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NATA

Client:

LumCAT: 1654-S

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): 35.5600

Current(A): 0.2970

Power (W): 9.9700

PF: 0.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 950.23, Efficiency(%): 88.23% , Luminous Efficacy(lm/W): 95.31

Central intensity(cd): 2802.375, Maximum intensity(cd): 2802.375

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=27.8

[C90/270]Total=27.8

Field angle(10%Imax): [C0/180]Total=62.2

[C90/270]Total=62.2

Maximum s/h(1/2): C0_180=0.47 C90_270=0.47

Maximum s/h(1/4): C0_180=0.49 C90_270=0.49

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.23%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.204%

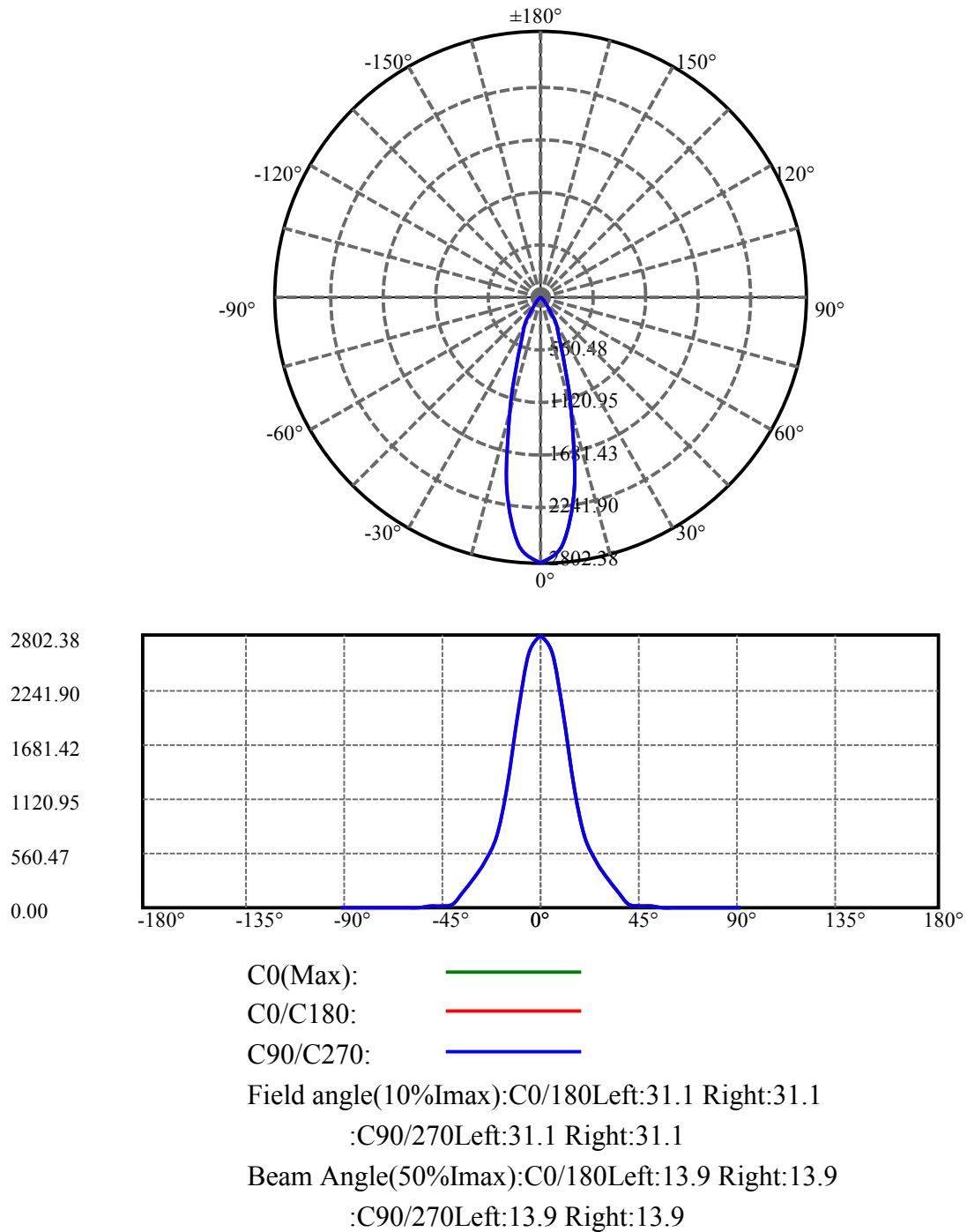
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2802.375	0.000	0	.000%	.000%
5.0	2612.742	64.736	64.736	6.011%	6.813%
10.0	2032.313	166.168	230.904	15.429%	24.300%
15.0	1214.395	192.593	423.497	17.882%	44.568%
20.0	736.713	160.799	584.296	14.930%	61.490%
25.0	472.627	126.837	711.133	11.777%	74.838%
30.0	314.634	99.629	810.762	9.251%	85.322%
35.0	151.263	68.607	879.368	6.370%	92.542%
40.0	42.061	32.255	911.623	2.995%	95.937%
45.0	12.495	10.101	921.724	.938%	97.000%
50.0	9.246	4.393	926.117	.408%	97.462%
55.0	7.699	3.684	929.802	.342%	97.850%
60.0	6.848	3.363	933.165	.312%	98.204%
65.0	6.159	3.162	936.327	.294%	98.536%
70.0	5.674	2.996	939.323	.278%	98.852%
75.0	5.295	2.867	942.19	.266%	99.153%
80.0	5.112	2.784	944.975	.259%	99.446%
85.0	4.887	2.717	947.691	.252%	99.732%
90.0	4.402	2.543	950.235	.236%	100.000%

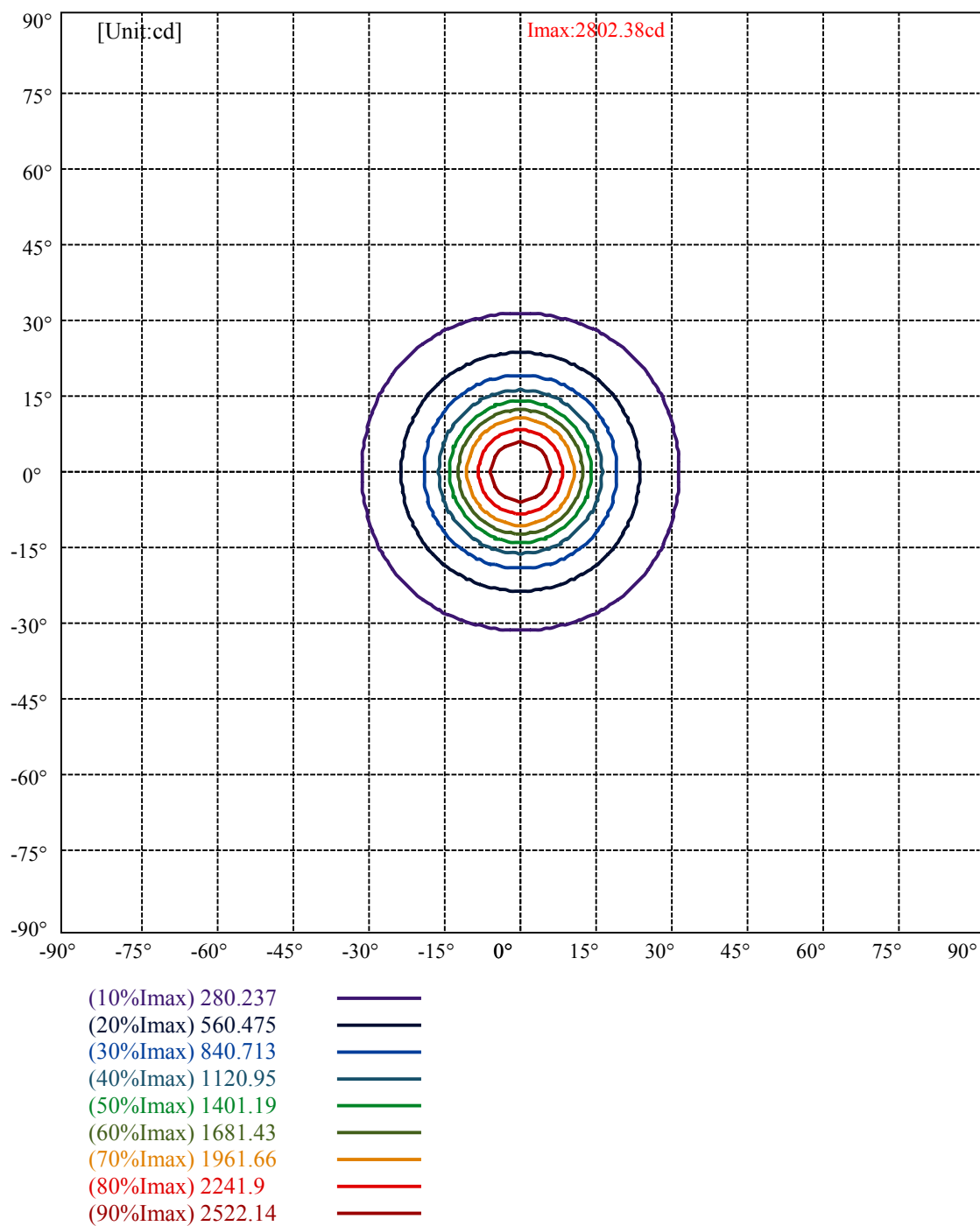
ZONAL LUMEN SUMMARY

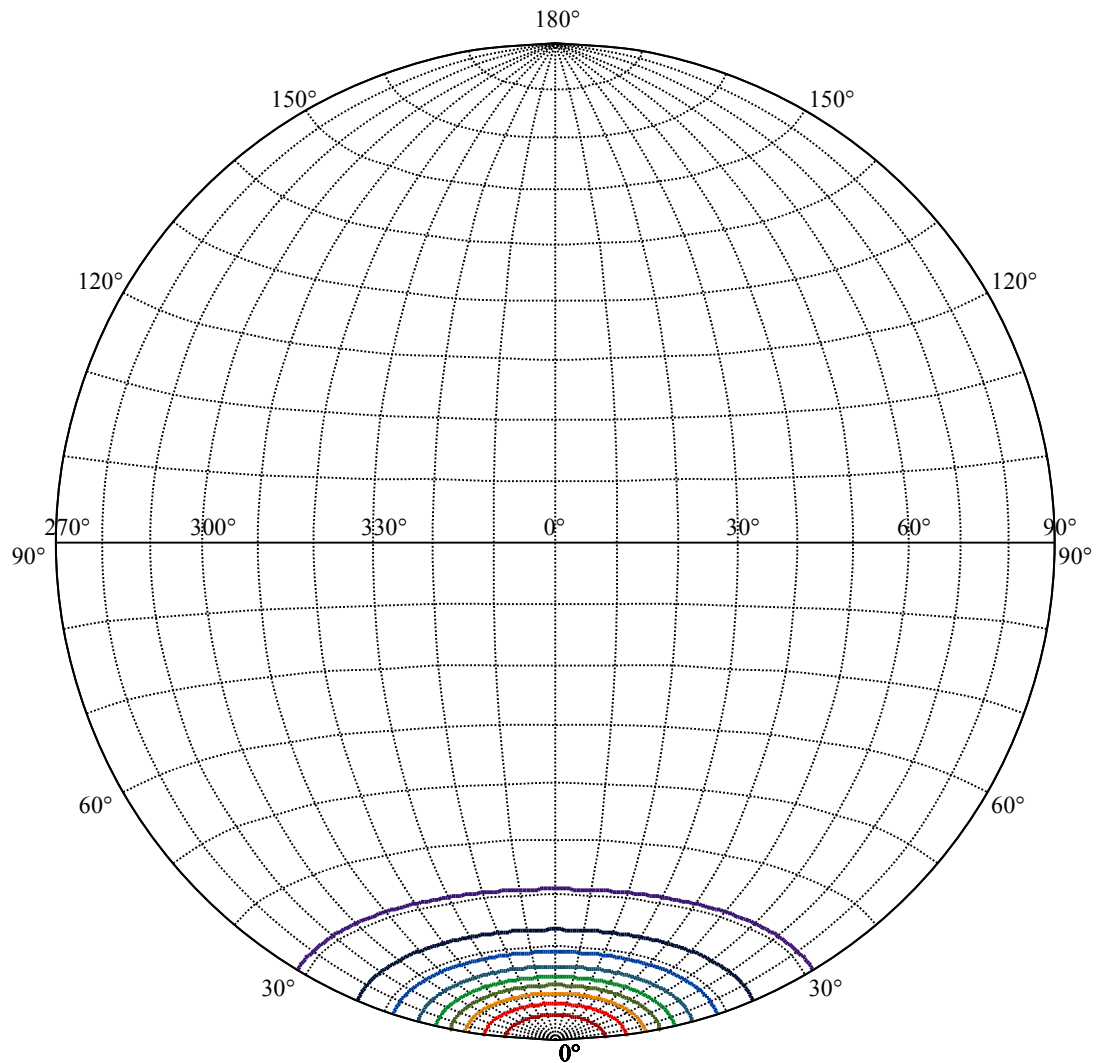
Zone	Lumens	%Lamp	%Fixt
0-30	810.76	75.28%	85.32%
0-40	911.62	84.64%	95.94%
0-60	933.16	86.64%	98.20%
0-90	947.69	87.99%	99.73%
0-120	947.69	87.99%	99.73%
0-180	950.23	88.23%	100.00%
60-90	17.89	1.66%	1.88%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.46	760.19	70.58%	80.00%

ZONAL LUMEN SUMMARY

0-10	230.90
10-20	353.39
20-30	226.47
30-40	100.86
40-50	14.49
50-60	7.05
60-70	6.16
70-80	5.65
80-90	2.72
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:2802.38

(10%Imax) 280.237

(20%Imax) 560.475

(30%Imax) 840.713

(40%Imax) 1120.95

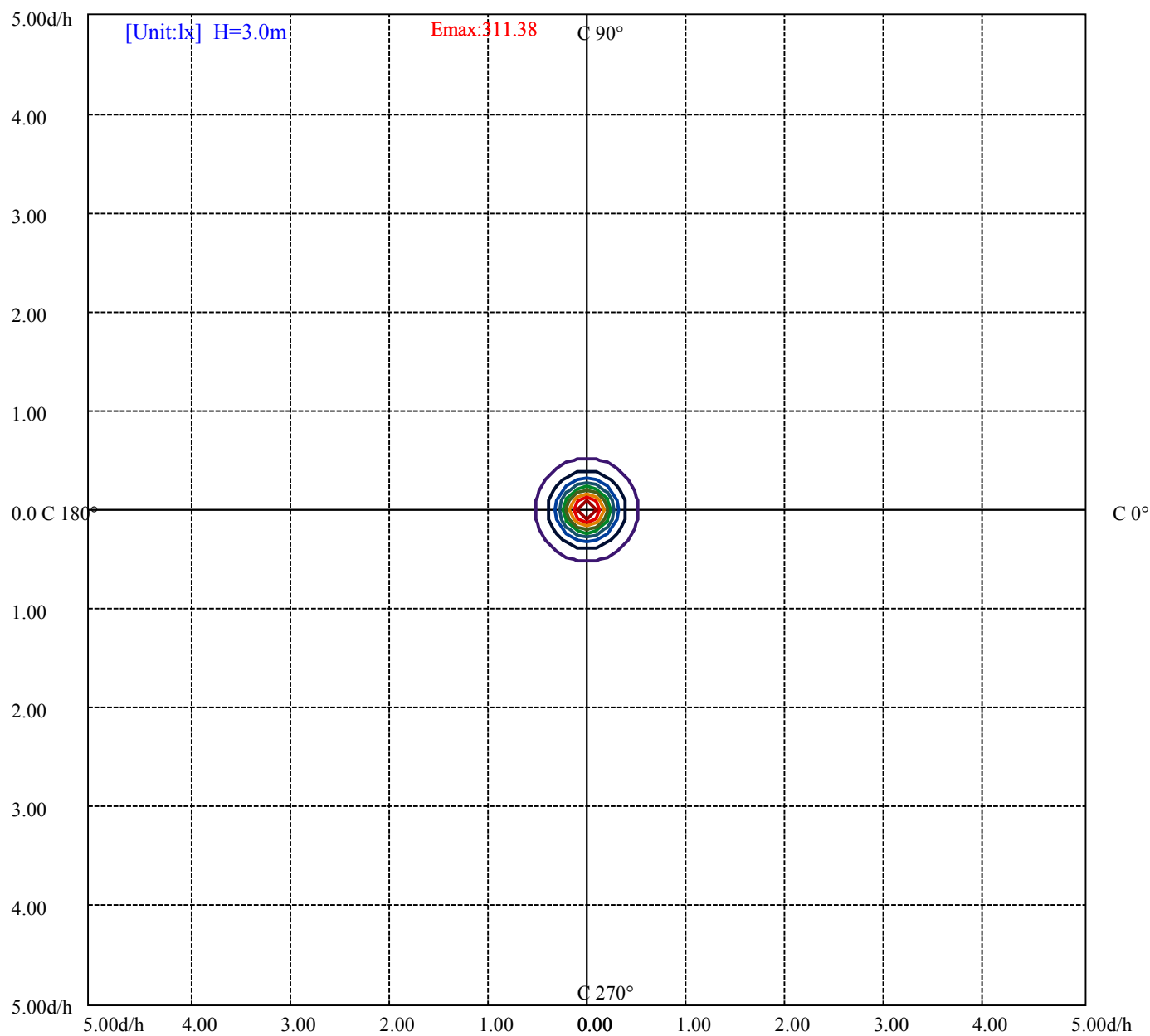
(50%Imax) 1401.19

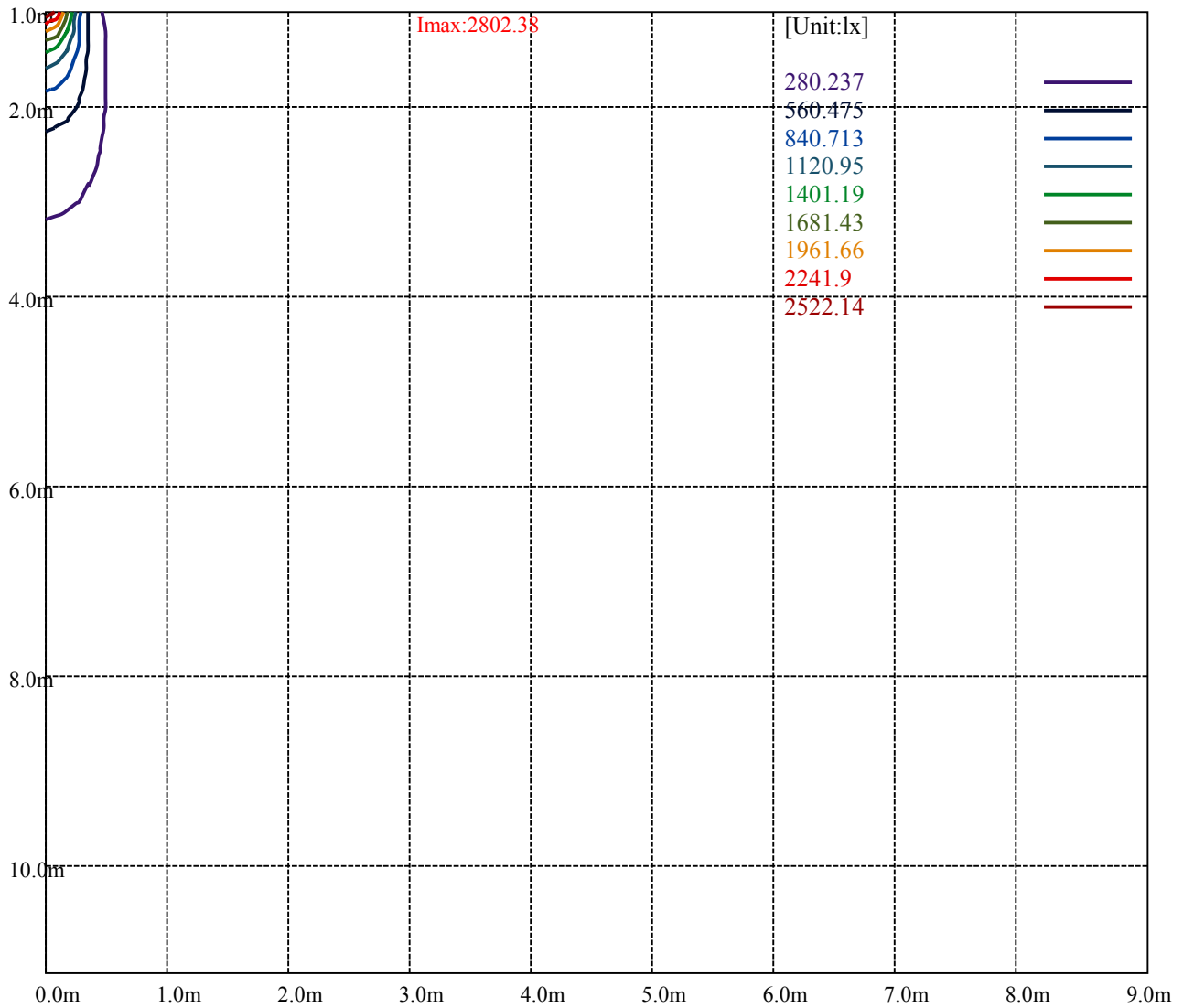
(60%Imax) 1681.43

(70%Imax) 1961.66

(80%Imax) 2241.9

(90%Imax) 2522.14





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

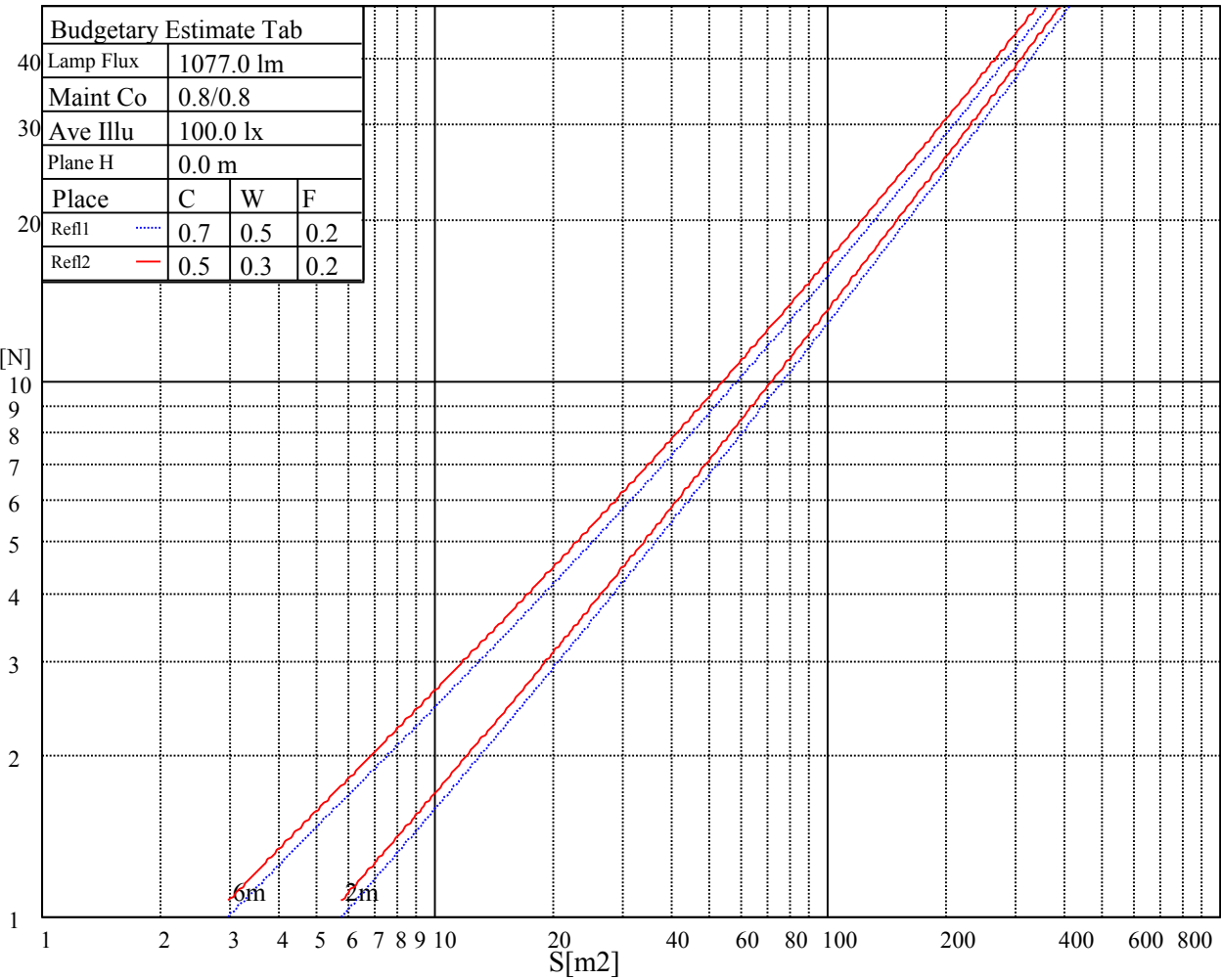
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

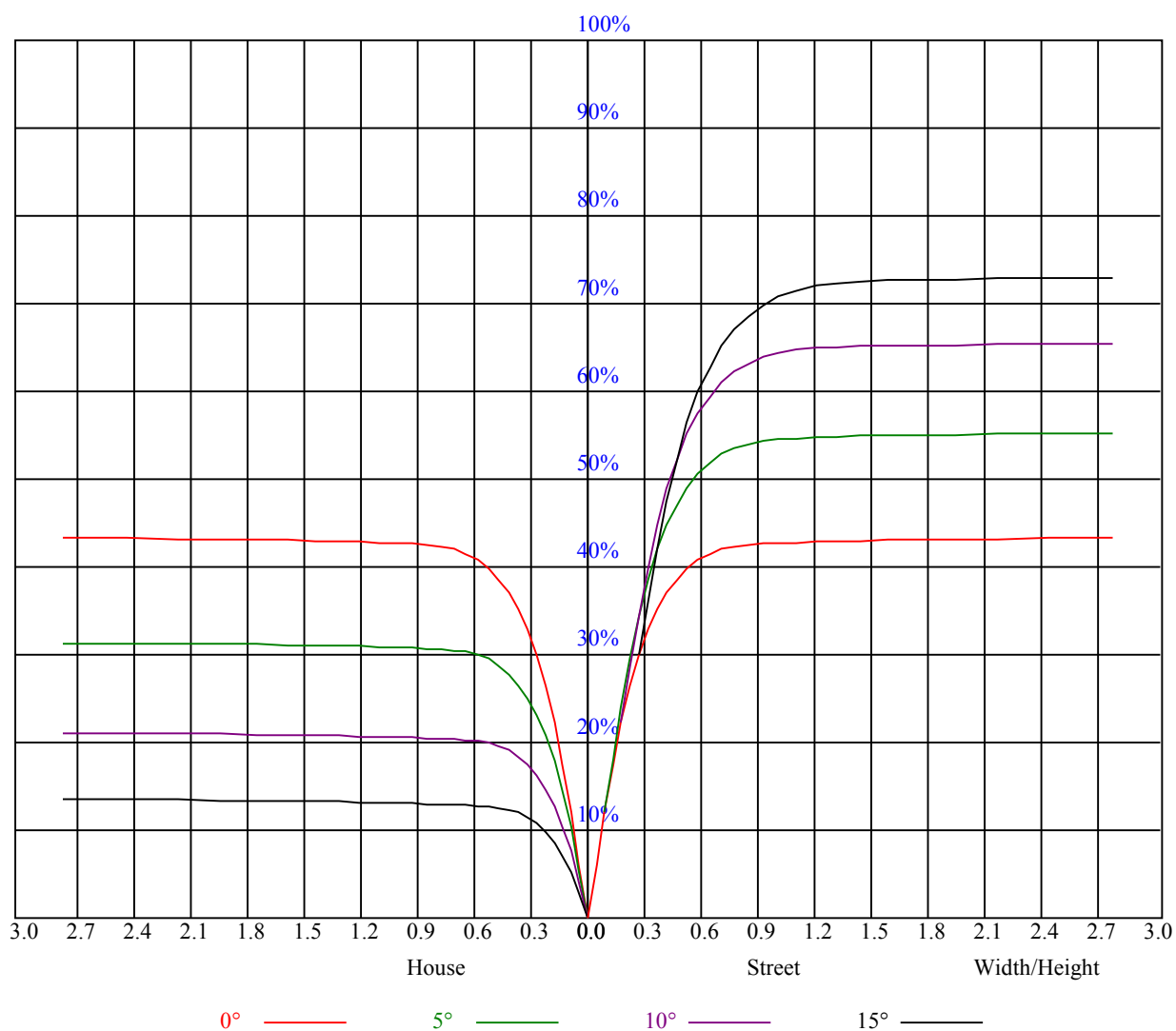
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

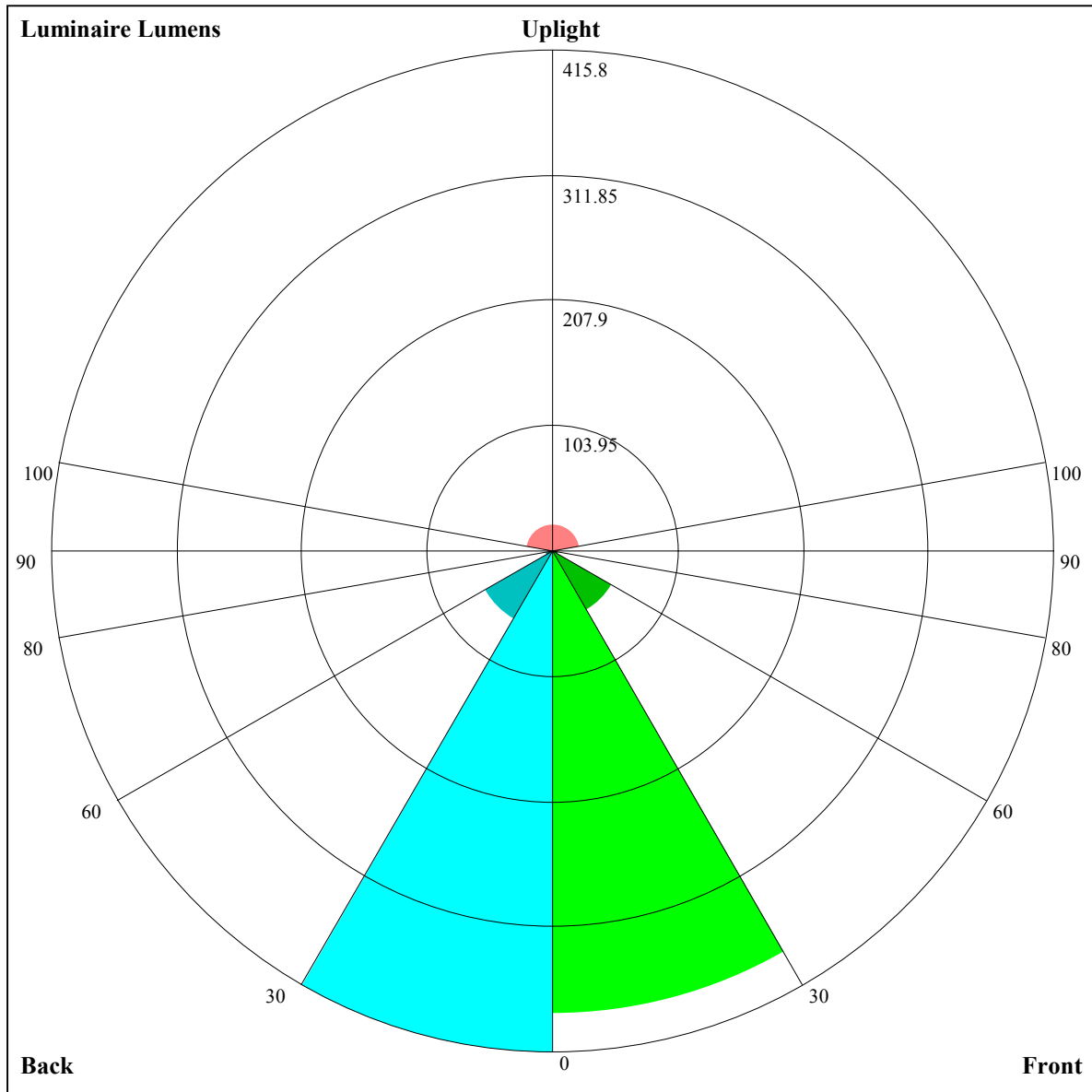
Luminance Limiting Curve





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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.98	0.96	0.95	0.96	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.87	0.86	0.85	0.83
2	0.93	0.90	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.83	0.82	0.81	0.79
3	0.88	0.84	0.81	0.87	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.77	0.75
4	0.83	0.79	0.76	0.82	0.79	0.76	0.81	0.77	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
5	0.79	0.75	0.72	0.79	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.72	0.70	0.69
6	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.67	0.64	0.61	0.60
9	0.67	0.63	0.60	0.67	0.62	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.58
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.56





Luminaire Lumens:

FL=384.94,FM=56.14,FH=5.81,FVH=2.62

BL=415.8,BM=65.79,BH=5.94,BVH=2.66

UL=4.8,UH=22.85

BUG Rating:B1-U2-G0

NATA 1654-S

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	2807.44	2540.25	1935.56	1150.88	651.38	444.94	288.00	126.45	32.85		
45.0	2802.38	2589.19	1977.75	1173.38	687.38	430.31	289.13	127.24	33.98		
90.0	2800.69	2604.94	1965.38	1121.34	703.97	468.11	305.94	149.74	38.03		
135.0	2799.00	2717.44	2254.50	1509.19	881.44	536.06	375.75	192.38	63.45		
180.0	2807.44	2685.94	2136.94	1271.81	790.88	481.28	340.09	171.39	50.85		
225.0	2802.38	2662.31	2088.56	1108.91	758.42	470.59	309.21	158.06	44.94		
270.0	2800.69	2635.31	2080.13	1302.75	781.31	501.19	335.81	171.73	49.44		
315.0	2799.00	2466.56	1819.69	1076.91	638.94	448.54	273.15	113.12	22.95		
360.0	2807.44	2540.25	1935.56	1150.88	651.38	444.94	288.00	126.45	32.85		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	14.01	10.46	8.38	7.09	6.08	5.51	5.12	4.89	4.61		
45.0	15.08	11.19	9.23	7.71	6.47	5.79	5.34	5.12	4.67		
90.0	9.62	7.43	6.69	6.36	5.96	5.63	5.18	4.95	4.89		
135.0	11.59	7.43	6.36	5.96	5.74	5.63	5.29	5.01	4.78		
180.0	11.98	8.44	7.82	7.59	6.86	6.02	5.40	5.12	4.89		
225.0	14.06	11.64	9.28	7.71	6.58	5.79	5.51	5.40	5.12		
270.0	13.16	9.51	7.31	6.36	5.85	5.57	5.34	5.18	5.18		
315.0	10.46	7.88	6.53	6.02	5.74	5.46	5.18	5.23	4.95		
360.0	14.01	10.46	8.38	7.09	6.08	5.51	5.12	4.89	4.61		
C/γ(°)	90.0										
0.0	4.33										
45.0	4.33										
90.0	4.33										
135.0	4.50										
180.0	4.39										
225.0	4.39										
270.0	4.50										
315.0	4.44										
360.0	4.33										