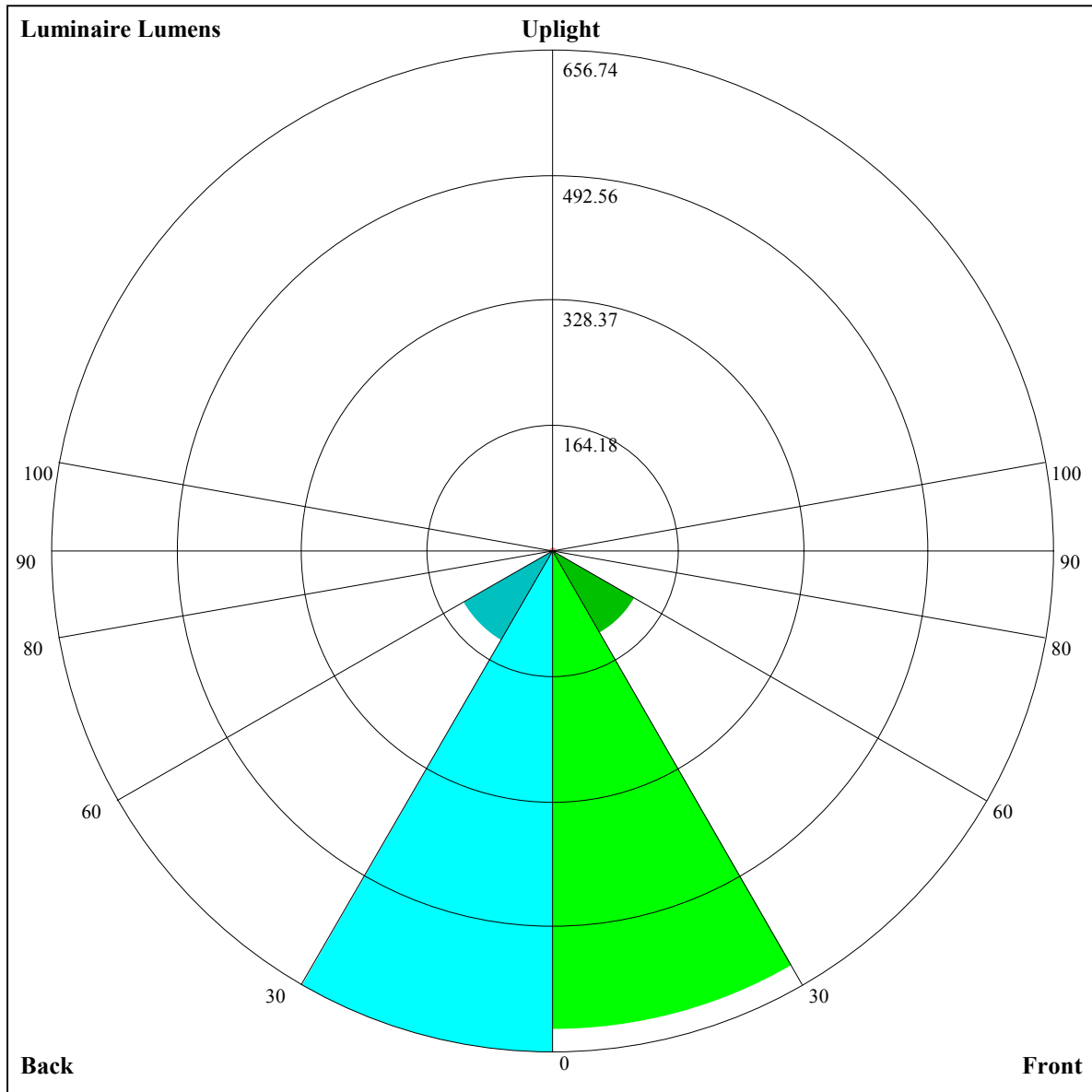
C45 ———

C90 ———



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	1.05	1.05	1.05	1.02	1.02	1.02	0.98	0.98	0.98	0.93	0.93	0.93	0.90	0.90	0.90	0.88
1	0.99	0.97	0.95	0.97	0.95	0.93	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	0.86	0.85	0.83	0.84	0.83	0.81	0.80
3	0.88	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.77	0.76
4	0.84	0.80	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.70
6	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
8	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62
9	0.68	0.64	0.61	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.59
10	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.57





Luminaire Lumens:

FL=628.29,FM=124.65,FH=1.79,FVH=0.72

BL=656.74,BM=136.28,BH=1.82,BVH=0.71

UL=1.44,UH=6.87

BUG Rating:B2-U1-G0

Intensity data(cd)										Appendix Page: 17 Total:19	
C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0		
0.0	5330.86	5296.99	5230.17	5126.22	4988.41	4813.00	4597.23	4348.97	4065.91		
45.0	5360.10	5319.73	5247.34	5147.11	5010.68	4909.52	4709.06	4375.42	4207.90		
90.0	5305.34	5220.89	5103.02	4938.29	4755.00	4523.44	4264.98	3962.89	3626.93		
135.0	5351.28	5323.44	5264.97	5174.02	5041.77	4878.89	4680.29	4444.56	4177.74		
180.0	5330.86	5342.00	5328.54	5273.32	5210.21	5098.38	4949.89	4765.67	4546.18		
225.0	5360.10	5368.91	5349.42	5295.13	5208.36	5075.18	4914.62	4713.23	4481.68		
270.0	5305.34	5361.95	5380.51	5373.55	5326.22	5283.07	5132.26	5045.02	4864.04		
315.0	5351.28	5349.42	5317.41	5251.98	5147.57	5006.50	4822.28	4598.62	4343.86		
360.0	5330.86	5296.99	5230.17	5126.22	4988.41	4813.00	4597.23	4348.97	4065.91		
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0		
0.0	3758.72	3421.36	3058.03	2683.09	2318.82	1981.01	1685.88	1434.84	1227.41		
45.0	3908.60	3574.50	3210.23	2832.04	2443.18	2084.95	1760.59	1485.42	1265.00		
90.0	3269.16	2887.26	2503.51	2206.06	1806.53	1531.36	1347.14	1052.94	898.79		
135.0	3938.30	3609.30	3175.89	2872.88	2491.44	2129.96	1806.06	1528.11	1302.59		
180.0	4288.64	3997.69	3678.44	3329.95	2956.40	2584.25	2228.33	1908.62	1629.27		
225.0	4208.37	3902.10	3566.61	3209.77	2833.43	2603.27	2234.83	1784.72	1621.38		
270.0	4547.11	4393.05	4104.89	3782.38	3421.83	3043.18	2651.07	2269.63	1920.68		
315.0	4052.45	3722.52	3506.75	2978.21	2745.27	2360.58	1868.71	1685.42	1423.70		
360.0	3758.72	3421.36	3058.03	2683.09	2318.82	1981.01	1685.88	1434.84	1227.41		
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0		
0.0	893.08	893.08	873.13	786.26	720.78	672.62	639.02	614.29	596.79		
45.0	1090.99	955.96	853.40	774.05	713.73	670.11	637.63	613.96	596.33		
90.0	898.79	810.99	743.15	692.52	654.24	626.86	606.26	590.81	578.79		
135.0	1120.69	978.69	869.18	785.19	723.94	676.14	640.88	615.82	596.79		
180.0	1393.54	1270.57	1036.70	913.26	852.01	769.41	708.63	664.54	632.06		
225.0	1384.72	1187.04	890.48	890.48	803.06	733.96	683.20	646.03	620.32		
270.0	1621.84	1377.76	1179.62	1024.63	904.91	813.96	744.82	692.38	667.79		
315.0	1213.03	925.19	925.19	829.09	755.54	701.62	659.62	635.40	608.63		
360.0	893.08	893.08	873.13	786.26	720.78	672.62	639.02	614.29	596.79		
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0		
0.0	581.94	570.76	558.93	548.91	537.95	508.95	462.55	406.45	345.19		
45.0	585.19	570.81	562.45	551.32	540.18	523.94	484.50	433.45	373.13		
90.0	567.28	556.56	546.07	536.10	509.18	483.29	432.80	371.74	307.47		
135.0	582.41	570.34	560.60	549.93	543.43	526.26	508.16	465.01	409.79		
180.0	608.86	591.69	577.77	565.24	553.64	544.36	530.44	494.24	447.37		
225.0	601.67	586.21	578.46	562.55	550.99	544.22	524.08	501.90	455.17		
270.0	625.56	612.57	595.40	581.48	570.34	559.21	548.53	539.25	524.40		
315.0	595.31	581.57	567.93	558.97	547.88	538.46	521.94	481.85	429.51		
360.0	581.94	570.76	558.93	548.91	537.95	508.95	462.55	406.45	345.19		
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0		
0.0	293.45	216.52	154.85	108.91	60.28	26.40	12.85	11.18	9.14		
45.0	308.63	244.13	244.13	120.23	70.07	45.34	14.11	11.88	10.72		
90.0	242.83	178.88	120.56	71.00	33.36	14.76	12.53	10.26	7.89		
135.0	349.00	285.43	246.45	246.45	101.34	54.34	23.57	13.13	11.23		
180.0	390.76	329.97	265.47	239.02	239.02	85.99	50.07	20.74	12.44		
225.0	400.46	338.88	274.89	210.35	148.03	93.50	48.31	20.65	12.76		
270.0	488.21	440.88	383.34	320.69	256.66	256.66	118.24	86.87	30.67		
315.0	370.62	308.21	242.78	180.28	121.07	69.47	31.74	14.15	11.88		
360.0	293.45	216.52	154.85	108.91	60.28	26.40	12.85	11.18	9.14		

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	6.91	5.61	4.83	4.18	3.94	3.71	3.48	3.39	3.16
45.0	8.58	6.50	5.48	4.83	4.55	4.36	4.13	3.85	3.62
90.0	6.22	5.15	4.78	4.50	4.27	4.08	3.85	3.57	3.39
135.0	9.37	6.82	5.57	4.83	4.18	3.90	3.71	3.57	3.34
180.0	10.72	8.54	6.40	5.20	4.41	4.18	3.85	3.67	3.53
225.0	11.00	8.86	6.96	5.75	4.83	4.69	4.27	4.08	3.90
270.0	14.62	13.13	10.95	8.40	6.64	5.34	4.83	4.59	4.27
315.0	9.42	6.96	6.03	4.32	4.08	3.94	3.71	3.48	3.29
360.0	6.91	5.61	4.83	4.18	3.94	3.71	3.48	3.39	3.16
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	2.97	2.83	2.74	2.60	2.46	2.27	2.27	2.18	2.09
45.0	3.43	3.25	3.06	2.88	2.78	2.69	2.55	2.41	2.27
90.0	3.25	3.06	2.92	2.78	2.64	2.55	2.46	2.32	2.18
135.0	3.11	2.97	2.88	2.74	2.55	2.41	2.37	2.27	2.18
180.0	3.34	3.11	2.92	2.83	2.69	2.55	2.41	2.37	2.27
225.0	3.71	3.48	3.25	3.11	3.02	2.83	2.60	2.51	2.46
270.0	3.99	3.81	3.62	3.43	3.20	3.02	2.92	2.78	2.60
315.0	3.16	2.97	2.74	2.69	2.60	2.41	2.27	2.23	2.18
360.0	2.97	2.83	2.74	2.60	2.46	2.27	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	2.04	1.95	1.86	1.76	1.76	1.72	1.62	1.58	1.53
45.0	2.23	2.13	2.04	1.90	1.90	1.86	1.76	1.67	1.62
90.0	2.13	2.09	1.90	1.86	1.81	1.76	1.67	1.62	1.62
135.0	2.04	2.00	1.95	1.86	1.72	1.72	1.67	1.58	1.53
180.0	2.18	2.13	2.00	1.90	1.86	1.81	1.72	1.62	1.62
225.0	2.27	2.18	2.13	2.04	1.90	1.86	1.81	1.76	1.67
270.0	2.46	2.41	2.32	2.18	2.18	2.04	1.95	1.86	1.86
315.0	2.00	1.95	1.90	1.86	1.72	1.72	1.67	1.58	1.58
360.0	2.04	1.95	1.86	1.76	1.76	1.72	1.62	1.58	1.53
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	1.39	1.44	1.39	1.30	1.30	1.35
45.0	1.67	1.58	1.48	1.44	1.48	1.44	1.39	1.39	1.39
90.0	1.58	1.48	1.44	1.44	1.48	1.39	1.44	1.39	1.30
135.0	1.58	1.53	1.44	1.44	1.44	1.39	1.30	1.30	1.39
180.0	1.62	1.53	1.44	1.44	1.48	1.39	1.35	1.30	1.35
225.0	1.58	1.62	1.58	1.48	1.44	1.44	1.44	1.39	1.35
270.0	1.72	1.67	1.62	1.62	1.58	1.48	1.44	1.48	1.44
315.0	1.48	1.44	1.48	1.44	1.35	1.35	1.35	1.35	1.25
360.0	1.53	1.48	1.39	1.39	1.44	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	1.35	1.25	1.30	1.30	1.25	1.30	1.30
45.0	1.39	1.30	1.35	1.25	1.30	1.35	1.58	1.44	1.35
90.0	1.35	1.25	1.35	1.30	1.35	1.30	1.35	1.48	1.35
135.0	1.35	1.25	1.35	1.25	1.25	1.25	1.21	1.21	1.30
180.0	1.35	1.30	1.30	1.25	1.25	1.25	1.25	1.25	1.21
225.0	1.39	1.30	1.30	1.25	1.30	1.25	1.30	1.30	1.30
270.0	1.39	1.35	1.35	1.39	1.25	1.30	1.25	1.30	1.30
315.0	1.30	1.30	1.25	1.25	1.30	1.25	1.21	1.30	1.30
360.0	1.30	1.25	1.35	1.25	1.30	1.30	1.25	1.30	1.30

Intensity data(cd)

Appendix Page: 19 Total:19

C/ γ (°)	90.0
0.0	1.30
45.0	1.39
90.0	1.35
135.0	1.30
180.0	1.44
225.0	1.25
270.0	1.21
315.0	1.35
360.0	1.30