
NATA

Client:

LumCAT: 3-1550-A3

Luminaire: 99.02.73.172+92.76.365.00

Report No: nata-0100

Voltage(V): 36.2000

Test No: GC2018111517

Current(A): 0.5000

LampCAT: OSRAM OPTO SOLERIQ S13 G2 Power (W): 18.1000

Lamp flux(lm): 1689.0

PF: 1.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 78

Width(mm): 78

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1551.00, Efficiency(%): 91.83% , Luminous Efficacy(lm/W): 85.69

Central intensity(cd): 2747.531, Maximum intensity(cd): 2747.531

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=42.4

[C90/270]Total=42.4

Field angle(10%Imax): [C0/180]Total=73.4

[C90/270]Total=73.4

Maximum s/h(1/2): C0_180=0.68 C90_270=0.68

Maximum s/h(1/4): C0_180=0.71 C90_270=0.71

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 92.71%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.787%

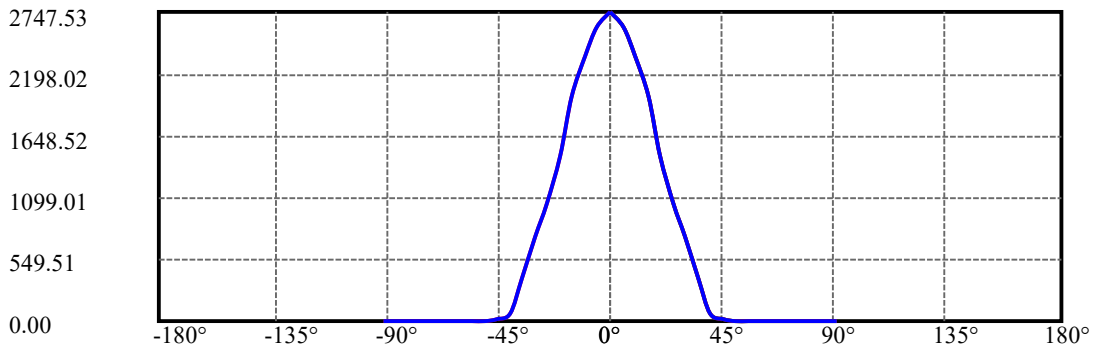
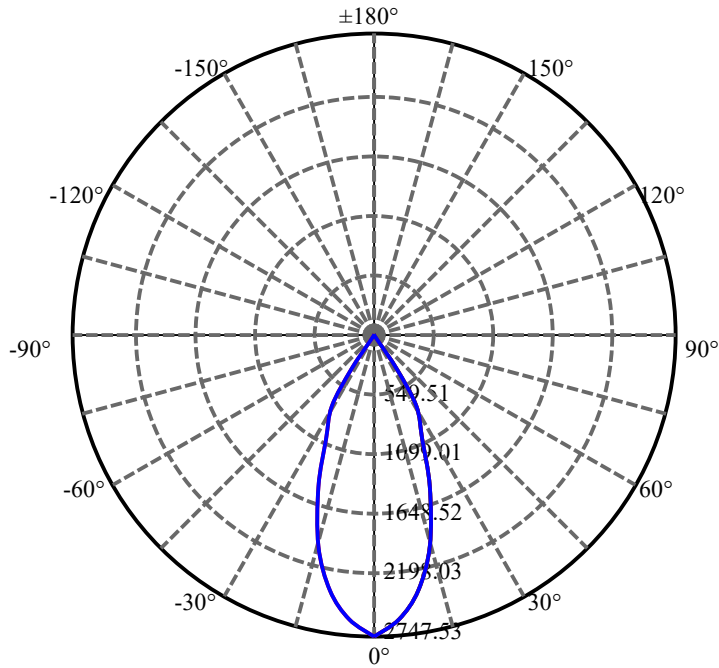
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2747.531	16.431	16.431	.973%	1.059%
5.0	2604.797	124.440	140.871	7.368%	9.083%
10.0	2356.734	224.321	365.192	13.281%	23.546%
15.0	1994.555	282.964	648.156	16.753%	41.790%
20.0	1474.545	276.439	924.595	16.367%	59.613%
25.0	1041.996	241.381	1165.976	14.291%	75.176%
30.0	755.353	207.019	1372.995	12.257%	88.523%
35.0	380.686	119.687	1492.682	7.086%	96.240%
40.0	67.324	23.721	1516.403	1.404%	97.769%
45.0	11.187	4.336	1520.739	.257%	98.049%
50.0	8.395	3.525	1524.264	.209%	98.276%
55.0	7.798	3.501	1527.765	.207%	98.502%
60.0	7.439	3.531	1531.296	.209%	98.730%
65.0	7.123	3.538	1534.835	.209%	98.958%
70.0	6.940	3.575	1538.409	.212%	99.188%
75.0	6.792	3.596	1542.006	.213%	99.420%
80.0	6.673	3.602	1545.608	.213%	99.652%
85.0	6.602	3.605	1549.213	.213%	99.885%
90.0	6.525	1.788	1551.001	.106%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1372.99	81.29%	88.52%
0-40	1516.40	89.78%	97.77%
0-60	1531.30	90.66%	98.73%
0-90	1549.21	91.72%	99.88%
0-120	1549.21	91.72%	99.88%
0-180	1551.00	91.83%	100.00%
60-90	21.45	1.27%	1.38%
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%
0-26.81	1240.80	73.46%	80.00%

ZONAL LUMEN SUMMARY

0-10	365.19
10-20	559.40
20-30	448.40
30-40	143.41
40-50	7.86
50-60	7.03
60-70	7.11
70-80	7.20
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: —————

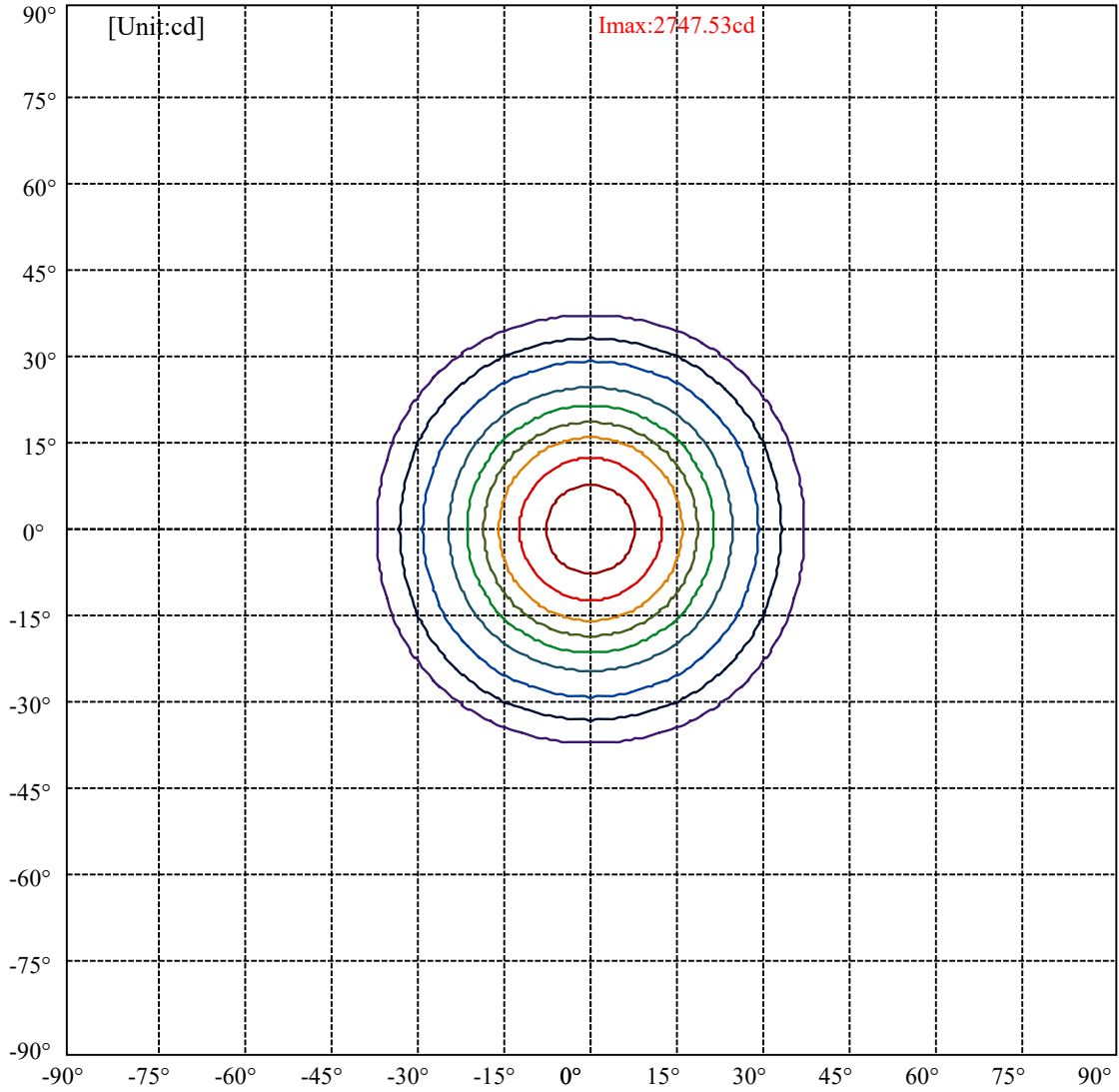
C90/C270: —————

Field angle(10%Imax):C0/180Left:36.7 Right:36.7

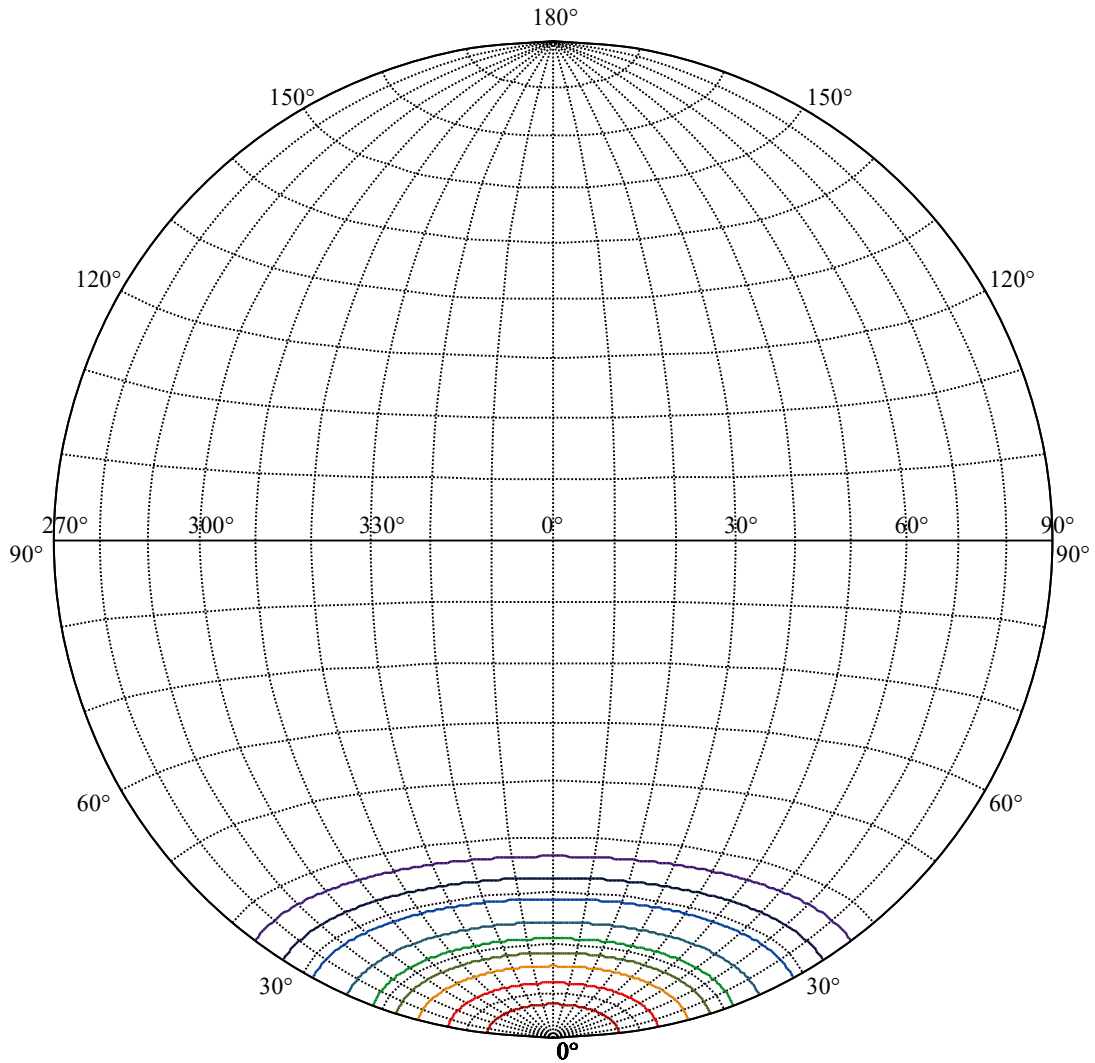
:C90/270Left:36.7 Right:36.7

Beam Angle(50%Imax):C0/180Left:21.2 Right:21.2

:C90/270Left:21.2 Right:21.2



(10%I _{max}) 274.753	—
(20%I _{max}) 549.506	—
(30%I _{max}) 824.259	—
(40%I _{max}) 1099.01	—
(50%I _{max}) 1373.77	—
(60%I _{max}) 1648.52	—
(70%I _{max}) 1923.27	—
(80%I _{max}) 2198.02	—
(90%I _{max}) 2472.78	—



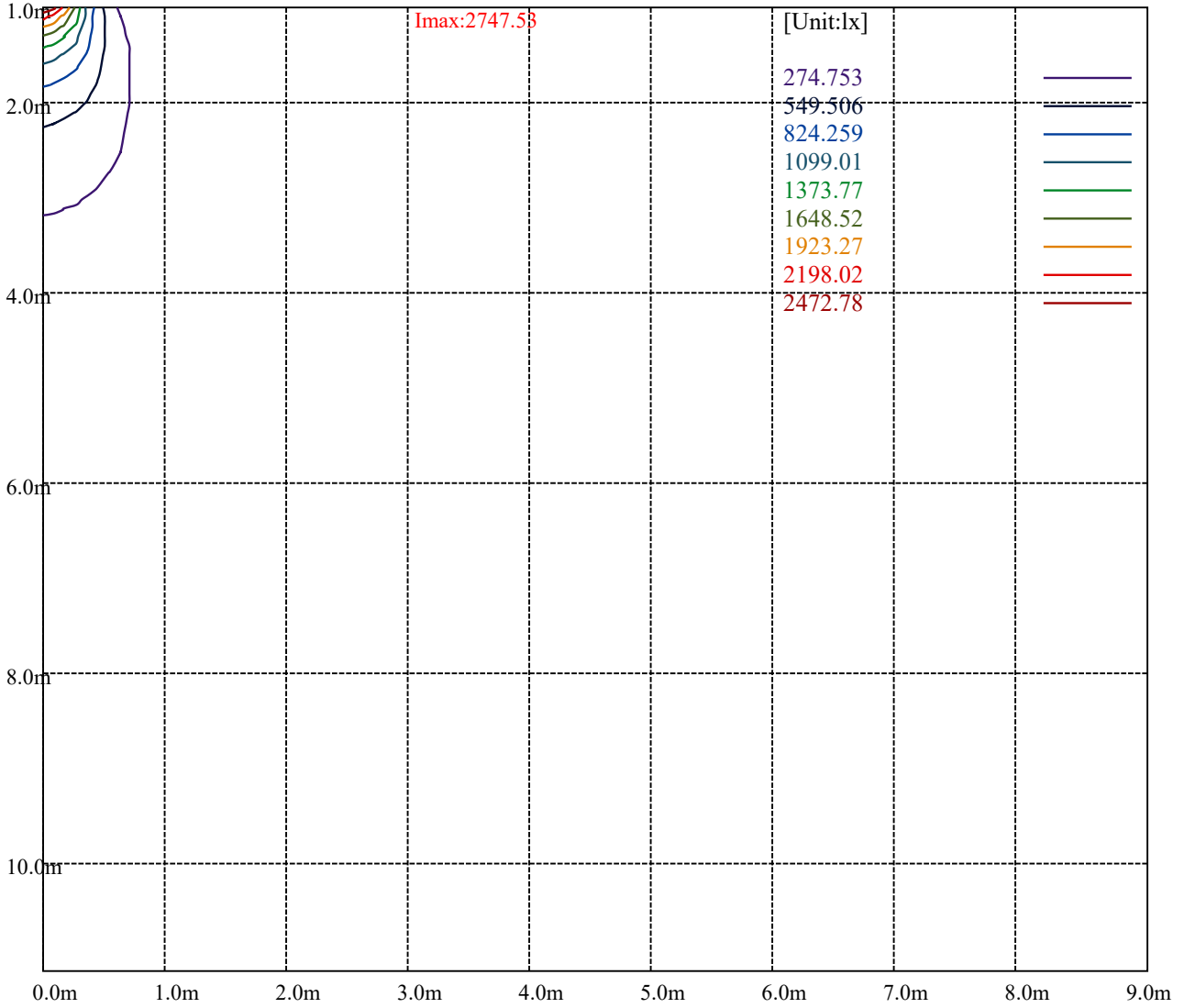
House

[Unit:cd]

Road

Imax:2747.53

(10%Imax) 274.753	—
(20%Imax) 549.506	—
(30%Imax) 824.259	—
(40%Imax) 1099.01	—
(50%Imax) 1373.77	—
(60%Imax) 1648.52	—
(70%Imax) 1923.27	—
(80%Imax) 2198.02	—
(90%Imax) 2472.78	—



Luminance Table

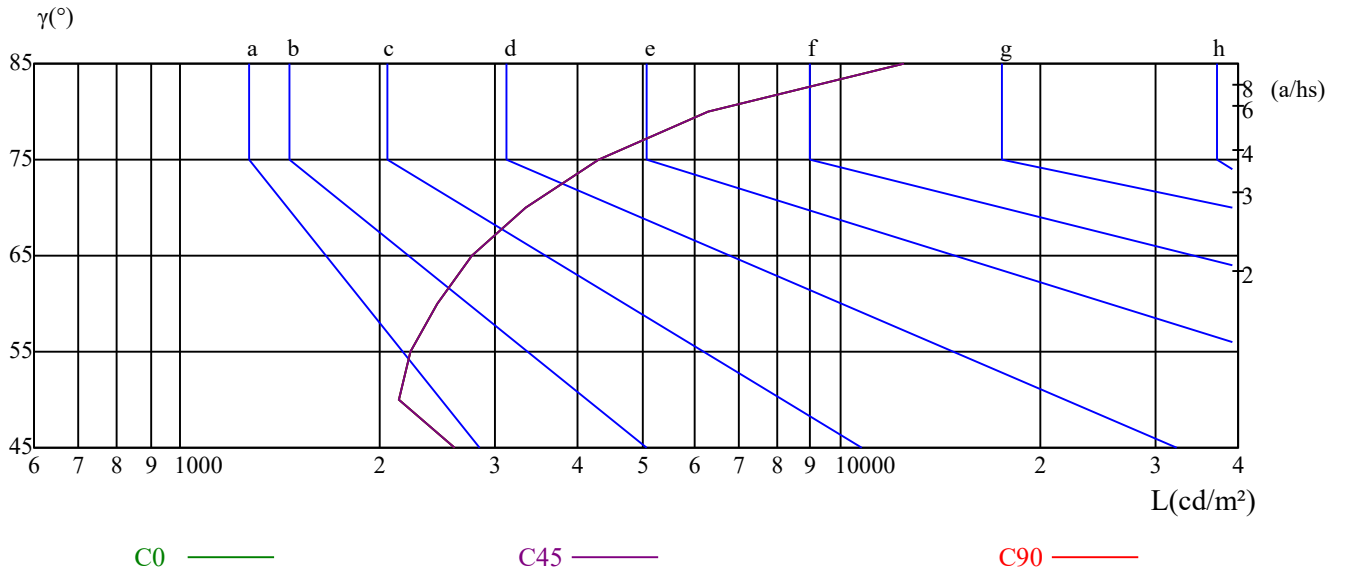
γ	45	50	55	60	65	70	75	80	85
C0	2600	2147	2235	2445	2770	3335	4313	6316	12451
C45	2600	2147	2235	2445	2770	3335	4313	6316	12451
C90	2600	2147	2235	2445	2770	3335	4313	6316	12451

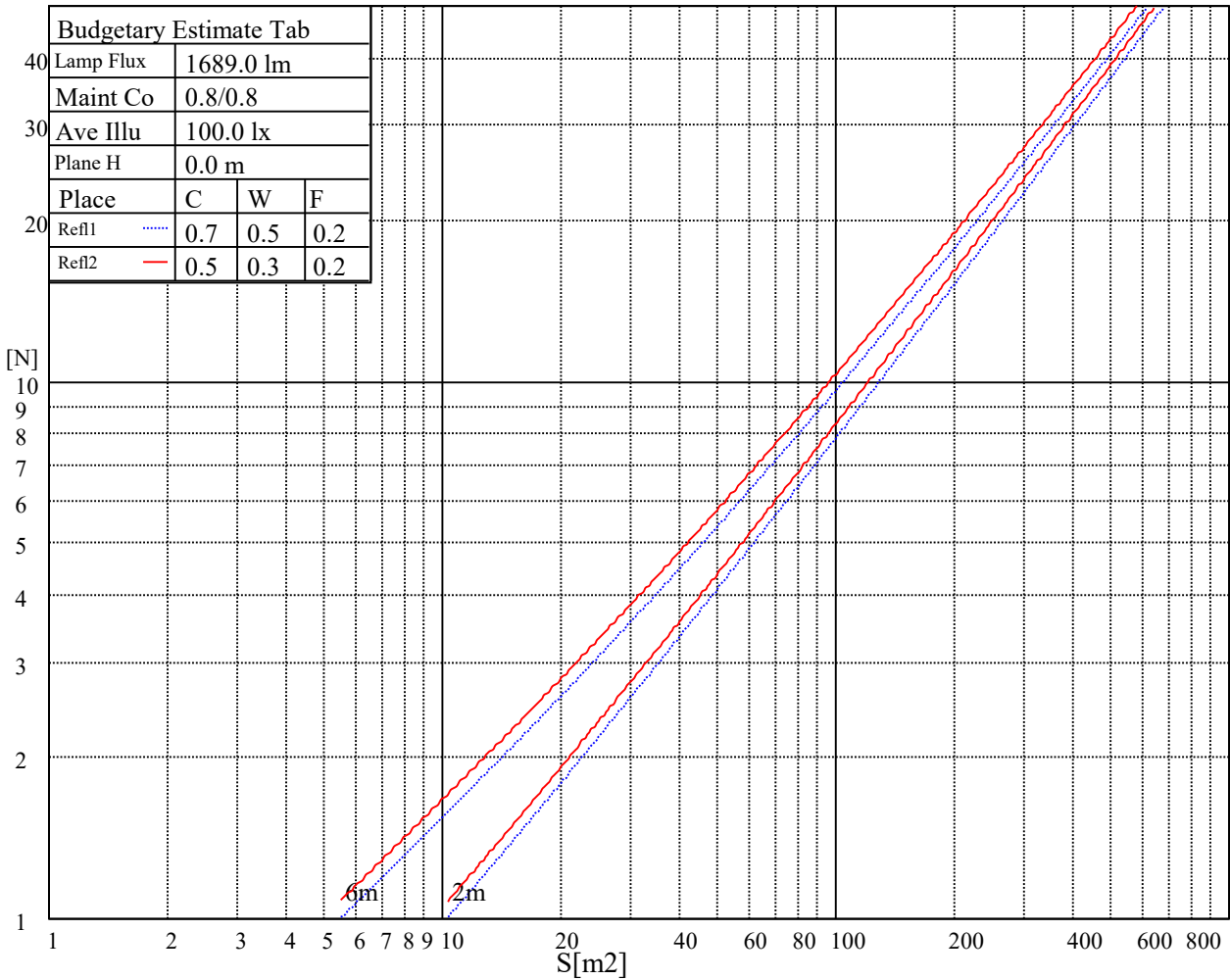
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2770	2770	2770	4313	4313	4313	12451	12451	12451

Glare Table

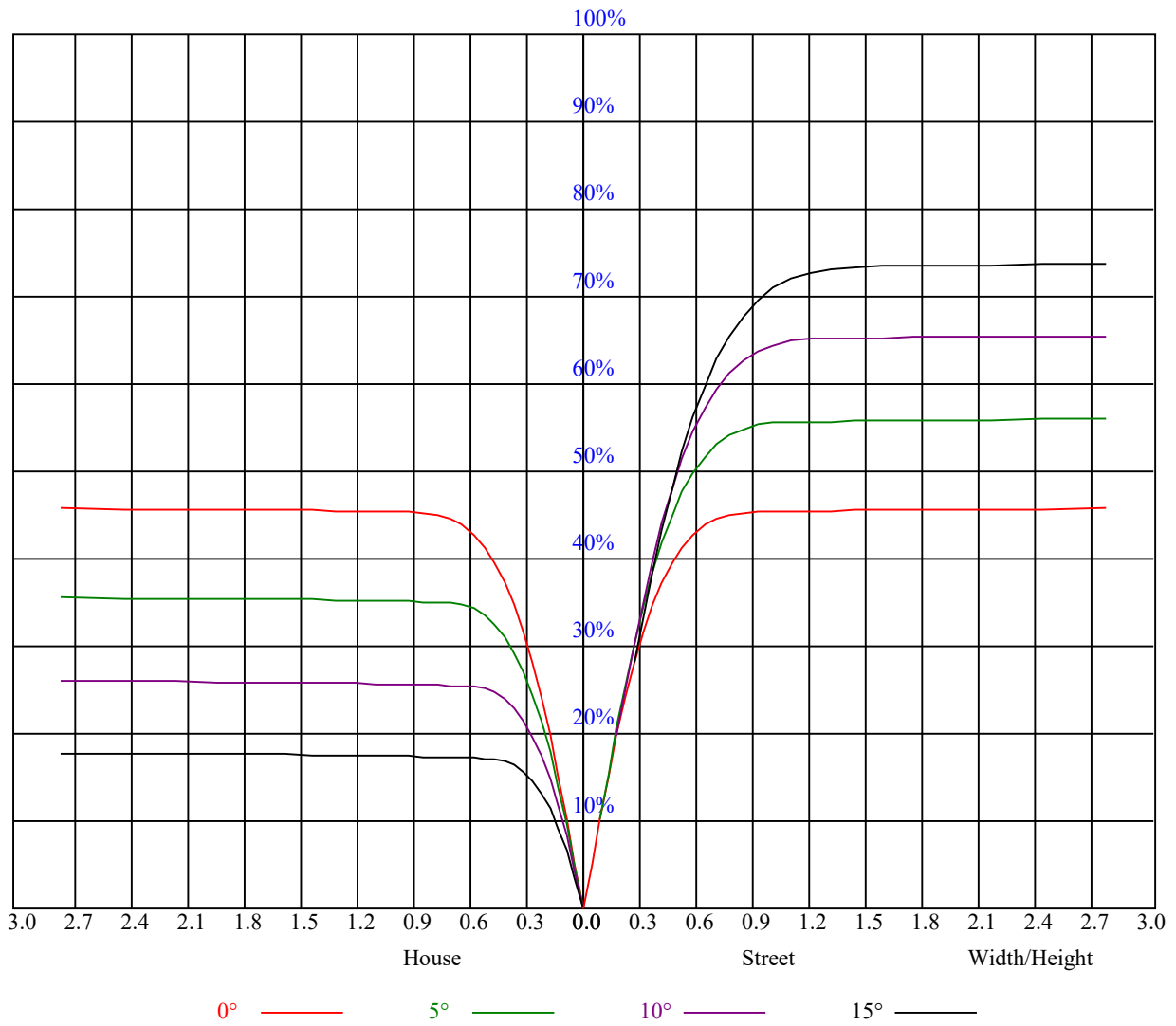
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

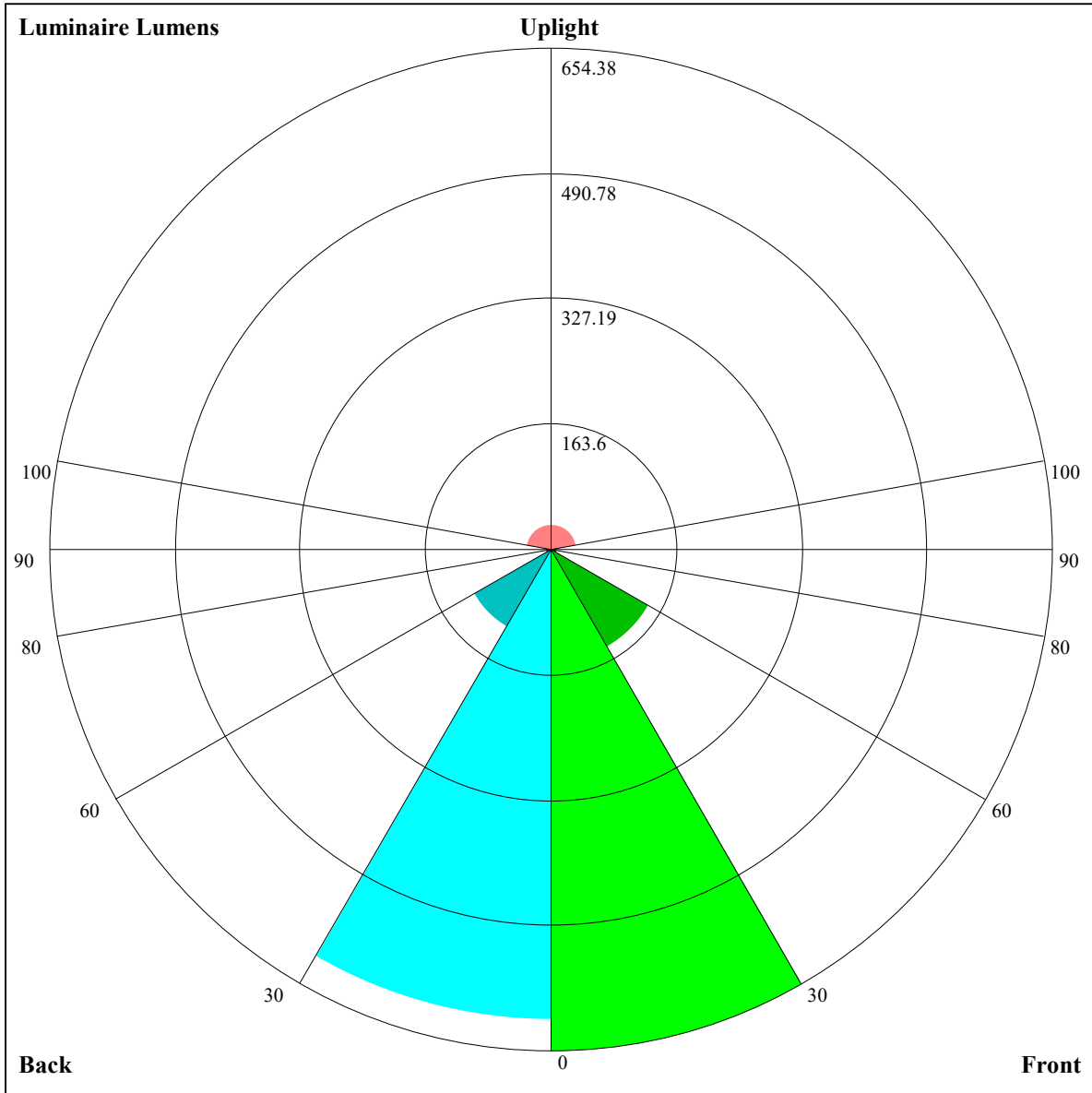
Luminance Limiting Curve





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	1.10	1.10	1.10	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.02	1.00	0.98	1.00	0.98	0.96	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.86
2	0.96	0.93	0.90	0.95	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.83	0.82
3	0.91	0.87	0.84	0.90	0.86	0.83	0.88	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.79	0.78
4	0.87	0.82	0.79	0.86	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.78	0.76	0.74
5	0.83	0.78	0.74	0.82	0.77	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.71
6	0.79	0.74	0.71	0.78	0.74	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.71	0.67	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.66	0.65
8	0.72	0.67	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.62
9	0.69	0.65	0.62	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.60
10	0.67	0.62	0.59	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.57





Luminaire Lumens:

FL=654.38,FM=147.05,FH=7.17,FVH=3.61

BL=614.14,BM=117.25,BH=7.12,BVH=3.6

UL=7.12,UH=33.88

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	2724.75	2711.81	2509.88	2187.00	1722.38	1187.44	866.81	576.00	285.19
45.0	2762.44	2611.13	2382.75	2019.38	1489.50	1046.25	764.44	384.75	36.11
90.0	2744.44	2548.13	2273.06	1836.00	1368.56	955.29	685.07	287.66	26.61
135.0	2758.50	2543.63	2291.63	1925.44	1423.13	994.50	734.63	322.88	24.58
180.0	2724.75	2485.69	2215.13	1793.25	1119.54	911.98	656.72	193.89	19.80
225.0	2762.44	2598.19	2338.88	1994.63	1489.50	1032.30	748.86	371.87	26.10
270.0	2744.44	2667.38	2429.44	2106.56	1638.00	1131.19	804.38	508.50	71.32
315.0	2758.50	2672.44	2413.13	2094.19	1545.75	1077.02	781.93	399.94	48.88
360.0	2724.75	2711.81	2509.88	2187.00	1722.38	1187.44	866.81	576.00	285.19
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	16.03	8.66	7.93	7.54	7.20	7.03	6.86	6.69	6.64
45.0	12.26	8.38	7.82	7.43	7.14	6.92	6.81	6.69	6.58
90.0	9.22	8.33	7.76	7.43	7.09	6.92	6.75	6.64	6.58
135.0	9.34	8.38	7.82	7.43	7.14	6.92	6.81	6.69	6.58
180.0	8.89	8.10	7.59	7.31	7.03	6.86	6.75	6.64	6.58
225.0	10.24	8.33	7.76	7.43	7.09	6.92	6.75	6.64	6.58
270.0	12.09	8.55	7.88	7.48	7.14	6.98	6.81	6.69	6.64
315.0	11.42	8.44	7.82	7.48	7.14	6.98	6.81	6.69	6.64
360.0	16.03	8.66	7.93	7.54	7.20	7.03	6.86	6.69	6.64
C/γ(°)	90.0								
0.0	6.53								
45.0	6.53								
90.0	6.53								
135.0	6.53								
180.0	6.53								
225.0	6.53								
270.0	6.53								
315.0	6.53								
360.0	6.53								