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NATA

Client:

LumCAT: 1406-N

Luminaire: 92.70.064.00

Report No: nt0100

Test No: GC2019122417

LampCAT: LUMINUS CXM-9-AC40

Lamp flux(lm): 1077.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 33.5600

Current(A): 0.2970

Power (W): 9.9700

PF: 0.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 932.98, Efficiency(%): 86.63% , Luminous Efficacy(lm/W): 93.58

Central intensity(cd): 1222.453, Maximum intensity(cd): 1222.453

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=40.0

[C90/270]Total=40.0

Field angle(10%Imax): [C0/180]Total=92.4

[C90/270]Total=92.4

Maximum s/h(1/2): C0_180=0.64 C90_270=0.64

Maximum s/h(1/4): C0_180=0.71 C90_270=0.71

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.63%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.174%

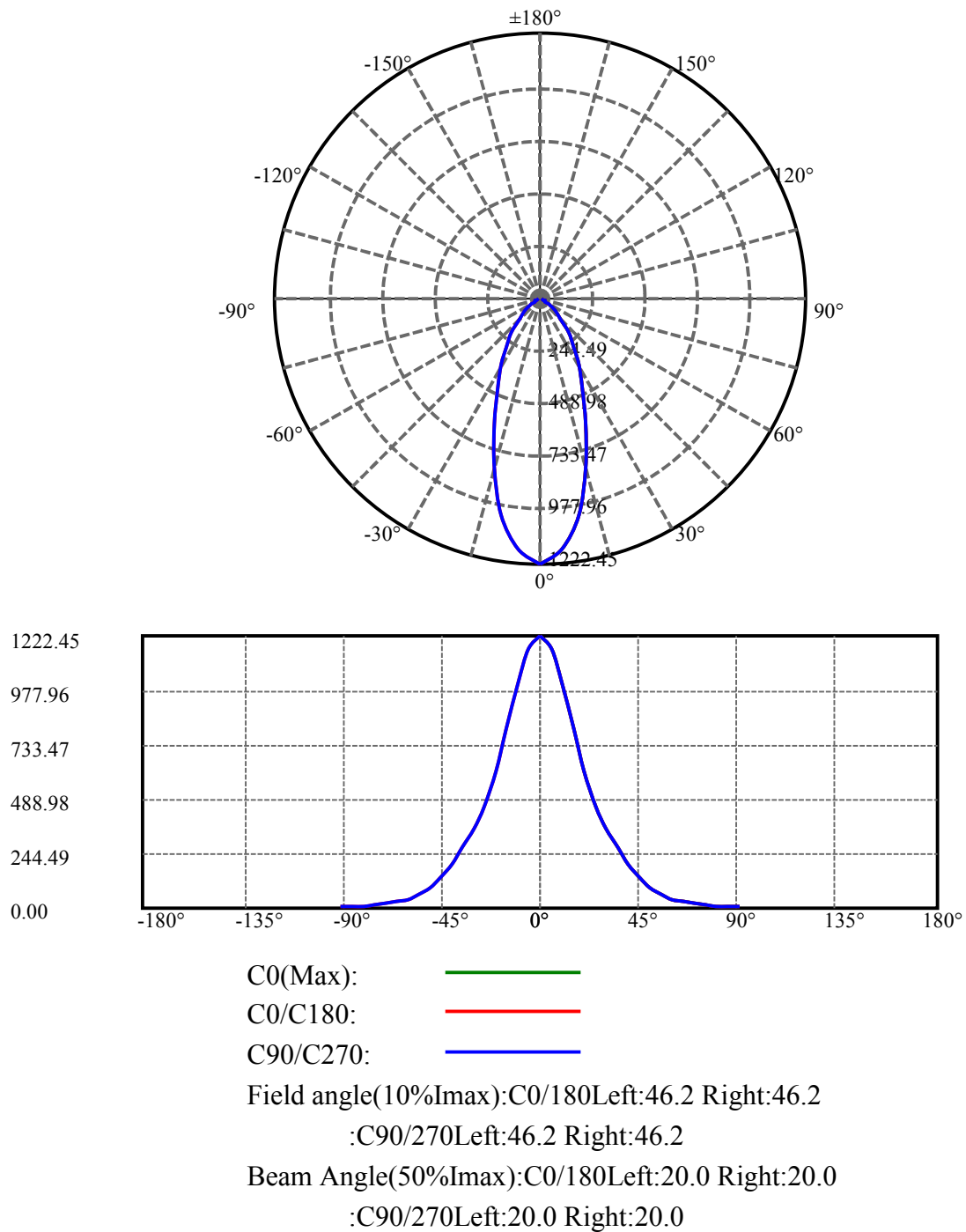
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1222.453	0.000	0	.000%	.000%
5.0	1158.623	28.465	28.465	2.643%	3.051%
10.0	1011.206	77.622	106.087	7.207%	11.371%
15.0	804.832	107.726	213.813	10.002%	22.917%
20.0	611.438	116.721	330.533	10.838%	35.428%
25.0	456.905	112.049	442.583	10.404%	47.437%
30.0	354.987	102.746	545.328	9.540%	58.450%
35.0	275.323	92.817	638.146	8.618%	68.399%
40.0	200.391	79.369	717.515	7.369%	76.906%
45.0	133.123	61.753	779.268	5.734%	83.524%
50.0	87.694	44.619	823.887	4.143%	88.307%
55.0	58.127	31.706	855.593	2.944%	91.705%
60.0	41.527	23.035	878.628	2.139%	94.174%
65.0	29.918	17.368	895.996	1.613%	96.036%
70.0	21.902	13.121	909.117	1.218%	97.442%
75.0	15.265	9.715	918.832	.902%	98.483%
80.0	10.252	6.827	925.66	.634%	99.215%
85.0	6.251	4.484	930.144	.416%	99.696%
90.0	4.113	2.838	932.982	.263%	100.000%

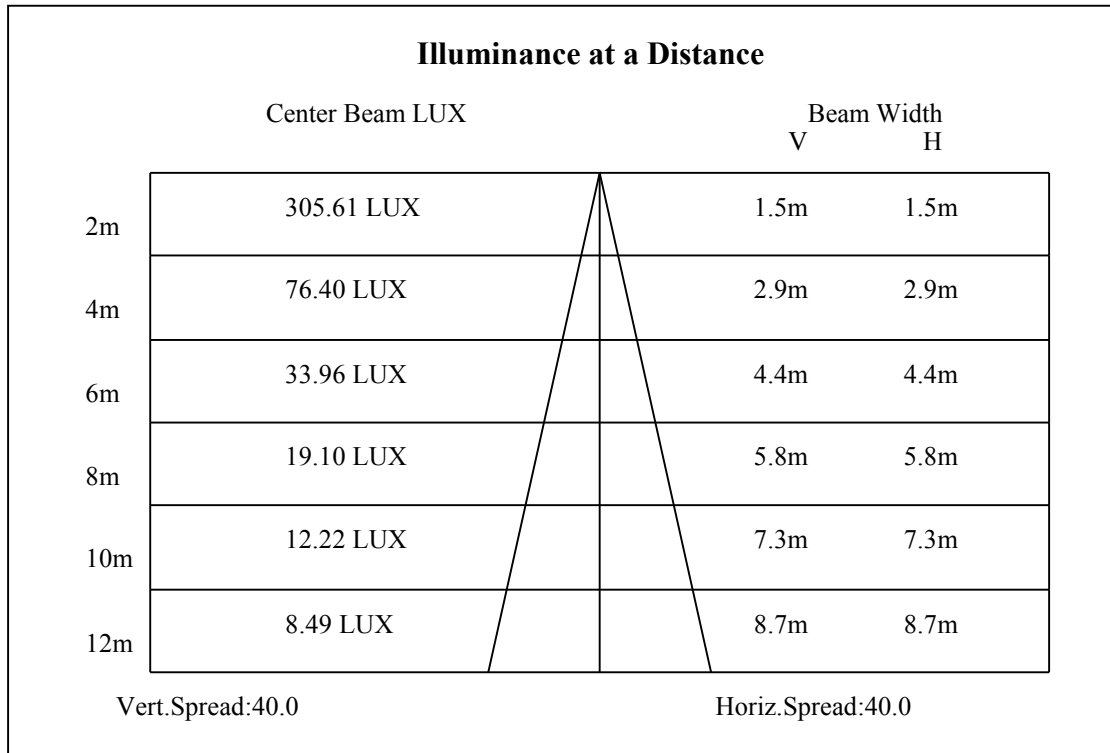
ZONAL LUMEN SUMMARY

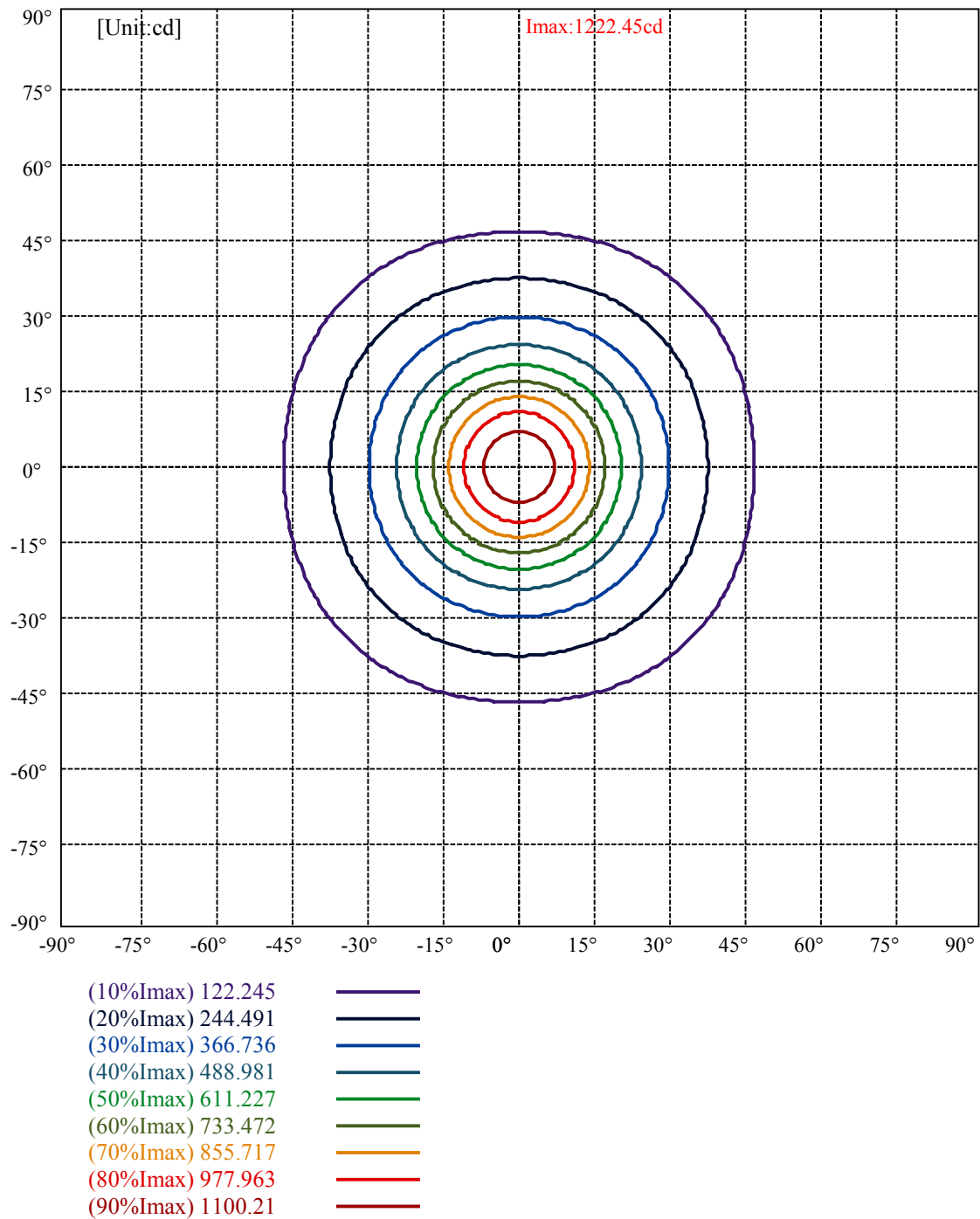
Zone	Lumens	%Lamp	%Fixt
0-30	545.33	50.63%	58.45%
0-40	717.51	66.62%	76.91%
0-60	878.63	81.58%	94.17%
0-90	930.14	86.36%	99.70%
0-120	930.14	86.36%	99.70%
0-180	932.98	86.63%	100.00%
60-90	74.55	6.92%	7.99%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-42.34	746.39	69.30%	80.00%

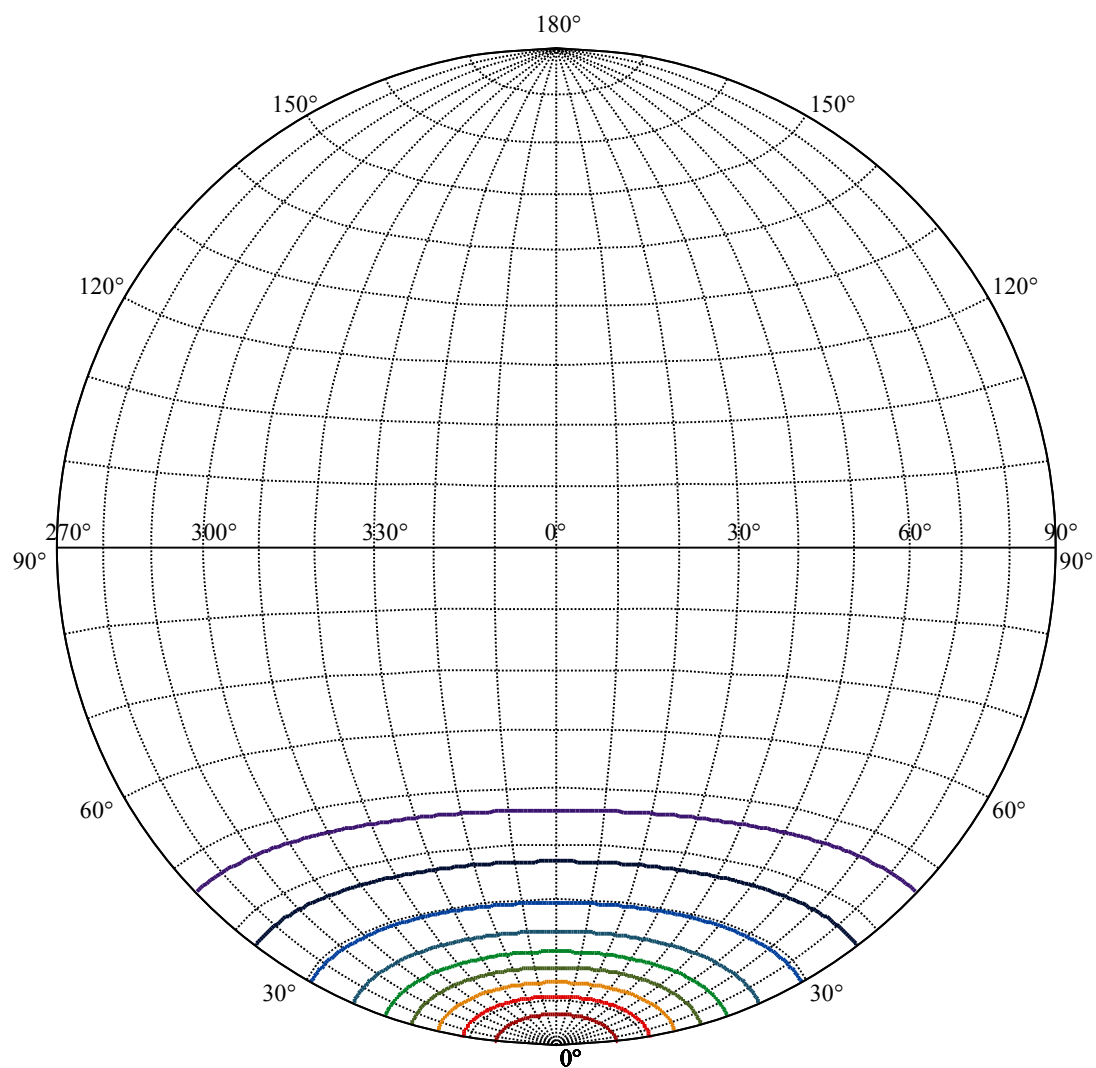
ZONAL LUMEN SUMMARY

0-10	106.09
10-20	224.45
20-30	214.79
30-40	172.19
40-50	106.37
50-60	54.74
60-70	30.49
70-80	16.54
80-90	4.48
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:1222.45

(10%Imax) 122.245

(20%Imax) 244.491

(30%Imax) 366.736

(40%Imax) 488.981

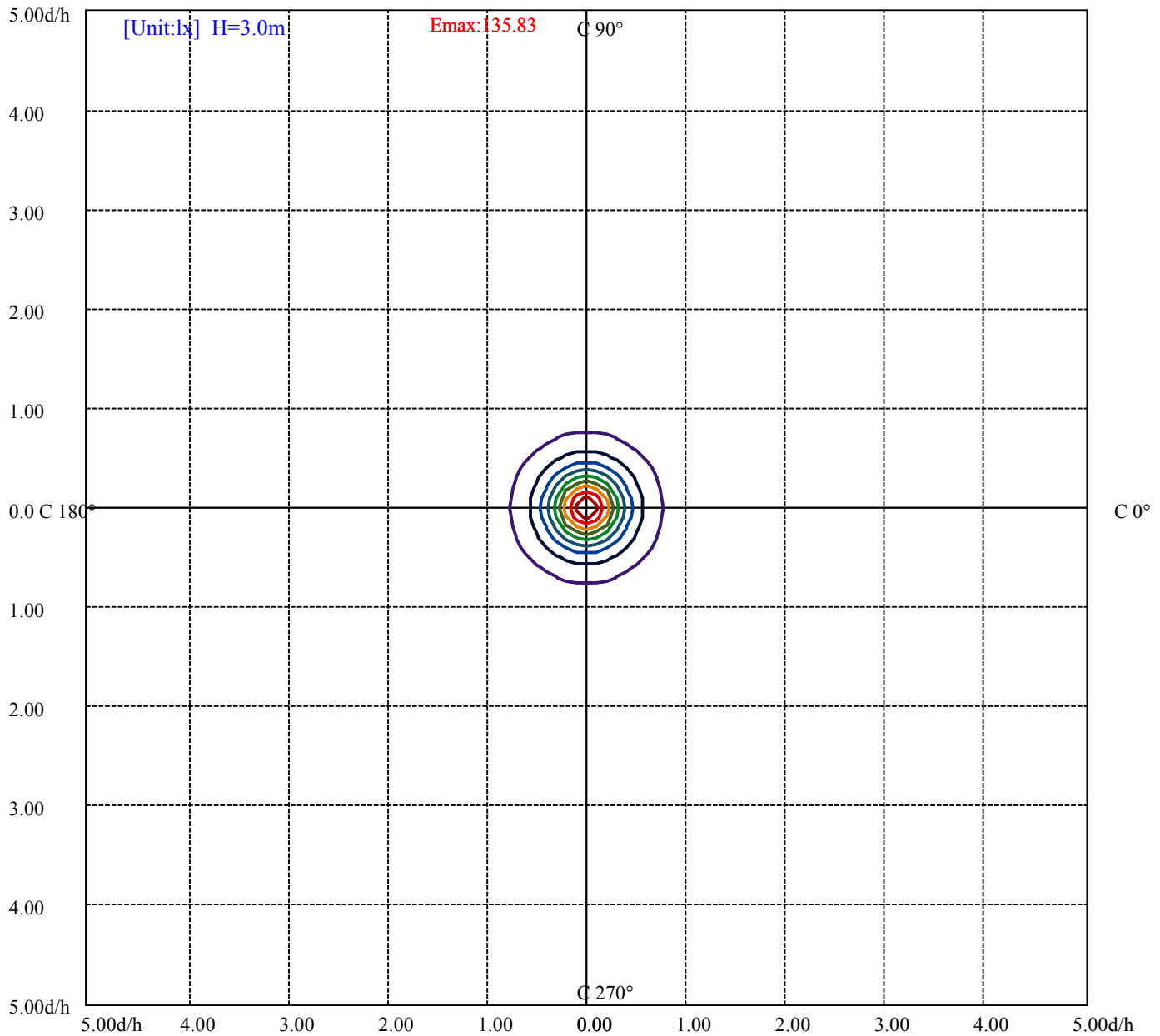
(50%Imax) 611.227

(60%Imax) 733.472

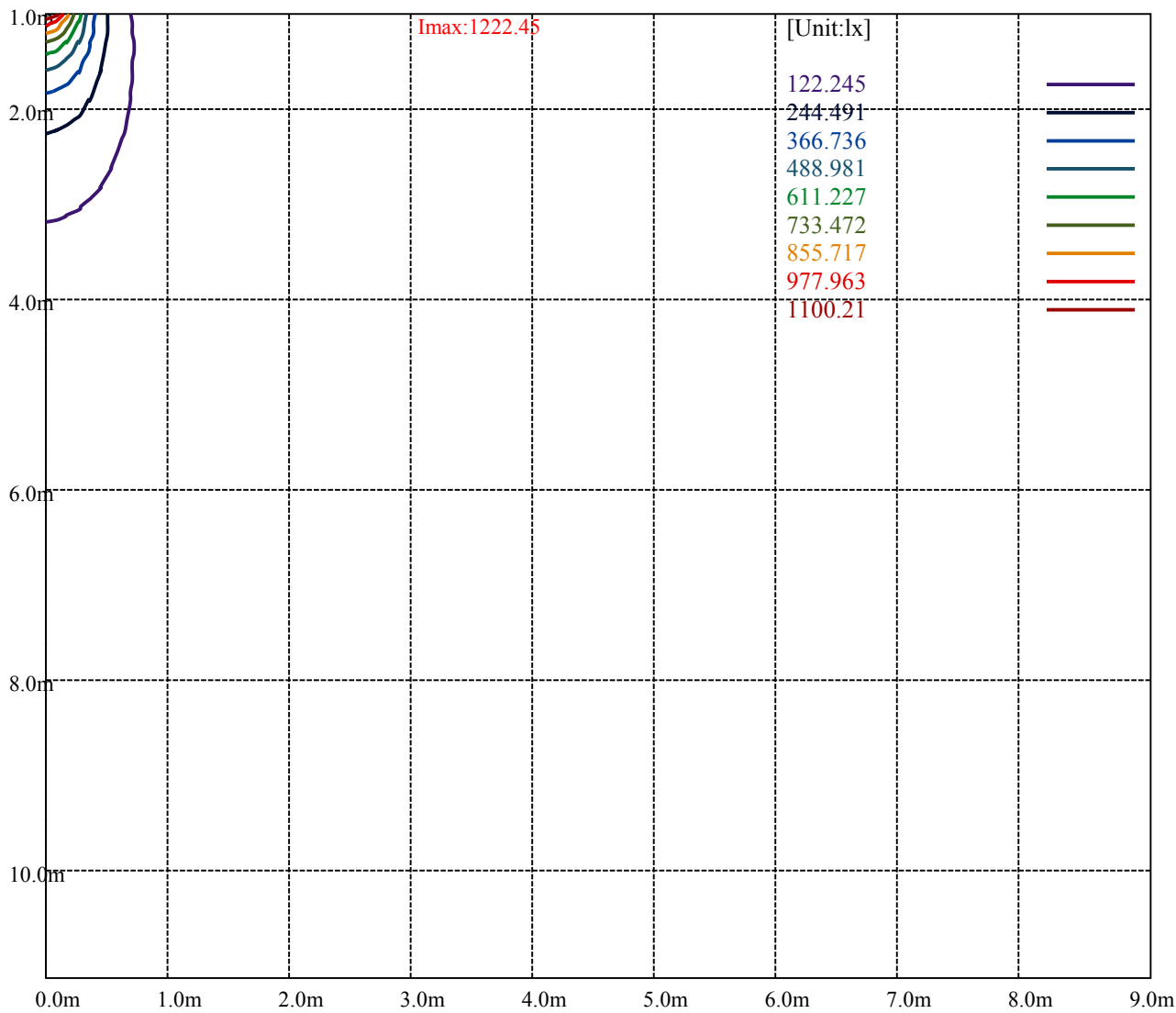
(70%Imax) 855.717

(80%Imax) 977.963

(90%Imax) 1100.21



(10%Emax) 13.58278	—
(20%Emax) 27.16556	—
(30%Emax) 40.74833	—
(40%Emax) 54.33111	—
(50%Emax) 67.914	—
(60%Emax) 81.49678	—
(70%Emax) 95.07956	—
(80%Emax) 108.6623	—
(90%Emax) 122.2456	—



Luminance Table

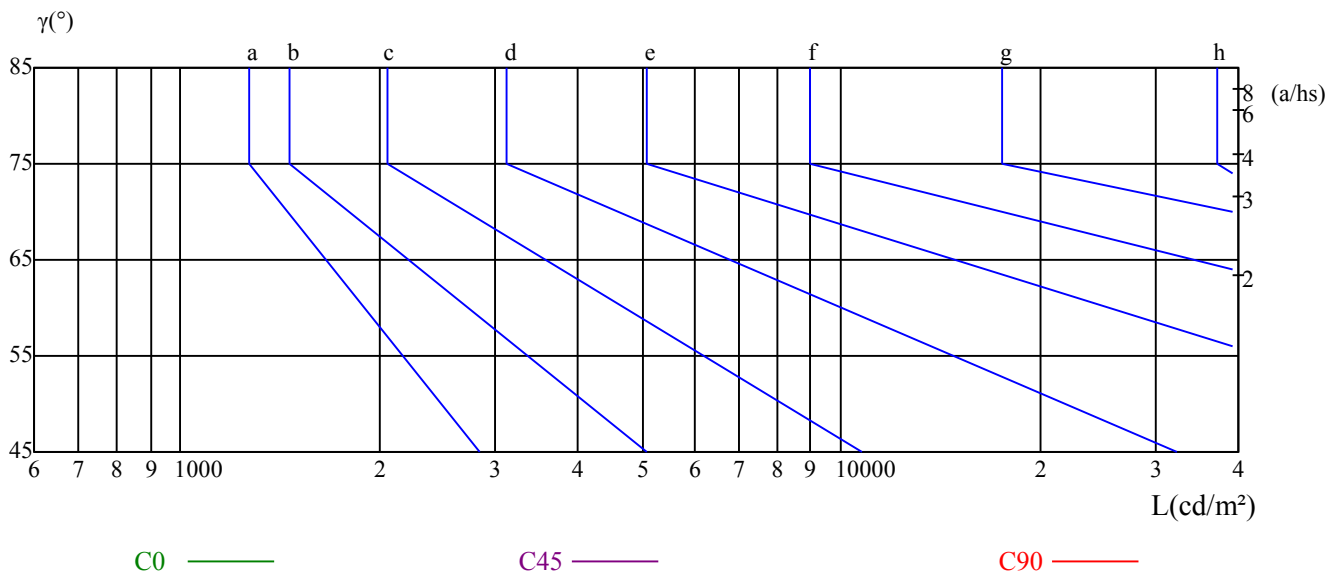
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

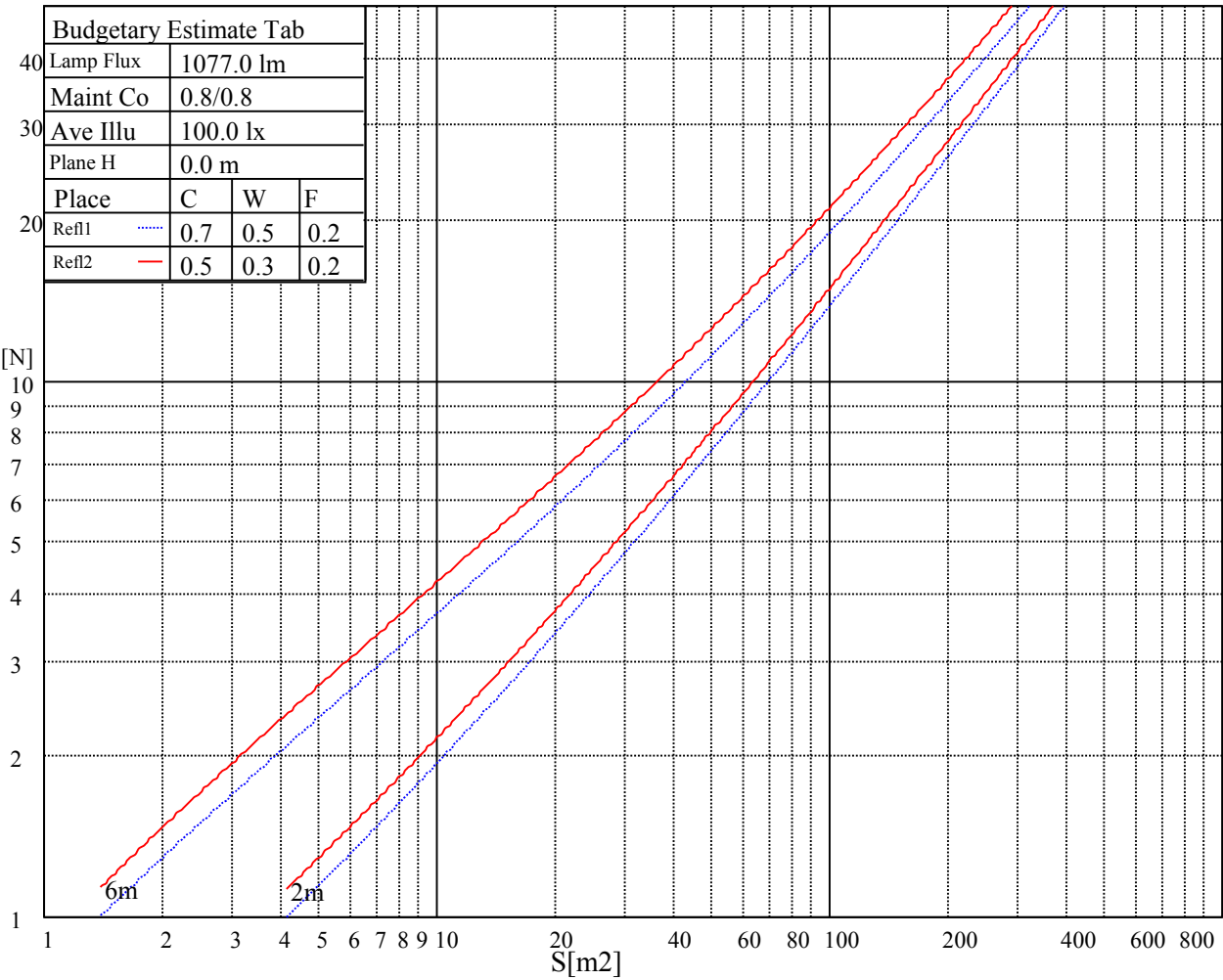
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

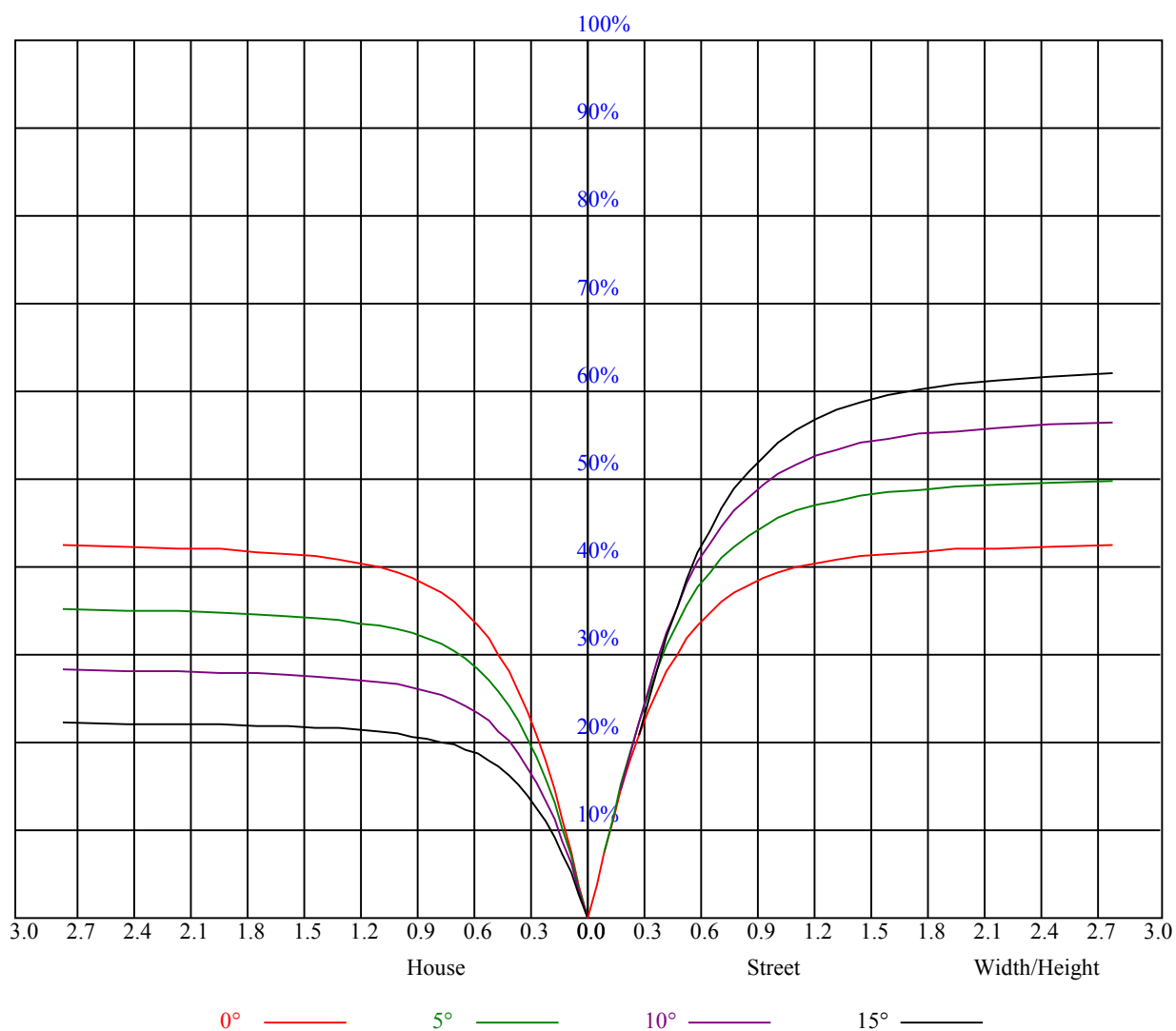
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

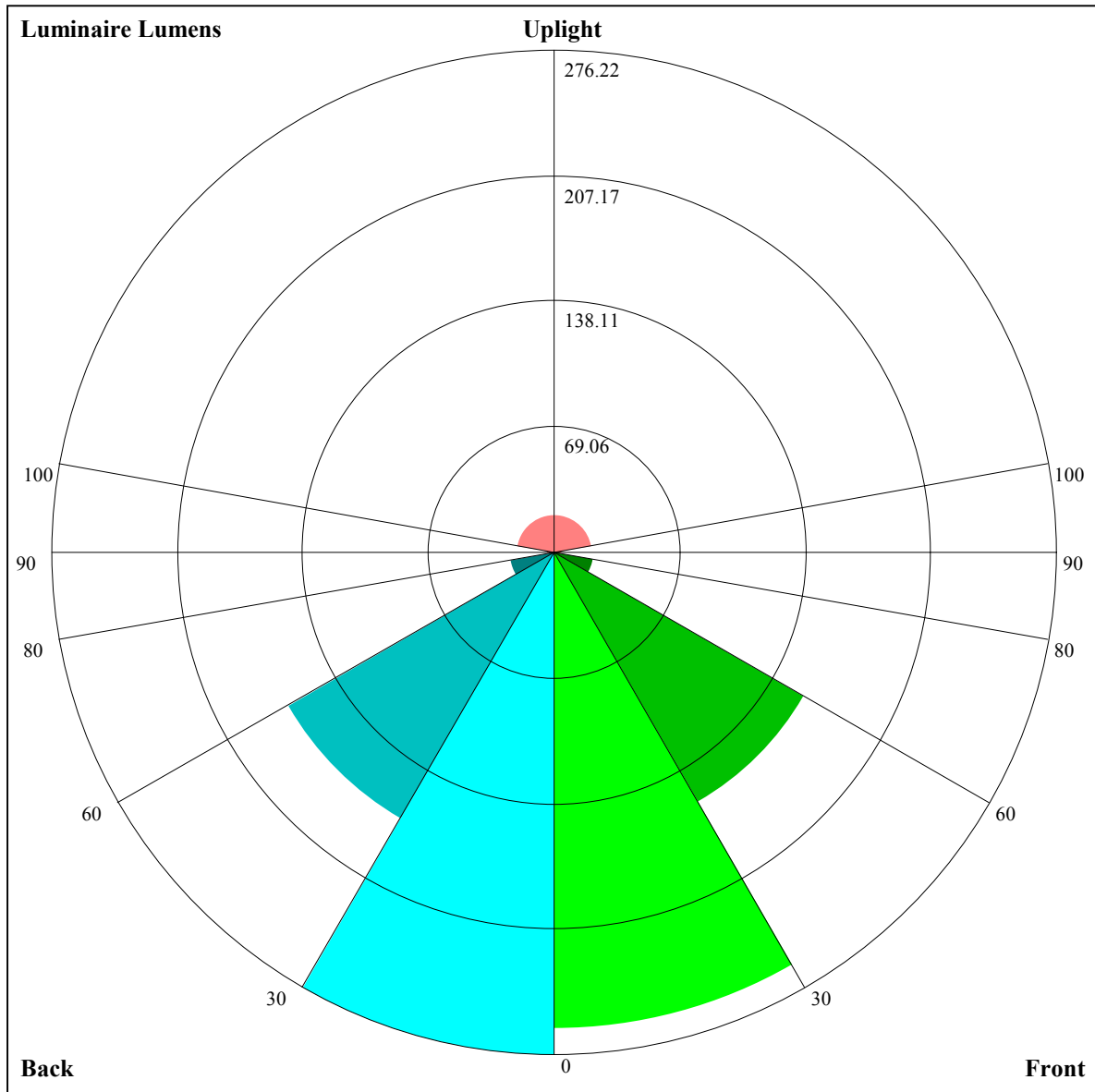
Luminance Limiting Curve





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	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.87
1	0.94	0.92	0.89	0.92	0.90	0.88	0.89	0.87	0.85	0.86	0.84	0.83	0.83	0.81	0.80	0.79
2	0.86	0.82	0.79	0.85	0.81	0.78	0.82	0.79	0.76	0.79	0.77	0.75	0.77	0.75	0.73	0.71
3	0.80	0.74	0.70	0.78	0.74	0.70	0.76	0.72	0.69	0.74	0.70	0.68	0.72	0.69	0.67	0.65
4	0.73	0.68	0.64	0.72	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.67	0.64	0.61	0.60
5	0.68	0.62	0.58	0.67	0.62	0.58	0.66	0.61	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.55
6	0.64	0.58	0.54	0.63	0.57	0.53	0.61	0.57	0.53	0.60	0.56	0.53	0.59	0.55	0.52	0.51
7	0.59	0.54	0.50	0.59	0.53	0.49	0.58	0.53	0.49	0.57	0.52	0.49	0.56	0.52	0.49	0.47
8	0.56	0.50	0.46	0.55	0.50	0.46	0.54	0.49	0.46	0.53	0.49	0.46	0.52	0.48	0.45	0.44
9	0.52	0.47	0.43	0.52	0.47	0.43	0.51	0.46	0.43	0.50	0.46	0.43	0.50	0.46	0.43	0.41
10	0.50	0.44	0.41	0.49	0.44	0.40	0.48	0.44	0.40	0.48	0.43	0.40	0.47	0.43	0.40	0.39





Luminaire Lumens:

FL=262.5,FM=159.03,FH=22.27,FVH=3.43

BL=276.22,BM=169.79,BH=24.75,BVH=3.88

UL=4.49,UH=21.36

BUG Rating:B1-U2-G0

NATA 1406-N

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	1224.56	1150.31	992.81	782.44	604.69	455.63	358.31	284.06	198.45	
45.0	1220.63	1150.88	991.13	787.50	597.94	451.13	365.06	286.88	200.70	
90.0	1221.75	1115.27	976.44	763.88	553.39	410.12	311.12	232.37	169.09	
135.0	1222.88	1193.63	1059.19	847.13	663.19	481.50	370.13	284.63	216.84	
180.0	1224.56	1190.81	1048.78	846.68	655.88	486.00	372.26	287.10	212.74	
225.0	1220.63	1182.38	1040.85	840.26	644.34	487.01	377.55	288.00	215.89	
270.0	1221.75	1169.44	1031.63	819.56	619.88	471.94	356.06	285.19	205.71	
315.0	1222.88	1116.28	948.83	751.22	552.21	411.92	329.40	254.36	183.71	
360.0	1224.56	1150.31	992.81	782.44	604.69	455.63	358.31	284.06	198.45	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	126.45	80.83	52.54	37.35	27.62	19.74	13.67	9.00	5.40	
45.0	131.79	83.98	54.28	39.04	27.79	20.19	13.89	9.34	5.51	
90.0	116.55	79.14	54.00	39.88	28.80	21.04	14.46	9.73	5.96	
135.0	149.63	100.46	66.66	46.80	33.13	24.58	17.21	11.64	7.03	
180.0	143.66	94.61	63.17	44.83	32.06	23.79	16.54	11.19	7.03	
225.0	144.84	94.28	62.78	44.04	31.50	23.01	16.37	11.03	6.97	
270.0	136.52	90.39	59.96	43.37	31.22	23.01	16.31	10.86	6.41	
315.0	115.54	77.85	51.64	36.90	27.23	19.86	13.67	9.22	5.68	
360.0	126.45	80.83	52.54	37.35	27.62	19.74	13.67	9.00	5.40	
C/γ(°)	90.0									
0.0	3.94									
45.0	3.99									
90.0	3.99									
135.0	4.11									
180.0	4.33									
225.0	4.50									
270.0	4.05									
315.0	3.99									
360.0	3.94									