
Nata

Client:

LumCAT: 2-1795-N

Luminaire: 92.70.131.00

Report No: nata-0100

Test No: GC2018051901

LampCAT: LUMINUS CHM9 XH20

Lamp flux(lm): 1576.5

Number of Lamps: 1

Length(mm): 69

Phm Type: C

Voltage(V): 35.3000

Current(A): 0.4100

Power (W): 14.4730

PF: 0.0000

Ballast type: DC

Width(mm): 69

Height(mm): 0

Photometric Results

Lumens(lm): 1322.07, Efficiency(%): 83.86% , Luminous Efficacy(lm/W): 91.35

Central intensity(cd): 3648.037, Maximum intensity(cd): 3648.037

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=31.6

[C90/270]Total=31.6

Field angle(10%Imax): [C0/180]Total=59.4

[C90/270]Total=59.4

Maximum s/h(1/2): C0_180=0.52 C90_270=0.52

Maximum s/h(1/4): C0_180=0.55 C90_270=0.55

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 85.17%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.520%

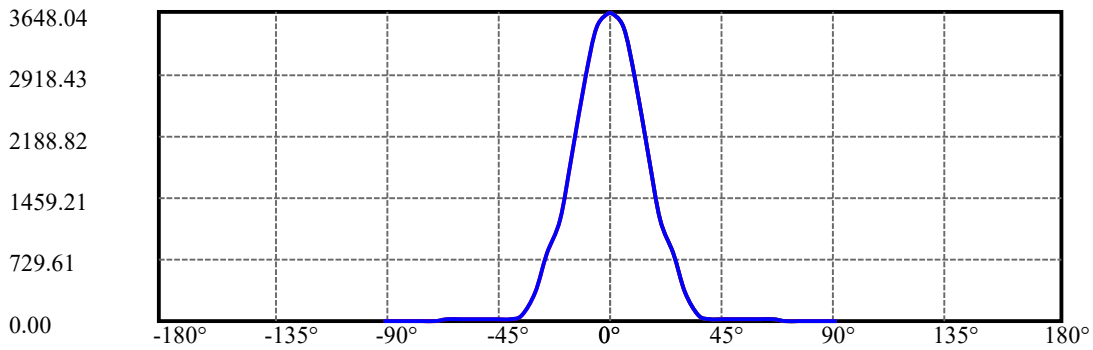
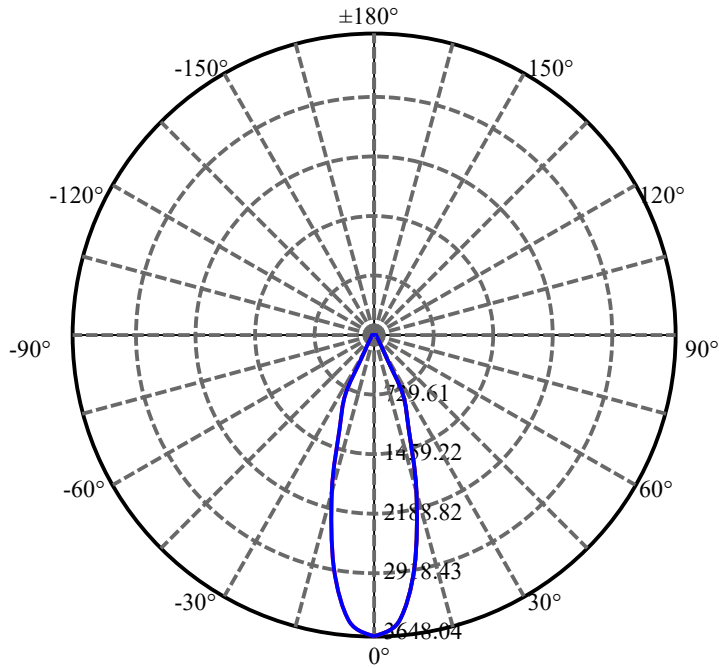
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3648.037	21.816	21.816	1.384%	1.650%
5.0	3472.338	165.885	187.701	10.522%	14.197%
10.0	2865.686	272.765	460.466	17.302%	34.829%
15.0	1948.928	276.491	736.957	17.538%	55.742%
20.0	1209.190	226.692	963.649	14.379%	72.889%
25.0	802.220	185.837	1149.485	11.788%	86.946%
30.0	336.718	92.284	1241.769	5.854%	93.926%
35.0	61.388	19.300	1261.07	1.224%	95.386%
40.0	26.021	9.168	1270.238	.582%	96.079%
45.0	18.052	6.997	1277.234	.444%	96.608%
50.0	15.196	6.381	1283.615	.405%	97.091%
55.0	13.826	6.208	1289.823	.394%	97.561%
60.0	12.821	6.086	1295.909	.386%	98.021%
65.0	11.624	5.774	1301.684	.366%	98.458%
70.0	10.695	5.509	1307.192	.349%	98.874%
75.0	9.532	5.047	1312.239	.320%	99.256%
80.0	8.327	4.495	1316.734	.285%	99.596%
85.0	6.861	3.747	1320.481	.238%	99.879%
90.0	5.815	1.594	1322.075	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1241.77	78.77%	93.93%
0-40	1270.24	80.57%	96.08%
0-60	1295.91	82.20%	98.02%
0-90	1320.48	83.76%	99.88%
0-120	1320.48	83.76%	99.88%
0-180	1322.07	83.86%	100.00%
60-90	30.66	1.94%	2.32%
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%
0-22.53	1057.66	67.09%	80.00%

ZONAL LUMEN SUMMARY

0-10	460.47
10-20	503.18
20-30	278.12
30-40	28.47
40-50	13.38
50-60	12.29
60-70	11.28
70-80	9.54
80-90	3.75
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: —————

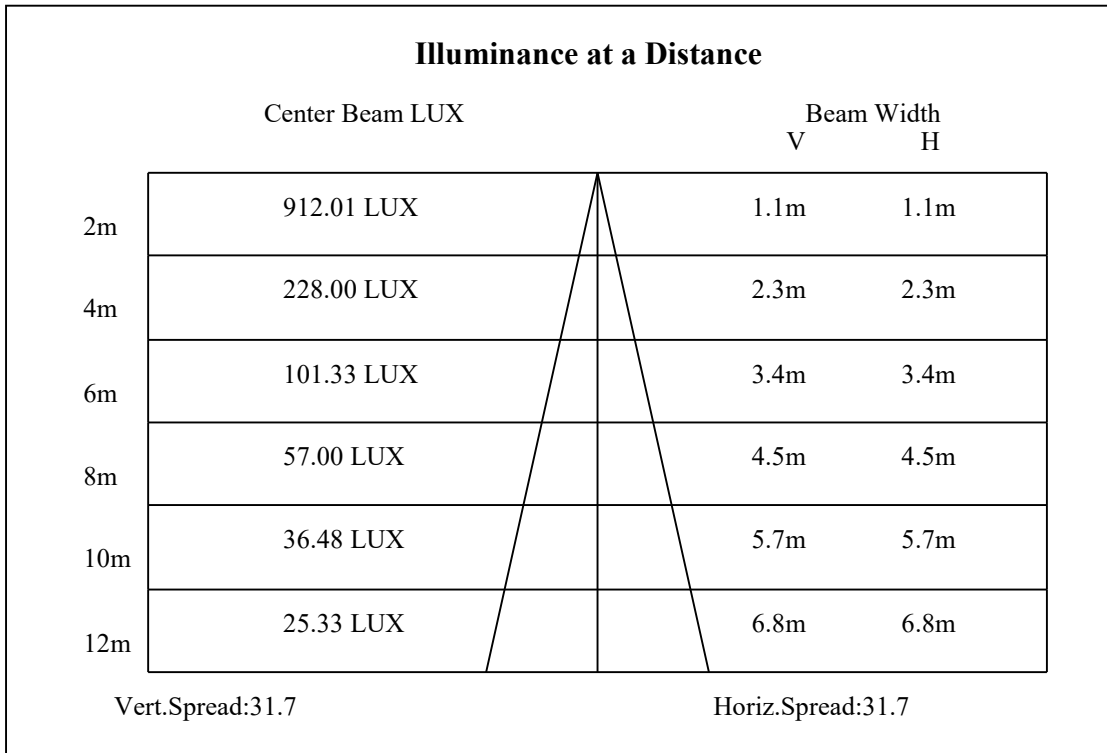
C90/C270: —————

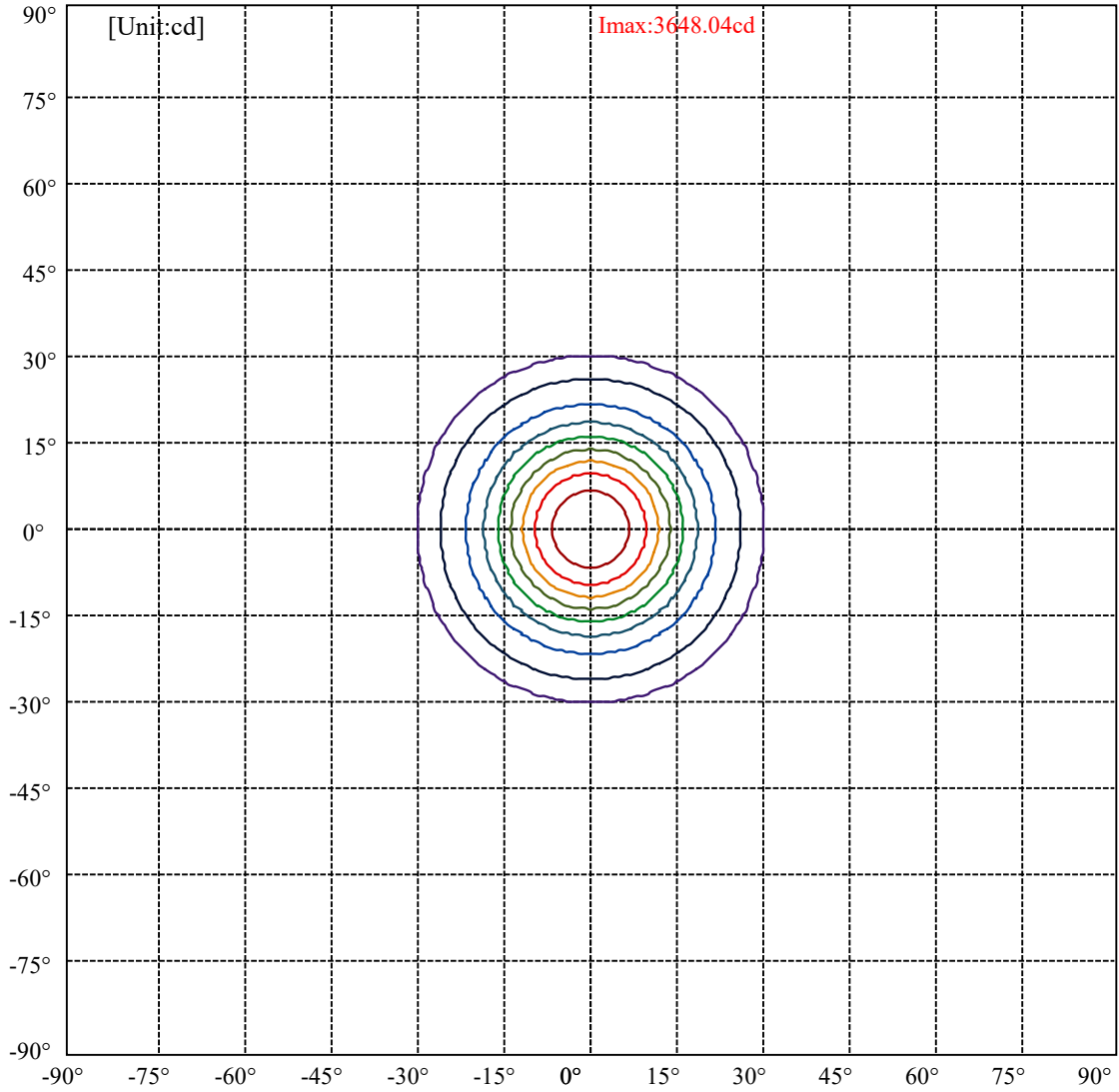
Field angle(10%Imax):C0/180Left:29.7 Right:29.7

:C90/270Left:29.7 Right:29.7

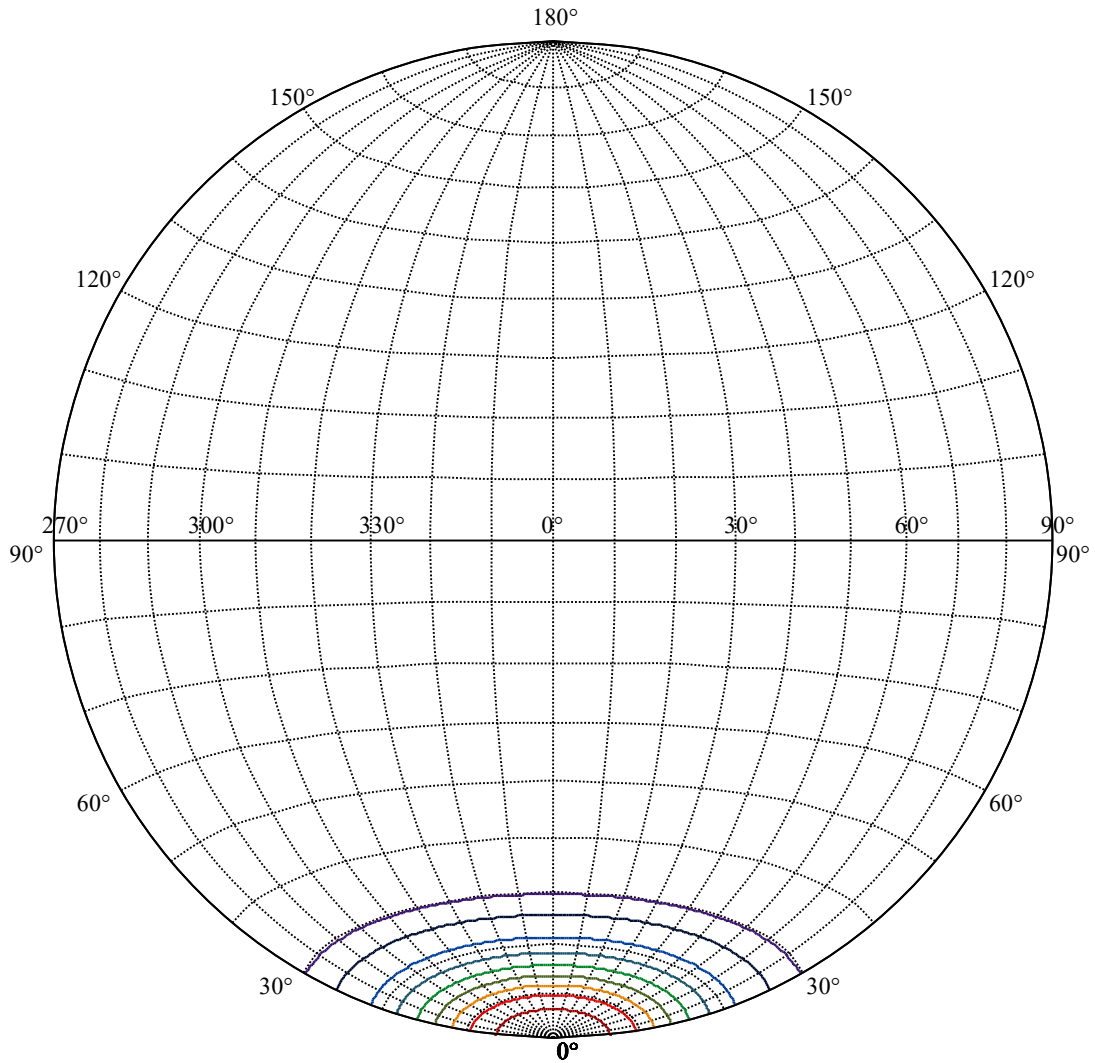
Beam Angle(50%Imax):C0/180Left:15.8 Right:15.8

:C90/270Left:15.8 Right:15.8





(10%Imax) 364.804	—
(20%Imax) 729.607	—
(30%Imax) 1094.41	—
(40%Imax) 1459.21	—
(50%Imax) 1824.02	—
(60%Imax) 2188.82	—
(70%Imax) 2553.63	—
(80%Imax) 2918.43	—
(90%Imax) 3283.23	—



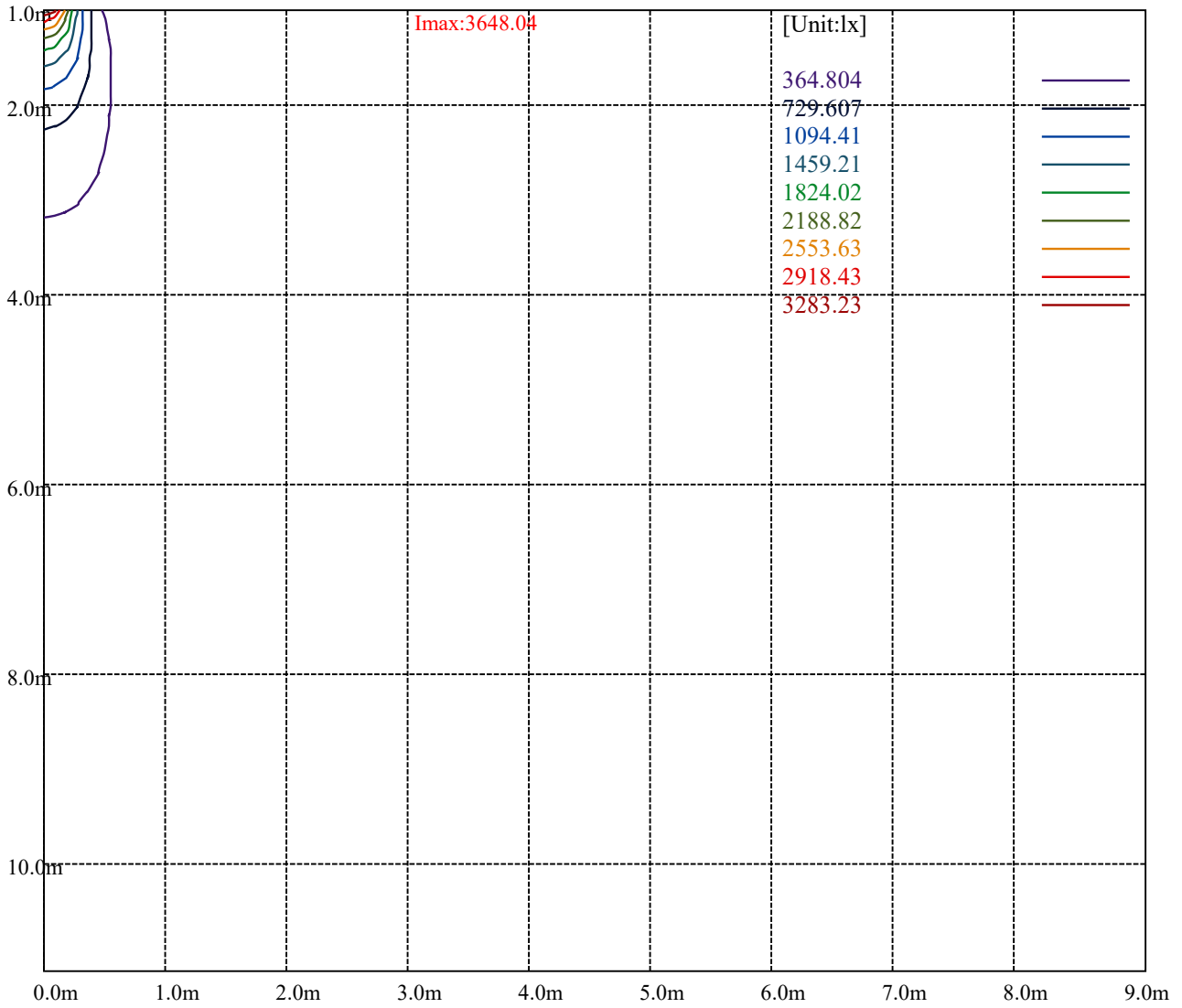
House

[Unit:cd]

Road

Imax:3648.04

(10%Imax)	364.804	—
(20%Imax)	729.607	—
(30%Imax)	1094.41	—
(40%Imax)	1459.21	—
(50%Imax)	1824.02	—
(60%Imax)	2188.82	—
(70%Imax)	2553.63	—
(80%Imax)	2918.43	—
(90%Imax)	3283.23	—



Luminance Table

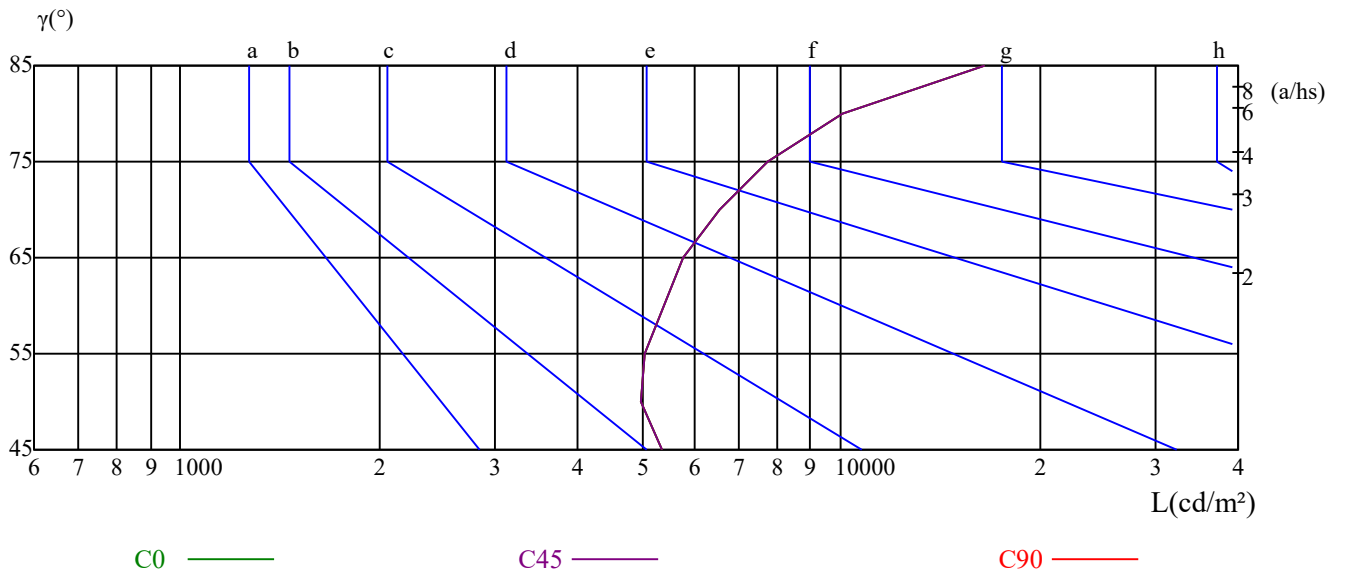
γ	45	50	55	60	65	70	75	80	85
C0	5362	4965	5063	5386	5777	6568	7735	10072	16536
C45	5362	4965	5063	5386	5777	6568	7735	10072	16536
C90	5362	4965	5063	5386	5777	6568	7735	10072	16536

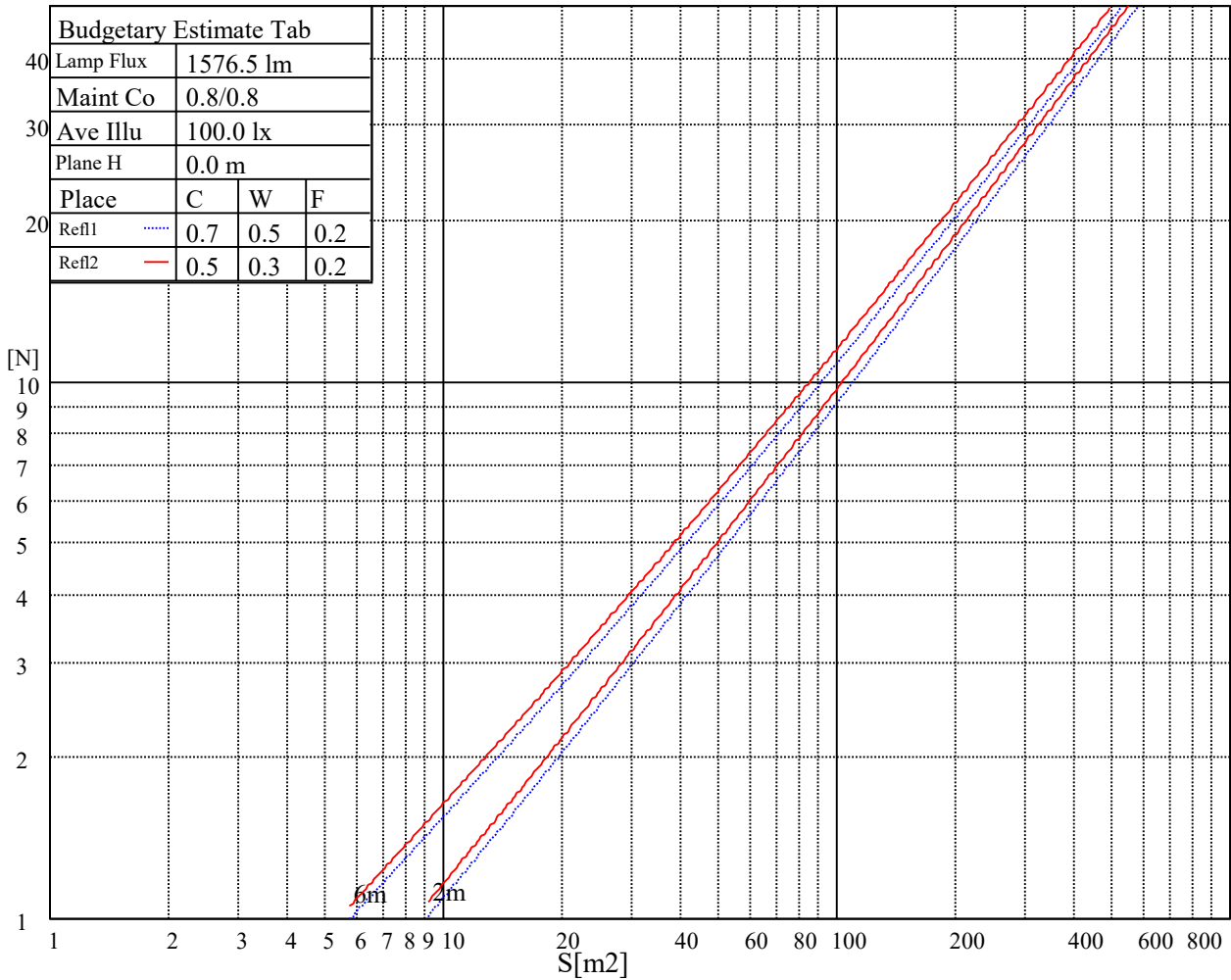
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5777	5777	5777	7735	7735	7735	16536	16536	16536

Glare Table

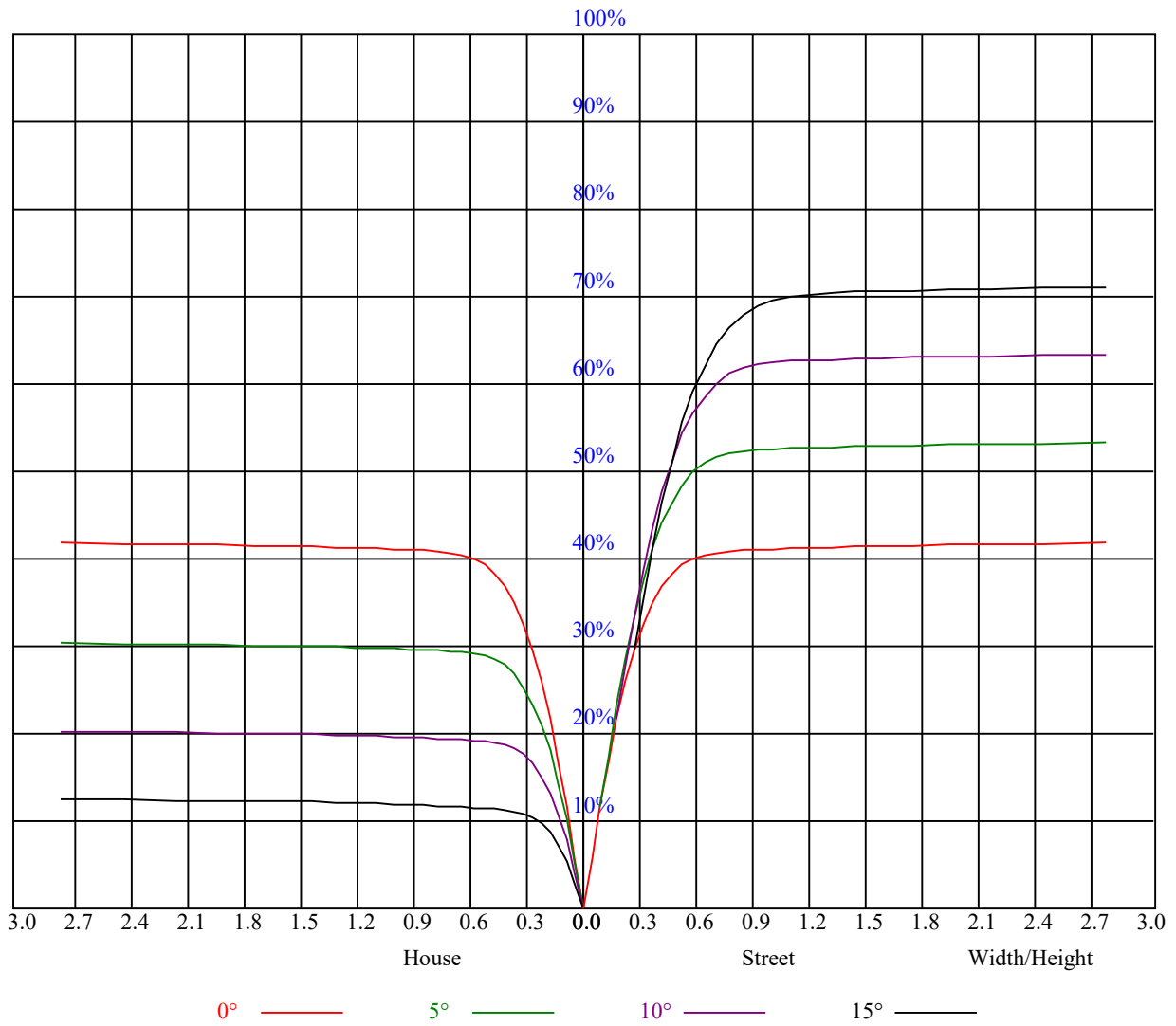
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

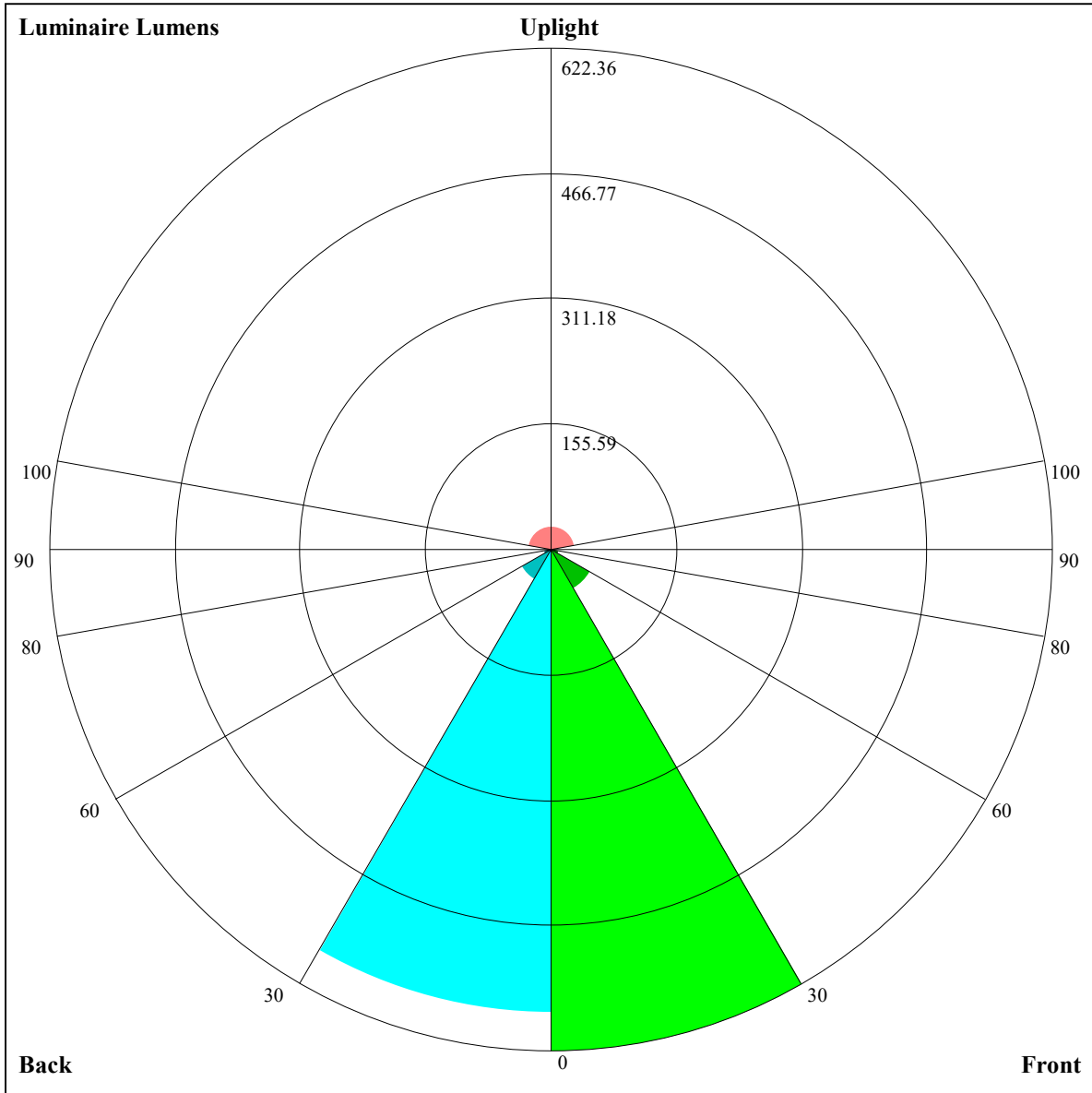
Luminance Limiting Curve





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	1.01	1.01	1.01	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.85
1	0.94	0.91	0.89	0.92	0.90	0.88	0.88	0.87	0.85	0.85	0.84	0.83	0.82	0.81	0.80	0.79
2	0.89	0.86	0.83	0.87	0.85	0.82	0.85	0.82	0.80	0.82	0.80	0.79	0.80	0.78	0.77	0.76
3	0.85	0.81	0.78	0.84	0.80	0.77	0.81	0.79	0.76	0.79	0.77	0.75	0.77	0.76	0.74	0.73
4	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.70
5	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.68
6	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
7	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
8	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.62
9	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.60
10	0.66	0.62	0.59	0.65	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.58





Luminaire Lumens:

FL=622.36,FM=55.25,FH=10.92,FVH=3.82

BL=575.01,BM=43.63,BH=10.74,BVH=3.78

UL=6.34,UH=30.19

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	3641.98	3540.68	3078.75	2230.33	1432.02	928.80	515.33	92.49	31.93
45.0	3641.98	3508.74	3038.56	2122.42	1342.83	914.49	444.86	73.11	30.01
90.0	3652.99	3463.05	2762.18	1872.47	1090.78	759.56	309.14	53.90	23.62
135.0	3655.19	3482.87	2860.18	1919.82	1248.68	812.08	316.57	59.52	25.99
180.0	3641.98	3373.86	2633.35	1716.11	1069.36	672.46	182.73	42.39	23.12
225.0	3641.98	3427.81	2749.52	1790.43	1096.01	687.16	231.90	44.16	21.53
270.0	3652.99	3496.08	2942.76	2009.56	1298.78	834.10	360.07	61.72	25.71
315.0	3655.19	3485.62	2860.18	1930.28	1095.07	809.11	333.15	63.81	26.26
360.0	3641.98	3540.68	3078.75	2230.33	1432.02	928.80	515.33	92.49	31.93
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	19.93	16.19	14.20	13.60	11.95	11.07	9.63	8.75	6.99
45.0	18.55	15.58	13.87	13.38	11.84	10.96	9.74	8.81	6.99
90.0	17.12	14.98	13.82	12.88	11.84	11.07	9.97	8.75	7.27
135.0	18.44	15.64	14.26	13.16	12.00	11.12	9.69	8.26	7.10
180.0	17.45	14.87	13.87	12.55	11.62	10.52	9.69	8.26	7.16
225.0	16.85	14.26	13.10	12.11	10.85	10.02	8.97	7.49	6.39
270.0	17.84	14.92	13.54	12.39	11.40	10.46	9.19	8.15	6.39
315.0	18.22	15.14	13.93	12.50	11.51	10.35	9.36	8.15	6.61
360.0	19.93	16.19	14.20	13.60	11.95	11.07	9.63	8.75	6.99
C/γ(°)	90.0								
0.0	6.00								
45.0	5.73								
90.0	5.73								
135.0	5.78								
180.0	5.95								
225.0	5.89								
270.0	5.73								
315.0	5.73								
360.0	6.00								