
LumCAT: 61.0013.03

Luminaire:

Report No: NATA0100

Test No: GC2019120602

LampCAT: LUMINUS CXM-4-AC40

Lamp flux(lm): 602.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 34.9900

Current(A): 0.1470

Power (W): 5.1400

PF: 1.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 524.85

Efficiency(%): 87.18%

Lumens(lm)/Power(W): 102.11

Central intensity(cd): 491.850

Maximum intensity(cd): 491.850

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=58.9

[C90/270]Total=58.9

Field angle(10%Imax): [C0/180]Total=93.5

[C90/270]Total=93.5

Maximum s/h(1/2): C0_180=0.94 C90_270=0.94

Maximum s/h(1/4): C0_180=0.88 C90_270=0.88

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.18%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 92.196%

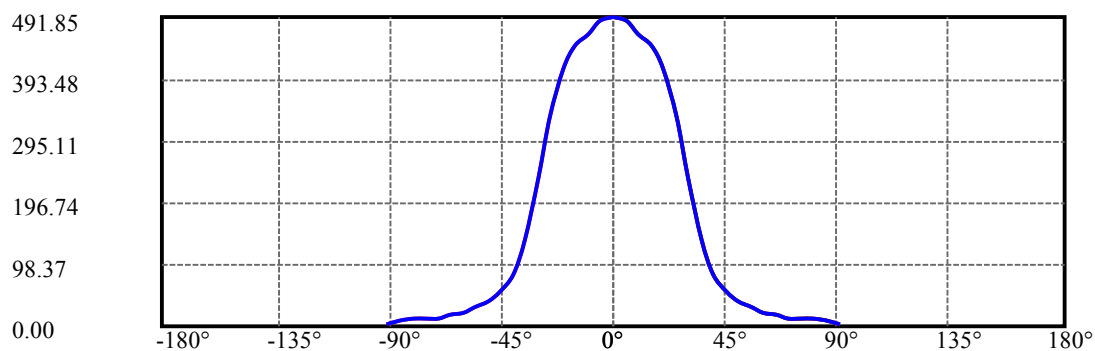
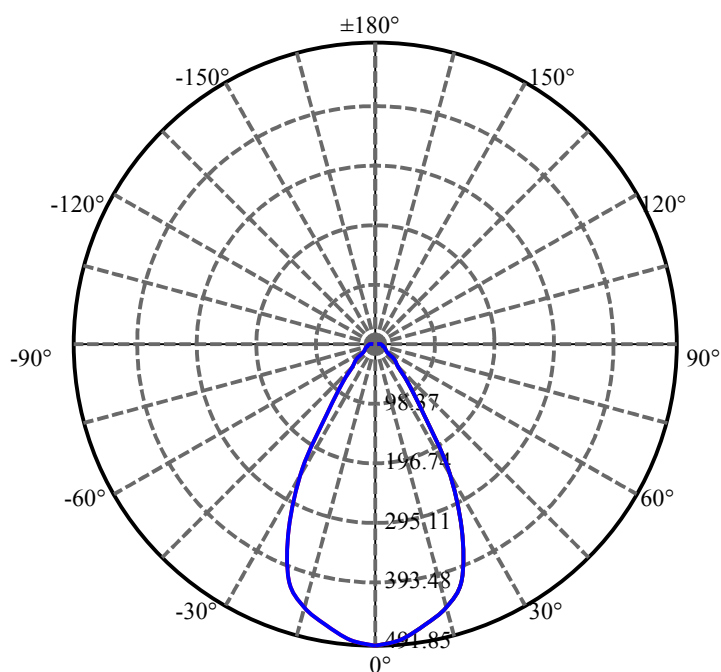
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	491.850	0.000	0	.000%	.000%
5.0	484.770	11.675	11.675	1.939%	2.224%
10.0	465.152	33.982	45.657	5.645%	8.699%
15.0	444.502	53.960	99.617	8.963%	18.980%
20.0	409.908	70.415	170.032	11.697%	32.397%
25.0	332.719	77.888	247.92	12.938%	47.237%
30.0	235.441	71.901	319.821	11.944%	60.936%
35.0	138.902	55.125	374.946	9.157%	71.439%
40.0	82.343	36.913	411.859	6.132%	78.472%
45.0	53.740	25.197	437.056	4.186%	83.273%
50.0	40.732	19.089	456.145	3.171%	86.910%
55.0	30.382	15.463	471.608	2.569%	89.856%
60.0	22.746	12.280	483.888	2.040%	92.196%
65.0	17.023	9.668	493.556	1.606%	94.038%
70.0	13.641	7.764	501.32	1.290%	95.517%
75.0	12.023	6.708	508.029	1.114%	96.796%
80.0	12.783	6.637	514.666	1.103%	98.060%
85.0	10.132	6.227	520.893	1.034%	99.247%
90.0	4.310	3.954	524.847	.657%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	319.82	53.13%	60.94%
0-40	411.86	68.42%	78.47%
0-60	483.89	80.38%	92.20%
0-90	520.89	86.53%	99.25%
0-120	520.89	86.53%	99.25%
0-180	524.85	87.18%	100.00%
60-90	49.28	8.19%	9.39%
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%
0-41.59	419.88	69.75%	80.00%

ZONAL LUMEN SUMMARY

0-10	45.66
10-20	124.38
20-30	149.79
30-40	92.04
40-50	44.29
50-60	27.74
60-70	17.43
70-80	13.35
80-90	6.23
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: —————

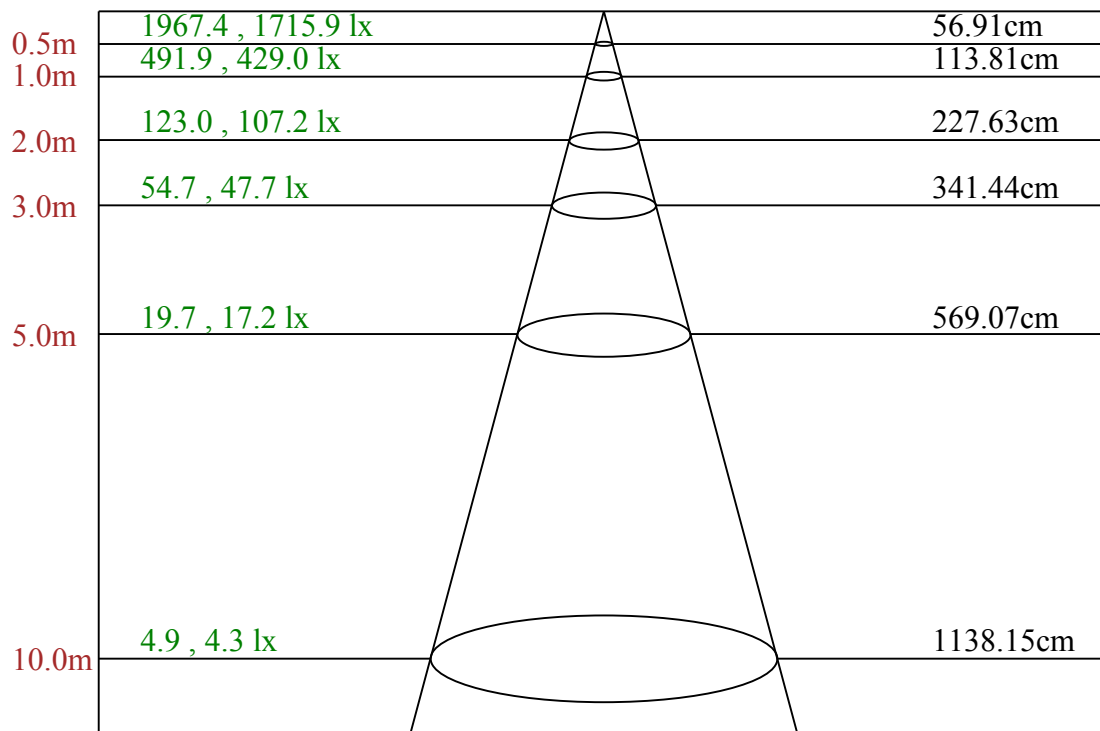
C90/C270: —————

Field angle(10%I_{max}):C0/180Left:46.8 Right:46.8

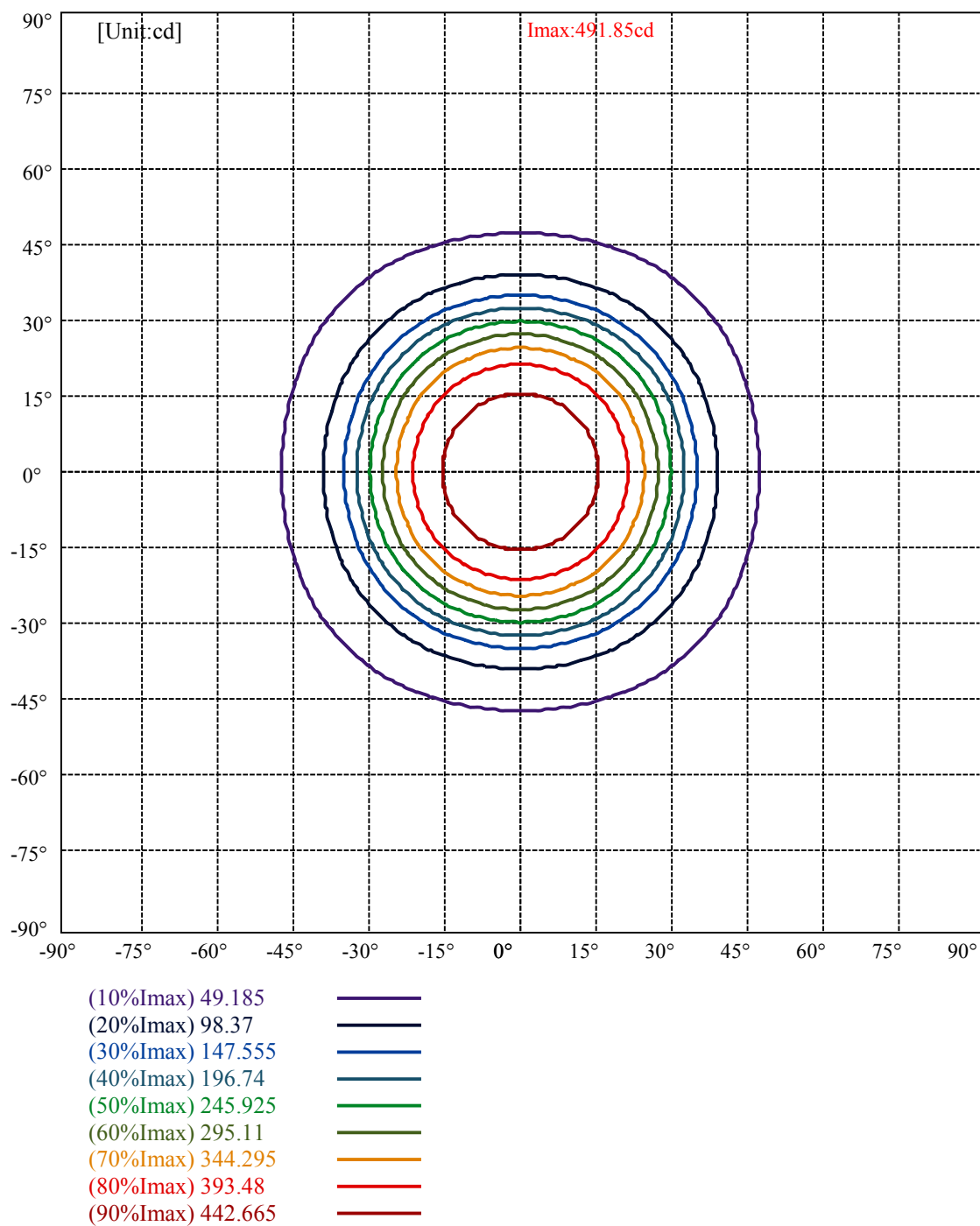
:C90/270Left:46.8 Right:46.8

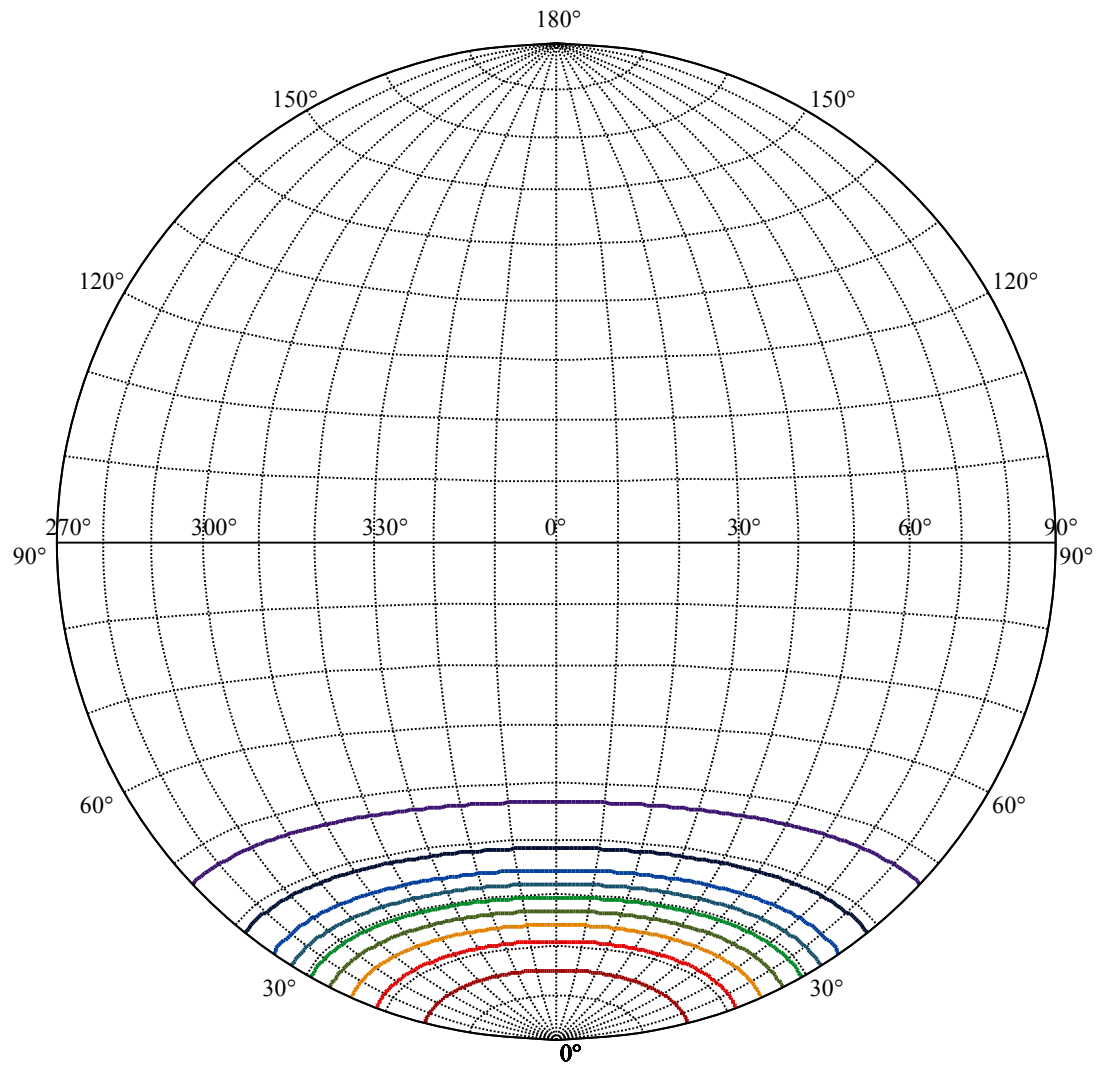
Beam Angle(50%I_{max}):C0/180Left:29.5 Right:29.5

:C90/270Left:29.5 Right:29.5



Max , Ave Beam angle of C0 plane 59.29



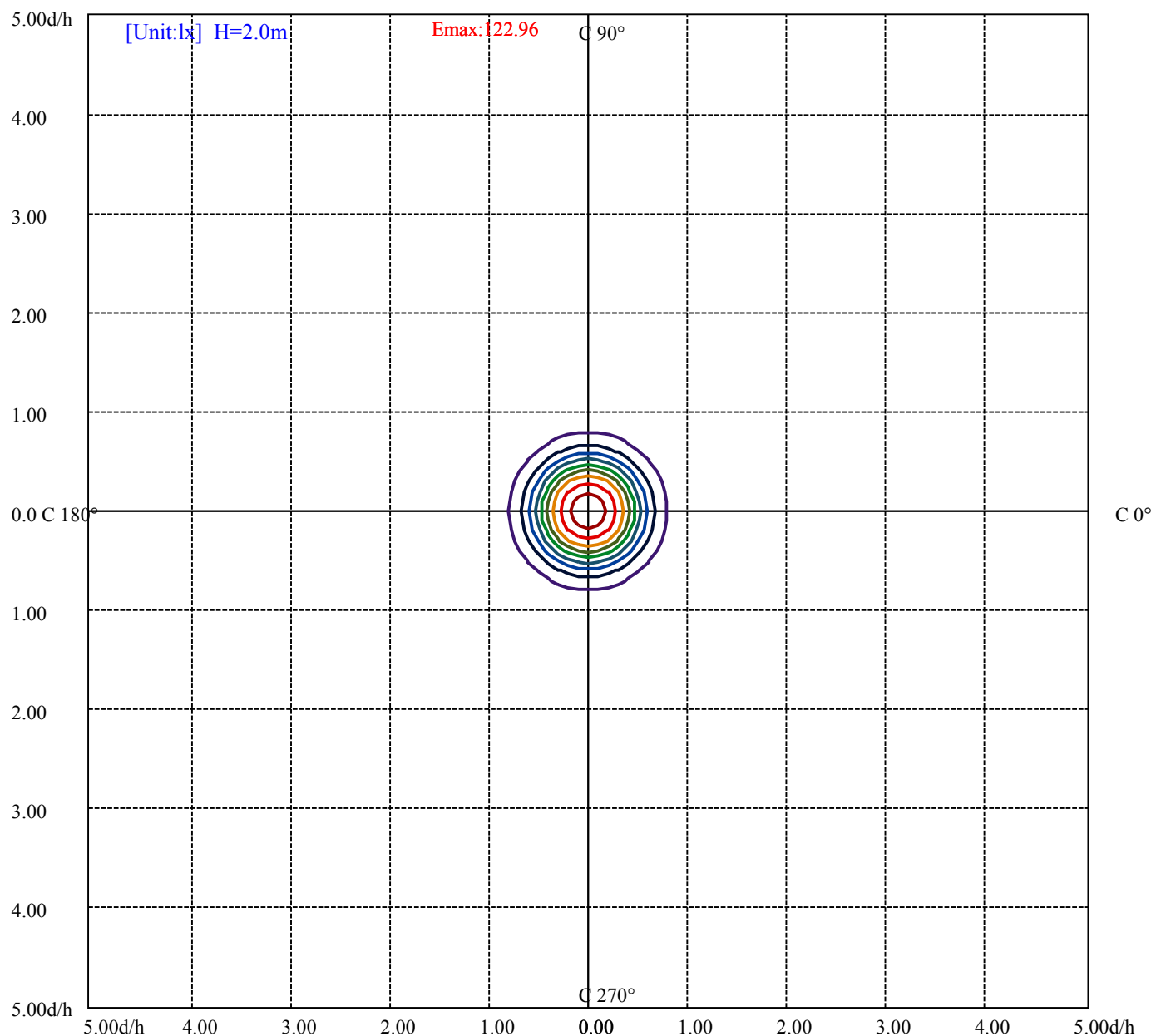


House

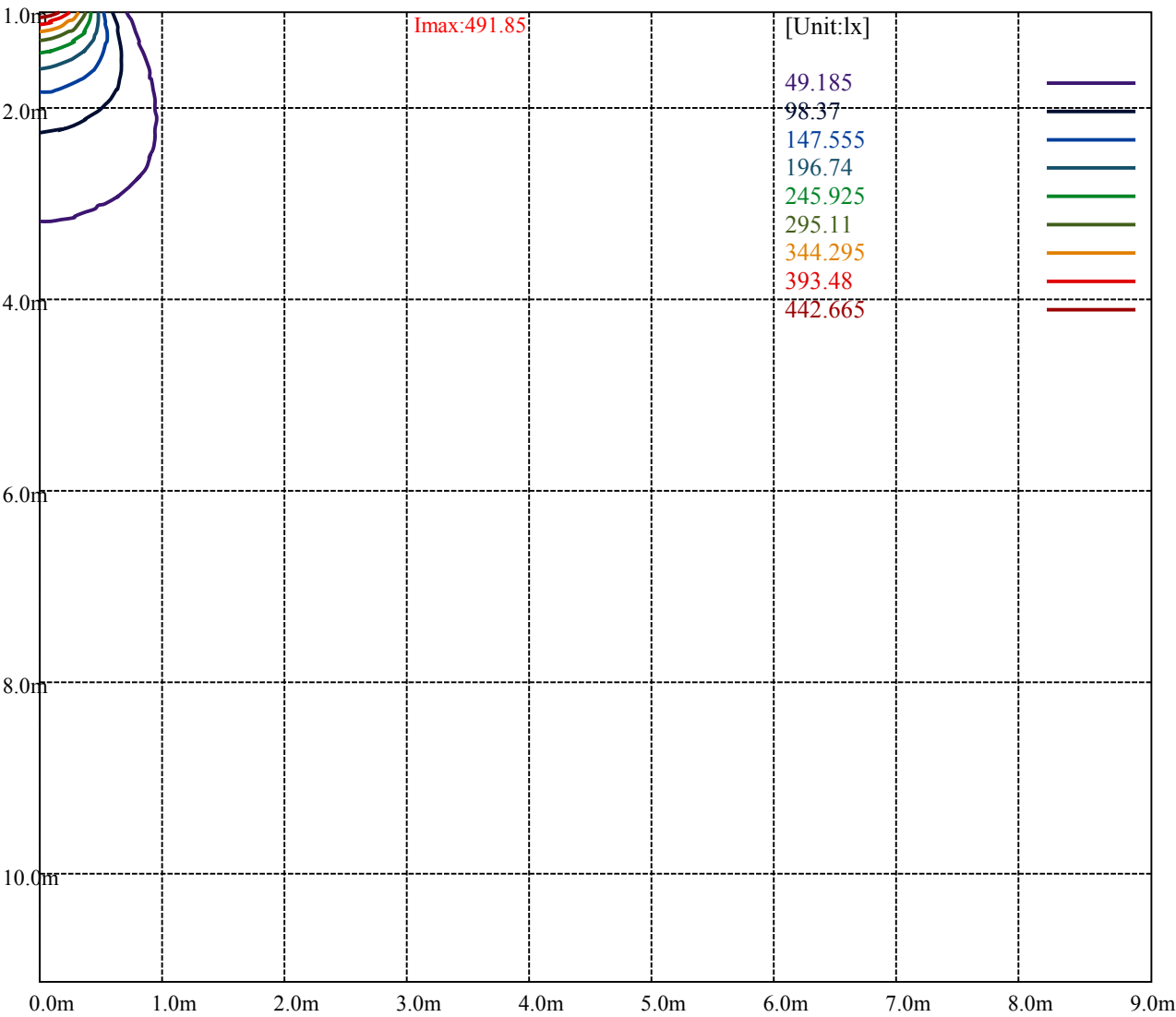
[Unit:cd]

Road

Imax:491.85	
(10%Imax) 49.185	—
(20%Imax) 98.37	—
(30%Imax) 147.555	—
(40%Imax) 196.74	—
(50%Imax) 245.925	—
(60%Imax) 295.11	—
(70%Imax) 344.295	—
(80%Imax) 393.48	—
(90%Imax) 442.665	—



(10%E _{max}) 12.29625	—
(20%E _{max}) 24.59248	—
(30%E _{max}) 36.88875	—
(40%E _{max}) 49.185	—
(50%E _{max}) 61.48125	—
(60%E _{max}) 73.7775	—
(70%E _{max}) 86.07375	—
(80%E _{max}) 98.37	—
(90%E _{max}) 110.6663	—



Luminance Table

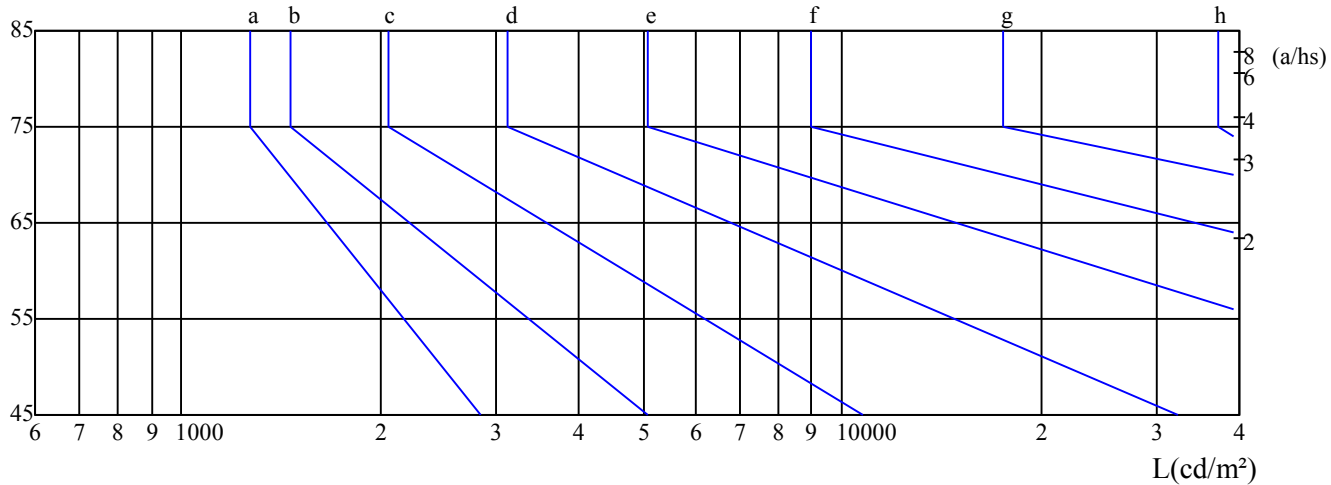
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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

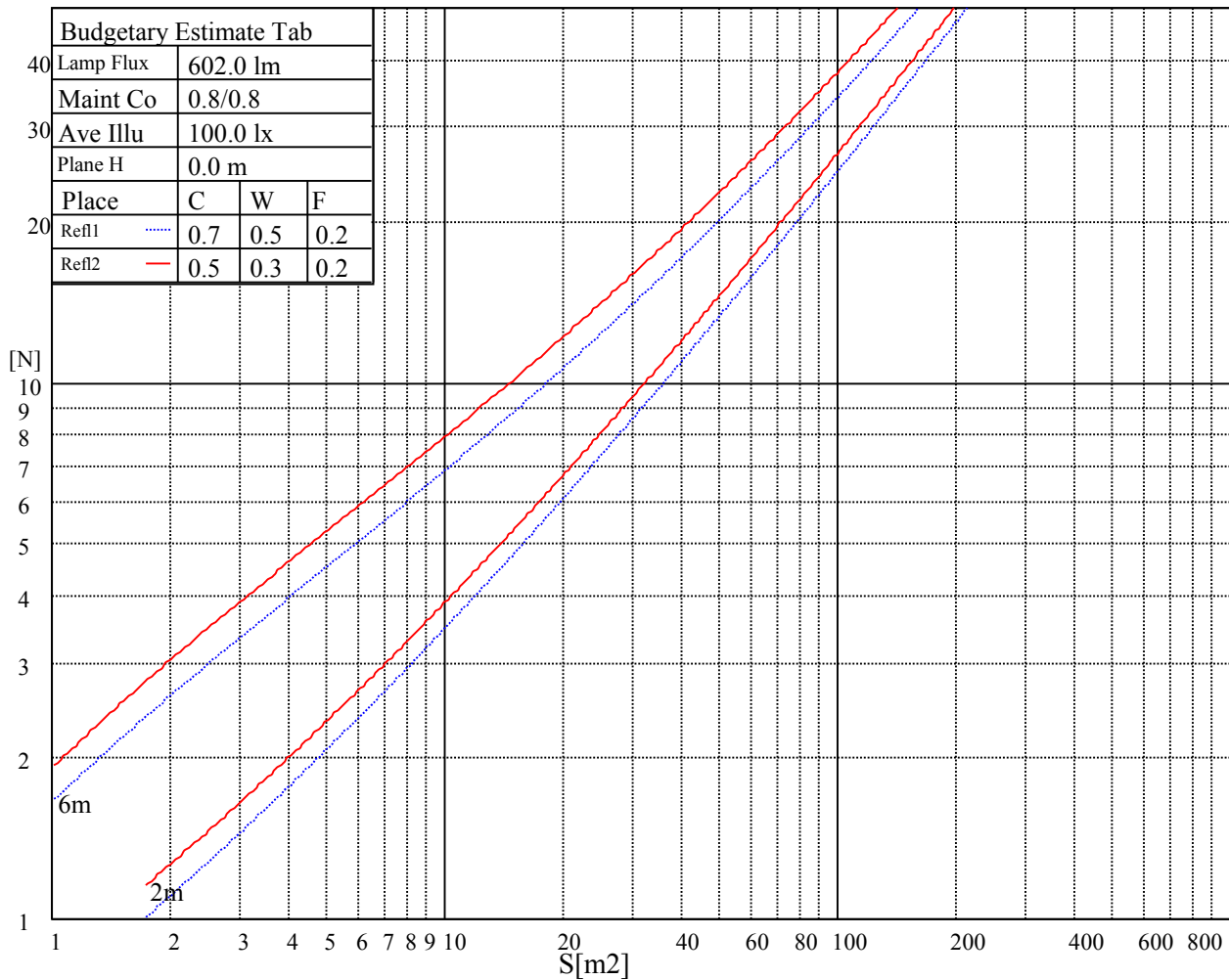
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

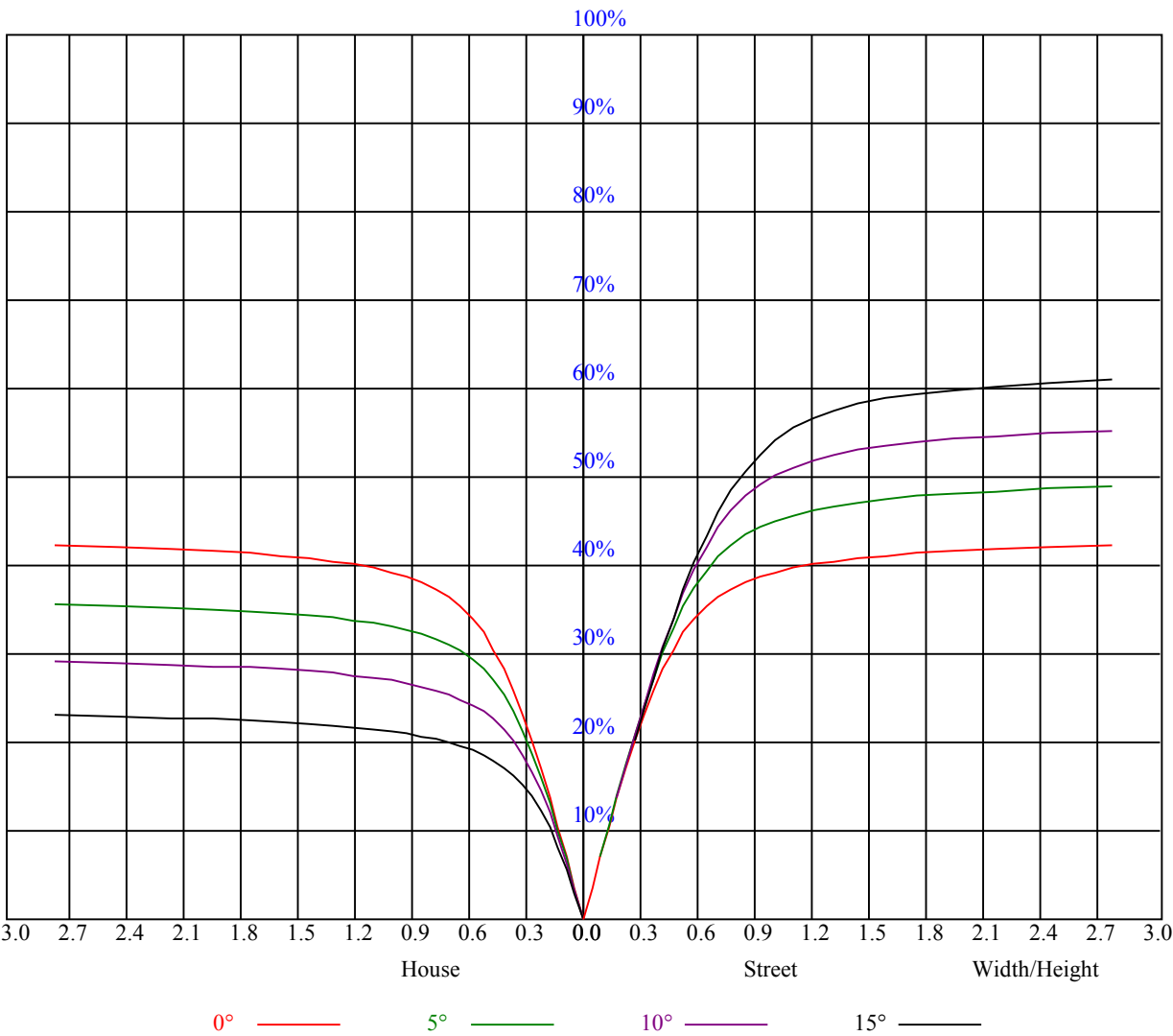
C0 ———

C45 ———

C90 ———



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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.94	0.91	0.89	0.92	0.90	0.88	0.89	0.87	0.85	0.85	0.84	0.82	0.82	0.81	0.80	0.78
2	0.86	0.82	0.78	0.85	0.81	0.77	0.82	0.78	0.76	0.79	0.76	0.74	0.77	0.74	0.72	0.71
3	0.79	0.74	0.70	0.78	0.73	0.69	0.76	0.71	0.68	0.73	0.70	0.67	0.71	0.68	0.66	0.64
4	0.73	0.68	0.63	0.72	0.67	0.63	0.70	0.66	0.62	0.68	0.64	0.61	0.67	0.63	0.61	0.59
5	0.68	0.62	0.58	0.67	0.62	0.57	0.65	0.61	0.57	0.64	0.60	0.56	0.62	0.59	0.56	0.54
6	0.63	0.57	0.53	0.63	0.57	0.53	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.50
7	0.59	0.53	0.49	0.58	0.53	0.49	0.57	0.52	0.49	0.56	0.52	0.48	0.55	0.51	0.48	0.47
8	0.55	0.50	0.46	0.55	0.49	0.45	0.54	0.49	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.44
9	0.52	0.46	0.43	0.52	0.46	0.42	0.51	0.46	0.42	0.50	0.45	0.42	0.49	0.45	0.42	0.41
10	0.49	0.44	0.40	0.49	0.43	0.40	0.48	0.43	0.40	0.47	0.43	0.40	0.47	0.42	0.39	0.38



Intensity data(cd)

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C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	492.69	491.40	467.44	449.16	429.36	357.24	255.32	148.84	88.82
45.0	491.01	487.97	467.38	443.36	409.22	338.06	242.21	143.49	85.89
90.0	491.51	487.74	468.23	440.49	390.32	303.53	210.83	126.84	79.31
135.0	492.19	486.45	469.69	449.38	408.21	329.57	234.79	138.54	84.38
180.0	492.69	479.08	457.76	437.01	403.26	324.79	225.23	135.06	78.58
225.0	491.01	475.37	456.58	442.97	409.89	331.59	235.74	139.84	79.14
270.0	491.51	483.64	468.00	448.82	420.53	352.46	249.53	148.73	86.63
315.0	492.19	486.51	466.14	444.83	408.49	324.51	229.89	129.88	75.99
360.0	492.69	491.40	467.44	449.16	429.36	357.24	255.32	148.84	88.82
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	57.21	43.54	33.36	25.03	18.06	14.85	12.43	10.74	9.23
45.0	57.21	43.20	31.61	23.57	17.83	13.56	12.09	17.10	11.19
90.0	54.34	41.51	30.71	21.66	16.82	13.22	11.42	10.63	8.94
135.0	55.24	41.63	31.78	23.74	17.66	13.95	12.21	11.19	9.56
180.0	50.57	39.66	29.87	22.33	15.98	13.39	11.59	10.13	9.06
225.0	50.01	38.31	26.78	20.87	15.19	12.88	13.22	21.49	14.63
270.0	53.38	37.52	28.35	21.38	17.10	13.50	11.64	10.86	9.84
315.0	51.98	40.50	30.60	23.40	17.55	13.78	11.59	10.13	8.61
360.0	57.21	43.54	33.36	25.03	18.06	14.85	12.43	10.74	9.23
C/γ(°)	90.0								
0.0	4.56								
45.0	4.05								
90.0	3.38								
135.0	4.44								
180.0	4.50								
225.0	4.61								
270.0	4.44								
315.0	4.50								
360.0	4.56								