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Nata

LumCAT: 4-2267-M	
Luminaire: 92.70.134.00	
Report No: NATA0100	Voltage(V): 36.5000
Test No: GC2018082416	Current(A): 0.6000
LampCAT: CREE CXA2520	Power (W): 21.9000
Lamp flux(lm): 2645.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 100	Width(mm): 100
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2332.88
Efficiency(%): 88.20%
Lumens(lm)/Power(W): 107.63
Central intensity(cd): 4408.228
Maximum intensity(cd): 4408.228
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=39.9
[C90/270]Total=39.9
Field angle(10%Imax): [C0/180]Total=72.1
[C90/270]Total=72.1
Maximum s/h(1/2): C0_180=0.64 C90_270=0.64
Maximum s/h(1/4): C0_180=0.66 C90_270=0.66
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.11%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.741%

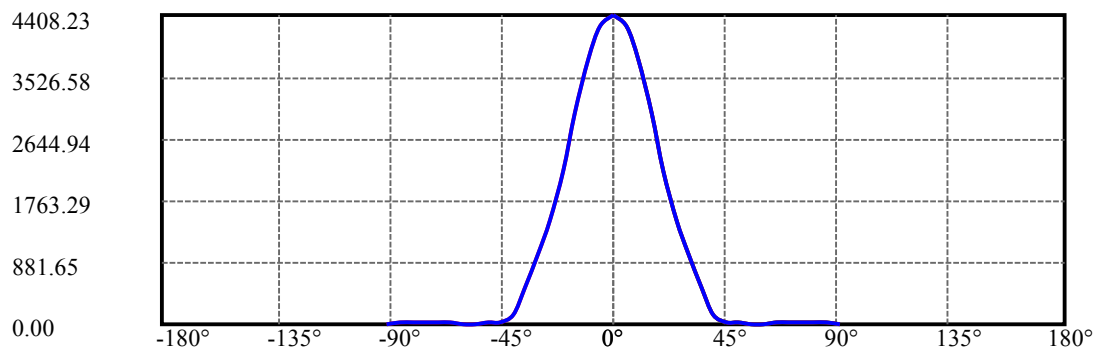
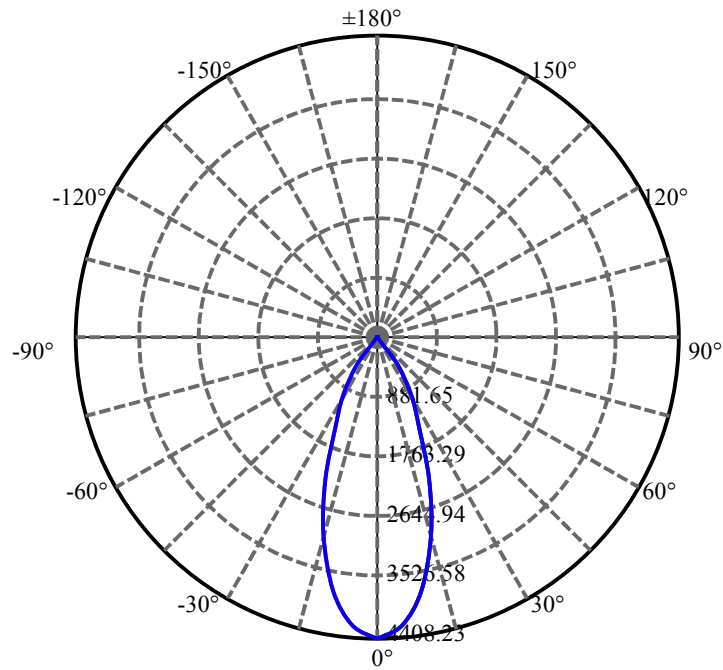
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4408.228	26.362	26.362	.997%	1.130%
5.0	4238.999	202.511	228.873	7.656%	9.811%
10.0	3774.392	359.258	588.131	13.583%	25.211%
15.0	3005.667	426.409	1014.54	16.121%	43.489%
20.0	2197.301	411.937	1426.477	15.574%	61.147%
25.0	1476.750	342.093	1768.571	12.934%	75.811%
30.0	1003.850	275.124	2043.695	10.402%	87.604%
35.0	523.848	164.697	2208.392	6.227%	94.664%
40.0	134.578	47.417	2255.808	1.793%	96.696%
45.0	15.911	6.167	2261.976	.233%	96.961%
50.0	13.998	5.878	2267.853	.222%	97.213%
55.0	13.351	5.995	2273.848	.227%	97.470%
60.0	13.372	6.348	2280.196	.240%	97.742%
65.0	17.405	8.646	2288.842	.327%	98.112%
70.0	23.137	11.918	2300.76	.451%	98.623%
75.0	22.580	11.955	2312.715	.452%	99.136%
80.0	17.191	9.280	2321.995	.351%	99.533%
85.0	14.652	8.001	2329.996	.302%	99.876%
90.0	10.523	2.884	2332.88	.109%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2043.69	77.27%	87.60%
0-40	2255.81	85.29%	96.70%
0-60	2280.20	86.21%	97.74%
0-90	2330.00	88.09%	99.88%
0-120	2330.00	88.09%	99.88%
0-180	2332.88	88.20%	100.00%
60-90	56.15	2.12%	2.41%
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%
0-26.78	1866.30	70.56%	80.00%

ZONAL LUMEN SUMMARY

0-10	588.13
10-20	838.35
20-30	617.22
30-40	212.11
40-50	12.04
50-60	12.34
60-70	20.56
70-80	21.24
80-90	8.00
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:

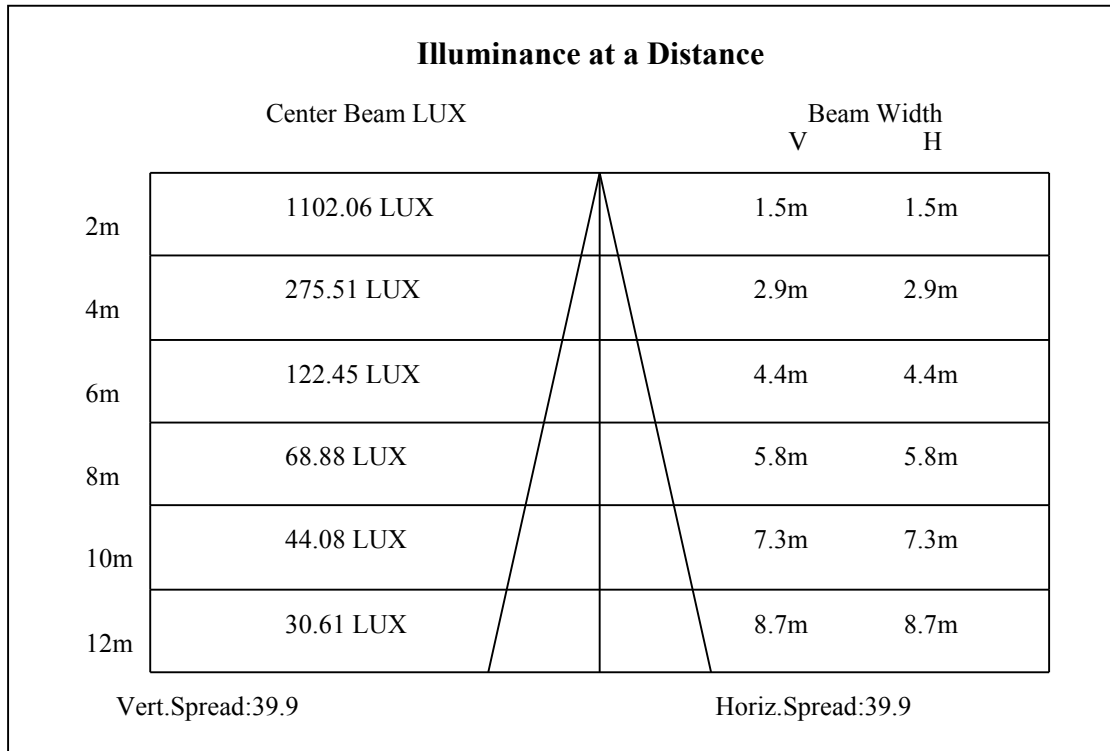
C90/C270:

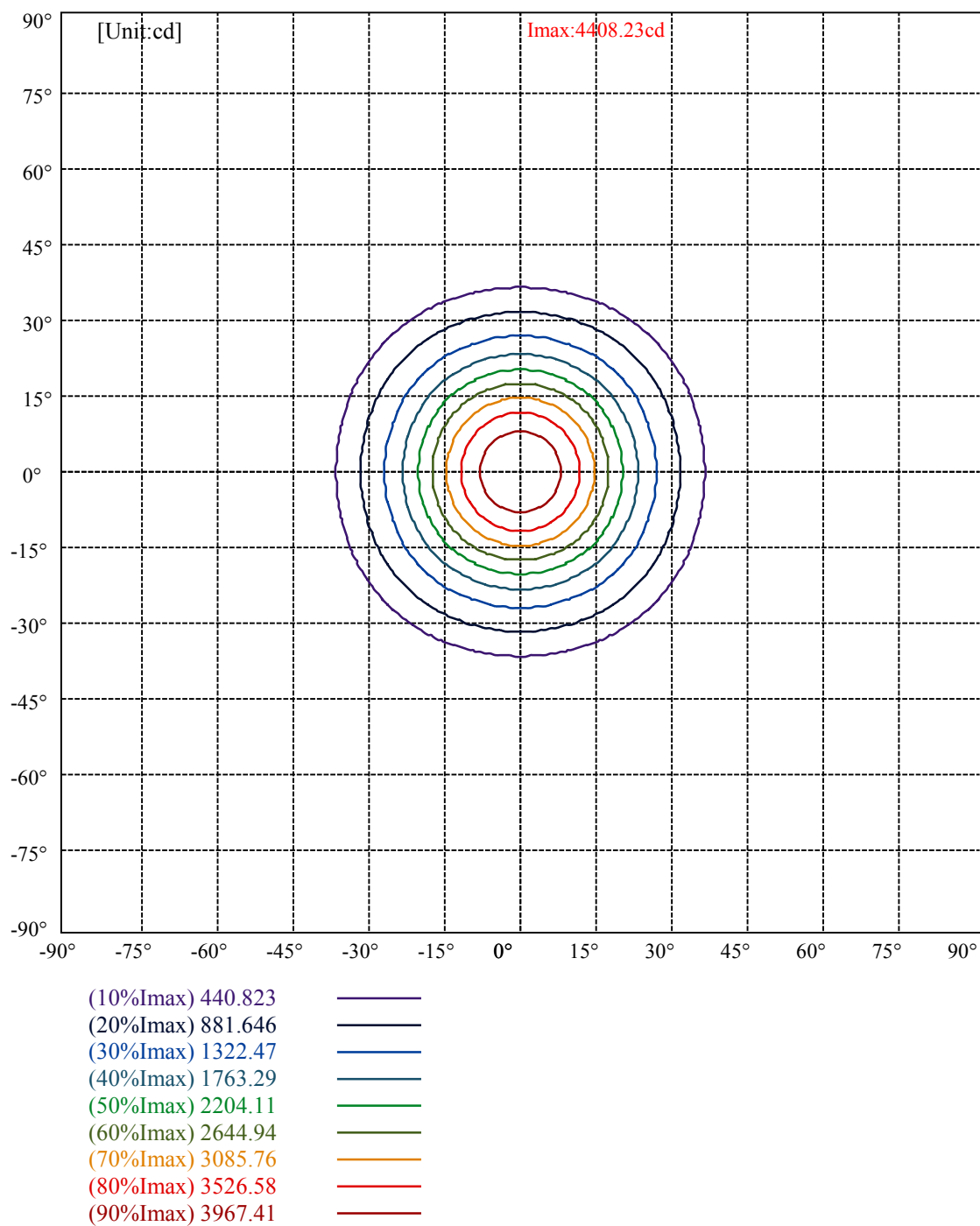
Field angle(10%Imax):C0/180Left:36.1 Right:36.1

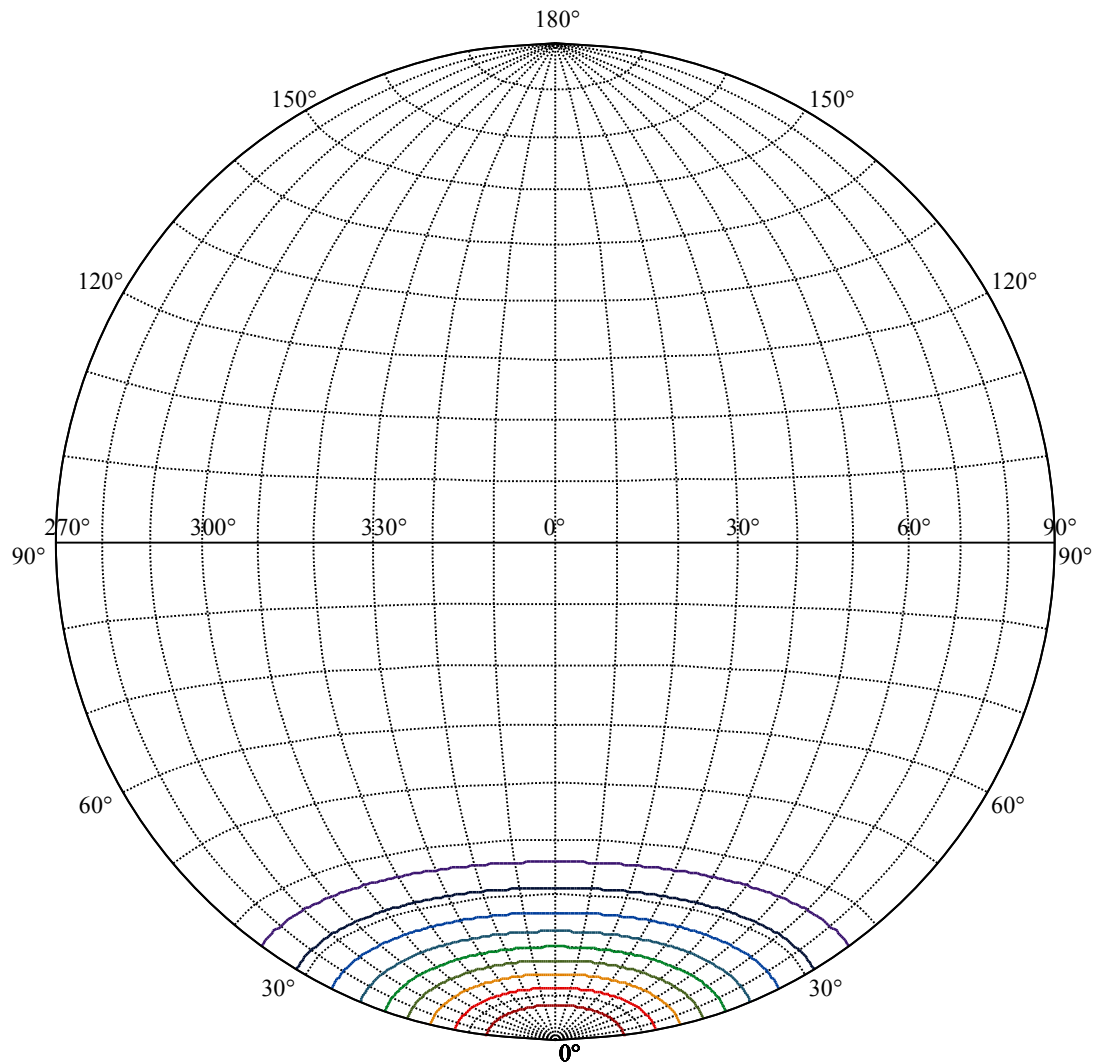
:C90/270Left:36.1 Right:36.1

Beam Angle(50%Imax):C0/180Left:20.0 Right:20.0

:C90/270Left:20.0 Right:20.0







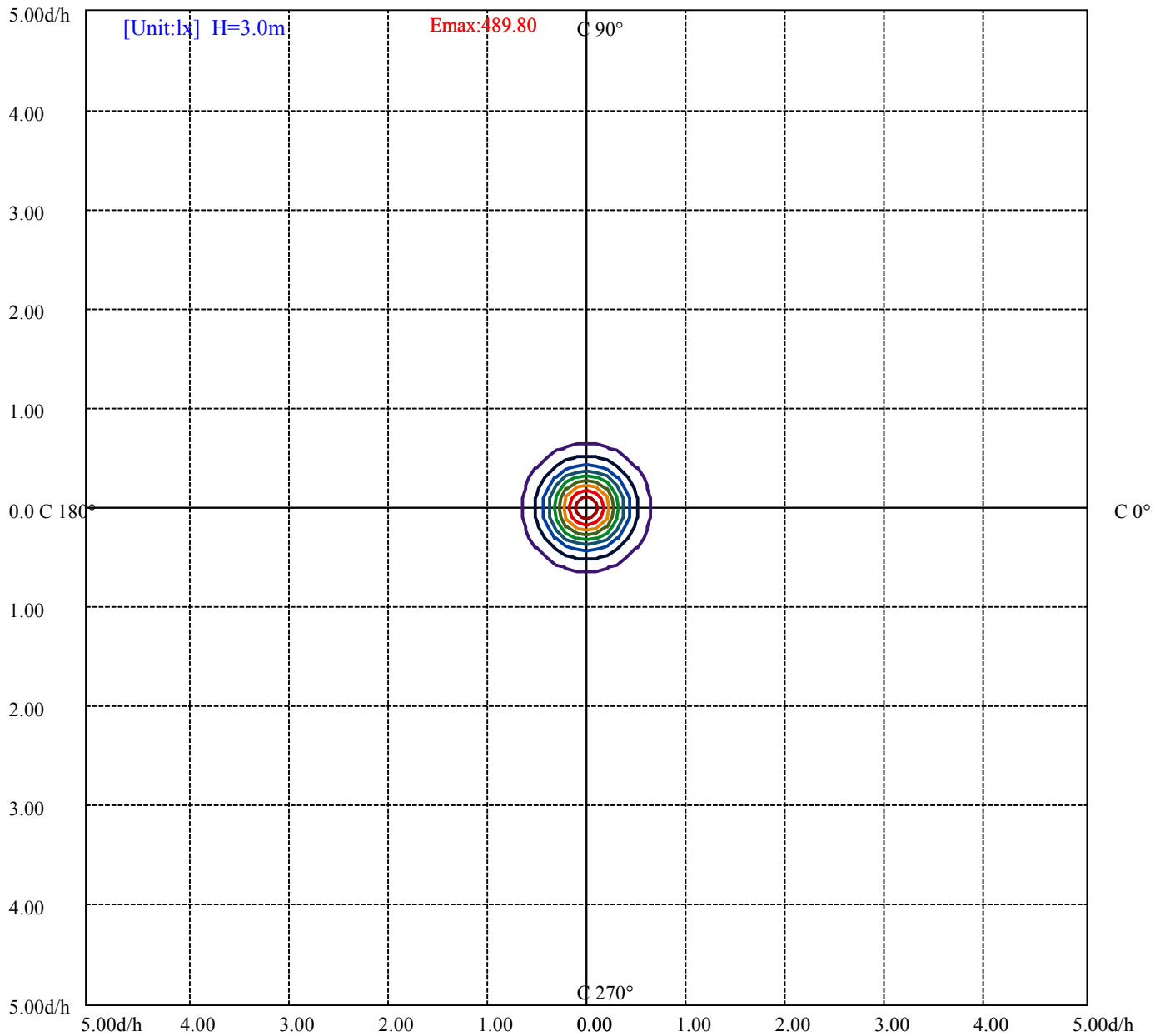
House

[Unit:cd]

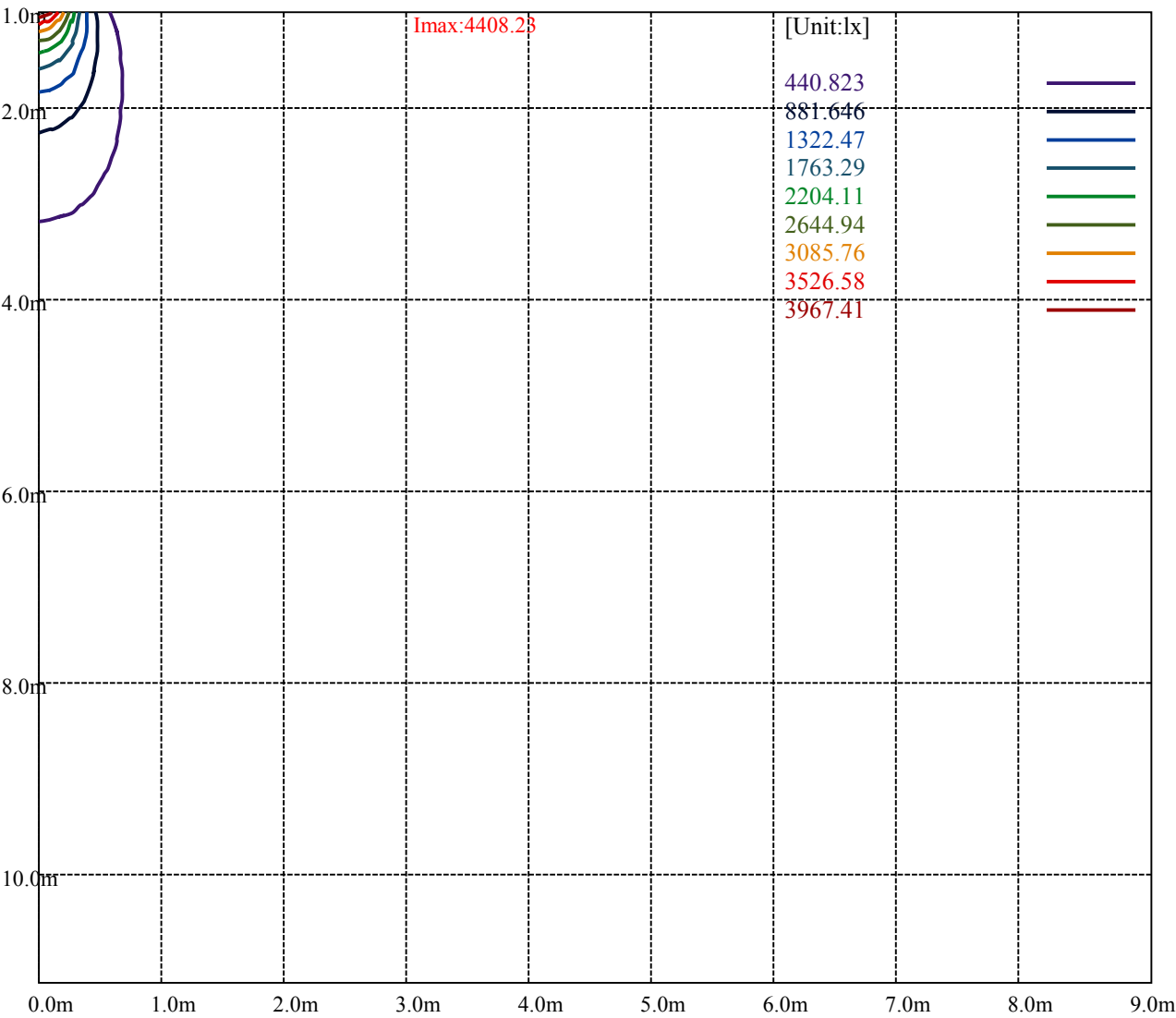
Road

Imax:4408.23

(10%Imax)	440.823	—
(20%Imax)	881.646	—
(30%Imax)	1322.47	—
(40%Imax)	1763.29	—
(50%Imax)	2204.11	—
(60%Imax)	2644.94	—
(70%Imax)	3085.76	—
(80%Imax)	3526.58	—
(90%Imax)	3967.41	—



(10%Emax) 48.98022	—
(20%Emax) 97.96056	—
(30%Emax) 146.9411	—
(40%Emax) 195.9211	—
(50%Emax) 244.9011	—
(60%Emax) 293.8811	—
(70%Emax) 342.8622	—
(80%Emax) 391.8422	—
(90%Emax) 440.8222	—



Luminance Table

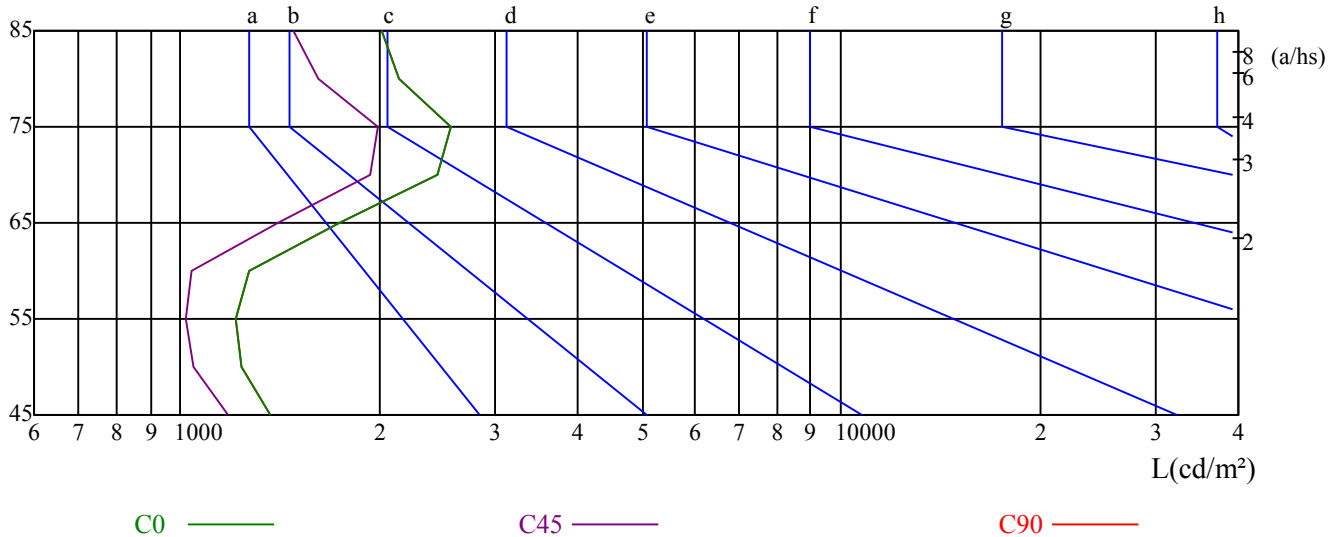
γ	45	50	55	60	65	70	75	80	85
C0	1372	1235	1216	1268	1736	2452	2575	2138	2022
C45	1181	1048	1015	1042	1400	1940	1993	1614	1482
C90	1372	1235	1216	1268	1736	2452	2575	2138	2022

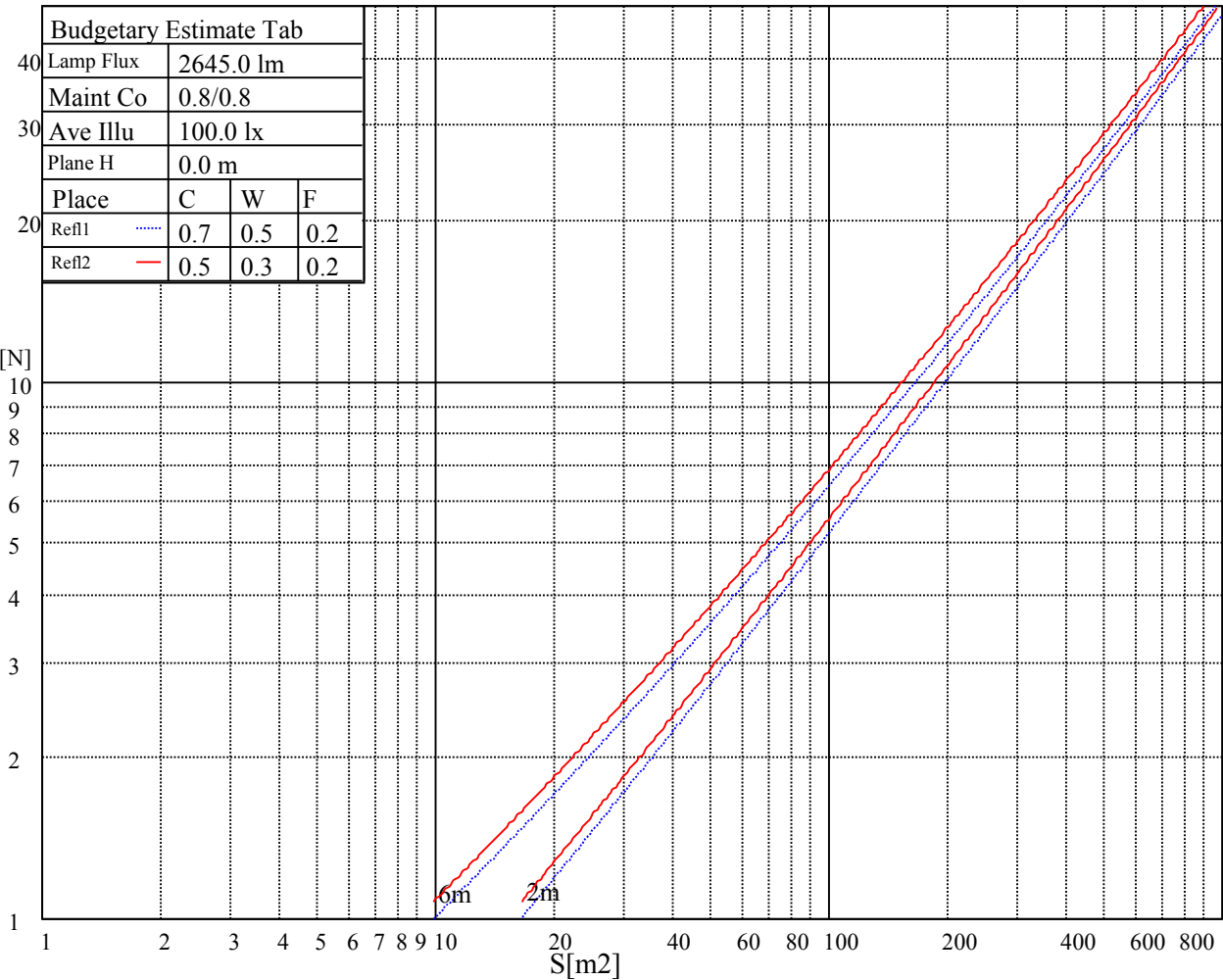
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4118	4118	4118	8724	8724	8724	16811	16811	16811

Glare Table

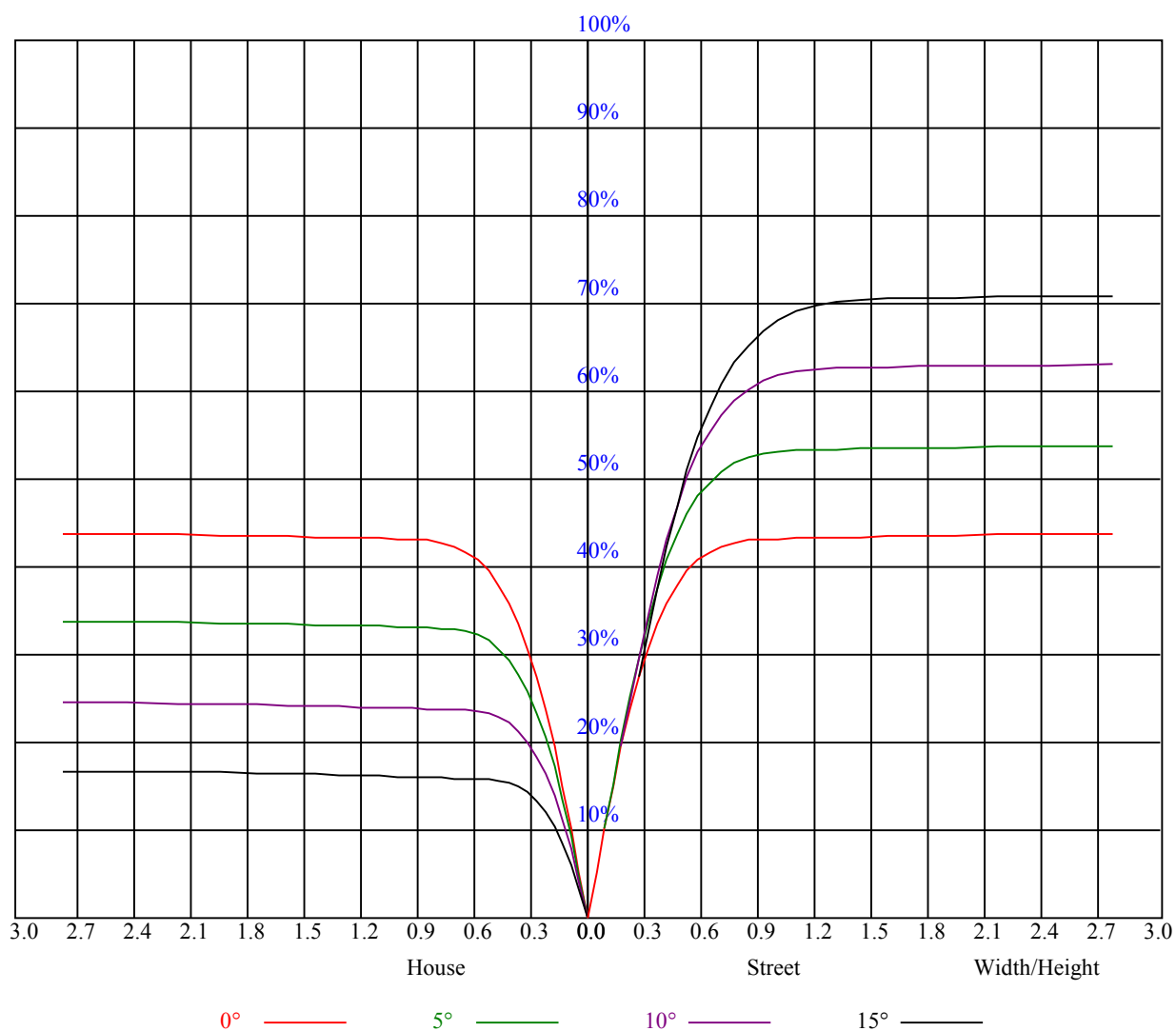
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 



RHOC	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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.98	0.96	0.94	0.96	0.94	0.92	0.93	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.82
2	0.92	0.89	0.86	0.91	0.88	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.80	0.78
3	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
4	0.83	0.79	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.77	0.74	0.72	0.71
5	0.79	0.75	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
6	0.76	0.71	0.68	0.75	0.71	0.68	0.74	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	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.62
8	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.60
9	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	0.58
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.56



Intensity data(cd)										Appendix Page: 14 Total:14	
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	4402.86	4306.51	3952.50	3243.37	2414.77	1620.86	1120.40	641.41	313.27		
45.0	4407.82	4239.34	3826.97	3057.83	2224.28	1521.21	1036.71	556.62	169.19		
90.0	4401.21	4156.21	3576.46	2702.17	1988.09	1326.31	854.37	398.11	34.41		
135.0	4421.03	4194.20	3701.44	2940.01	2116.92	1418.25	973.95	478.99	50.49		
180.0	4402.86	4167.22	3639.78	2813.93	2001.85	1336.22	898.30	405.99	35.84		
225.0	4407.82	4219.52	3678.32	2943.87	2124.08	1414.95	981.16	484.66	52.58		
270.0	4401.21	4322.48	3943.14	3226.86	2428.54	1635.18	1119.30	694.26	303.36		
315.0	4421.03	4306.51	3876.52	3117.29	2279.89	1541.03	1046.62	530.74	117.49		
360.0	4402.86	4306.51	3952.50	3243.37	2414.77	1620.86	1120.40	641.41	313.27		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	16.85	14.09	13.10	12.83	17.40	22.90	24.61	19.21	15.36		
45.0	15.75	13.87	13.10	12.94	16.90	23.18	24.56	17.34	13.87		
90.0	15.14	13.98	13.65	14.15	19.60	26.21	21.47	16.24	14.81		
135.0	15.53	14.09	13.60	13.65	15.69	21.36	22.35	18.28	15.14		
180.0	15.42	14.20	13.98	14.31	18.66	22.74	18.28	15.69	14.20		
225.0	15.64	13.82	13.27	13.38	17.56	22.79	22.13	17.62	16.13		
270.0	16.74	14.04	12.94	12.61	15.14	19.99	22.24	18.28	14.70		
315.0	16.24	13.87	13.16	13.10	18.28	25.93	25.00	14.87	12.99		
360.0	16.85	14.09	13.10	12.83	17.40	22.90	24.61	19.21	15.36		
C/ γ (°)	90.0										
0.0	10.57										
45.0	10.46										
90.0	10.52										
135.0	10.57										
180.0	10.57										
225.0	10.46										
270.0	10.52										
315.0	10.52										
360.0	10.57										