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NATA

Client:

LumCAT: 1-0920-M

Luminaire: 92.70.124.00

Report No: nt0100

Test No: GC2019122302

LampCAT: LUMINUS CXM-9-AC40

Lamp flux(lm): 1036.0

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): 827.18, Efficiency(%): 79.84% , Luminous Efficacy(lm/W): 82.97

Central intensity(cd): 2545.031, Maximum intensity(cd): 2545.031

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=34.2

[C90/270]Total=34.2

Field angle(10%Imax): [C0/180]Total=50.8

[C90/270]Total=50.8

Maximum s/h(1/2): C0_180=0.57 C90_270=0.57

Maximum s/h(1/4): C0_180=0.55 C90_270=0.55

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 79.84%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.532%

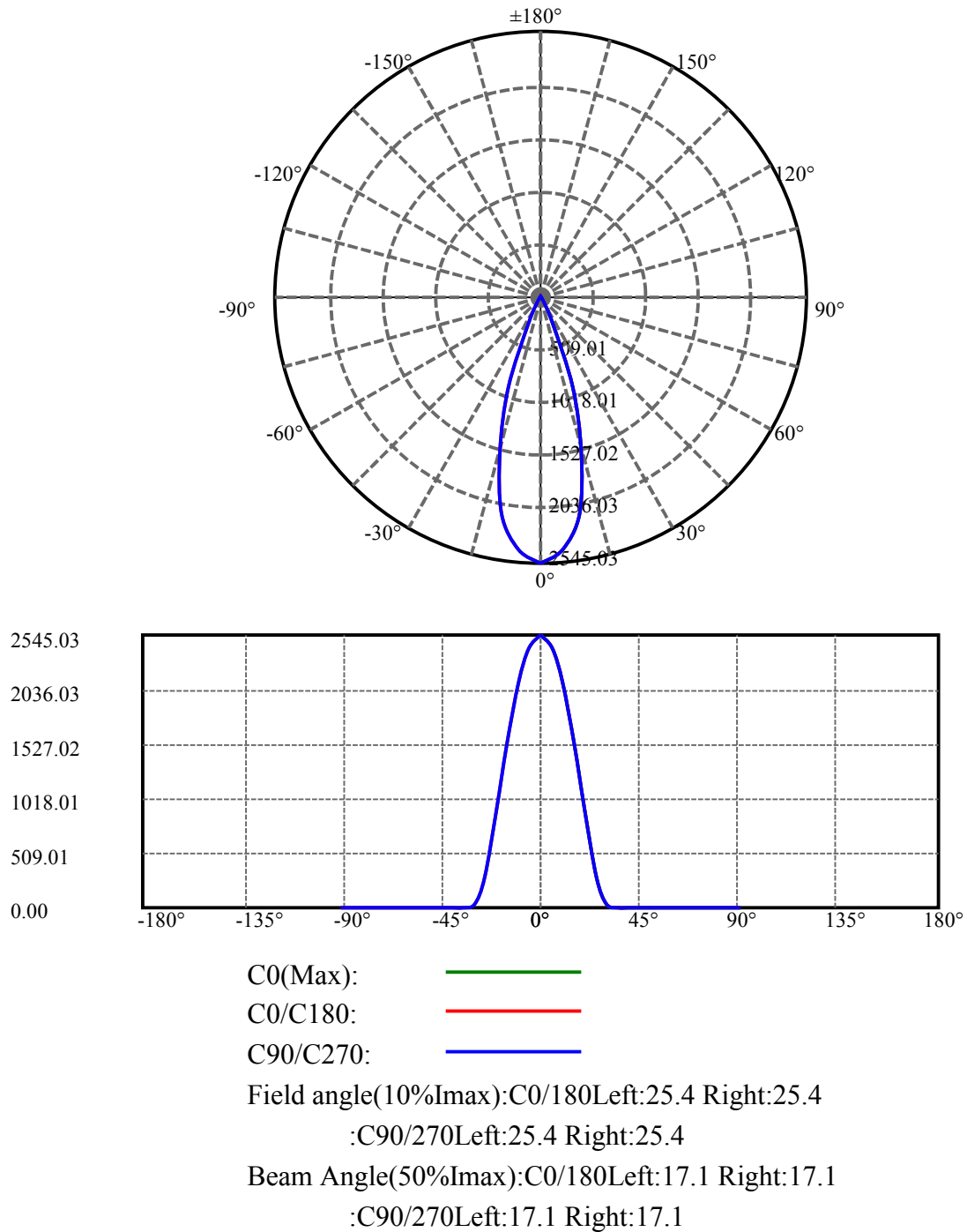
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2545.031	0.000	0	.000%	.000%
5.0	2425.289	59.419	59.419	5.735%	7.183%
10.0	2104.805	162.056	221.474	15.642%	26.775%
15.0	1524.368	215.280	436.755	20.780%	52.800%
20.0	913.929	200.950	637.704	19.397%	77.094%
25.0	277.144	124.922	762.626	12.058%	92.196%
30.0	24.722	38.201	800.827	3.687%	96.814%
35.0	7.355	4.723	805.551	.456%	97.385%
40.0	5.414	2.130	807.681	.206%	97.643%
45.0	4.613	1.856	809.538	.179%	97.867%
50.0	4.303	1.802	811.339	.174%	98.085%
55.0	4.106	1.828	813.168	.176%	98.306%
60.0	3.994	1.872	815.04	.181%	98.532%
65.0	3.923	1.925	816.965	.186%	98.765%
70.0	3.874	1.974	818.939	.191%	99.004%
75.0	3.832	2.014	820.953	.194%	99.247%
80.0	3.839	2.053	823.006	.198%	99.495%
85.0	3.839	2.086	825.092	.201%	99.747%
90.0	3.790	2.089	827.181	.202%	100.000%

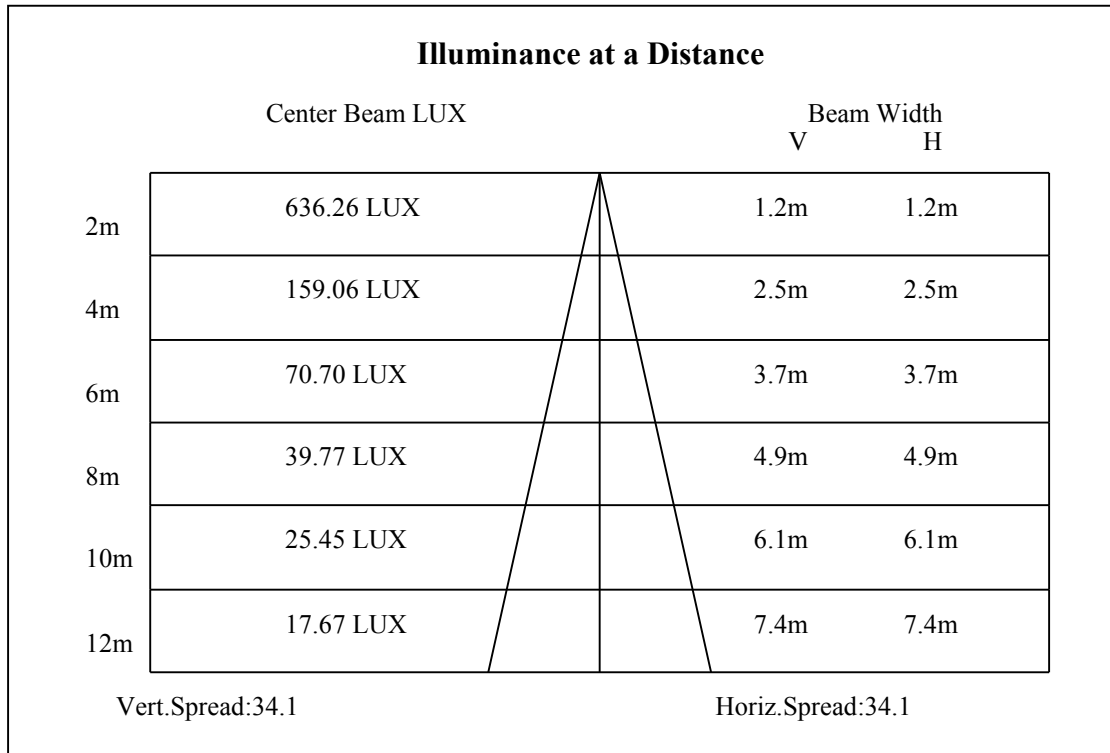
ZONAL LUMEN SUMMARY

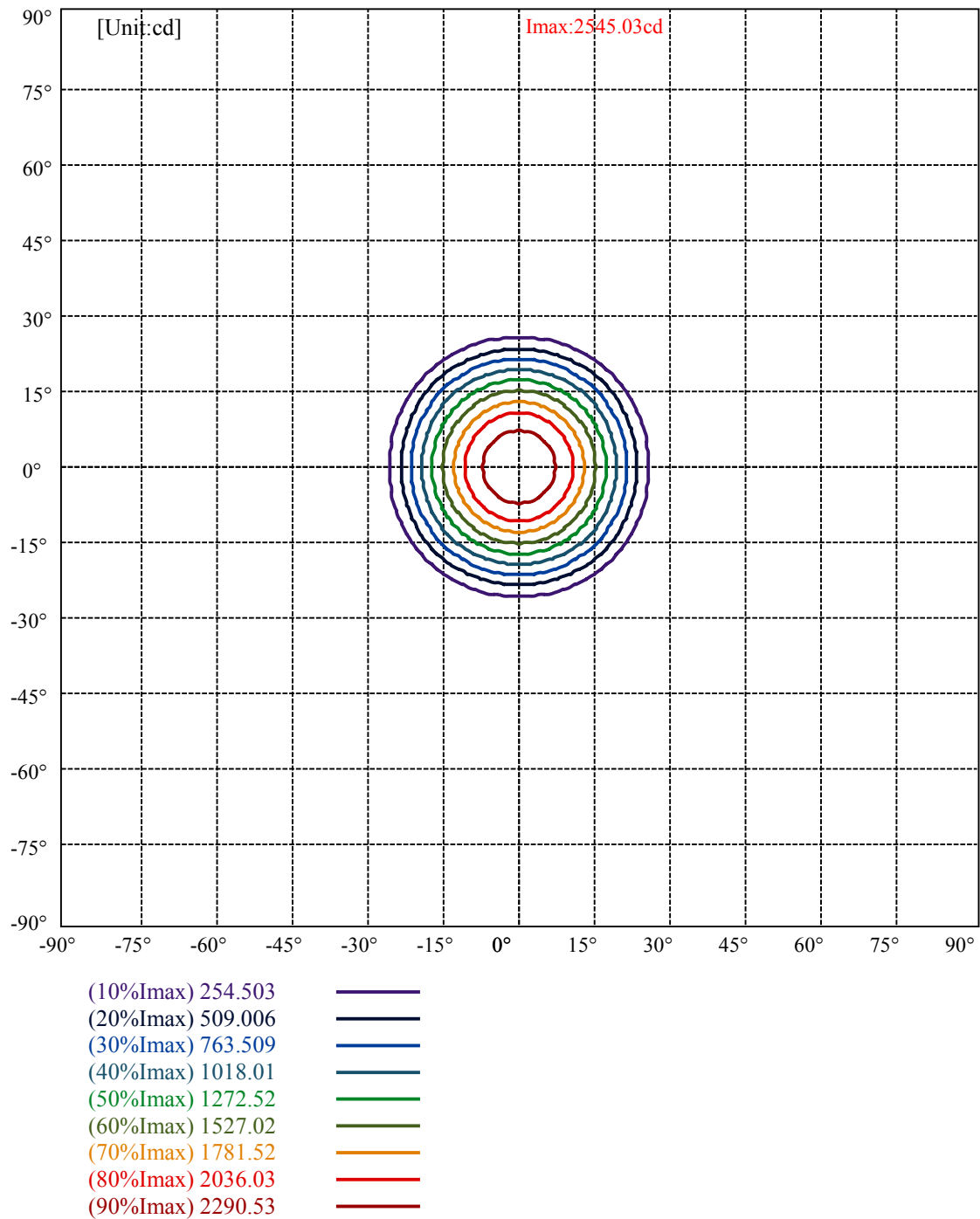
Zone	Lumens	%Lamp	%Fixt
0-30	800.83	77.30%	96.81%
0-40	807.68	77.96%	97.64%
0-60	815.04	78.67%	98.53%
0-90	825.09	79.64%	99.75%
0-120	825.09	79.64%	99.75%
0-180	827.18	79.84%	100.00%
60-90	11.92	1.15%	1.44%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-20.96	661.74	63.88%	80.00%

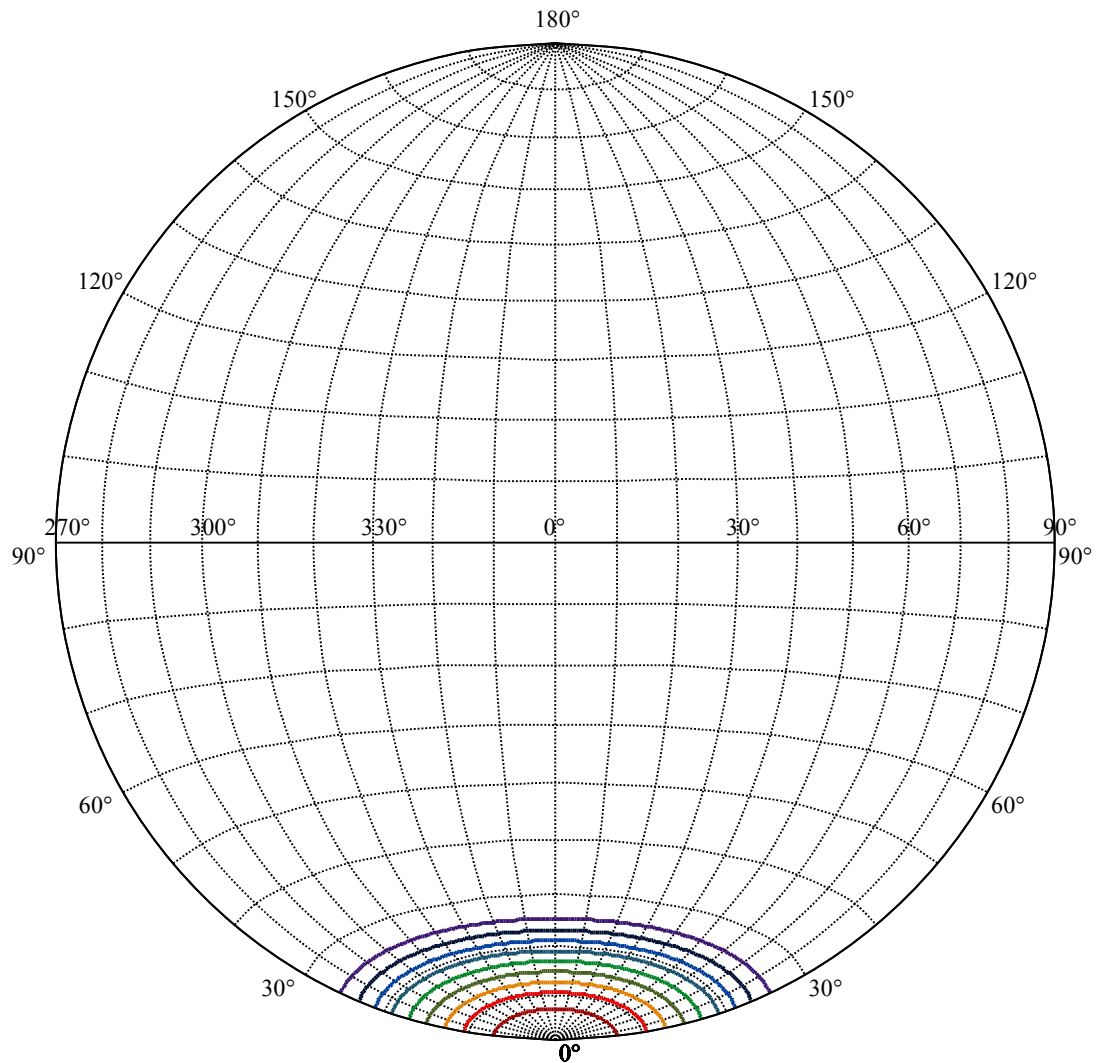
ZONAL LUMEN SUMMARY

0-10	221.47
10-20	416.23
20-30	163.12
30-40	6.85
40-50	3.66
50-60	3.70
60-70	3.90
70-80	4.07
80-90	2.09
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:2545.03

(10%Imax) 254.503

(20%Imax) 509.006

(30%Imax) 763.509

(40%Imax) 1018.01

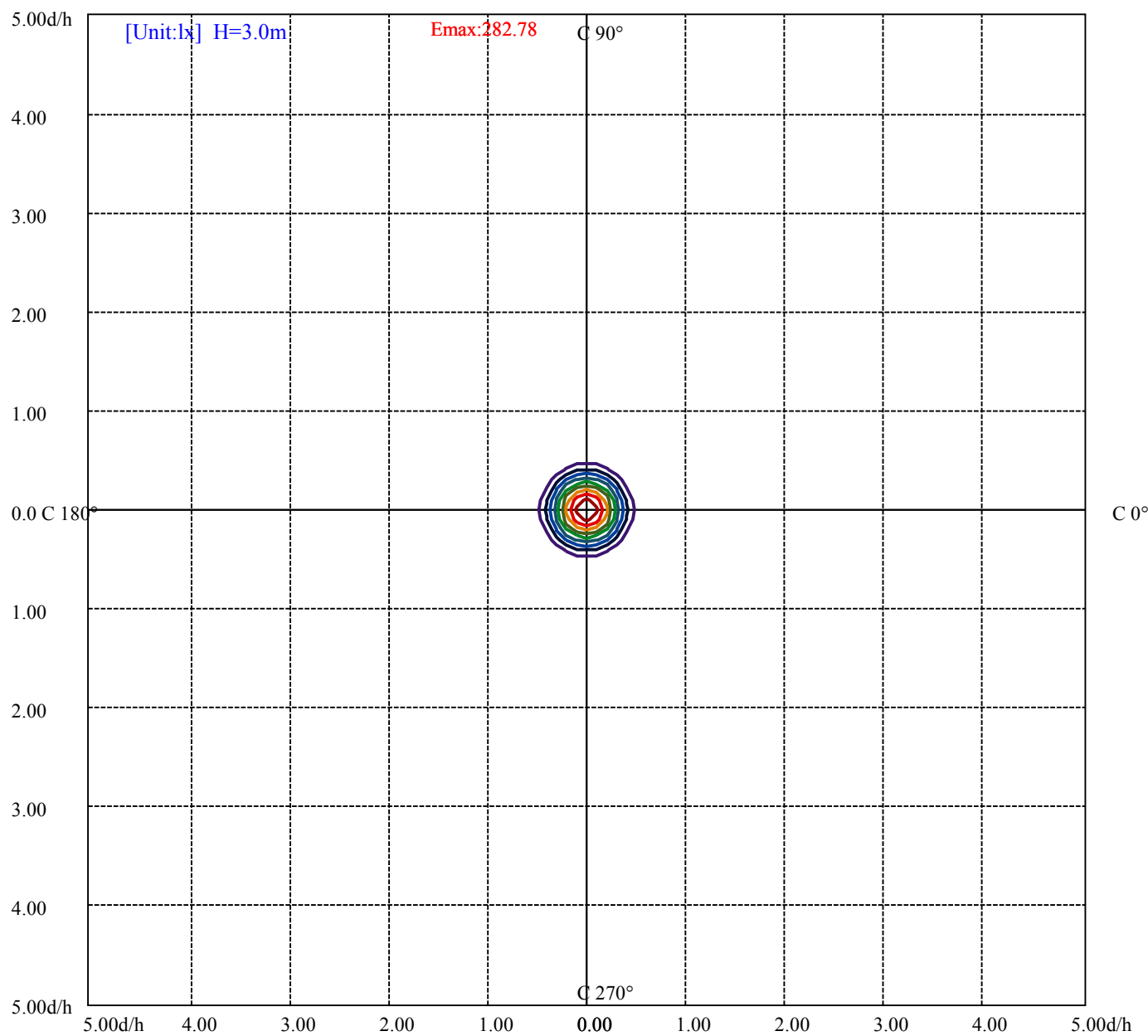
(50%Imax) 1272.52

(60%Imax) 1527.02

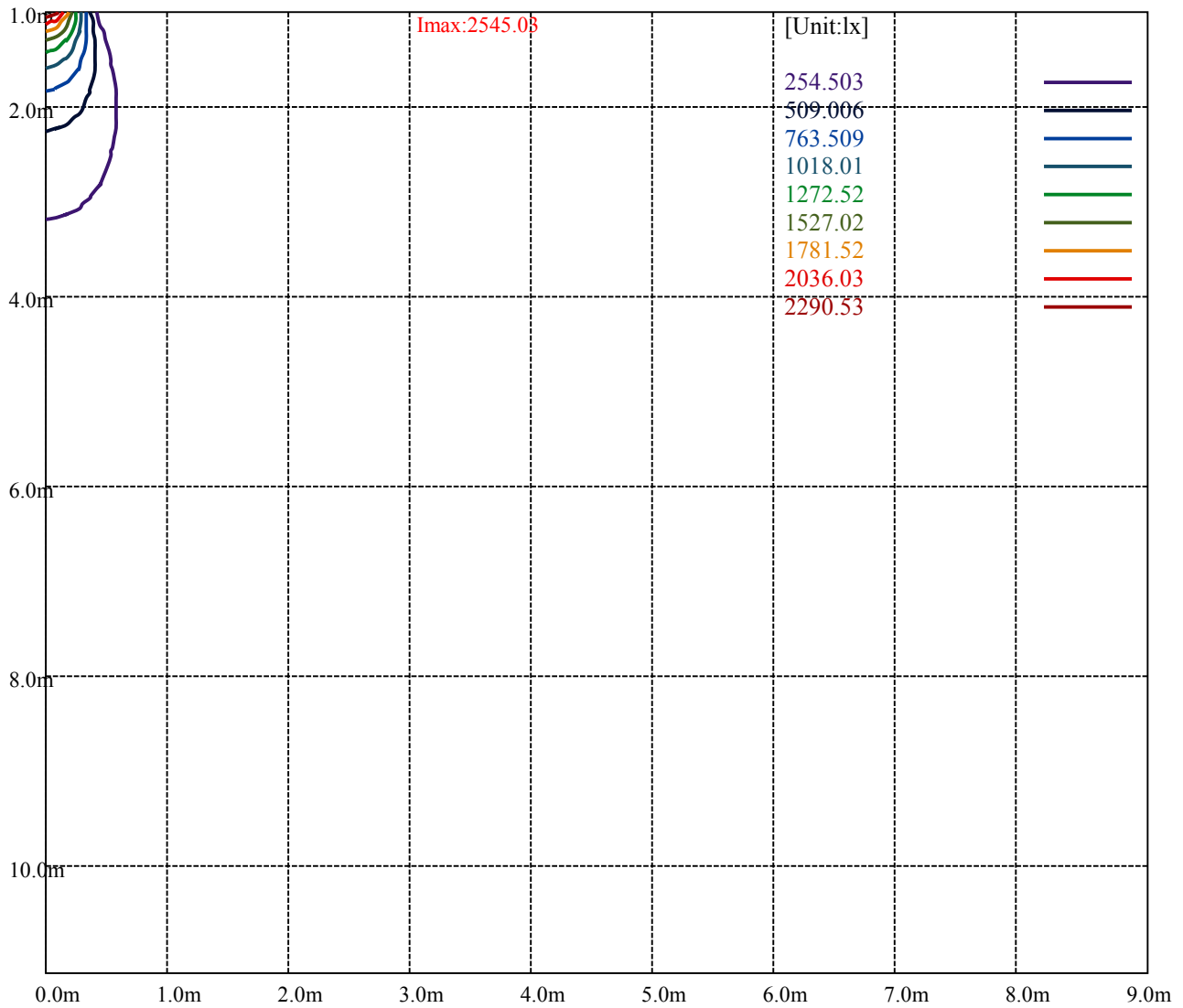
(70%Imax) 1781.52

(80%Imax) 2036.03

(90%Imax) 2290.53



(10%E _{max}) 28.27811	—
(20%E _{max}) 56.55622	—
(30%E _{max}) 84.83422	—
(40%E _{max}) 113.1122	—
(50%E _{max}) 141.39	—
(60%E _{max}) 169.6689	—
(70%E _{max}) 197.9467	—
(80%E _{max}) 226.2244	—
(90%E _{max}) 254.5033	—



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

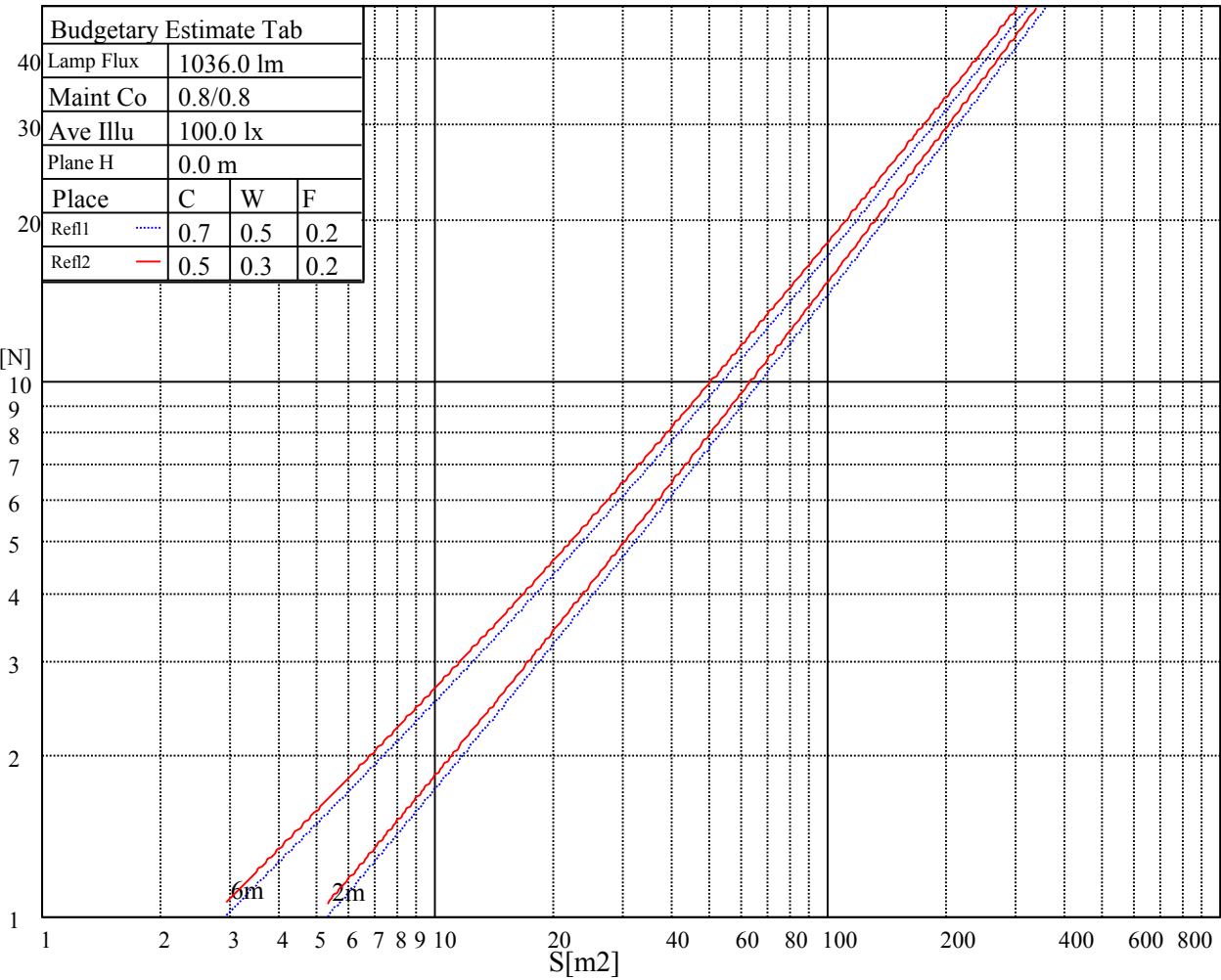
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

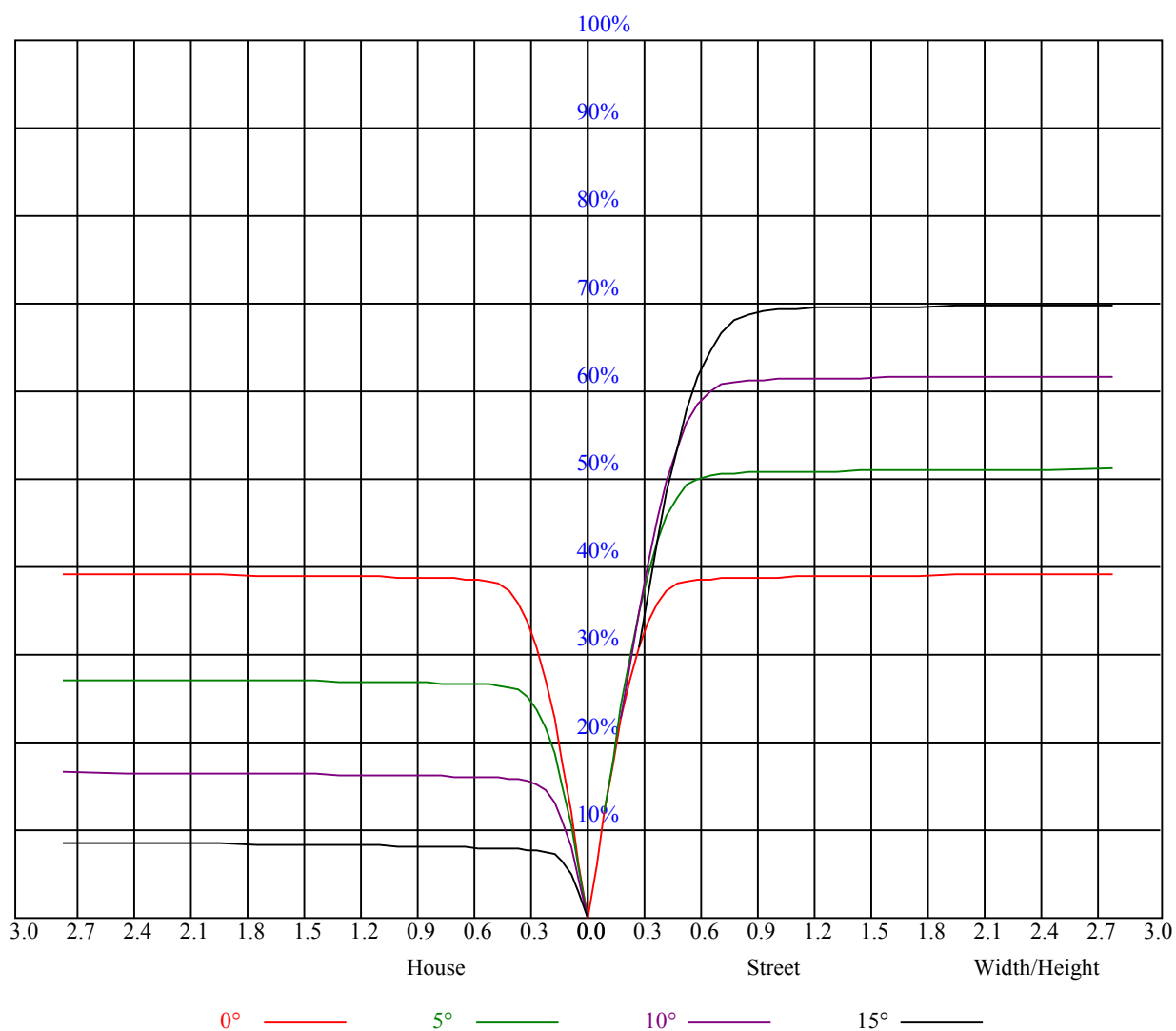
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

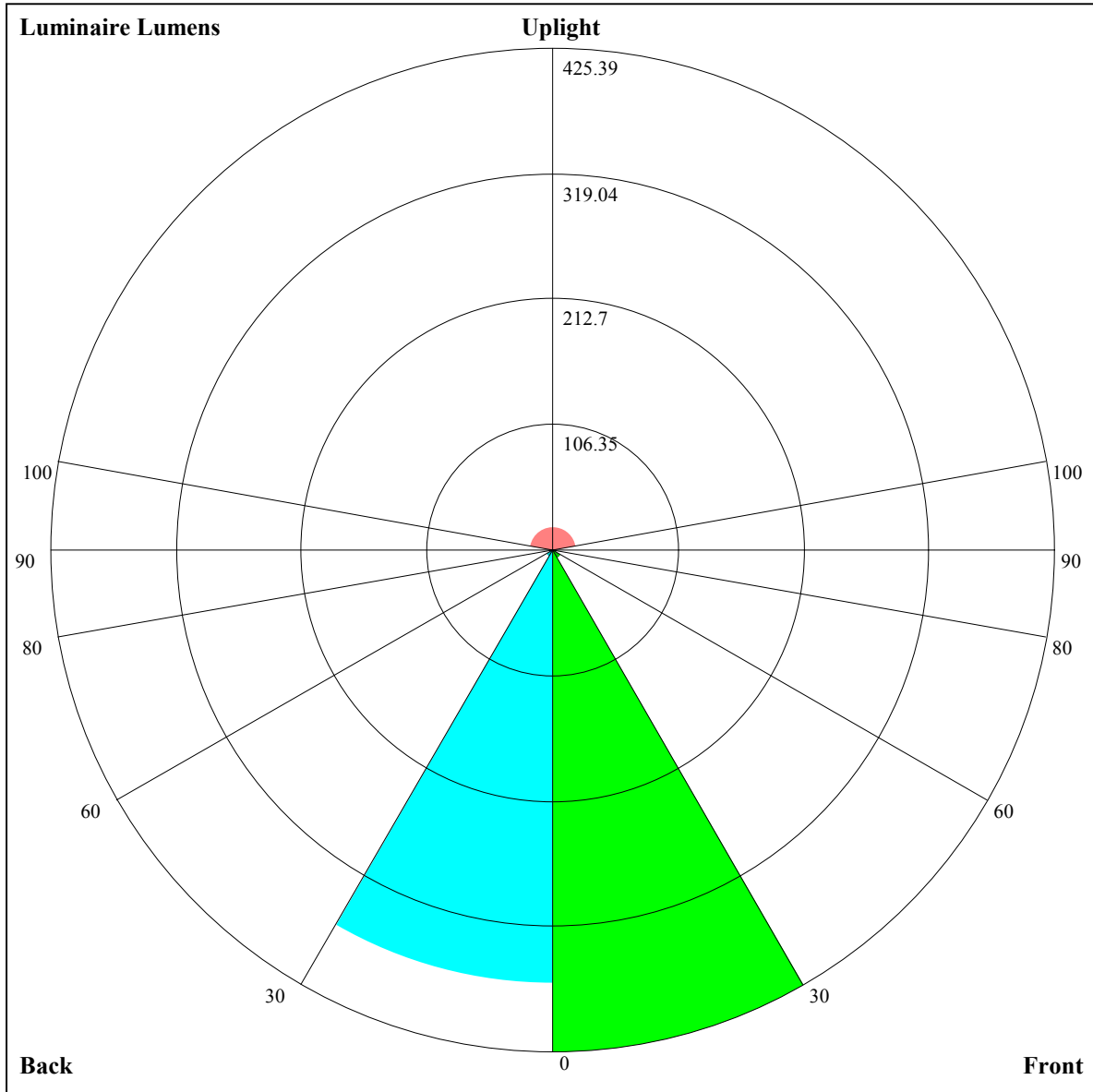
Luminance Limiting Curve





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	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.80
1	0.90	0.88	0.86	0.88	0.86	0.85	0.85	0.84	0.82	0.82	0.81	0.80	0.79	0.78	0.78	0.76
2	0.85	0.83	0.80	0.84	0.81	0.79	0.81	0.79	0.78	0.79	0.77	0.76	0.77	0.76	0.75	0.73
3	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.76	0.74	0.73	0.75	0.73	0.72	0.71
4	0.78	0.74	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.74	0.72	0.70	0.72	0.71	0.69	0.68
5	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.70	0.68	0.67	0.66
6	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.64	0.64
7	0.69	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.66	0.64	0.62	0.61
8	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.65	0.62	0.60	0.60
9	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.63	0.60	0.58	0.58
10	0.63	0.59	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.61	0.59	0.57	0.56





Luminaire Lumens:

FL=425.39,FM=7.53,FH=3.98,FVH=2.09

BL=367.78,BM=6.5,BH=3.99,BVH=2.09

UL=4.13,UH=19.68

BUG Rating:B1-U2-G0

NATA 1-0920-M

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	2539.69	2502.00	2246.63	1774.13	1142.44	438.19	41.91	8.32	5.74		
45.0	2544.19	2516.06	2262.94	1824.75	1198.13	468.56	48.77	8.89	5.74		
90.0	2550.94	2456.44	2140.88	1612.69	980.38	295.09	23.91	7.26	5.40		
135.0	2545.31	2434.50	2152.13	1620.00	941.06	288.00	24.02	7.20	5.34		
180.0	2539.69	2342.81	1930.50	1121.01	681.47	117.56	12.43	6.36	5.12		
225.0	2544.19	2332.69	1944.56	1121.63	648.79	98.38	11.42	6.58	5.23		
270.0	2550.94	2406.38	2073.38	1584.56	862.31	289.13	18.79	7.20	5.40		
315.0	2545.31	2411.44	2087.44	1536.19	856.86	222.24	16.54	7.03	5.34		
360.0	2539.69	2502.00	2246.63	1774.13	1142.44	438.19	41.91	8.32	5.74		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	4.67	4.28	4.11	3.99	3.88	3.83	3.83	3.83	3.83		
45.0	4.73	4.39	4.16	3.99	3.94	3.88	3.88	3.88	3.88		
90.0	4.56	4.22	4.05	3.94	3.88	3.88	3.83	3.83	3.88		
135.0	4.56	4.28	4.05	3.94	3.88	3.83	3.77	3.77	3.77		
180.0	4.56	4.28	4.11	3.99	3.94	3.88	3.83	3.83	3.83		
225.0	4.61	4.39	4.16	4.11	3.99	3.94	3.88	3.88	3.88		
270.0	4.67	4.39	4.16	4.05	3.99	3.94	3.88	3.88	3.88		
315.0	4.56	4.22	4.05	3.94	3.88	3.83	3.77	3.83	3.77		
360.0	4.67	4.28	4.11	3.99	3.88	3.83	3.83	3.83	3.83		
C/γ(°)	90.0										
0.0	3.83										
45.0	3.83										
90.0	3.83										
135.0	3.77										
180.0	3.77										
225.0	3.83										
270.0	3.77										
315.0	3.71										
360.0	3.83										