
Nata

LumCAT: 5-1067-N

Luminaire:

Report No: nata-0100

Voltage(V): 13.7000

Test No: GC2018081102

Current(A): 0.2000

LampCAT: LUMINUS SST20

Power (W): 2.7400

Lamp flux(lm): 320.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 30

Width(mm): 135

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 221.45

Efficiency(%): 69.20%

Lumens(lm)/Power(W): 80.82

Central intensity(cd): 786.646

Maximum intensity(cd): 786.646

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=26.3

[C90/270]Total=26.3

Field angle(10%Imax): [C0/180]Total=51.7

[C90/270]Total=51.7

Maximum s/h(1/2): C0_180=0.45 C90_270=0.45

Maximum s/h(1/4): C0_180=0.46 C90_270=0.46

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 69.20%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.144%

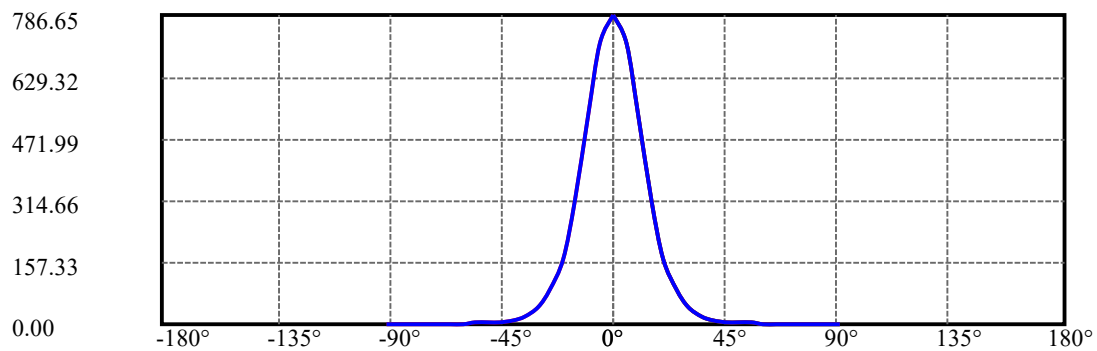
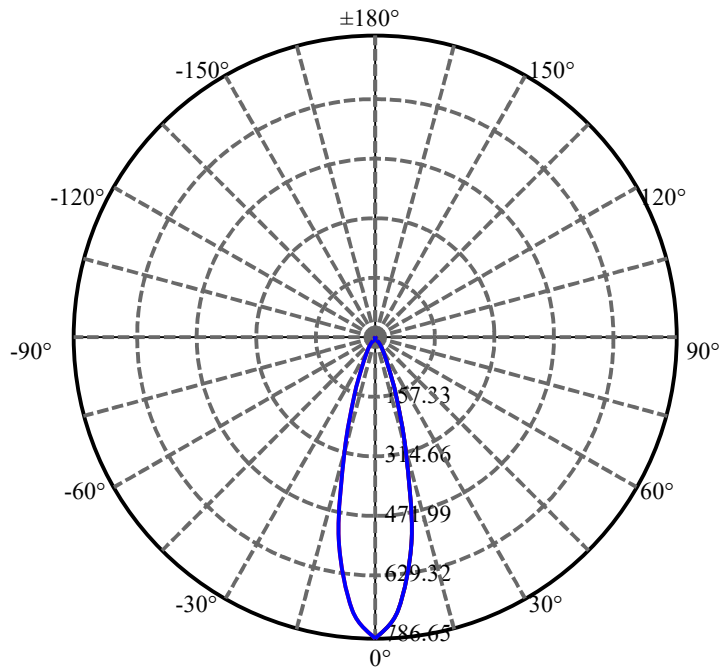
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	786.646	0.000	0	.000%	.000%
5.0	715.768	17.961	17.961	5.613%	8.111%
10.0	534.384	44.722	62.683	13.976%	28.306%
15.0	311.289	50.165	112.848	15.676%	50.959%
20.0	165.135	39.264	152.112	12.270%	68.689%
25.0	85.847	26.323	178.435	8.226%	80.576%
30.0	43.378	16.353	194.788	5.110%	87.961%
35.0	19.917	9.321	204.109	2.913%	92.169%
40.0	10.956	5.151	209.26	1.610%	94.495%
45.0	6.579	3.247	212.507	1.015%	95.962%
50.0	4.239	2.186	214.693	.683%	96.949%
55.0	2.808	1.532	216.225	.479%	97.641%
60.0	2.010	1.114	217.338	.348%	98.144%
65.0	1.411	0.832	218.17	.260%	98.519%
70.0	1.239	0.671	218.841	.210%	98.822%
75.0	1.301	0.664	219.505	.207%	99.122%
80.0	0.936	0.598	220.103	.187%	99.392%
85.0	1.294	0.606	220.709	.189%	99.666%
90.0	1.411	0.741	221.45	.231%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	194.79	60.87%	87.96%
0-40	209.26	65.39%	94.50%
0-60	217.34	67.92%	98.14%
0-90	220.71	68.97%	99.67%
0-120	220.71	68.97%	99.67%
0-180	221.45	69.20%	100.00%
60-90	4.48	1.40%	2.02%
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%
0-24.76	177.16	55.36%	80.00%

ZONAL LUMEN SUMMARY

0-10	62.68
10-20	89.43
20-30	42.68
30-40	14.47
40-50	5.43
50-60	2.65
60-70	1.50
70-80	1.26
80-90	0.61
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: —————

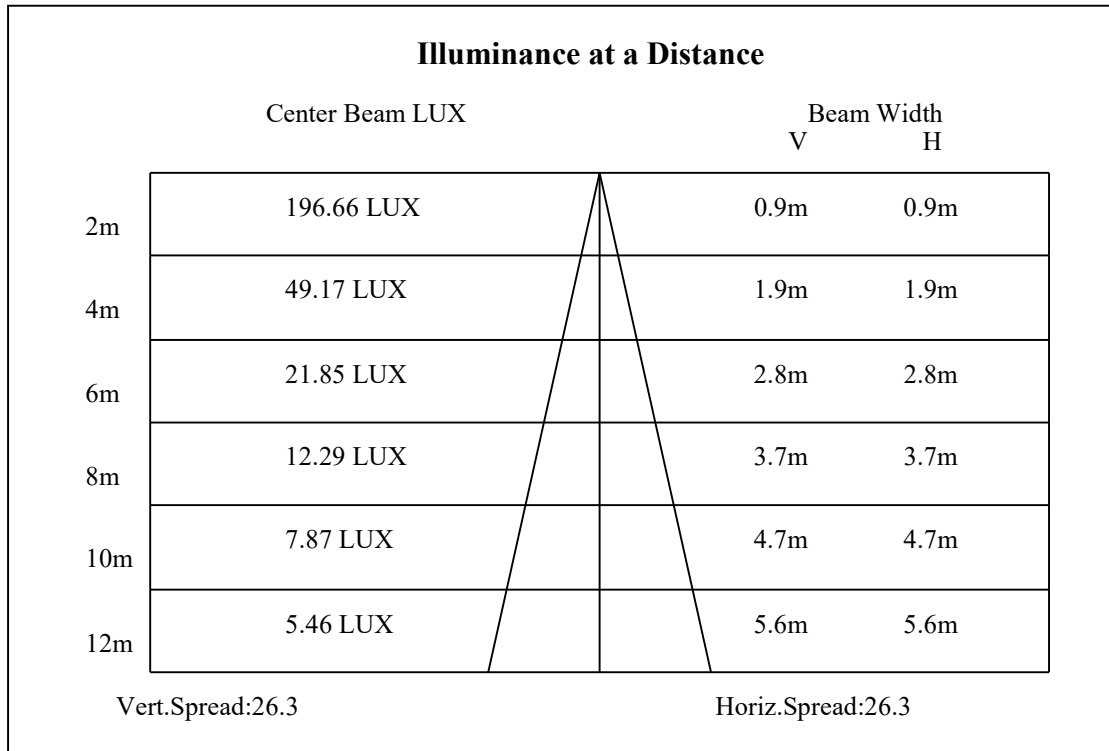
C90/C270: —————

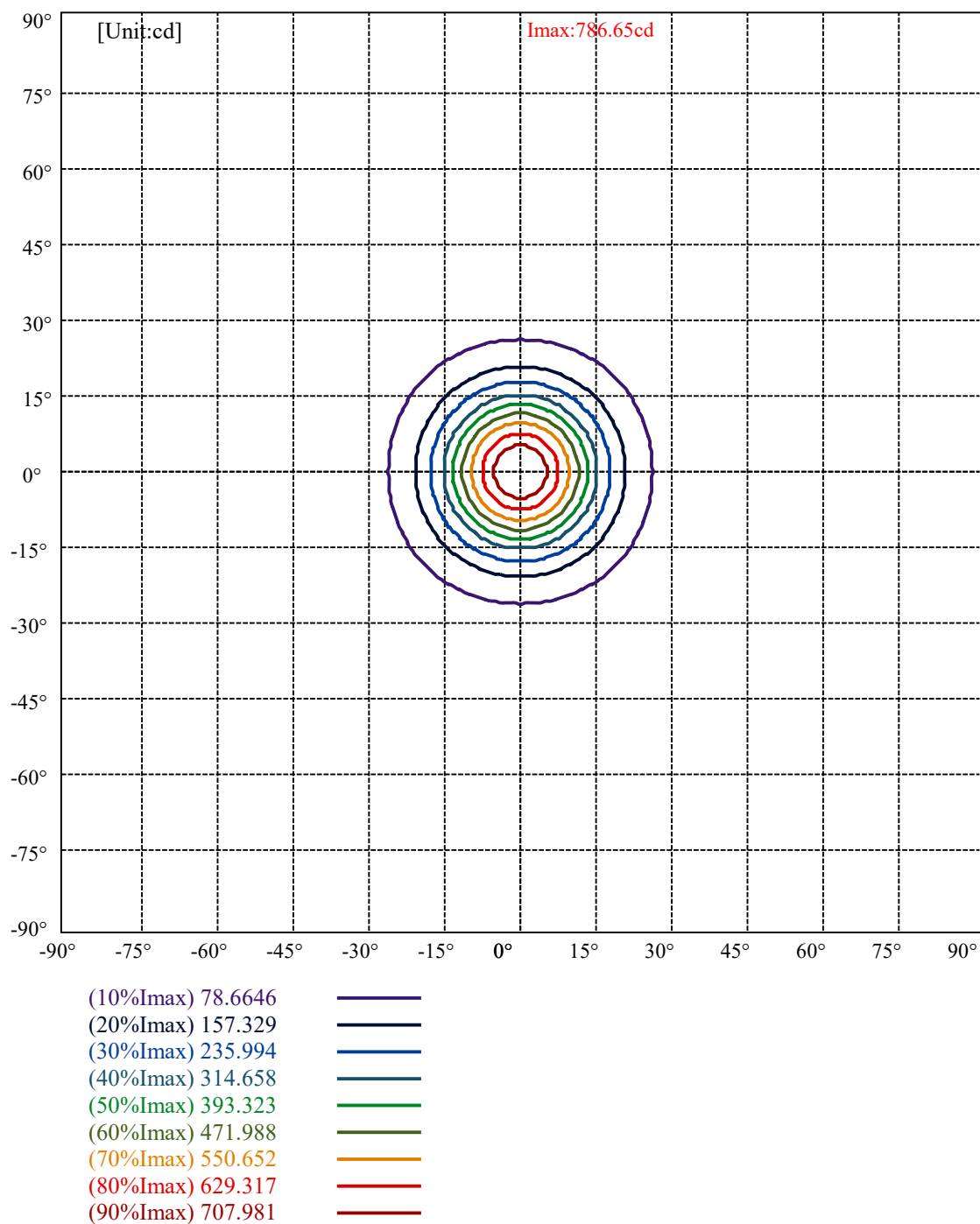
Field angle(10%Imax):C0/180Left:25.8 Right:25.8

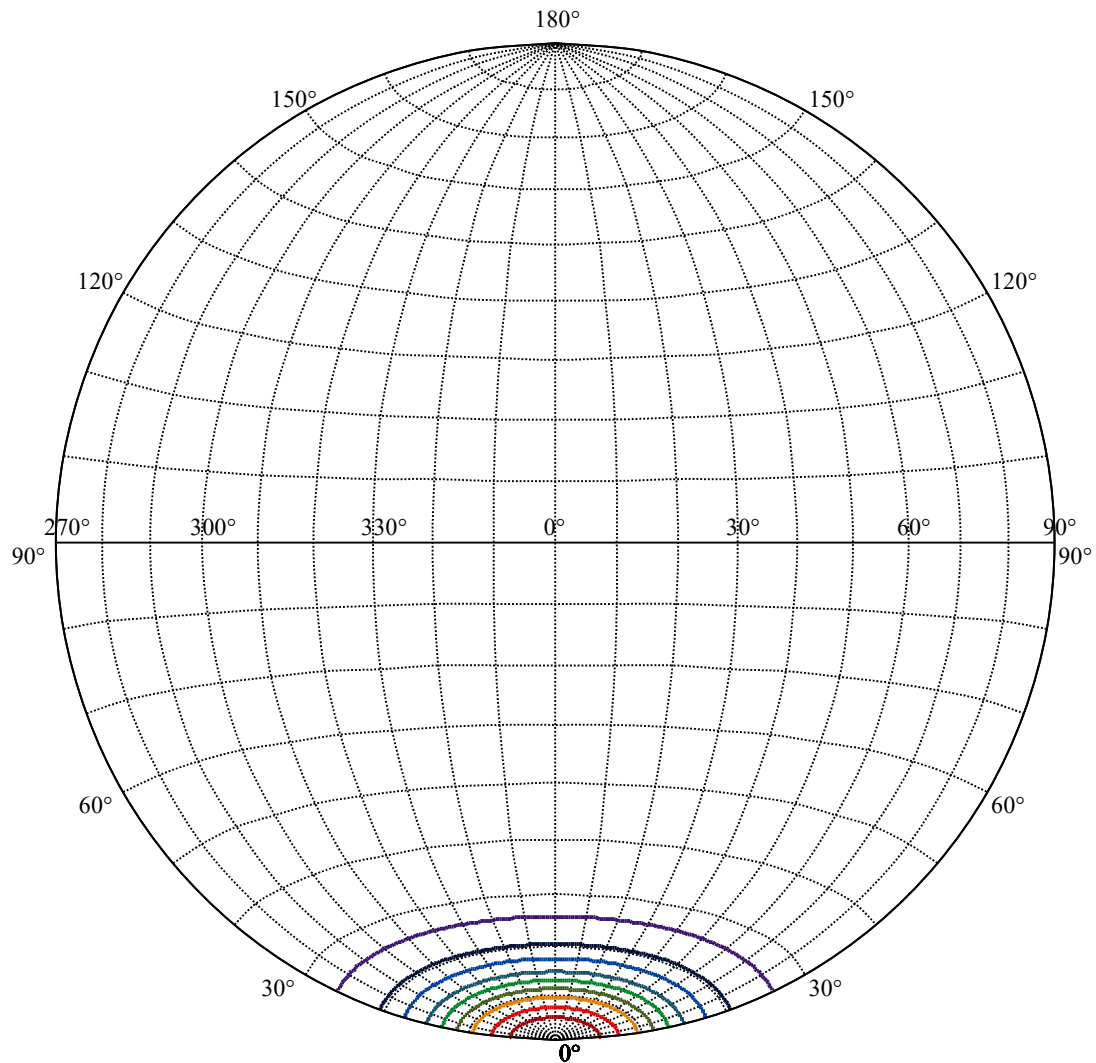
:C90/270Left:25.8 Right:25.8

Beam Angle(50%Imax):C0/180Left:13.2 Right:13.2

:C90/270Left:13.2 Right:13.2





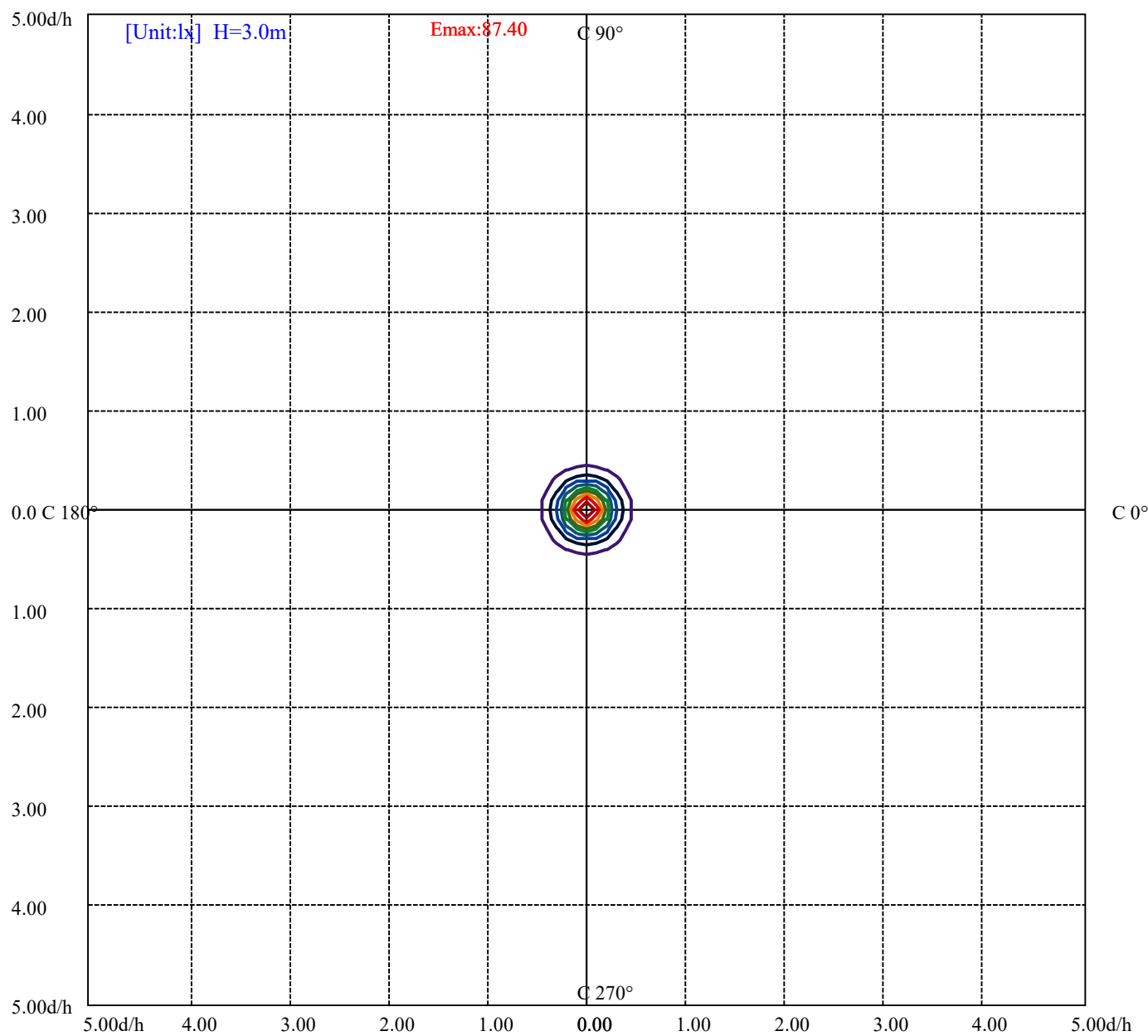


House

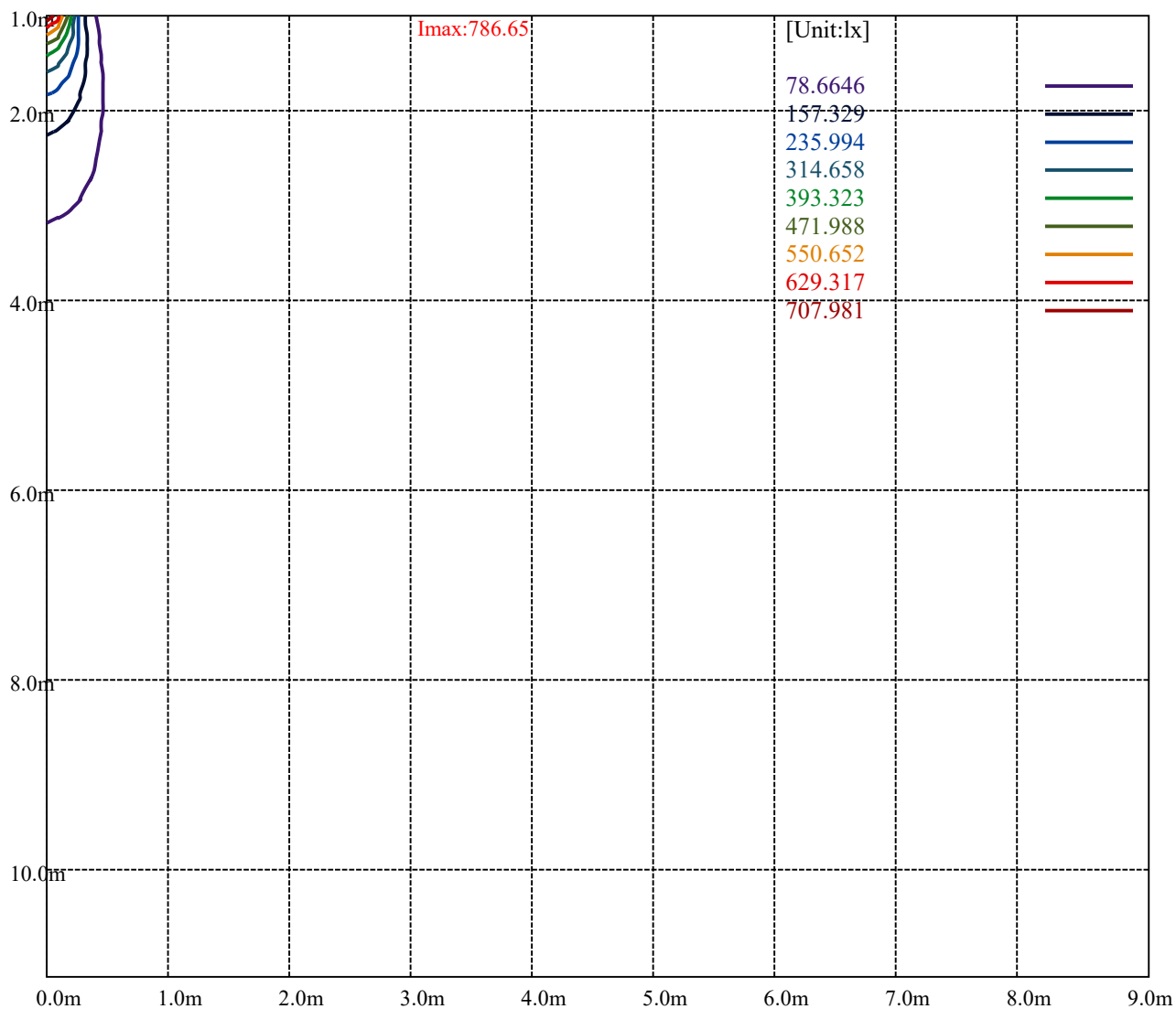
[Unit:cd]

Road

Imax:786.65	
(10%Imax) 78.6646	—
(20%Imax) 157.329	—
(30%Imax) 235.994	—
(40%Imax) 314.658	—
(50%Imax) 393.323	—
(60%Imax) 471.988	—
(70%Imax) 550.652	—
(80%Imax) 629.317	—
(90%Imax) 707.981	—



(10%E _{max}) 8.740489	—
(20%E _{max}) 17.481	—
(30%E _{max}) 26.22144	—
(40%E _{max}) 34.962	—
(50%E _{max}) 43.70244	—
(60%E _{max}) 52.44289	—
(70%E _{max}) 61.18344	—
(80%E _{max}) 69.92389	—
(90%E _{max}) 78.66434	—



Luminance Table

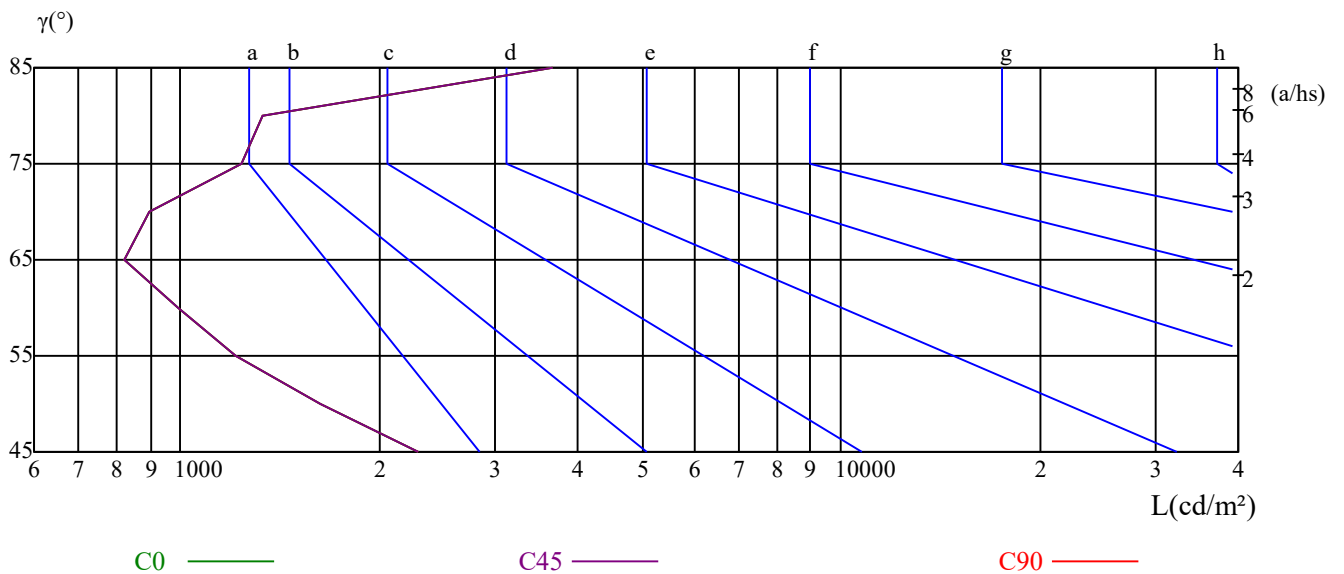
γ	45	50	55	60	65	70	75	80	85
C0	2297	1628	1209	992	824	894	1241	1331	3665
C45	2297	1628	1209	992	824	894	1241	1331	3665
C90	2297	1628	1209	992	824	894	1241	1331	3665

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
824	824	824	1241	1241	1241	3665	3665	3665

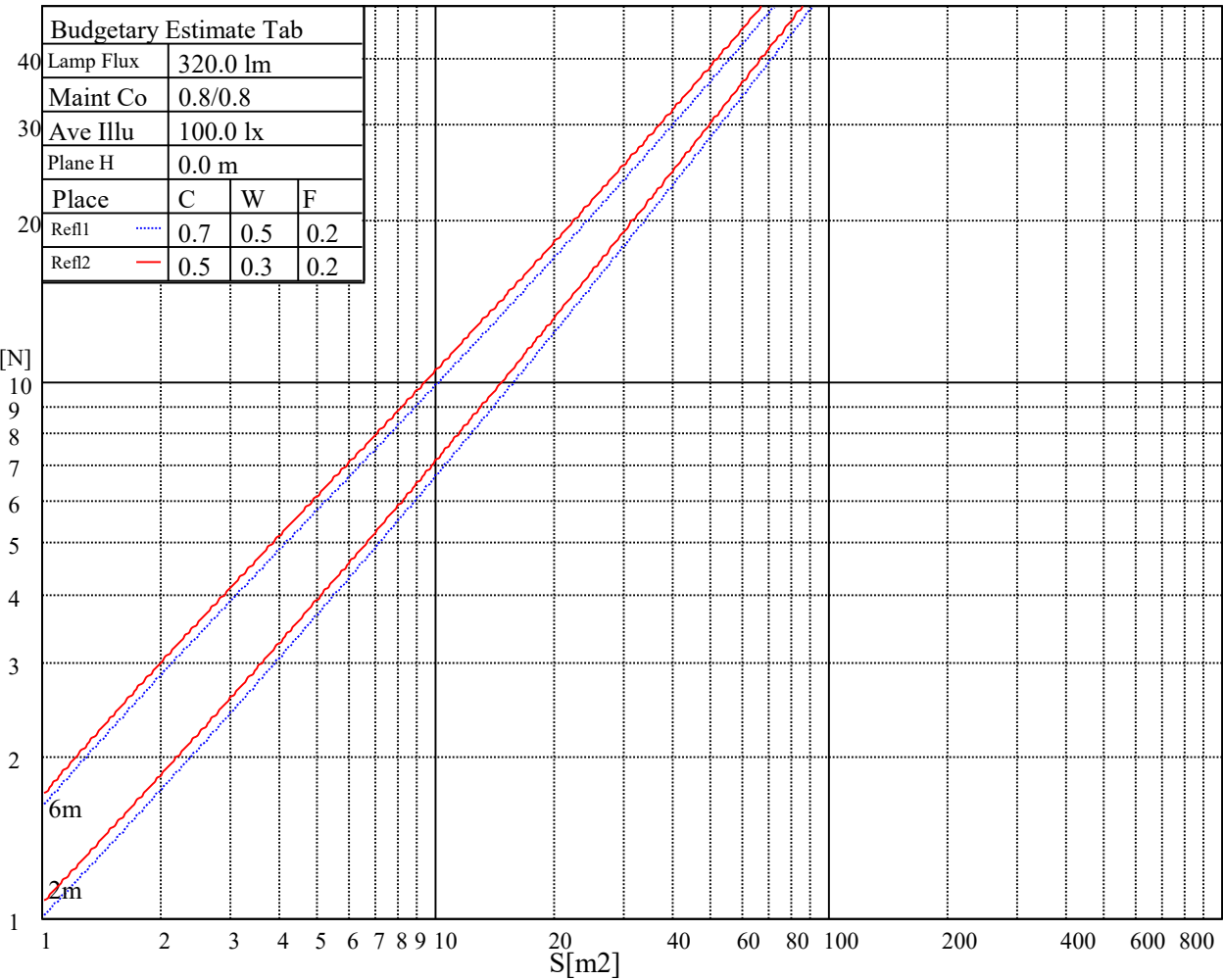
Glare Table

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

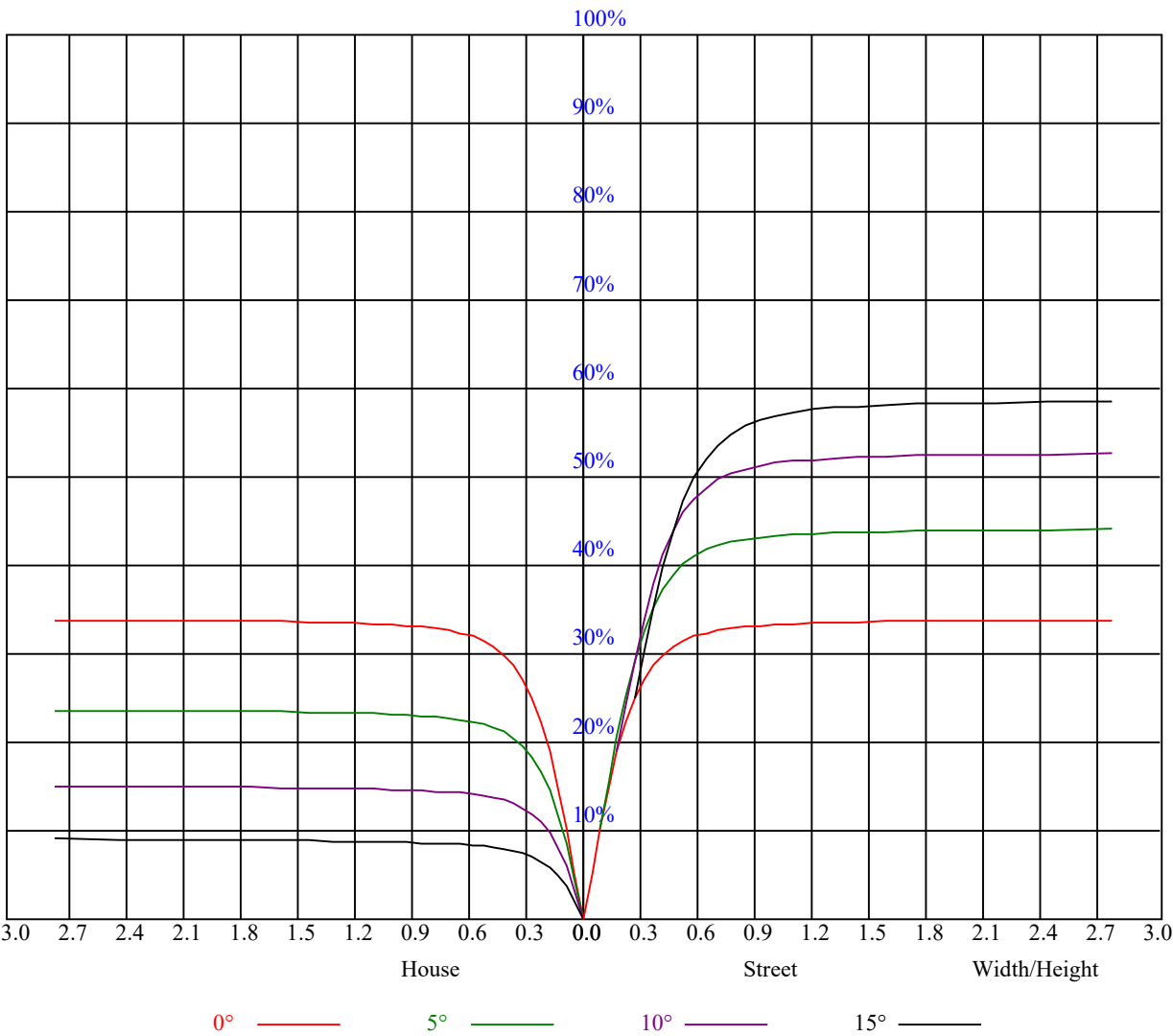
Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	9.58	10.54	9.95	10.85	11.17	8.46	9.42	8.83	9.73	10.05
	3H	11.17	12.01	11.55	12.34	12.71	9.49	10.34	9.88	10.67	11.04
	4H	12.59	13.38	13.00	13.73	14.12	10.32	11.11	10.73	11.46	11.85
	6H	13.55	14.27	13.97	14.64	15.04	11.44	12.16	11.86	12.54	12.93
	8H	14.09	14.76	14.52	15.15	15.56	12.22	12.89	12.65	13.28	13.69
	12H	15.35	15.99	15.79	16.38	16.81	13.68	14.32	14.11	14.70	15.14
4H	2H	9.84	10.62	10.25	10.98	11.37	8.92	9.70	9.32	10.05	10.44
	3H	11.77	12.41	12.19	12.82	13.23	10.35	10.99	10.76	11.40	11.81
	4H	13.46	14.03	13.89	14.45	14.90	11.46	12.04	11.90	12.46	12.91
	6H	14.82	15.31	15.29	15.76	16.24	12.96	13.46	13.44	13.91	14.38
	8H	15.46	15.92	15.94	16.37	16.85	13.85	14.31	14.32	14.76	15.23
	12H	16.76	17.16	17.25	17.64	18.12	15.28	15.67	15.77	16.16	16.64
8H	4H	13.78	14.24	14.25	14.69	15.16	12.14	12.60	12.62	13.05	13.53
	6H	15.34	15.70	15.85	16.21	16.69	13.88	14.24	14.39	14.75	15.23
	8H	16.28	16.60	16.81	17.13	17.62	15.05	15.37	15.58	15.90	16.39
	12H	17.96	18.24	18.48	18.74	19.32	16.77	17.05	17.29	17.55	18.13
12H	4H	13.83	14.22	14.32	14.71	15.19	12.28	12.68	12.77	13.17	13.65
	6H	15.79	15.86	16.08	16.34	16.89	14.47	14.55	14.76	15.02	15.57
	8H	16.69	16.97	17.21	17.47	18.05	15.62	15.90	16.15	16.40	16.98
Variation with the observer position at spacings:											
S = 1.0H		2.9/-2.1					2.9/-2.1				
S = 1.5H		4.1/-1.9					4.1/-1.9				
S = 2.0H		4.9/-1.9					4.9/-1.9				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		-4.1					-4.1				



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	0.82	0.82	0.82	0.80	0.80	0.80	0.77	0.77	0.77	0.74	0.74	0.74	0.71	0.71	0.71	0.69
1	0.77	0.76	0.74	0.76	0.74	0.73	0.73	0.72	0.71	0.71	0.70	0.69	0.68	0.68	0.67	0.66
2	0.73	0.71	0.69	0.72	0.70	0.68	0.70	0.68	0.66	0.68	0.66	0.65	0.66	0.65	0.64	0.63
3	0.69	0.67	0.64	0.68	0.66	0.64	0.67	0.65	0.63	0.65	0.63	0.62	0.64	0.62	0.61	0.60
4	0.66	0.63	0.61	0.65	0.63	0.60	0.64	0.62	0.60	0.63	0.61	0.59	0.61	0.60	0.58	0.57
5	0.63	0.60	0.58	0.63	0.60	0.57	0.61	0.59	0.57	0.60	0.58	0.56	0.59	0.57	0.56	0.55
6	0.61	0.57	0.55	0.60	0.57	0.55	0.59	0.56	0.54	0.58	0.56	0.54	0.57	0.55	0.54	0.53
7	0.58	0.55	0.53	0.58	0.55	0.53	0.57	0.54	0.52	0.56	0.54	0.52	0.56	0.53	0.52	0.51
8	0.56	0.53	0.51	0.56	0.53	0.51	0.55	0.52	0.50	0.54	0.52	0.50	0.54	0.52	0.50	0.49
9	0.54	0.51	0.49	0.54	0.51	0.49	0.53	0.51	0.49	0.53	0.50	0.48	0.52	0.50	0.48	0.48
10	0.52	0.49	0.47	0.52	0.49	0.47	0.52	0.49	0.47	0.51	0.49	0.47	0.51	0.48	0.47	0.46



Intensity data(cd)										Appendix Page: 15 Total:15	
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	777.95	736.43	568.57	322.36	165.22	86.71	40.47	17.45	9.19		
45.0	792.26	715.95	501.89	293.23	150.96	77.79	41.51	19.32	11.07		
90.0	785.65	660.73	442.49	239.33	129.16	68.82	30.72	14.20	8.37		
135.0	790.72	684.68	513.13	285.03	153.83	79.12	40.85	19.93	11.40		
180.0	777.95	680.72	493.97	286.40	149.86	71.35	36.78	15.97	8.64		
225.0	792.26	726.85	559.21	338.32	183.78	98.22	49.22	23.40	13.38		
270.0	785.65	768.59	619.49	396.19	213.78	111.71	60.45	26.21	12.83		
315.0	790.72	752.18	576.33	329.46	174.47	93.05	47.02	22.85	12.77		
360.0	777.95	736.43	568.57	322.36	165.22	86.71	40.47	17.45	9.19		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	5.51	3.52	2.26	1.54	0.94	0.88	0.88	0.88	0.94		
45.0	6.55	4.24	2.81	2.04	1.54	1.38	1.43	0.94	2.53		
90.0	5.29	3.74	2.59	1.93	1.43	1.54	1.76	0.94	1.10		
135.0	7.05	4.51	2.97	2.09	1.43	1.10	1.10	0.99	0.99		
180.0	5.29	3.47	2.31	1.60	0.94	0.94	0.88	0.88	0.88		
225.0	7.87	4.96	3.25	2.31	1.76	1.43	1.54	0.99	1.65		
270.0	7.43	4.79	3.30	2.48	1.82	1.54	1.71	0.94	1.21		
315.0	7.65	4.68	2.97	2.09	1.43	1.10	1.10	0.94	1.05		
360.0	5.51	3.52	2.26	1.54	0.94	0.88	0.88	0.88	0.94		
C/ γ (°)	90.0										
0.0	0.88										
45.0	2.31										
90.0	1.54										
135.0	1.05										
180.0	0.94										
225.0	2.15										
270.0	1.21										
315.0	1.21										
360.0	0.88										