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NATA

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Client:

LumCAT: 3-1700-N

Luminaire: 92.70.065.00+92.70.089.00

Report No: nata-0100

Voltage(V): 36.2000

Test No: GC2018112006

Current(A): 0.5000

LampCAT: OSRAM SOLERIQ S13

Power (W): 18.1000

Lamp flux(lm): 1776.0

PF: 1.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 79

Width(mm): 79

Phm Type: C

Height(mm): 0

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Photometric Results

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Lumens(lm): 1389.66, Efficiency(%): 78.25% , Luminous Efficacy(lm/W): 76.78

Central intensity(cd): 2967.117, Maximum intensity(cd): 2967.117

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

Beam Angle(50%Imax): [C0/180]Total=36.8

[C90/270]Total=36.8

Field angle(10%Imax): [C0/180]Total=65.4

[C90/270]Total=65.4

Maximum s/h(1/2): C0\_180=0.62 C90\_270=0.62

Maximum s/h(1/4): C0\_180=0.59 C90\_270=0.59

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 79.17%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.883%

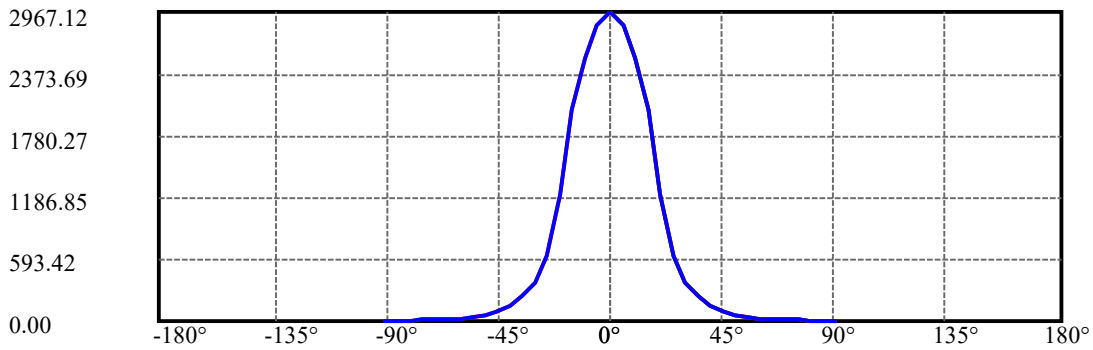
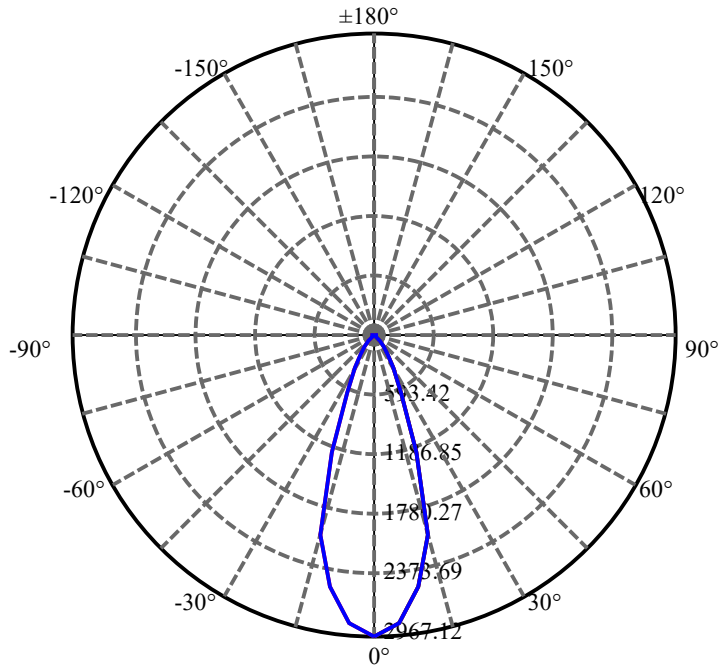
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2967.117	17.744	17.744	.999%	1.277%
5.0	2844.773	135.904	153.648	7.652%	11.057%
10.0	2515.641	239.446	393.095	13.482%	28.287%
15.0	2028.305	287.752	680.847	16.202%	48.994%
20.0	1224.823	229.622	910.469	12.929%	65.518%
25.0	626.386	145.104	1055.573	8.170%	75.959%
30.0	370.709	101.600	1157.173	5.721%	83.270%
35.0	234.696	73.788	1230.961	4.155%	88.580%
40.0	145.364	51.217	1282.178	2.884%	92.266%
45.0	89.100	34.534	1316.713	1.945%	94.751%
50.0	54.225	22.769	1339.482	1.282%	96.389%
55.0	30.952	13.897	1353.379	.783%	97.390%
60.0	18.682	8.868	1362.247	.499%	98.028%
65.0	13.838	6.874	1369.122	.387%	98.522%
70.0	11.503	5.925	1375.047	.334%	98.949%
75.0	9.598	5.082	1380.128	.286%	99.314%
80.0	8.051	4.346	1384.474	.245%	99.627%
85.0	6.616	3.613	1388.087	.203%	99.887%
90.0	5.723	1.569	1389.656	.088%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1157.17	65.16%	83.27%
0-40	1282.18	72.19%	92.27%
0-60	1362.25	76.70%	98.03%
0-90	1388.09	78.16%	99.89%
0-120	1388.09	78.16%	99.89%
0-180	1389.66	78.25%	100.00%
60-90	34.71	1.95%	2.50%
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%
0-27.76	1111.72	62.60%	80.00%

ZONAL LUMEN SUMMARY

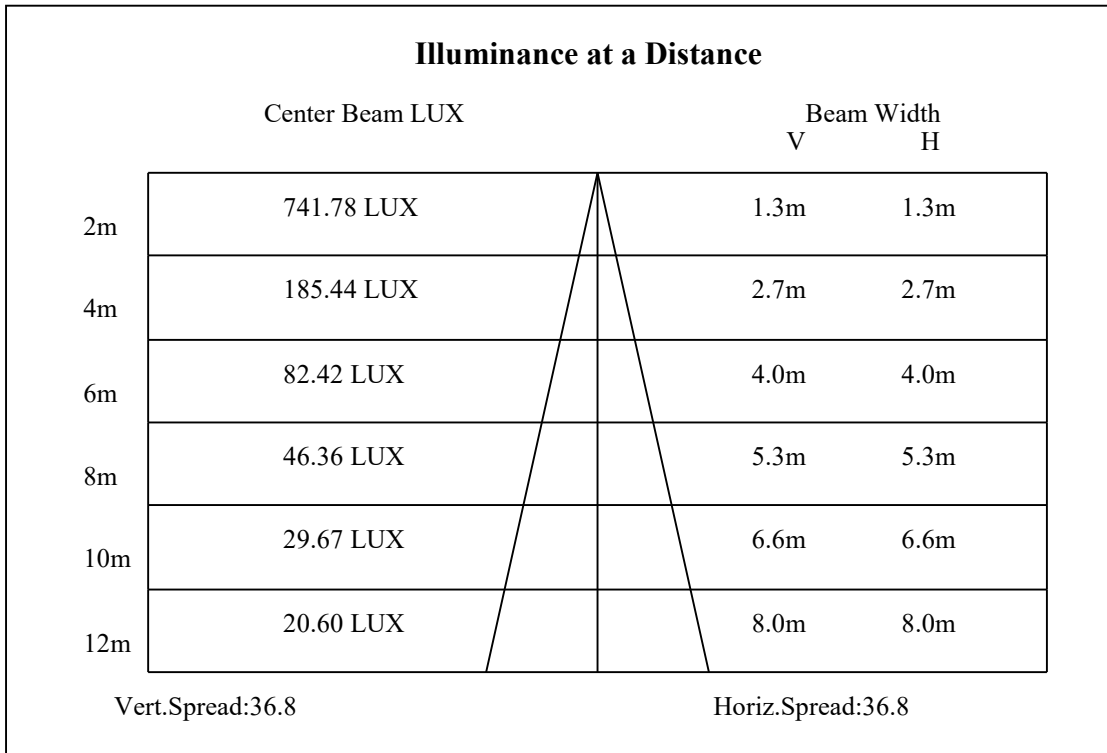
0-10	393.09
10-20	517.37
20-30	246.70
30-40	125.01
40-50	57.30
50-60	22.77
60-70	12.80
70-80	9.43
80-90	3.61
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

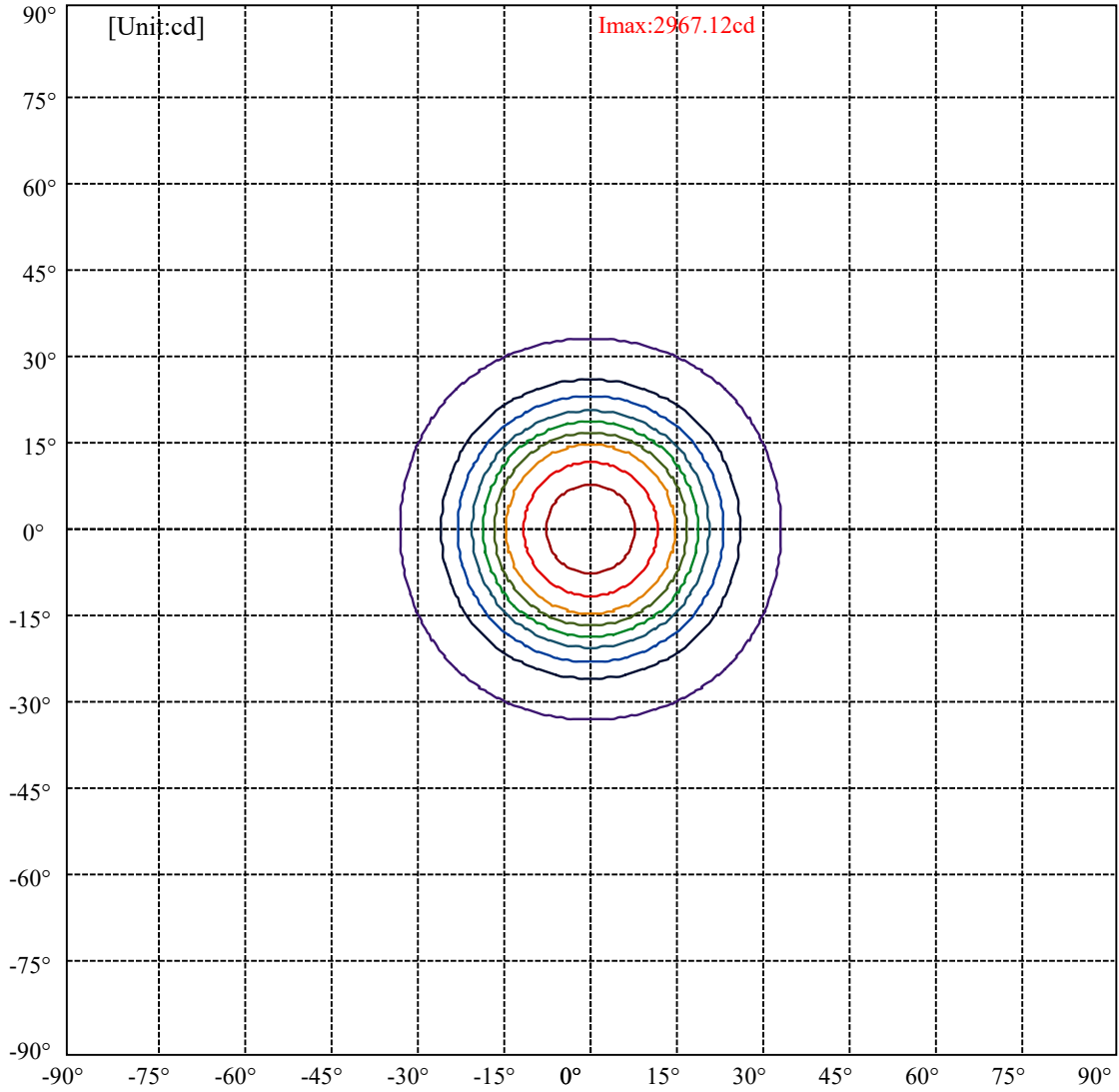


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

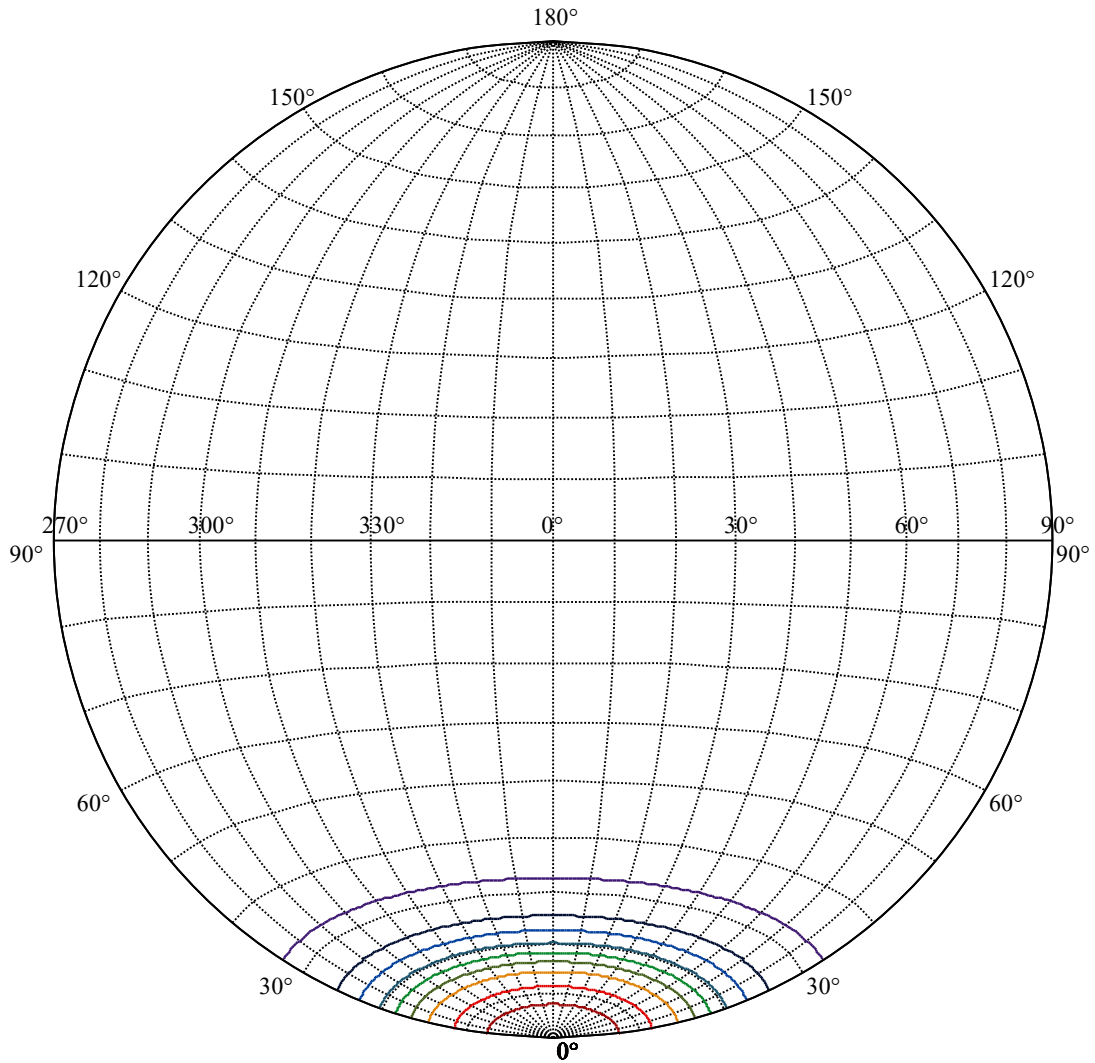
Field angle(10%Imax):C0/180Left:32.7 Right:32.7  
:C90/270Left:32.7 Right:32.7

Beam Angle(50%Imax):C0/180Left:18.4 Right:18.4  
:C90/270Left:18.4 Right:18.4





(10%Imax) 296.712	—
(20%Imax) 593.423	—
(30%Imax) 890.135	—
(40%Imax) 1186.85	—
(50%Imax) 1483.56	—
(60%Imax) 1780.27	—
(70%Imax) 2076.98	—
(80%Imax) 2373.69	—
(90%Imax) 2670.41	—



House

[Unit:cd]

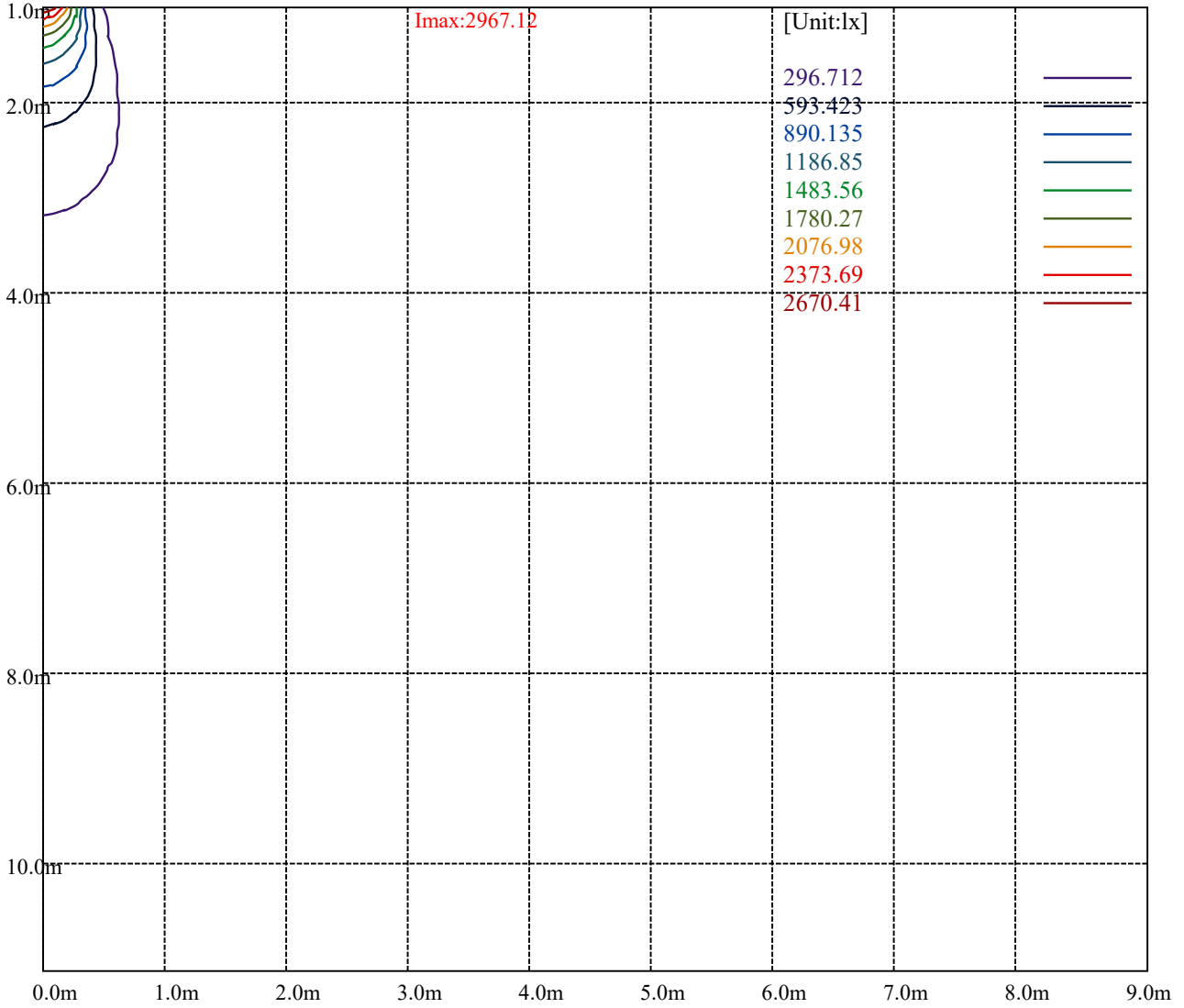
Road

**Imax:2967.12**

(10%Imax) 296.712	—
(20%Imax) 593.423	—
(30%Imax) 890.135	—
(40%Imax) 1186.85	—
(50%Imax) 1483.56	—
(60%Imax) 1780.27	—
(70%Imax) 2076.98	—
(80%Imax) 2373.69	—
(90%Imax) 2670.41	—







Luminance Table

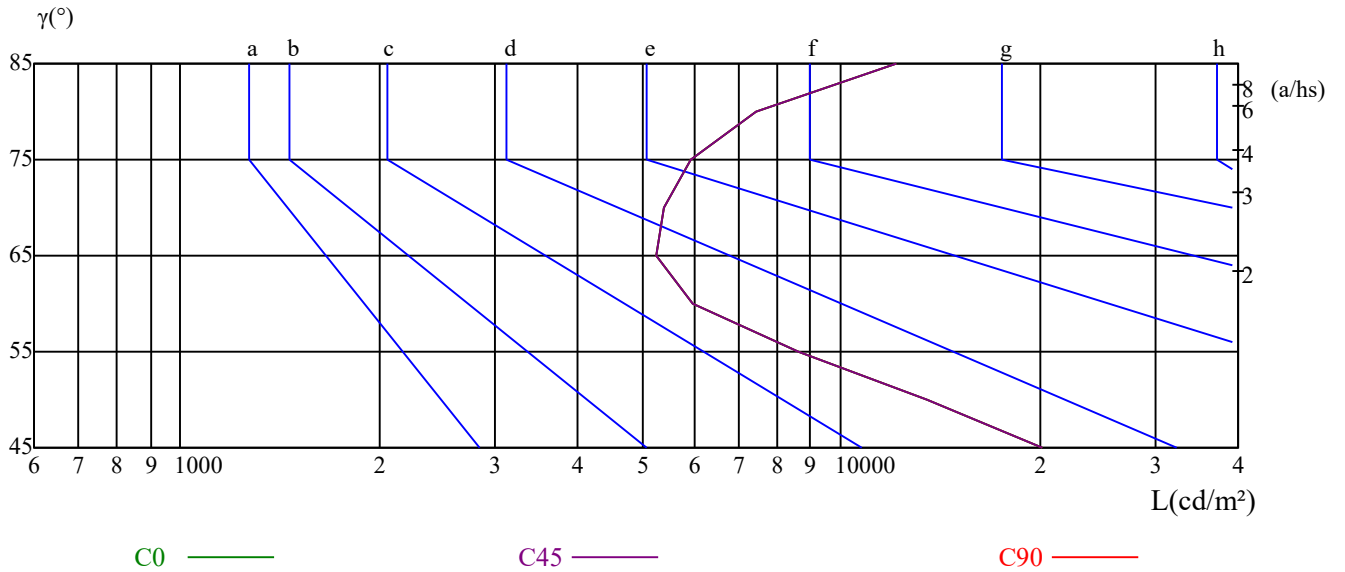
$\gamma$	45	50	55	60	65	70	75	80	85
C0	20190	13517	8646	5987	5246	5389	5942	7429	12164
C45	20190	13517	8646	5987	5246	5389	5942	7429	12164
C90	20190	13517	8646	5987	5246	5389	5942	7429	12164

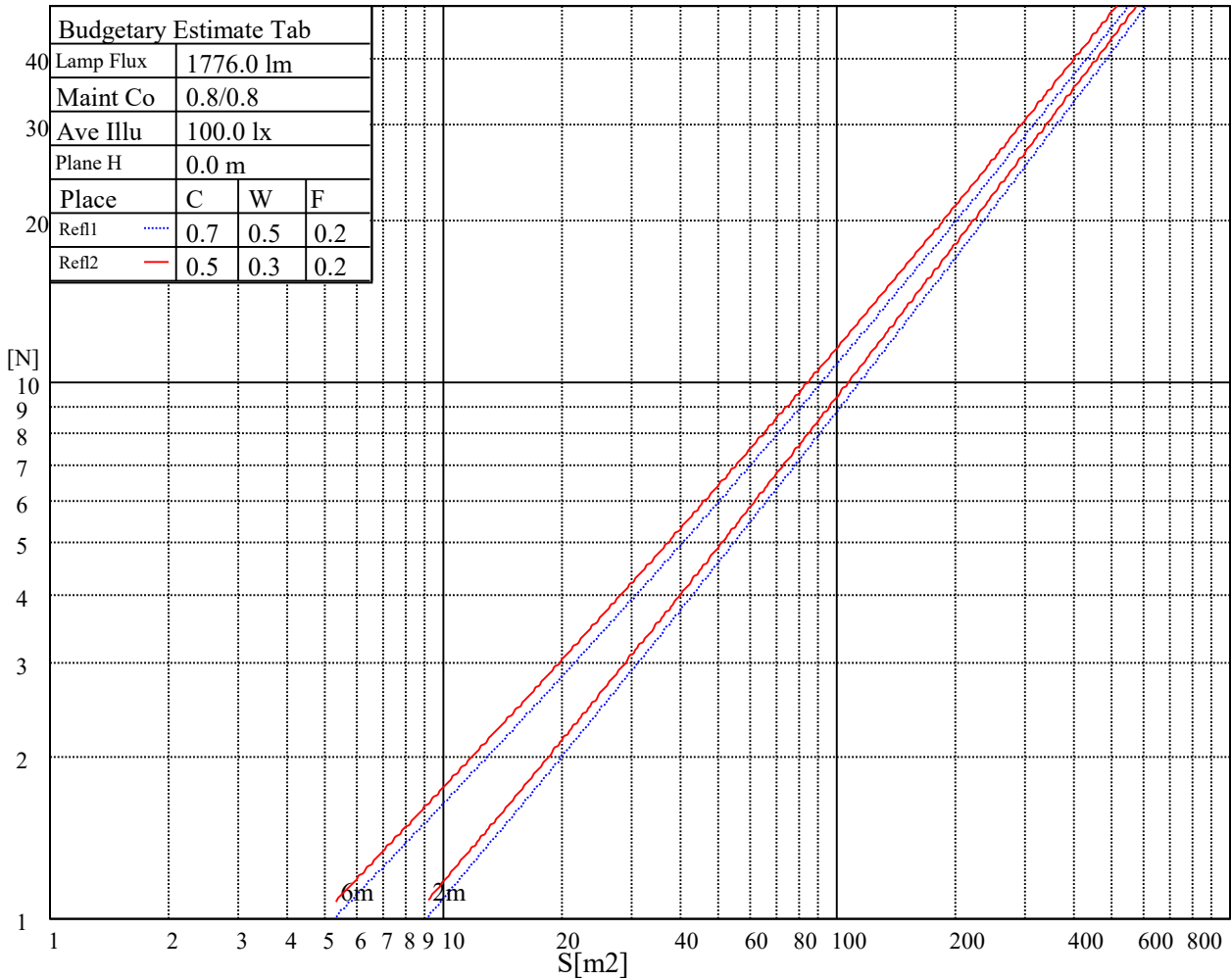
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5246	5246	5246	5942	5942	5942	12164	12164	12164

Glare Table

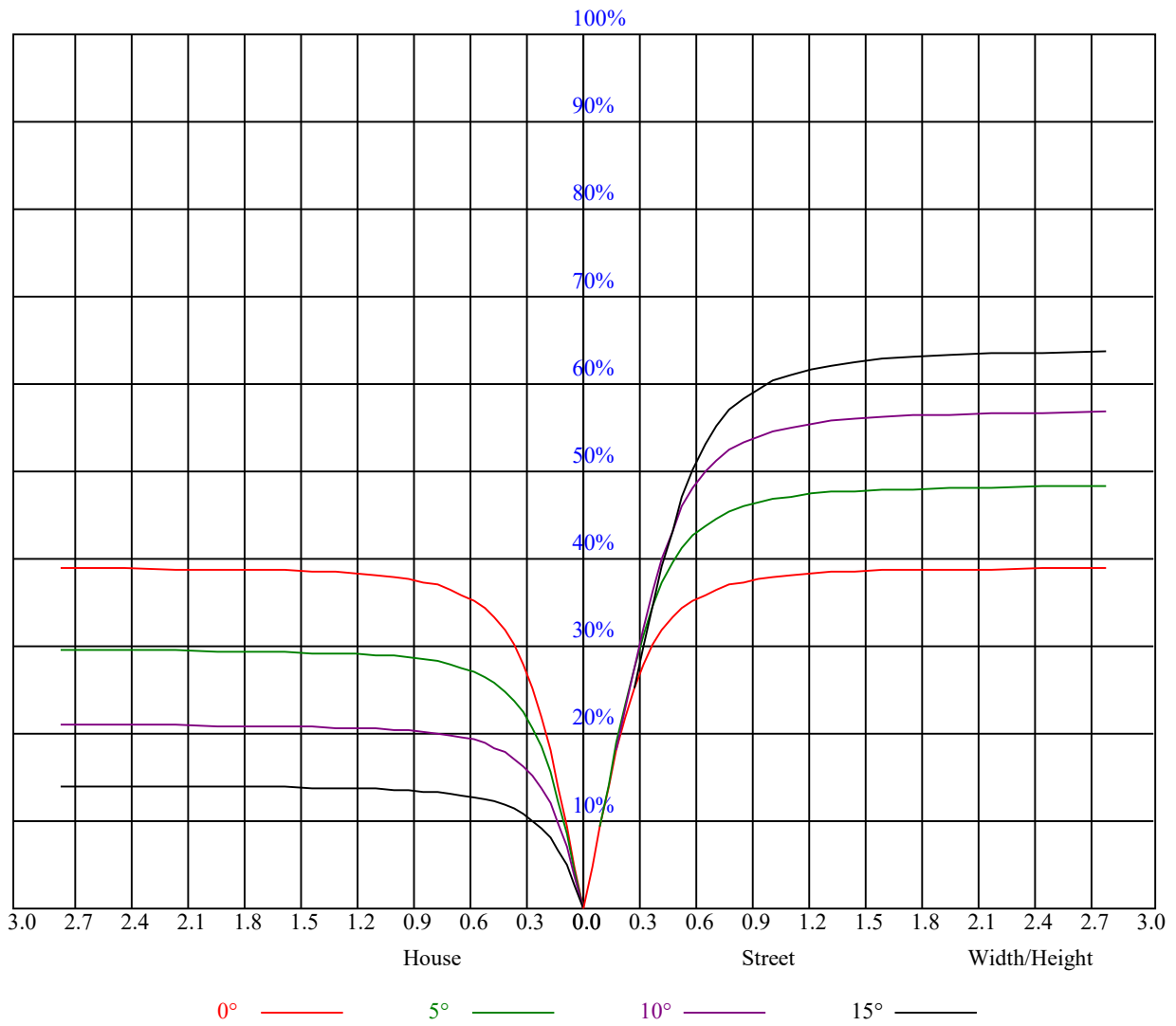
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

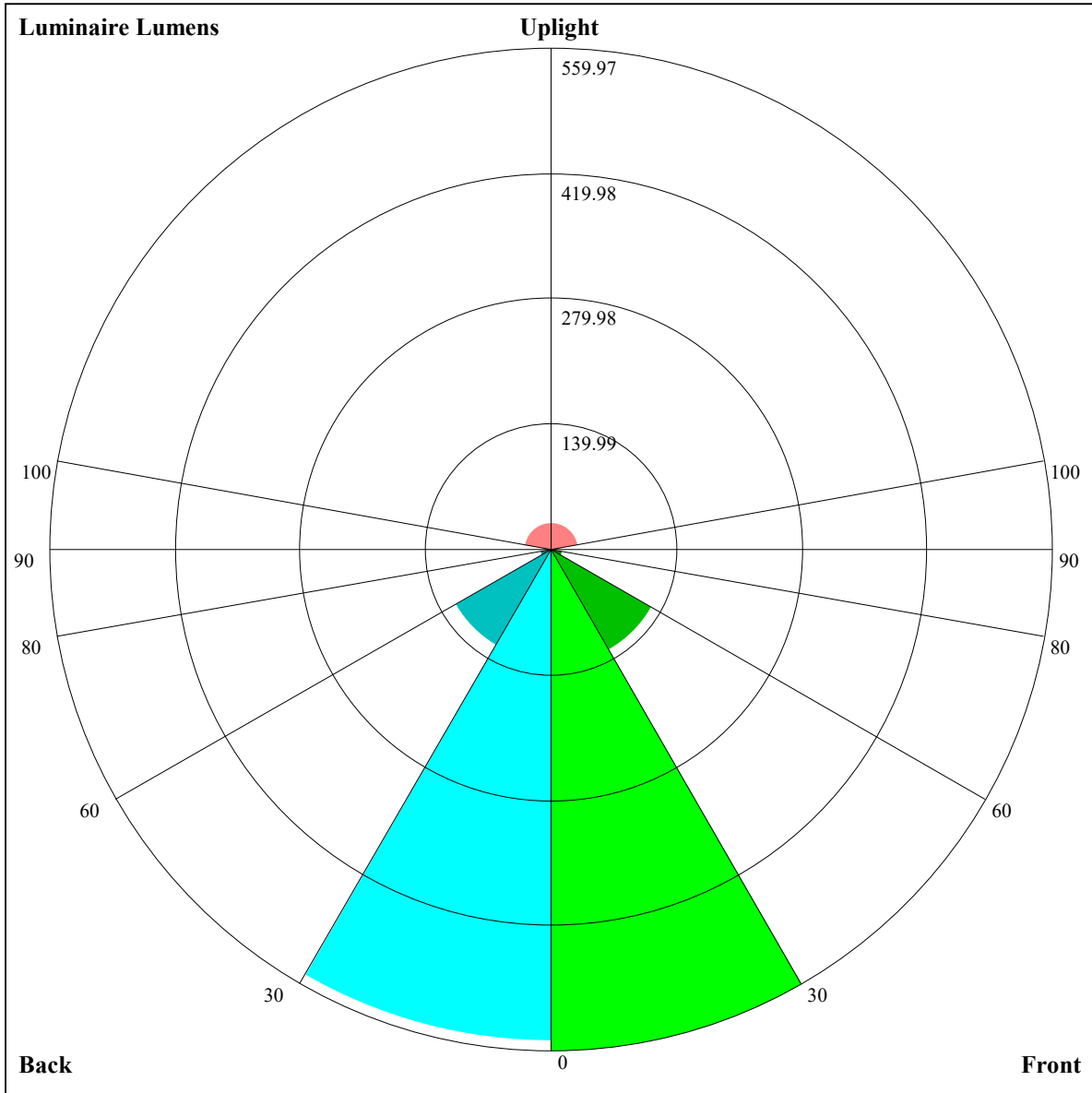
Luminance Limiting Curve





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	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.81	0.81	0.81	0.79
1	0.87	0.85	0.83	0.85	0.83	0.82	0.82	0.81	0.79	0.79	0.78	0.77	0.76	0.75	0.75	0.73
2	0.82	0.79	0.76	0.81	0.78	0.75	0.78	0.76	0.74	0.76	0.74	0.72	0.74	0.72	0.71	0.69
3	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.72	0.69	0.72	0.70	0.68	0.71	0.69	0.67	0.66
4	0.74	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.65	0.69	0.67	0.65	0.68	0.66	0.64	0.63
5	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
6	0.67	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.58
7	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.61	0.58	0.56	0.55
8	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.60	0.57	0.54	0.59	0.56	0.54	0.53
9	0.59	0.55	0.53	0.59	0.55	0.53	0.58	0.55	0.53	0.58	0.55	0.52	0.57	0.54	0.52	0.51
10	0.57	0.53	0.51	0.57	0.53	0.51	0.56	0.53	0.51	0.56	0.53	0.51	0.55	0.52	0.50	0.50





Luminaire Lumens:

FL=559.97,FM=130.21,FH=12.39,FVH=3.7

BL=549.81,BM=124.22,BH=12.23,BVH=3.68

UL=6.24,UH=29.72

BUG Rating:B2-U2-G0

Intensity data(cd)

C/ $\gamma$ ( $^{\circ}$ )	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	2972.25	2868.19	2578.50	2160.00	1484.44	720.00	426.94	285.75	161.66
45.0	2970.56	2793.38	2435.06	1933.88	1177.88	558.00	350.44	213.08	136.35
90.0	2952.56	2733.75	2347.88	1823.06	1047.54	508.28	322.65	201.32	128.42
135.0	2973.38	2844.00	2494.13	2017.13	1269.00	594.00	356.06	221.01	140.91
180.0	2972.25	2836.13	2451.94	1888.31	1085.40	530.33	322.09	193.84	130.05
225.0	2970.56	2904.75	2624.63	2145.38	1108.86	694.86	392.40	240.75	151.26
270.0	2952.56	2933.44	2650.50	2192.63	1523.81	761.63	416.81	284.06	163.80
315.0	2972.81	2844.56	2542.50	2066.06	1101.66	644.01	378.28	237.77	150.47
360.0	2972.25	2868.19	2578.50	2160.00	1484.44	720.00	426.94	285.75	161.66
C/ $\gamma$ ( $^{\circ}$ )	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	101.19	61.43	34.93	20.36	14.51	11.98	9.96	8.44	6.81
45.0	82.58	48.77	27.51	17.33	13.33	11.03	9.28	7.71	6.24
90.0	79.31	47.14	26.66	16.37	13.11	10.97	9.11	7.59	6.19
135.0	84.60	53.27	29.42	17.89	13.44	11.19	9.34	7.88	6.36
180.0	79.09	47.14	27.68	16.99	13.11	11.08	9.17	7.65	6.36
225.0	94.05	57.26	32.68	19.91	14.29	11.76	9.96	8.27	6.98
270.0	100.69	62.27	36.79	21.83	14.96	12.38	10.29	8.66	7.14
315.0	91.29	56.53	31.95	18.79	13.95	11.64	9.67	8.21	6.86
360.0	101.19	61.43	34.93	20.36	14.51	11.98	9.96	8.44	6.81
C/ $\gamma$ ( $^{\circ}$ )	90.0								
0.0	5.68								
45.0	5.68								
90.0	5.74								
135.0	5.68								
180.0	5.68								
225.0	5.85								
270.0	5.79								
315.0	5.68								
360.0	5.68								