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NATA

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Client:

LumCAT: 3-2117-N

Luminaire: 92.70.131.00

Report No: nata-0100

Test No: GC2018111309

LampCAT: OSRAM S15

Lamp flux(lm): 2619.0

Number of Lamps: 1

Length(mm): 74

Phm Type: C

Voltage(V): 36.2000

Current(A): 0.5500

Power (W): 19.9100

PF: 0.0000

Ballast type: DC

Width(mm): 74

Height(mm): 0

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Photometric Results

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Lumens(lm): 2118.81, Efficiency(%): 80.90% , Luminous Efficacy(lm/W): 106.42

Central intensity(cd): 5472.000, Maximum intensity(cd): 5472.000

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

Beam Angle(50%Imax): [C0/180]Total=35.6

[C90/270]Total=35.6

Field angle(10%Imax): [C0/180]Total=58.8

[C90/270]Total=58.8

Maximum s/h(1/2): C0\_180=0.60 C90\_270=0.60

Maximum s/h(1/4): C0\_180=0.56 C90\_270=0.56

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 82.07%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.952%

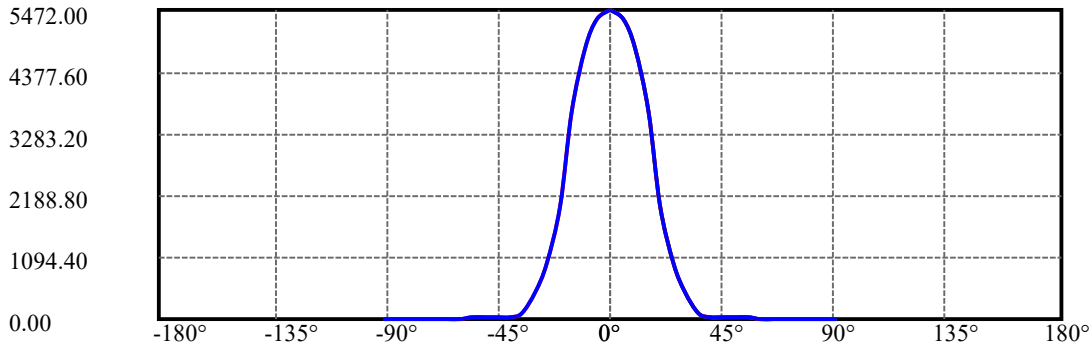
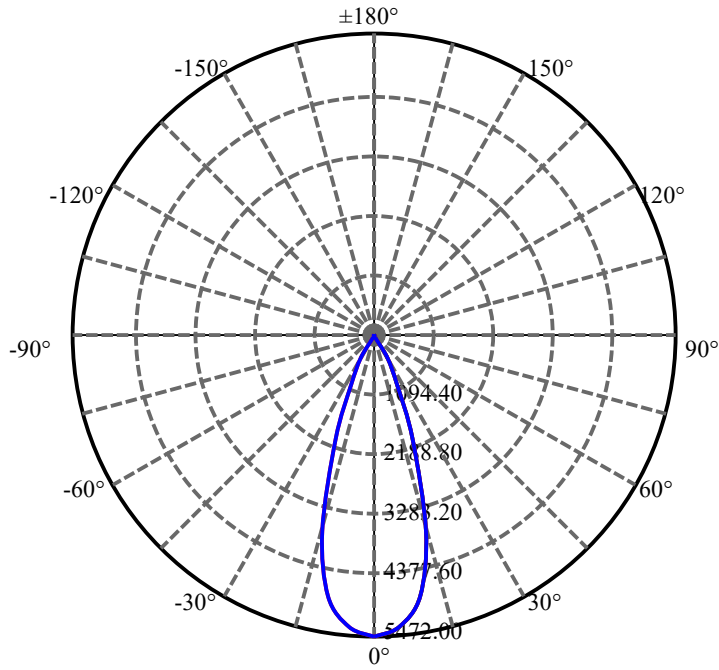
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5472.000	32.724	32.724	1.249%	1.544%
5.0	5307.117	253.539	286.262	9.681%	13.510%
10.0	4801.992	457.068	743.331	17.452%	35.082%
15.0	3665.320	519.993	1263.324	19.855%	59.624%
20.0	2019.656	378.633	1641.957	14.457%	77.494%
25.0	985.627	228.323	1870.28	8.718%	88.270%
30.0	489.248	134.088	2004.368	5.120%	94.599%
35.0	87.405	27.480	2031.848	1.049%	95.896%
40.0	43.059	15.171	2047.019	.579%	96.612%
45.0	29.159	11.302	2058.321	.432%	97.145%
50.0	22.493	9.445	2067.766	.361%	97.591%
55.0	18.724	8.407	2076.173	.321%	97.987%
60.0	16.502	7.834	2084.007	.299%	98.357%
65.0	14.759	7.332	2091.338	.280%	98.703%
70.0	13.465	6.935	2098.274	.265%	99.031%
75.0	12.277	6.500	2104.774	.248%	99.337%
80.0	11.116	6.001	2110.775	.229%	99.621%
85.0	10.076	5.502	2116.276	.210%	99.880%
90.0	9.260	2.538	2118.814	.097%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2004.37	76.53%	94.60%
0-40	2047.02	78.16%	96.61%
0-60	2084.01	79.57%	98.36%
0-90	2116.28	80.80%	99.88%
0-120	2116.28	80.80%	99.88%
0-180	2118.81	80.90%	100.00%
60-90	40.10	1.53%	1.89%
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%
0-21.16	1695.05	64.72%	80.00%

ZONAL LUMEN SUMMARY

0-10	743.33
10-20	898.63
20-30	362.41
30-40	42.65
40-50	20.75
50-60	16.24
60-70	14.27
70-80	12.50
80-90	5.50
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



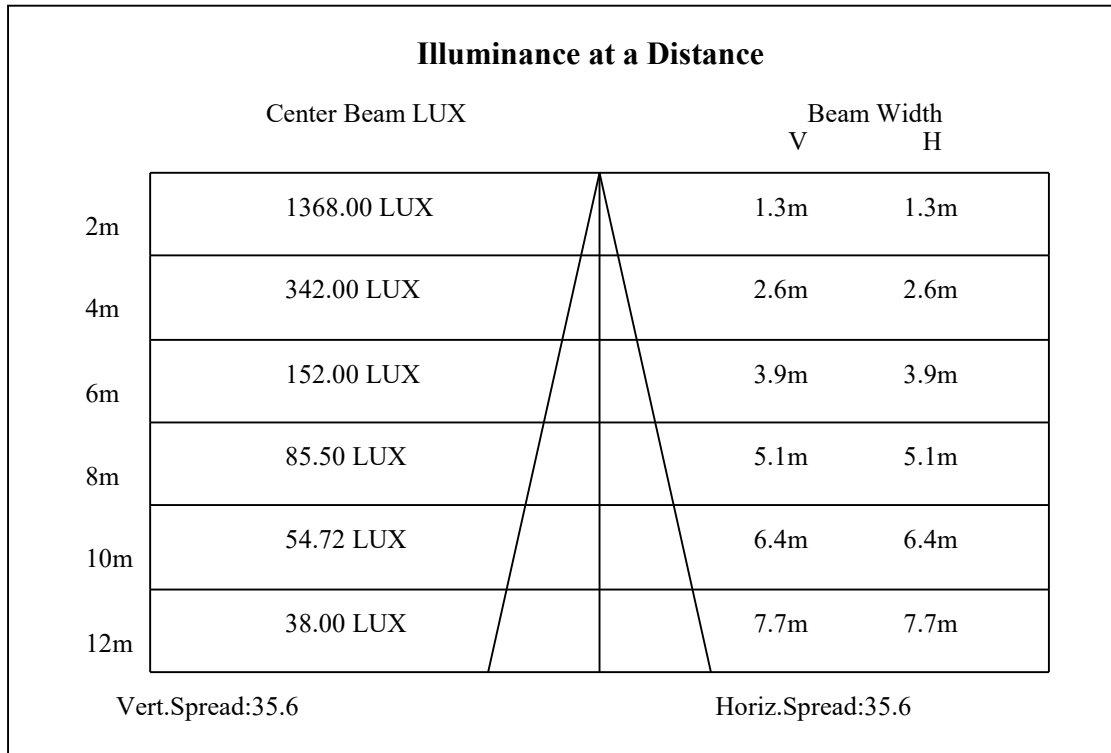
C0(Max): —————

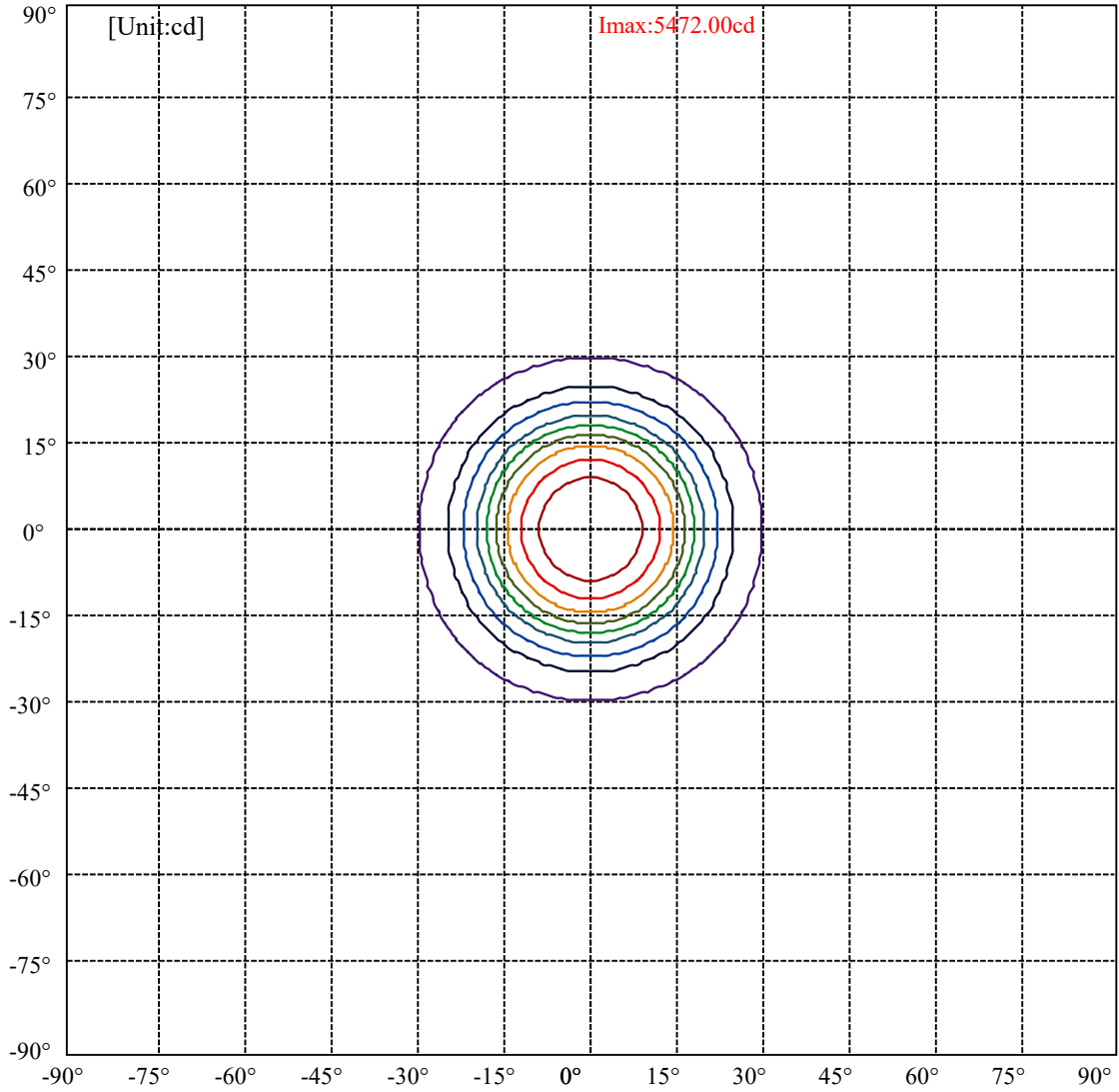
C0/C180: —————

C90/C270: —————

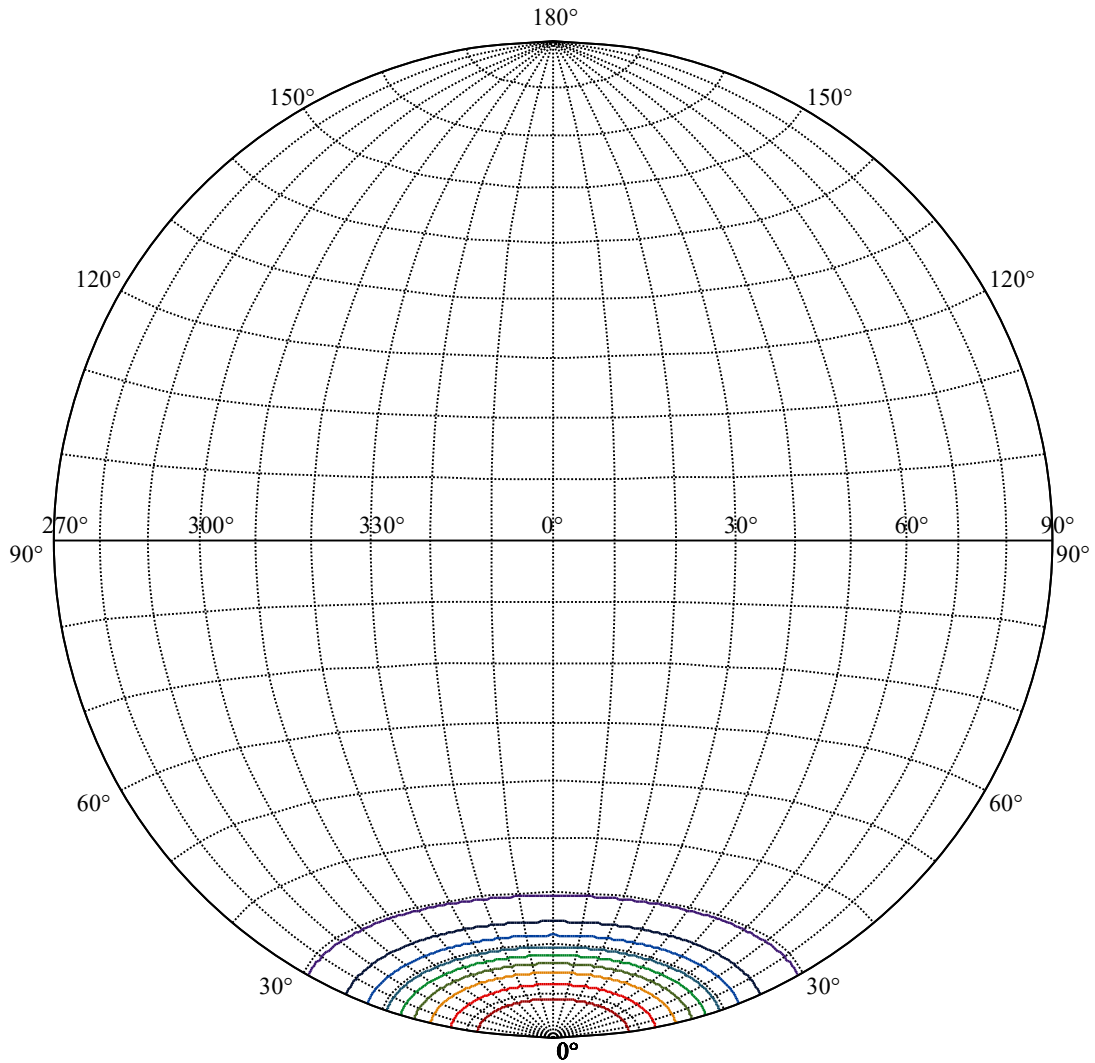
Field angle(10%Imax):C0/180Left:29.4 Right:29.4  
:C90/270Left:29.4 Right:29.4

Beam Angle(50%Imax):C0/180Left:17.8 Right:17.8  
:C90/270Left:17.8 Right:17.8





(10%Imax) 547.2	—
(20%Imax) 1094.4	—
(30%Imax) 1641.6	—
(40%Imax) 2188.8	—
(50%Imax) 2736	—
(60%Imax) 3283.2	—
(70%Imax) 3830.4	—
(80%Imax) 4377.6	—
(90%Imax) 4924.8	—



House

[Unit:cd]

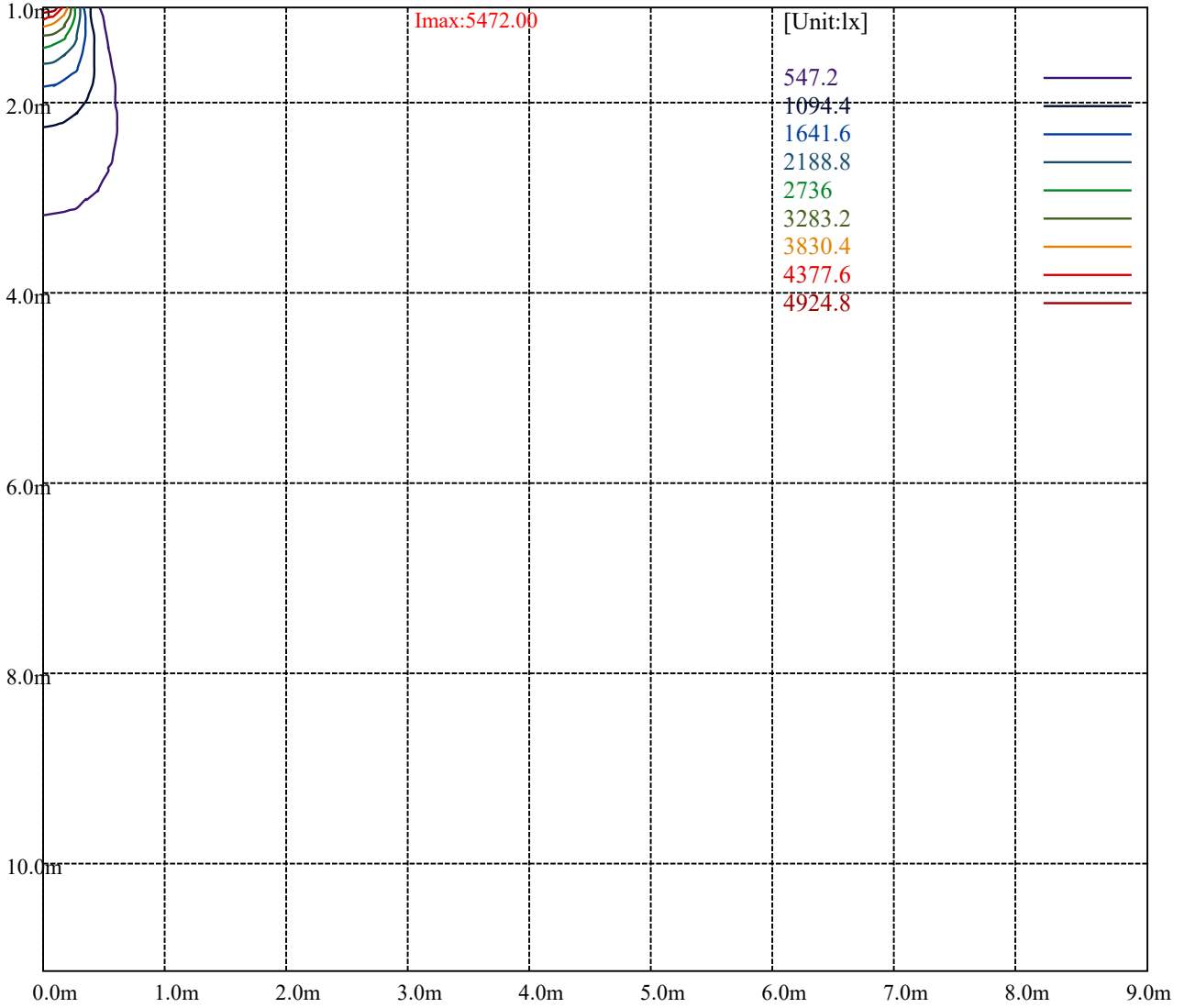
Road

**Imax:5472.00**

(10%Imax) 547.2	—
(20%Imax) 1094.4	—
(30%Imax) 1641.6	—
(40%Imax) 2188.8	—
(50%Imax) 2736	—
(60%Imax) 3283.2	—
(70%Imax) 3830.4	—
(80%Imax) 4377.6	—
(90%Imax) 4924.8	—







Luminance Table

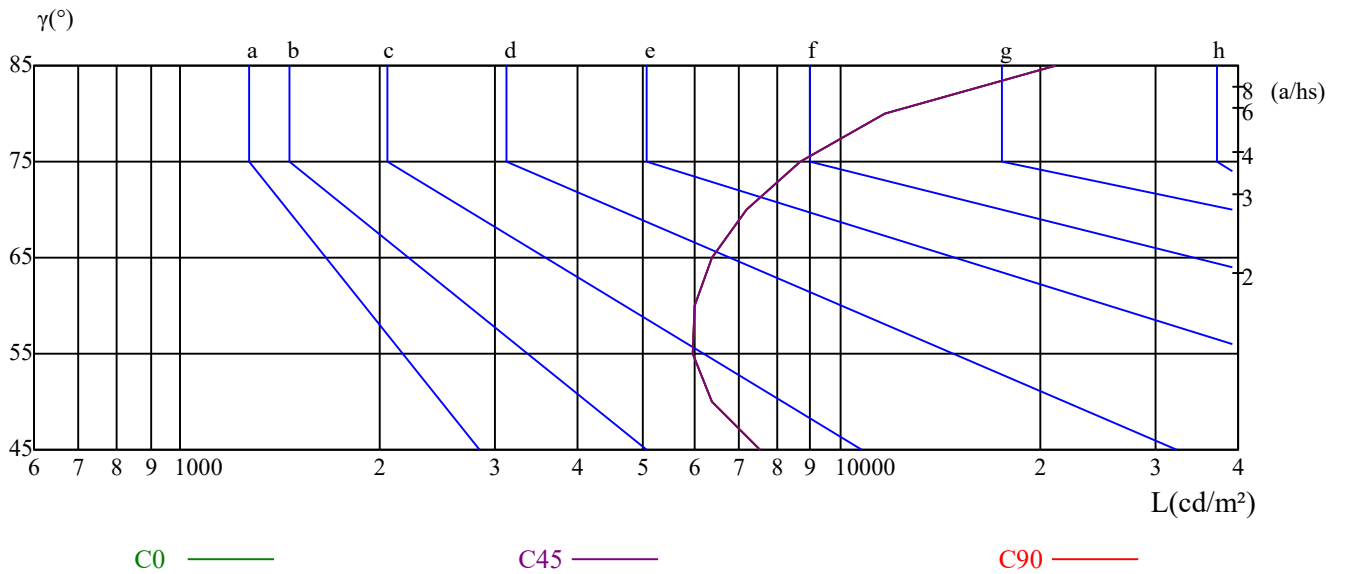
$\gamma$	45	50	55	60	65	70	75	80	85
C0	7530	6390	5961	6027	6377	7189	8662	11690	21112
C45	7530	6390	5961	6027	6377	7189	8662	11690	21112
C90	7530	6390	5961	6027	6377	7189	8662	11690	21112

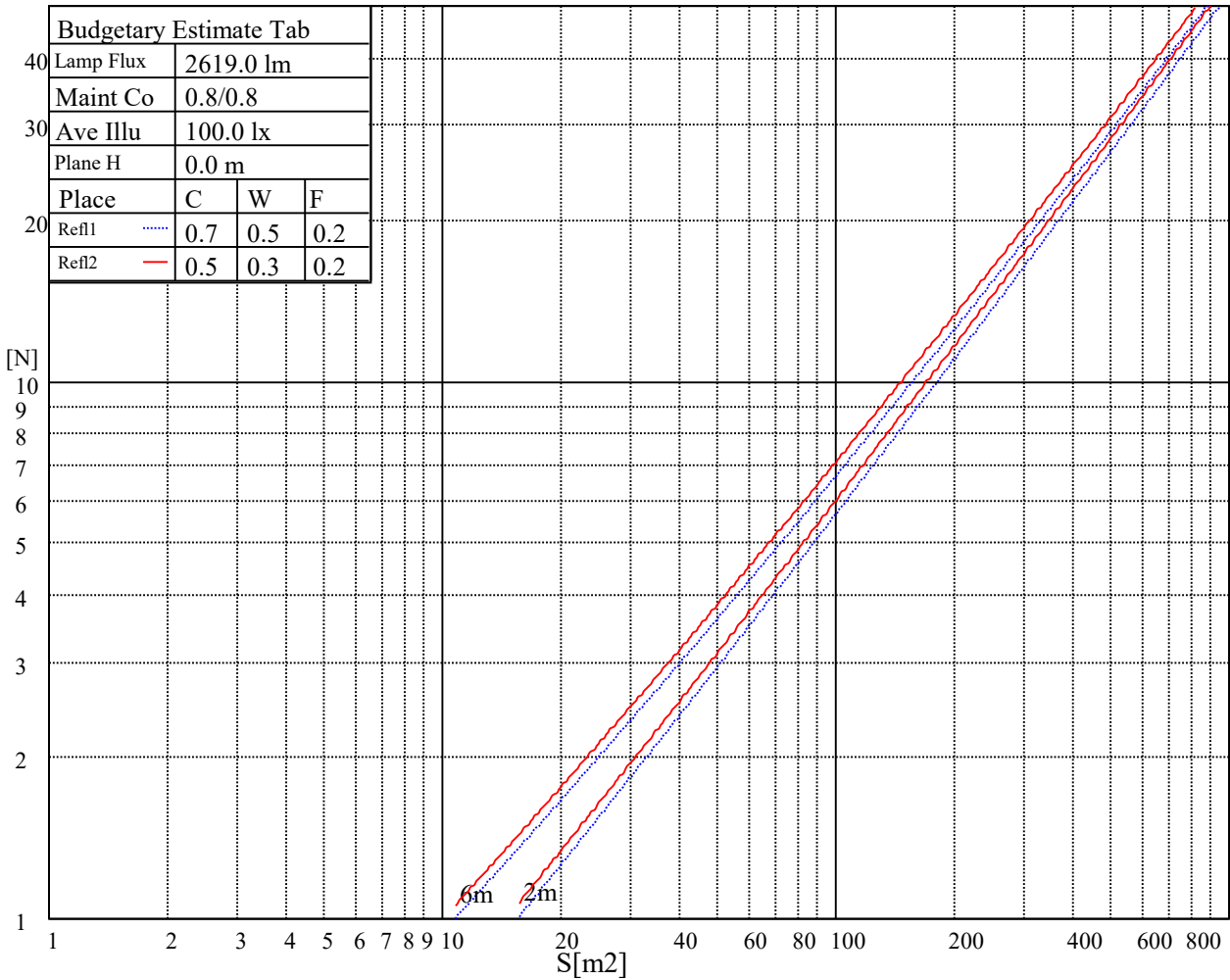
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6377	6377	6377	8662	8662	8662	21112	21112	21112

Glare Table

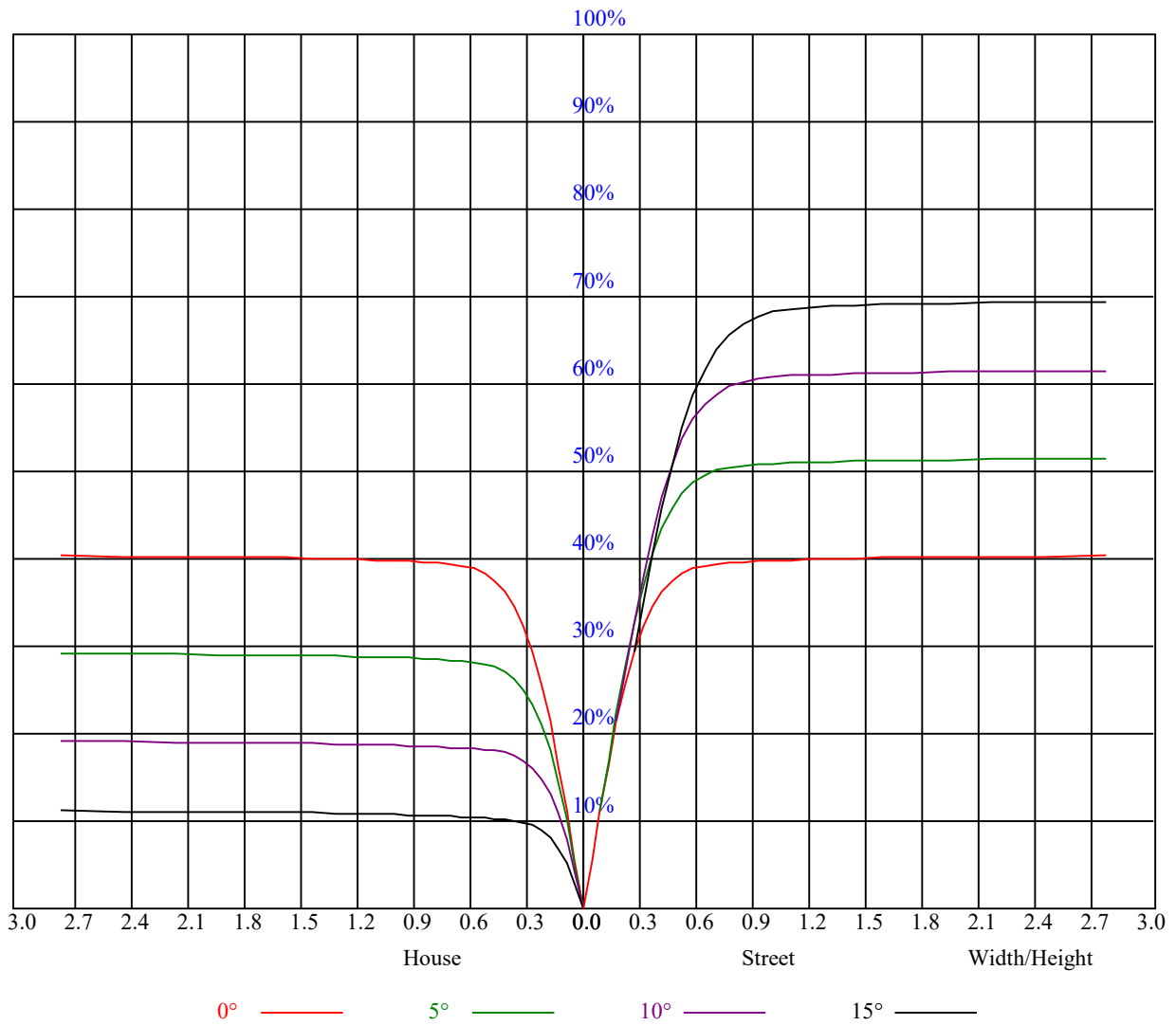
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

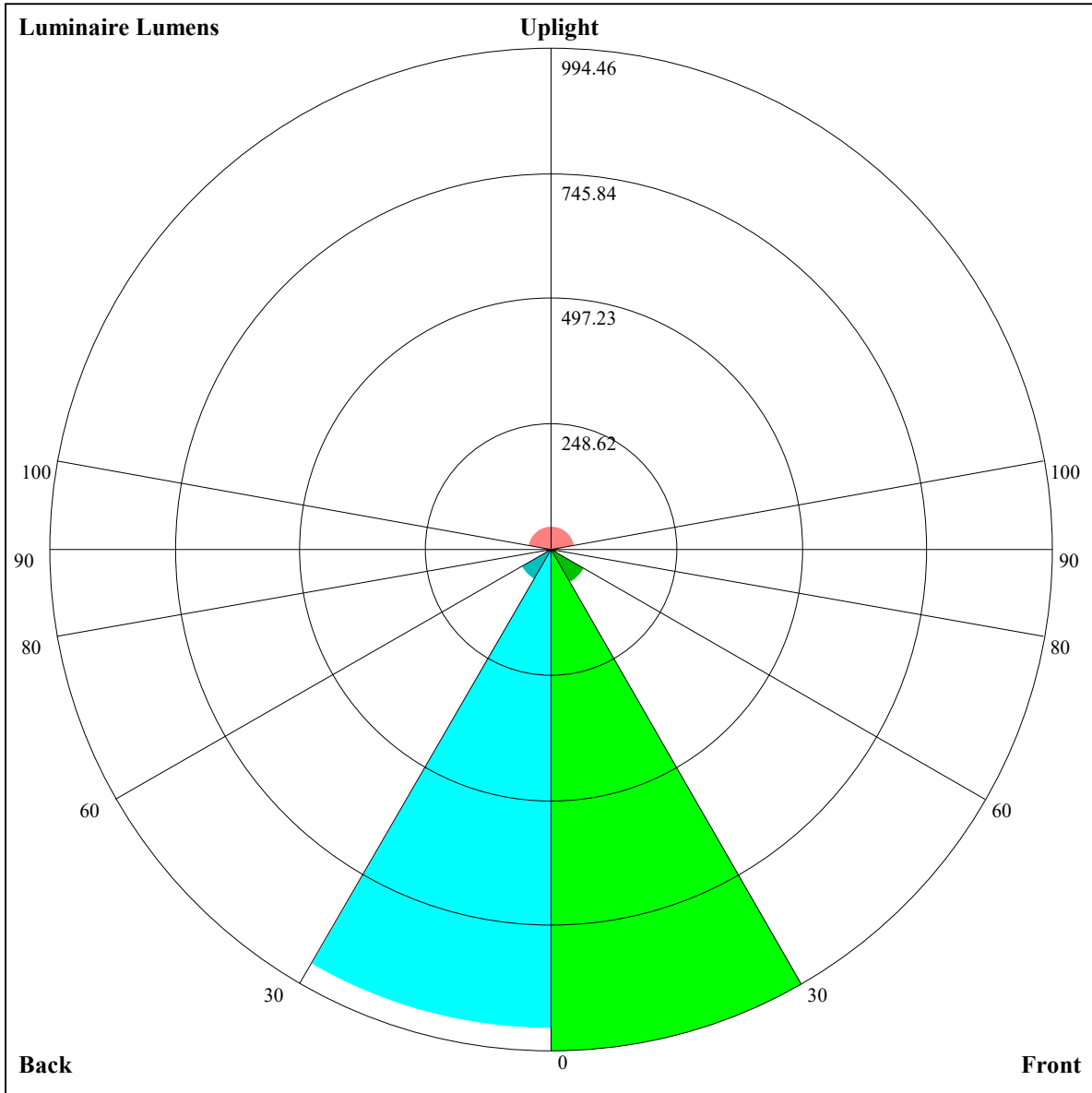
Luminance Limiting Curve





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





Luminaire Lumens:

FL=994.46,FM=76.67,FH=13.96,FVH=5.57

BL=949.89,BM=68.69,BH=13.79,BVH=5.5

UL=10.1,UH=48.08

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	5469.75	5437.13	5036.06	4071.38	2499.75	1097.44	683.44	181.58	47.36
45.0	5482.69	5246.44	4782.94	3566.81	1902.94	942.19	428.06	68.46	40.89
90.0	5448.38	5138.44	4496.63	3317.06	1669.50	902.48	362.64	63.34	38.25
135.0	5486.06	5202.56	4704.75	3586.50	2038.50	993.38	458.44	70.03	41.51
180.0	5469.75	5193.00	4538.25	3228.19	1314.00	895.56	338.85	61.99	38.98
225.0	5482.69	5353.31	4851.56	3742.88	2140.88	1020.77	529.26	83.03	46.52
270.0	5448.38	5451.75	5068.13	4069.69	2455.88	1091.81	619.88	95.91	47.19
315.0	5488.31	5434.31	4937.63	3740.06	2135.81	941.40	493.43	74.93	43.76
360.0	5469.75	5437.13	5036.06	4071.38	2499.75	1097.44	683.44	181.58	47.36
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	31.95	23.91	19.52	17.04	15.19	13.78	12.54	11.42	10.24
45.0	28.46	22.22	18.62	16.59	14.85	13.44	12.38	11.08	10.13
90.0	26.94	21.32	18.00	15.98	14.40	13.22	12.04	10.97	9.84
135.0	28.07	22.16	18.45	16.26	14.51	13.33	12.09	10.91	9.84
180.0	26.83	21.21	18.06	16.03	14.34	13.05	11.87	10.63	9.73
225.0	30.43	23.01	19.01	16.76	14.96	13.56	12.38	11.25	10.18
270.0	31.28	23.46	19.41	16.93	15.13	13.89	12.66	11.53	10.52
315.0	29.31	22.67	18.73	16.43	14.68	13.44	12.26	11.14	10.13
360.0	31.95	23.91	19.52	17.04	15.19	13.78	12.54	11.42	10.24
C/γ(°)	90.0								
0.0	9.28								
45.0	9.39								
90.0	9.23								
135.0	9.17								
180.0	9.17								
225.0	9.34								
270.0	9.28								
315.0	9.23								
360.0	9.28								