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NATA

Client:

LumCAT: 1408-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): 877.71, Efficiency(%): 81.50% , Luminous Efficacy(lm/W): 88.04

Central intensity(cd): 812.672, Maximum intensity(cd): 812.672

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=57.8

[C90/270]Total=57.8

Field angle(10%Imax): [C0/180]Total=101.8

[C90/270]Total=101.8

Maximum s/h(1/2): C0_180=0.85 C90_270=0.85

Maximum s/h(1/4): C0_180=0.91 C90_270=0.91

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 81.50%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.104%

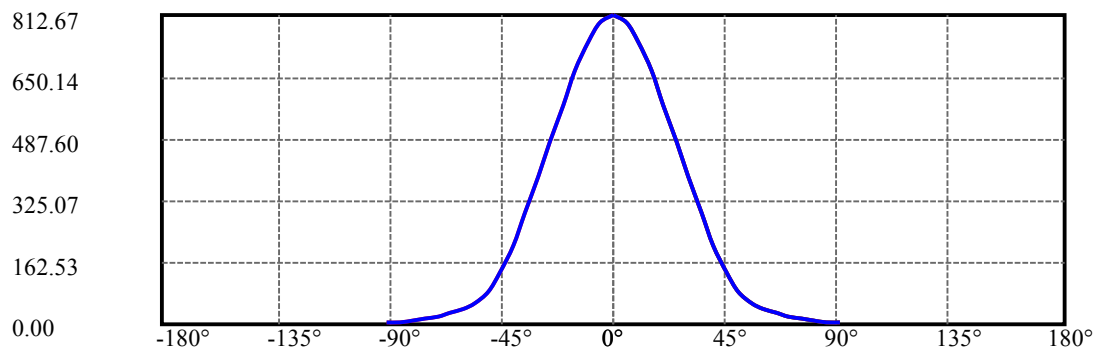
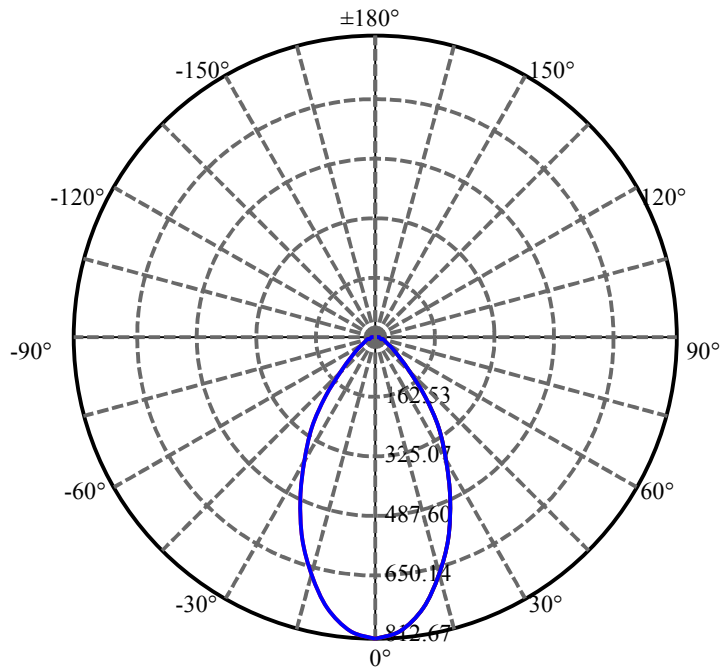
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	812.672	0.000	0	.000%	.000%
5.0	794.468	19.213	19.213	1.784%	2.189%
10.0	742.943	54.998	74.211	5.107%	8.455%
15.0	664.559	83.492	157.703	7.752%	17.967%
20.0	577.294	102.346	260.049	9.503%	29.628%
25.0	479.109	110.797	370.846	10.288%	42.251%
30.0	386.824	109.585	480.431	10.175%	54.737%
35.0	293.878	100.238	580.669	9.307%	66.157%
40.0	208.997	83.901	664.57	7.790%	75.716%
45.0	135.141	63.720	728.29	5.916%	82.976%
50.0	86.808	44.848	773.138	4.164%	88.085%
55.0	55.575	30.959	804.096	2.875%	91.613%
60.0	39.045	21.871	825.968	2.031%	94.104%
65.0	27.795	16.249	842.216	1.509%	95.956%
70.0	20.440	12.213	854.429	1.134%	97.347%
75.0	14.850	9.224	863.654	.856%	98.398%
80.0	10.455	6.771	870.425	.629%	99.170%
85.0	6.202	4.526	874.951	.420%	99.685%
90.0	3.888	2.763	877.713	.257%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	480.43	44.61%	54.74%
0-40	664.57	61.71%	75.72%
0-60	825.97	76.69%	94.10%
0-90	874.95	81.24%	99.69%
0-120	874.95	81.24%	99.69%
0-180	877.71	81.50%	100.00%
60-90	70.85	6.58%	8.07%
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%
0-42.95	702.17	65.20%	80.00%

ZONAL LUMEN SUMMARY

0-10	74.21
10-20	185.84
20-30	220.38
30-40	184.14
40-50	108.57
50-60	52.83
60-70	28.46
70-80	16.00
80-90	4.53
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

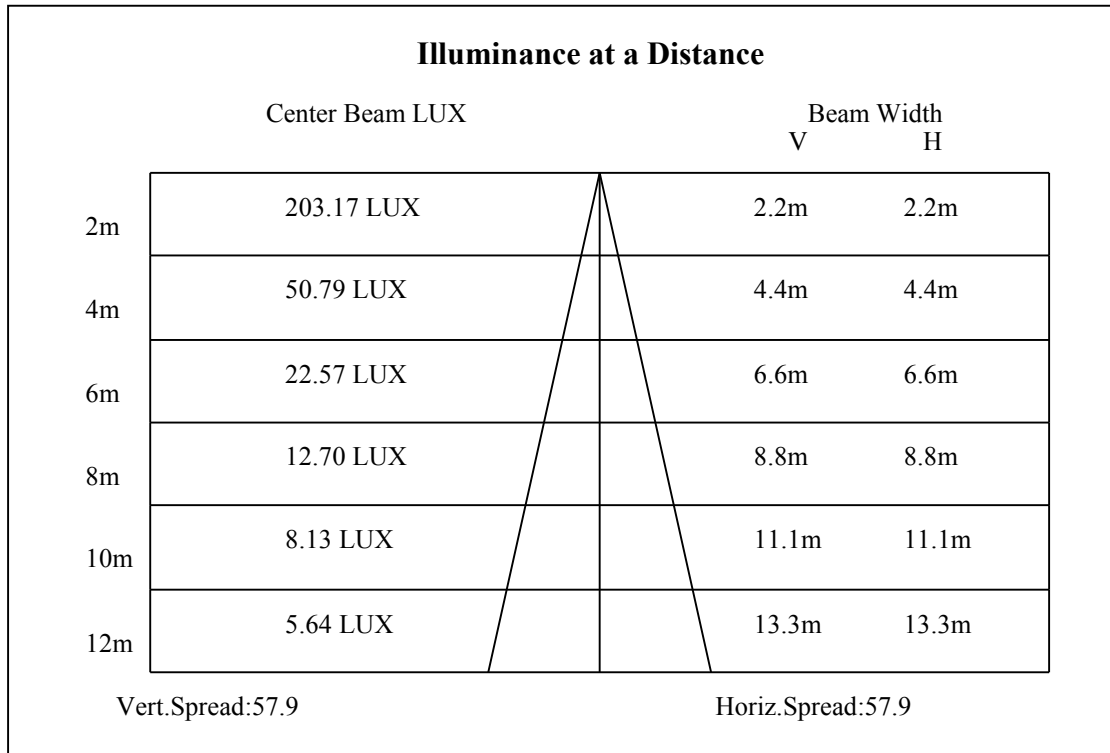
C0(Max): —————C0/C180: —————C90/C270: —————

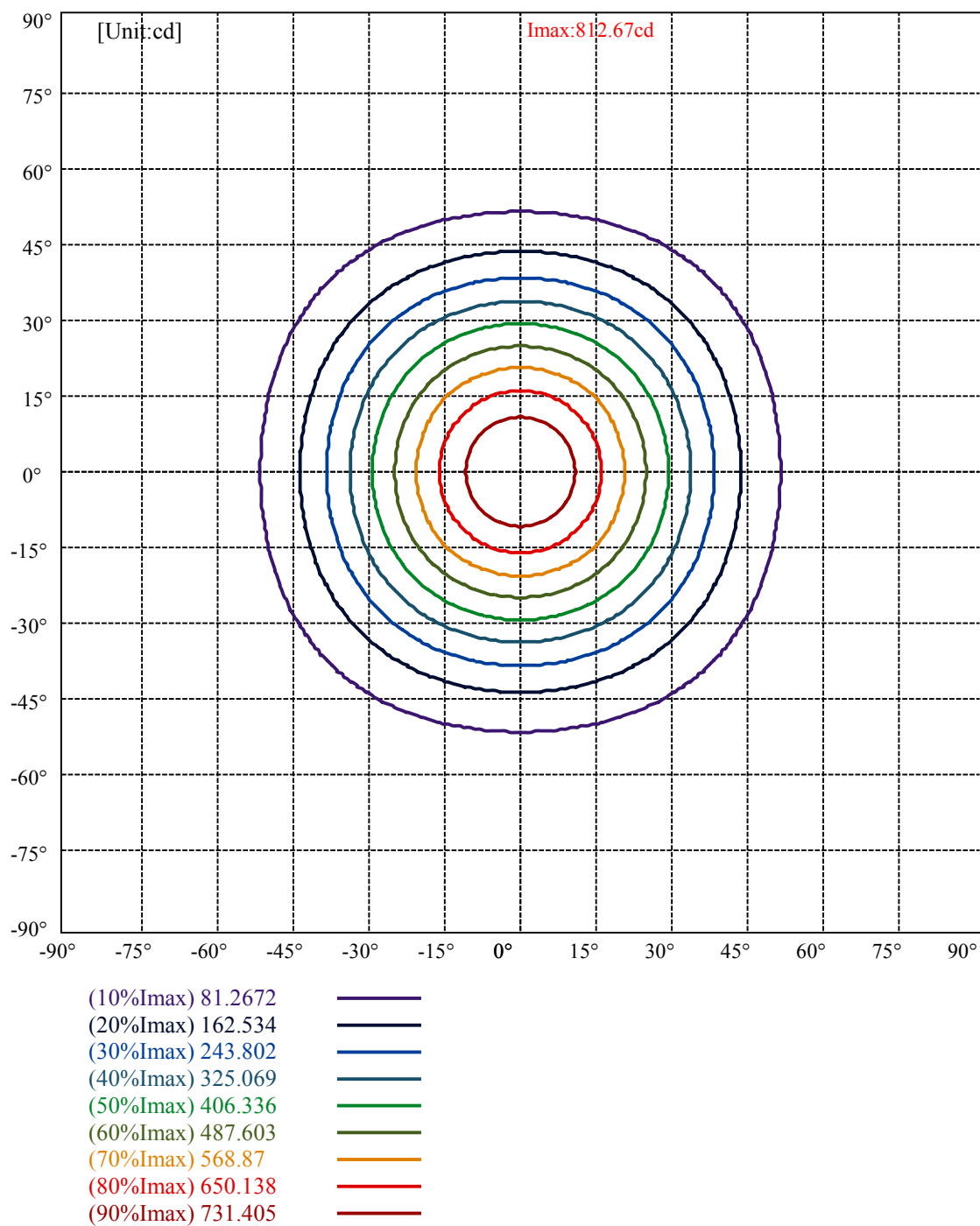
Field angle(10%Imax):C0/180Left:50.9 Right:50.9

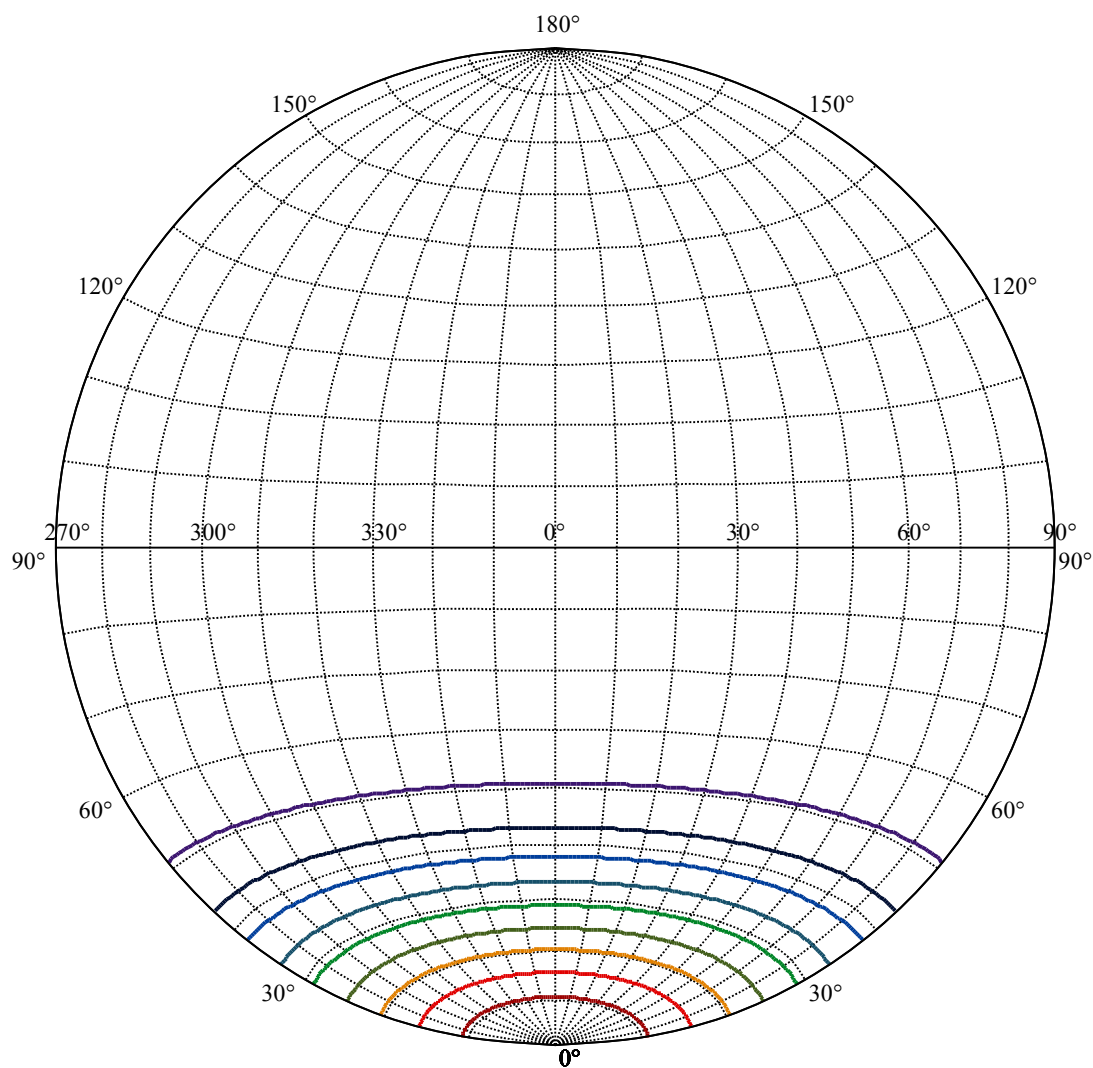
:C90/270Left:50.9 Right:50.9

Beam Angle(50%Imax):C0/180Left:28.9 Right:28.9

:C90/270Left:28.9 Right:28.9







House

[Unit:cd]

Road

Imax:812.67

(10%Imax) 81.2672

(20%Imax) 162.534

(30%Imax) 243.802

(40%Imax) 325.069

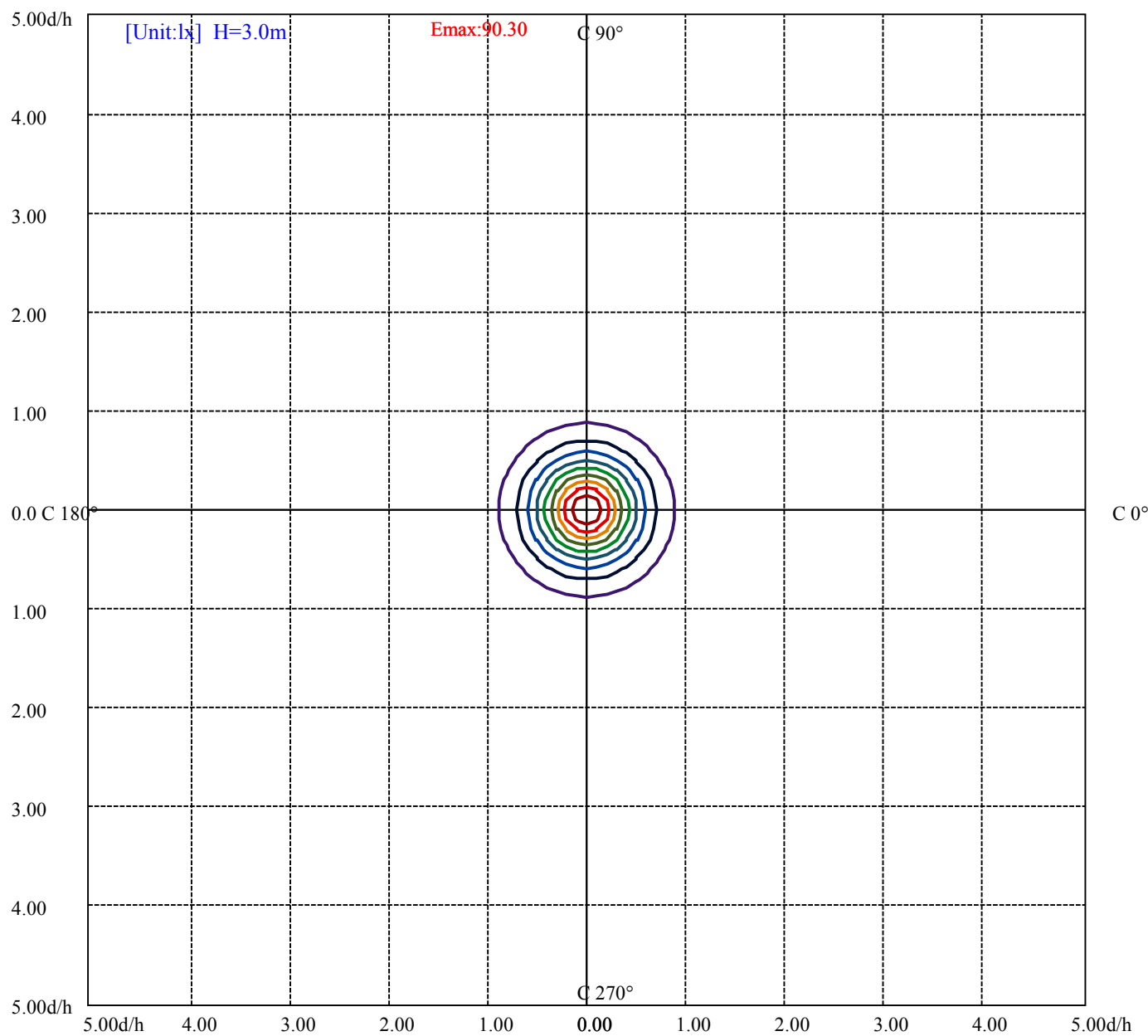
(50%Imax) 406.336

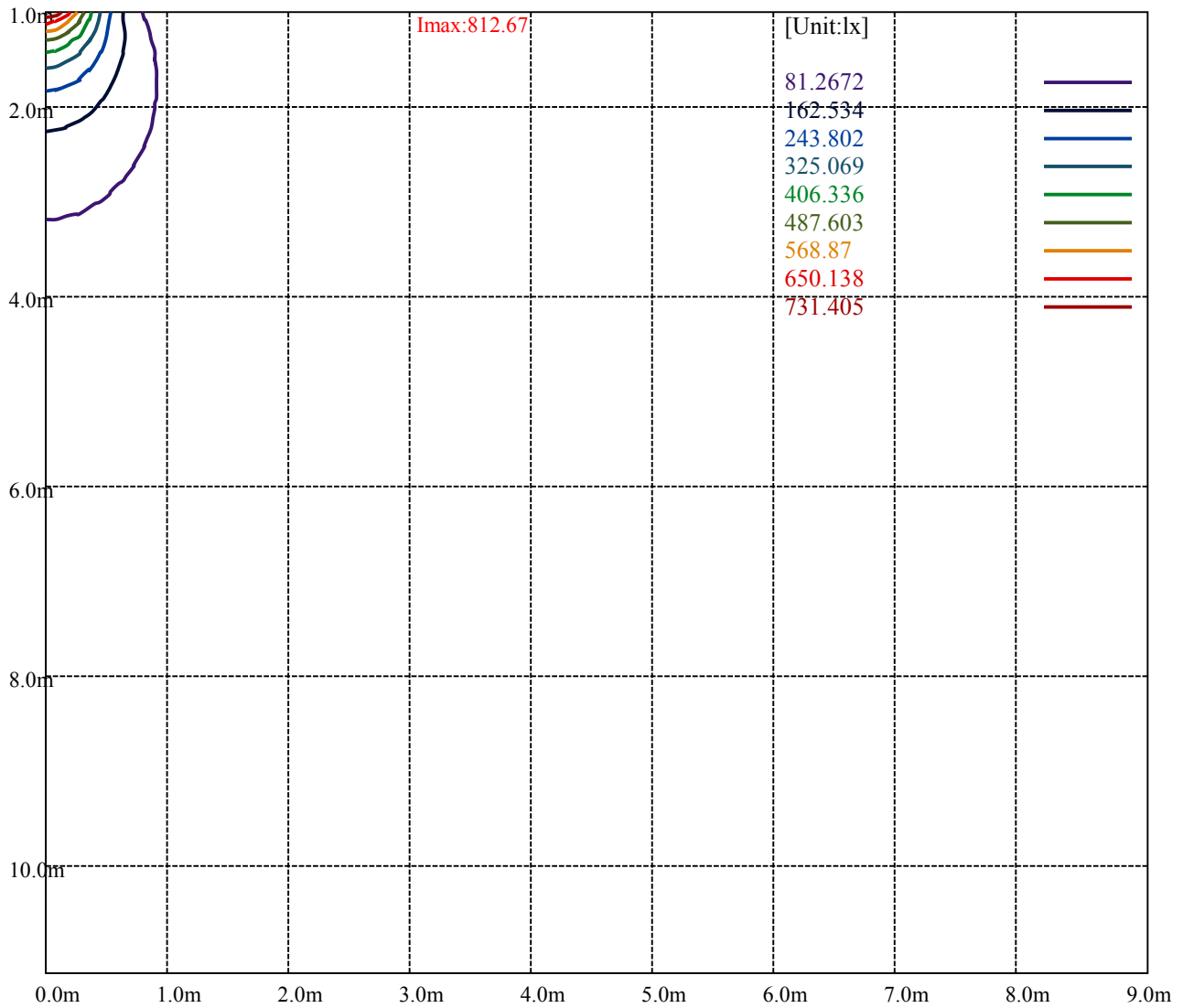
(60%Imax) 487.603

(70%Imax) 568.87

(80%Imax) 650.138

(90%Imax) 731.405

(10%E_{max}) 9.029677(20%E_{max}) 18.05933(30%E_{max}) 27.089(40%E_{max}) 36.11878(50%E_{max}) 45.14845(60%E_{max}) 54.17811(70%E_{max}) 63.20778(80%E_{max}) 72.23745(90%E_{max}) 81.26711



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

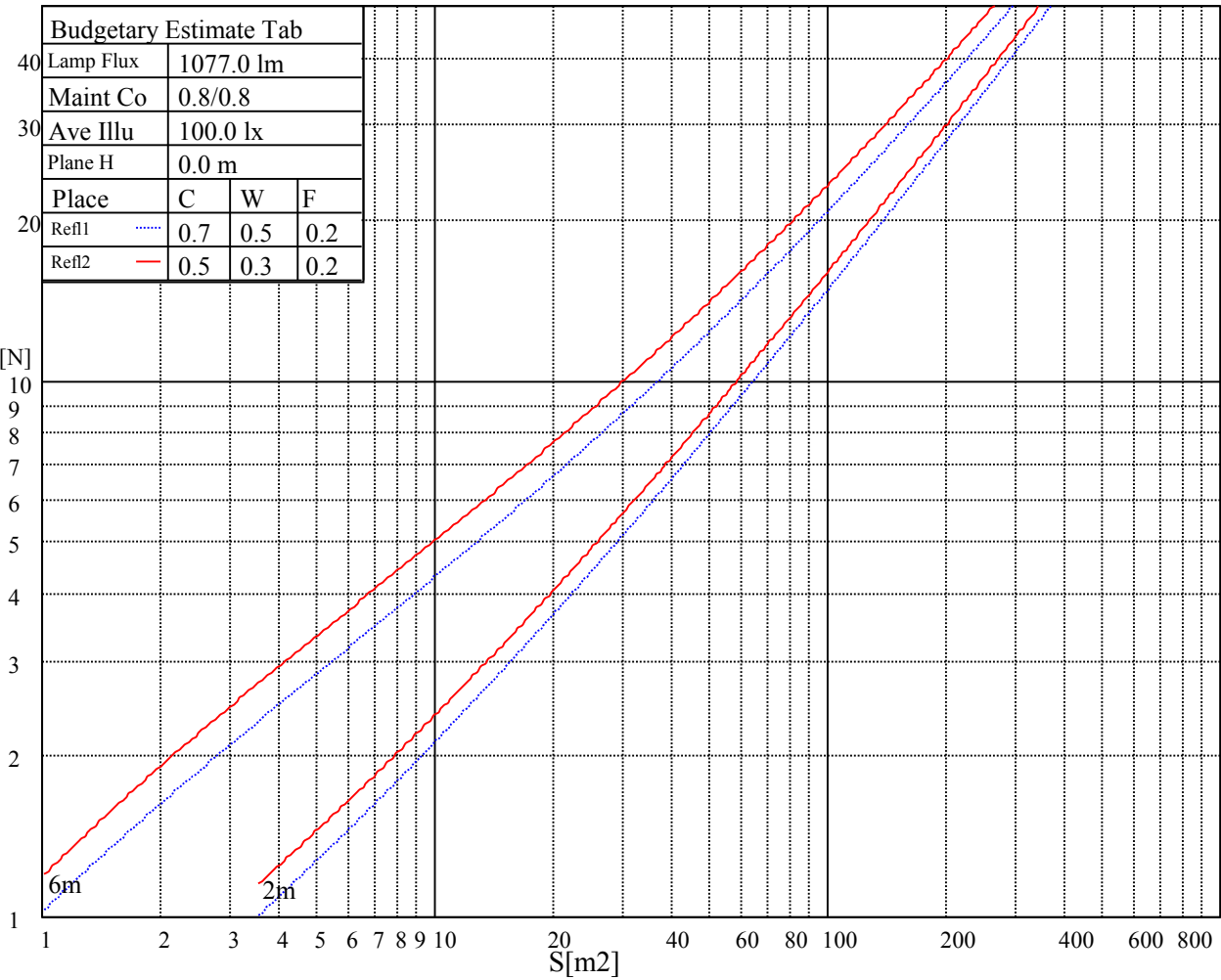
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

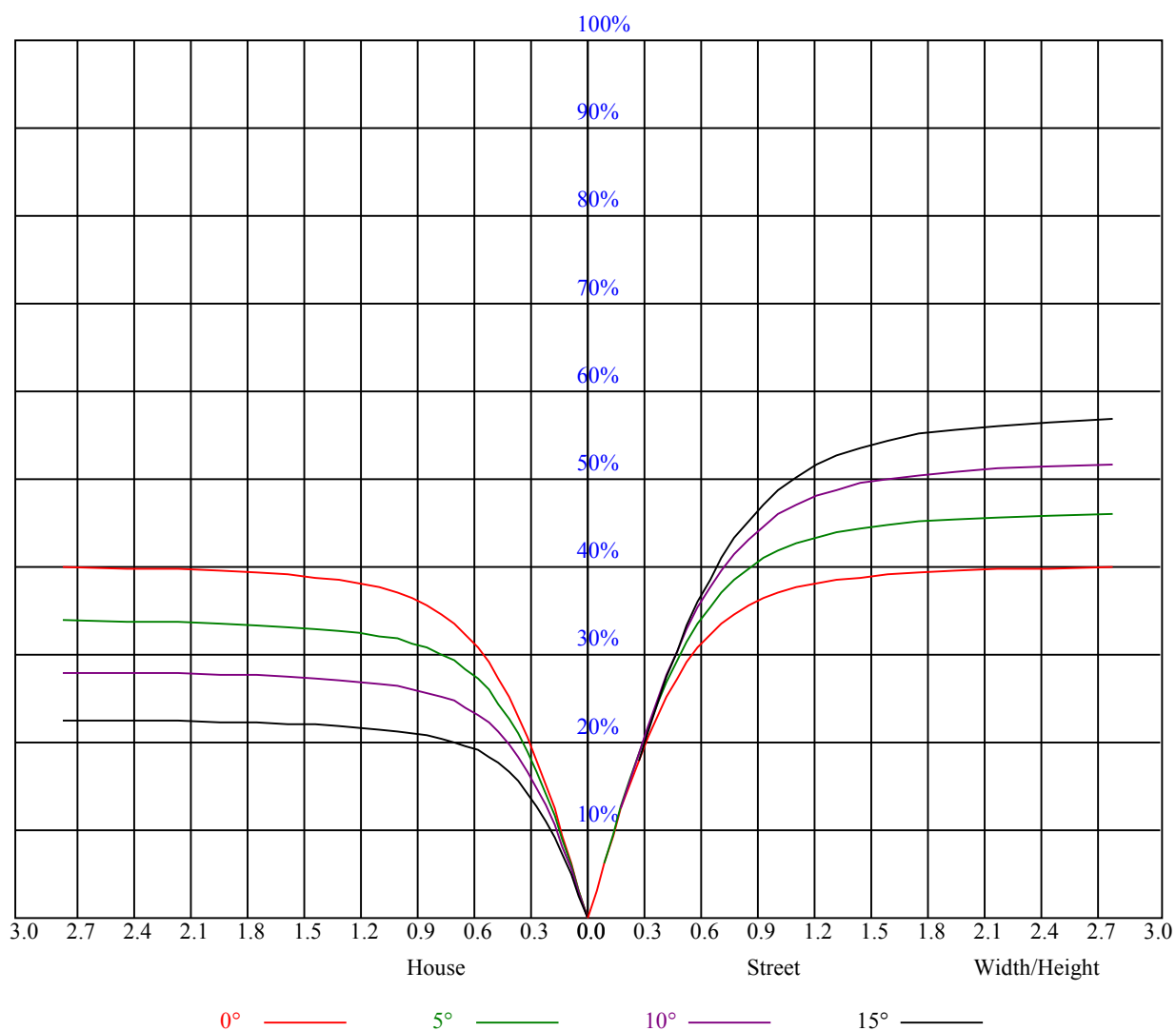
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

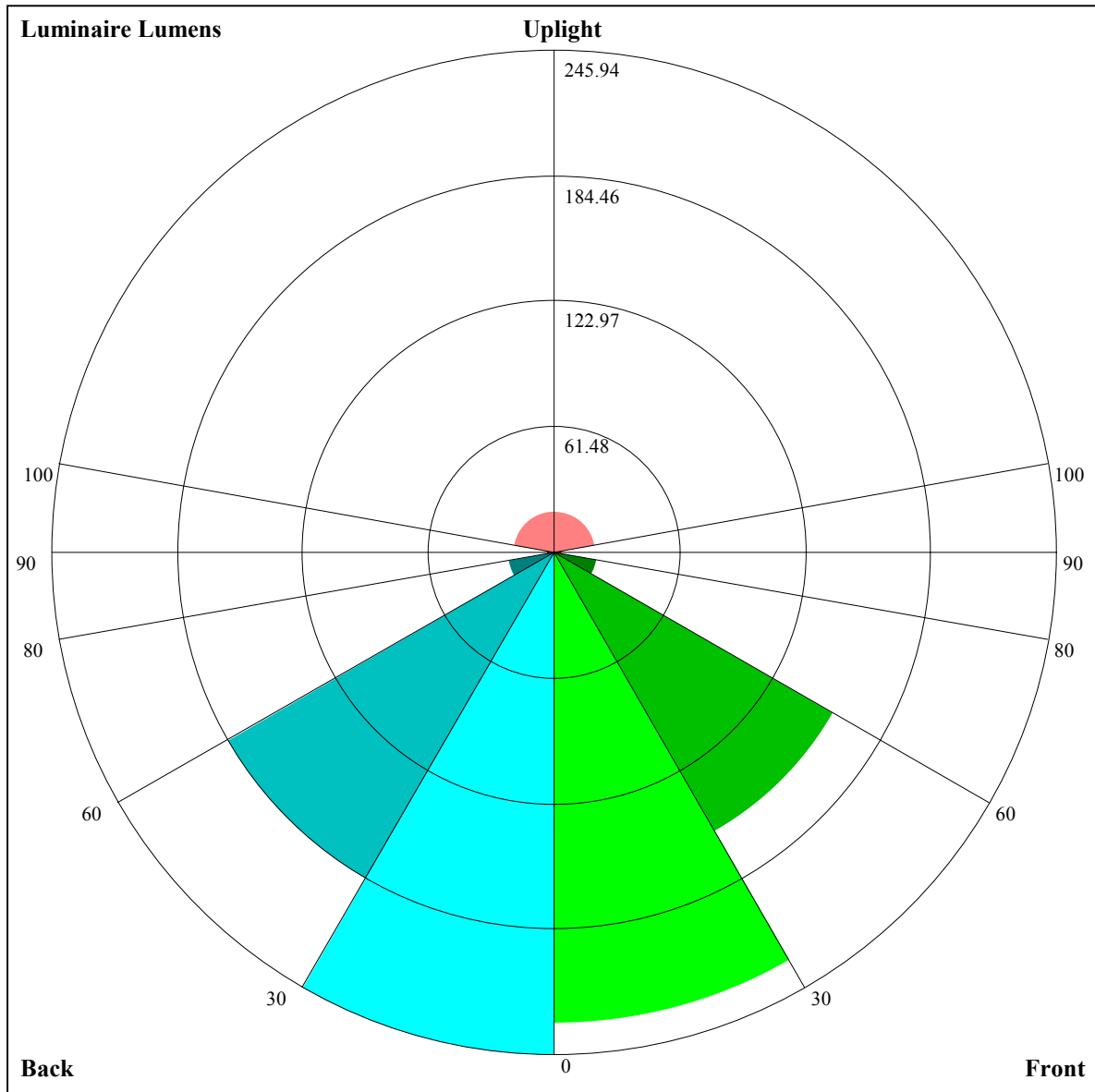
Luminance Limiting Curve





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	0.97	0.97	0.97	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.81
1	0.88	0.86	0.84	0.87	0.84	0.82	0.83	0.82	0.80	0.80	0.79	0.77	0.77	0.76	0.75	0.74
2	0.81	0.77	0.73	0.79	0.76	0.73	0.77	0.74	0.71	0.74	0.72	0.69	0.72	0.70	0.68	0.66
3	0.74	0.69	0.65	0.73	0.68	0.65	0.71	0.67	0.64	0.68	0.65	0.63	0.67	0.64	0.62	0.60
4	0.68	0.63	0.59	0.67	0.62	0.58	0.65	0.61	0.57	0.63	0.60	0.57	0.62	0.59	0.56	0.55
5	0.63	0.57	0.53	0.62	0.57	0.53	0.60	0.56	0.52	0.59	0.55	0.52	0.58	0.54	0.51	0.50
6	0.58	0.53	0.48	0.58	0.52	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.47	0.46
7	0.54	0.49	0.45	0.54	0.48	0.44	0.52	0.48	0.44	0.51	0.47	0.44	0.50	0.47	0.44	0.42
8	0.51	0.45	0.41	0.50	0.45	0.41	0.49	0.44	0.41	0.48	0.44	0.41	0.47	0.43	0.40	0.39
9	0.47	0.42	0.38	0.47	0.42	0.38	0.46	0.41	0.38	0.45	0.41	0.38	0.45	0.41	0.38	0.36
10	0.44	0.39	0.36	0.44	0.39	0.36	0.43	0.39	0.35	0.43	0.38	0.35	0.42	0.38	0.35	0.34





Luminaire Lumens:

FL=230.94,FM=157.64,FH=21.04,FVH=3.49

BL=245.94,BM=184.73,BH=23.28,BVH=3.72

UL=4.24,UH=20.19

BUG Rating:B1-U2-G0

NATA 1408-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	810.62	781.14	722.14	642.09	549.79	447.86	356.91	259.65	173.64		
45.0	814.50	782.89	721.13	633.26	546.36	447.81	354.49	267.47	179.55		
90.0	812.36	782.38	715.33	625.22	532.07	431.10	339.19	250.99	172.63		
135.0	813.21	798.53	752.85	682.43	597.60	499.33	412.48	315.39	226.86		
180.0	810.62	805.33	770.12	704.19	622.74	534.83	441.34	340.88	252.84		
225.0	814.50	810.96	771.98	700.88	619.88	519.24	425.36	334.58	247.67		
270.0	812.36	804.99	761.34	685.80	601.09	500.34	405.34	316.63	230.29		
315.0	813.21	789.53	728.66	642.60	548.83	452.36	359.49	265.44	188.49		
360.0	810.62	781.14	722.14	642.09	549.79	447.86	356.91	259.65	173.64		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	112.50	69.36	46.80	33.98	24.92	18.34	14.34	11.53	5.85		
45.0	111.38	70.54	47.14	33.64	24.13	18.17	14.46	10.41	6.13		
90.0	109.29	72.06	47.25	33.58	23.85	17.49	13.50	9.56	5.34		
135.0	145.13	93.66	58.56	40.73	29.19	21.21	14.74	10.35	6.08		
180.0	164.25	102.94	61.48	43.82	30.88	22.50	16.03	10.80	7.03		
225.0	166.33	109.18	67.67	45.34	31.56	23.18	16.31	11.25	7.37		
270.0	152.38	100.18	63.73	44.21	31.22	23.01	15.98	10.58	6.19		
315.0	119.87	76.56	51.98	37.07	26.61	19.63	13.44	9.17	5.63		
360.0	112.50	69.36	46.80	33.98	24.92	18.34	14.34	11.53	5.85		
C/γ(°)	90.0										
0.0	3.60										
45.0	3.77										
90.0	3.71										
135.0	3.66										
180.0	4.22										
225.0	4.61										
270.0	3.88										
315.0	3.66										
360.0	3.60										