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NATA

Client:

LumCAT: CT01D03560AF

Luminaire:

Report No:

Voltage(V): 34.8800

Test No: GC2019043019

Current(A): 0.3790

LampCAT: CITIZEN CLU710

Power (W): 13.2200

Lamp flux(lm): 1774.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 35

Width(mm): 35

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1391.64, Efficiency(%): 78.45% , Luminous Efficacy(lm/W): 105.27

Central intensity(cd): 997.270, Maximum intensity(cd): 997.270

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=63.4

[C90/270]Total=63.4

Field angle(10%Imax): [C0/180]Total=117.4

[C90/270]Total=117.4

Maximum s/h(1/2): C0_180=0.91 C90_270=0.91

Maximum s/h(1/4): C0_180=0.96 C90_270=0.96

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 78.45%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 85.510%

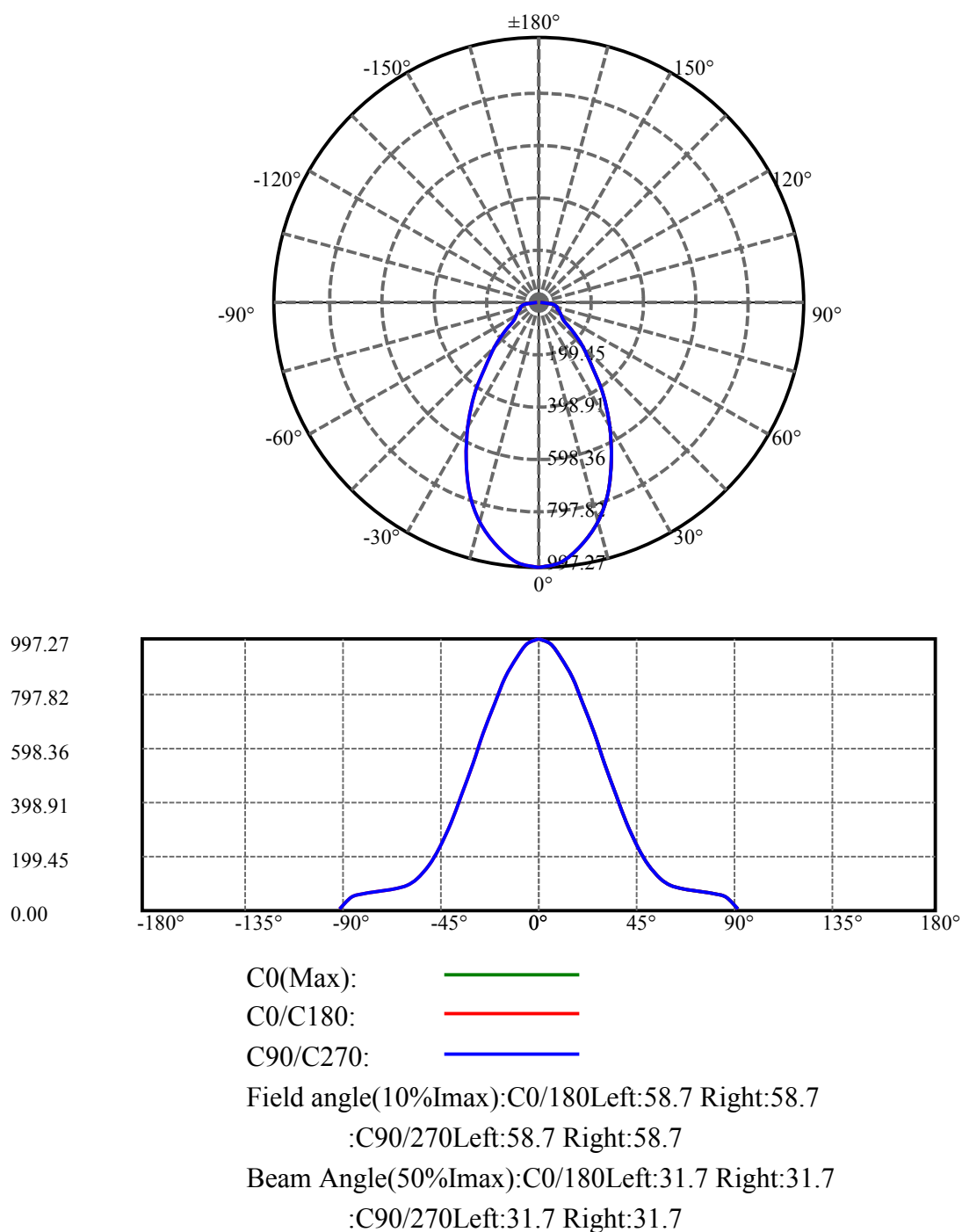
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	997.270	0.000	0	.000%	.000%
5.0	981.499	23.656	23.656	1.333%	1.700%
10.0	931.971	68.451	92.106	3.859%	6.619%
15.0	855.401	106.026	198.132	5.977%	14.237%
20.0	763.805	133.445	331.577	7.522%	23.826%
25.0	653.006	148.597	480.175	8.376%	34.504%
30.0	538.003	150.723	630.898	8.496%	45.335%
35.0	421.580	141.305	772.203	7.965%	55.489%
40.0	319.781	123.690	895.894	6.972%	64.377%
45.0	230.920	101.967	997.861	5.748%	71.704%
50.0	168.602	80.729	1078.59	4.551%	77.505%
55.0	118.519	62.430	1141.02	3.519%	81.991%
60.0	93.354	48.974	1189.993	2.761%	85.510%
65.0	81.837	42.589	1232.583	2.401%	88.571%
70.0	75.178	39.757	1272.34	2.241%	91.428%
75.0	70.003	37.948	1310.288	2.139%	94.154%
80.0	63.893	35.827	1346.115	2.020%	96.729%
85.0	47.974	30.397	1376.512	1.713%	98.913%
90.0	7.263	15.124	1391.636	.853%	100.000%

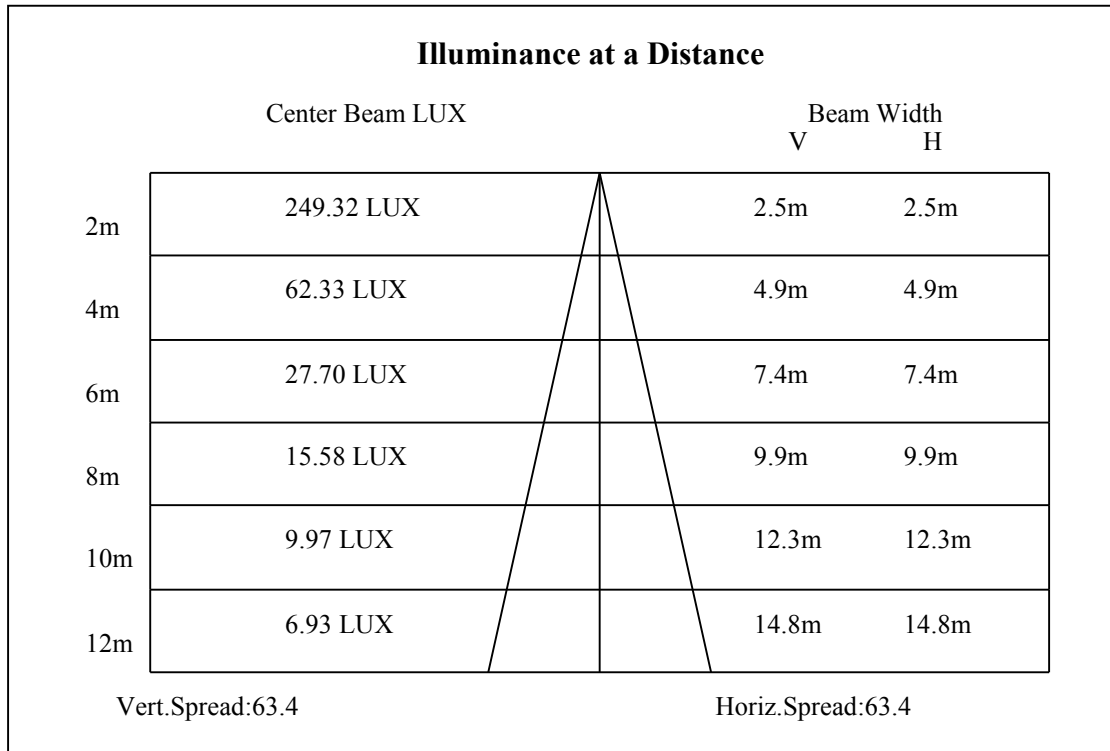
ZONAL LUMEN SUMMARY

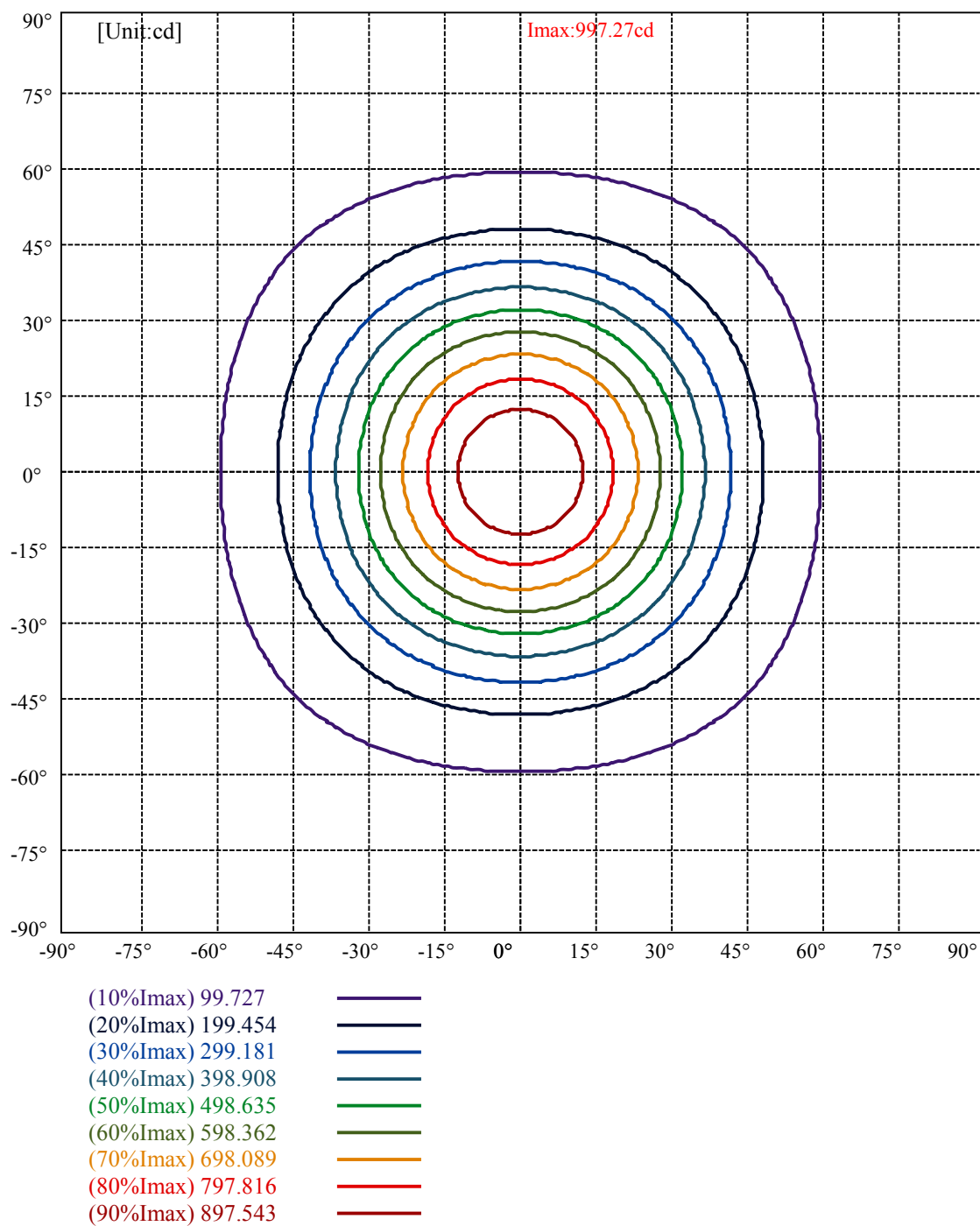
Zone	Lumens	%Lamp	%Fixt
0-30	630.90	35.56%	45.33%
0-40	895.89	50.50%	64.38%
0-60	1189.99	67.08%	85.51%
0-90	1376.51	77.59%	98.91%
0-120	1376.51	77.59%	98.91%
0-180	1391.64	78.45%	100.00%
60-90	235.49	13.27%	16.92%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-52.78	1113.31	62.76%	80.00%

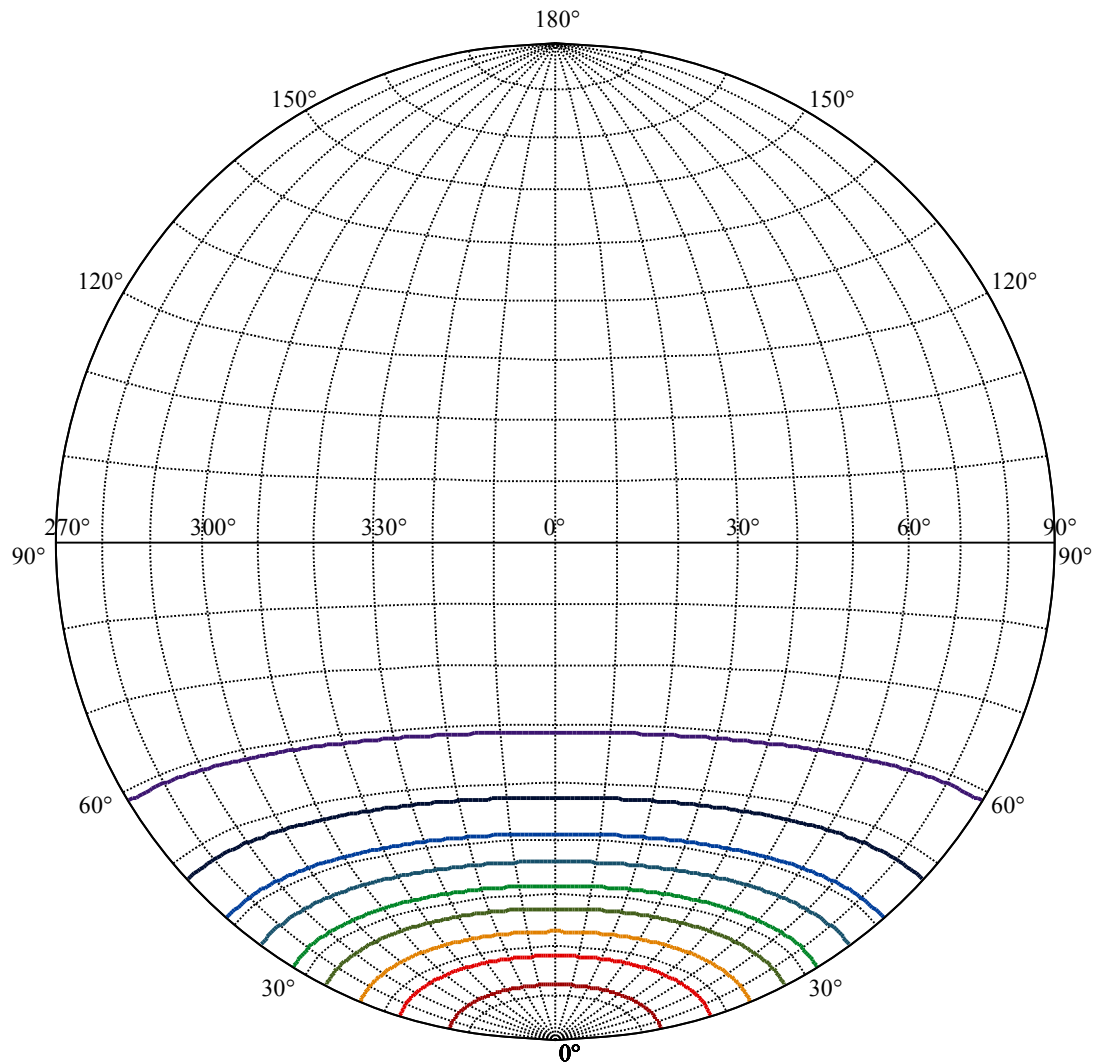
ZONAL LUMEN SUMMARY

0-10	92.11
10-20	239.47
20-30	299.32
30-40	265.00
40-50	182.70
50-60	111.40
60-70	82.35
70-80	73.77
80-90	30.40
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:997.27

(10%Imax) 99.727

(20%Imax) 199.454

(30%Imax) 299.181

(40%Imax) 398.908

(50%Imax) 498.635

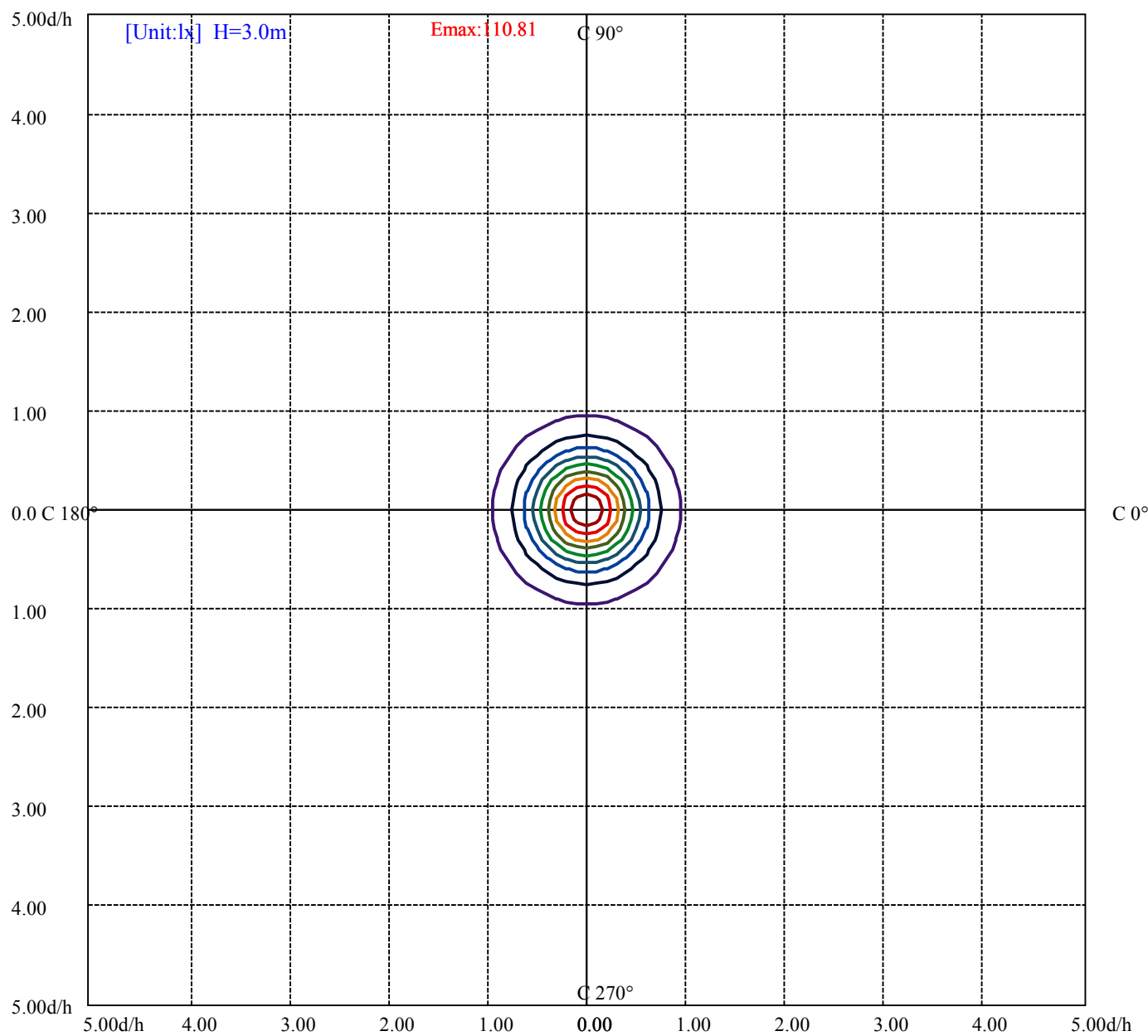
(60%Imax) 598.362

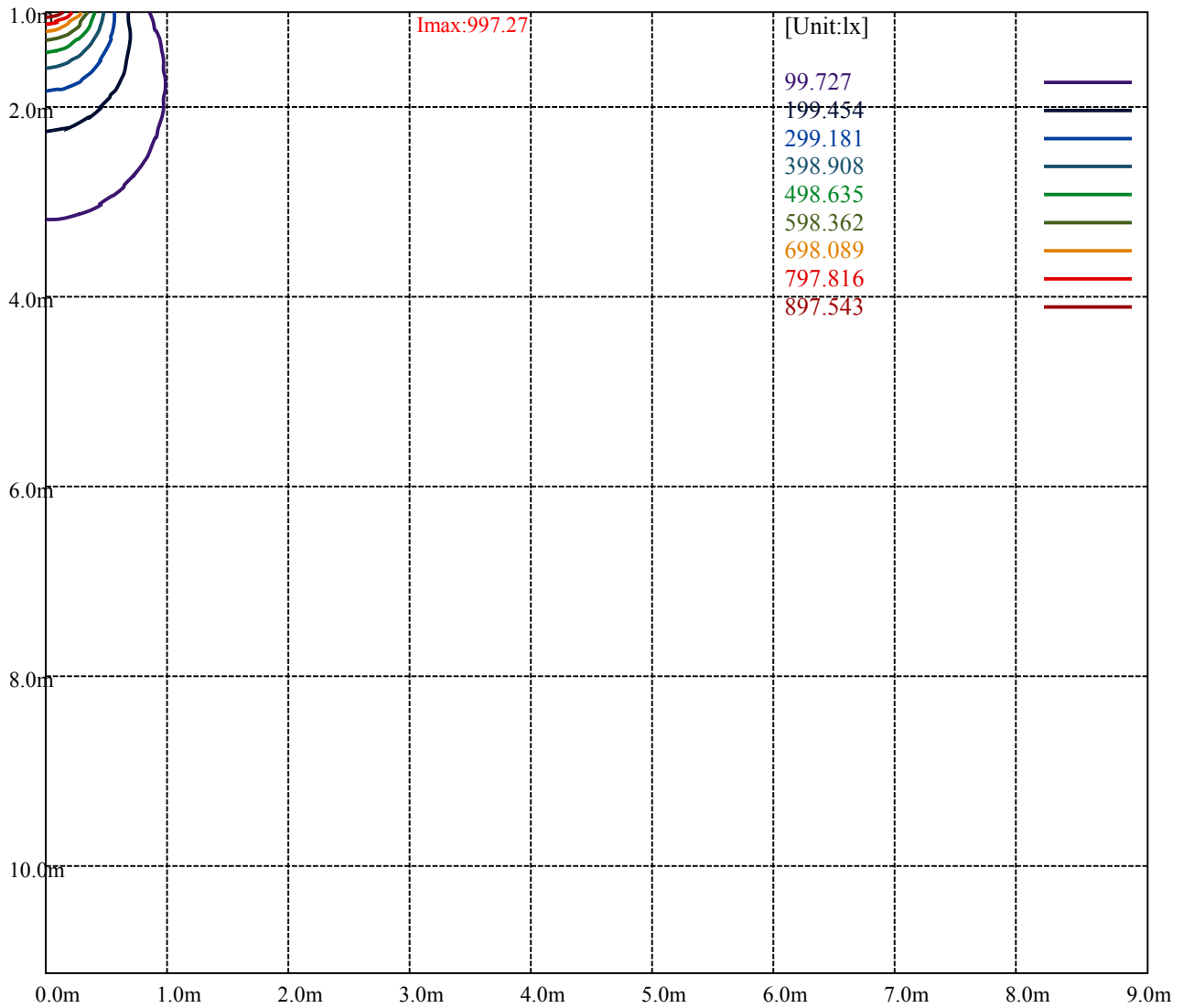
(70%Imax) 698.089

(80%Imax) 797.816

(90%Imax) 897.543



(10%E_{max}) 11.08078(20%E_{max}) 22.16155(30%E_{max}) 33.24233(40%E_{max}) 44.32311(50%E_{max}) 55.40389(60%E_{max}) 66.48466(70%E_{max}) 77.56544(80%E_{max}) 88.64622(90%E_{max}) 99.72701



Luminance Table

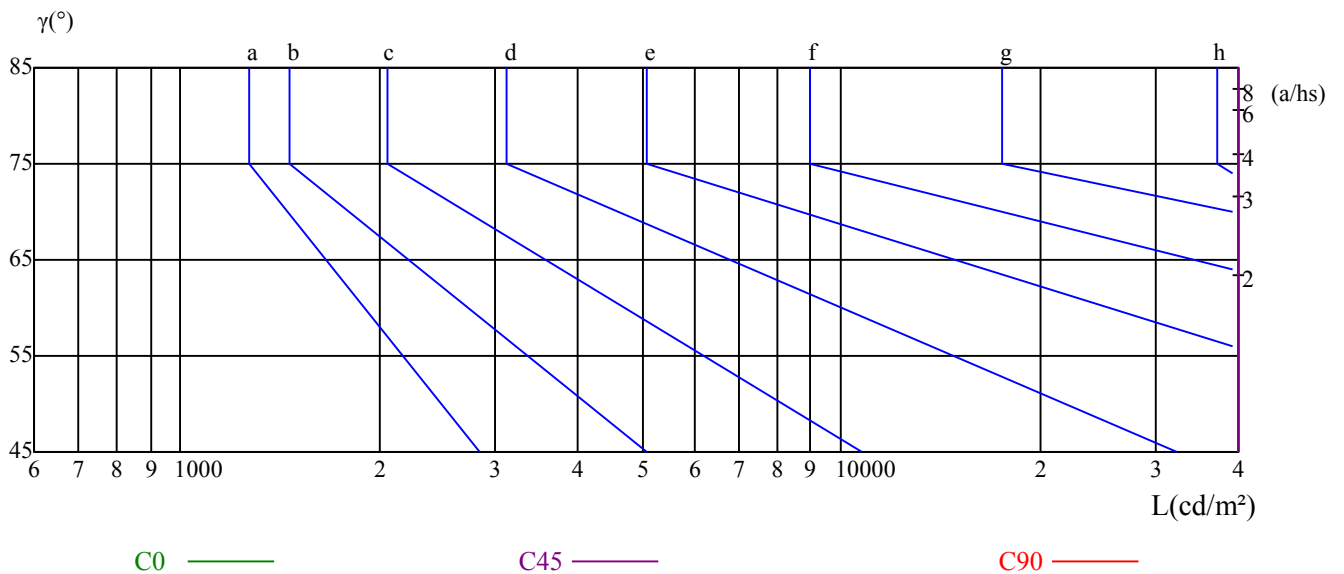
γ	45	50	55	60	65	70	75	80	85
C0	266588	214121	168679	152415	158075	179434	220793	300363	449341
C45	266588	214121	168679	152415	158075	179434	220793	300363	449341
C90	266588	214121	168679	152415	158075	179434	220793	300363	449341

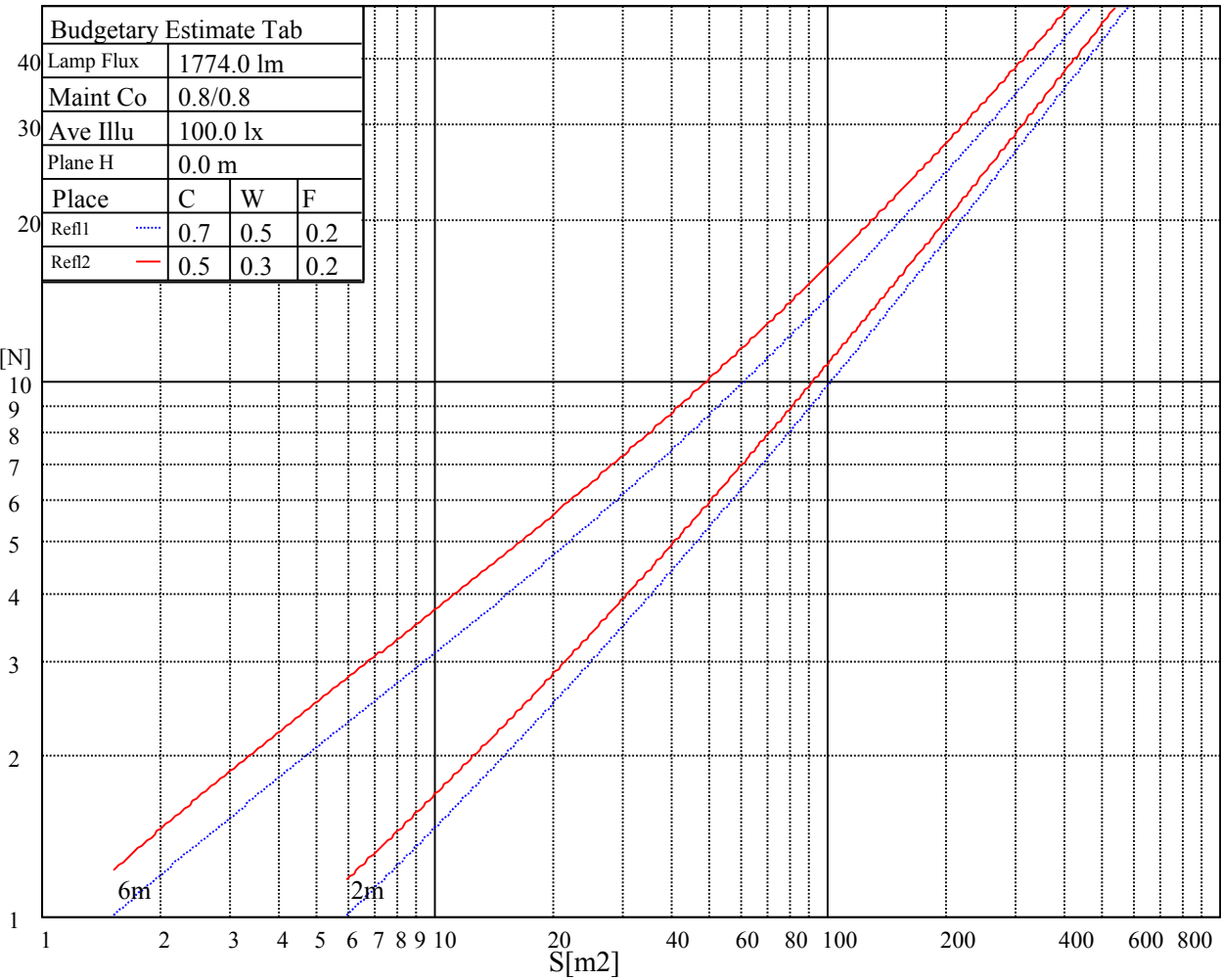
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
158075	158075	158075	220793	220793	220793	449341	449341	449341

Glare Table

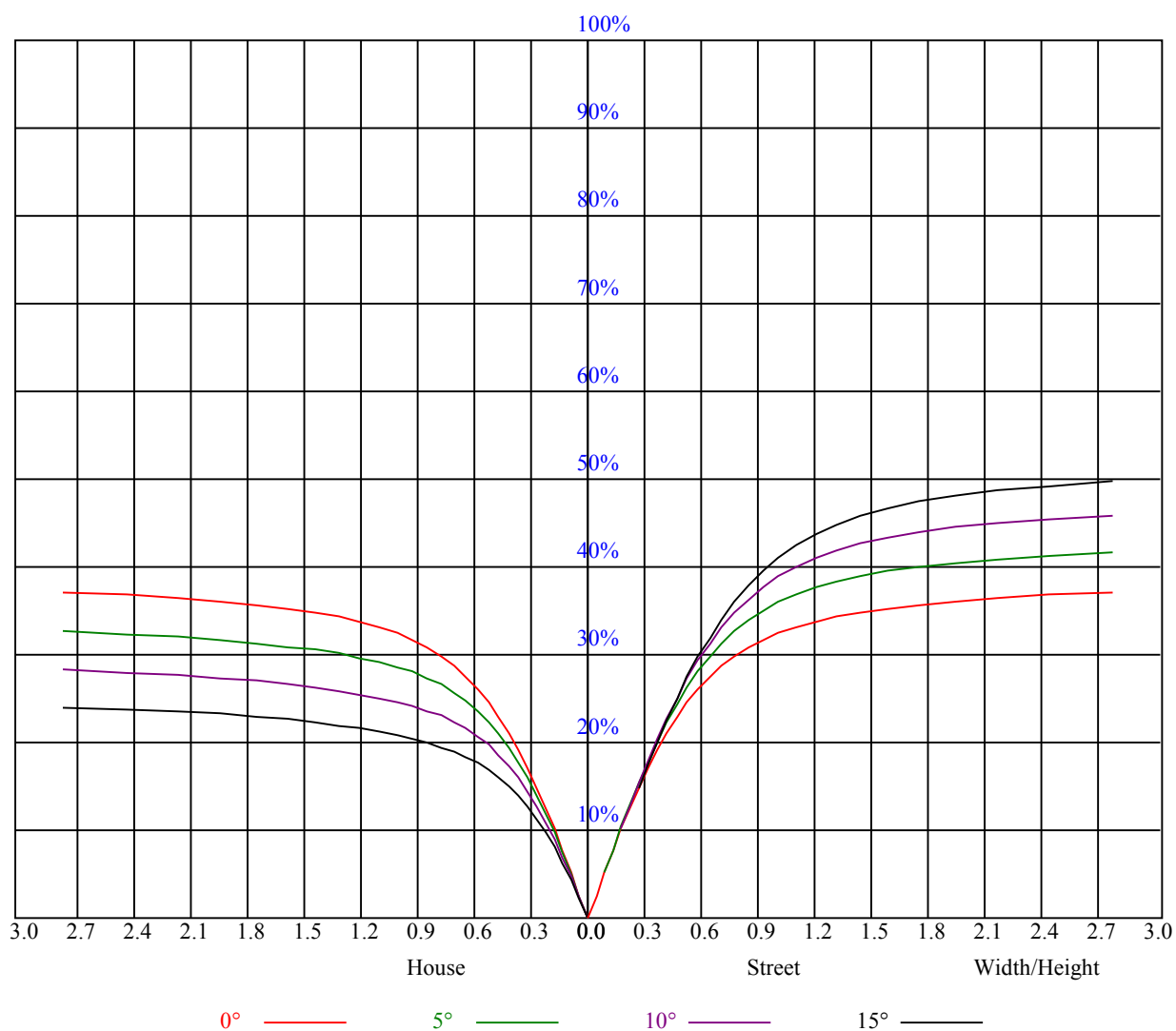
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

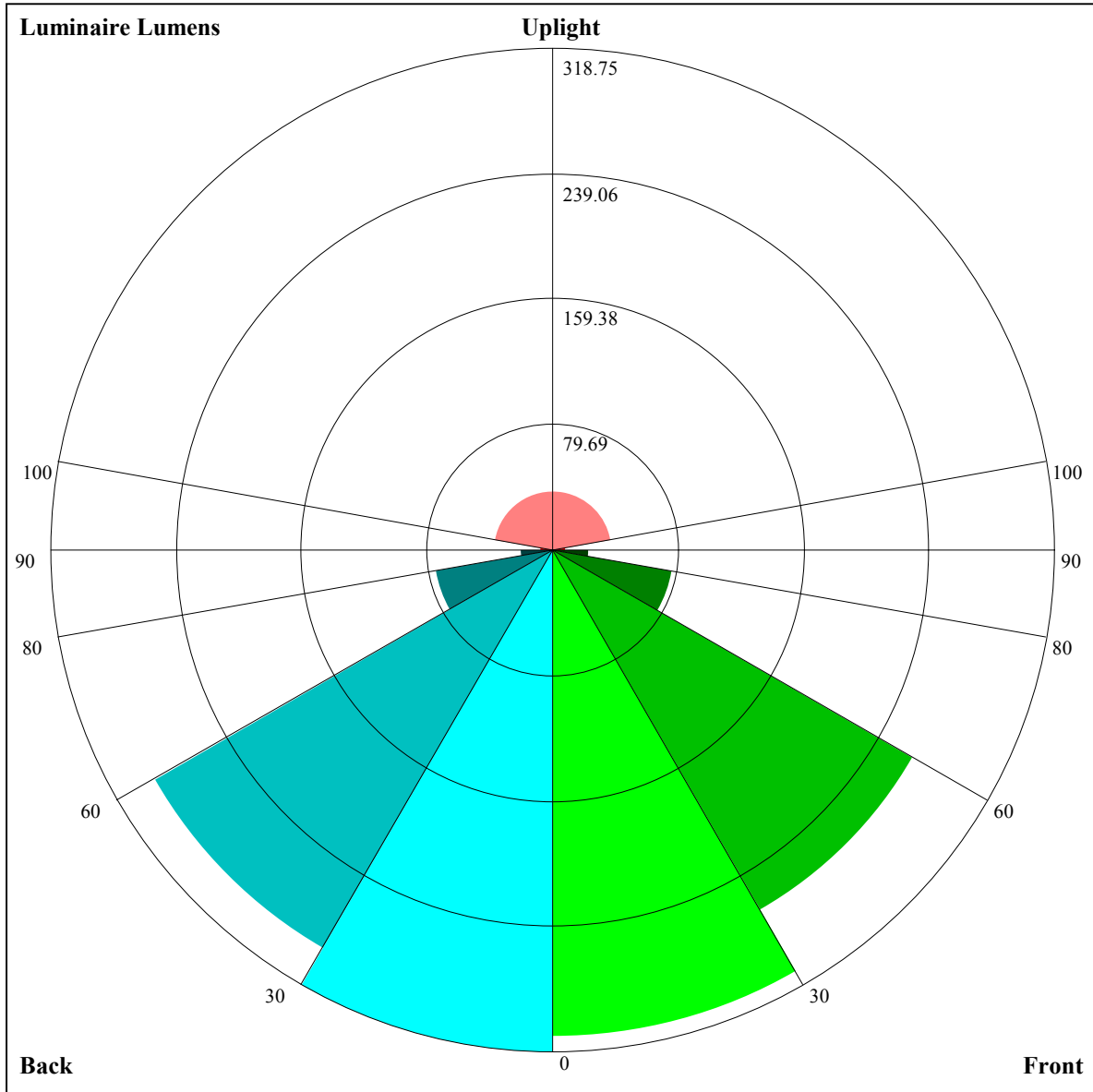
Luminance Limiting Curve





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	0.93	0.93	0.93	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.78
1	0.83	0.80	0.77	0.81	0.78	0.76	0.78	0.75	0.73	0.75	0.73	0.71	0.72	0.70	0.69	0.67
2	0.74	0.70	0.66	0.73	0.68	0.65	0.70	0.66	0.63	0.68	0.65	0.62	0.65	0.63	0.61	0.59
3	0.67	0.62	0.57	0.66	0.61	0.57	0.64	0.59	0.56	0.62	0.58	0.55	0.60	0.56	0.54	0.52
4	0.61	0.55	0.51	0.60	0.54	0.50	0.58	0.53	0.50	0.56	0.52	0.49	0.55	0.51	0.48	0.47
5	0.56	0.50	0.45	0.55	0.49	0.45	0.53	0.48	0.45	0.52	0.48	0.44	0.51	0.47	0.44	0.42
6	0.51	0.45	0.41	0.51	0.45	0.41	0.49	0.44	0.40	0.48	0.44	0.40	0.47	0.43	0.40	0.38
7	0.48	0.42	0.37	0.47	0.41	0.37	0.46	0.41	0.37	0.45	0.40	0.37	0.44	0.40	0.36	0.35
8	0.44	0.38	0.34	0.44	0.38	0.34	0.43	0.38	0.34	0.42	0.37	0.34	0.41	0.37	0.34	0.32
9	0.41	0.35	0.32	0.41	0.35	0.32	0.40	0.35	0.31	0.39	0.35	0.31	0.38	0.34	0.31	0.30
10	0.38	0.33	0.29	0.38	0.33	0.29	0.37	0.32	0.29	0.37	0.32	0.29	0.36	0.32	0.29	0.28





Luminaire Lumens:

FL=308.82,FM=264.13,FH=77.62,FVH=23.38

BL=318.75,BM=292.59,BH=76.49,BVH=20.97

UL=7.92,UH=37.71

BUG Rating:B1-U2-G1

NATA CT01D03560AF

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	1000.80	989.83	944.72	868.39	766.74	638.61	516.88	391.28	291.77		
45.0	995.01	965.64	899.66	810.06	698.57	565.59	436.84	320.96	244.29		
90.0	992.42	953.83	878.85	778.84	671.34	545.18	425.19	316.13	229.44		
135.0	1000.86	970.31	910.41	828.96	736.37	630.68	517.16	400.84	291.54		
180.0	1000.80	980.72	929.70	856.86	769.33	681.92	574.76	453.21	348.53		
225.0	995.01	995.51	967.05	910.69	842.63	751.11	646.37	541.86	424.24		
270.0	992.42	1000.58	973.74	913.73	839.03	740.81	635.96	522.84	405.79		
315.0	1000.86	995.57	951.64	875.70	786.43	670.16	550.86	425.53	322.65		
360.0	1000.80	989.83	944.72	868.39	766.74	638.61	516.88	391.28	291.77		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	216.84	163.97	117.68	94.67	86.12	79.88	73.69	67.67	61.43		
45.0	178.71	134.38	102.04	89.44	83.48	77.06	71.78	70.26	47.31		
90.0	165.21	122.91	94.28	82.46	74.59	67.73	61.20	53.04	30.43		
135.0	204.02	146.98	105.13	88.71	81.17	75.66	70.54	63.00	35.21		
180.0	248.96	171.06	117.17	91.35	80.33	75.04	68.96	61.93	32.91		
225.0	310.67	226.18	147.09	103.95	85.16	76.89	73.41	66.99	66.49		
270.0	292.33	211.50	141.86	101.31	80.83	72.84	67.33	60.86	51.13		
315.0	230.63	171.84	122.91	94.95	83.03	76.33	73.13	67.39	58.89		
360.0	216.84	163.97	117.68	94.67	86.12	79.88	73.69	67.67	61.43		
C/γ(°)	90.0										
0.0	10.80										
45.0	5.79										
90.0	5.68										
135.0	5.79										
180.0	5.63										
225.0	5.79										
270.0	9.11										
315.0	9.51										
360.0	10.80										