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NATA

LumCAT: 3-1219-E
Luminaire: 92.70.046.00
Report No: NATA0100
Test No: GC2019030603
LampCAT: CREE CXA1512
Lamp flux(lm): 1440.0
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 35.1000
Current(A): 0.3000
Power (W): 10.5300
PF: 0.0000
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 1328.85
Efficiency(%): 92.28%
Lumens(lm)/Power(W): 127.03
Central intensity(cd): 1680.609
Maximum intensity(cd): 1680.609
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=44.6
 [C90/270]Total=44.6
Field angle(10%Imax): [C0/180]Total=93.9
 [C90/270]Total=93.9
Maximum s/h(1/2): C0_180=0.69 C90_270=0.69
Maximum s/h(1/4): C0_180=0.77 C90_270=0.77
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.89%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.175%

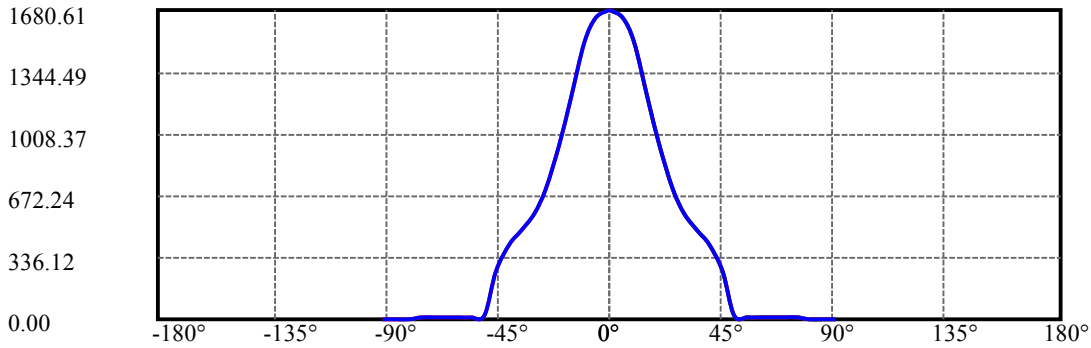
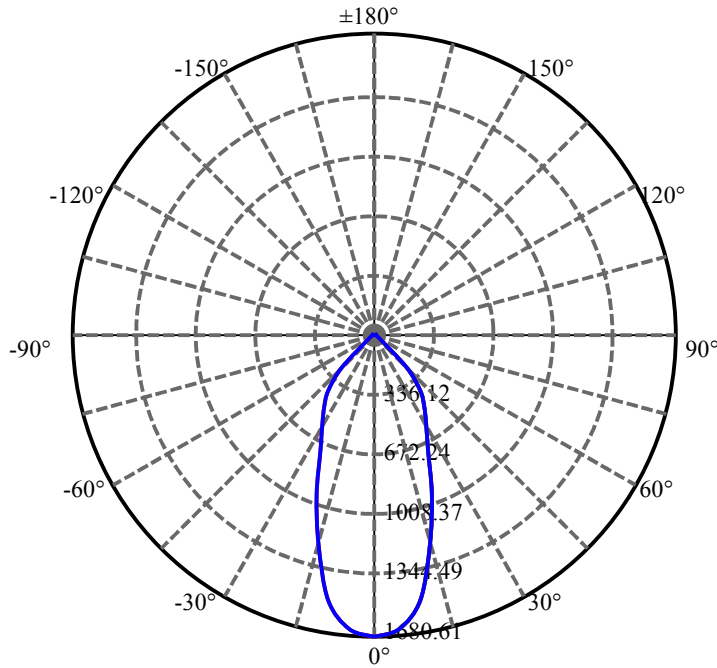
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1680.609	10.050	10.05	.698%	.756%
5.0	1639.477	78.323	88.374	5.439%	6.650%
10.0	1503.984	143.154	231.527	9.941%	17.423%
15.0	1205.177	170.977	402.504	11.873%	30.290%
20.0	948.480	177.815	580.319	12.348%	43.671%
25.0	712.364	165.021	745.341	11.460%	56.089%
30.0	573.075	157.062	902.403	10.907%	67.909%
35.0	481.043	151.239	1053.642	10.503%	79.290%
40.0	404.353	142.468	1196.11	9.894%	90.011%
45.0	258.905	100.349	1296.459	6.969%	97.563%
50.0	24.237	10.177	1306.636	.707%	98.328%
55.0	7.650	3.435	1310.071	.239%	98.587%
60.0	6.645	3.154	1313.225	.219%	98.824%
65.0	6.427	3.193	1316.418	.222%	99.065%
70.0	6.476	3.336	1319.753	.232%	99.316%
75.0	5.576	2.952	1322.706	.205%	99.538%
80.0	4.641	2.505	1325.211	.174%	99.726%
85.0	4.479	2.446	1327.656	.170%	99.910%
90.0	4.352	1.193	1328.849	.083%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	902.40	62.67%	67.91%
0-40	1196.11	83.06%	90.01%
0-60	1313.23	91.20%	98.82%
0-90	1327.66	92.20%	99.91%
0-120	1327.66	92.20%	99.91%
0-180	1328.85	92.28%	100.00%
60-90	17.59	1.22%	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%
0-35.33	1063.08	73.82%	80.00%

ZONAL LUMEN SUMMARY

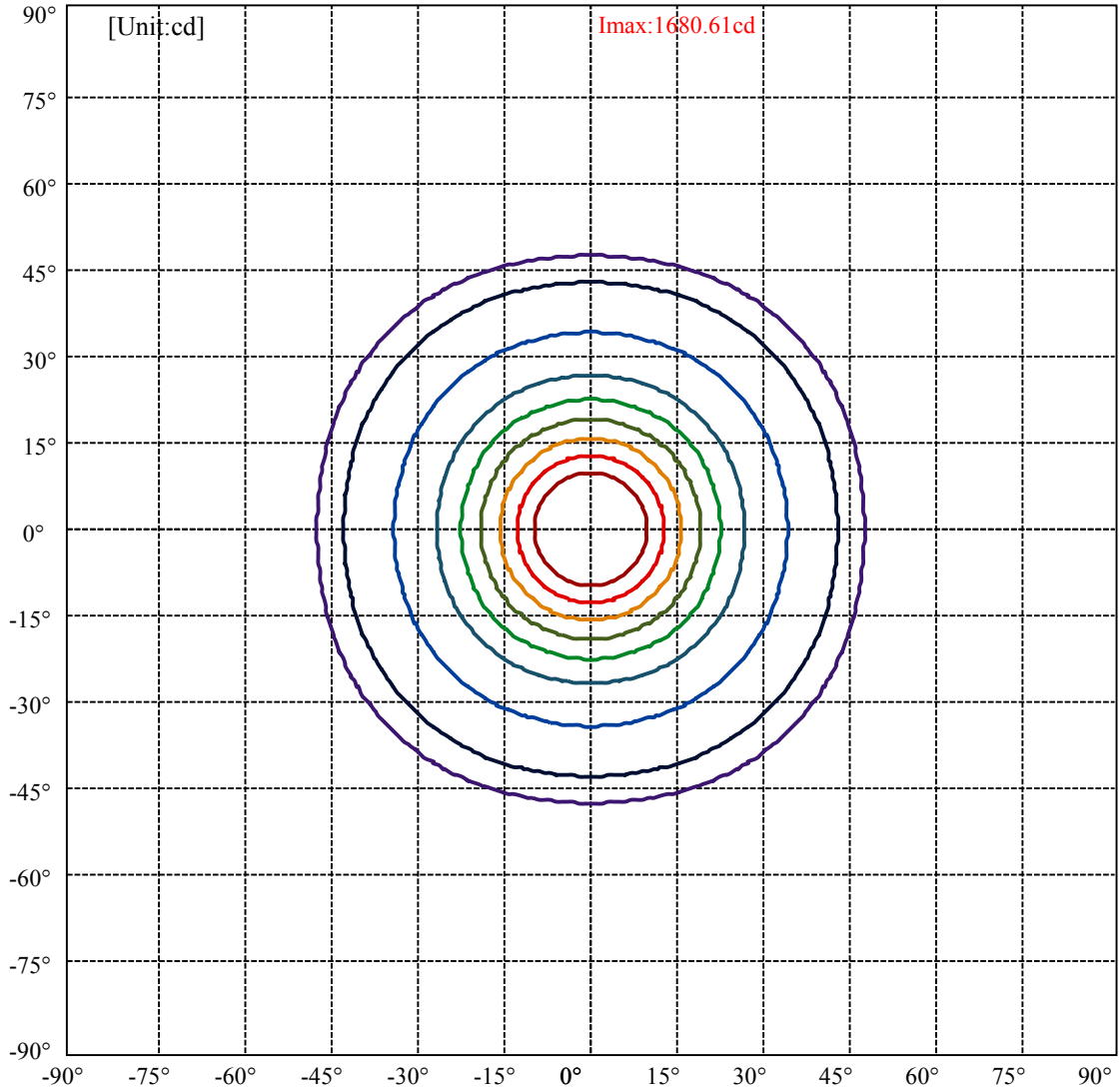
0-10	231.53
10-20	348.79
20-30	322.08
30-40	293.71
40-50	110.53
50-60	6.59
60-70	6.53
70-80	5.46
80-90	2.45
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



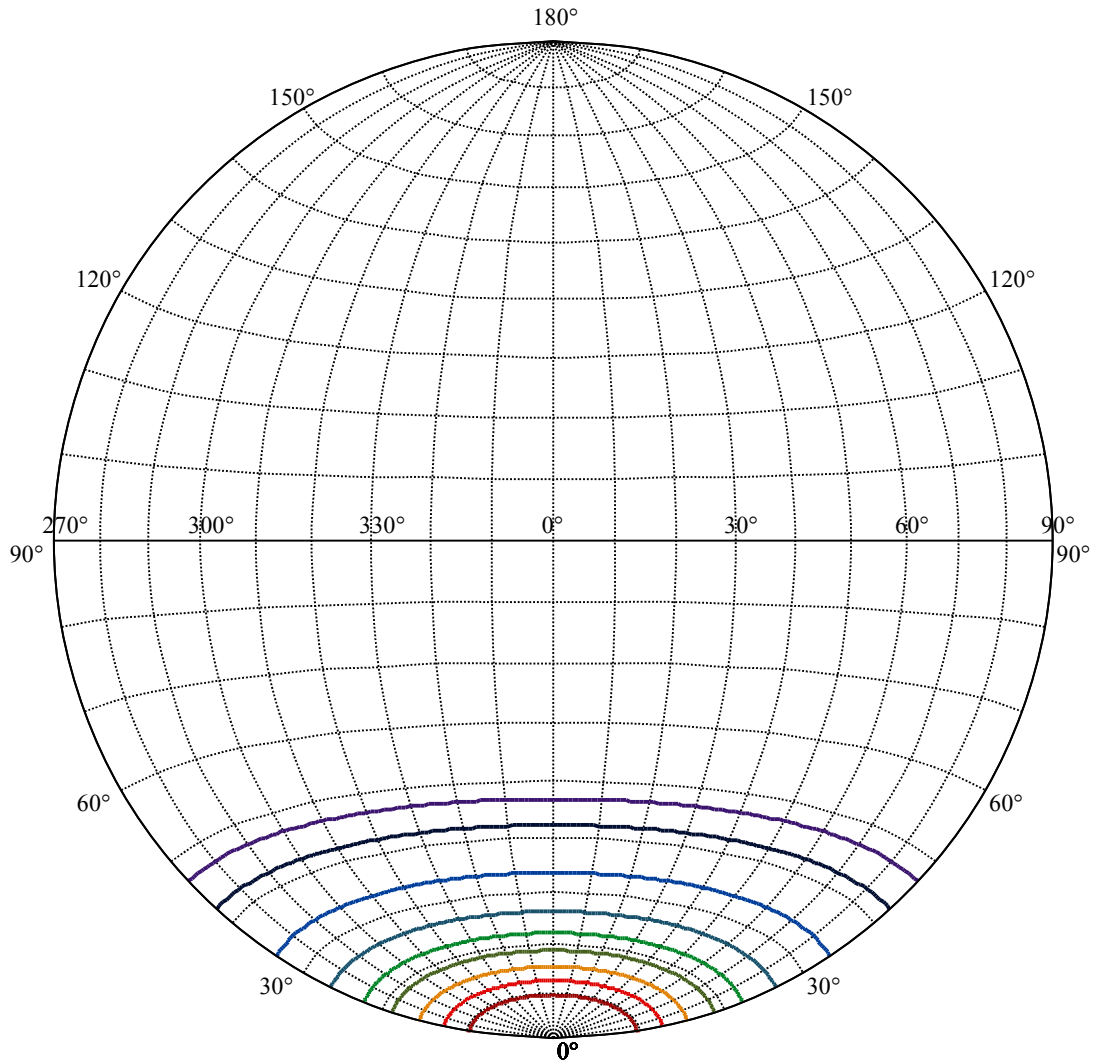
C0(Max): ———
C0/C180: ———
C90/C270: ———

Field angle(10%Imax):C0/180Left:46.9 Right:46.9
:C90/270Left:46.9 Right:46.9

Beam Angle(50%Imax):C0/180Left:22.3 Right:22.3
:C90/270Left:22.3 Right:22.3



(10%Imax) 168.061	—
(20%Imax) 336.122	—
(30%Imax) 504.183	—
(40%Imax) 672.244	—
(50%Imax) 840.305	—
(60%Imax) 1008.37	—
(70%Imax) 1176.43	—
(80%Imax) 1344.49	—
(90%Imax) 1512.55	—












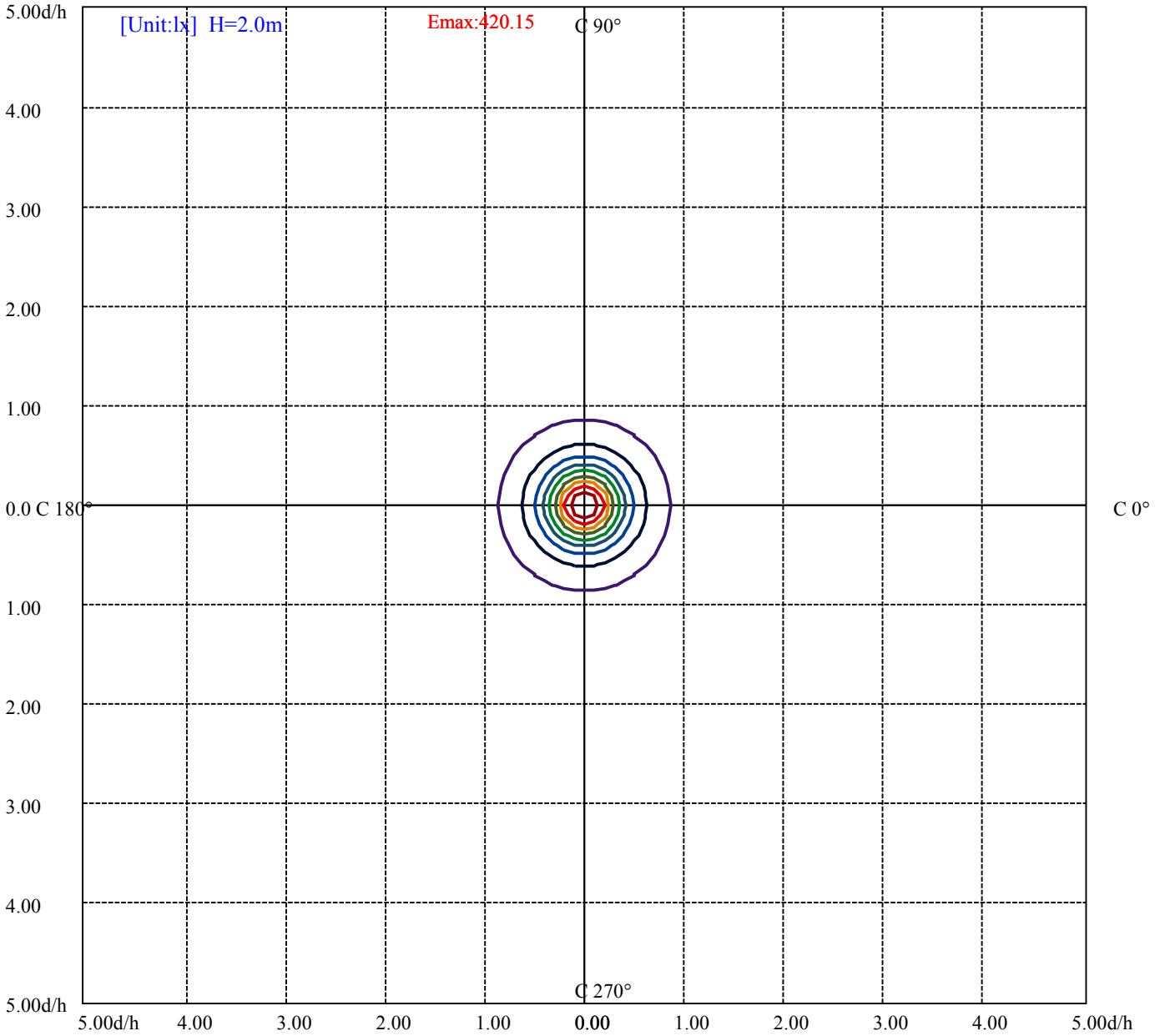
House

[Unit:cd]

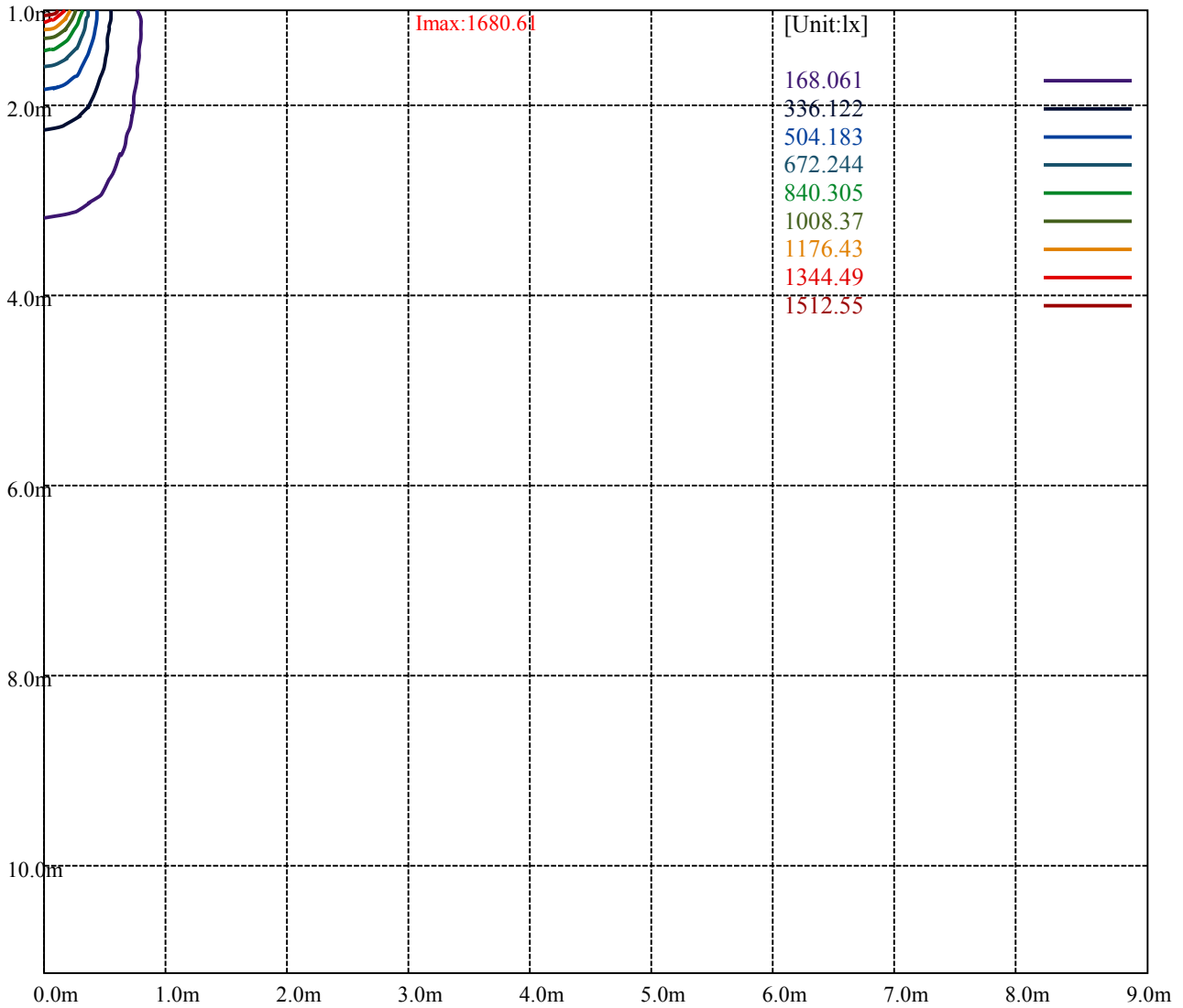
Road

I_{max}:1680.61

(10%I _{max}) 168.061	
(20%I _{max}) 336.122	
(30%I _{max}) 504.183	
(40%I _{max}) 672.244	
(50%I _{max}) 840.305	
(60%I _{max}) 1008.37	
(70%I _{max}) 1176.43	
(80%I _{max}) 1344.49	
(90%I _{max}) 1512.55	



- (10%Emax) 42.01525
- (20%Emax) 84.0305
- (30%Emax) 126.0455
- (40%Emax) 168.0607
- (50%Emax) 210.076
- (60%Emax) 252.09
- (70%Emax) 294.1075
- (80%Emax) 336.1225
- (90%Emax) 378.1375



Luminance Table

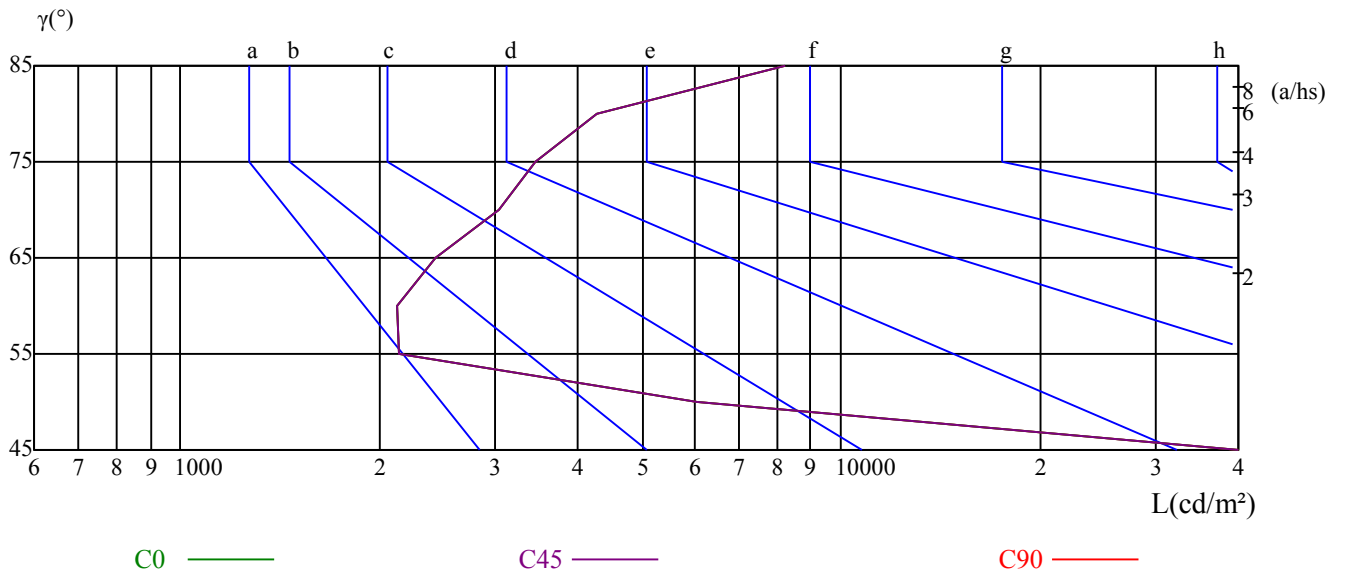
γ	45	50	55	60	65	70	75	80	85
C0	58668	6042	2137	2129	2437	3034	3452	4282	8234
C45	58668	6042	2137	2129	2437	3034	3452	4282	8234
C90	58668	6042	2137	2129	2437	3034	3452	4282	8234

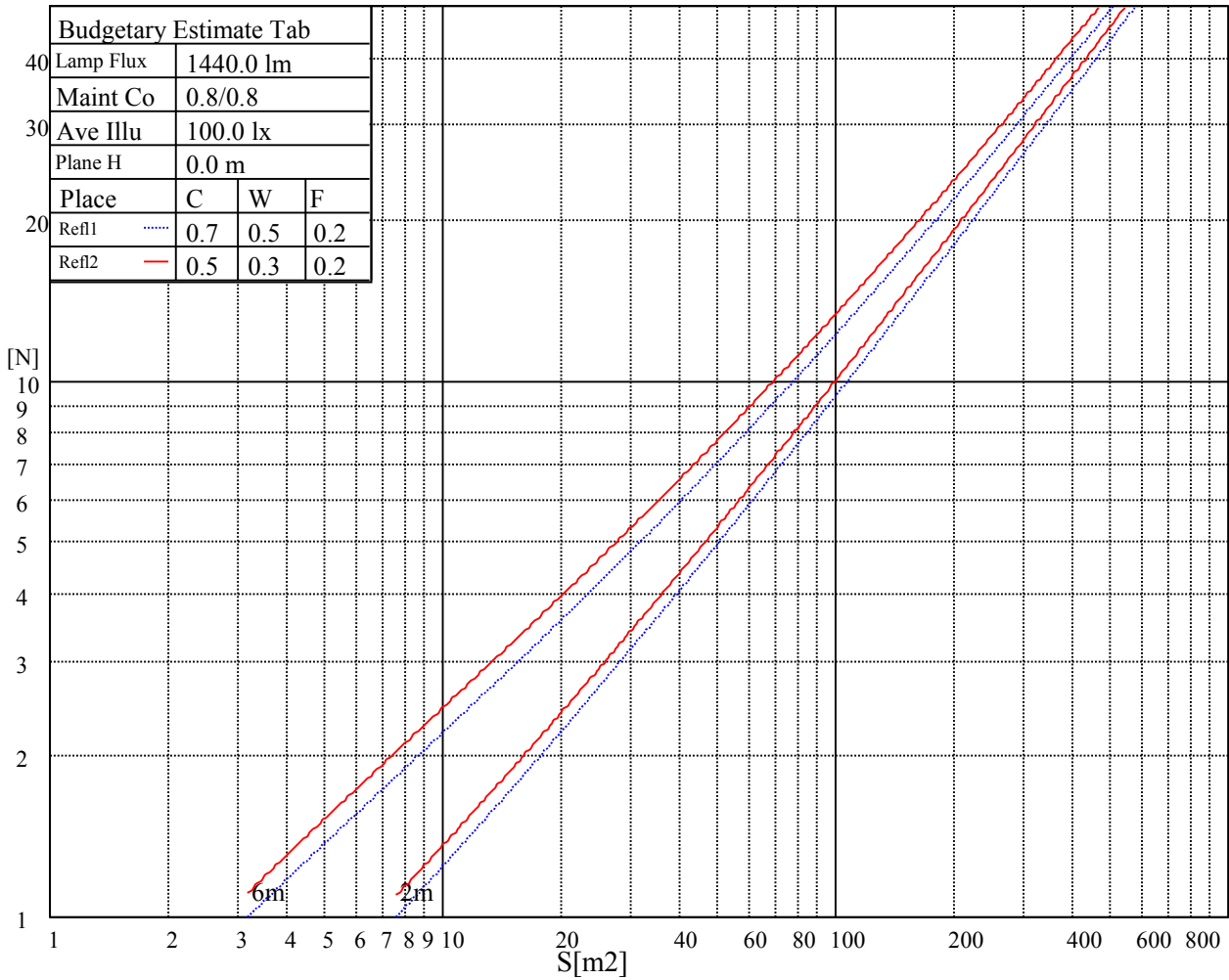
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2437	2437	2437	3452	3452	3452	8234	8234	8234

Glare Table

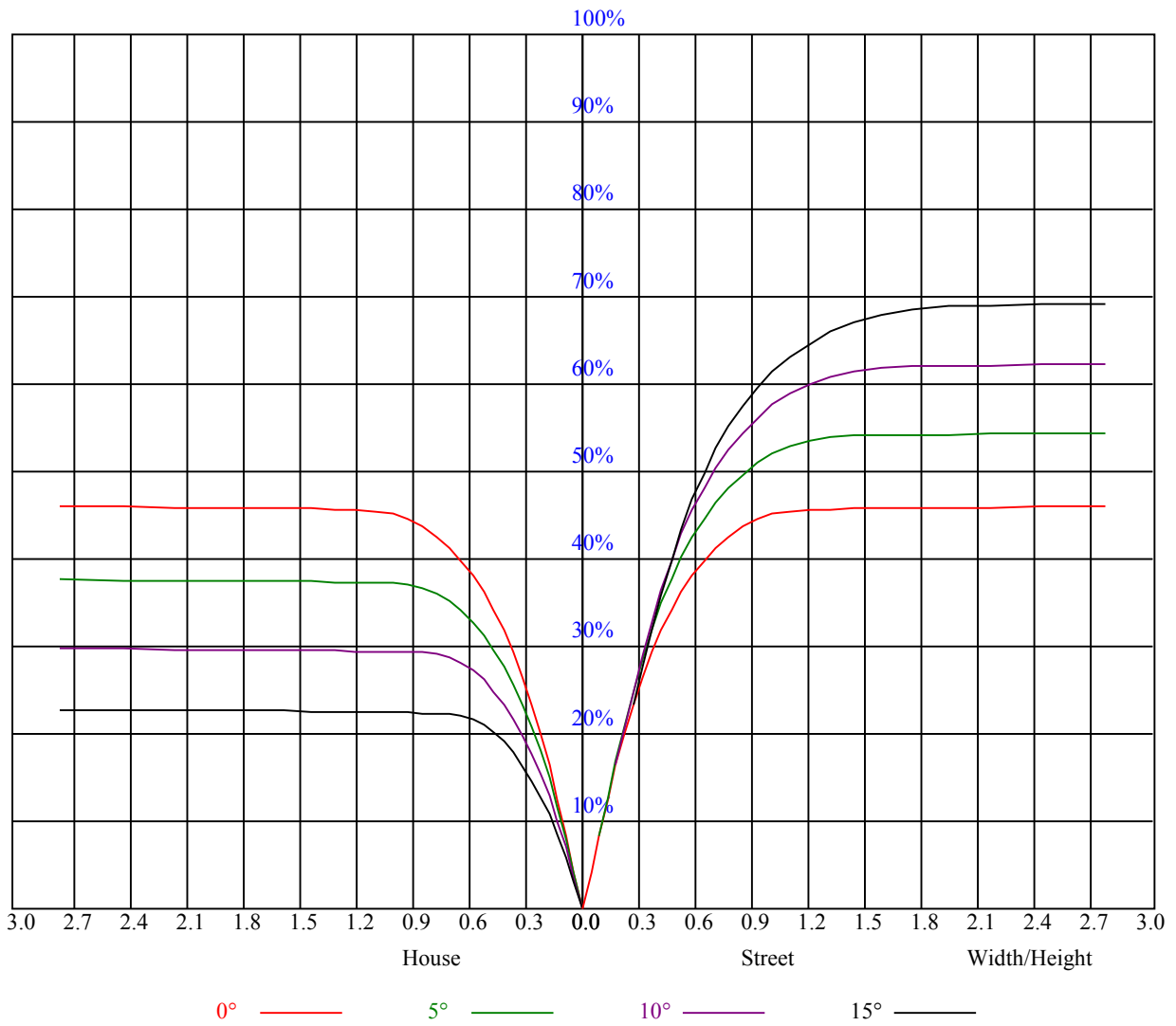
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.11	1.11	1.11	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	0.99	0.97	1.00	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.88	0.87	0.86
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.80
3	0.89	0.84	0.80	0.87	0.83	0.80	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.74
4	0.83	0.78	0.74	0.82	0.77	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.69
5	0.78	0.72	0.68	0.77	0.72	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.72	0.69	0.66	0.65
6	0.73	0.68	0.64	0.73	0.67	0.64	0.71	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.61
7	0.69	0.64	0.60	0.69	0.63	0.60	0.67	0.63	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.57
8	0.65	0.60	0.56	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.54
9	0.62	0.57	0.53	0.62	0.56	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.52	0.51
10	0.59	0.54	0.50	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.49



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	1674.56	1644.75	1522.13	1288.69	1025.44	781.31	613.13	502.88	424.13
45.0	1677.38	1644.19	1510.31	1260.00	964.69	709.31	569.25	491.63	408.94
90.0	1683.00	1639.69	1468.13	1121.34	880.99	653.91	537.24	460.29	391.67
135.0	1687.50	1659.38	1539.56	1245.94	918.56	678.94	554.63	467.44	396.00
180.0	1674.56	1638.00	1483.88	1117.35	885.88	671.12	553.16	467.83	396.68
225.0	1677.38	1625.63	1501.88	1108.35	944.44	710.78	576.45	486.28	408.43
270.0	1683.00	1635.19	1516.50	1303.31	993.38	730.69	576.00	478.13	393.19
315.0	1687.50	1629.00	1489.50	1196.44	974.48	762.86	604.74	493.88	415.80
360.0	1674.56	1644.75	1522.13	1288.69	1025.44	781.31	613.13	502.88	424.13
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	330.75	42.02	6.75	5.06	4.67	4.61	4.56	4.56	4.50
45.0	285.19	12.83	5.74	5.12	4.78	4.67	4.61	4.56	4.50
90.0	151.20	15.08	14.51	13.56	13.73	13.89	8.61	4.61	4.39
135.0	288.00	7.31	5.23	4.95	4.78	4.67	4.56	4.50	4.44
180.0	171.39	6.75	5.06	4.78	4.67	4.56	4.50	4.44	4.44
225.0	229.61	10.07	6.19	5.96	6.47	7.71	6.41	4.61	4.50
270.0	304.88	67.89	11.03	8.55	7.54	7.03	6.75	5.29	4.56
315.0	310.22	31.95	6.69	5.18	4.78	4.67	4.61	4.56	4.50
360.0	330.75	42.02	6.75	5.06	4.67	4.61	4.56	4.56	4.50
C/ γ (°)	90.0								
0.0	4.44								
45.0	4.33								
90.0	4.33								
135.0	4.28								
180.0	4.28								
225.0	4.33								
270.0	4.39								
315.0	4.44								
360.0	4.44								