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NATA

LumCAT: 91.61.0039.02

Luminaire:

Report No: NATA0100

Voltage(V): 6.1000

Test No: GC2018112902

Current(A): 0.2500

LampCAT: CREE XPE2

Power (W): 1.5250

Lamp flux(lm): 210.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 190.62

Efficiency(%): 90.77%

Lumens(lm)/Power(W): 125.00

Central intensity(cd): 20.419

Maximum intensity(cd): 55.800

Angle of maximum intensity: C=0.0 γ =75.0

Beam Angle(50%Imax): [C0/180]Total=164.9

[C90/270]Total=164.9

Field angle(10%Imax): [C0/180]Total=177.1

[C90/270]Total=177.1

Maximum s/h(1/2): C0_180=1.55 C90_270=1.55

Maximum s/h(1/4): C0_180=2.14 C90_270=2.14

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.74%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 42.998%

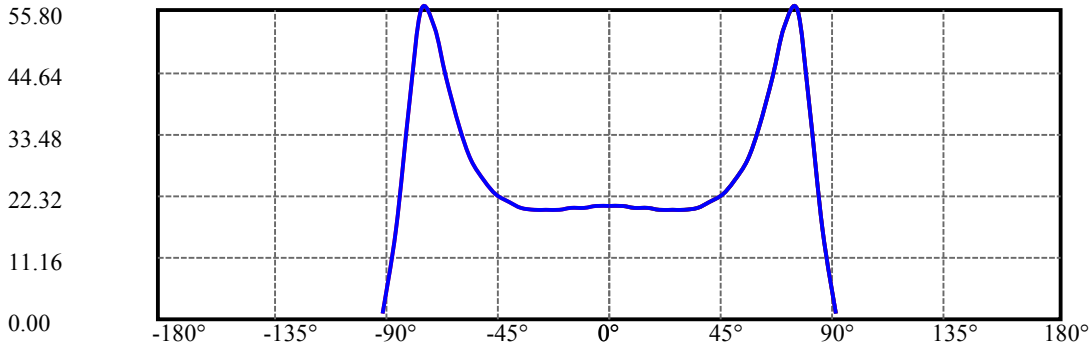
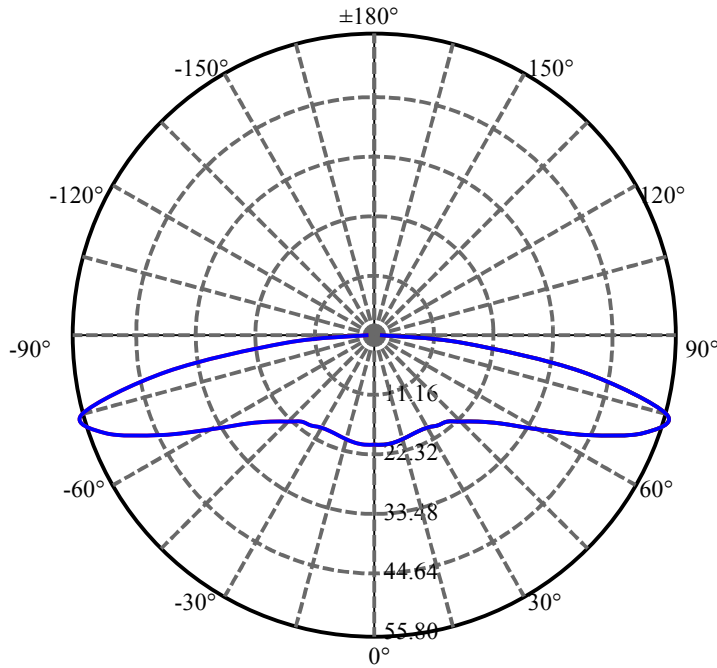
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	20.419	0.122	0.122	.058%	.064%
5.0	20.355	0.972	1.095	.463%	.574%
10.0	20.180	1.921	3.015	.915%	1.582%
15.0	19.997	2.837	5.852	1.351%	3.070%
20.0	19.793	3.711	9.563	1.767%	5.017%
25.0	19.716	4.567	14.13	2.175%	7.413%
30.0	19.828	5.434	19.564	2.588%	10.264%
35.0	20.250	6.367	25.931	3.032%	13.604%
40.0	21.038	7.412	33.343	3.530%	17.492%
45.0	22.556	8.743	42.086	4.163%	22.078%
50.0	24.848	10.434	52.52	4.968%	27.552%
55.0	28.793	12.928	65.448	6.156%	34.334%
60.0	34.734	16.488	81.936	7.852%	42.984%
65.0	43.523	21.622	103.558	10.296%	54.327%
70.0	52.763	27.177	130.735	12.941%	68.584%
75.0	55.800	29.544	160.279	14.069%	84.083%
80.0	39.059	21.084	181.363	10.040%	95.144%
85.0	16.348	8.927	190.29	4.251%	99.827%
90.0	1.202	0.330	190.619	.157%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	19.56	9.32%	10.26%
0-40	33.34	15.88%	17.49%
0-60	81.94	39.02%	42.98%
0-90	190.29	90.61%	99.83%
0-120	190.29	90.61%	99.83%
0-180	190.62	90.77%	100.00%
60-90	124.84	59.45%	65.49%
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%
0-73.68	152.50	72.62%	80.00%

ZONAL LUMEN SUMMARY

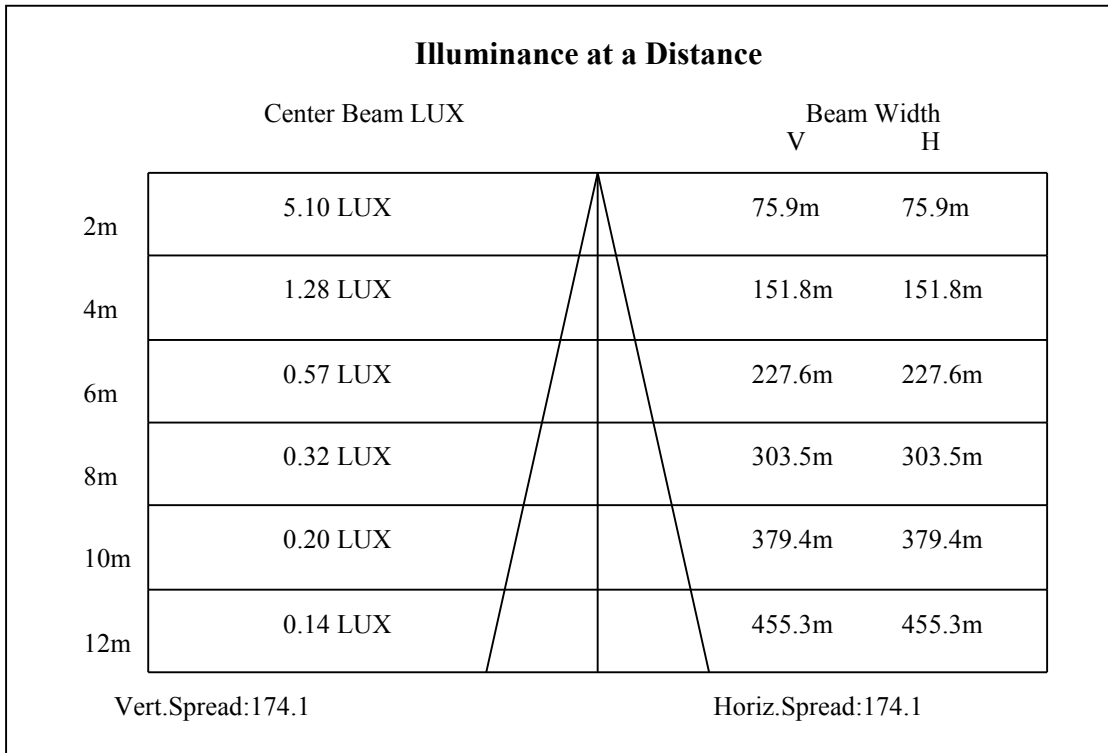
0-10	3.02
10-20	6.55
20-30	10.00
30-40	13.78
40-50	19.18
50-60	29.42
60-70	48.80
70-80	50.63
80-90	8.93
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

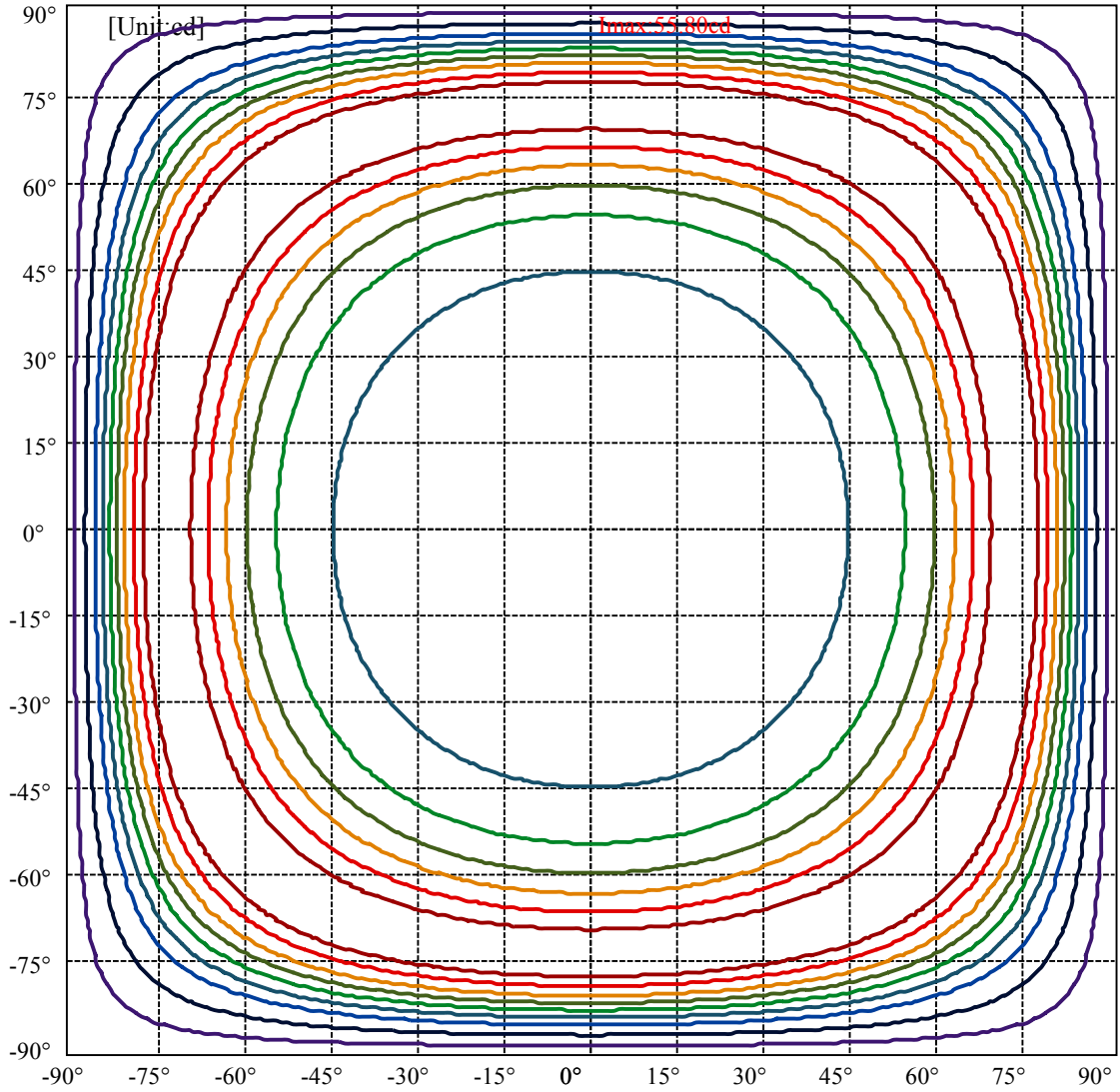


C0(Max): ———
C0/C180: ———
C90/C270: ———

Field angle(10%Imax):C0/180Left:163.6 Right:13.6
:C90/270Left:163.6 Right:13.6

Beam Angle(50%Imax):C0/180Left:157.5 Right:7.5
:C90/270Left:157.5 Right:7.5



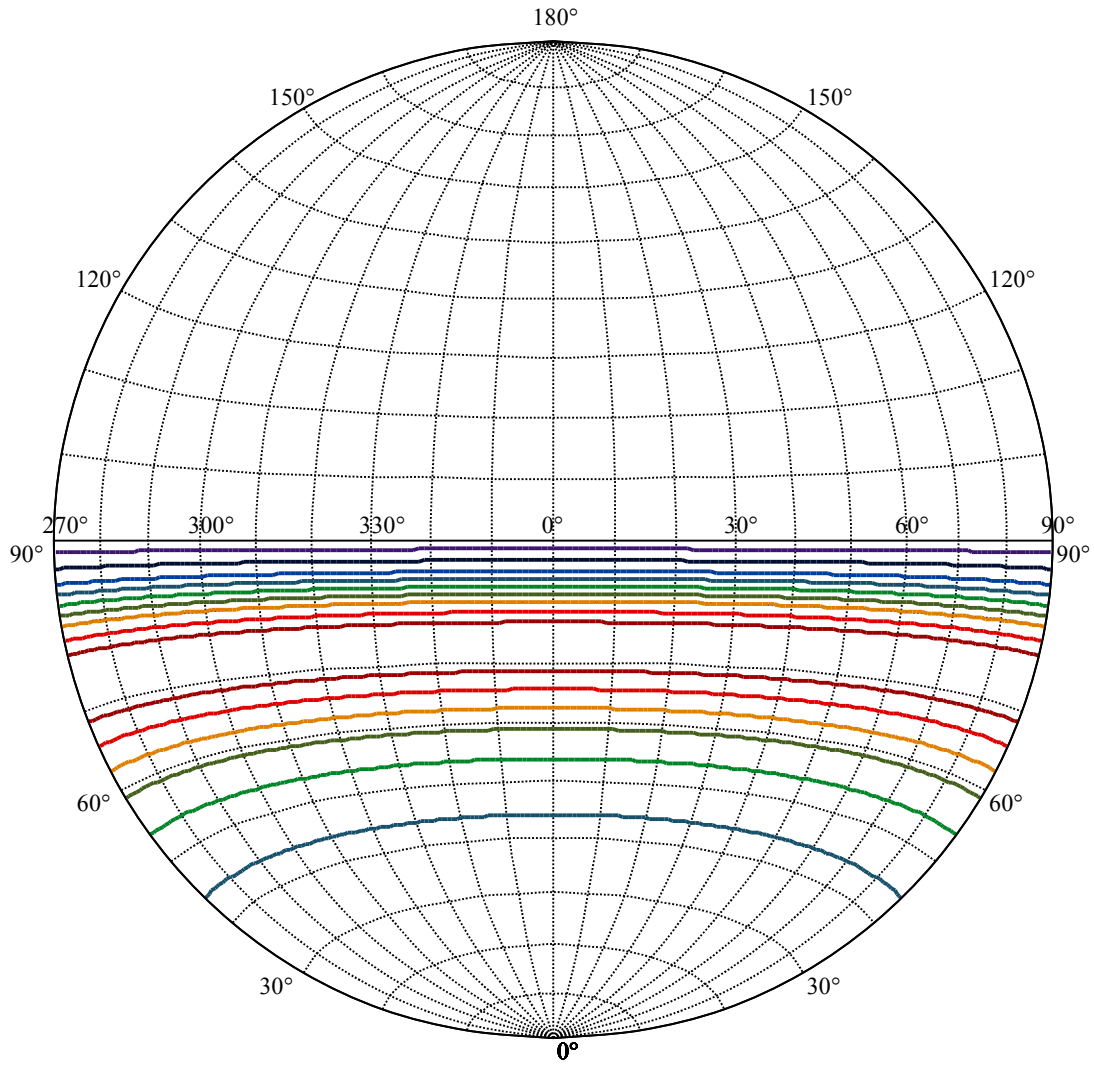


(10%Imax) 5.58	—
(20%Imax) 11.16	—
(30%Imax) 16.74	—
(40%Imax) 22.32	—
(50%Imax) 27.9	—
(60%Imax) 33.48	—
(70%Imax) 39.06	—
(80%Imax) 44.64	—
(90%Imax) 50.22	—

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/11/29
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50



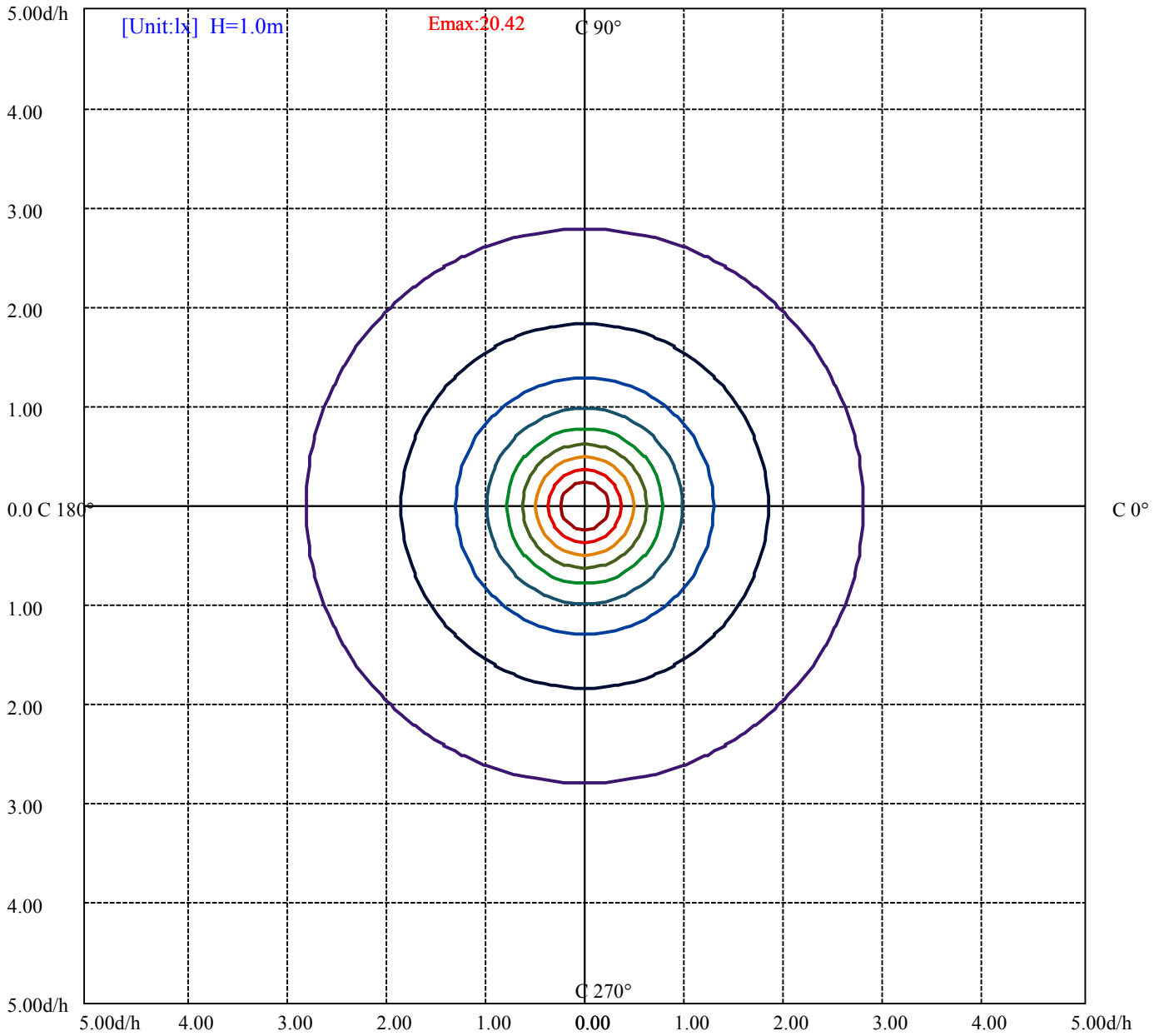
House

[Unit:cd]

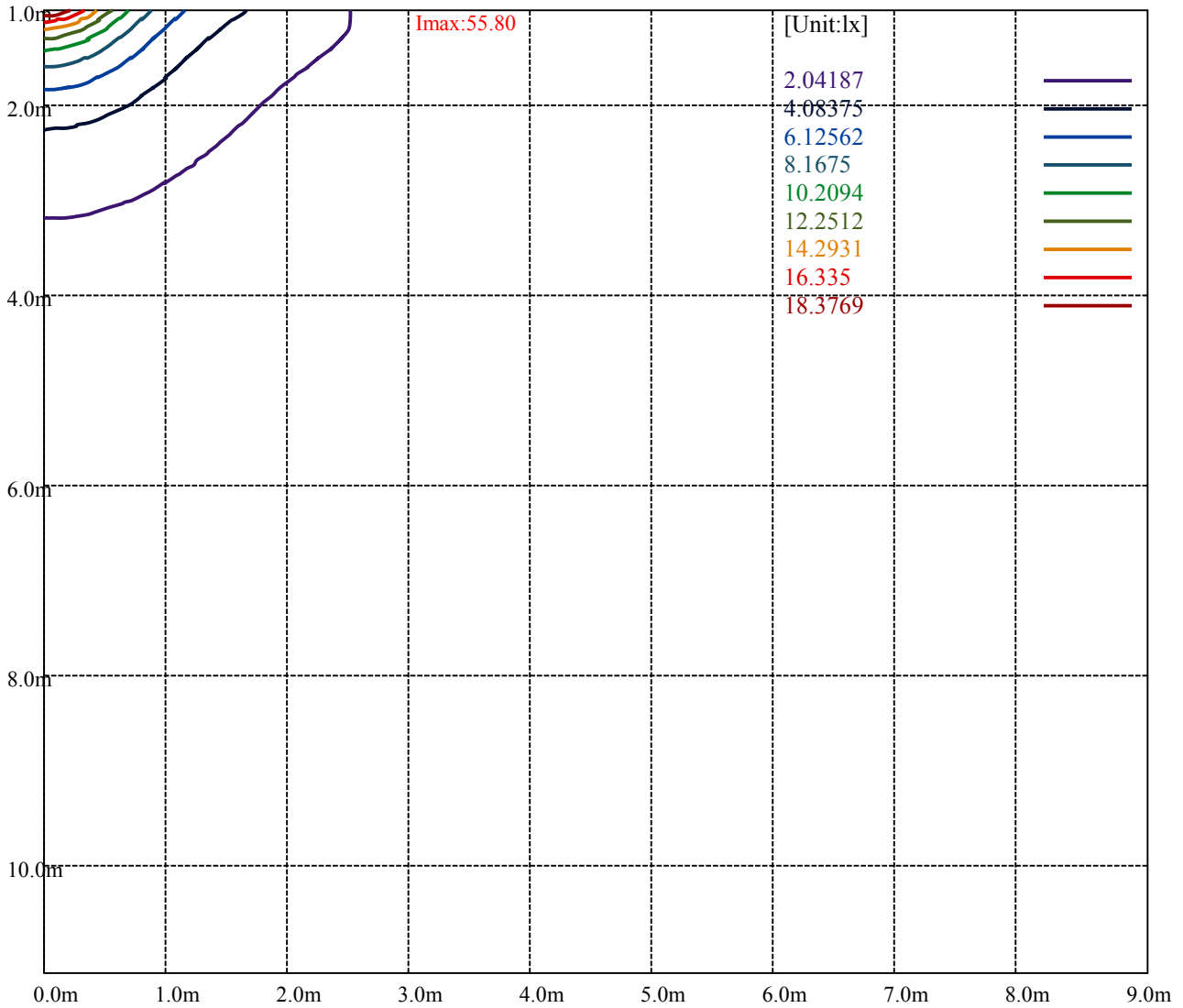
Road

Imax:55.80

(10%Imax) 5.58	—
(20%Imax) 11.16	—
(30%Imax) 16.74	—
(40%Imax) 22.32	—
(50%Imax) 27.9	—
(60%Imax) 33.48	—
(70%Imax) 39.06	—
(80%Imax) 44.64	—
(90%Imax) 50.22	—



- (10%Emax) 2.04187
- (20%Emax) 4.08375
- (30%Emax) 6.12562
- (40%Emax) 8.1675
- (50%Emax) 10.2094
- (60%Emax) 12.2512
- (70%Emax) 14.2931
- (80%Emax) 16.335
- (90%Emax) 18.3769



Luminance Table

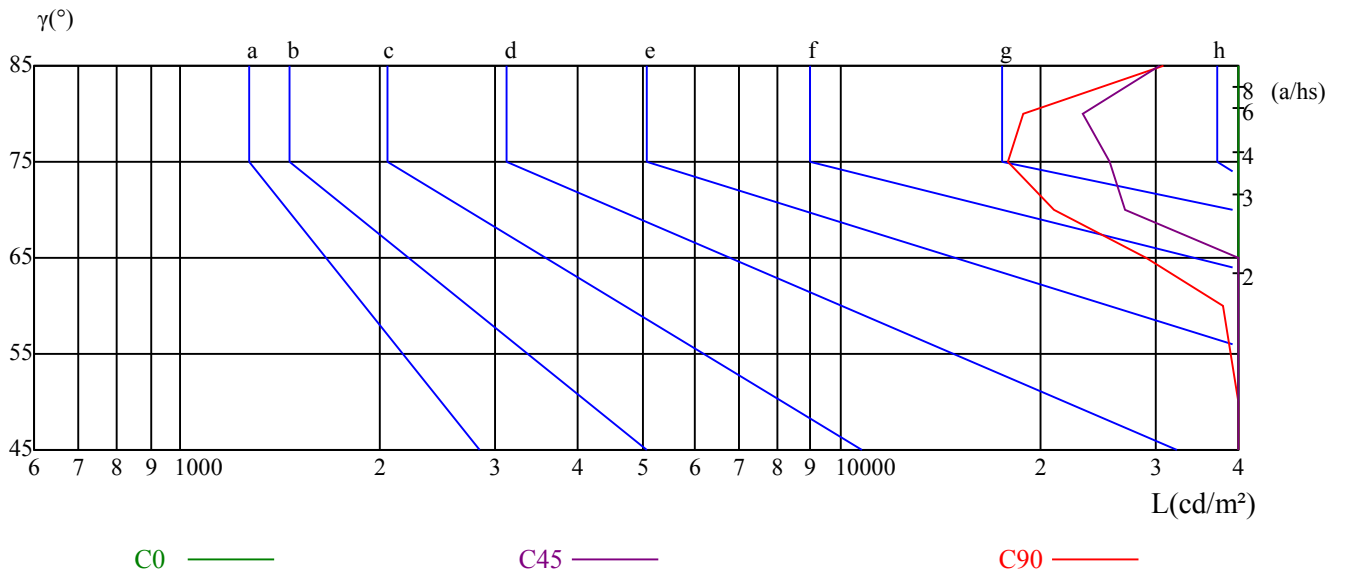
γ	45	50	55	60	65	70	75	80	85
C0	140771	158637	184958	219015	240164	249262	176301	83833	55246
C45	70322	64442	59665	57105	53665	26972	25471	23193	30463
C90	48907	45260	39071	37890	28962	20986	17908	18918	30721

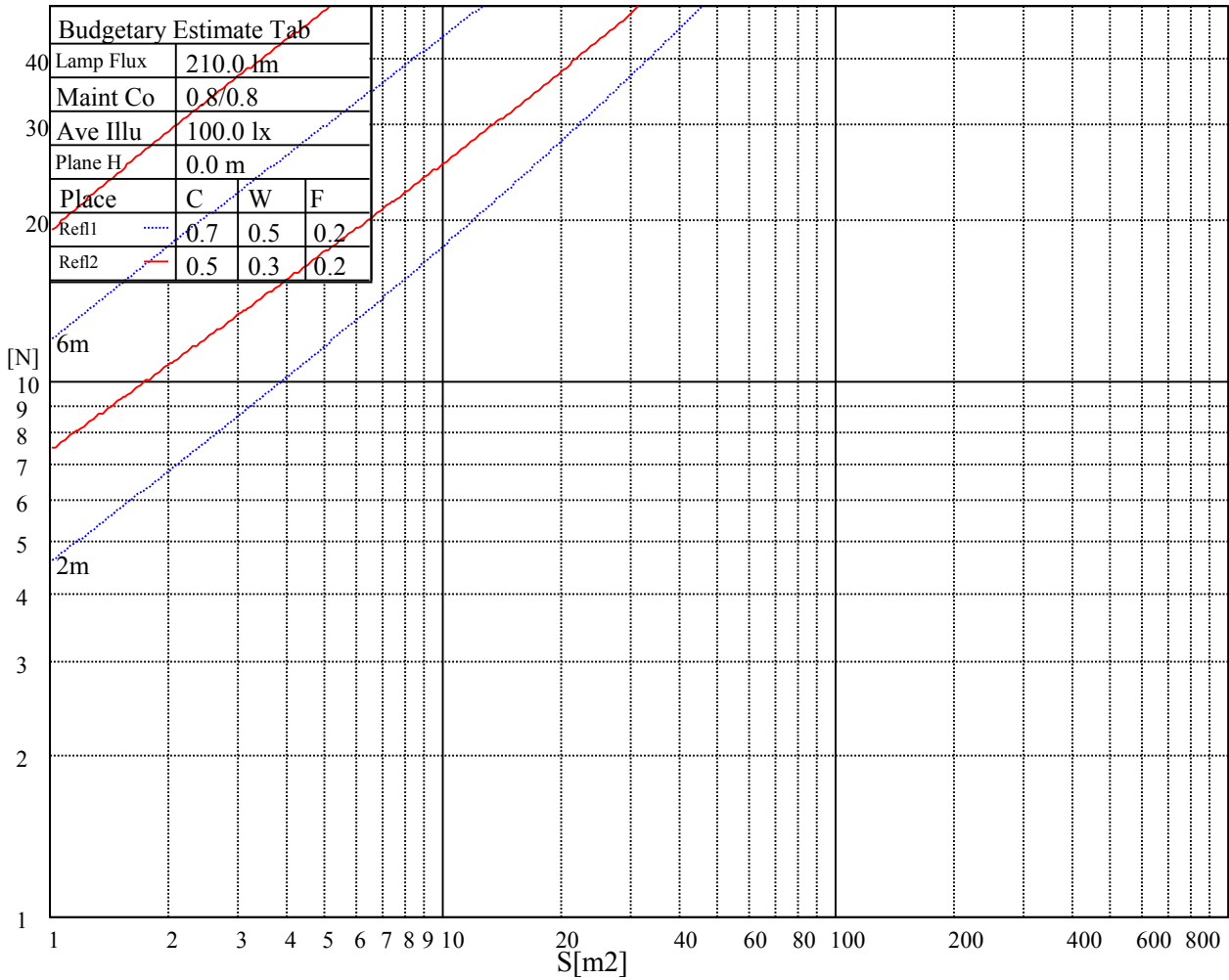
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
228318	38918	71647	152568	36382	51052	54601	37433	84547

Glare Table

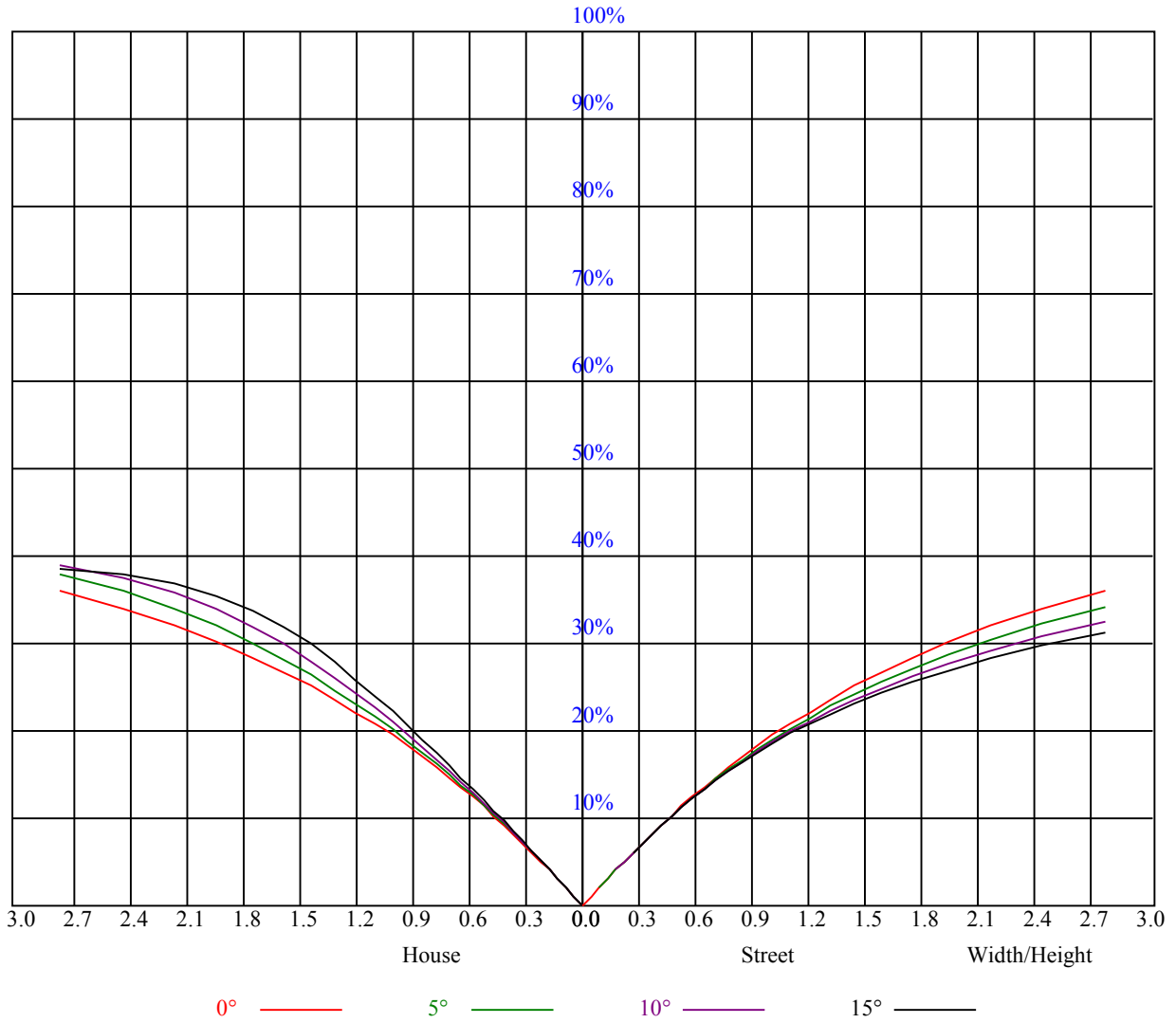
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	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	0.86	0.80	0.75	0.84	0.79	0.74	0.80	0.75	0.71	0.76	0.72	0.69	0.73	0.70	0.67	0.65
2	0.70	0.60	0.53	0.68	0.59	0.52	0.64	0.57	0.51	0.61	0.55	0.49	0.58	0.53	0.48	0.46
3	0.57	0.47	0.39	0.56	0.46	0.38	0.53	0.44	0.38	0.50	0.43	0.37	0.47	0.41	0.36	0.34
4	0.49	0.38	0.30	0.47	0.37	0.30	0.45	0.36	0.29	0.42	0.35	0.29	0.40	0.34	0.28	0.26
5	0.42	0.32	0.24	0.41	0.31	0.24	0.39	0.30	0.23	0.37	0.29	0.23	0.35	0.28	0.23	0.20
6	0.37	0.27	0.20	0.36	0.27	0.20	0.34	0.26	0.19	0.33	0.25	0.19	0.31	0.24	0.19	0.17
7	0.33	0.24	0.17	0.32	0.23	0.17	0.31	0.23	0.17	0.29	0.22	0.16	0.28	0.21	0.16	0.14
8	0.30	0.21	0.15	0.29	0.21	0.15	0.28	0.20	0.14	0.27	0.19	0.14	0.26	0.19	0.14	0.12
9	0.27	0.19	0.13	0.27	0.18	0.13	0.26	0.18	0.13	0.25	0.18	0.13	0.23	0.17	0.12	0.10
10	0.25	0.17	0.11	0.25	0.17	0.11	0.24	0.16	0.11	0.23	0.16	0.11	0.22	0.16	0.11	0.09



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	20.42	20.31	20.14	20.08	19.91	19.74	19.74	20.03	20.81
45.0	20.42	20.25	20.14	20.03	19.91	19.97	20.31	20.98	22.05
90.0	20.42	20.25	20.08	19.97	19.97	20.14	20.53	21.32	22.44
135.0	20.42	20.31	20.03	19.86	19.74	19.86	20.08	20.64	21.49
180.0	20.42	20.36	20.14	19.86	19.80	19.80	20.03	20.48	21.21
225.0	20.42	20.48	20.31	20.03	19.58	19.29	19.18	19.35	19.80
270.0	20.42	20.48	20.36	20.08	19.63	19.24	19.07	19.18	19.74
315.0	20.42	20.42	20.25	20.08	19.80	19.69	19.69	20.03	20.76
360.0	20.42	20.31	20.14	20.08	19.91	19.74	19.74	20.03	20.81

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	22.50	25.14	29.87	36.90	46.80	57.04	56.98	35.61	12.21
45.0	23.91	26.44	30.99	37.63	46.97	53.89	51.24	35.61	14.63
90.0	24.47	27.56	32.46	39.60	48.83	54.39	49.11	22.95	8.16
135.0	23.06	25.14	28.91	34.71	42.81	52.82	55.35	41.57	17.55
180.0	22.50	24.41	27.79	32.57	40.67	51.98	59.06	38.03	14.12
225.0	20.87	22.78	25.71	30.54	38.14	47.70	58.39	49.78	22.78
270.0	20.87	22.56	25.76	30.60	38.53	48.09	56.59	45.11	18.79
315.0	22.28	24.75	28.86	35.33	45.45	56.19	59.68	43.82	22.56
360.0	22.50	25.14	29.87	36.90	46.80	57.04	56.98	35.61	12.21

C/γ(°)	90.0
0.0	1.24
45.0	1.24
90.0	1.29
135.0	1.29
180.0	1.24
225.0	1.24
270.0	1.29
315.0	0.79
360.0	1.24