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NATA

Client:

LumCAT: 1535-S

Luminaire: 92.70.064.00

Report No: nt0100

Test No: GC20191225121

LampCAT: LUMINUS CXM-9-AC40

Lamp flux(lm): 1100.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 33.5900

Current(A): 0.2970

Power (W): 9.9700

PF: 1.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 935.68, Efficiency(%): 85.06% , Luminous Efficacy(lm/W): 93.85

Central intensity(cd): 1359.492, Maximum intensity(cd): 1359.492

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=44.6

[C90/270]Total=44.6

Field angle(10%Imax): [C0/180]Total=83.0

[C90/270]Total=83.0

Maximum s/h(1/2): C0_180=0.70 C90_270=0.70

Maximum s/h(1/4): C0_180=0.74 C90_270=0.74

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 85.06%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.436%

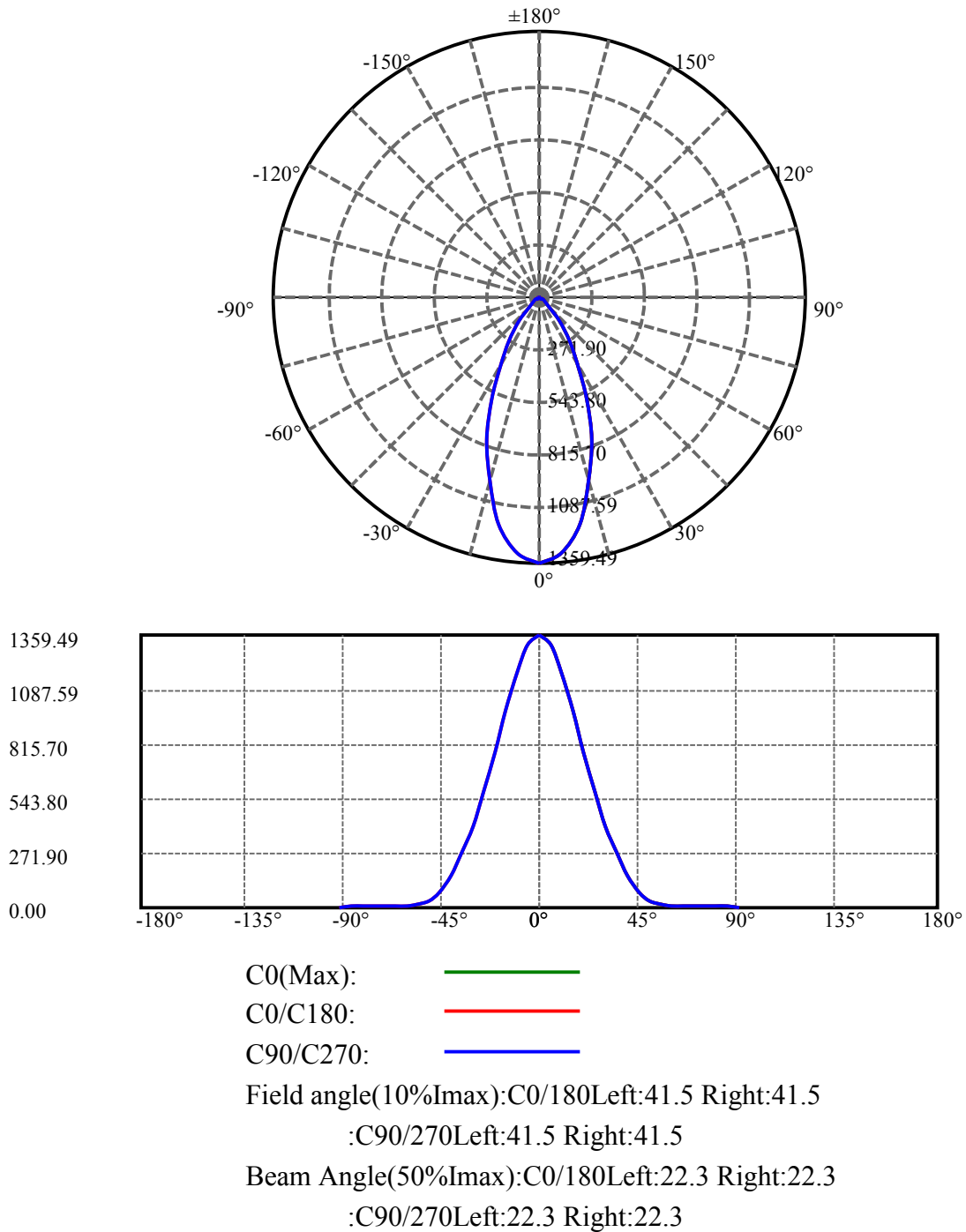
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1359.492	0.000	0	.000%	.000%
5.0	1311.117	31.926	31.926	2.902%	3.412%
10.0	1175.766	88.964	120.89	8.088%	12.920%
15.0	976.535	127.673	248.563	11.607%	26.565%
20.0	774.281	144.292	392.855	13.117%	41.986%
25.0	572.527	141.255	534.11	12.841%	57.083%
30.0	405.928	123.824	657.934	11.257%	70.317%
35.0	269.599	99.476	757.411	9.043%	80.948%
40.0	163.202	72.210	829.62	6.565%	88.665%
45.0	74.946	44.095	873.715	4.009%	93.378%
50.0	30.902	21.388	895.104	1.944%	95.664%
55.0	16.003	10.199	905.302	.927%	96.754%
60.0	11.595	6.379	911.682	.580%	97.436%
65.0	9.879	5.220	916.902	.475%	97.994%
70.0	8.670	4.697	921.598	.427%	98.496%
75.0	7.650	4.266	925.864	.388%	98.951%
80.0	6.722	3.846	929.709	.350%	99.362%
85.0	5.520	3.326	933.036	.302%	99.718%
90.0	4.120	2.639	935.675	.240%	100.000%

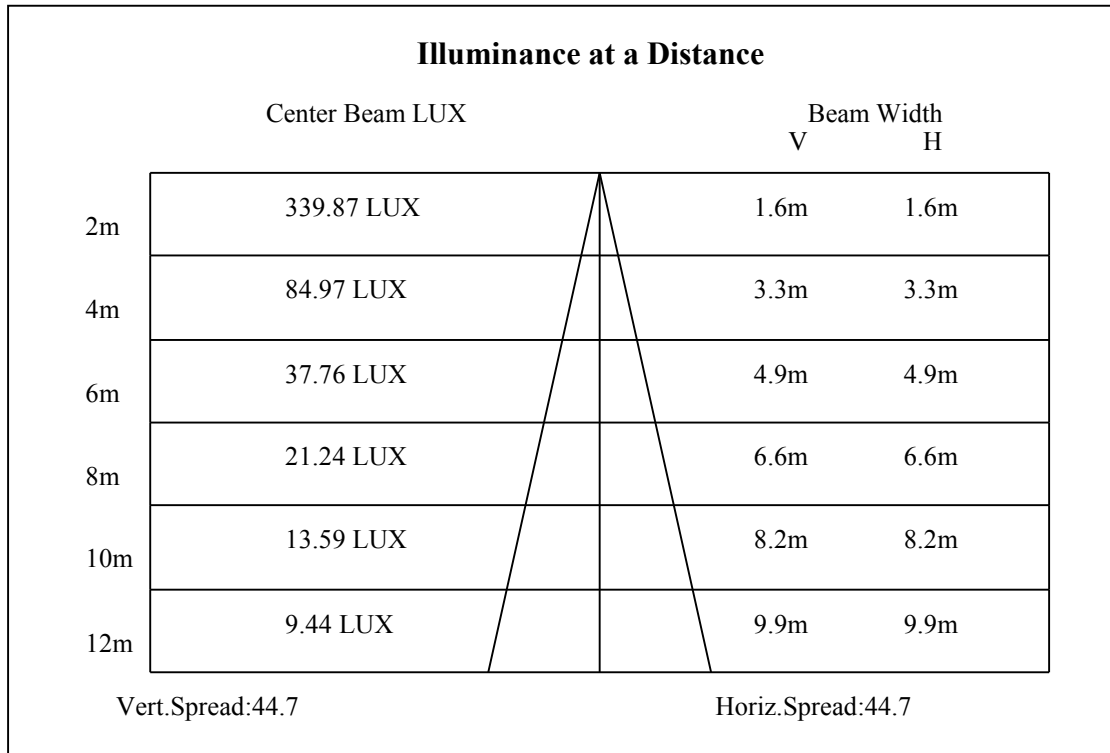
ZONAL LUMEN SUMMARY

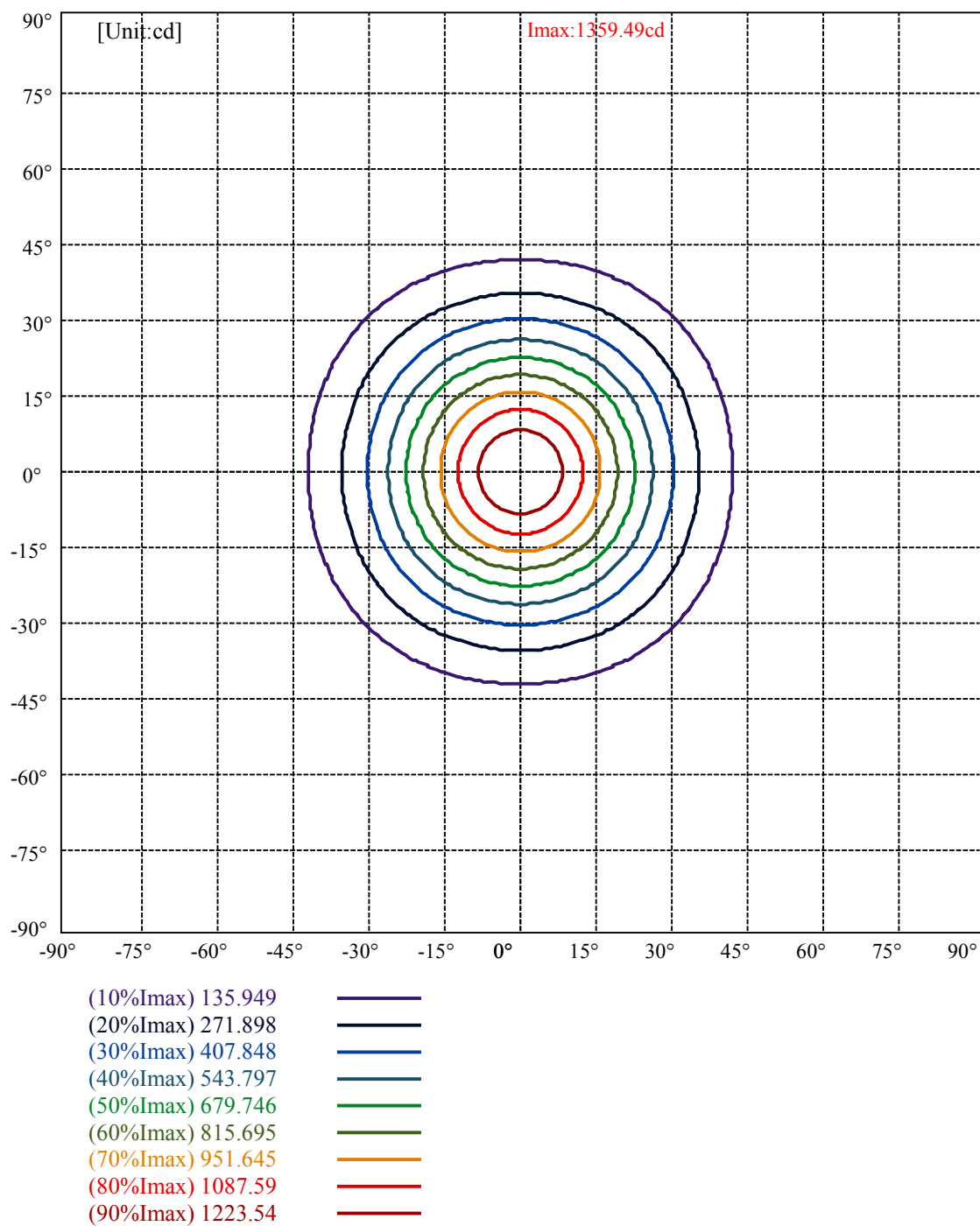
Zone	Lumens	%Lamp	%Fixt
0-30	657.93	59.81%	70.32%
0-40	829.62	75.42%	88.67%
0-60	911.68	82.88%	97.44%
0-90	933.04	84.82%	99.72%
0-120	933.04	84.82%	99.72%
0-180	935.68	85.06%	100.00%
60-90	27.73	2.52%	2.96%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-34.55	748.54	68.05%	80.00%

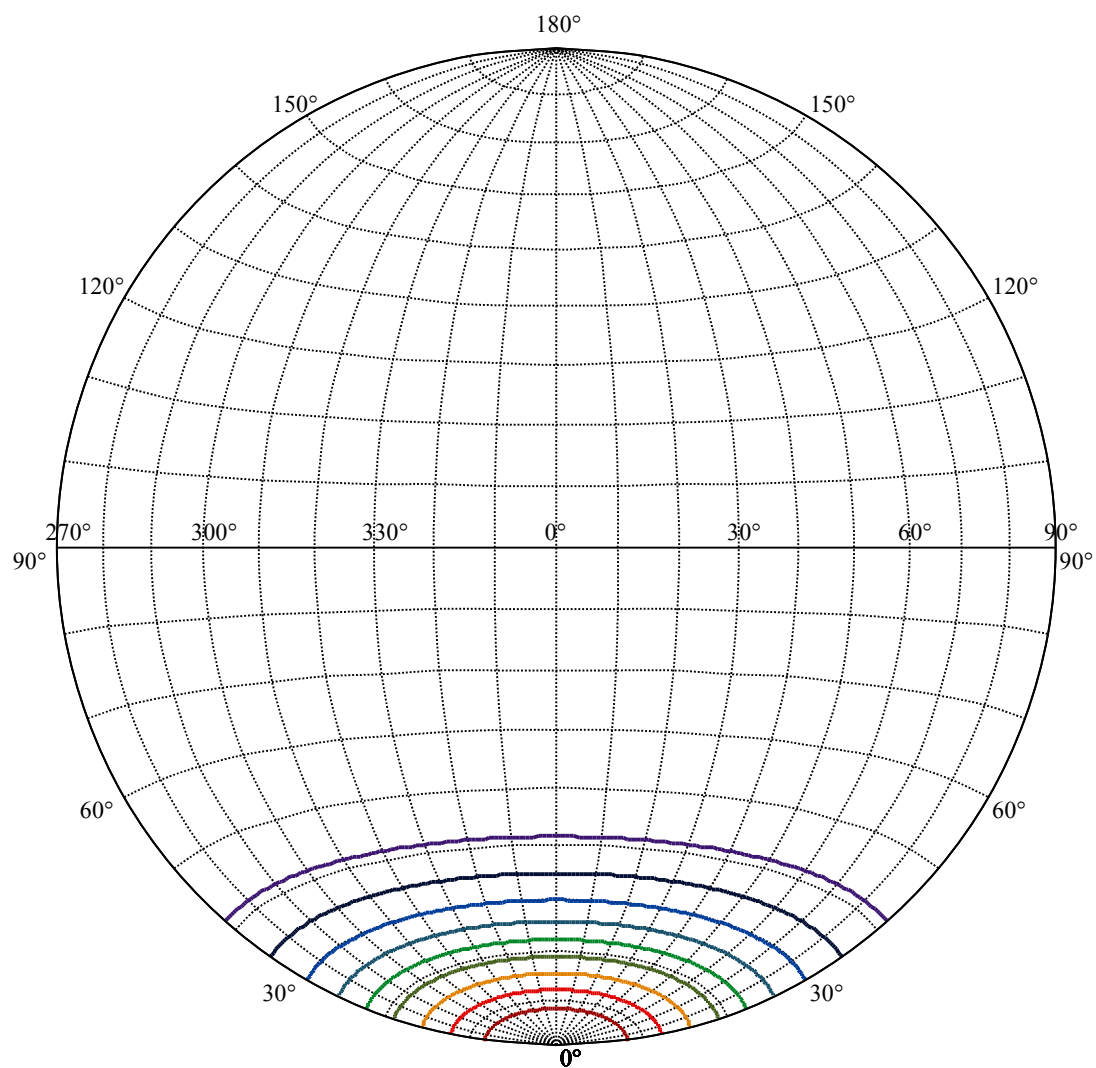
ZONAL LUMEN SUMMARY

0-10	120.89
10-20	271.96
20-30	265.08
30-40	171.69
40-50	65.48
50-60	16.58
60-70	9.92
70-80	8.11
80-90	3.33
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







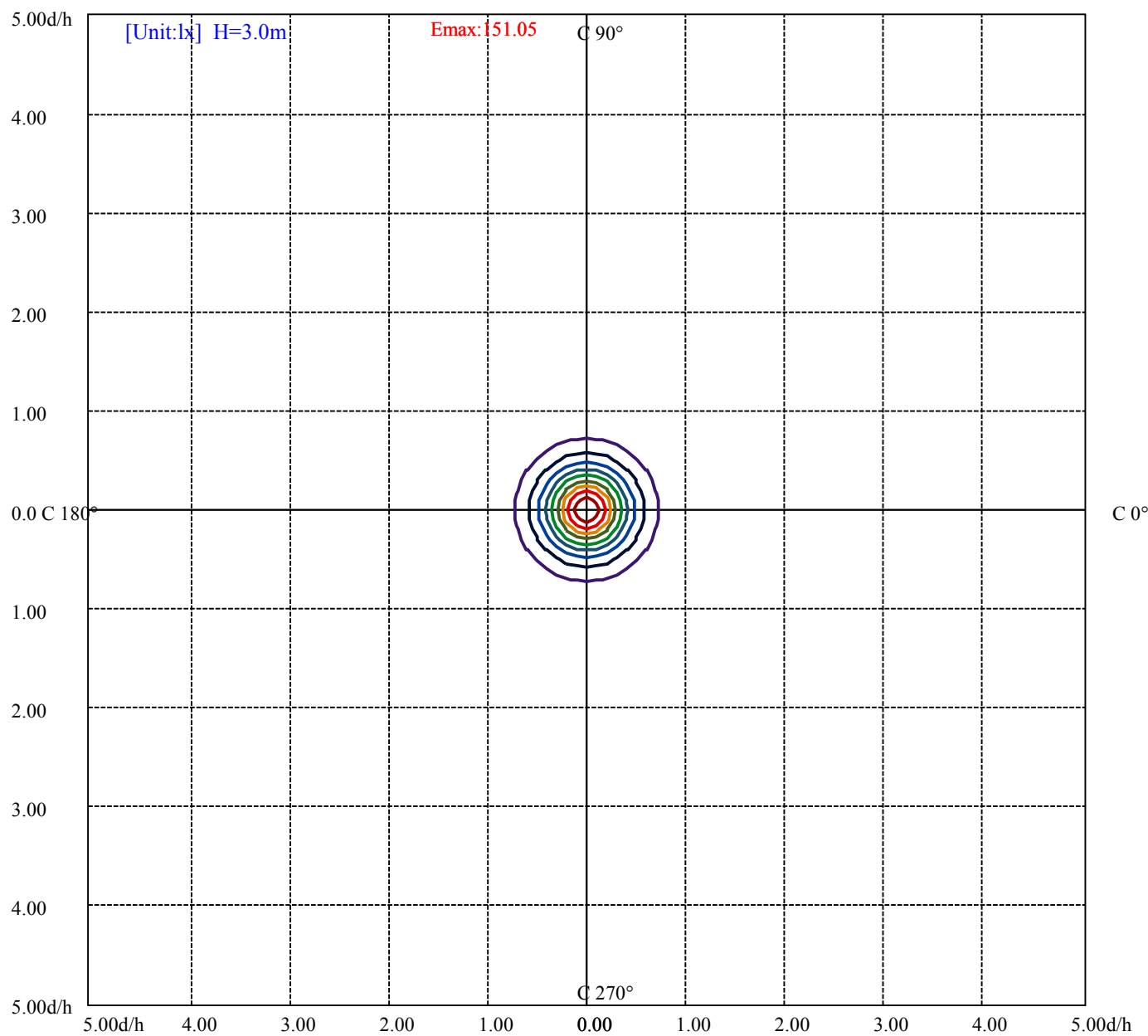


House

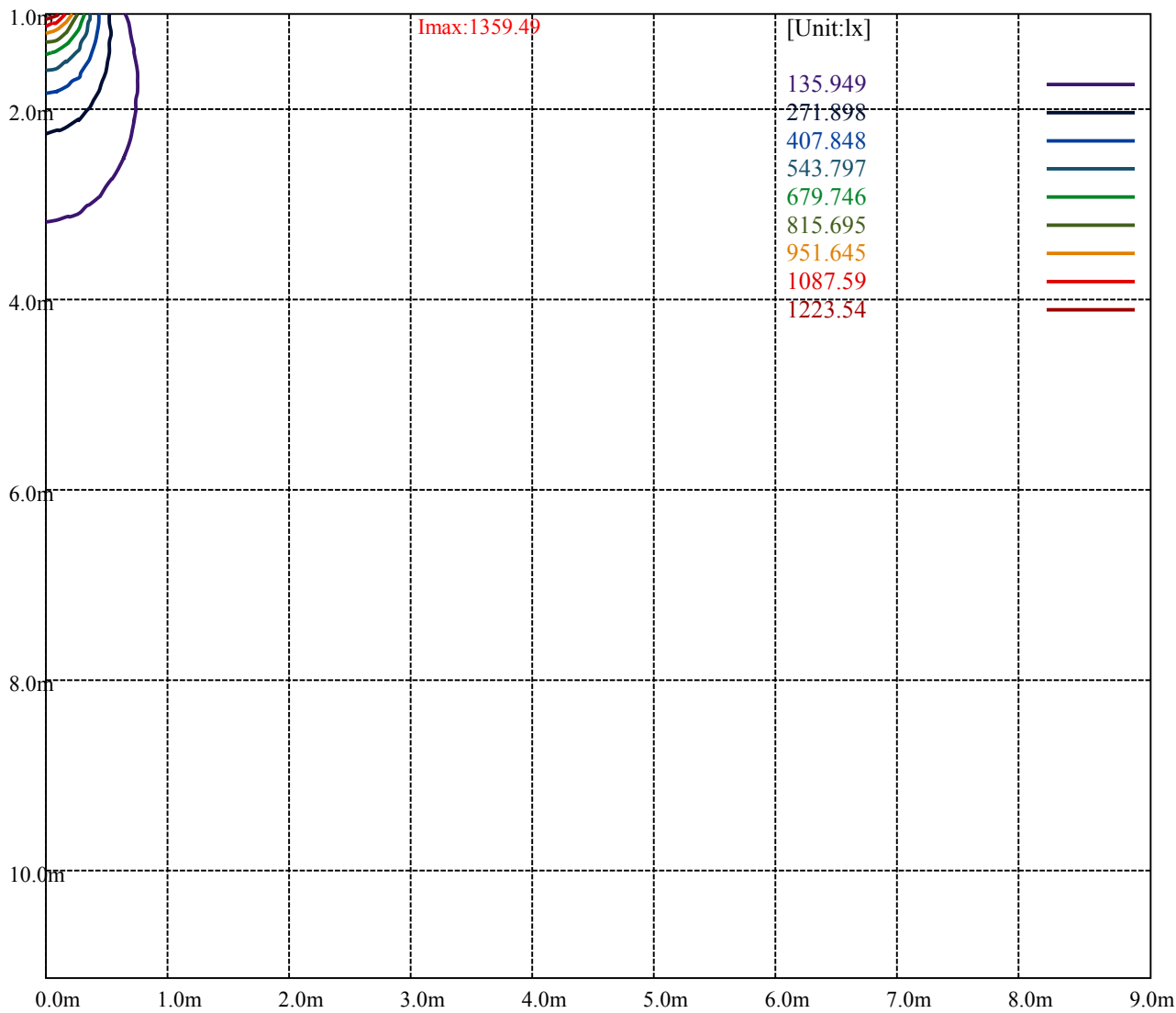
[Unit:cd]

Road

I_{max}:1359.49(10%I_{max}) 135.949(20%I_{max}) 271.898(30%I_{max}) 407.848(40%I_{max}) 543.797(50%I_{max}) 679.746(60%I_{max}) 815.695(70%I_{max}) 951.645(80%I_{max}) 1087.59(90%I_{max}) 1223.54



(10%E _{max}) 15.10544	—
(20%E _{max}) 30.21089	—
(30%E _{max}) 45.31633	—
(40%E _{max}) 60.42178	—
(50%E _{max}) 75.52722	—
(60%E _{max}) 90.63266	—
(70%E _{max}) 105.7381	—
(80%E _{max}) 120.8433	—
(90%E _{max}) 135.9489	—



Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

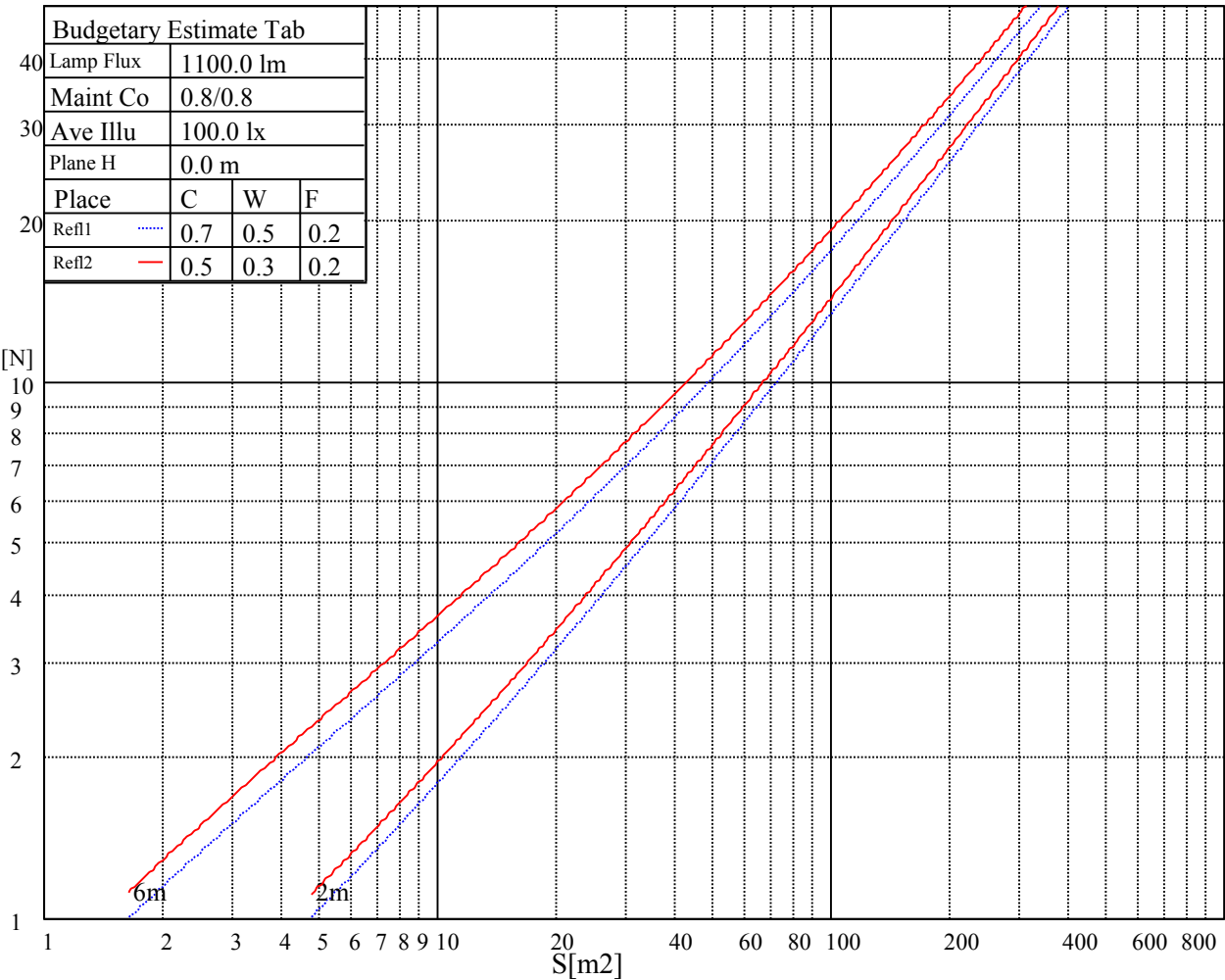
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

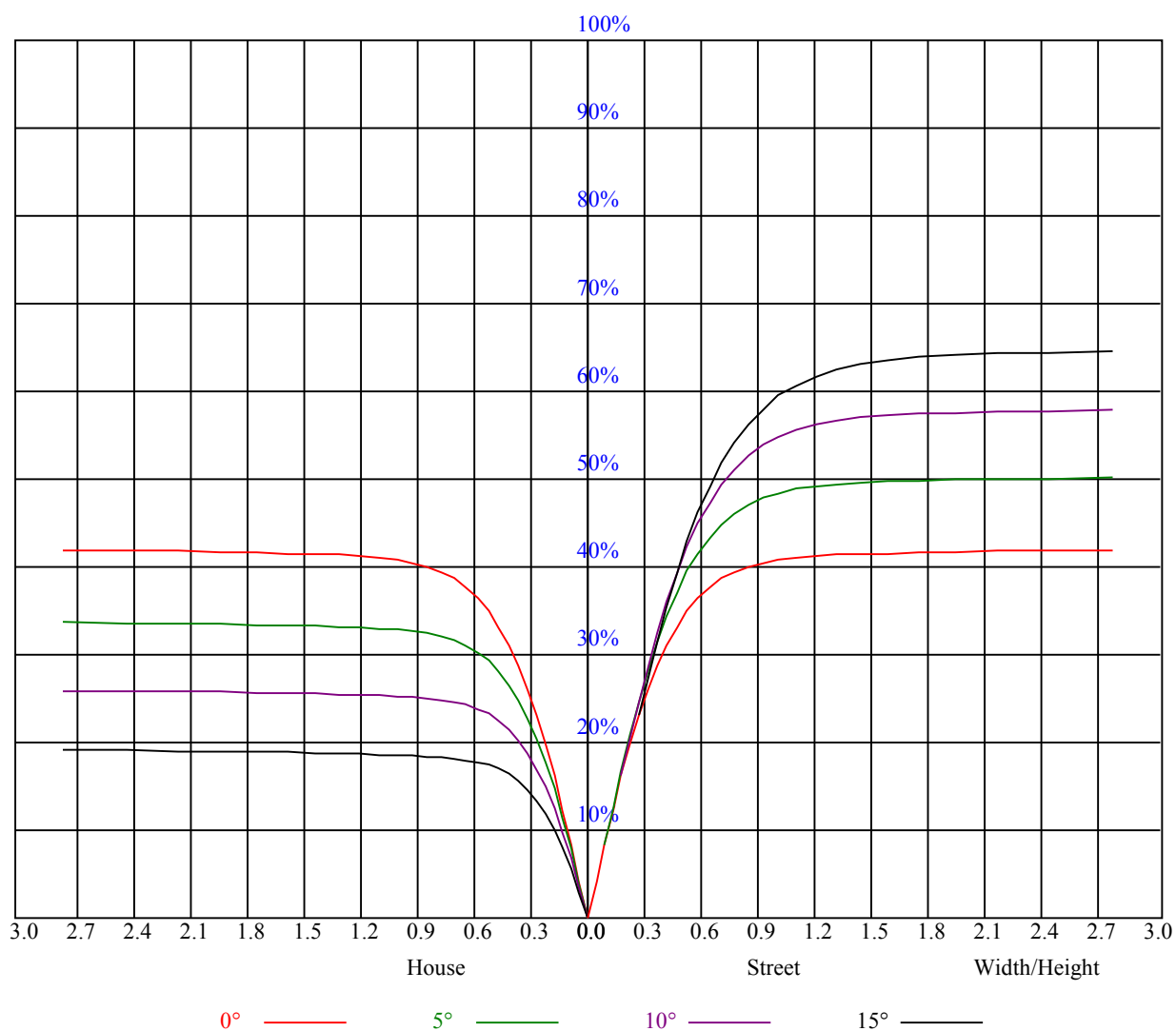
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

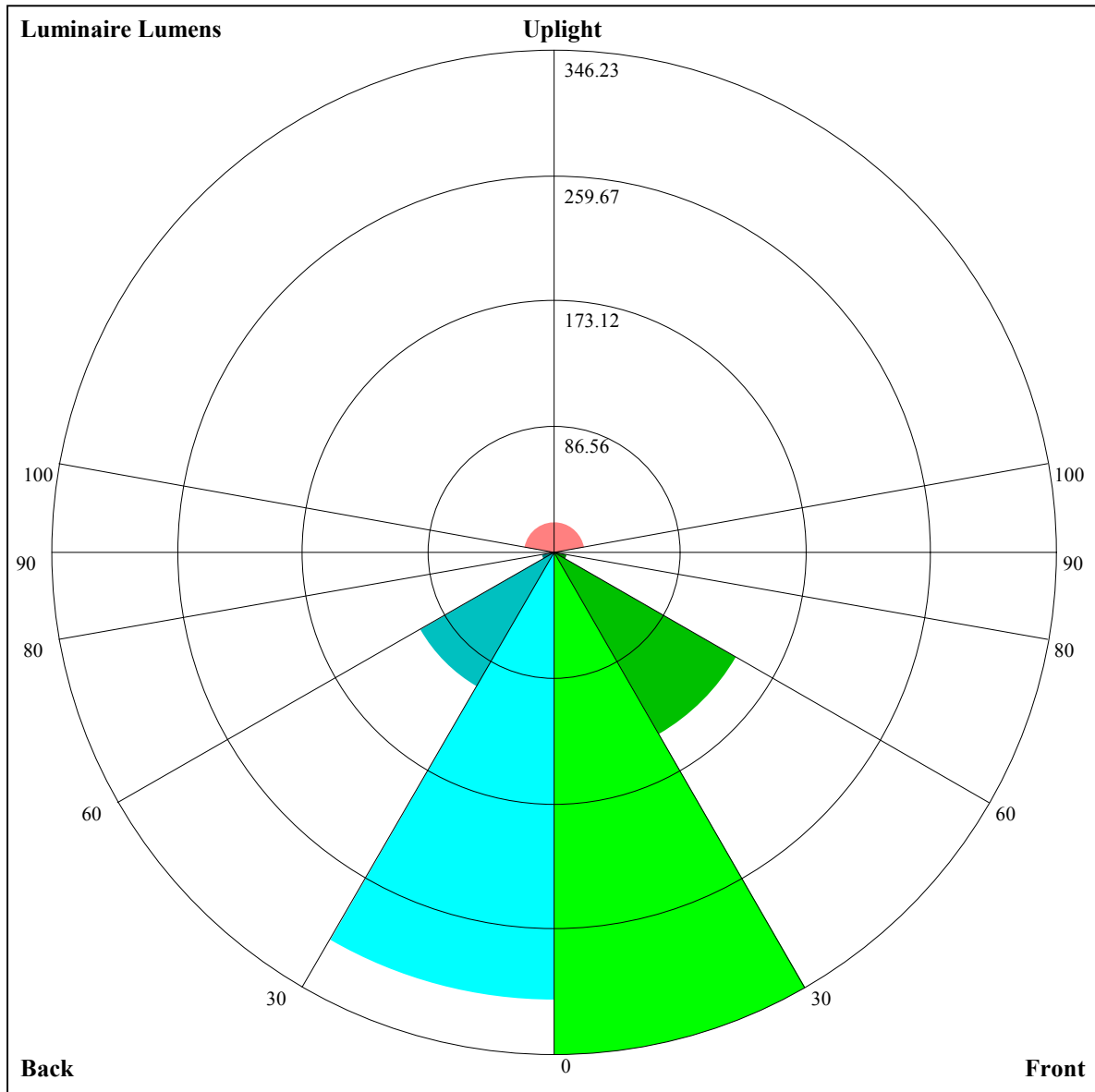
Luminance Limiting Curve





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	1.01	1.01	1.01	0.99	0.99	0.99	0.95	0.95	0.95	0.90	0.90	0.90	0.87	0.87	0.87	0.85
1	0.94	0.92	0.89	0.92	0.90	0.88	0.88	0.87	0.85	0.85	0.84	0.83	0.82	0.81	0.80	0.79
2	0.87	0.83	0.80	0.86	0.82	0.80	0.83	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.75	0.73
3	0.81	0.77	0.73	0.80	0.76	0.73	0.78	0.74	0.72	0.76	0.73	0.70	0.74	0.71	0.69	0.68
4	0.76	0.71	0.67	0.75	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.63
5	0.71	0.66	0.62	0.70	0.66	0.62	0.69	0.65	0.62	0.67	0.64	0.61	0.66	0.63	0.60	0.59
6	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.55
7	0.63	0.58	0.54	0.62	0.58	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.53	0.52
8	0.59	0.54	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.53	0.50	0.56	0.53	0.50	0.49
9	0.56	0.51	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.48	0.54	0.50	0.47	0.46
10	0.53	0.49	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.52	0.48	0.45	0.51	0.47	0.45	0.44





Luminaire Lumens:

FL=346.23,FM=144.98,FH=9.4,FVH=3.13

BL=308.73,BM=107.32,BH=8.98,BVH=2.93

UL=4.5,UH=21.39

BUG Rating:B1-U2-G0

NATA 1535-S

Intensity data(cd)										Appendix Page: 15 Total:15	
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	1351.13	1372.50	1290.38	1112.63	918.56	697.50	505.69	355.50	252.84		
45.0	1373.06	1295.44	1144.69	947.25	736.88	531.00	388.13	289.13	149.12		
90.0	1348.31	1213.31	1036.24	826.71	628.88	458.33	312.30	194.96	101.98		
135.0	1363.50	1248.75	1056.94	839.25	640.13	471.94	324.56	195.02	101.31		
180.0	1355.06	1240.88	1042.20	806.96	626.34	442.74	302.12	188.16	91.46		
225.0	1373.06	1341.56	1211.63	1001.93	787.05	576.23	402.24	249.64	164.08		
270.0	1348.31	1383.75	1316.25	1157.06	934.88	707.63	500.06	333.56	214.37		
315.0	1363.50	1392.75	1307.81	1120.50	921.54	694.86	512.33	350.83	230.46		
360.0	1351.13	1372.50	1290.38	1112.63	918.56	697.50	505.69	355.50	252.84		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	126.06	54.00	20.14	12.32	10.01	8.49	7.26	6.41	5.79		
45.0	65.81	22.22	14.18	12.09	10.63	9.45	8.55	7.31	6.36		
90.0	35.83	16.09	13.95	12.66	11.59	10.63	9.39	8.33	6.47		
135.0	29.31	13.22	11.87	10.74	9.68	8.89	7.76	6.69	4.56		
180.0	27.84	12.66	10.69	9.39	8.16	7.43	6.81	6.08	4.22		
225.0	76.50	25.99	13.56	10.86	9.17	8.04	7.26	6.47	5.68		
270.0	115.48	52.26	22.78	12.99	10.13	8.44	7.37	6.47	5.68		
315.0	122.74	50.79	20.87	11.70	9.68	7.99	6.81	6.02	5.40		
360.0	126.06	54.00	20.14	12.32	10.01	8.49	7.26	6.41	5.79		
C/ γ (°)	90.0										
0.0	4.33										
45.0	3.94										
90.0	3.99										
135.0	3.94										
180.0	3.99										
225.0	4.05										
270.0	4.39										
315.0	4.33										
360.0	4.33										