
NATA

Client:

LumCAT: 3-1703-N

Luminaire: 92.70.065.00+92.70.061.00

Report No: nata-0100

Voltage(V): 36.2000

Test No: GC2018112003

Current(A): 0.5000

LampCAT: OSRAM SOLERIQ S13

Power (W): 18.1000

Lamp flux(lm): 1776.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 86

Width(mm): 86

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1393.22, Efficiency(%): 78.45% , Luminous Efficacy(lm/W): 76.97

Central intensity(cd): 3153.797, Maximum intensity(cd): 3153.797

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=34.4

[C90/270]Total=34.4

Field angle(10%Imax): [C0/180]Total=64.2

[C90/270]Total=64.2

Maximum s/h(1/2): C0_180=0.57 C90_270=0.57

Maximum s/h(1/4): C0_180=0.58 C90_270=0.58

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 79.43%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.604%

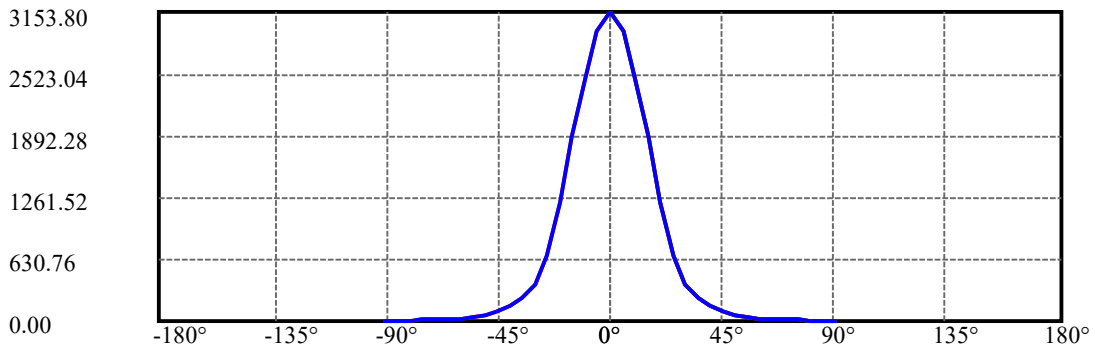
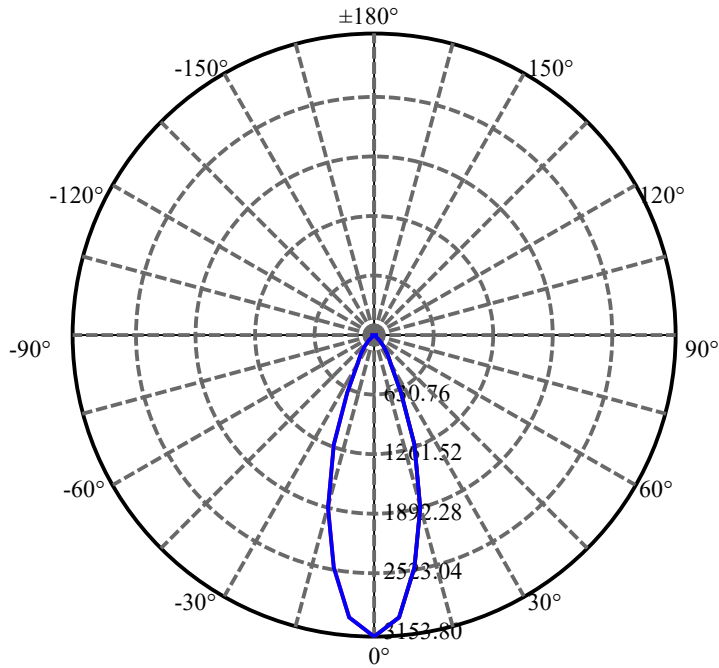
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3153.797	18.860	18.86	1.062%	1.354%
5.0	2956.219	141.228	160.089	7.952%	11.491%
10.0	2463.609	234.494	394.583	13.203%	28.322%
15.0	1871.367	265.488	660.07	14.949%	47.377%
20.0	1215.689	227.910	887.981	12.833%	63.736%
25.0	669.832	155.169	1043.149	8.737%	74.873%
30.0	368.698	101.048	1144.198	5.690%	82.126%
35.0	239.449	75.283	1219.48	4.239%	87.530%
40.0	155.559	54.809	1274.289	3.086%	91.464%
45.0	98.318	38.107	1312.396	2.146%	94.199%
50.0	59.196	24.856	1337.253	1.400%	95.983%
55.0	34.249	15.378	1352.631	.866%	97.087%
60.0	21.523	10.217	1362.848	.575%	97.820%
65.0	15.673	7.786	1370.634	.438%	98.379%
70.0	13.141	6.769	1377.403	.381%	98.865%
75.0	10.793	5.714	1383.117	.322%	99.275%
80.0	8.831	4.767	1387.884	.268%	99.617%
85.0	6.933	3.786	1391.67	.213%	99.889%
90.0	5.660	1.551	1393.221	.087%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1144.20	64.43%	82.13%
0-40	1274.29	71.75%	91.46%
0-60	1362.85	76.74%	97.82%
0-90	1391.67	78.36%	99.89%
0-120	1391.67	78.36%	99.89%
0-180	1393.22	78.45%	100.00%
60-90	39.04	2.20%	2.80%
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%
0-28.53	1114.58	62.76%	80.00%

ZONAL LUMEN SUMMARY

0-10	394.58
10-20	493.40
20-30	256.22
30-40	130.09
40-50	62.96
50-60	25.59
60-70	14.55
70-80	10.48
80-90	3.79
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: —————

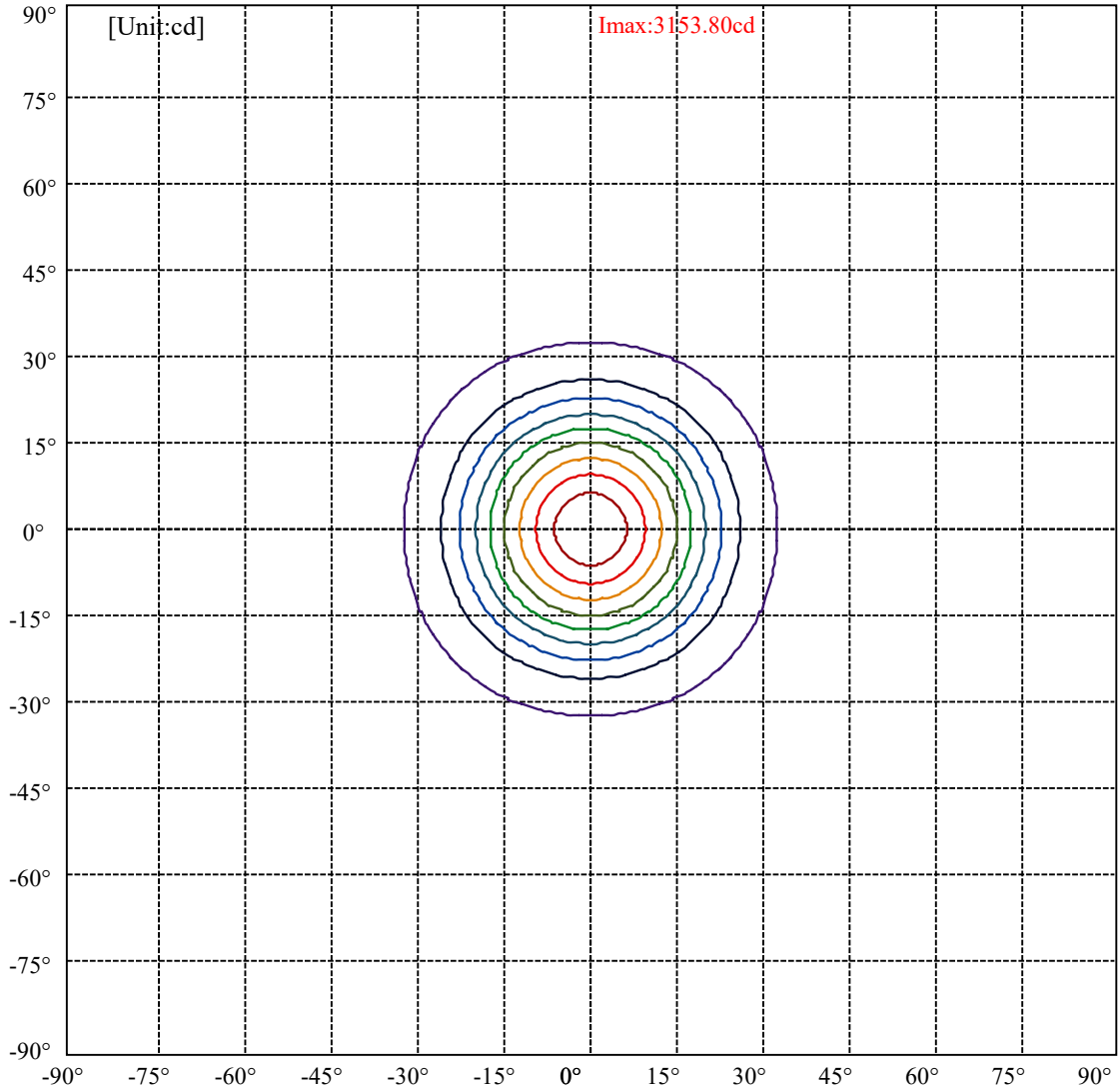
C90/C270: —————

Field angle(10%Imax):C0/180Left:32.1 Right:32.1

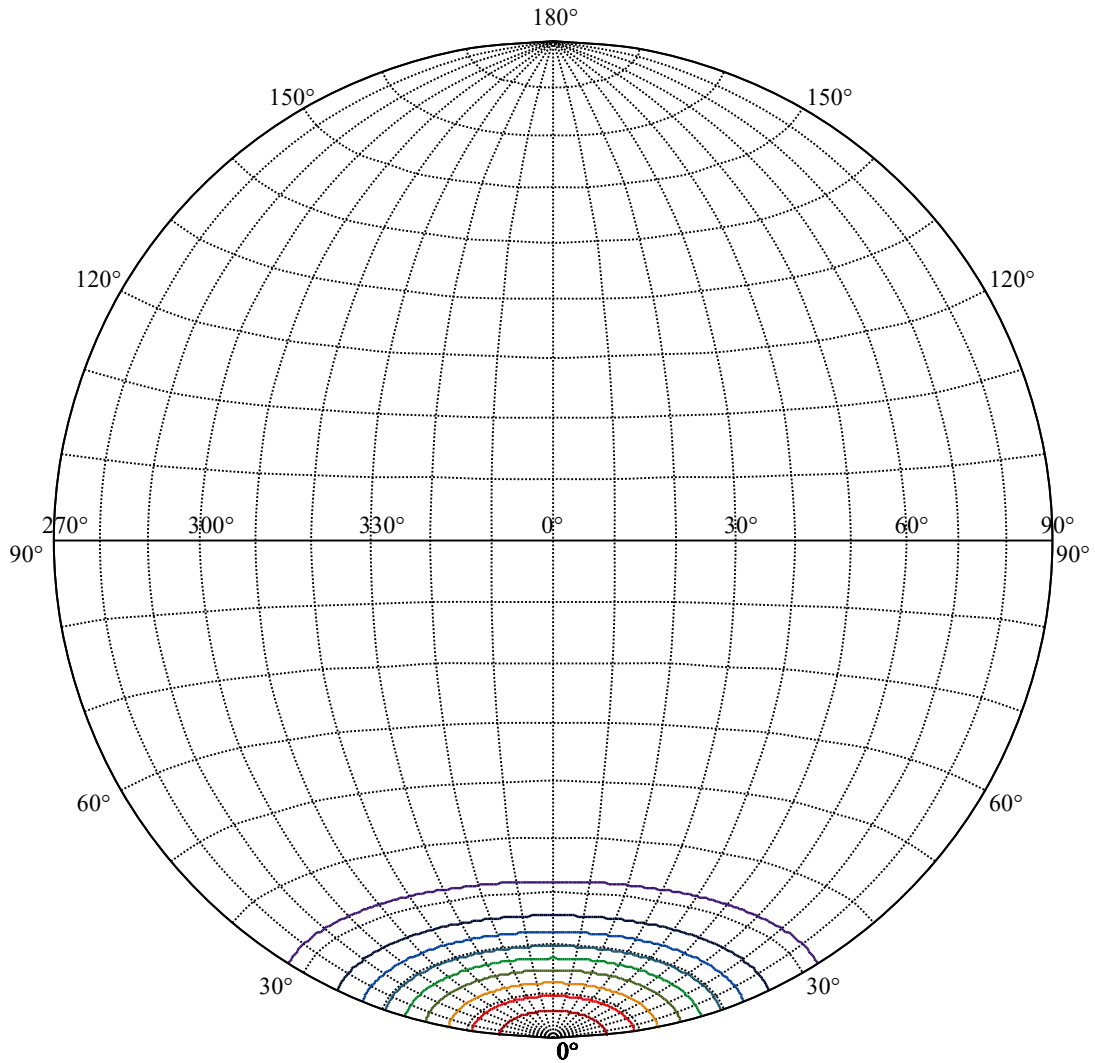
:C90/270Left:32.1 Right:32.1

Beam Angle(50%Imax):C0/180Left:17.2 Right:17.2

:C90/270Left:17.2 Right:17.2



(10%Imax) 315.38	—
(20%Imax) 630.759	—
(30%Imax) 946.139	—
(40%Imax) 1261.52	—
(50%Imax) 1576.9	—
(60%Imax) 1892.28	—
(70%Imax) 2207.66	—
(80%Imax) 2523.04	—
(90%Imax) 2838.42	—



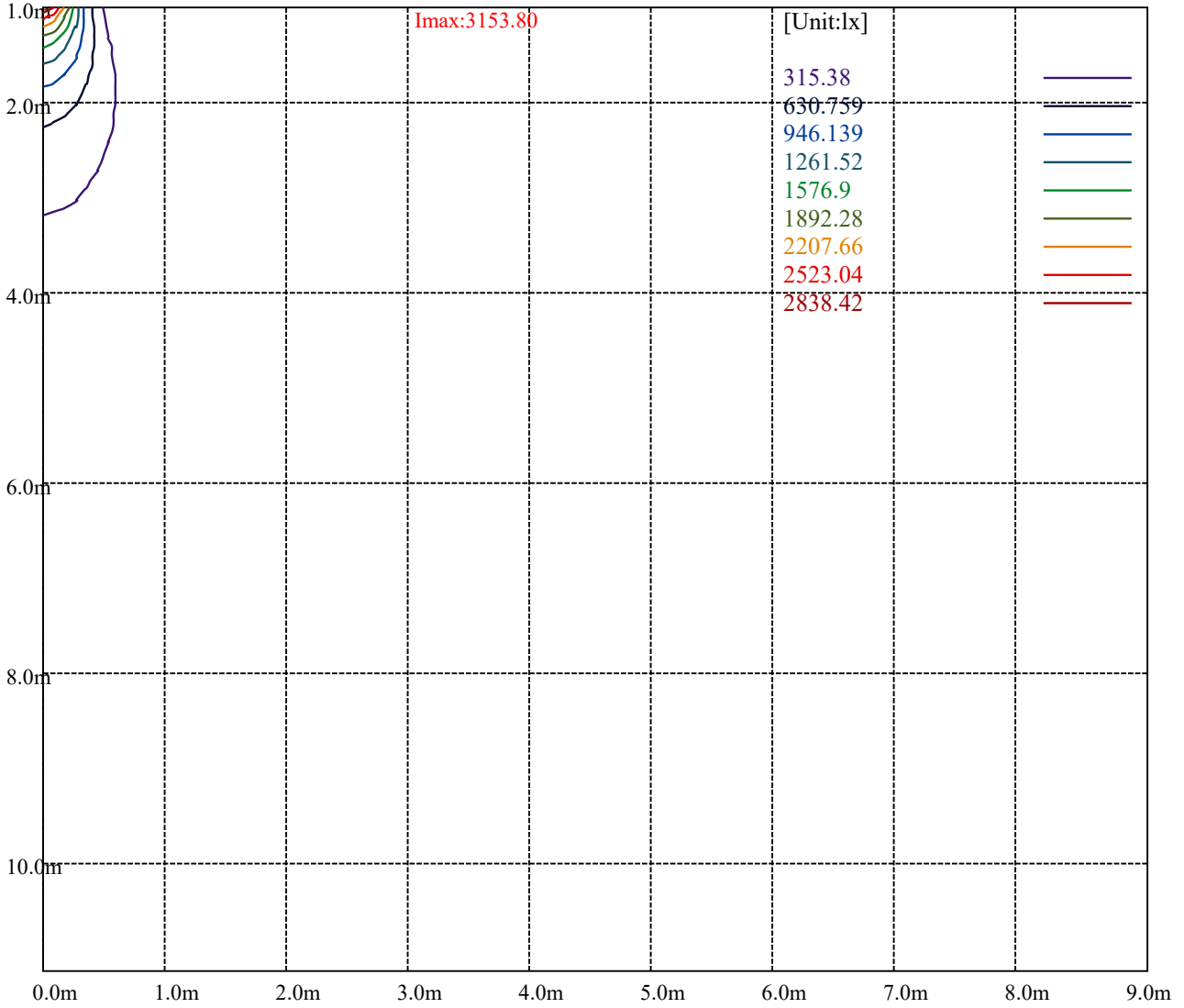
House

[Unit:cd]

Road

Imax:3153.80

- (10%Imax) 315.38
- (20%Imax) 630.759
- (30%Imax) 946.139
- (40%Imax) 1261.52
- (50%Imax) 1576.9
- (60%Imax) 1892.28
- (70%Imax) 2207.66
- (80%Imax) 2523.04
- (90%Imax) 2838.42



Luminance Table

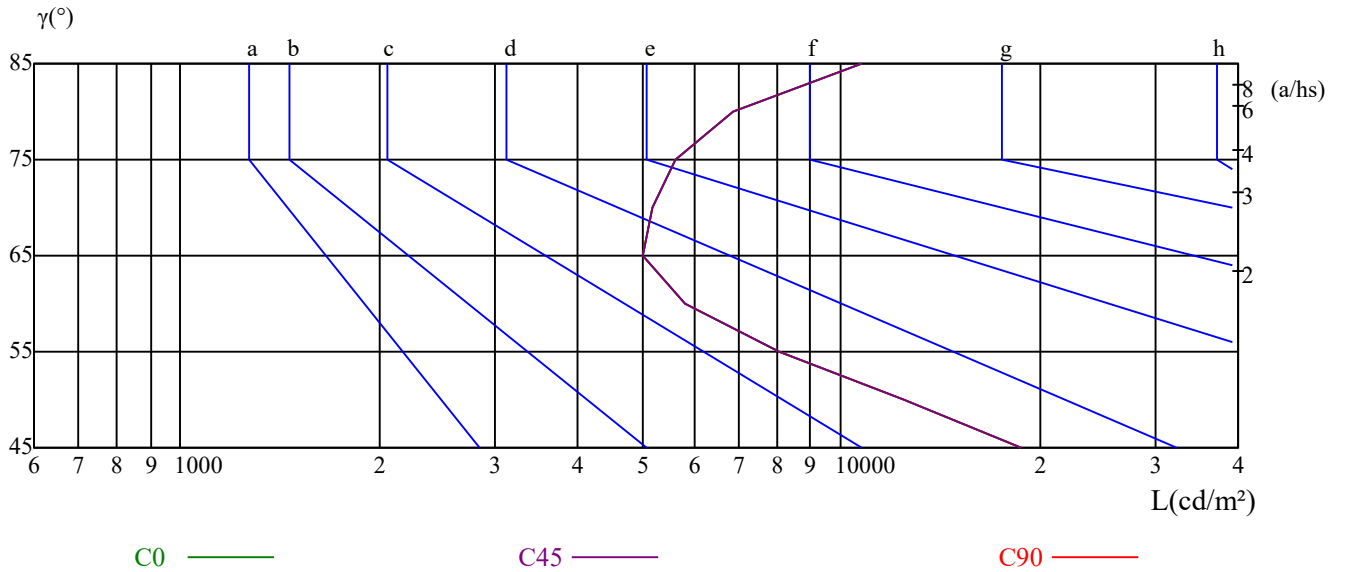
γ	45	50	55	60	65	70	75	80	85
C0	18800	12452	8074	5820	5014	5195	5638	6876	10755
C45	18800	12452	8074	5820	5014	5195	5638	6876	10755
C90	18800	12452	8074	5820	5014	5195	5638	6876	10755

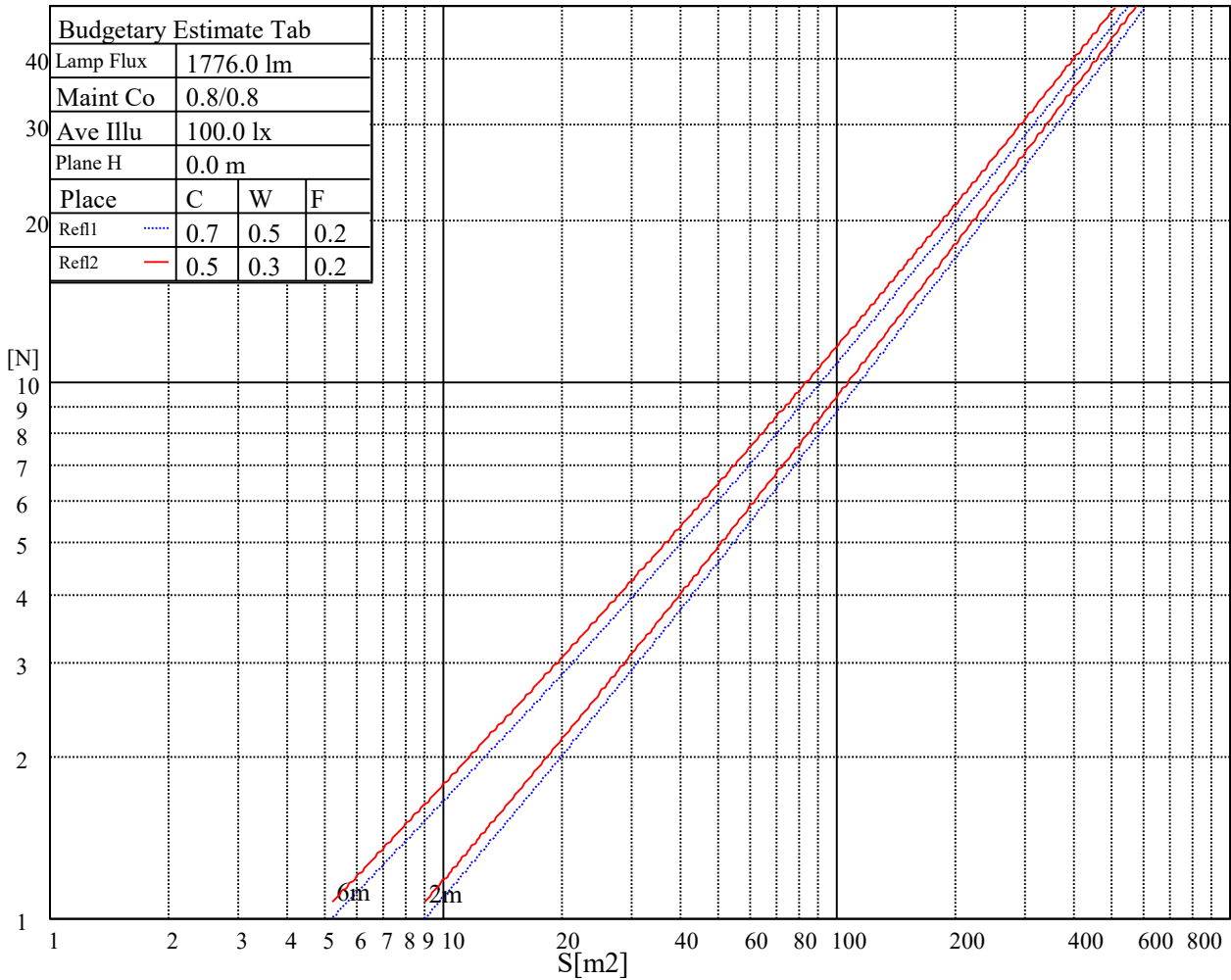
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5014	5014	5014	5638	5638	5638	10755	10755	10755

Glare Table

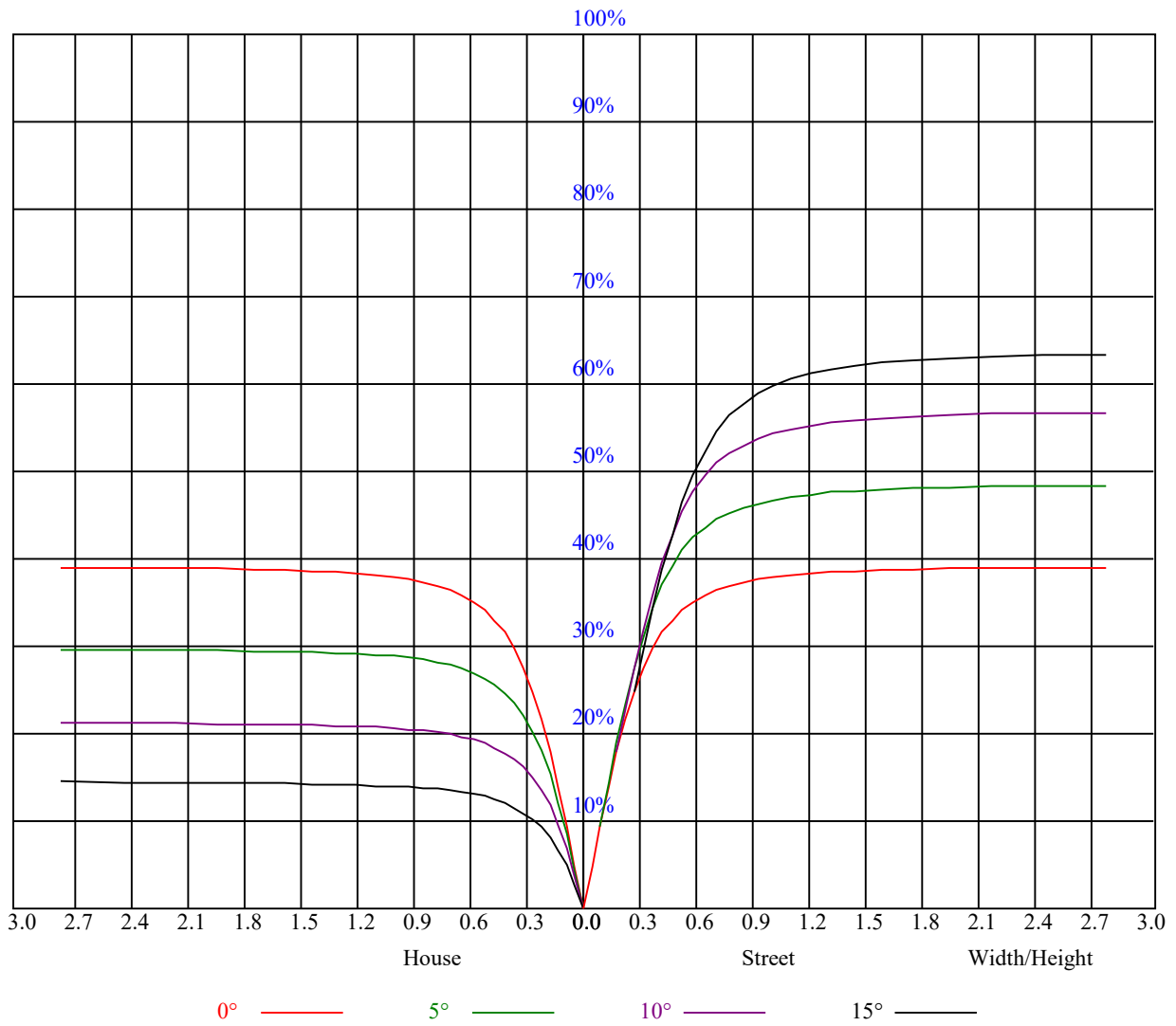
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

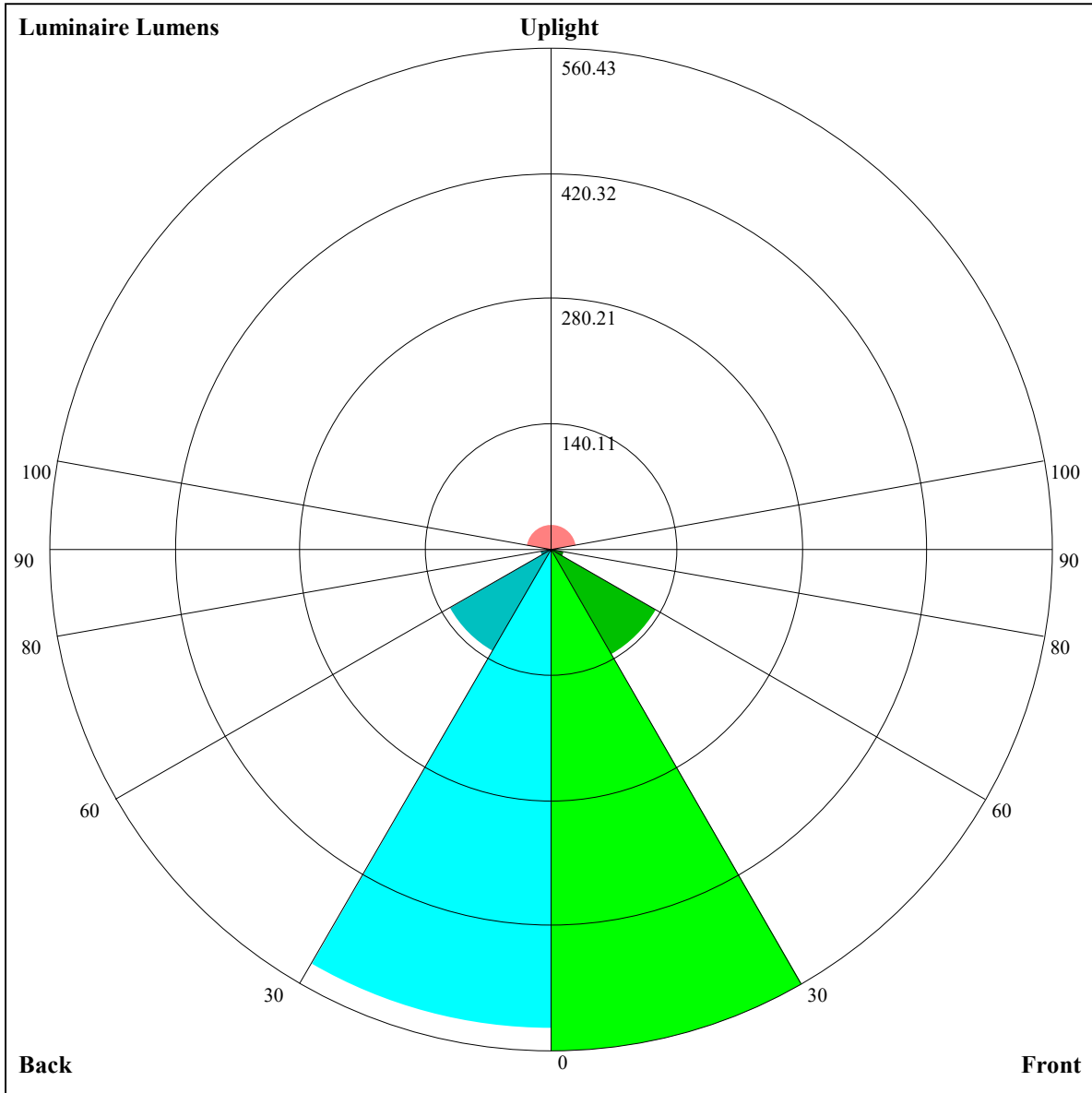
Luminance Limiting Curve





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	0.95	0.95	0.95	0.92	0.92	0.92	0.88	0.88	0.88	0.85	0.85	0.85	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	0.76	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	0.73	0.72	0.71	0.69
3	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.71	0.69	0.72	0.70	0.68	0.71	0.69	0.67	0.66
4	0.73	0.69	0.66	0.73	0.69	0.66	0.71	0.68	0.65	0.69	0.67	0.64	0.68	0.66	0.64	0.63
5	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.64	0.62	0.66	0.64	0.61	0.65	0.63	0.61	0.60
6	0.67	0.63	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.63	0.60	0.58	0.57
7	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.55
8	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.57	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.53
9	0.59	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.52	0.57	0.54	0.52	0.51
10	0.57	0.53	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.55	0.52	0.50	0.55	0.52	0.50	0.49





Luminaire Lumens:

FL=560.43,FM=135.08,FH=14.08,FVH=3.91

BL=536.25,BM=131.63,BH=13.76,BVH=3.82

UL=6.18,UH=29.39

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	3129.75	3109.50	2696.63	2096.44	1423.69	804.38	417.94	285.75	167.51
45.0	3168.56	2998.13	2458.69	1841.06	1227.94	648.56	354.38	223.82	149.06
90.0	3155.63	2860.88	2355.19	1746.56	1095.98	596.31	335.98	209.64	143.38
135.0	3161.25	2916.00	2445.19	1861.88	1257.19	678.94	375.19	230.74	160.09
180.0	3129.75	2775.94	2262.94	1687.50	1110.32	560.03	328.44	215.44	149.34
225.0	3168.56	2949.19	2416.50	1838.81	1115.44	676.46	365.74	237.09	162.00
270.0	3155.63	3016.69	2585.25	1990.13	1374.75	756.00	403.88	288.56	163.35
315.0	3161.25	3023.44	2488.50	1908.56	1120.22	637.99	368.04	224.55	149.74
360.0	3129.75	3109.50	2696.63	2096.44	1423.69	804.38	417.94	285.75	167.51
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	108.00	67.56	39.21	23.96	16.37	13.84	11.42	9.45	7.37
45.0	92.76	57.26	33.24	20.81	15.58	13.05	10.74	8.83	6.81
90.0	88.09	52.54	30.38	19.74	15.02	12.60	10.41	8.38	6.64
135.0	99.51	58.84	34.59	21.32	15.53	12.99	10.74	8.66	6.69
180.0	89.44	53.72	30.04	18.96	15.02	12.60	10.18	8.21	6.47
225.0	103.44	60.64	35.44	21.66	15.75	13.28	10.97	8.94	7.14
270.0	108.34	64.69	37.13	24.02	16.37	13.61	11.19	9.28	7.26
315.0	96.98	58.33	33.98	21.71	15.75	13.16	10.69	8.89	7.09
360.0	108.00	67.56	39.21	23.96	16.37	13.84	11.42	9.45	7.37
C/γ(°)	90.0								
0.0	5.79								
45.0	5.68								
90.0	5.63								
135.0	5.57								
180.0	5.68								
225.0	5.68								
270.0	5.63								
315.0	5.63								
360.0	5.79								