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NATA

Client:

LumCAT: 1405-N

Luminaire: 92.70.046.00

Report No: nt0100

Test No: GC2020010815

LampCAT: LUMINUS CLM-9-AA40

Lamp flux(lm): 1288.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 34.1700

Current(A): 0.3070

Power (W): 10.4900

PF: 0.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 1036.85, Efficiency(%): 80.50% , Luminous Efficacy(lm/W): 98.84

Central intensity(cd): 2001.375, Maximum intensity(cd): 2001.375

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=27.4

[C90/270]Total=27.4

Field angle(10%Imax): [C0/180]Total=82.0

[C90/270]Total=82.0

Maximum s/h(1/2): C0_180=0.45 C90_270=0.45

Maximum s/h(1/4): C0_180=0.52 C90_270=0.52

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 80.50%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.173%

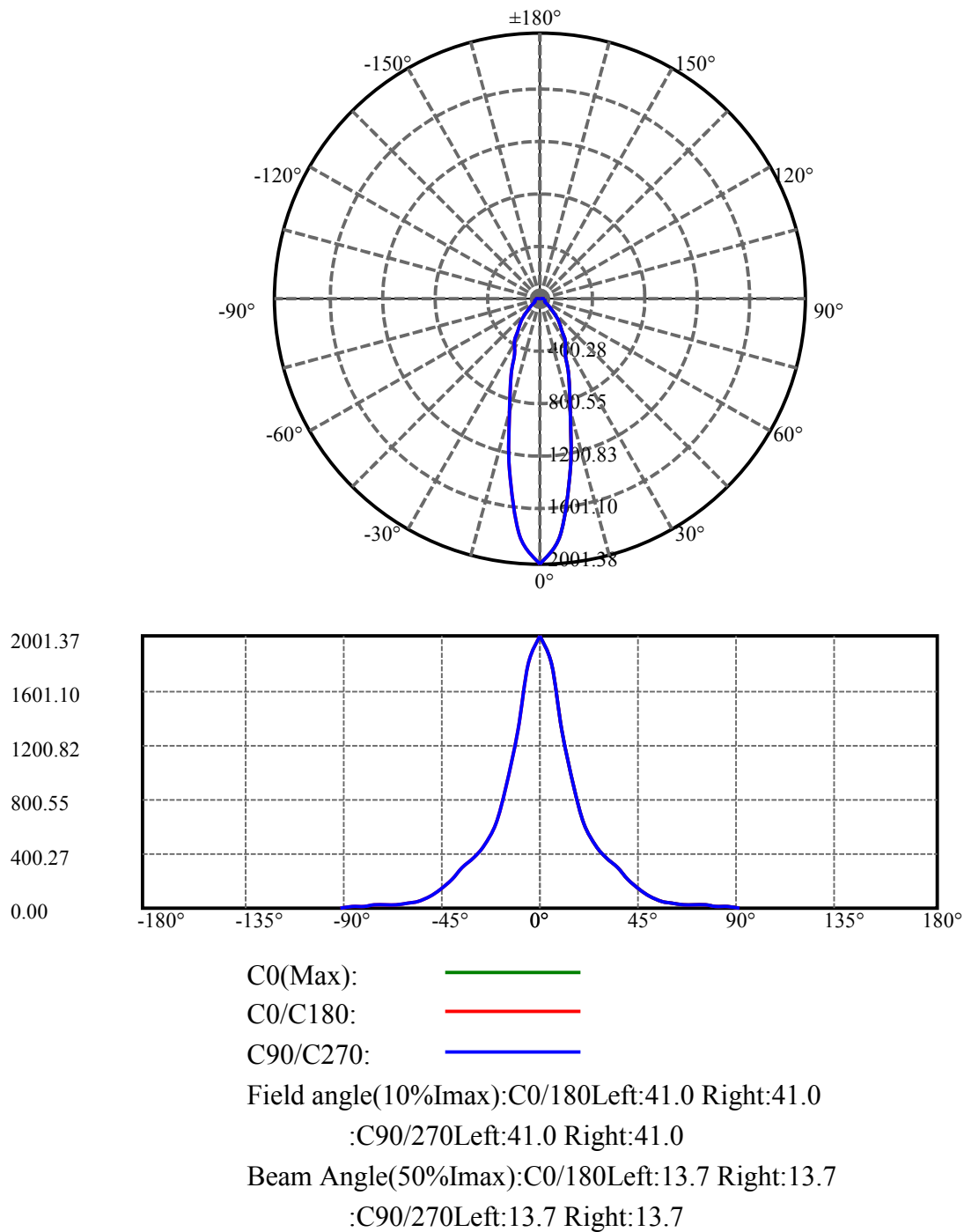
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2001.375	0.000	0	.000%	.000%
5.0	1792.969	45.360	45.36	3.522%	4.375%
10.0	1307.306	110.907	156.267	8.611%	15.071%
15.0	891.640	130.440	286.707	10.127%	27.652%
20.0	616.486	124.291	410.998	9.650%	39.639%
25.0	462.480	113.164	524.161	8.786%	50.553%
30.0	374.280	105.893	630.054	8.221%	60.766%
35.0	298.329	99.046	729.101	7.690%	70.319%
40.0	215.416	85.715	814.815	6.655%	78.586%
45.0	136.948	65.243	880.058	5.065%	84.878%
50.0	85.324	44.913	924.971	3.487%	89.210%
55.0	53.909	30.274	955.245	2.350%	92.130%
60.0	37.758	21.188	976.434	1.645%	94.173%
65.0	27.893	15.960	992.394	1.239%	95.712%
70.0	22.134	12.667	1005.061	.983%	96.934%
75.0	19.905	10.989	1016.049	.853%	97.994%
80.0	15.047	9.352	1025.402	.726%	98.896%
85.0	11.187	7.128	1032.53	.553%	99.583%
90.0	4.591	4.320	1036.85	.335%	100.000%

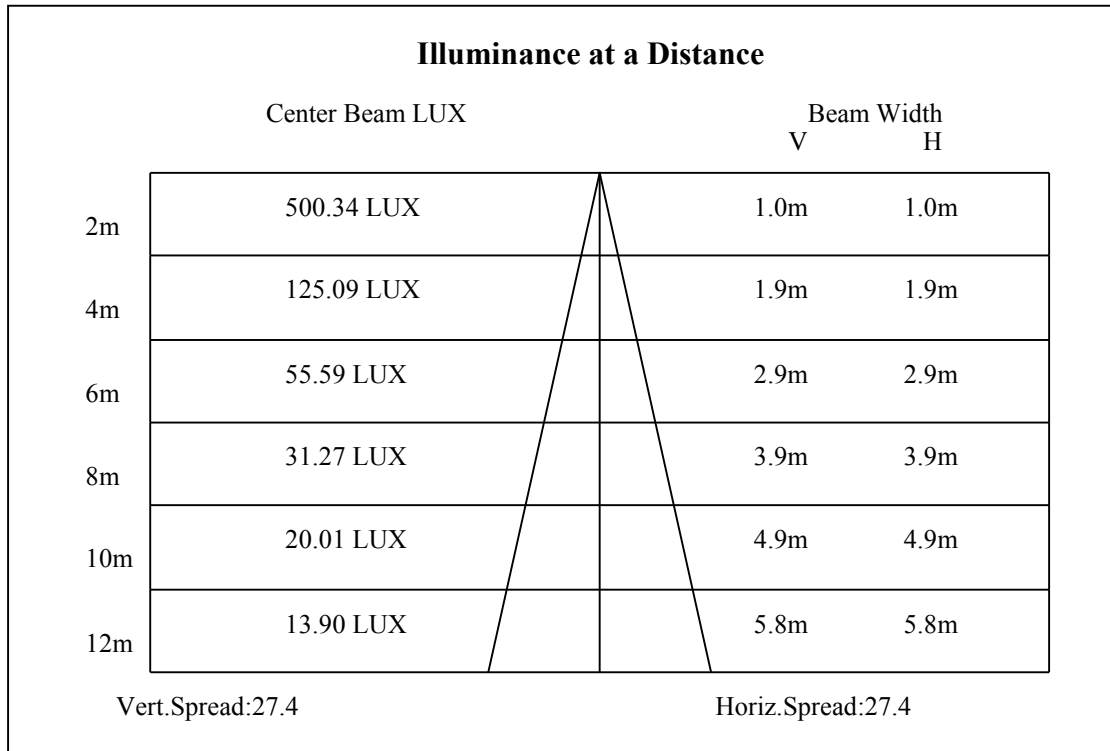
ZONAL LUMEN SUMMARY

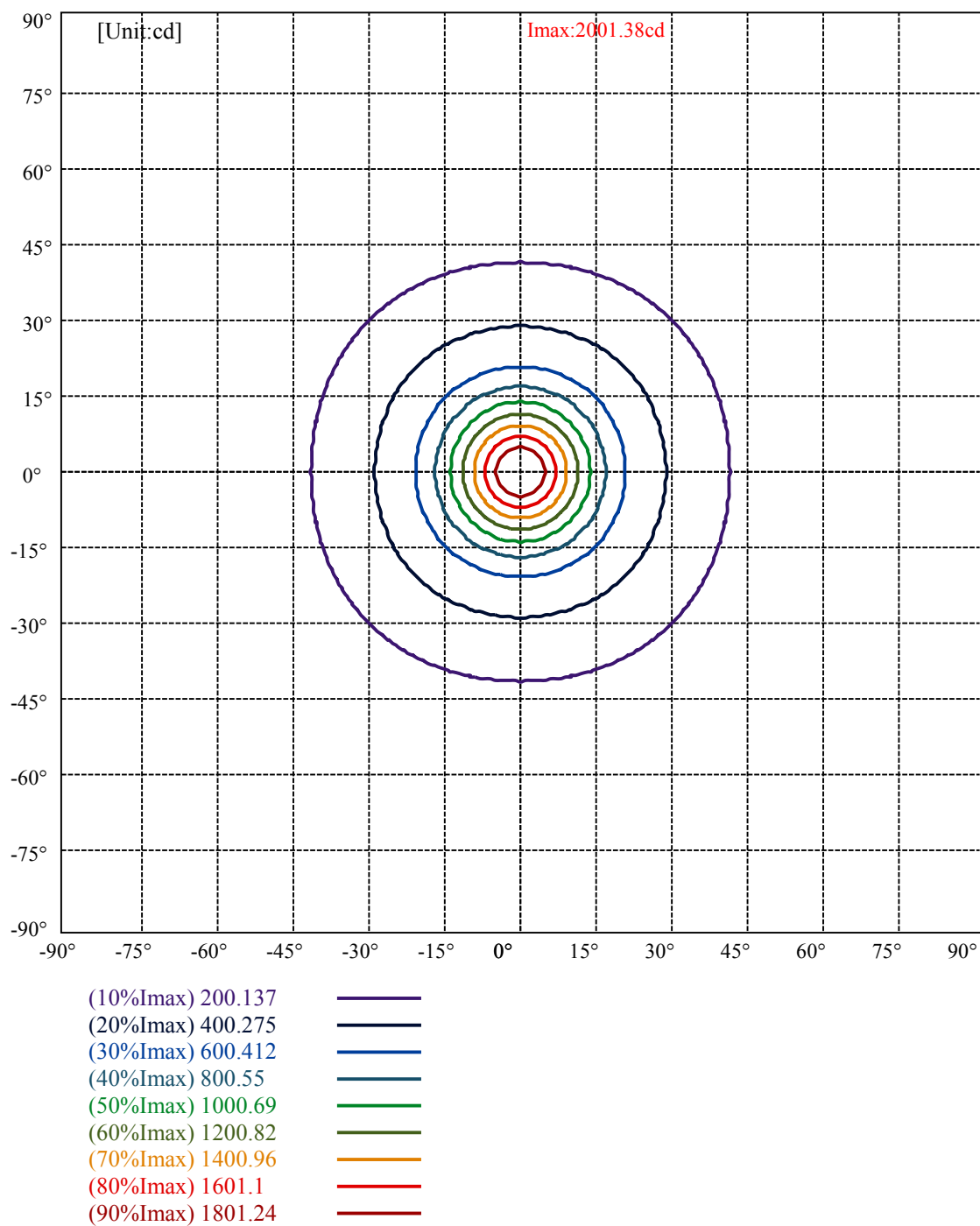
Zone	Lumens	%Lamp	%Fixt
0-30	630.05	48.92%	60.77%
0-40	814.82	63.26%	78.59%
0-60	976.43	75.81%	94.17%
0-90	1032.53	80.17%	99.58%
0-120	1032.53	80.17%	99.58%
0-180	1036.85	80.50%	100.00%
60-90	77.28	6.00%	7.45%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-41.12	829.48	64.40%	80.00%

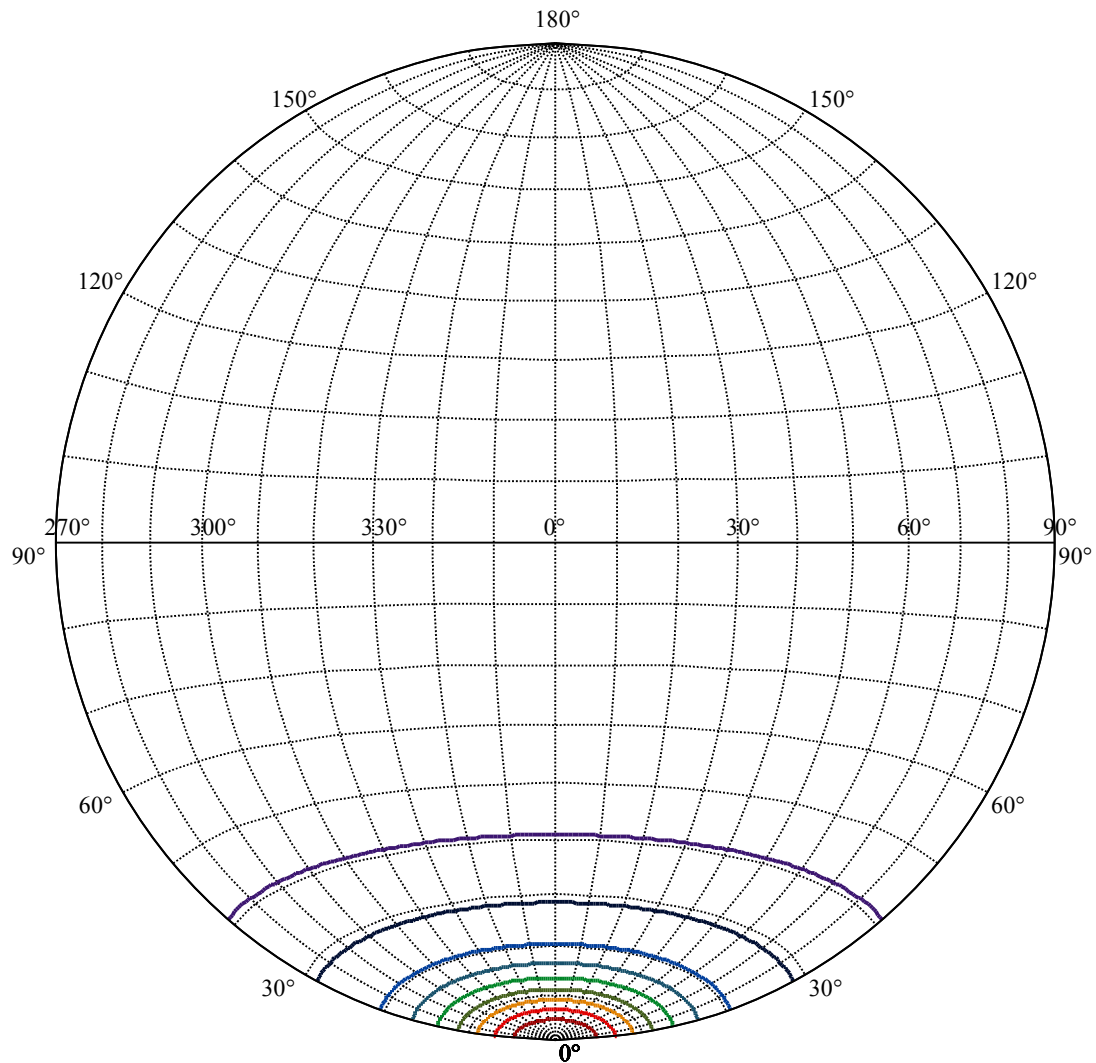
ZONAL LUMEN SUMMARY

0-10	156.27
10-20	254.73
20-30	219.06
30-40	184.76
40-50	110.16
50-60	51.46
60-70	28.63
70-80	20.34
80-90	7.13
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









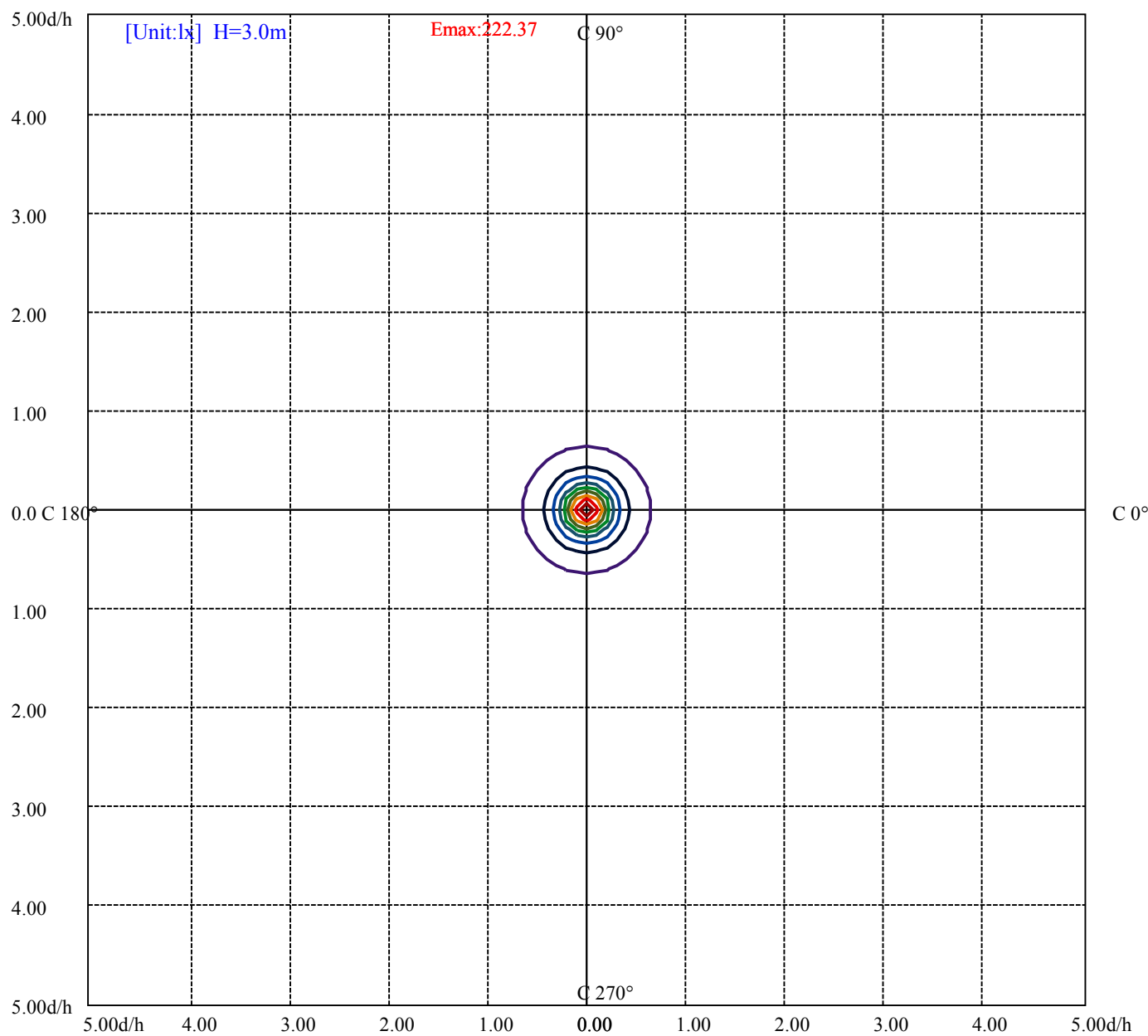
House

[Unit:cd]

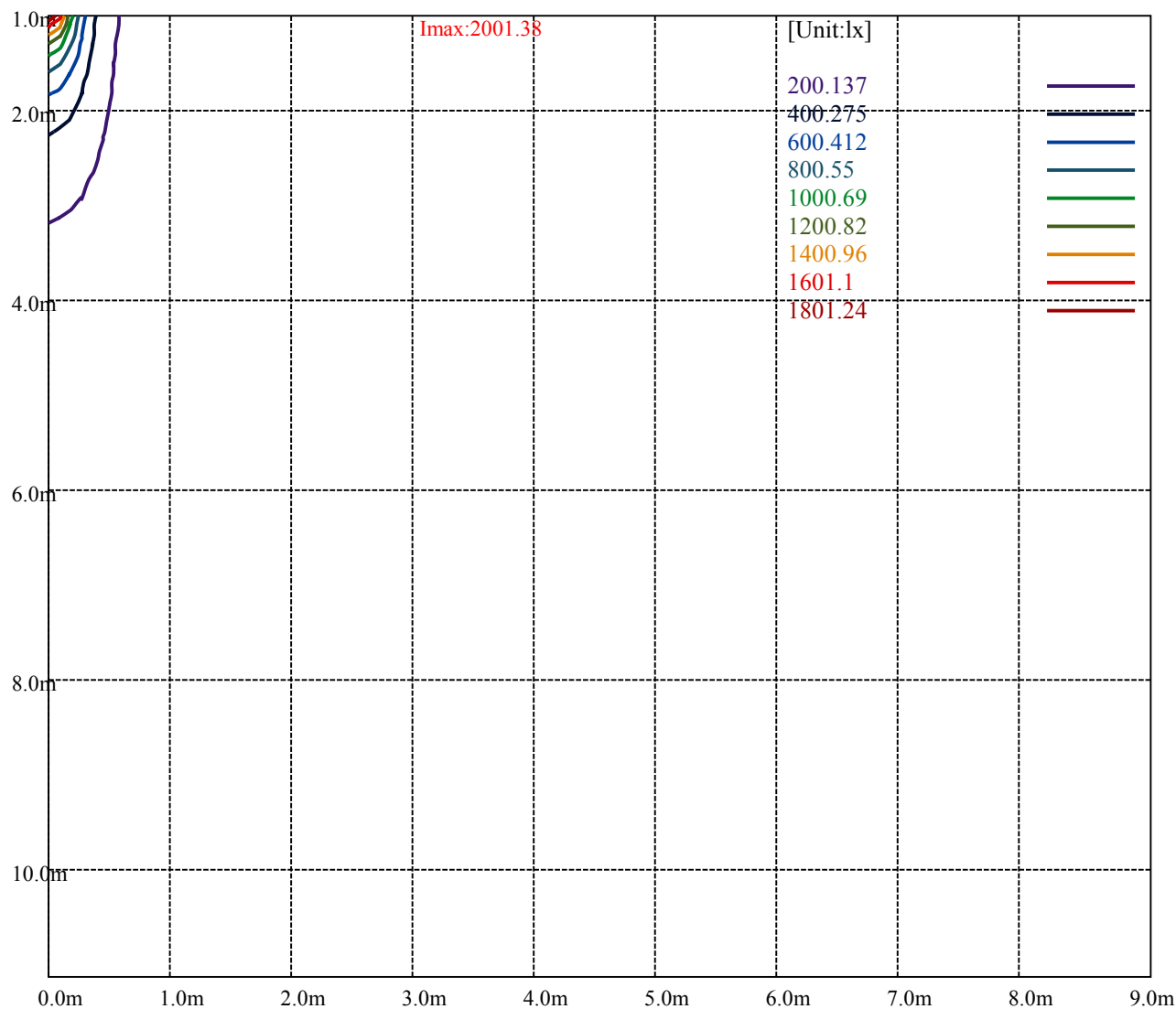
Road

Imax:2001.38

(10%Imax)	200.137	—
(20%Imax)	400.275	—
(30%Imax)	600.412	—
(40%Imax)	800.55	—
(50%Imax)	1000.69	—
(60%Imax)	1200.82	—
(70%Imax)	1400.96	—
(80%Imax)	1601.1	—
(90%Imax)	1801.24	—



(10%E _{max}) 22.23744	—
(20%E _{max}) 44.47489	—
(30%E _{max}) 66.71233	—
(40%E _{max}) 88.94967	—
(50%E _{max}) 111.1867	—
(60%E _{max}) 133.4244	—
(70%E _{max}) 155.6622	—
(80%E _{max}) 177.8989	—
(90%E _{max}) 200.1367	—



Luminance Table

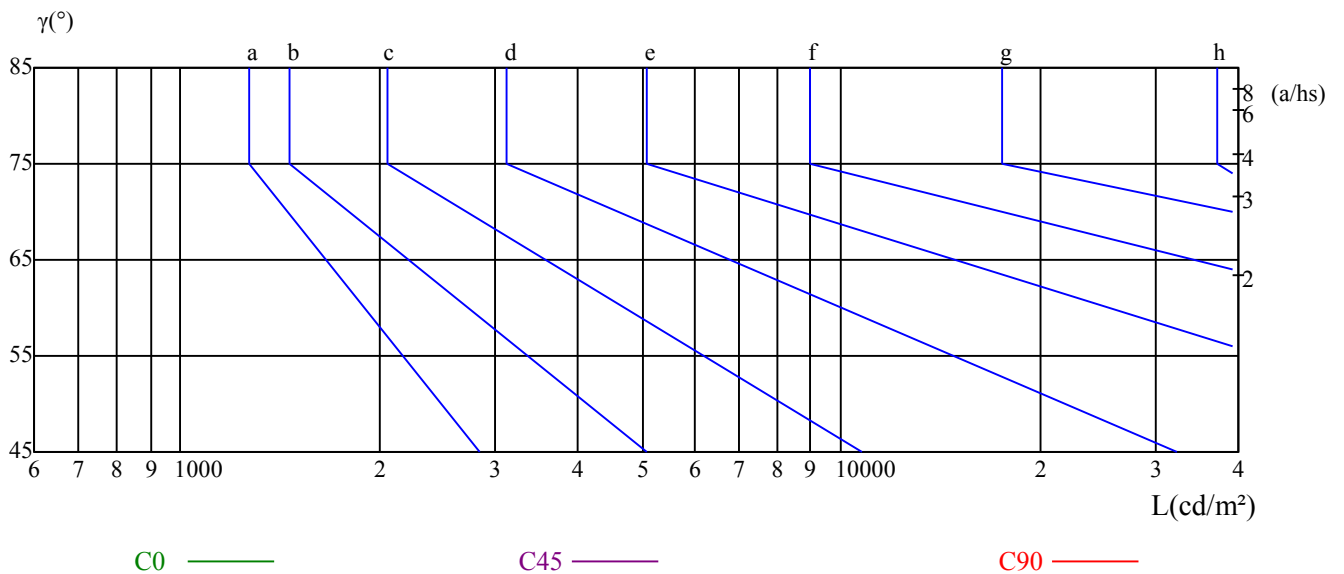
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

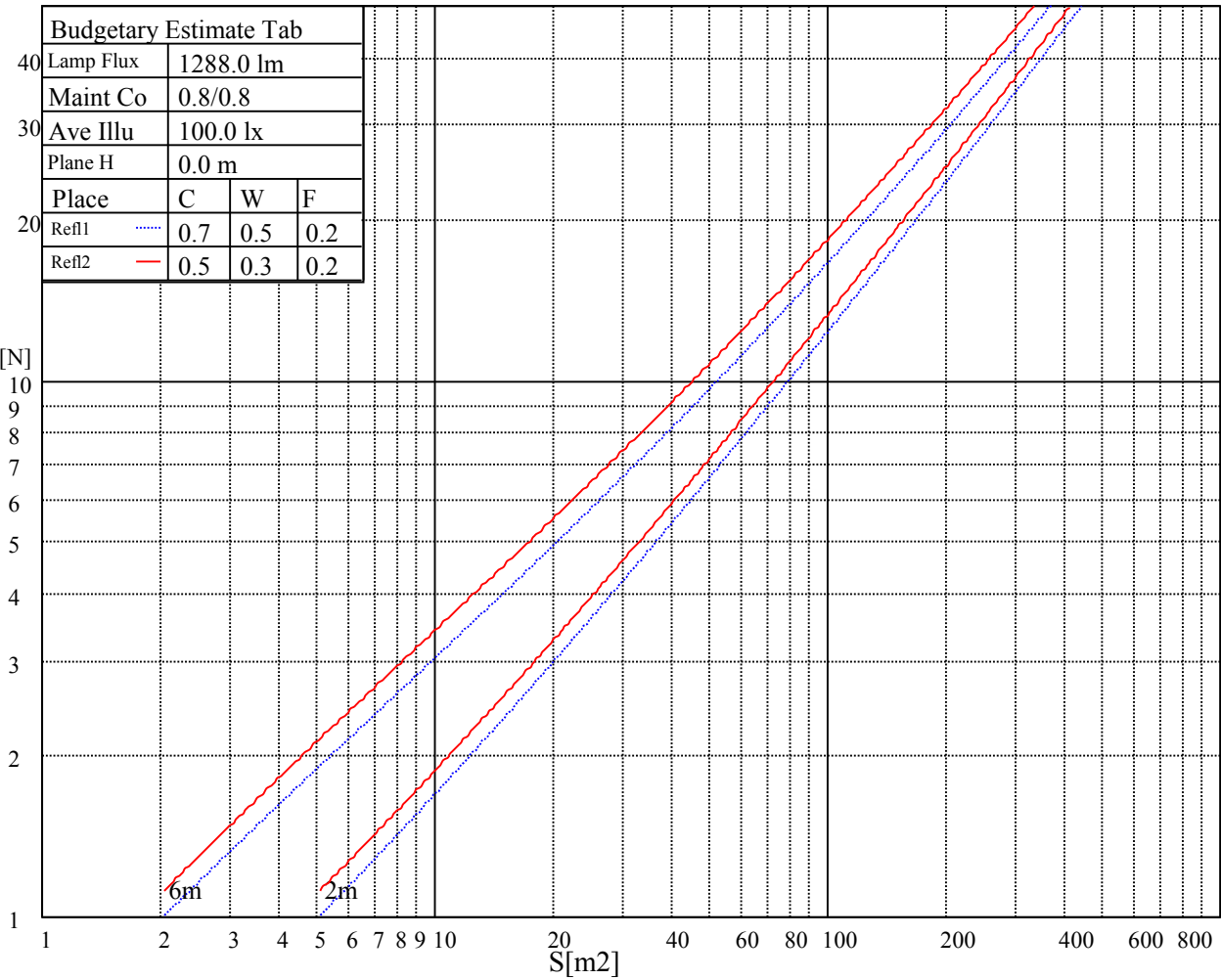
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

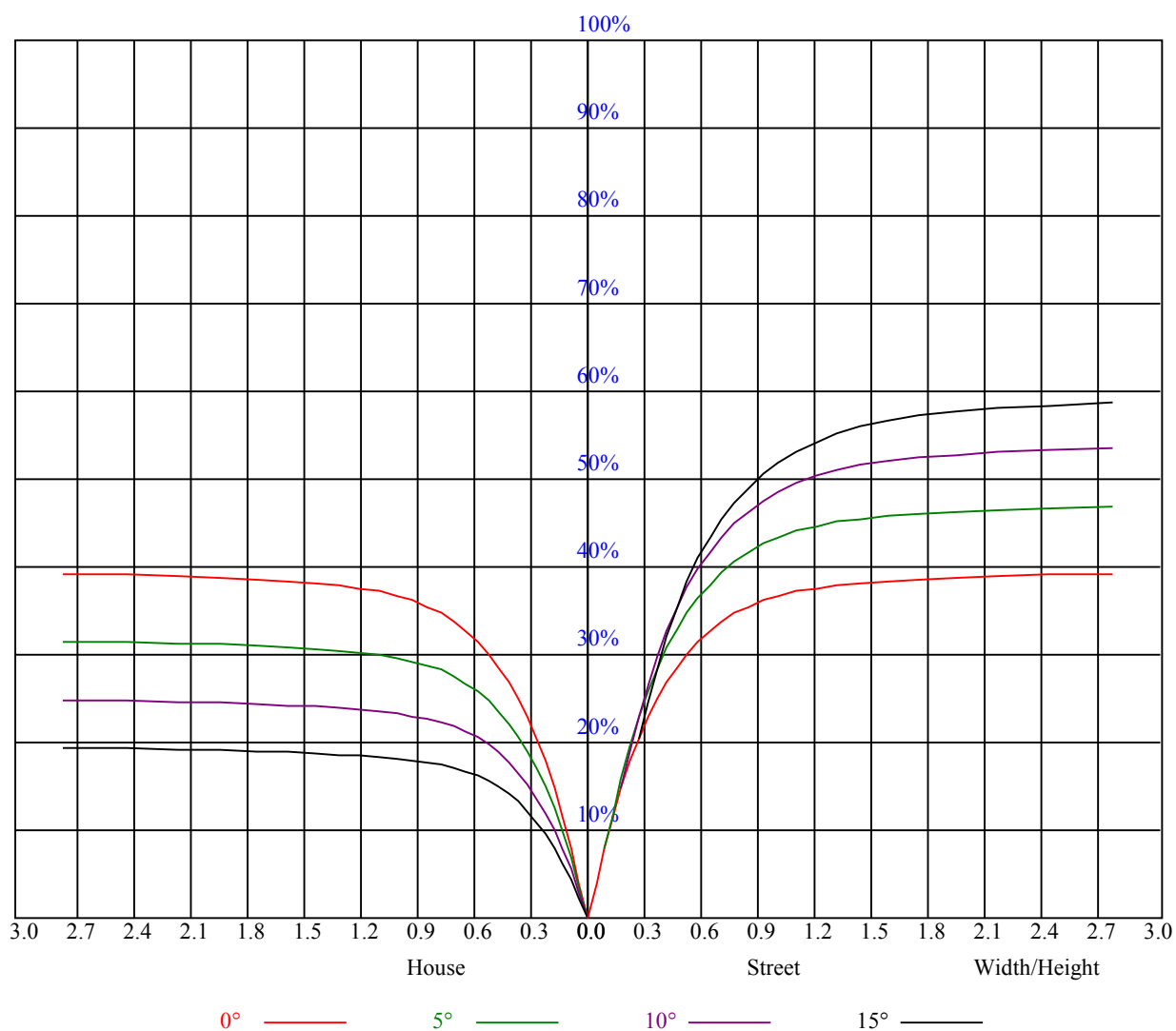
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

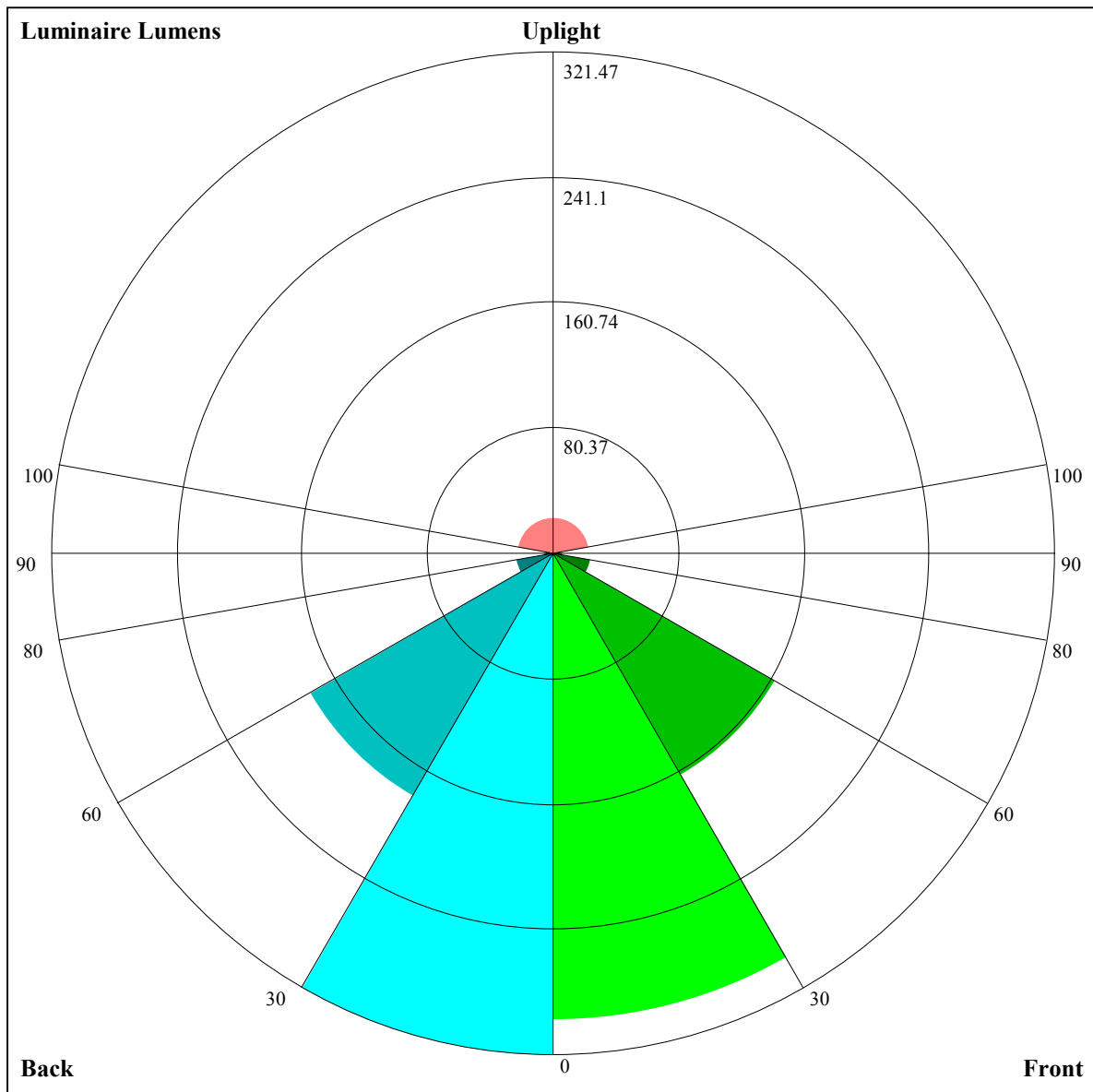
Luminance Limiting Curve





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	0.96	0.96	0.96	0.94	0.94	0.94	0.89	0.89	0.89	0.86	0.86	0.86	0.82	0.82	0.82	0.81
1	0.88	0.85	0.83	0.86	0.84	0.82	0.83	0.81	0.79	0.80	0.78	0.77	0.77	0.76	0.75	0.73
2	0.81	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.71	0.74	0.72	0.70	0.72	0.70	0.68	0.67
3	0.75	0.70	0.66	0.73	0.69	0.66	0.71	0.68	0.65	0.69	0.66	0.64	0.67	0.65	0.63	0.61
4	0.69	0.64	0.60	0.68	0.64	0.60	0.66	0.63	0.59	0.65	0.61	0.59	0.63	0.60	0.58	0.57
5	0.65	0.59	0.56	0.64	0.59	0.55	0.62	0.58	0.55	0.61	0.57	0.54	0.60	0.56	0.54	0.53
6	0.60	0.55	0.51	0.60	0.55	0.51	0.59	0.54	0.51	0.57	0.54	0.51	0.56	0.53	0.50	0.49
7	0.57	0.52	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.47	0.53	0.50	0.47	0.46
8	0.54	0.48	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.51	0.47	0.44	0.50	0.47	0.44	0.43
9	0.51	0.46	0.42	0.50	0.45	0.42	0.49	0.45	0.42	0.49	0.45	0.42	0.48	0.44	0.42	0.41
10	0.48	0.43	0.40	0.48	0.43	0.40	0.47	0.43	0.40	0.46	0.42	0.40	0.46	0.42	0.40	0.38





Luminaire Lumens:

FL=299.33,FM=164.26,FH=24.65,FVH=5.78

BL=321.47,BM=180.52,BH=24.33,BVH=5.69

UL=5.01,UH=23.84

BUG Rating:B1-U2-G0

NATA 1405-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	2014.31	1714.50	1258.31	858.94	601.31	449.44	354.94	284.06	196.20		
45.0	2006.44	1739.25	1287.56	870.75	585.00	434.81	341.44	286.88	195.13		
90.0	1999.13	1730.25	1109.48	830.53	589.84	447.47	361.46	283.78	204.98		
135.0	1985.63	1885.50	1463.06	1011.94	669.94	505.13	417.94	334.13	262.97		
180.0	2014.31	1878.19	1435.50	914.12	646.76	486.06	396.23	318.43	234.11		
225.0	2006.44	1855.13	1410.19	938.59	637.54	467.66	386.89	304.14	219.88		
270.0	1999.13	1851.19	1379.25	921.94	628.31	470.25	381.94	308.25	221.68		
315.0	1985.63	1689.75	1115.10	786.32	573.19	439.03	353.42	266.96	188.38		
360.0	2014.31	1714.50	1258.31	858.94	601.31	449.44	354.94	284.06	196.20		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	127.52	83.14	53.04	37.01	27.28	22.16	23.29	17.10	12.26		
45.0	129.71	84.60	55.63	38.87	28.07	21.26	18.51	13.22	10.63		
90.0	131.40	84.77	53.04	36.90	27.11	20.48	16.37	12.21	9.84		
135.0	163.86	102.77	62.44	41.91	30.26	22.61	17.38	15.24	11.19		
180.0	147.60	88.54	54.84	37.80	27.28	21.66	16.82	14.46	10.58		
225.0	140.34	83.76	51.98	37.58	28.24	22.16	18.68	14.40	11.25		
270.0	139.78	86.68	53.94	38.42	29.08	23.51	23.68	19.41	12.43		
315.0	115.37	68.34	46.35	33.58	25.82	23.23	24.53	14.34	11.31		
360.0	127.52	83.14	53.04	37.01	27.28	22.16	23.29	17.10	12.26		
C/ γ (°)	90.0										
0.0	4.84										
45.0	5.01										
90.0	4.50										
135.0	4.67										
180.0	4.50										
225.0	4.56										
270.0	4.33										
315.0	4.33										
360.0	4.84										