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NATA

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Client:

LumCAT: 2-1795-N

Luminaire: 92.70.131.00

Report No: nata-0100

Test No: GC2018111312

LampCAT: OSRAM S15

Lamp flux(lm): 2619.0

Number of Lamps: 1

Length(mm): 69

Phm Type: C

Voltage(V): 36.2000

Current(A): 0.5500

Power (W): 19.9100

PF: 0.0000

Ballast type: DC

Width(mm): 69

Height(mm): 0

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Photometric Results

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Lumens(lm): 2092.36, Efficiency(%): 79.89% , Luminous Efficacy(lm/W): 105.09

Central intensity(cd): 4401.422, Maximum intensity(cd): 4401.422

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=39.2

[C90/270]Total=39.2

Field angle(10%Imax): [C0/180]Total=64.0

[C90/270]Total=64.0

Maximum s/h(1/2): C0\_180=0.65 C90\_270=0.65

Maximum s/h(1/4): C0\_180=0.63 C90\_270=0.63

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 80.82%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.465%

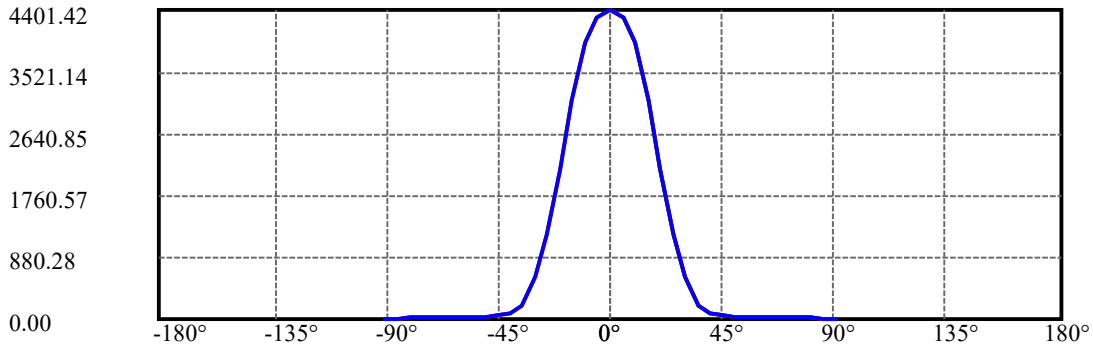
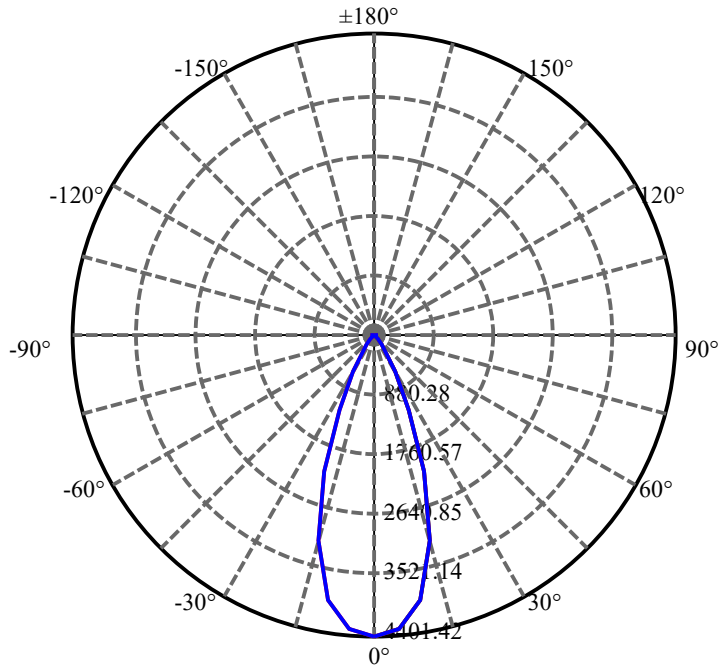
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4401.422	26.321	26.321	1.005%	1.258%
5.0	4292.930	205.088	231.409	7.831%	11.060%
10.0	3939.117	374.937	606.346	14.316%	28.979%
15.0	3115.688	442.018	1048.364	16.877%	50.104%
20.0	2127.727	398.893	1447.257	15.231%	69.169%
25.0	1212.349	280.844	1728.101	10.723%	82.591%
30.0	608.414	166.747	1894.849	6.367%	90.560%
35.0	179.866	56.550	1951.398	2.159%	93.263%
40.0	75.178	26.488	1977.886	1.011%	94.529%
45.0	49.493	19.183	1997.069	.732%	95.446%
50.0	38.932	16.347	2013.417	.624%	96.227%
55.0	32.723	14.693	2028.11	.561%	96.929%
60.0	28.990	13.762	2041.871	.525%	97.587%
65.0	25.109	12.473	2054.345	.476%	98.183%
70.0	21.326	10.984	2065.329	.419%	98.708%
75.0	18.077	9.571	2074.901	.365%	99.166%
80.0	15.026	8.111	2083.012	.310%	99.553%
85.0	12.234	6.681	2089.692	.255%	99.873%
90.0	9.731	2.667	2092.359	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1894.85	72.35%	90.56%
0-40	1977.89	75.52%	94.53%
0-60	2041.87	77.96%	97.59%
0-90	2089.69	79.79%	99.87%
0-120	2089.69	79.79%	99.87%
0-180	2092.36	79.89%	100.00%
60-90	61.58	2.35%	2.94%
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%
0-24.03	1673.89	63.91%	80.00%

ZONAL LUMEN SUMMARY

0-10	606.35
10-20	840.91
20-30	447.59
30-40	83.04
40-50	35.53
50-60	28.45
60-70	23.46
70-80	17.68
80-90	6.68
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

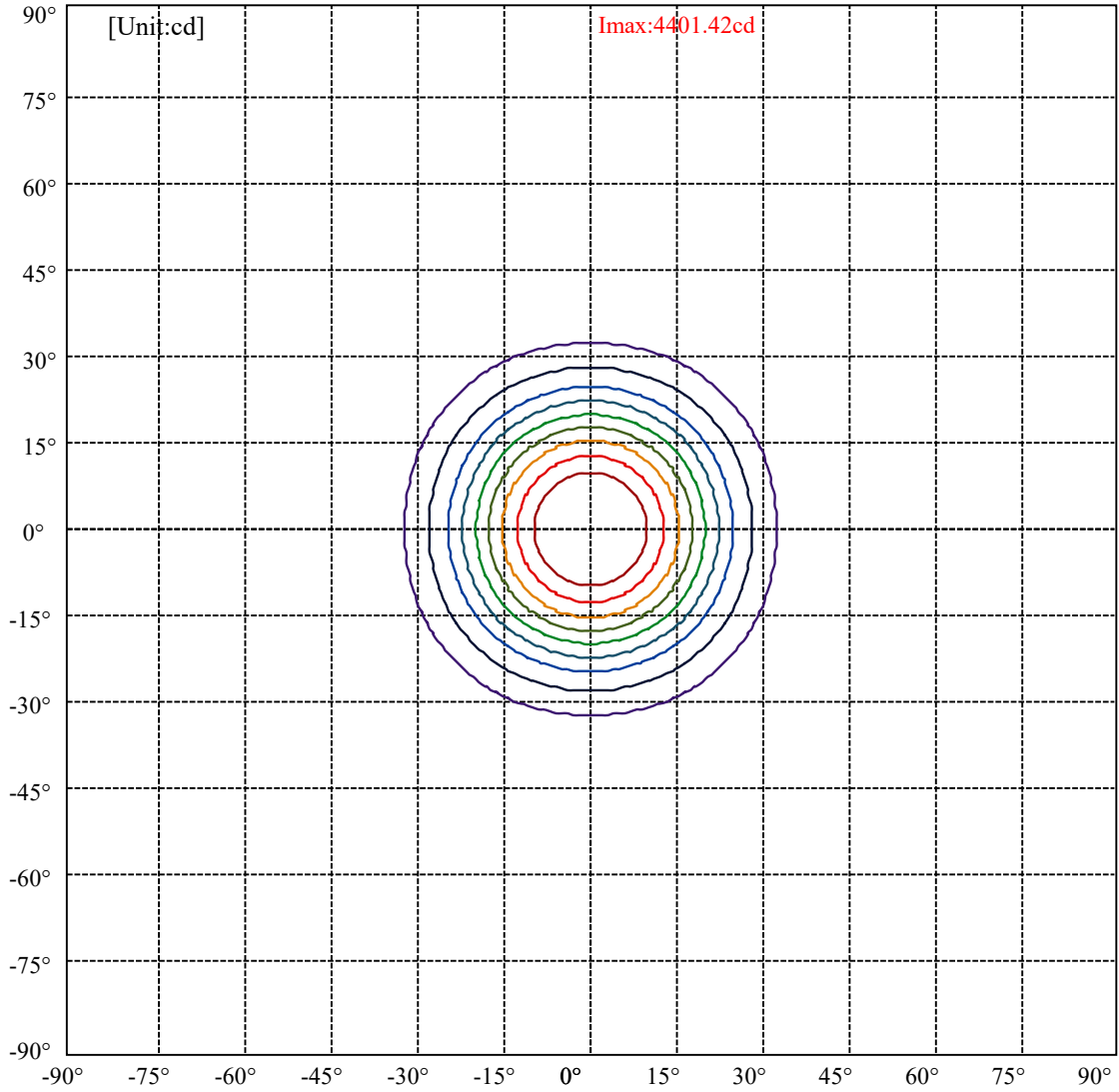


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

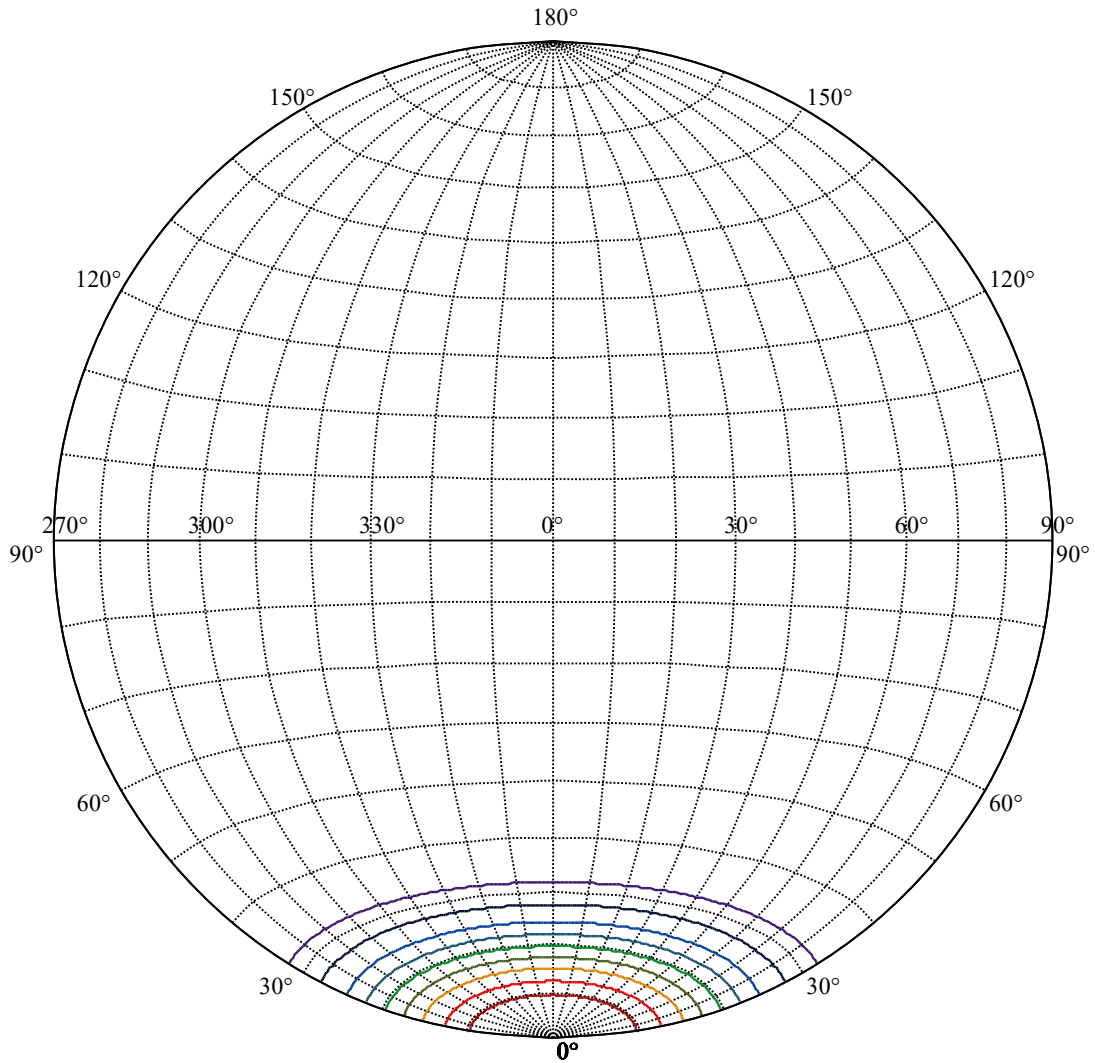
Field angle(10%Imax):C0/180Left:32.0 Right:32.0  
:C90/270Left:32.0 Right:32.0

Beam Angle(50%Imax):C0/180Left:19.6 Right:19.6  
:C90/270Left:19.6 Right:19.6





(10%Imax) 440.142	—
(20%Imax) 880.284	—
(30%Imax) 1320.43	—
(40%Imax) 1760.57	—
(50%Imax) 2200.71	—
(60%Imax) 2640.85	—
(70%Imax) 3081	—
(80%Imax) 3521.14	—
(90%Imax) 3961.28	—



House

[Unit:cd]

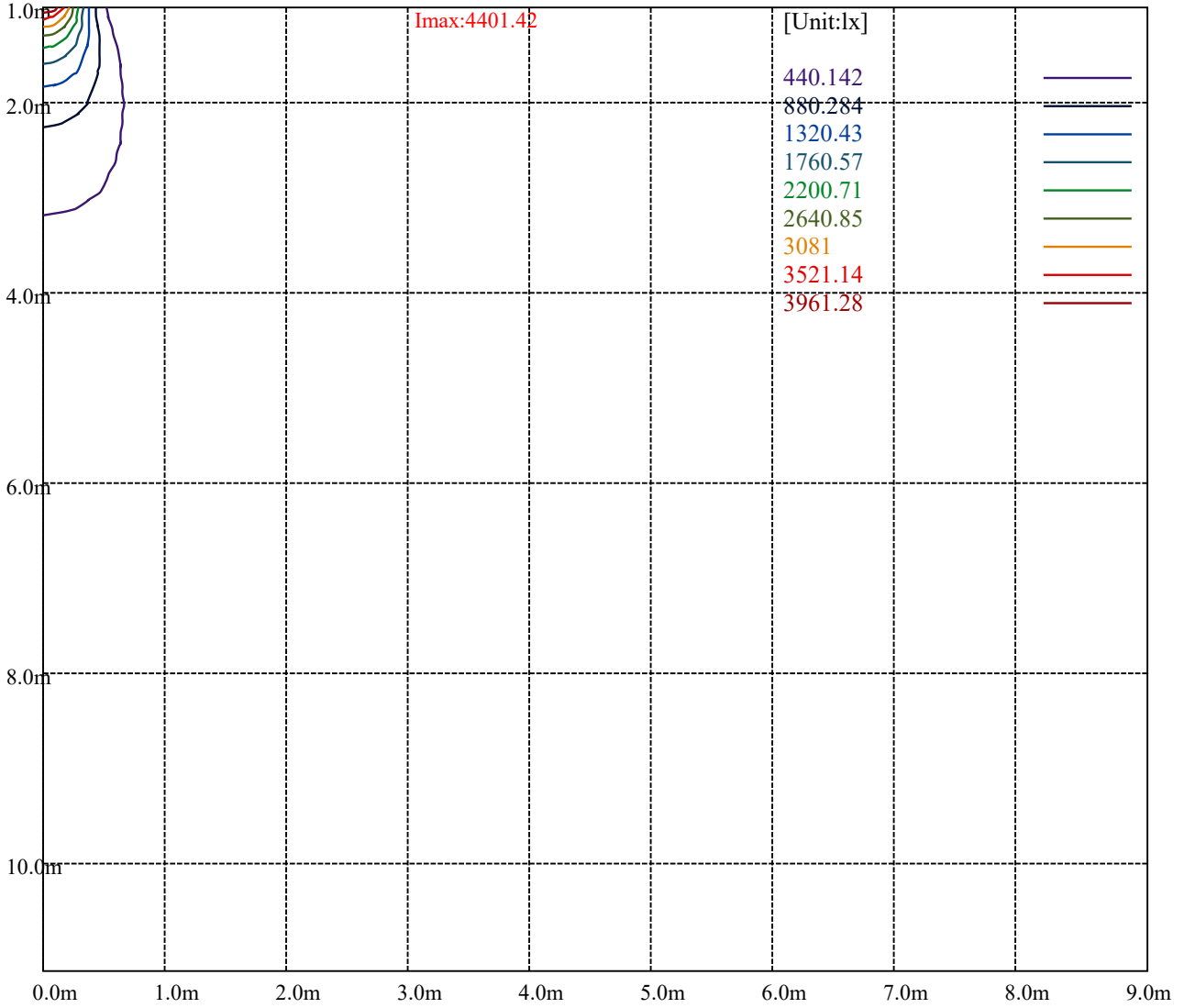
Road

Imax:4401.42

(10%Imax)	440.142	—
(20%Imax)	880.284	—
(30%Imax)	1320.43	—
(40%Imax)	1760.57	—
(50%Imax)	2200.71	—
(60%Imax)	2640.85	—
(70%Imax)	3081	—
(80%Imax)	3521.14	—
(90%Imax)	3961.28	—







Luminance Table

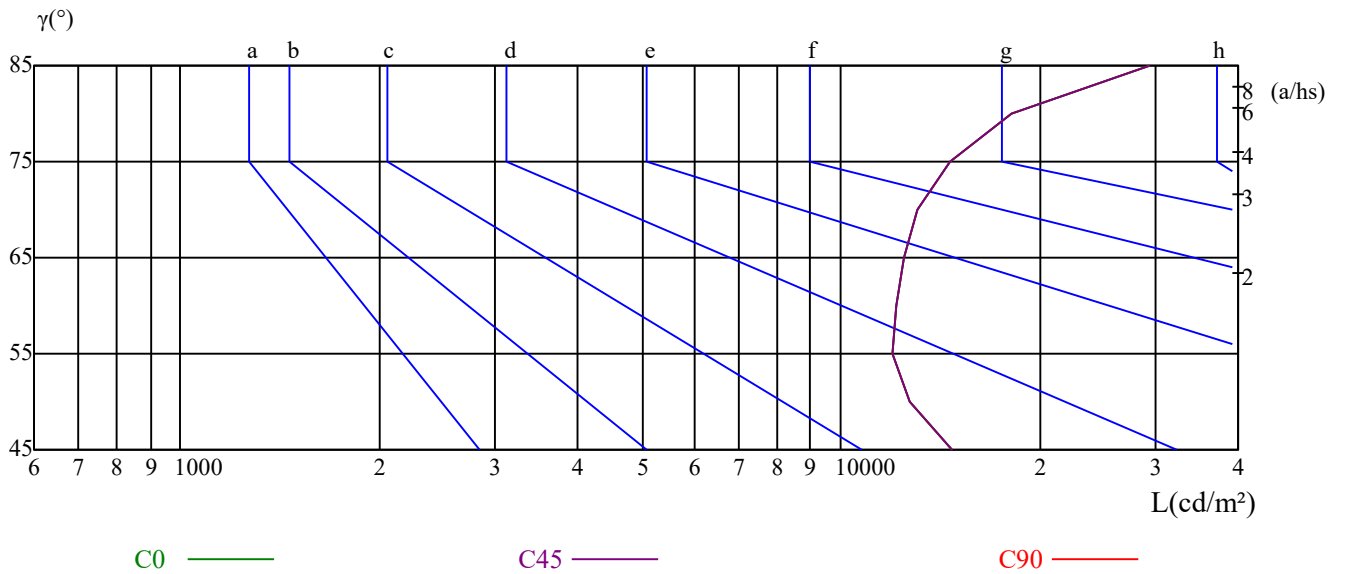
$\gamma$	45	50	55	60	65	70	75	80	85
C0	14701	12722	11983	12178	12479	13097	14670	18175	29484
C45	14701	12722	11983	12178	12479	13097	14670	18175	29484
C90	14701	12722	11983	12178	12479	13097	14670	18175	29484

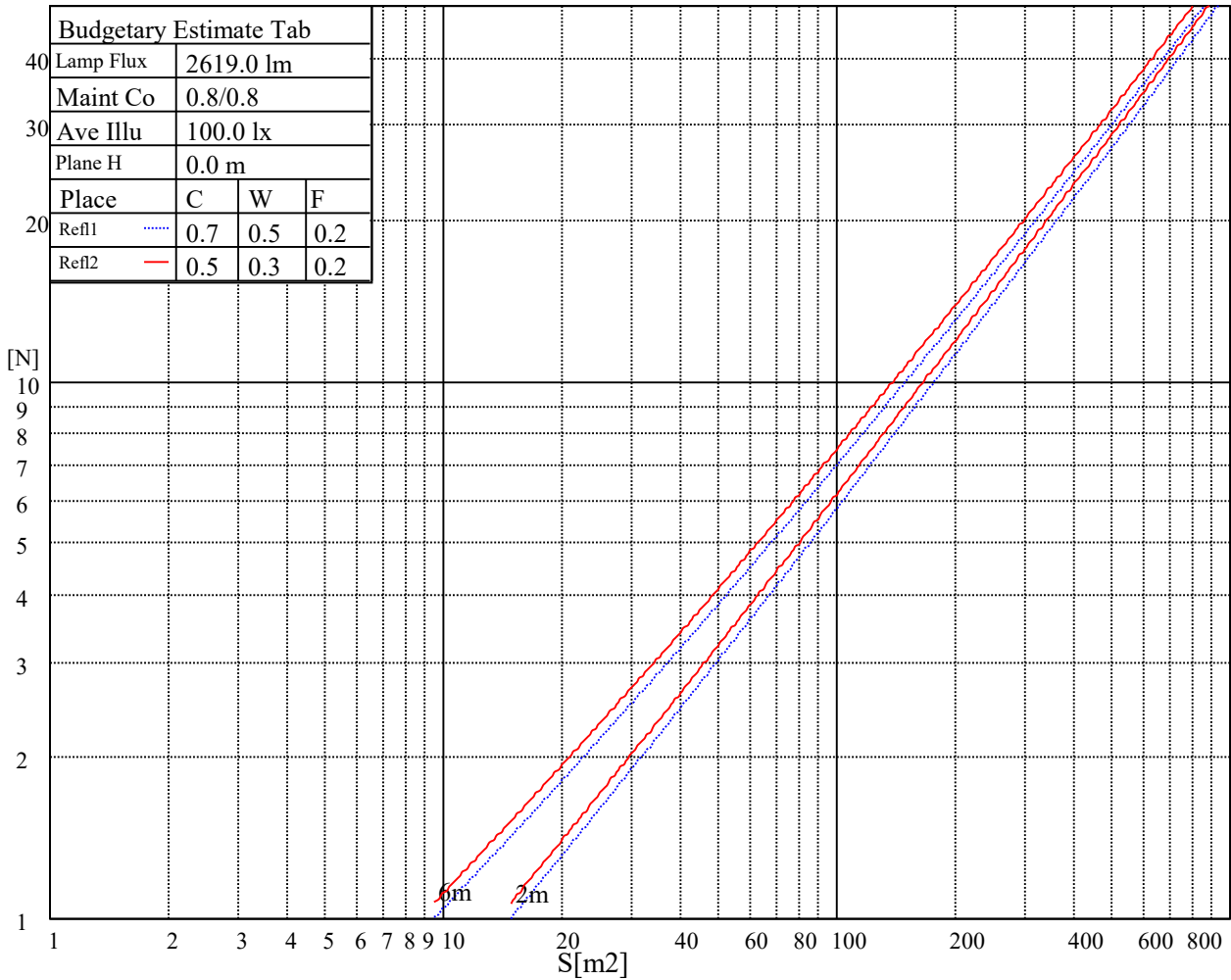
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
12479	12479	12479	14670	14670	14670	29484	29484	29484

Glare Table

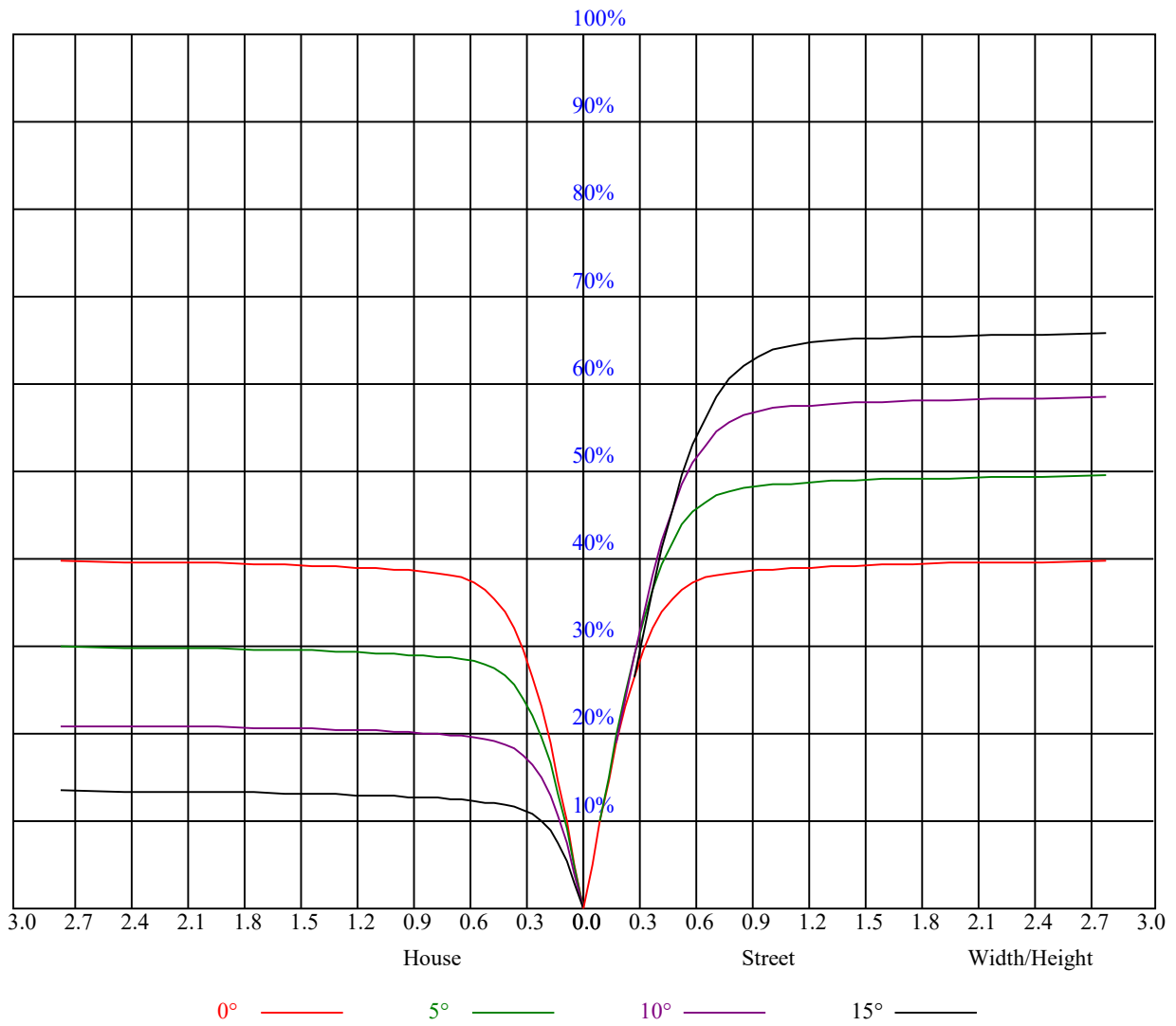
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

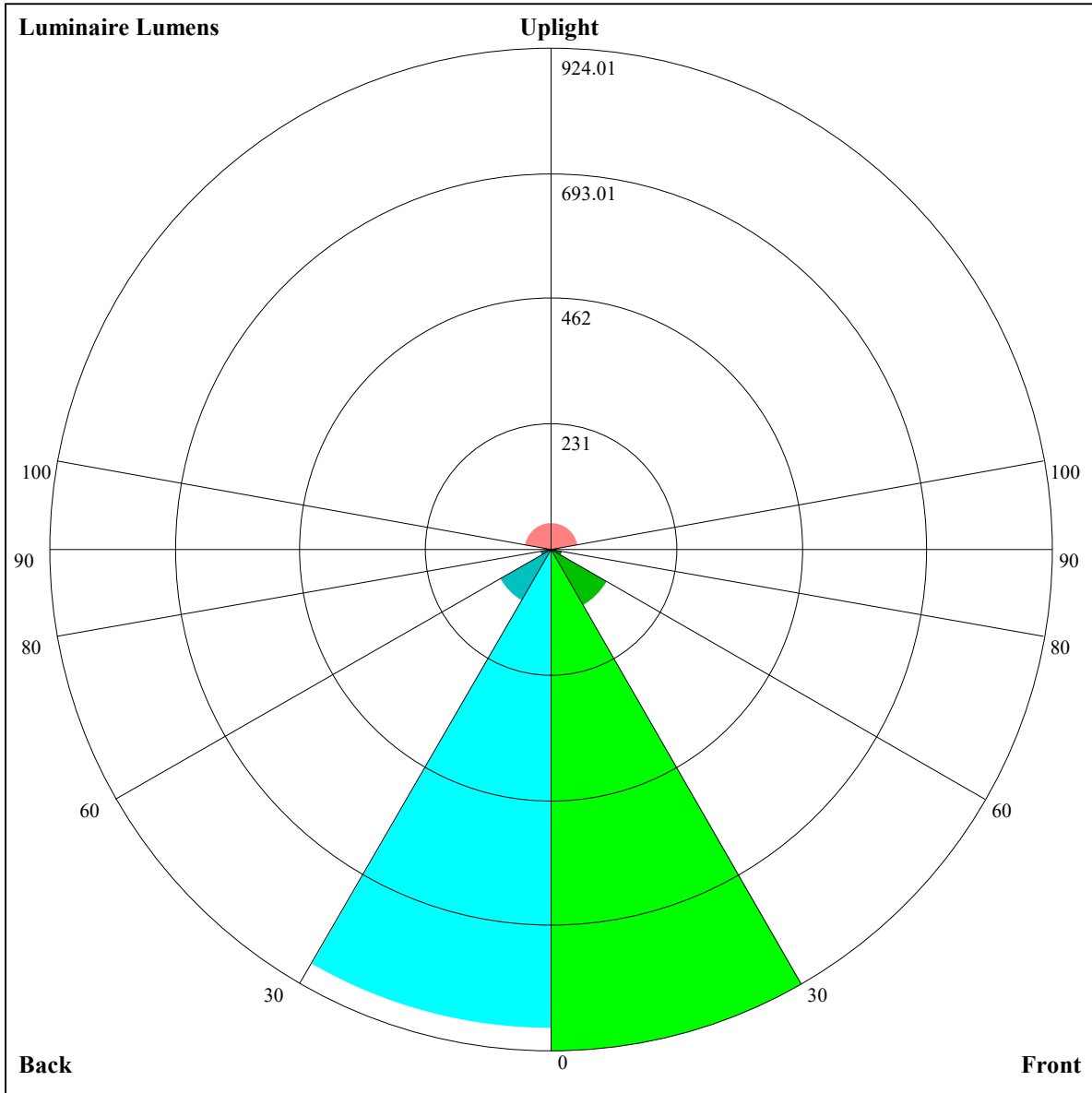
Luminance Limiting Curve





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	0.96	0.96	0.96	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.82	0.82	0.82	0.81
1	0.89	0.87	0.85	0.87	0.85	0.84	0.84	0.82	0.81	0.81	0.80	0.79	0.78	0.77	0.76	0.75
2	0.84	0.81	0.78	0.83	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.74	0.75	0.74	0.73	0.71
3	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.75	0.72	0.70	0.73	0.71	0.69	0.68
4	0.76	0.72	0.69	0.75	0.72	0.69	0.73	0.70	0.68	0.72	0.69	0.67	0.70	0.68	0.66	0.65
5	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.67	0.65	0.69	0.67	0.64	0.68	0.66	0.64	0.63
6	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
7	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.61	0.59	0.58
8	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.63	0.60	0.57	0.62	0.59	0.57	0.56
9	0.62	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.55	0.60	0.57	0.55	0.54
10	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.58	0.56	0.54	0.53





Luminaire Lumens:

FL=924.01,FM=120.44,FH=22.54,FVH=6.75

BL=884.59,BM=107.99,BH=21.93,BVH=6.51

UL=10.62,UH=50.53

BUG Rating:B2-U2-G0

Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	4377.38	4398.75	4154.63	3430.13	2414.25	1570.50	803.81	298.13	92.25
45.0	4421.81	4304.81	3897.56	2985.19	1990.13	1192.50	533.81	135.28	71.21
90.0	4397.06	4169.81	3644.44	2656.13	1743.19	950.57	384.86	118.18	63.06
135.0	4409.44	4217.06	3825.00	2989.69	2006.44	1164.94	564.19	126.28	67.22
180.0	4377.38	4212.56	3793.50	2836.13	1873.69	1079.55	431.27	116.44	65.36
225.0	4421.81	4319.44	4035.94	3314.81	2293.31	1118.14	693.11	175.61	77.29
270.0	4397.06	4353.75	4093.31	3422.81	2440.13	1511.44	770.63	297.56	88.20
315.0	4409.44	4367.25	4068.56	3290.63	2260.69	1111.16	685.63	171.45	76.84
360.0	4377.38	4398.75	4154.63	3430.13	2414.25	1570.50	803.81	298.13	92.25
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	55.07	41.85	34.48	30.83	26.49	22.50	18.96	16.99	14.06
45.0	47.98	37.63	32.29	28.41	24.19	20.42	17.38	14.51	12.09
90.0	45.23	37.58	32.57	28.63	24.69	20.98	17.27	13.05	10.13
135.0	46.86	36.96	31.44	27.56	23.79	19.80	16.99	14.23	11.87
180.0	46.86	37.13	31.56	28.01	23.96	20.14	17.21	14.18	12.54
225.0	51.24	39.38	32.40	28.52	24.75	20.93	17.94	15.19	12.60
270.0	53.66	42.69	34.65	31.22	28.18	24.64	20.81	16.82	11.87
315.0	49.05	38.25	32.40	28.74	24.81	21.21	18.06	15.24	12.71
360.0	55.07	41.85	34.48	30.83	26.49	22.50	18.96	16.99	14.06
C/ $\gamma$ (°)	90.0								
0.0	10.86								
45.0	9.45								
90.0	9.39								
135.0	9.23								
180.0	9.22								
225.0	10.07								
270.0	9.45								
315.0	10.18								
360.0	10.86								