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Nata

LumCAT: LM01D03030AE

Luminaire:

Report No: NATA0100

Voltage(V): 35.7500

Test No: GC2019092613

Current(A): 0.1550

LampCAT: CITIZEN CLU7A2

Power (W): 5.5400

Lamp flux(lm): 543.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 30

Width(mm): 30

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 496.01

Efficiency(%): 91.35%

Lumens(lm)/Power(W): 89.53

Central intensity(cd): 1893.234

Maximum intensity(cd): 1893.234

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=24.3

[C90/270]Total=24.3

Field angle(10%Imax): [C0/180]Total=47.5

[C90/270]Total=47.5

Maximum s/h(1/2): C0_180=0.41 C90_270=0.41

Maximum s/h(1/4): C0_180=0.43 C90_270=0.43

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 : 94.324%

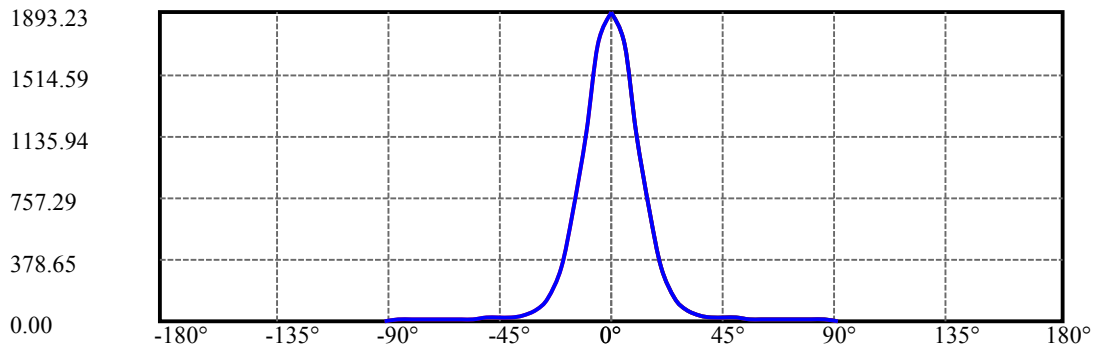
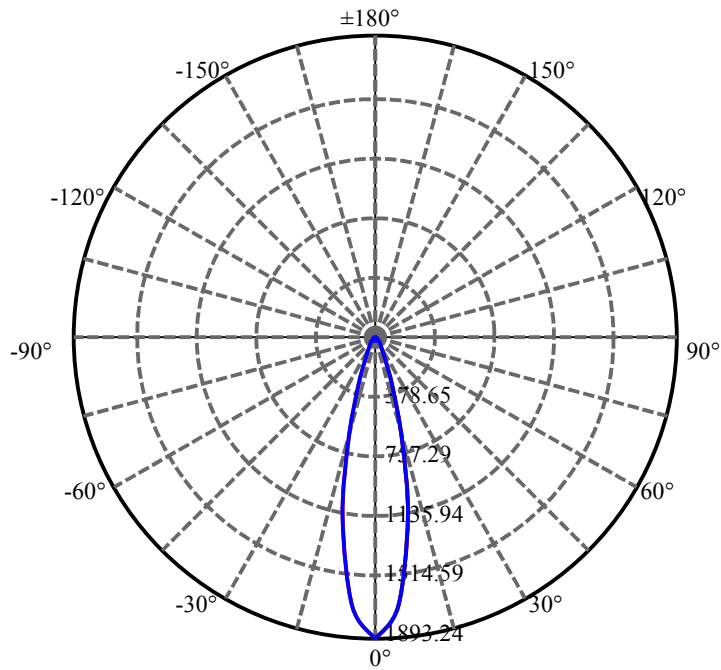
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1893.234	0.000	0	.000%	.000%
5.0	1692.211	42.863	42.863	7.894%	8.642%
10.0	1152.541	101.766	144.629	18.741%	29.158%
15.0	668.524	108.024	252.653	19.894%	50.937%
20.0	330.300	82.317	334.97	15.160%	67.533%
25.0	142.924	49.632	384.603	9.140%	77.539%
30.0	67.802	26.668	411.27	4.911%	82.915%
35.0	36.091	15.299	426.569	2.818%	86.000%
40.0	25.383	10.257	436.826	1.889%	88.068%
45.0	21.045	8.596	445.422	1.583%	89.801%
50.0	18.780	8.047	453.47	1.482%	91.423%
55.0	16.221	7.611	461.08	1.402%	92.958%
60.0	13.113	6.781	467.861	1.249%	94.325%
65.0	10.828	5.820	473.681	1.072%	95.498%
70.0	9.619	5.177	478.858	.953%	96.542%
75.0	8.234	4.666	483.524	.859%	97.482%
80.0	7.826	4.297	487.821	.791%	98.349%
85.0	8.677	4.484	492.306	.826%	99.253%
90.0	4.859	3.706	496.012	.683%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	411.27	75.74%	82.92%
0-40	436.83	80.45%	88.07%
0-60	467.86	86.16%	94.32%
0-90	492.31	90.66%	99.25%
0-120	492.31	90.66%	99.25%
0-180	496.01	91.35%	100.00%
60-90	31.23	5.75%	6.30%
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%
0-27.29	396.81	73.08%	80.00%

ZONAL LUMEN SUMMARY

0-10	144.63
10-20	190.34
20-30	76.30
30-40	25.56
40-50	16.64
50-60	14.39
60-70	11.00
70-80	8.96
80-90	4.48
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: —————

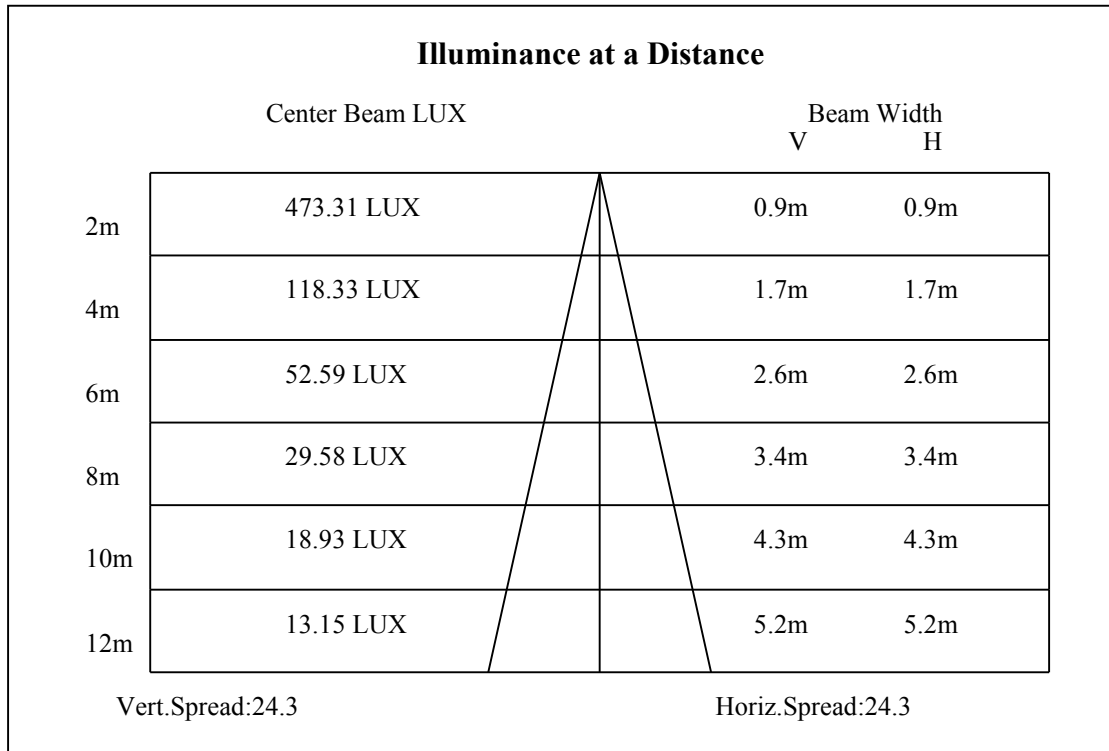
C90/C270: —————

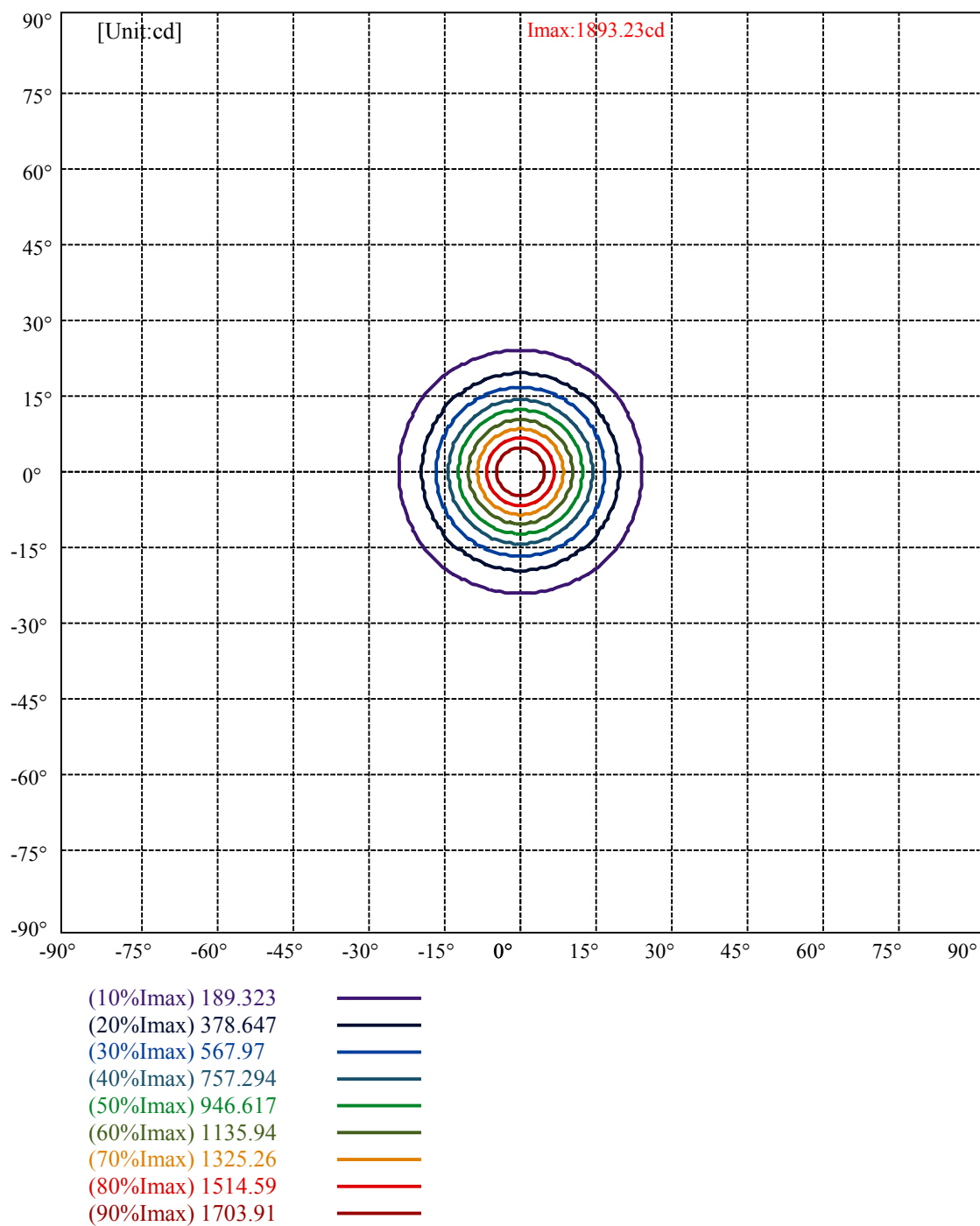
Field angle(10%Imax):C0/180Left:23.8 Right:23.8

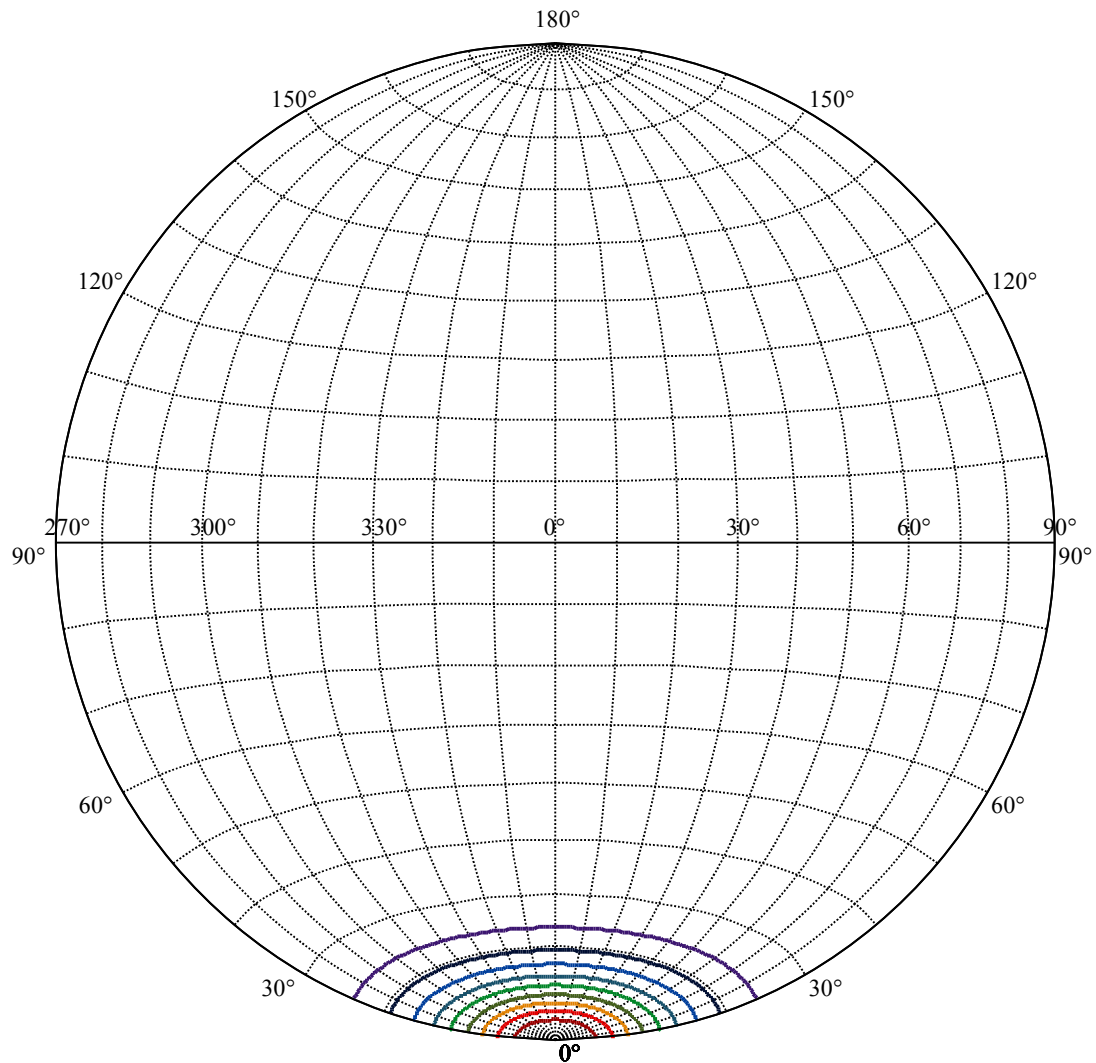
:C90/270Left:23.8 Right:23.8

Beam Angle(50%Imax):C0/180Left:12.1 Right:12.1

:C90/270Left:12.1 Right:12.1







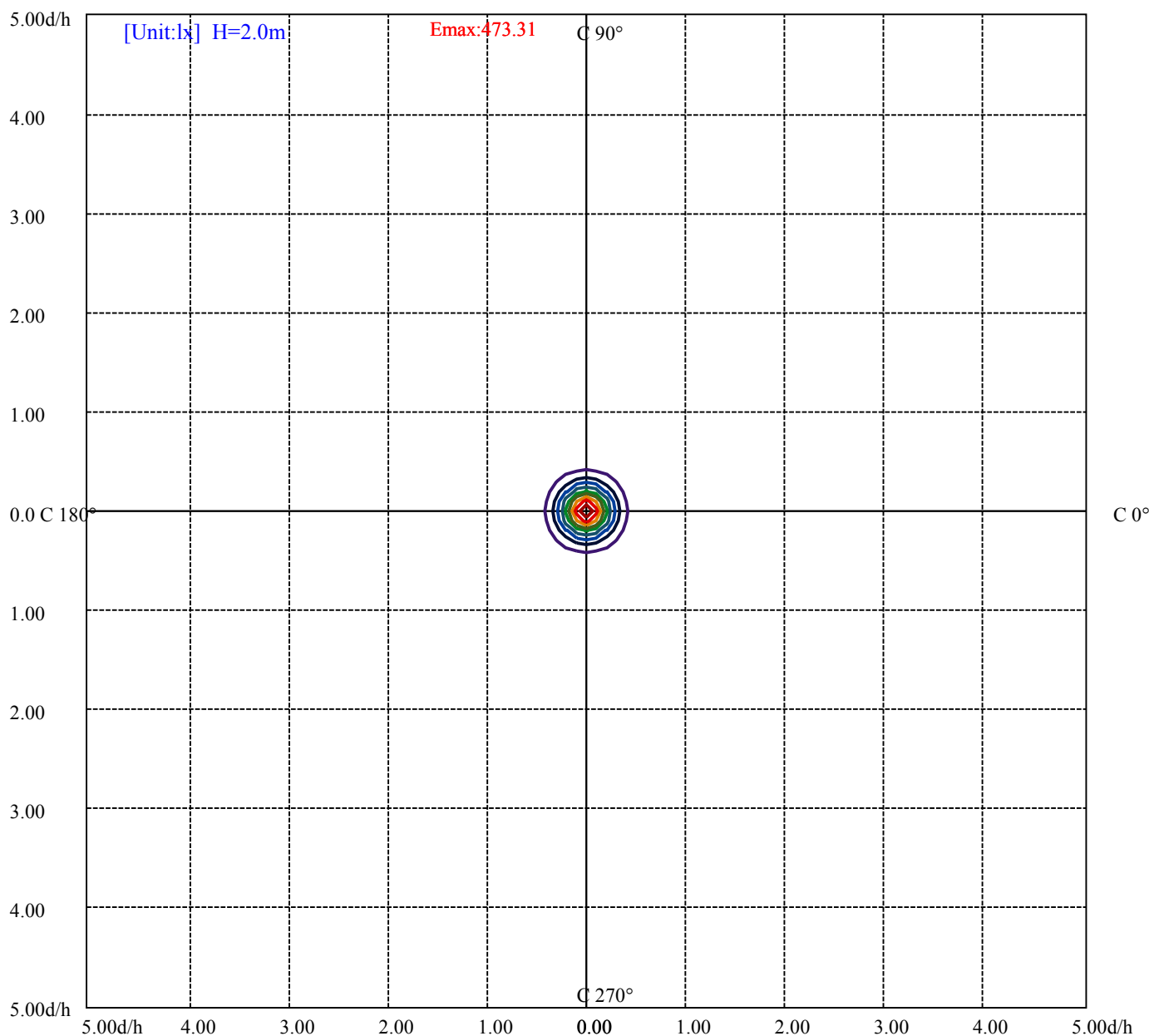
House

[Unit:cd]

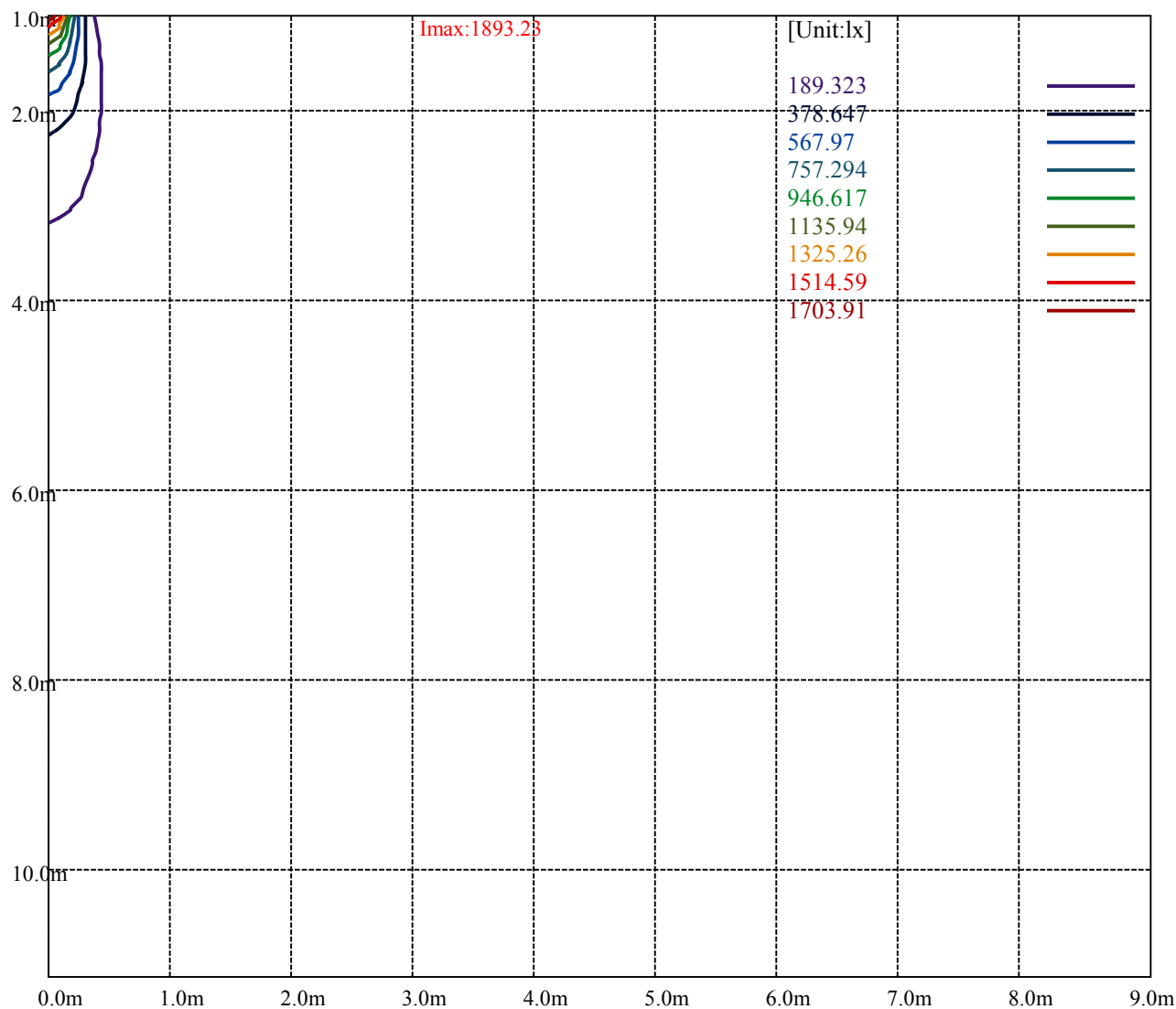
Road

Imax:1893.23

(10%Imax)	189.323	—
(20%Imax)	378.647	—
(30%Imax)	567.97	—
(40%Imax)	757.294	—
(50%Imax)	946.617	—
(60%Imax)	1135.94	—
(70%Imax)	1325.26	—
(80%Imax)	1514.59	—
(90%Imax)	1703.91	—



(10%Emax) 47.33075	—
(20%Emax) 94.6615	—
(30%Emax) 141.9922	—
(40%Emax) 189.3228	—
(50%Emax) 236.6535	—
(60%Emax) 283.985	—
(70%Emax) 331.315	—
(80%Emax) 378.645	—
(90%Emax) 425.9775	—



Luminance Table

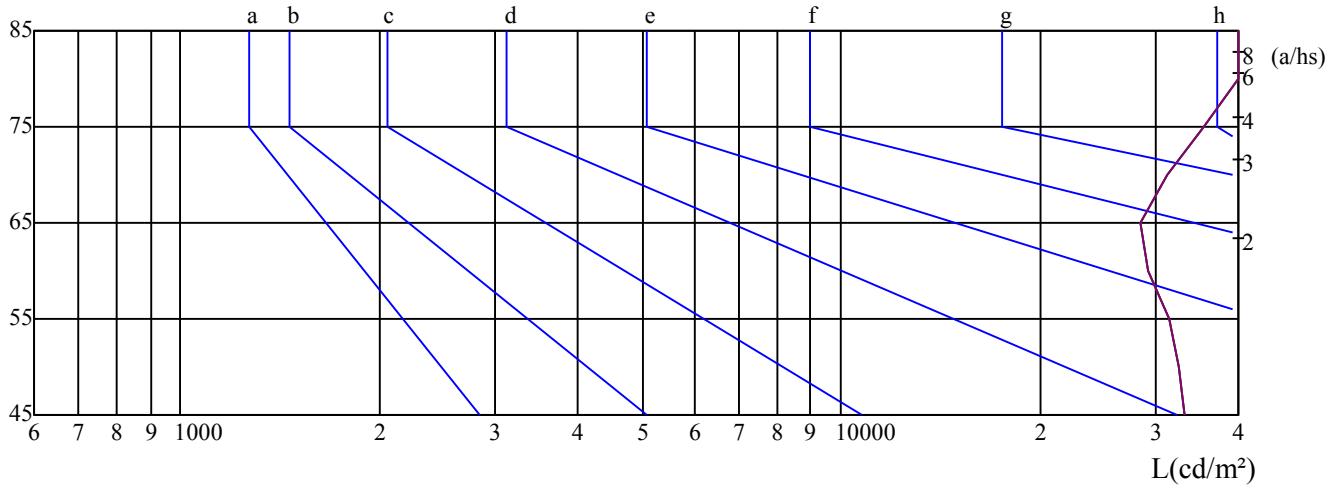
γ	45	50	55	60	65	70	75	80	85
C0	33068	32464	31423	29141	28468	31248	35347	50074	110614
C45	33068	32464	31423	29141	28468	31248	35347	50074	110614
C90	33068	32464	31423	29141	28468	31248	35347	50074	110614

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
28468	28468	28468	35347	35347	35347	110614	110614	110614

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

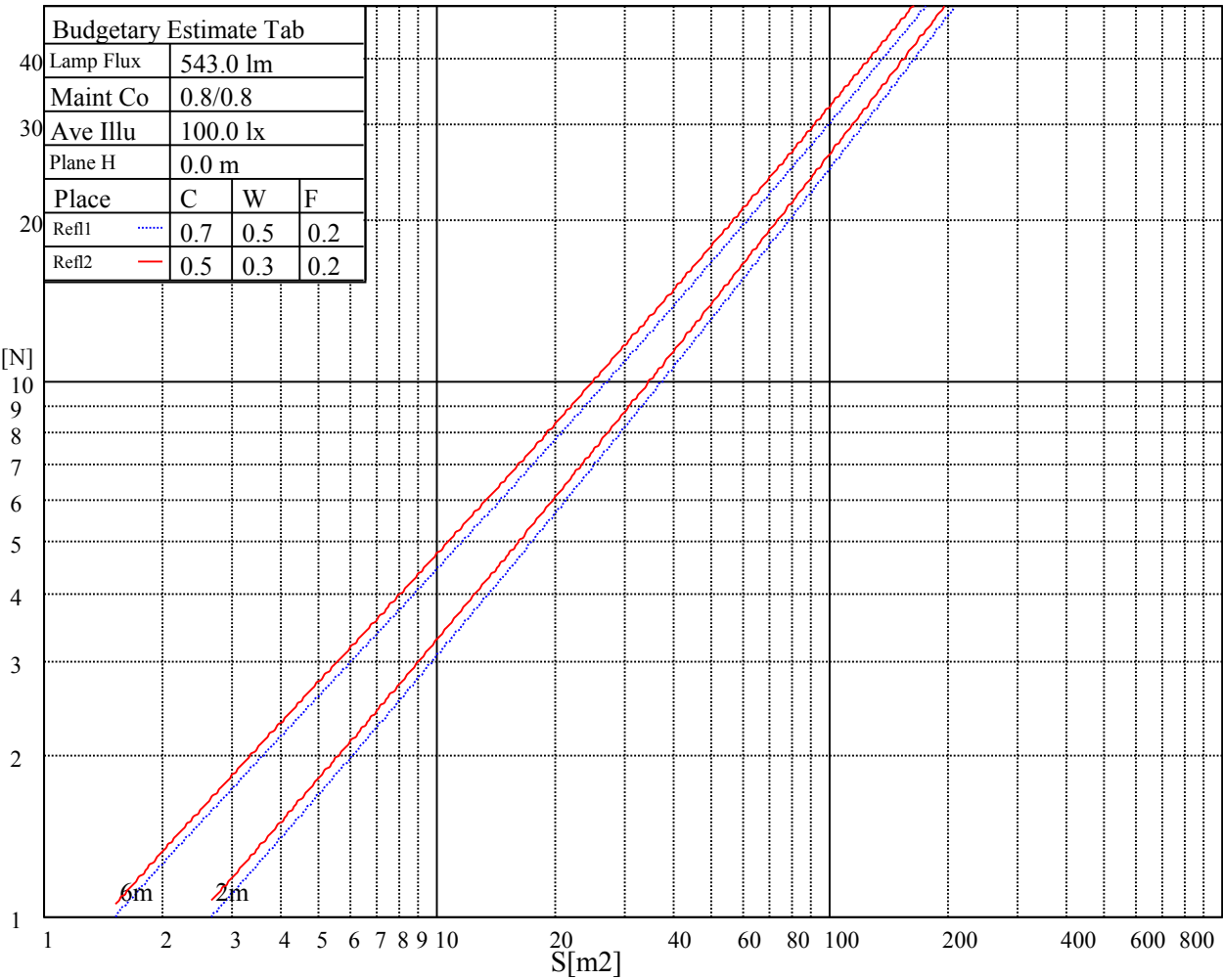
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

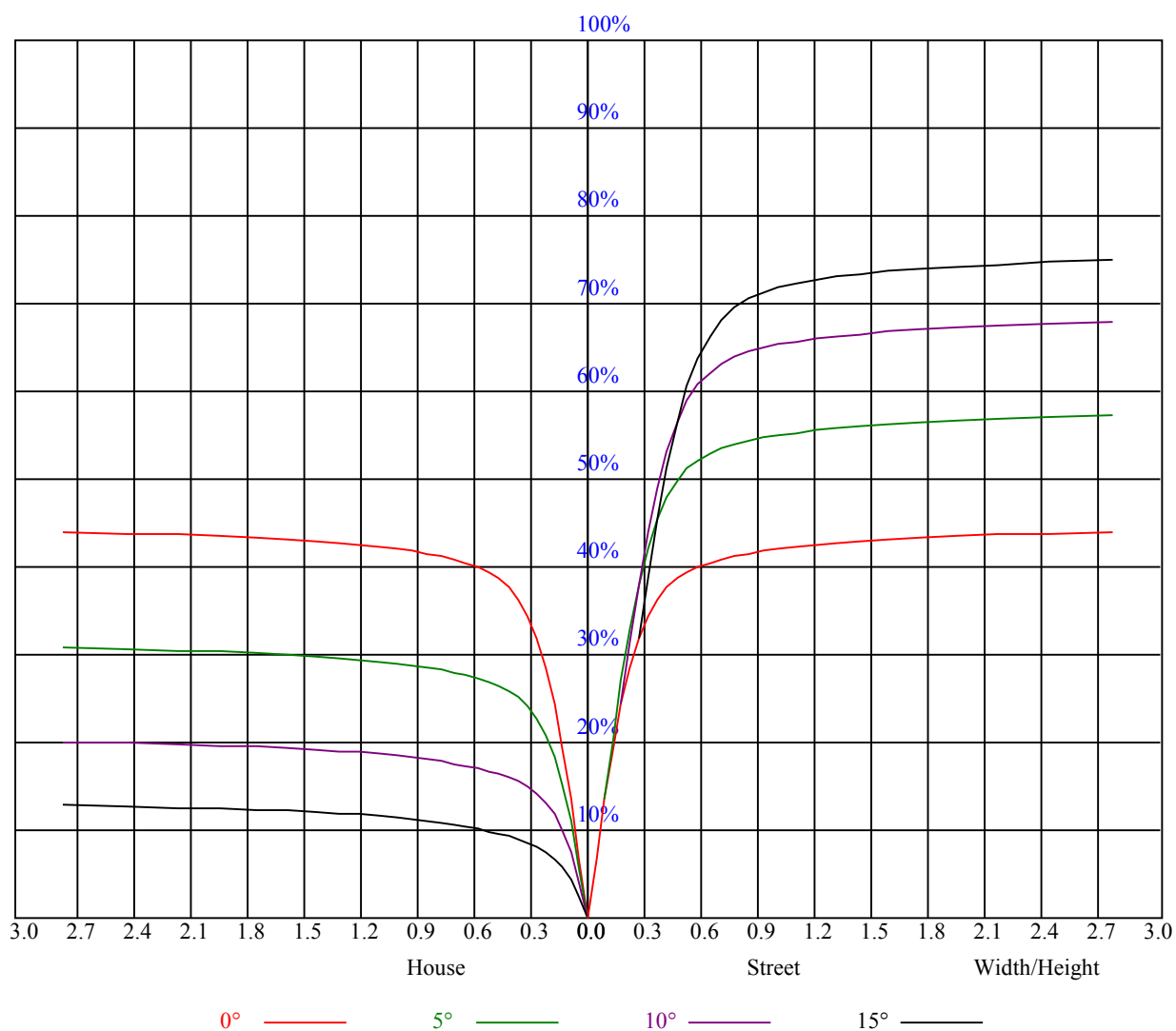
C0 ———

C45 ———

C90 ———



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	1.09	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	0.99	0.96	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.90	0.89	0.89	0.88	0.87	0.85
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.88	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.79	0.78	0.76
4	0.85	0.80	0.77	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.73
5	0.81	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
6	0.78	0.73	0.70	0.77	0.73	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.73	0.70	0.68	0.67
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.67	0.64	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.62
9	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60
10	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.59



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	1885.50	1813.50	1354.50	790.31	393.19	161.38	75.94	37.13	24.92		
45.0	1895.06	1709.44	1207.13	696.38	330.75	144.51	66.26	33.24	23.68		
90.0	1879.31	1518.19	956.36	511.26	249.47	112.89	57.60	32.91	25.03		
135.0	1913.06	1621.13	1041.75	558.56	286.31	126.62	65.08	38.14	25.31		
180.0	1885.50	1574.44	1018.86	547.93	281.19	124.82	60.02	34.88	26.49		
225.0	1895.06	1635.75	1098.51	615.77	303.98	137.48	65.53	35.04	26.55		
270.0	1879.31	1835.44	1428.19	843.75	425.81	183.09	82.07	38.93	25.14		
315.0	1913.06	1829.81	1115.04	784.24	371.70	152.61	69.92	38.48	25.93		
360.0	1885.50	1813.50	1354.50	790.31	393.19	161.38	75.94	37.13	24.92		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	20.19	17.94	16.31	14.63	12.94	11.36	9.79	8.21	7.26		
45.0	20.76	19.35	17.61	15.30	12.32	10.58	8.49	6.98	7.31		
90.0	23.40	21.94	18.45	12.21	9.73	8.55	6.98	7.20	7.71		
135.0	19.41	16.71	13.11	10.13	9.11	7.88	6.69	11.31	13.89		
180.0	23.34	21.15	17.83	12.38	10.46	9.28	7.59	7.43	7.09		
225.0	23.01	20.19	17.21	14.79	12.09	9.73	7.76	6.19	6.36		
270.0	20.03	17.89	16.14	14.34	10.97	11.31	10.24	7.09	6.81		
315.0	18.23	15.08	13.11	11.14	9.00	8.27	8.33	8.21	12.99		
360.0	20.19	17.94	16.31	14.63	12.94	11.36	9.79	8.21	7.26		
C/ γ (°)	90.0										
0.0	5.46										
45.0	5.63										
90.0	4.84										
135.0	4.95										
180.0	4.84										
225.0	4.56										
270.0	4.16										
315.0	4.44										
360.0	5.46										