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NATA

Client:

LumCAT: 3-1940-M

Luminaire: BJB 47.319.2011

Report No: nata-0100

Test No: 2017060802

LampCAT: LUXEON CoB 1205

Lamp flux(lm): 1094.7

Number of Lamps: 1

Length(mm): 78

Phm Type: C

Voltage(V):

Current(A):

Power (W): 20.6000

PF:

Ballast type:

Width(mm): 78

Height(mm): 0

Photometric Results

Lumens(lm): 987.11, Efficiency(%): 90.17% , Luminous Efficacy(lm/W): 47.92

Central intensity(cd): 2312.860, Maximum intensity(cd): 2312.860

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=35.0

[C90/270]Total=35.0

Field angle(10%Imax): [C0/180]Total=67.2

[C90/270]Total=67.2

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

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(%): 91.35%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.506%

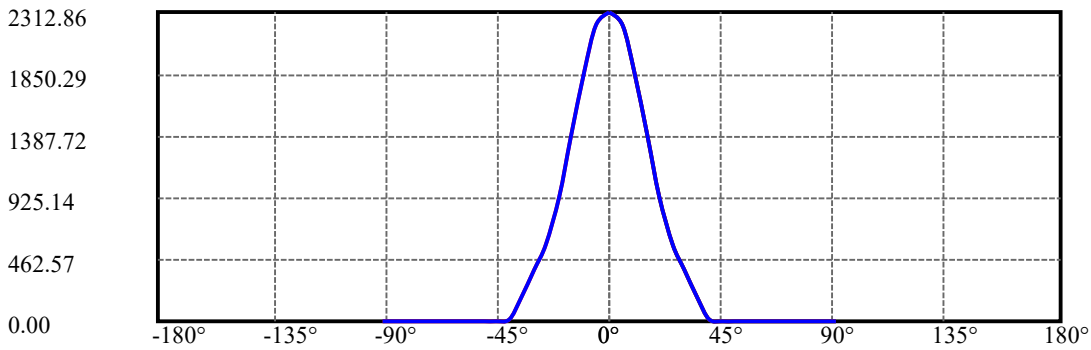
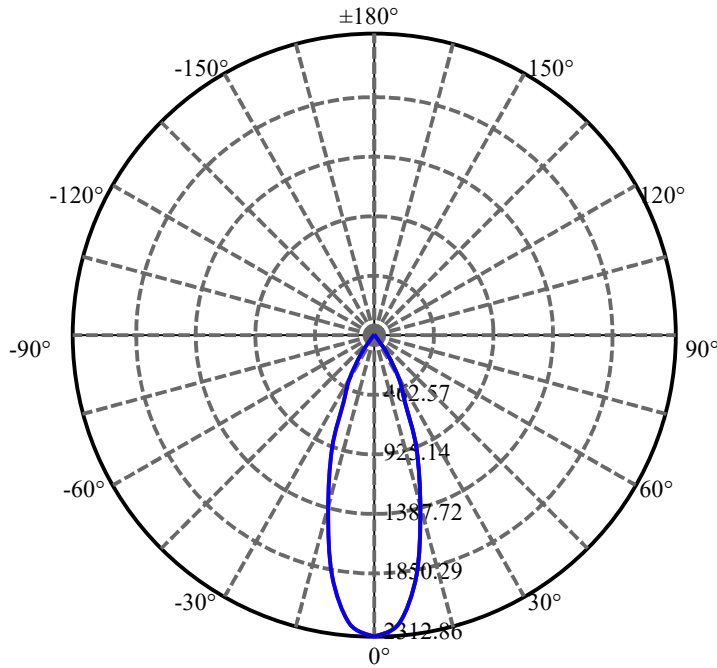
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2312.860	13.831	13.831	1.263%	1.401%
5.0	2213.177	105.731	119.562	9.658%	12.112%
10.0	1872.699	178.249	297.811	16.283%	30.170%
15.0	1381.078	195.931	493.743	17.898%	50.019%
20.0	931.854	174.698	668.441	15.959%	67.717%
25.0	572.242	132.562	801.003	12.109%	81.146%
30.0	383.958	105.231	906.233	9.613%	91.807%
35.0	172.199	54.139	960.372	4.946%	97.291%
40.0	16.520	5.821	966.193	.532%	97.881%
45.0	6.502	2.520	968.713	.230%	98.136%
50.0	5.042	2.117	970.83	.193%	98.351%
55.0	4.693	2.107	972.937	.192%	98.564%
60.0	4.470	2.122	975.059	.194%	98.779%
65.0	4.319	2.146	977.205	.196%	98.997%
70.0	4.229	2.178	979.383	.199%	99.217%
75.0	4.164	2.205	981.588	.201%	99.441%
80.0	4.081	2.203	983.791	.201%	99.664%
85.0	4.053	2.213	986.004	.202%	99.888%
90.0	4.031	1.105	987.109	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	906.23	82.78%	91.81%
0-40	966.19	88.26%	97.88%
0-60	975.06	89.07%	98.78%
0-90	986.00	90.07%	99.89%
0-120	986.00	90.07%	99.89%
0-180	987.11	90.17%	100.00%
60-90	13.07	1.19%	1.32%
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%
0-24.57	789.69	72.14%	80.00%

ZONAL LUMEN SUMMARY

0-10	297.81
10-20	370.63
20-30	237.79
30-40	59.96
40-50	4.64
50-60	4.23
60-70	4.32
70-80	4.41
80-90	2.21
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: —————

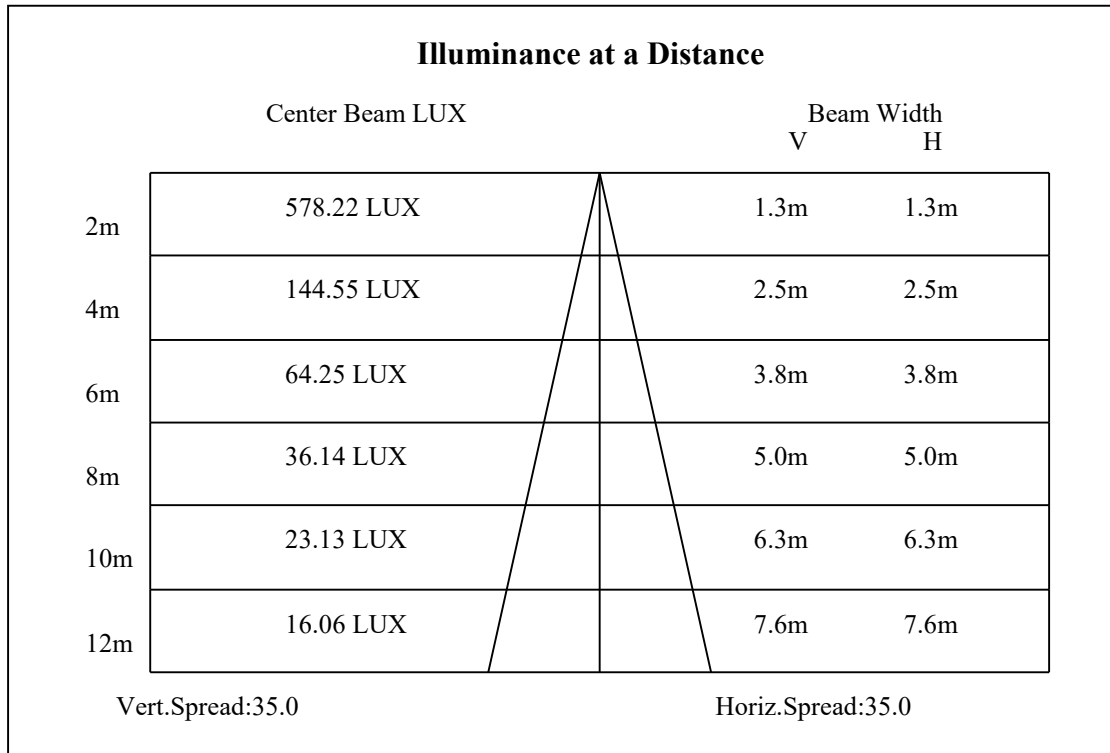
C90/C270: —————

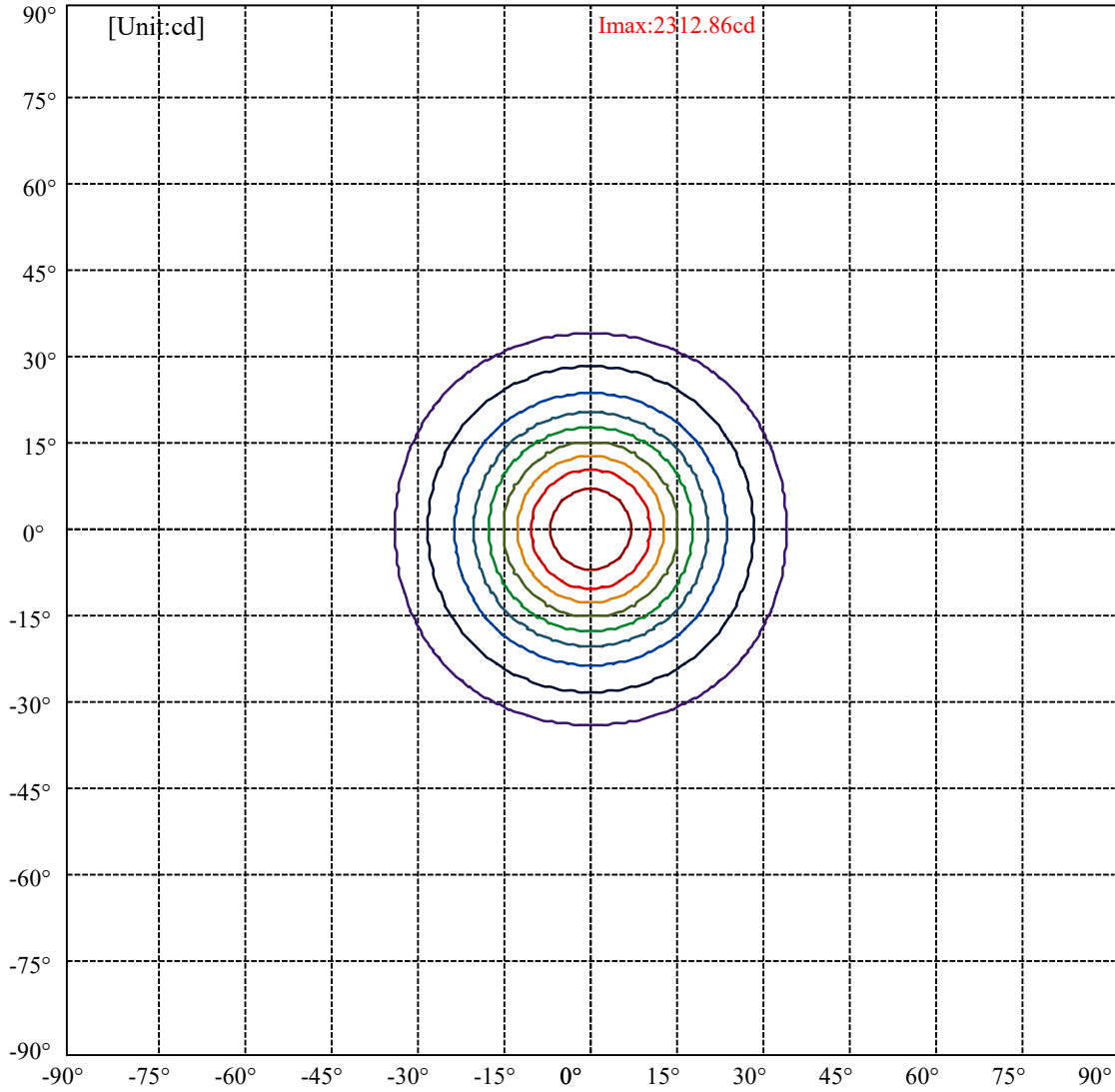
Field angle(10%Imax):C0/180Left:33.6 Right:33.6

:C90/270Left:33.6 Right:33.6

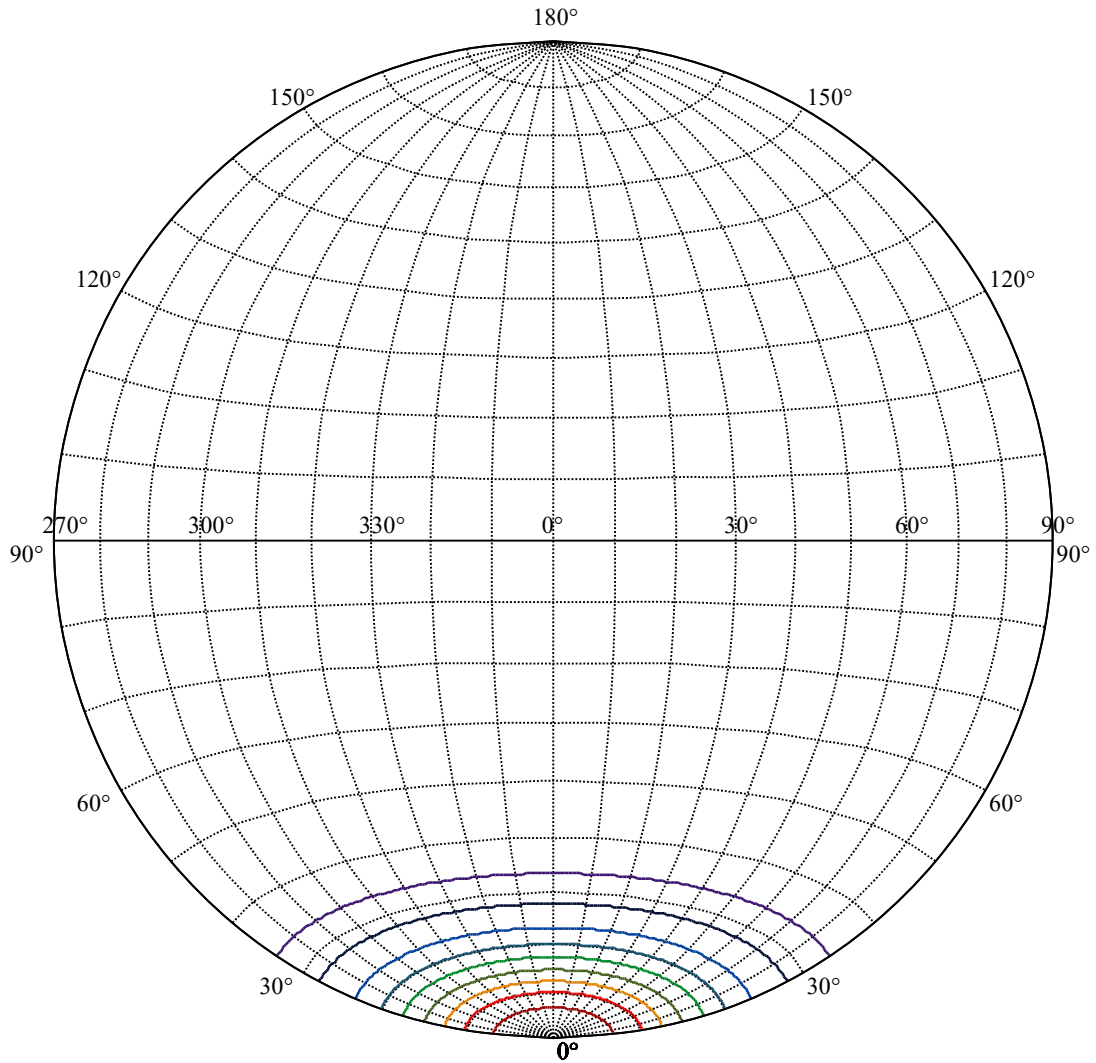
Beam Angle(50%Imax):C0/180Left:17.5 Right:17.5

:C90/270Left:17.5 Right:17.5





(10%Imax) 231.286	—
(20%Imax) 462.572	—
(30%Imax) 693.858	—
(40%Imax) 925.144	—
(50%Imax) 1156.43	—
(60%Imax) 1387.72	—
(70%Imax) 1619	—
(80%Imax) 1850.29	—
(90%Imax) 2081.57	—



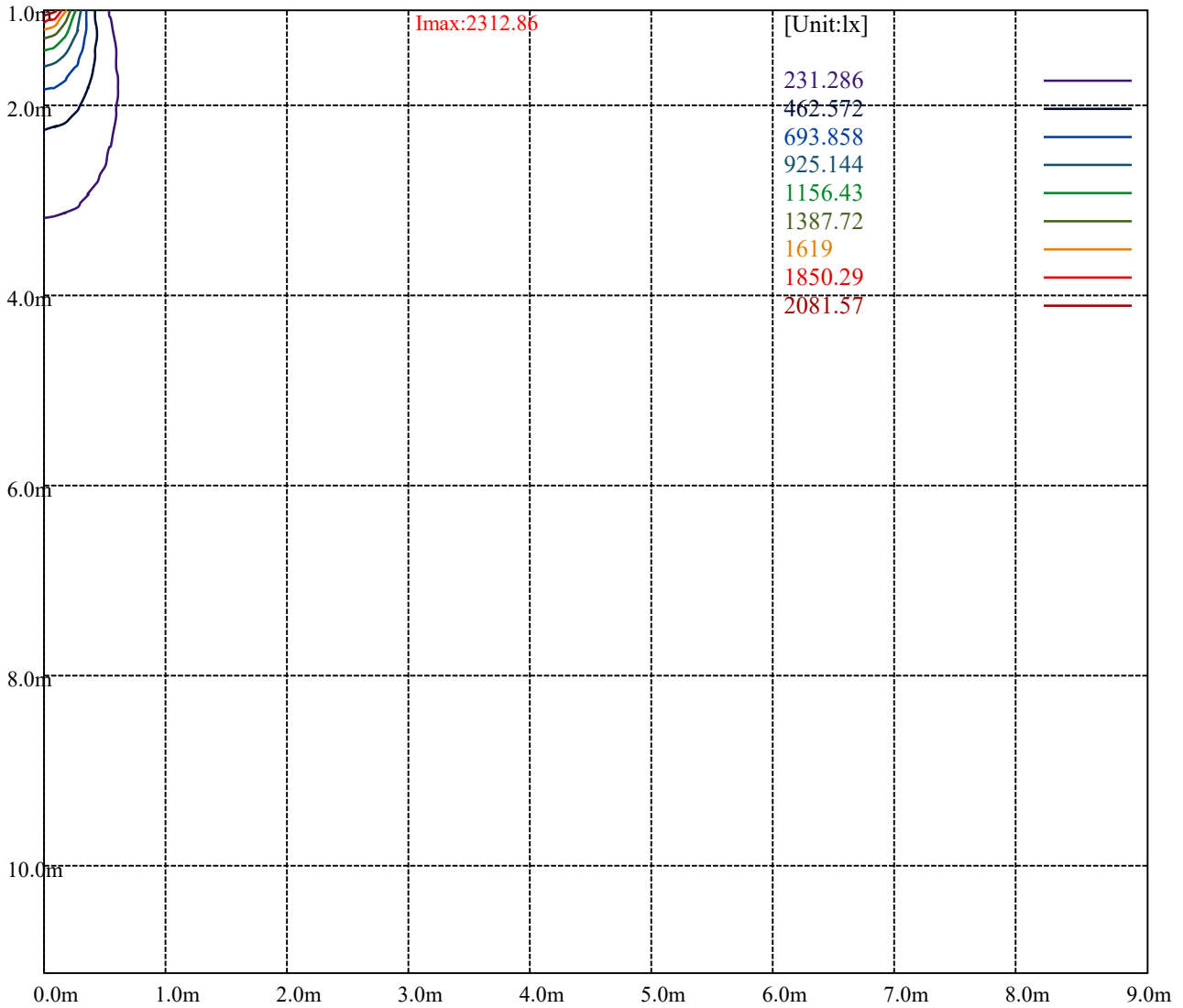
House

[Unit:cd]

Road

Imax:2312.86

(10%Imax) 231.286	—
(20%Imax) 462.572	—
(30%Imax) 693.858	—
(40%Imax) 925.144	—
(50%Imax) 1156.43	—
(60%Imax) 1387.72	—
(70%Imax) 1619	—
(80%Imax) 1850.29	—
(90%Imax) 2081.57	—



Luminance Table

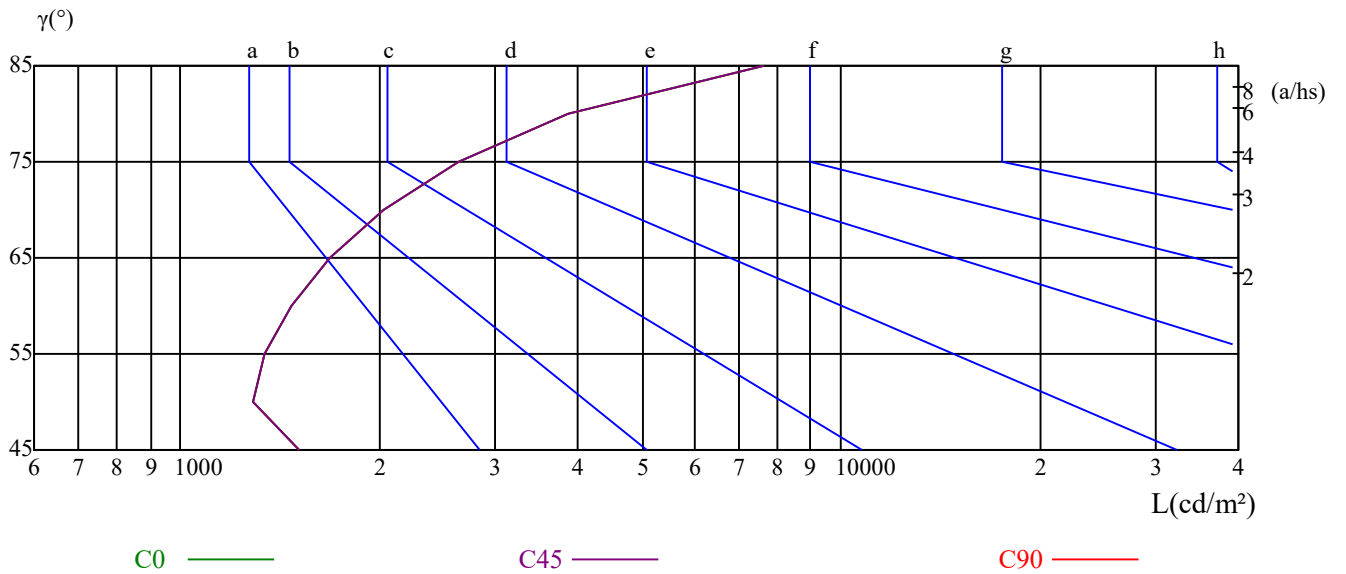
γ	45	50	55	60	65	70	75	80	85
C0	1511	1289	1345	1469	1680	2032	2645	3863	7643
C45	1511	1289	1345	1469	1680	2032	2645	3863	7643
C90	1511	1289	1345	1469	1680	2032	2645	3863	7643

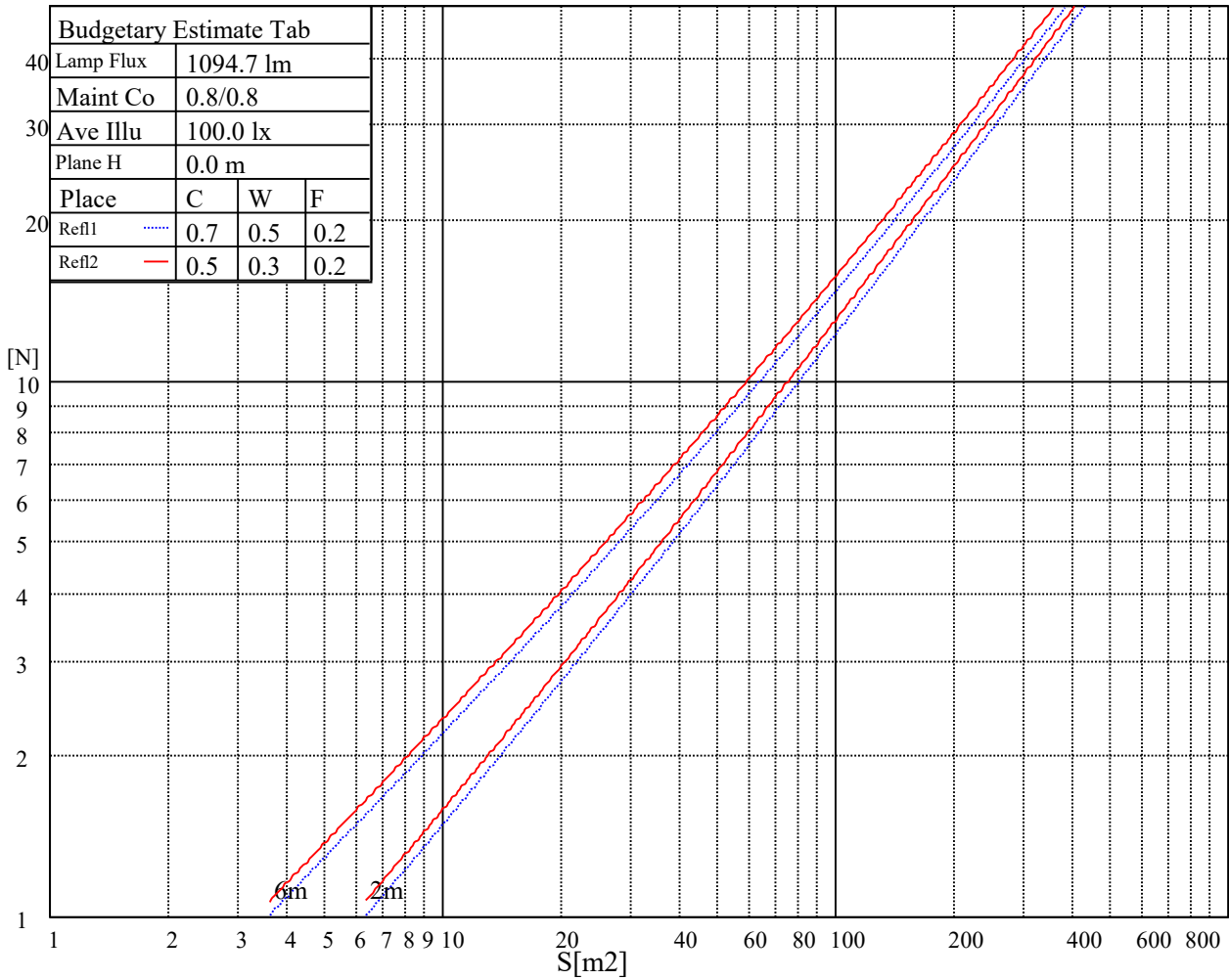
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1680	1680	1680	2645	2645	2645	7643	7643	7643

Glare Table

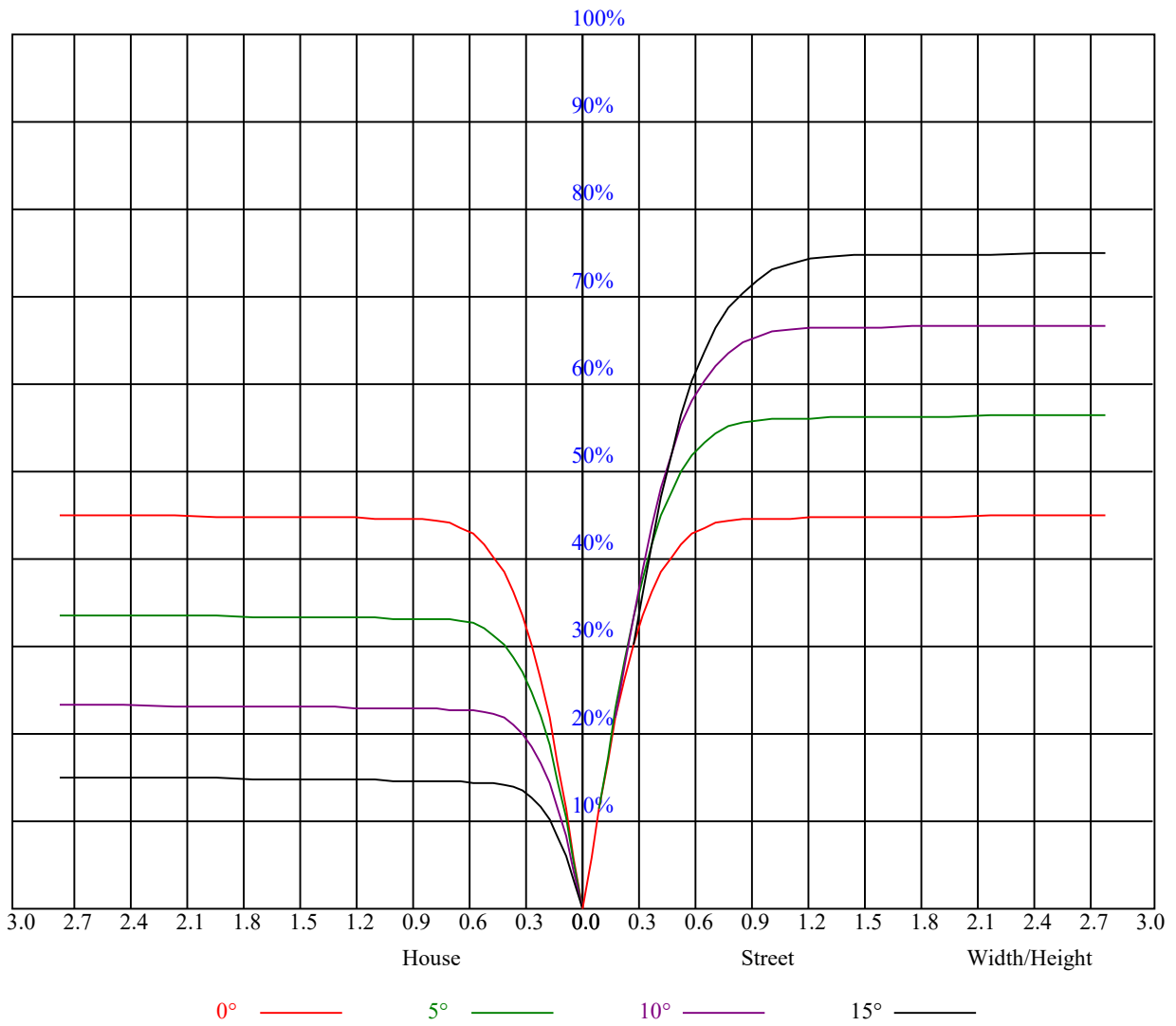
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

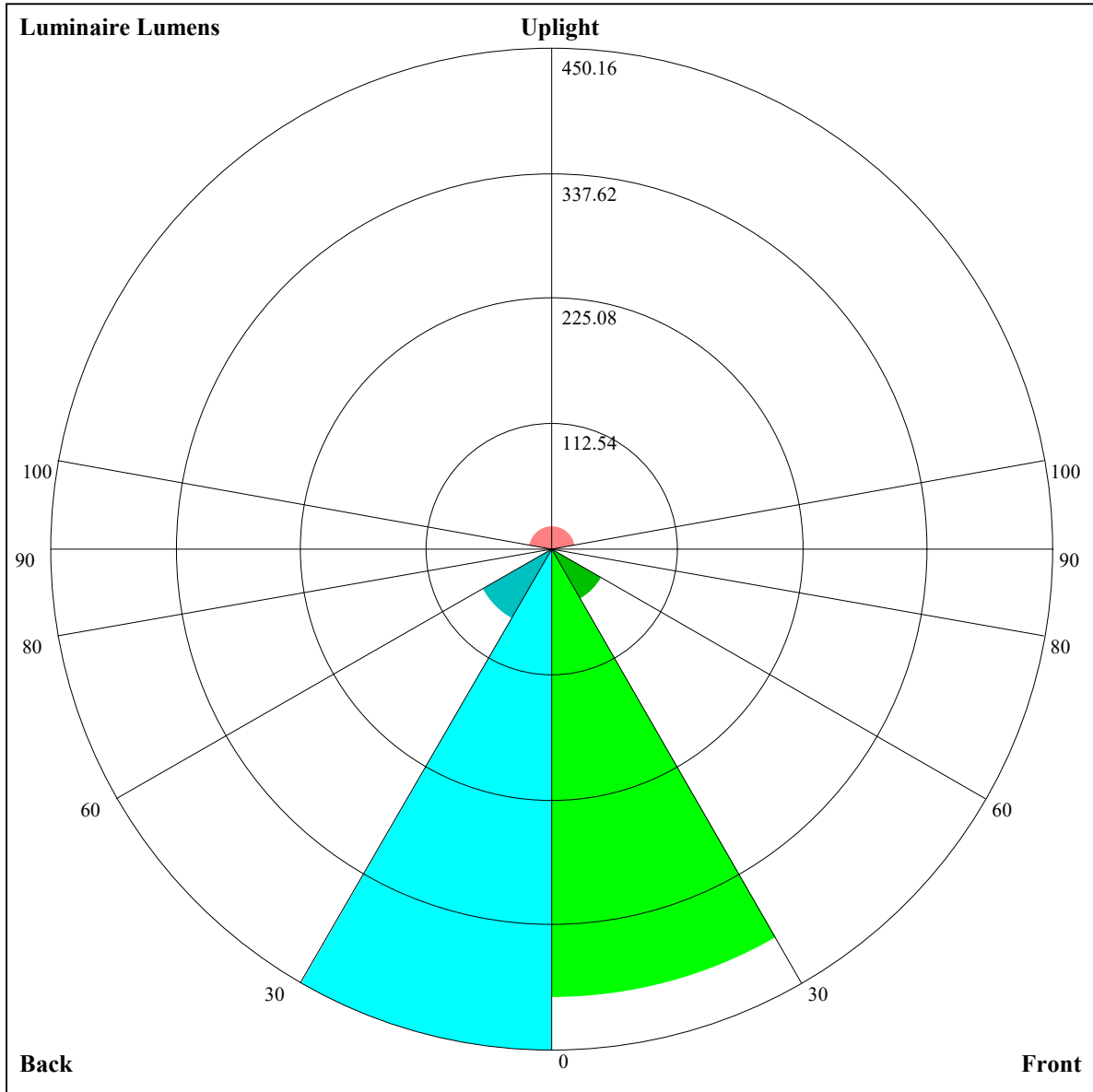
Luminance Limiting Curve





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	1.09	1.09	1.09	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.01	0.98	0.96	0.99	0.97	0.95	0.95	0.93	0.92	0.92	0.90	0.89	0.89	0.88	0.87	0.85
2	0.95	0.92	0.89	0.94	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.83	0.81
3	0.91	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.87	0.82	0.79	0.86	0.82	0.79	0.84	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
5	0.83	0.78	0.75	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.72
6	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.67
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	0.65	0.64
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.69	0.65	0.63	0.62
10	0.69	0.65	0.62	0.68	0.64	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.60





Luminaire Lumens:

FL=403.16,FM=51.84,FH=4.33,FVH=2.21

BL=450.16,BM=71.77,BH=4.37,BVH=2.22

UL=4.4,UH=20.93

BUG Rating:B1-U2-G0

NATA 3-1940-M

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	2318.76	2218.36	1848.68	1314.44	864.79	548.62	360.47	145.57	11.16
45.0	2316.17	2170.02	1749.14	1209.72	805.81	485.76	317.12	80.04	9.35
90.0	2318.18	2178.08	1775.61	1308.11	839.47	514.96	361.91	158.23	9.98
135.0	2298.33	2289.13	2046.03	1579.69	1096.38	703.68	453.11	260.07	32.74
180.0	2318.76	2229.86	1899.02	1437.86	986.19	559.67	414.59	194.33	12.75
225.0	2316.17	2263.81	1990.80	1523.88	1081.13	702.82	437.57	265.25	27.82
270.0	2318.18	2259.21	1968.64	1491.95	999.14	571.92	417.84	210.79	19.22
315.0	2298.33	2096.95	1703.68	1182.97	781.93	490.51	309.06	63.32	9.15
360.0	2318.76	2218.36	1848.68	1314.44	864.79	548.62	360.47	145.57	11.16
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	5.98	5.04	4.72	4.46	4.29	4.20	4.11	4.09	4.06
45.0	5.50	4.89	4.57	4.37	4.23	4.17	4.11	4.06	4.03
90.0	5.73	4.92	4.63	4.43	4.32	4.20	4.14	4.09	4.06
135.0	7.94	5.24	4.80	4.55	4.37	4.23	4.17	4.06	4.06
180.0	7.02	5.15	4.72	4.52	4.34	4.23	4.14	4.06	4.03
225.0	7.48	5.21	4.80	4.57	4.40	4.26	4.20	4.11	4.09
270.0	6.99	5.04	4.75	4.49	4.37	4.26	4.20	4.11	4.09
315.0	5.38	4.86	4.55	4.37	4.23	4.29	4.23	4.09	4.03
360.0	5.98	5.04	4.72	4.46	4.29	4.20	4.11	4.09	4.06
C/ γ (°)	90.0								
0.0	4.00								
45.0	4.03								
90.0	4.09								
135.0	4.00								
180.0	4.03								
225.0	4.03								
270.0	4.06								
315.0	4.03								
360.0	4.00								