
NATA

Client:

LumCAT: 3-1699-N

Luminaire: 92.70.065.00+92.70.089.00

Report No: nata-0100

Voltage(V): 36.2000

Test No: GC2018111318

Current(A): 0.5500

LampCAT: OSRAM SOLERIQ S15

Power (W): 19.9100

Lamp flux(lm): 2661.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 79

Width(mm): 79

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2316.05, Efficiency(%): 88.43% , Luminous Efficacy(lm/W): 116.33

Central intensity(cd): 9935.297, Maximum intensity(cd): 9935.297

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=23.0

[C90/270]Total=23.0

Field angle(10%Imax): [C0/180]Total=45.2

[C90/270]Total=45.2

Maximum s/h(1/2): C0_180=0.39 C90_270=0.39

Maximum s/h(1/4): C0_180=0.39 C90_270=0.39

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.62%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.780%

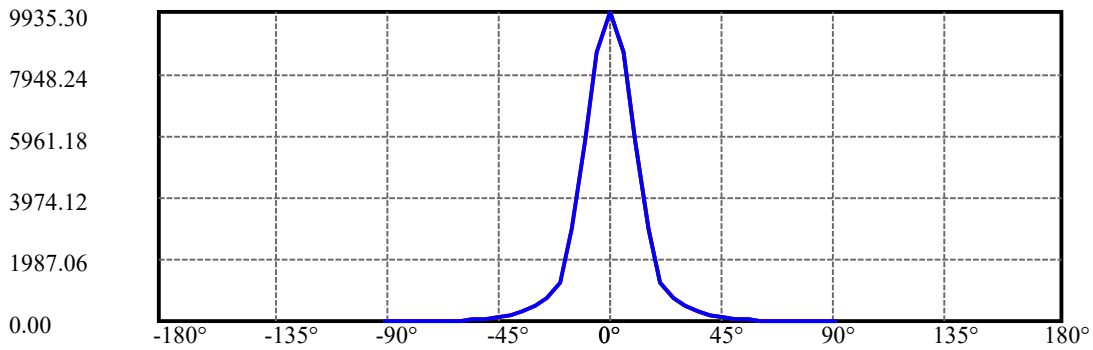
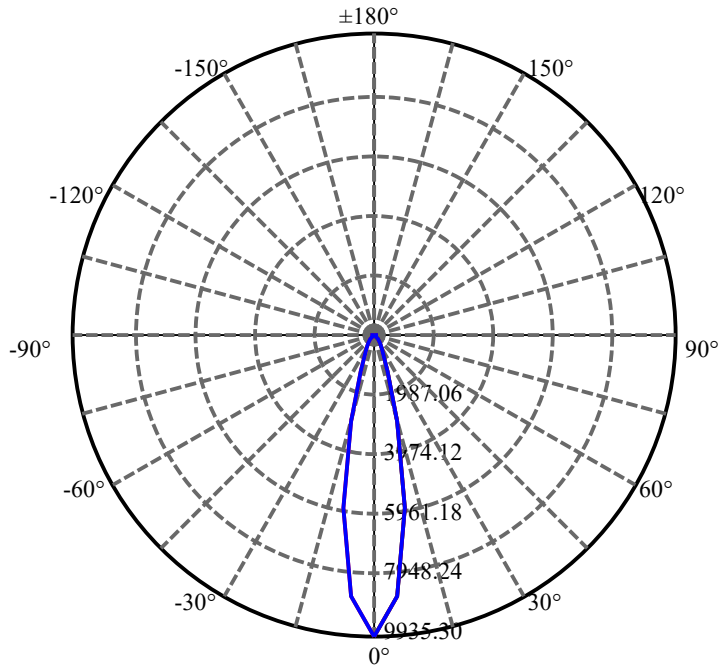
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9935.297	59.415	59.415	2.269%	2.565%
5.0	8623.617	411.979	471.394	15.730%	20.353%
10.0	5792.484	551.346	1022.74	21.052%	44.159%
15.0	2969.086	421.219	1443.96	16.083%	62.346%
20.0	1261.266	236.455	1680.414	9.028%	72.555%
25.0	747.176	173.085	1853.5	6.609%	80.028%
30.0	495.035	135.674	1989.173	5.180%	85.886%
35.0	312.961	98.395	2087.568	3.757%	90.135%
40.0	205.186	72.294	2159.862	2.760%	93.256%
45.0	125.592	48.678	2208.541	1.859%	95.358%
50.0	77.766	32.654	2241.194	1.247%	96.768%
55.0	43.868	19.697	2260.891	.752%	97.618%
60.0	25.748	12.223	2273.114	.467%	98.146%
65.0	20.180	10.025	2283.139	.383%	98.579%
70.0	17.733	9.134	2292.273	.349%	98.973%
75.0	15.532	8.224	2300.496	.314%	99.328%
80.0	13.198	7.124	2307.621	.272%	99.636%
85.0	10.786	5.890	2313.51	.225%	99.890%
90.0	9.281	2.544	2316.054	.097%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1989.17	75.95%	85.89%
0-40	2159.86	82.47%	93.26%
0-60	2273.11	86.79%	98.15%
0-90	2313.51	88.34%	99.89%
0-120	2313.51	88.34%	99.89%
0-180	2316.05	88.43%	100.00%
60-90	52.62	2.01%	2.27%
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%
0-24.98	1852.84	70.75%	80.00%

ZONAL LUMEN SUMMARY

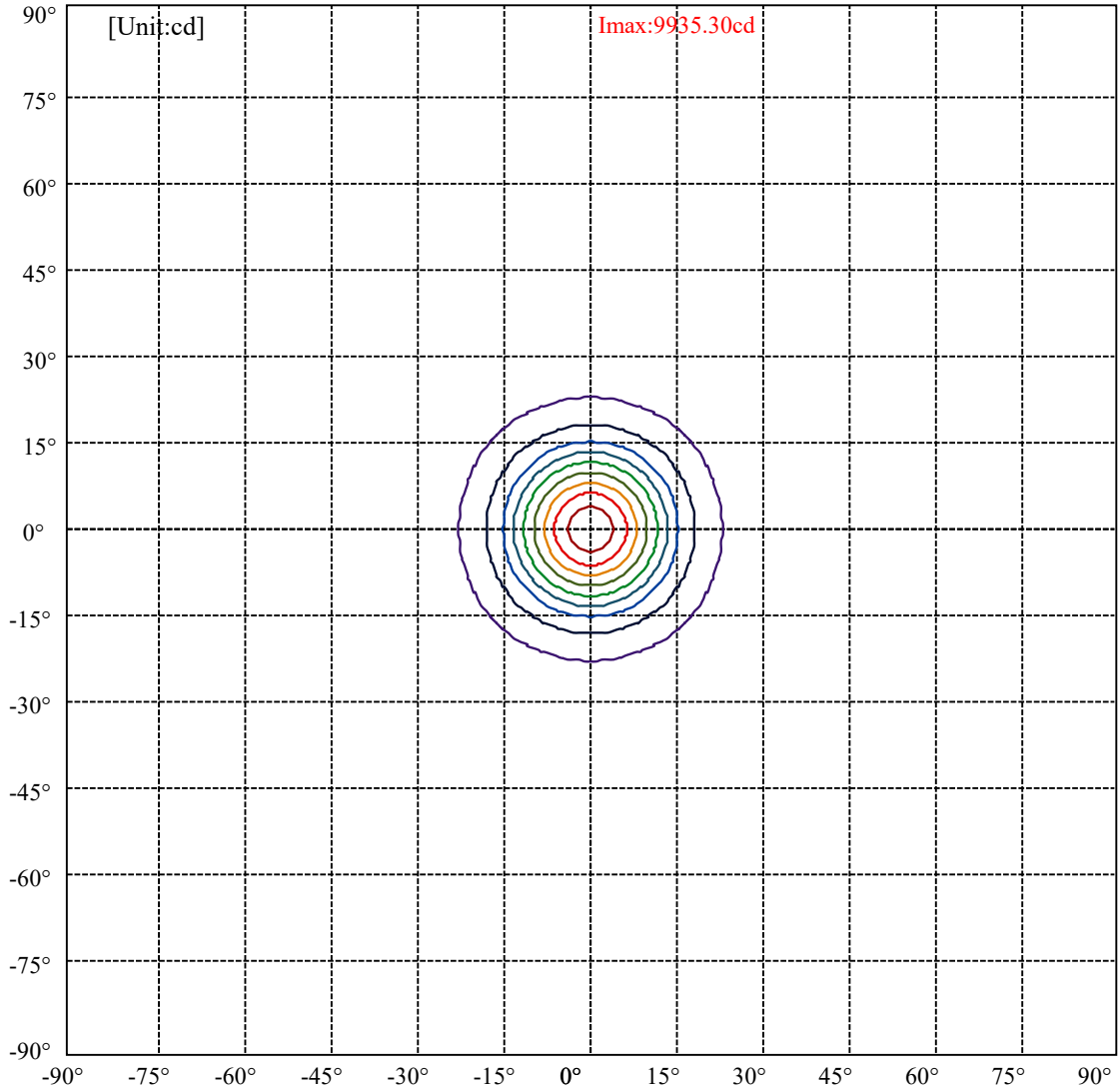
0-10	1022.74
10-20	657.67
20-30	308.76
30-40	170.69
40-50	81.33
50-60	31.92
60-70	19.16
70-80	15.35
80-90	5.89
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



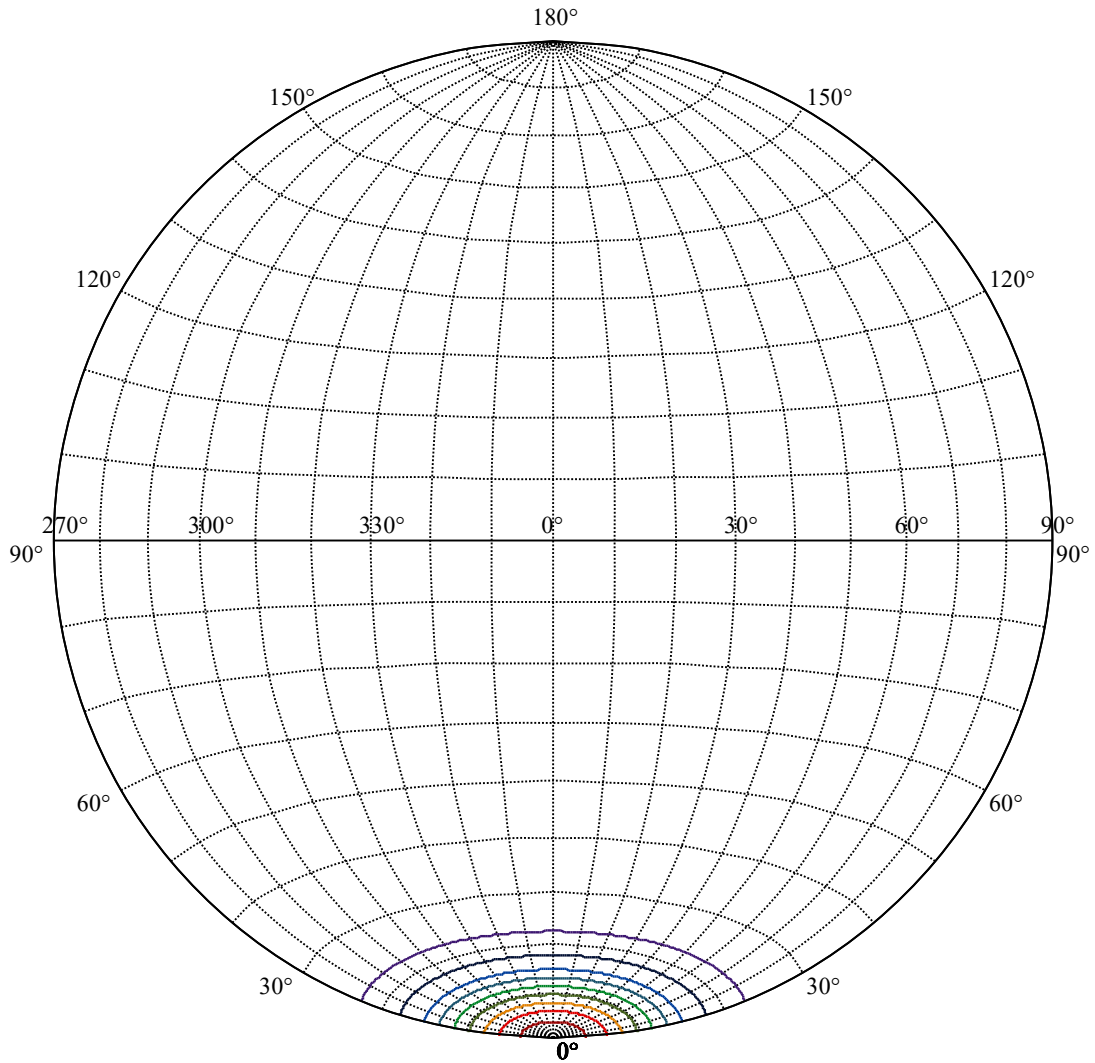
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:22.6 Right:22.6
:C90/270Left:22.6 Right:22.6

Beam Angle(50%Imax):C0/180Left:11.5 Right:11.5
:C90/270Left:11.5 Right:11.5



(10%Imax) 993.53	—
(20%Imax) 1987.06	—
(30%Imax) 2980.59	—
(40%Imax) 3974.12	—
(50%Imax) 4967.65	—
(60%Imax) 5961.18	—
(70%Imax) 6954.71	—
(80%Imax) 7948.24	—
(90%Imax) 8941.77	—



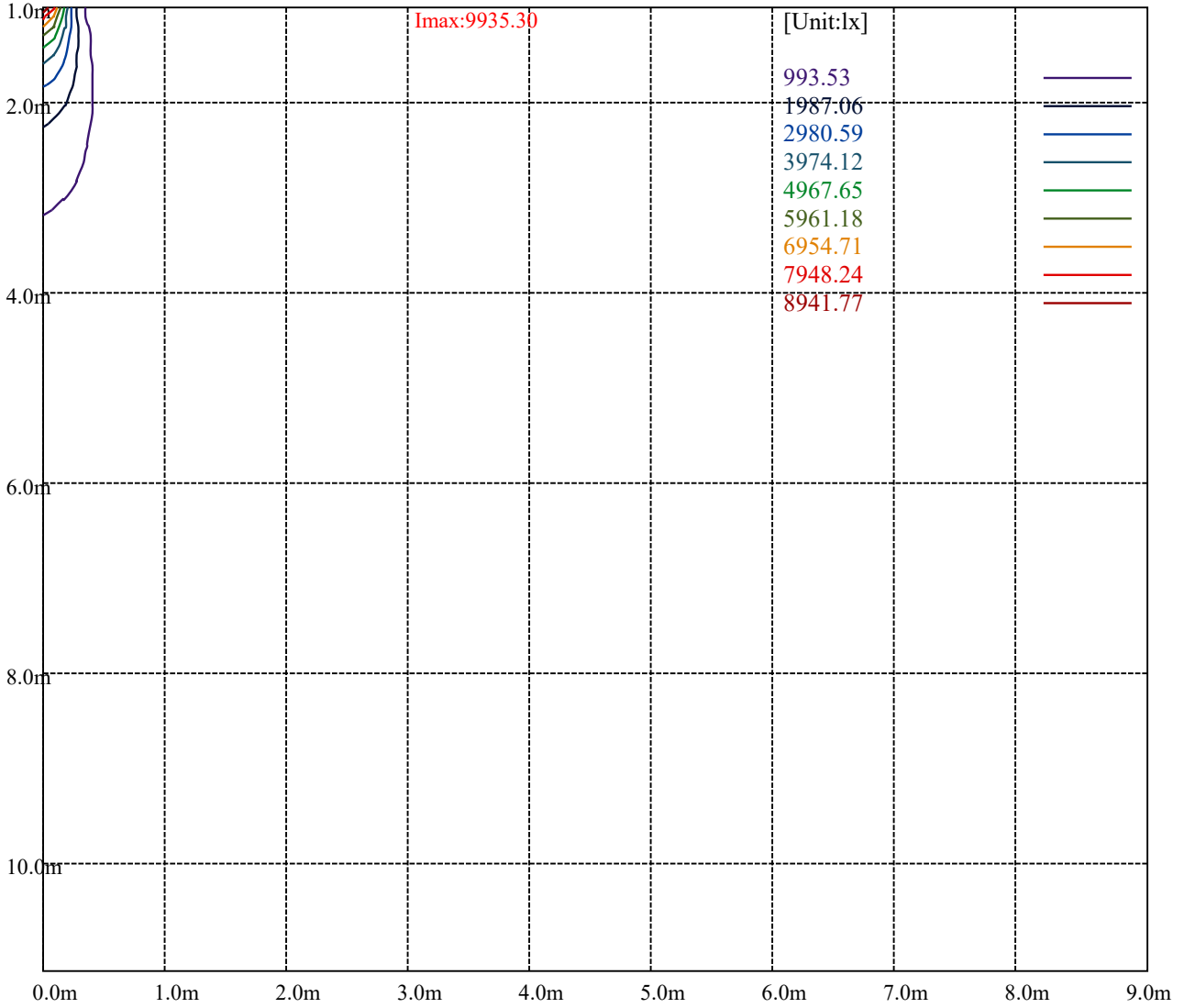
House

[Unit:cd]

Road

Imax:9935.30

(10%Imax) 993.53	—
(20%Imax) 1987.06	—
(30%Imax) 2980.59	—
(40%Imax) 3974.12	—
(50%Imax) 4967.65	—
(60%Imax) 5961.18	—
(70%Imax) 6954.71	—
(80%Imax) 7948.24	—
(90%Imax) 8941.77	—



Luminance Table

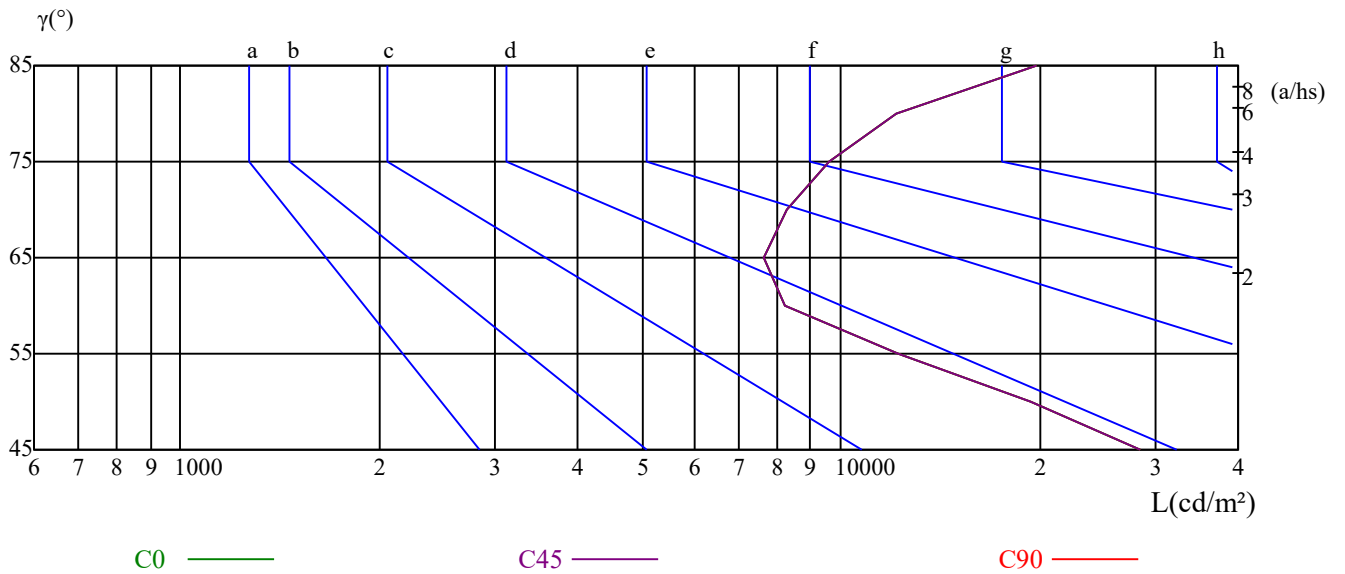
γ	45	50	55	60	65	70	75	80	85
C0	28459	19385	12255	8251	7651	8308	9616	12178	19829
C45	28459	19385	12255	8251	7651	8308	9616	12178	19829
C90	28459	19385	12255	8251	7651	8308	9616	12178	19829

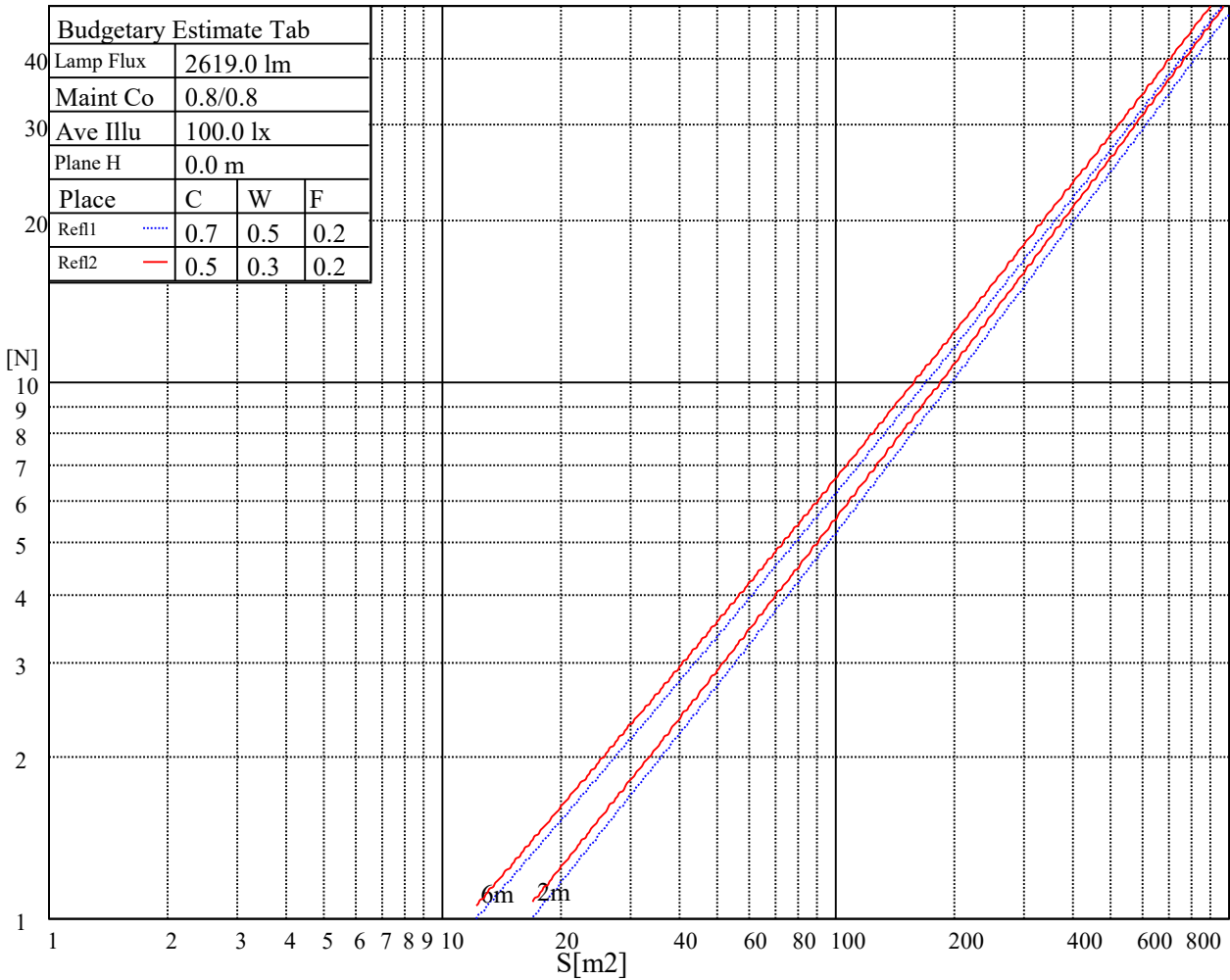
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7651	7651	7651	9616	9616	9616	19829	19829	19829

Glare Table

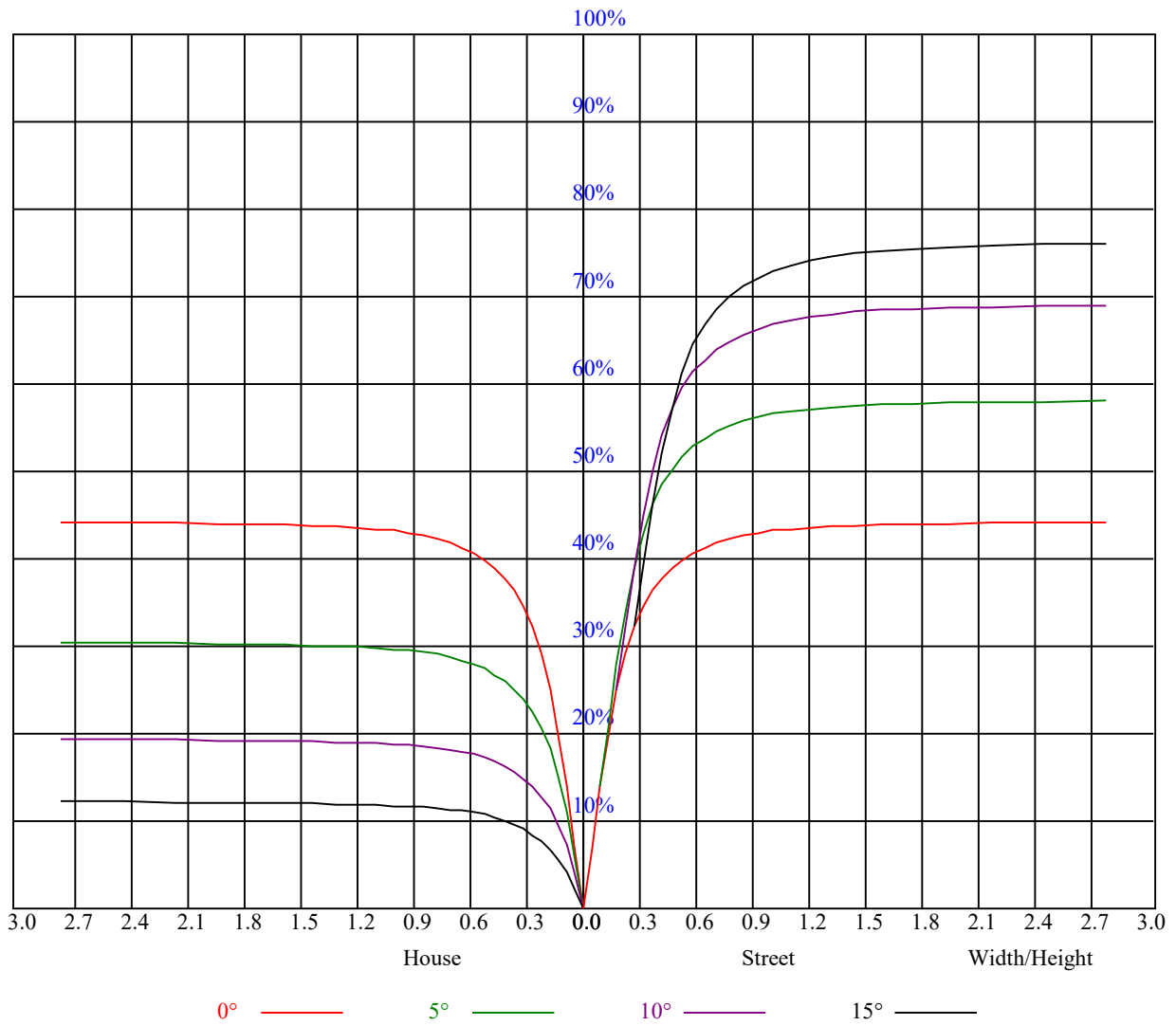
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

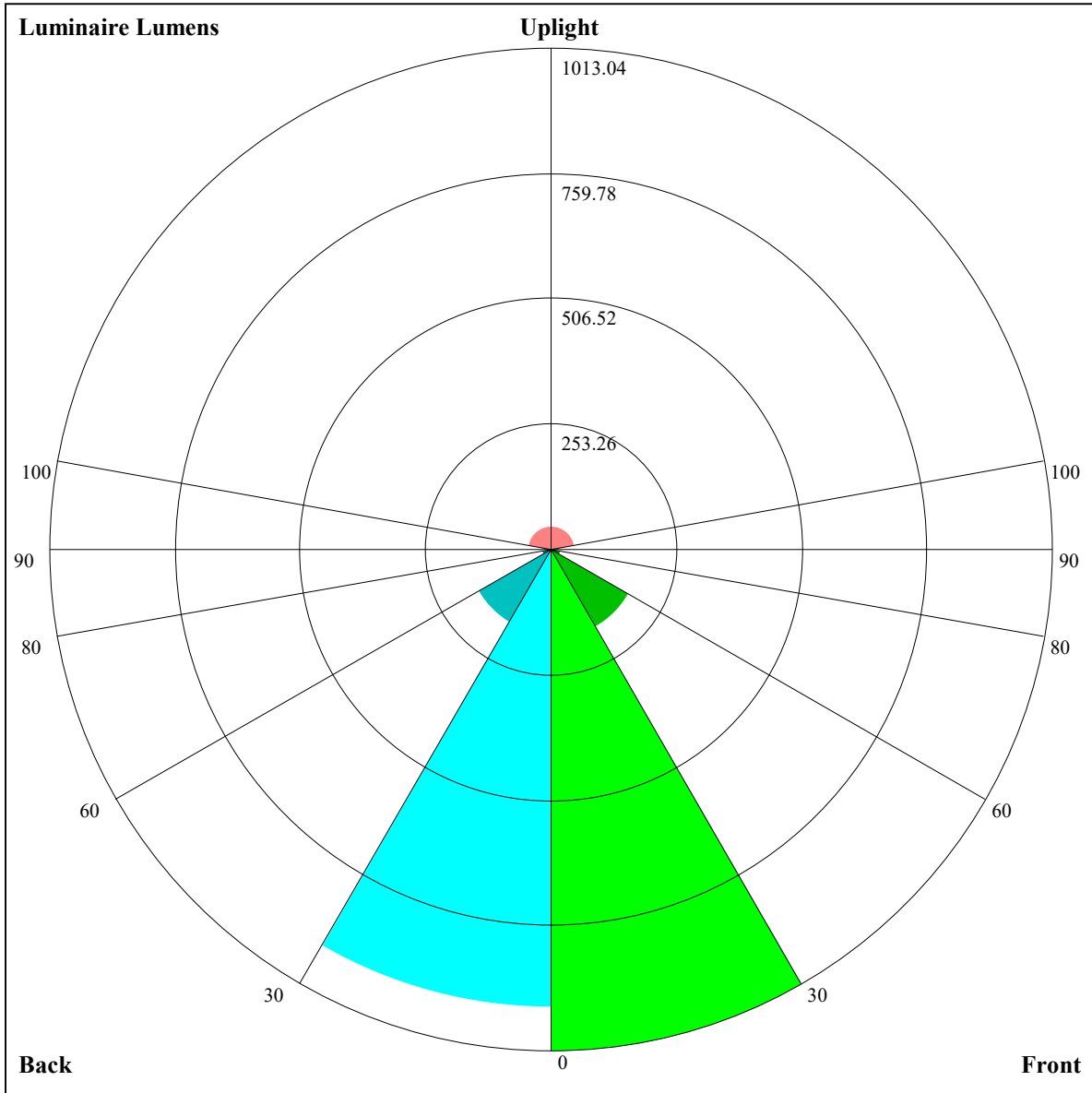
Luminance Limiting Curve





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	1.08	1.08	1.08	1.05	1.05	1.05	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.91
1	0.99	0.96	0.94	0.97	0.94	0.92	0.93	0.91	0.89	0.90	0.88	0.87	0.86	0.85	0.84	0.82
2	0.93	0.90	0.87	0.92	0.89	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.79
3	0.89	0.85	0.82	0.88	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.76
4	0.85	0.81	0.77	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.78	0.75	0.79	0.76	0.74	0.73
5	0.82	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
6	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.72	0.70	0.68
7	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.66
8	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
9	0.71	0.67	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.63	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61





Luminaire Lumens:

FL=1013.04,FM=180.91,FH=18.73,FVH=6.04

BL=923.94,BM=168.58,BH=18.34,BVH=5.96

UL=10.13,UH=48.19

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	9838.13	9455.06	6844.50	3893.63	1677.38	872.44	570.38	362.25	256.16
45.0	10000.13	8758.69	5770.69	2946.94	1302.75	725.63	478.69	306.56	195.75
90.0	9905.63	8052.75	5099.63	2384.44	1104.41	687.60	456.02	284.29	186.36
135.0	9997.31	8353.13	5613.19	2705.06	1205.44	718.31	473.06	295.88	196.43
180.0	9838.13	7686.56	4699.13	2233.13	1046.98	638.78	432.51	276.64	175.78
225.0	10000.13	8622.56	5799.38	2837.81	1095.24	732.94	483.64	309.21	202.05
270.0	9905.63	9198.00	6411.38	3666.38	1565.44	829.13	557.44	353.25	224.72
315.0	9997.31	8862.19	6102.00	3085.31	1092.49	772.59	508.56	315.62	204.24
360.0	9838.13	9455.06	6844.50	3893.63	1677.38	872.44	570.38	362.25	256.16

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	144.84	90.79	52.65	30.09	21.09	18.51	16.09	13.78	11.31
45.0	120.71	76.22	41.96	24.69	19.69	17.44	15.30	12.94	10.52
90.0	113.96	67.67	38.19	23.12	19.24	17.21	14.96	12.66	10.35
135.0	121.22	74.42	42.02	24.98	20.25	17.78	15.69	13.22	10.63
180.0	107.83	66.49	36.90	23.06	19.69	17.33	14.96	12.66	10.24
225.0	124.54	78.58	44.49	25.31	20.25	17.66	15.47	13.28	11.08
270.0	141.08	87.13	48.88	27.62	20.70	18.06	15.98	13.73	11.14
315.0	130.56	80.83	45.84	27.11	20.53	17.89	15.81	13.33	11.03
360.0	144.84	90.79	52.65	30.09	21.09	18.51	16.09	13.78	11.31

C/γ(°)	90.0
0.0	9.45
45.0	9.23
90.0	9.23
135.0	9.28
180.0	9.23
225.0	9.28
270.0	9.28
315.0	9.28
360.0	9.45