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NATA

Client:

LumCAT: 3-2019-A

Luminaire: 92.70.065.00+92.70.089.00

Report No: nt0100

Voltage(V): 34.1700

Test No: GC2020011702

Current(A): 0.6470

LampCAT: LUMINUS CXM-14-AC40

Power (W): 22.1100

Lamp flux(lm): 2606.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2272.89, Efficiency(%): 87.22% , Luminous Efficacy(lm/W): 102.80

Central intensity(cd): 15032.810, Maximum intensity(cd): 15032.810

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=17.2

[C90/270]Total=17.2

Field angle(10%Imax): [C0/180]Total=35.8

[C90/270]Total=35.8

Maximum s/h(1/2): C0_180=0.30 C90_270=0.30

Maximum s/h(1/4): C0_180=0.32 C90_270=0.32

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.22%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.691%

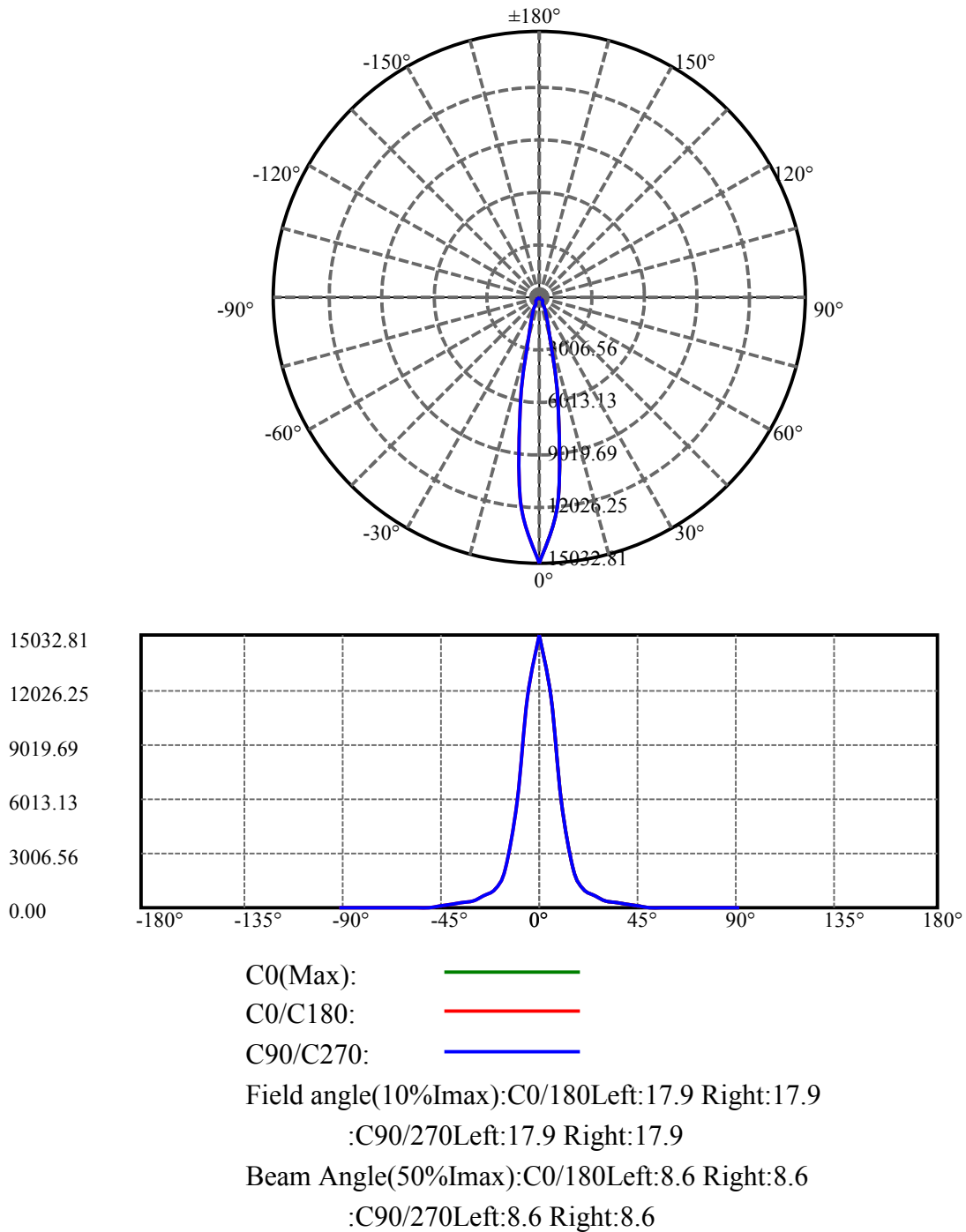
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	15032.813	0.000	0	.000%	.000%
5.0	11618.859	318.613	318.613	12.226%	14.018%
10.0	5913.703	627.195	945.808	24.067%	41.613%
15.0	2174.604	479.793	1425.601	18.411%	62.722%
20.0	1012.859	262.692	1688.293	10.080%	74.280%
25.0	638.789	173.227	1861.52	6.647%	81.901%
30.0	413.684	133.191	1994.711	5.111%	87.761%
35.0	253.406	98.234	2092.945	3.770%	92.083%
40.0	149.752	67.264	2160.209	2.581%	95.042%
45.0	77.590	42.094	2202.303	1.615%	96.894%
50.0	38.588	23.475	2225.778	.901%	97.927%
55.0	14.906	11.631	2237.41	.446%	98.439%
60.0	9.893	5.732	2243.142	.220%	98.691%
65.0	9.584	4.735	2247.877	.182%	98.900%
70.0	9.443	4.818	2252.694	.185%	99.112%
75.0	9.422	4.931	2257.625	.189%	99.329%
80.0	9.436	5.046	2262.671	.194%	99.551%
85.0	9.387	5.115	2267.786	.196%	99.776%
90.0	9.246	5.102	2272.887	.196%	100.000%

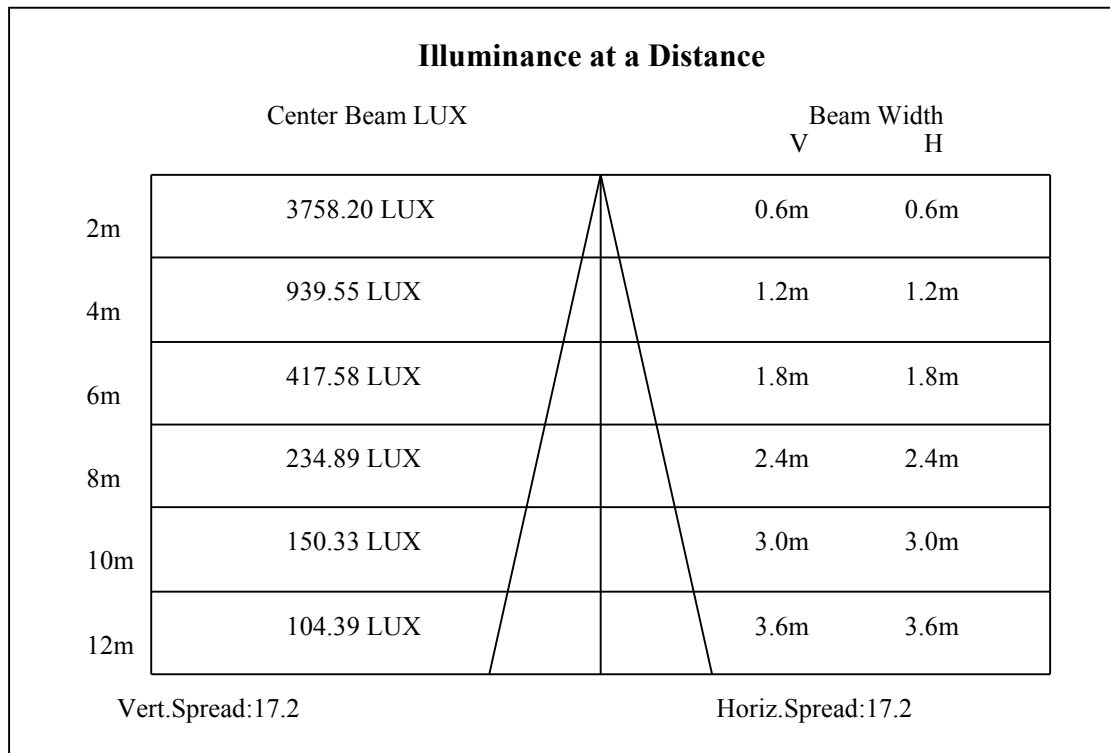
ZONAL LUMEN SUMMARY

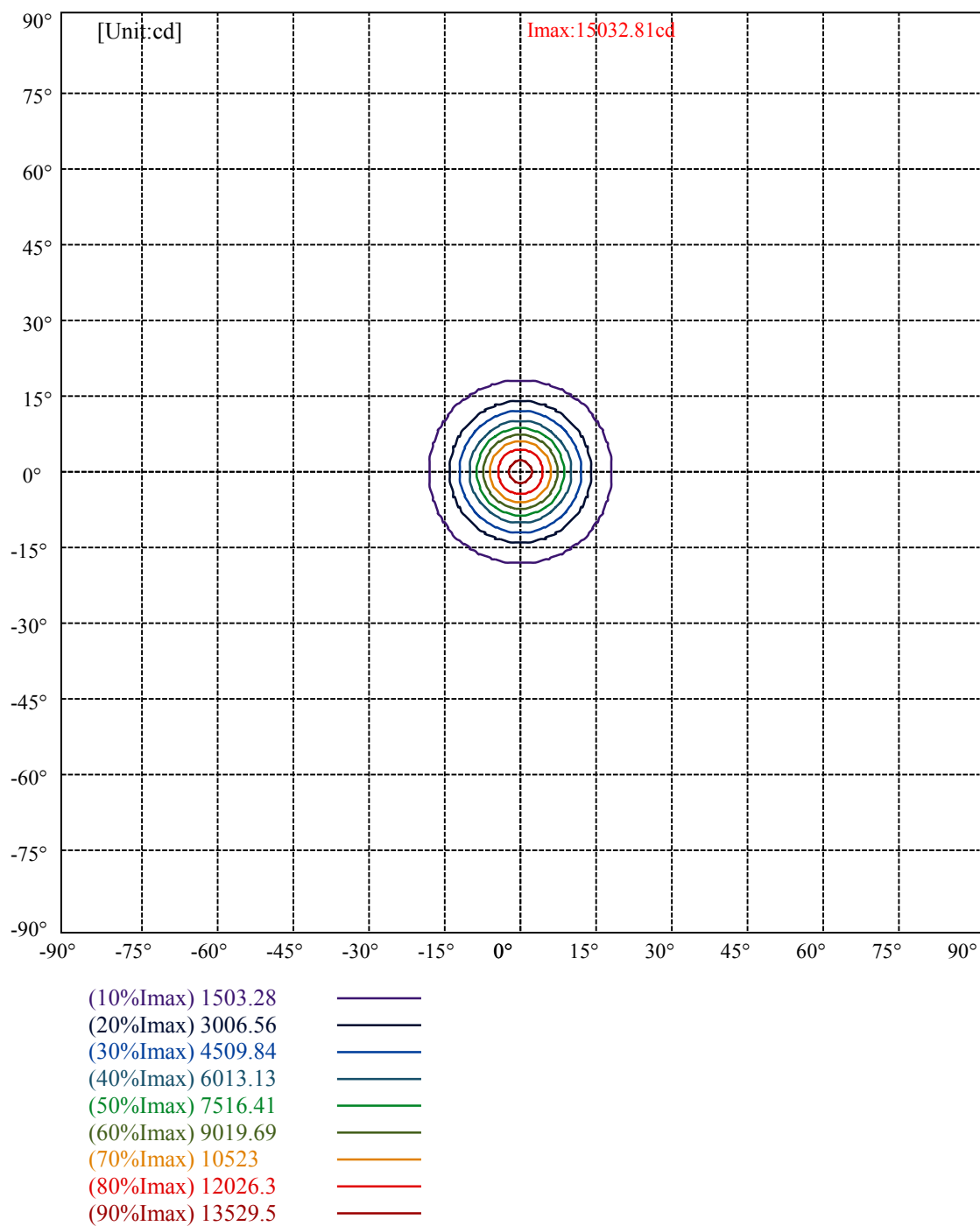
Zone	Lumens	%Lamp	%Fixt
0-30	1994.71	76.54%	87.76%
0-40	2160.21	82.89%	95.04%
0-60	2243.14	86.08%	98.69%
0-90	2267.79	87.02%	99.78%
0-120	2267.79	87.02%	99.78%
0-180	2272.89	87.22%	100.00%
60-90	30.38	1.17%	1.34%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-23.75	1818.31	69.77%	80.00%

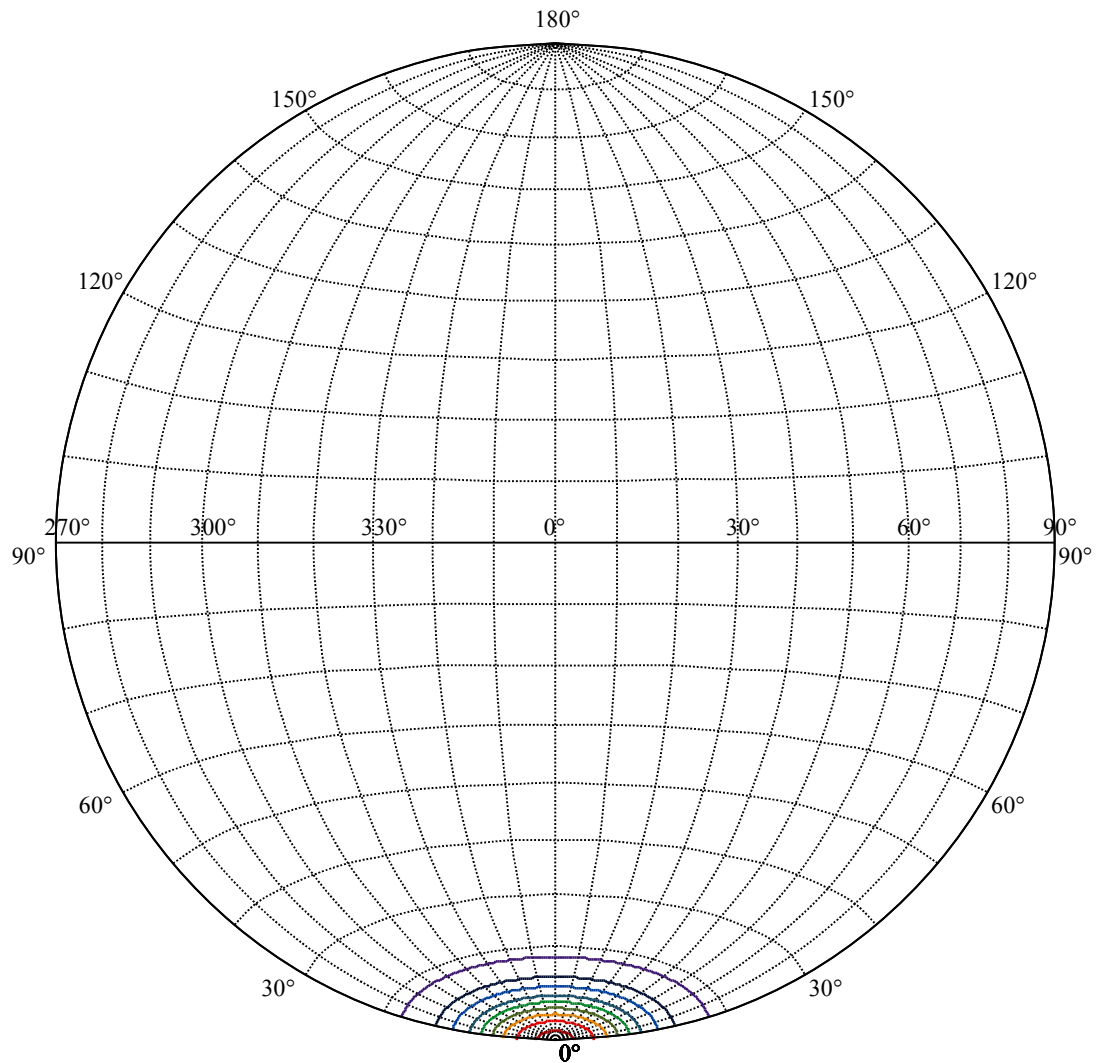
ZONAL LUMEN SUMMARY

0-10	945.81
10-20	742.48
20-30	306.42
30-40	165.50
40-50	65.57
50-60	17.36
60-70	9.55
70-80	9.98
80-90	5.11
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









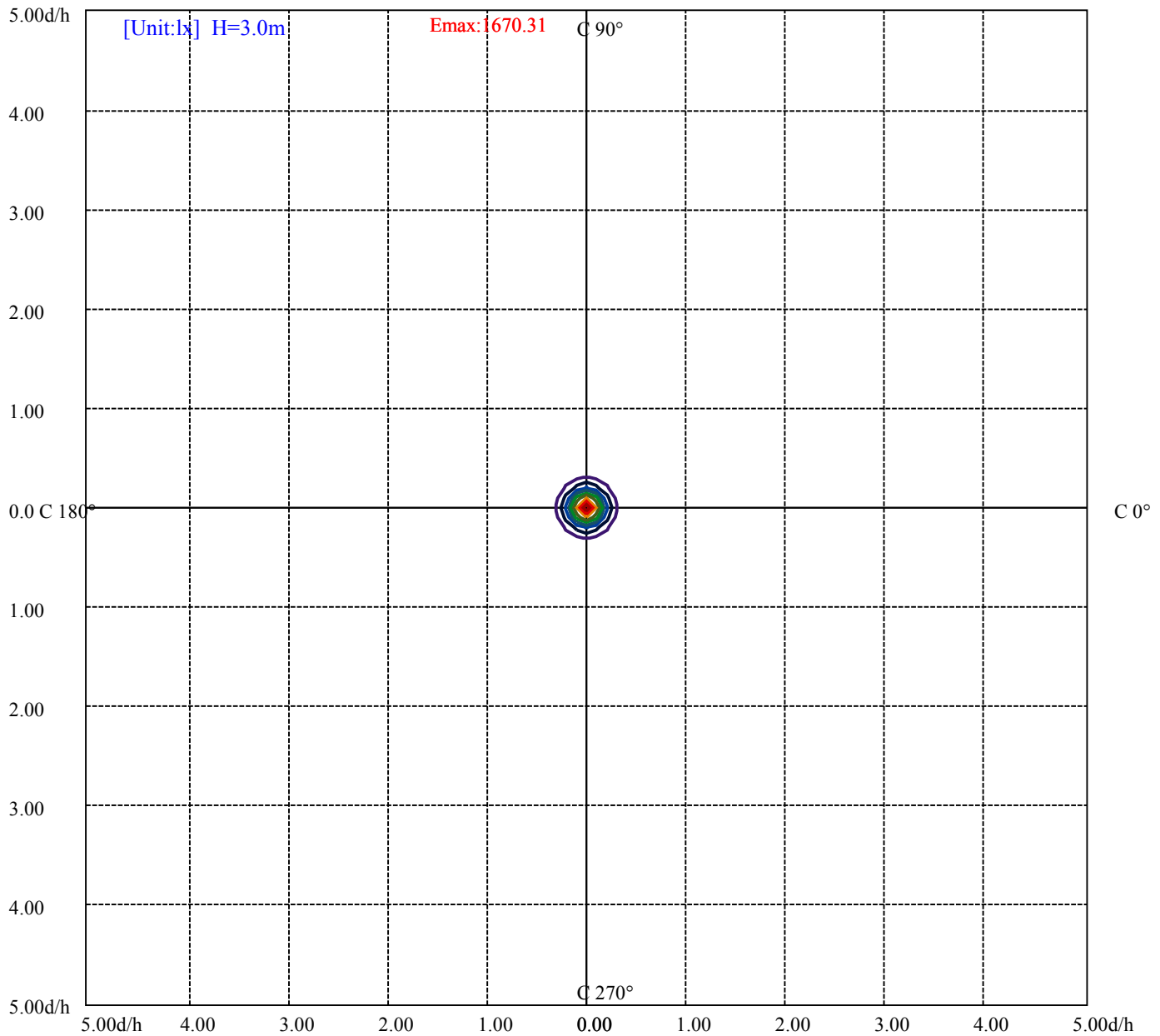
House

[Unit:cd]

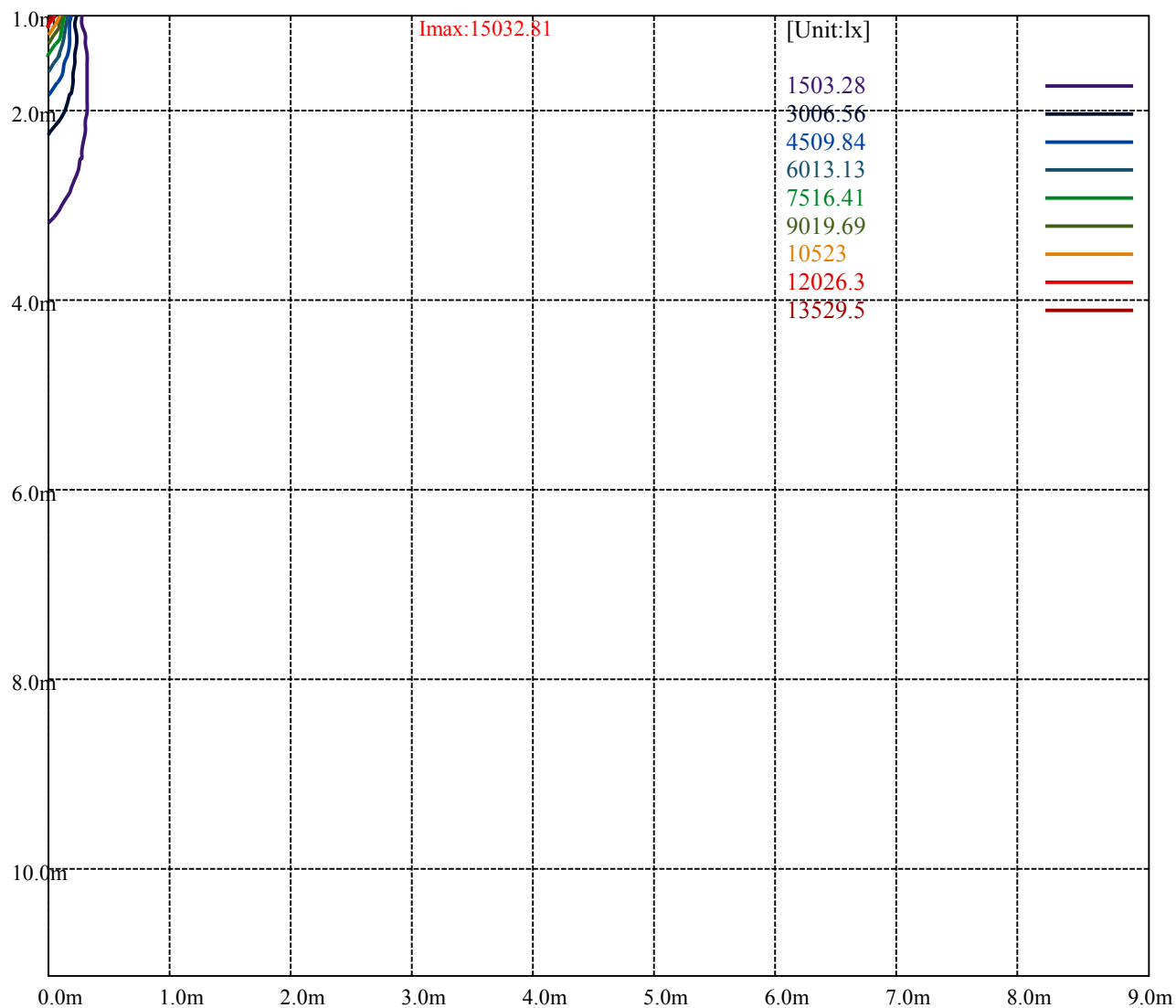
Road

Imax:15032.81

(10%Imax)	1503.28	—
(20%Imax)	3006.56	—
(30%Imax)	4509.84	—
(40%Imax)	6013.13	—
(50%Imax)	7516.41	—
(60%Imax)	9019.69	—
(70%Imax)	10523	—
(80%Imax)	12026.3	—
(90%Imax)	13529.5	—



(10%E _{max}) 167.03	—
(20%E _{max}) 334.06	—
(30%E _{max}) 501.09	—
(40%E _{max}) 668.12	—
(50%E _{max}) 835.15	—
(60%E _{max}) 1002.181	—
(70%E _{max}) 1169.211	—
(80%E _{max}) 1336.245	—
(90%E _{max}) 1503.267	—



Luminance Table

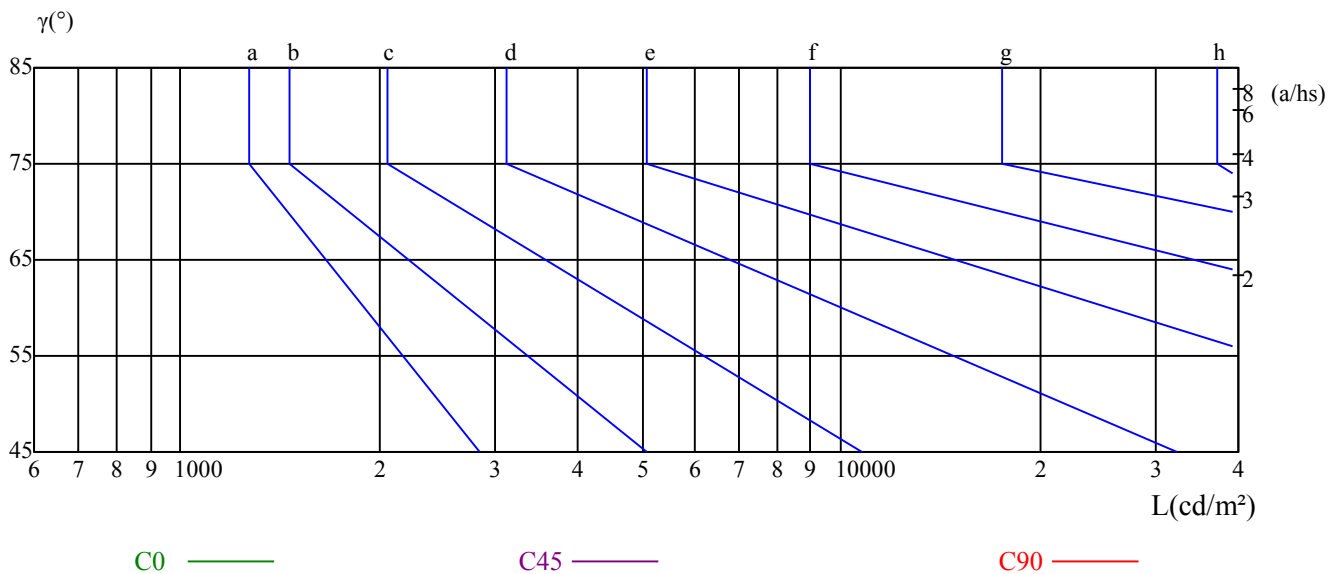
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

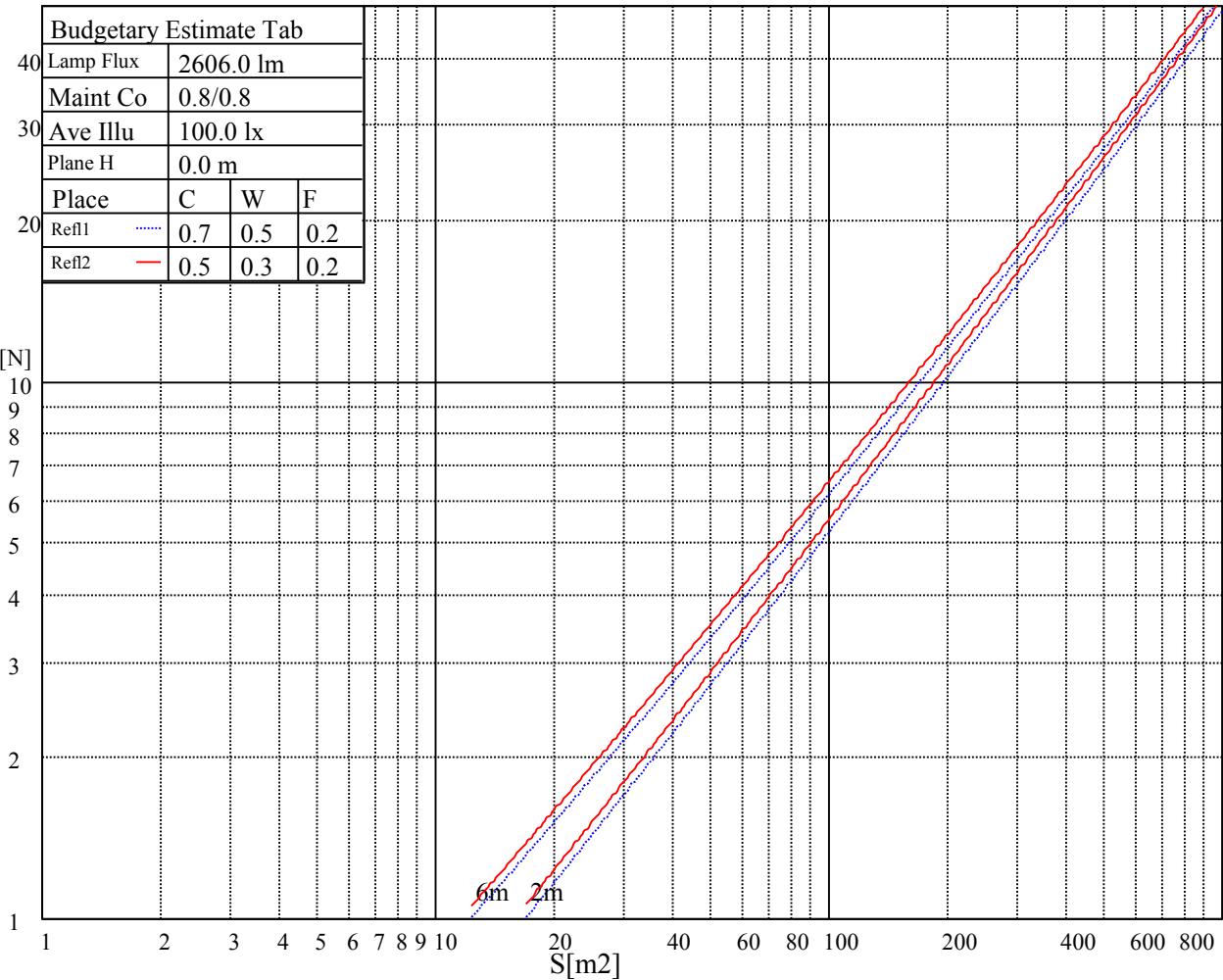
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

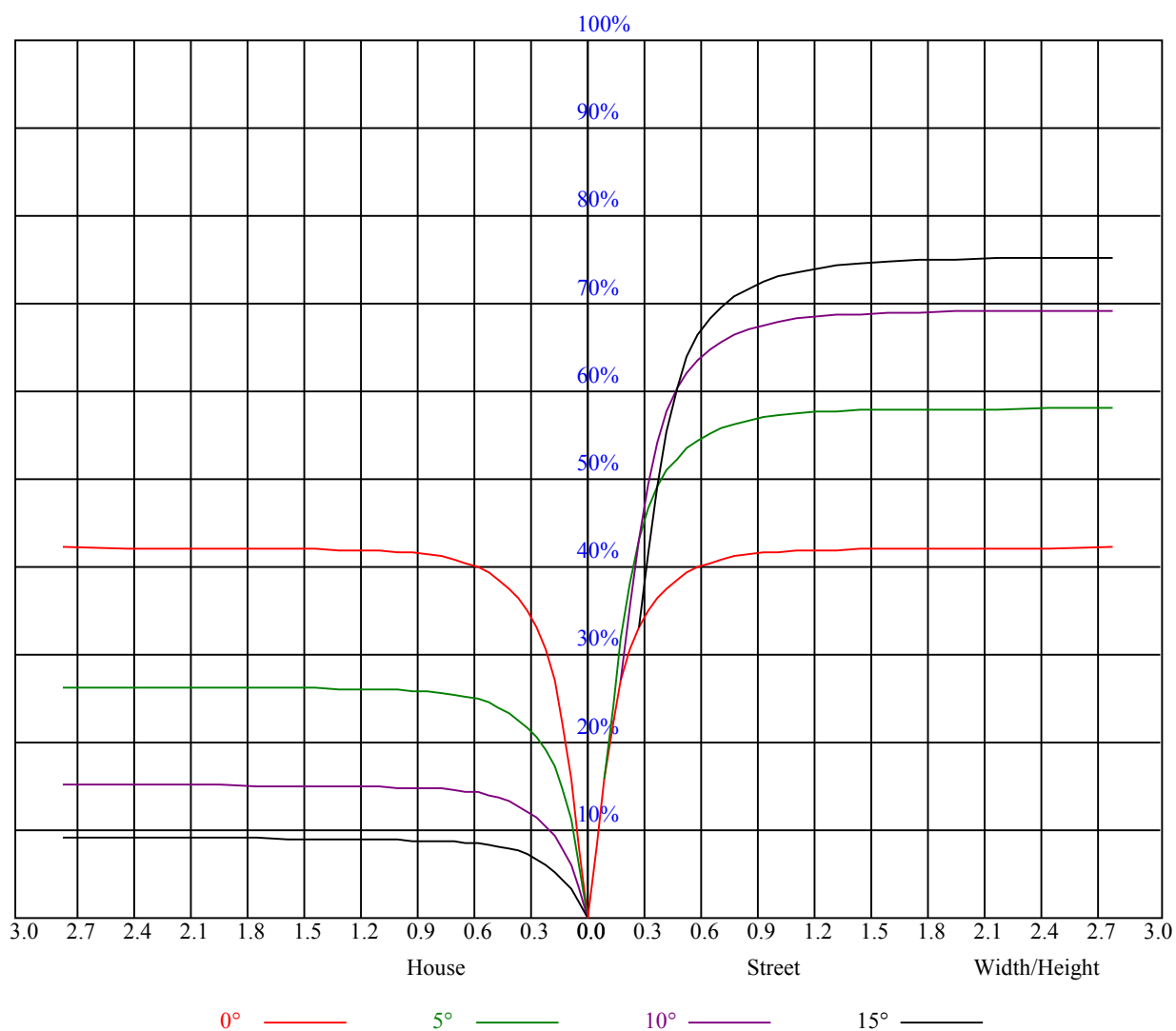
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

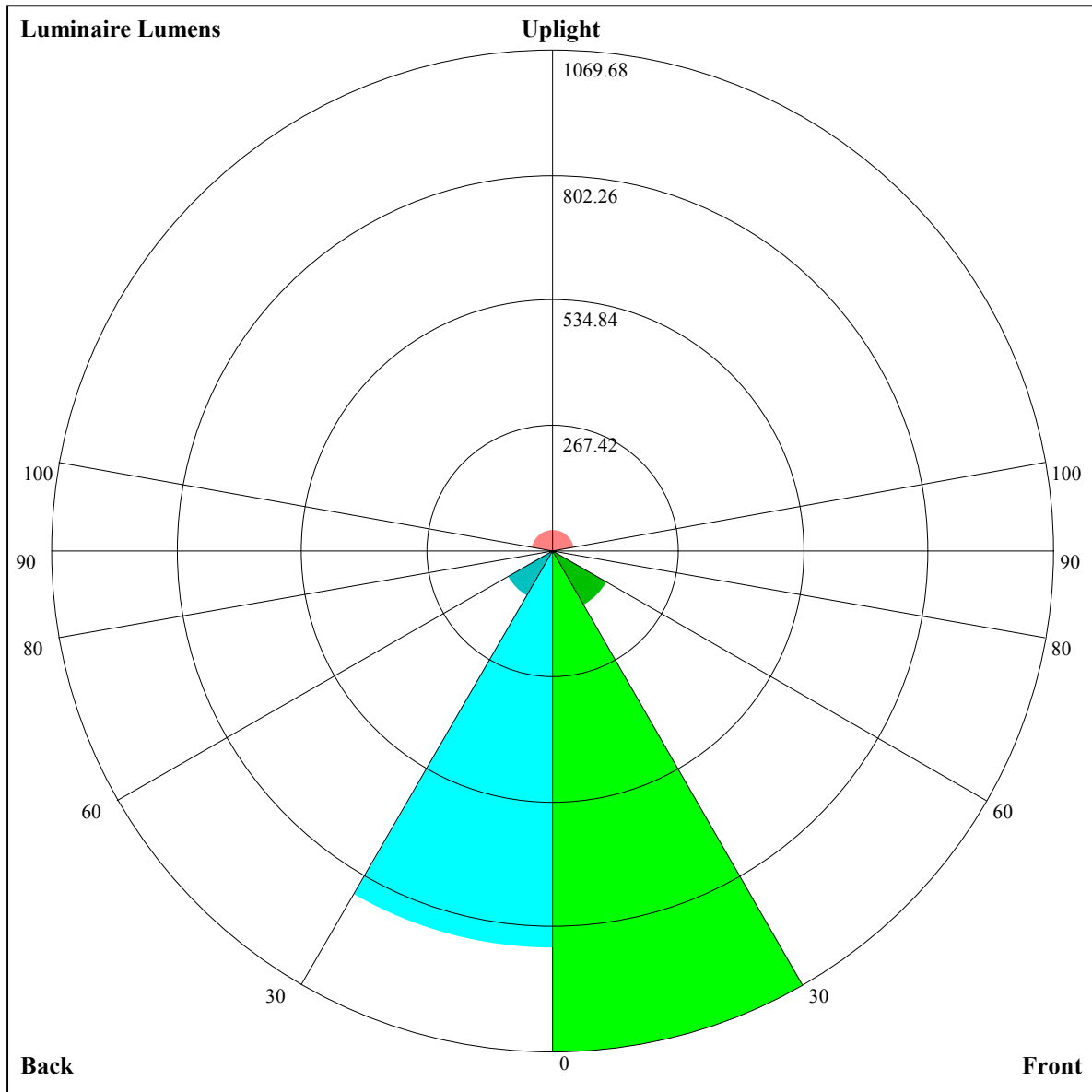
Luminance Limiting Curve





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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.98	0.96	0.95	0.96	0.95	0.93	0.93	0.91	0.90	0.89	0.89	0.88	0.87	0.86	0.85	0.84
2	0.93	0.90	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.84	0.83	0.82	0.80
3	0.89	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.77
4	0.85	0.82	0.79	0.84	0.81	0.78	0.83	0.80	0.78	0.81	0.79	0.77	0.80	0.78	0.76	0.75
5	0.82	0.78	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
6	0.79	0.75	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.72	0.75	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.68
8	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.72	0.69	0.67	0.66
9	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.70	0.67	0.65	0.65
10	0.70	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63





Luminaire Lumens:

FL=1069.68,FM=135.51,FH=9.74,FVH=5.09

BL=849.29,BM=110.31,BH=9.75,BVH=5.11

UL=10.09,UH=48.01

BUG Rating:B2-U2-G0

NATA 3-2019-A

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	14805.00	14191.88	8589.38	2998.13	1285.88	779.63	493.31	304.31	186.19		
45.0	14956.88	14585.63	8679.38	3206.25	1291.50	795.94	524.25	324.56	200.98		
90.0	15238.13	10987.31	6018.19	1961.44	1054.69	668.70	433.80	271.69	166.05		
135.0	15131.25	11885.63	5675.63	2880.00	988.31	655.31	418.50	284.06	156.71		
180.0	14805.00	9215.44	3675.94	1121.01	791.44	511.03	323.49	187.93	110.19		
225.0	14956.88	9294.75	3560.06	1093.95	786.26	498.15	332.21	189.11	102.21		
270.0	15238.13	11745.00	5242.50	2251.69	927.00	574.88	374.63	221.18	127.97		
315.0	15131.25	11045.25	5868.56	1884.38	977.79	626.68	409.28	244.41	147.71		
360.0	14805.00	14191.88	8589.38	2998.13	1285.88	779.63	493.31	304.31	186.19		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	102.94	53.16	22.33	10.13	9.73	9.51	9.39	9.39	9.39		
45.0	108.79	55.91	24.13	10.18	9.73	9.56	9.45	9.39	9.34		
90.0	84.60	43.20	15.58	9.79	9.51	9.34	9.34	9.28	9.23		
135.0	75.49	35.38	12.60	9.90	9.62	9.45	9.62	9.68	9.45		
180.0	55.01	25.88	10.18	9.84	9.56	9.51	9.45	9.51	9.34		
225.0	53.27	24.98	10.18	9.79	9.56	9.45	9.45	9.51	9.56		
270.0	65.93	33.75	11.93	9.73	9.51	9.34	9.34	9.39	9.34		
315.0	74.70	36.45	12.32	9.79	9.45	9.39	9.34	9.34	9.45		
360.0	102.94	53.16	22.33	10.13	9.73	9.51	9.39	9.39	9.39		
C/ γ (°)	90.0										
0.0	9.28										
45.0	9.28										
90.0	9.23										
135.0	9.17										
180.0	9.28										
225.0	9.34										
270.0	9.23										
315.0	9.17										
360.0	9.28										