
Nata

LumCAT: 5-1069-N

Luminaire:

Report No: nata-0100

Voltage(V): 13.7000

Test No: GC2018081103

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): 220.74

Efficiency(%): 68.98%

Lumens(lm)/Power(W): 80.56

Central intensity(cd): 478.303

Maximum intensity(cd): 478.303

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=37.0

[C90/270]Total=37.0

Field angle(10%Imax): [C0/180]Total=64.6

[C90/270]Total=64.6

Maximum s/h(1/2): C0_180=0.61 C90_270=0.61

Maximum s/h(1/4): C0_180=0.61 C90_270=0.61

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 68.98%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.963%

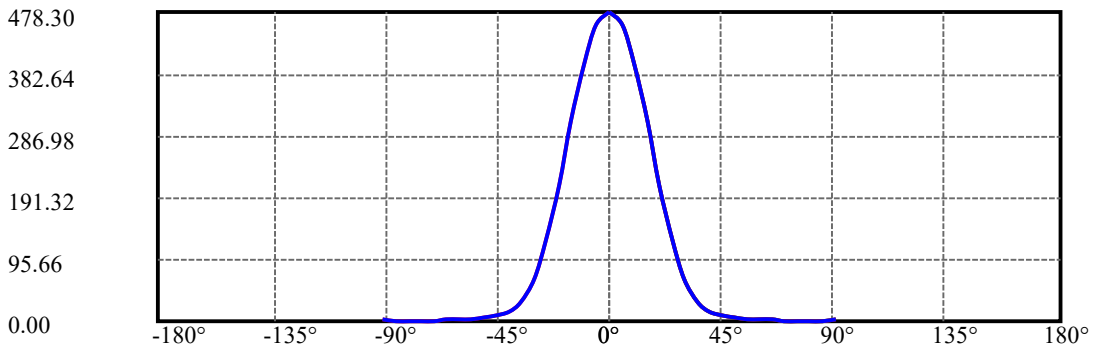
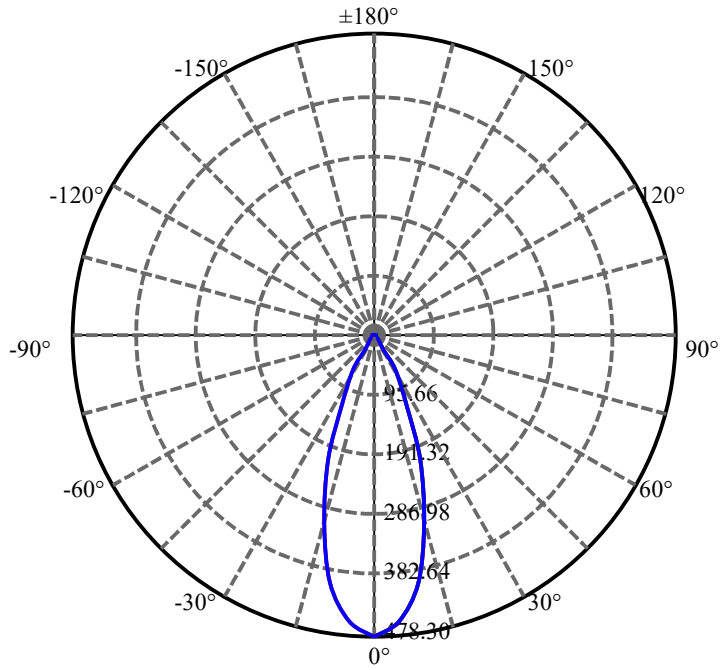
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	478.302	0.000	0	.000%	.000%
5.0	456.156	11.171	11.171	3.491%	5.061%
10.0	397.851	30.551	41.722	9.547%	18.901%
15.0	307.538	41.843	83.565	13.076%	37.856%
20.0	210.226	42.671	126.236	13.335%	57.187%
25.0	124.386	35.095	161.331	10.967%	73.085%
30.0	64.258	23.873	185.204	7.460%	83.900%
35.0	28.719	13.691	198.895	4.279%	90.103%
40.0	14.734	7.250	206.145	2.266%	93.387%
45.0	8.341	4.273	210.418	1.335%	95.323%
50.0	5.127	2.721	213.139	.850%	96.555%
55.0	3.283	1.829	214.968	.571%	97.384%
60.0	2.244	1.277	216.245	.399%	97.963%
65.0	1.521	0.915	217.16	.286%	98.377%
70.0	1.301	0.714	217.875	.223%	98.701%
75.0	1.383	0.702	218.576	.219%	99.019%
80.0	0.957	0.626	219.202	.196%	99.302%
85.0	1.404	0.641	219.844	.200%	99.593%
90.0	1.879	0.899	220.742	.281%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	185.20	57.88%	83.90%
0-40	206.14	64.42%	93.39%
0-60	216.24	67.58%	97.96%
0-90	219.84	68.70%	99.59%
0-120	219.84	68.70%	99.59%
0-180	220.74	68.98%	100.00%
60-90	4.88	1.52%	2.21%
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%
0-28.20	176.59	55.19%	80.00%

ZONAL LUMEN SUMMARY

0-10	41.72
10-20	84.51
20-30	58.97
30-40	20.94
40-50	6.99
50-60	3.11
60-70	1.63
70-80	1.33
80-90	0.64
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: —————

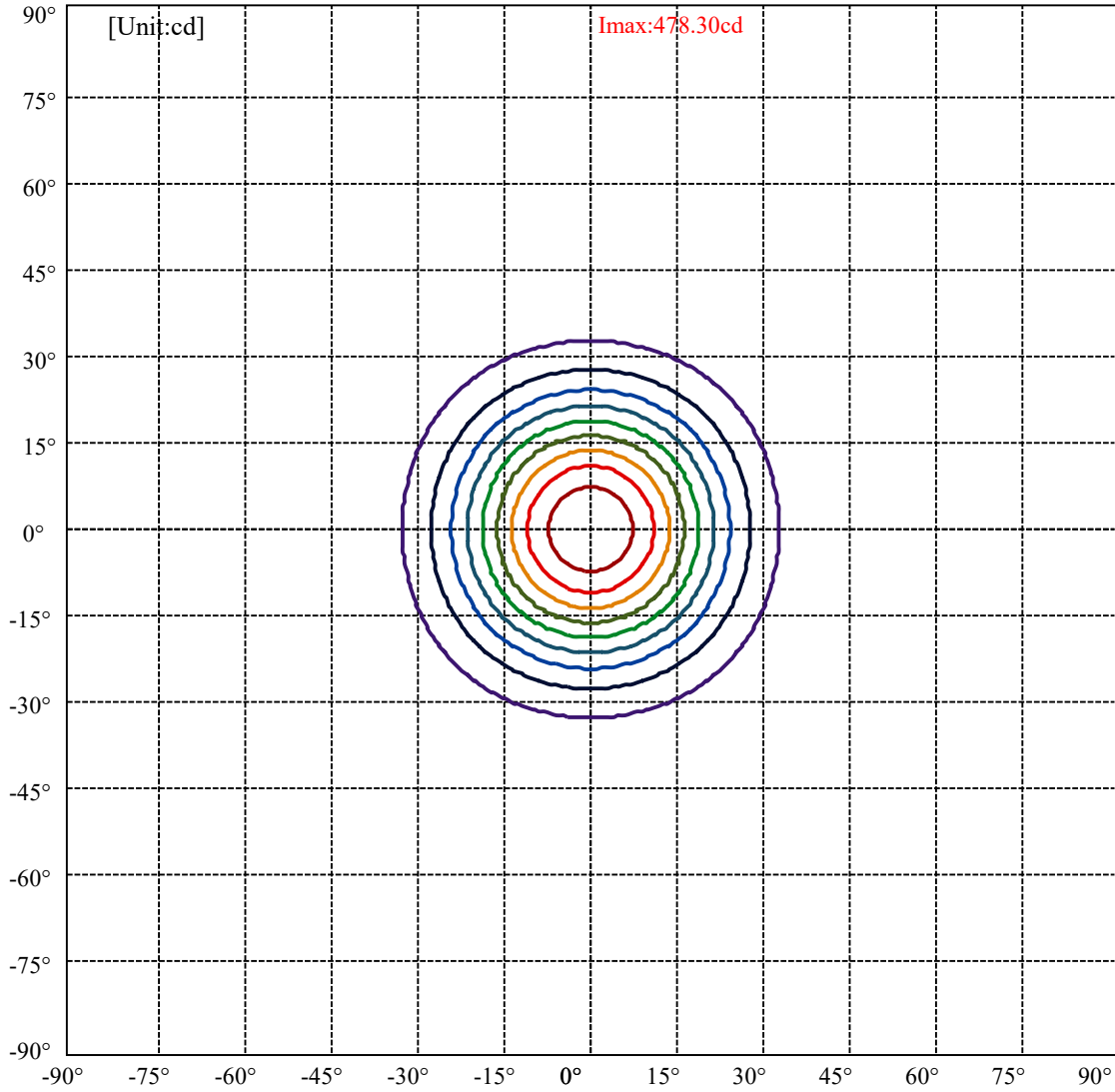
C90/C270: —————

Field angle(10%Imax):C0/180Left:32.3 Right:32.3

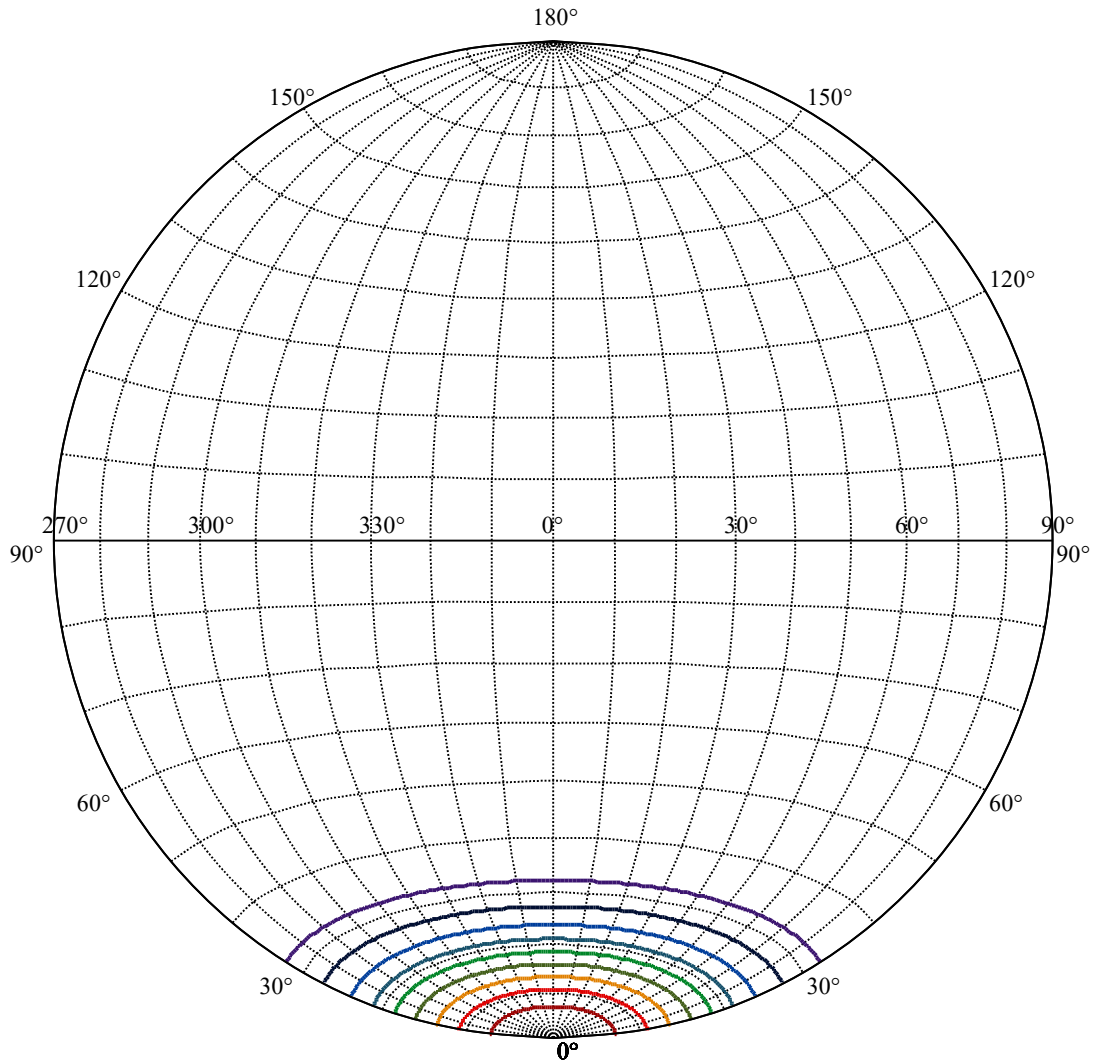
:C90/270Left:32.3 Right:32.3

Beam Angle(50%Imax):C0/180Left:18.5 Right:18.5

:C90/270Left:18.5 Right:18.5



(10%Imax) 47.8302	—
(20%Imax) 95.6605	—
(30%Imax) 143.491	—
(40%Imax) 191.321	—
(50%Imax) 239.151	—
(60%Imax) 286.982	—
(70%Imax) 334.812	—
(80%Imax) 382.642	—
(90%Imax) 430.472	—



House

[Unit:cd]

Road

Imax:478.30

(10%Imax) 47.8302

(20%Imax) 95.6605

(30%Imax) 143.491

(40%Imax) 191.321

(50%Imax) 239.151

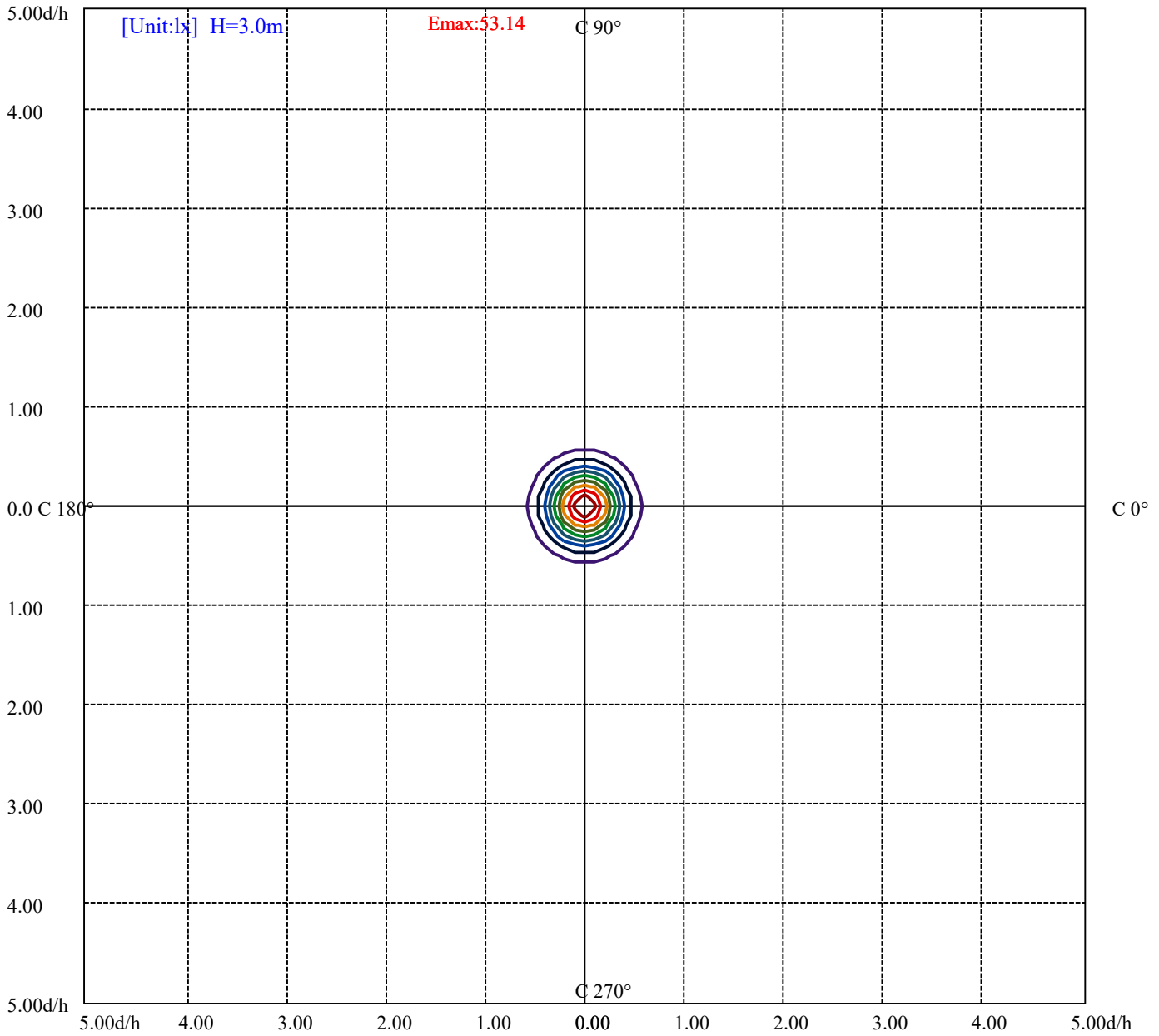
(60%Imax) 286.982

(70%Imax) 334.812

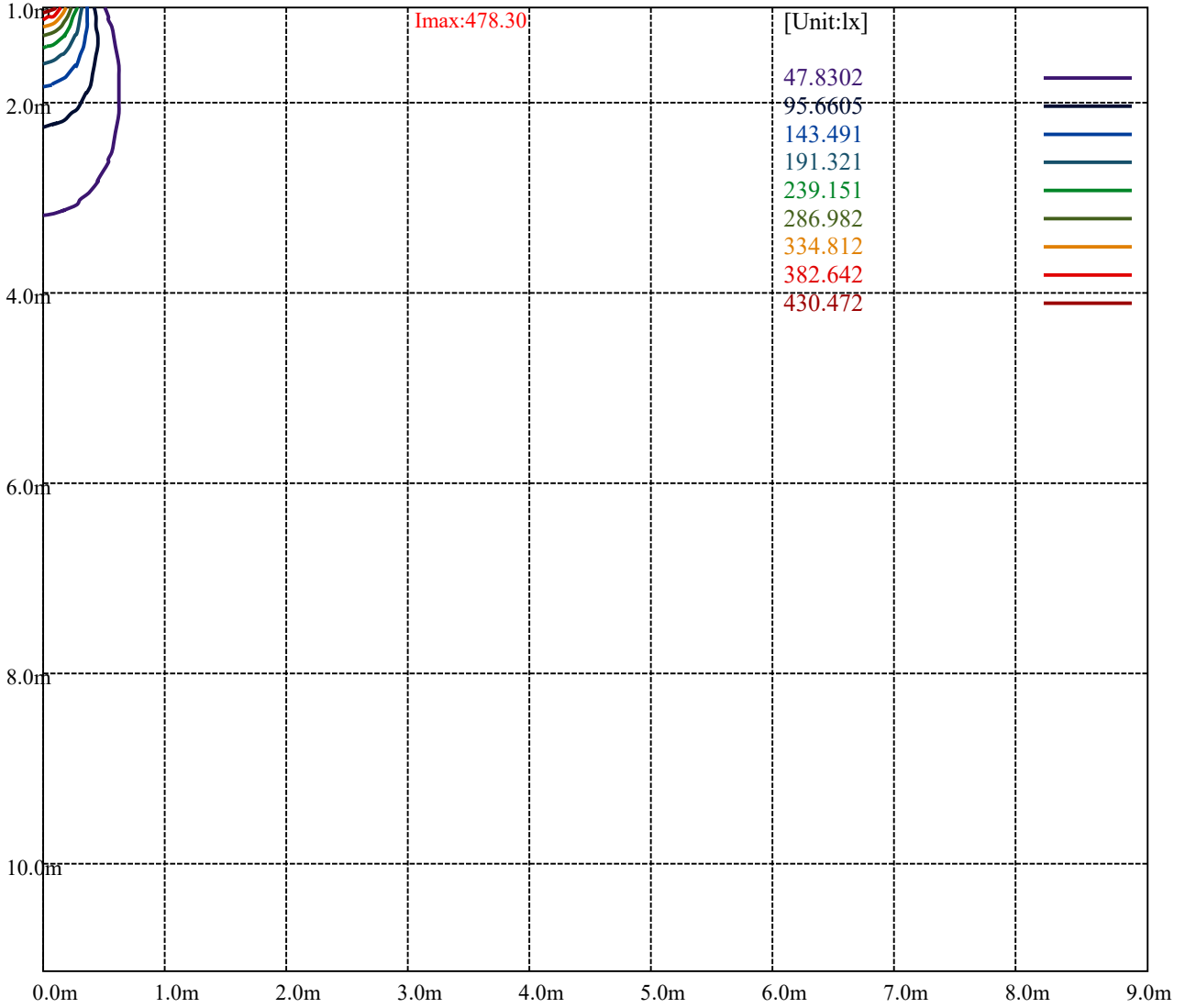
(80%Imax) 382.642

(90%Imax) 430.472





- (10%Emax) 5.314466
- (20%Emax) 10.62893
- (30%Emax) 15.94344
- (40%Emax) 21.25789
- (50%Emax) 26.57233
- (60%Emax) 31.88678
- (70%Emax) 37.20122
- (80%Emax) 42.51567
- (90%Emax) 47.83022



Luminance Table

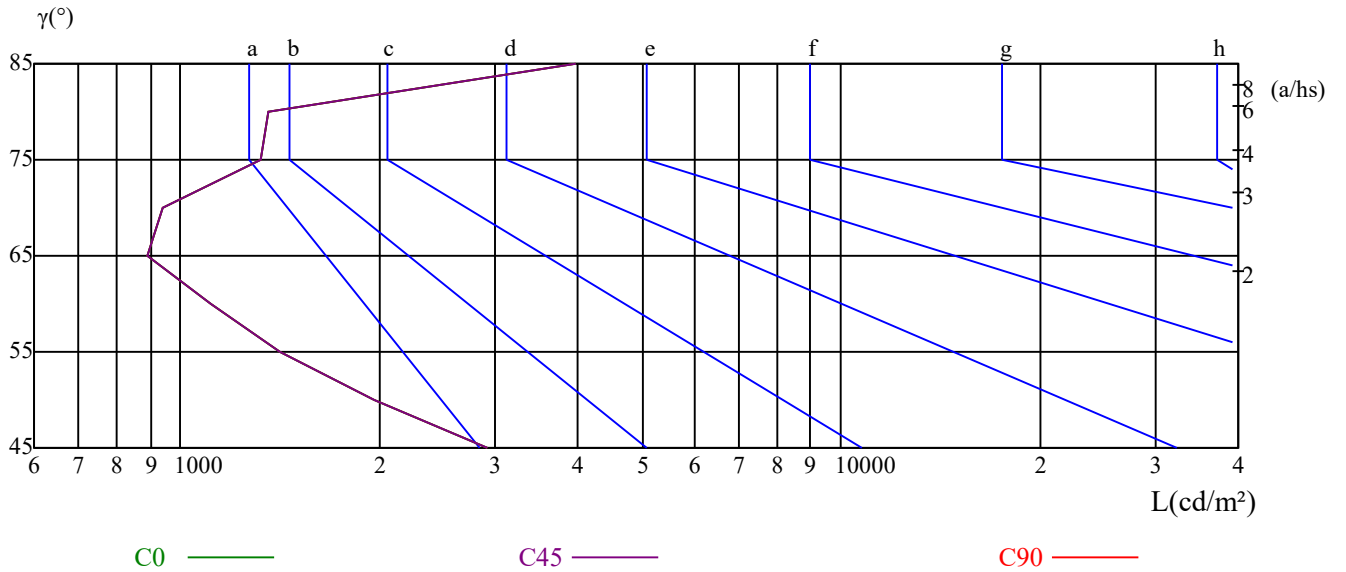
γ	45	50	55	60	65	70	75	80	85
C0	2913	1969	1413	1108	889	939	1320	1360	3977
C45	2913	1969	1413	1108	889	939	1320	1360	3977
C90	2913	1969	1413	1108	889	939	1320	1360	3977

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
889	889	889	1320	1320	1320	3977	3977	3977

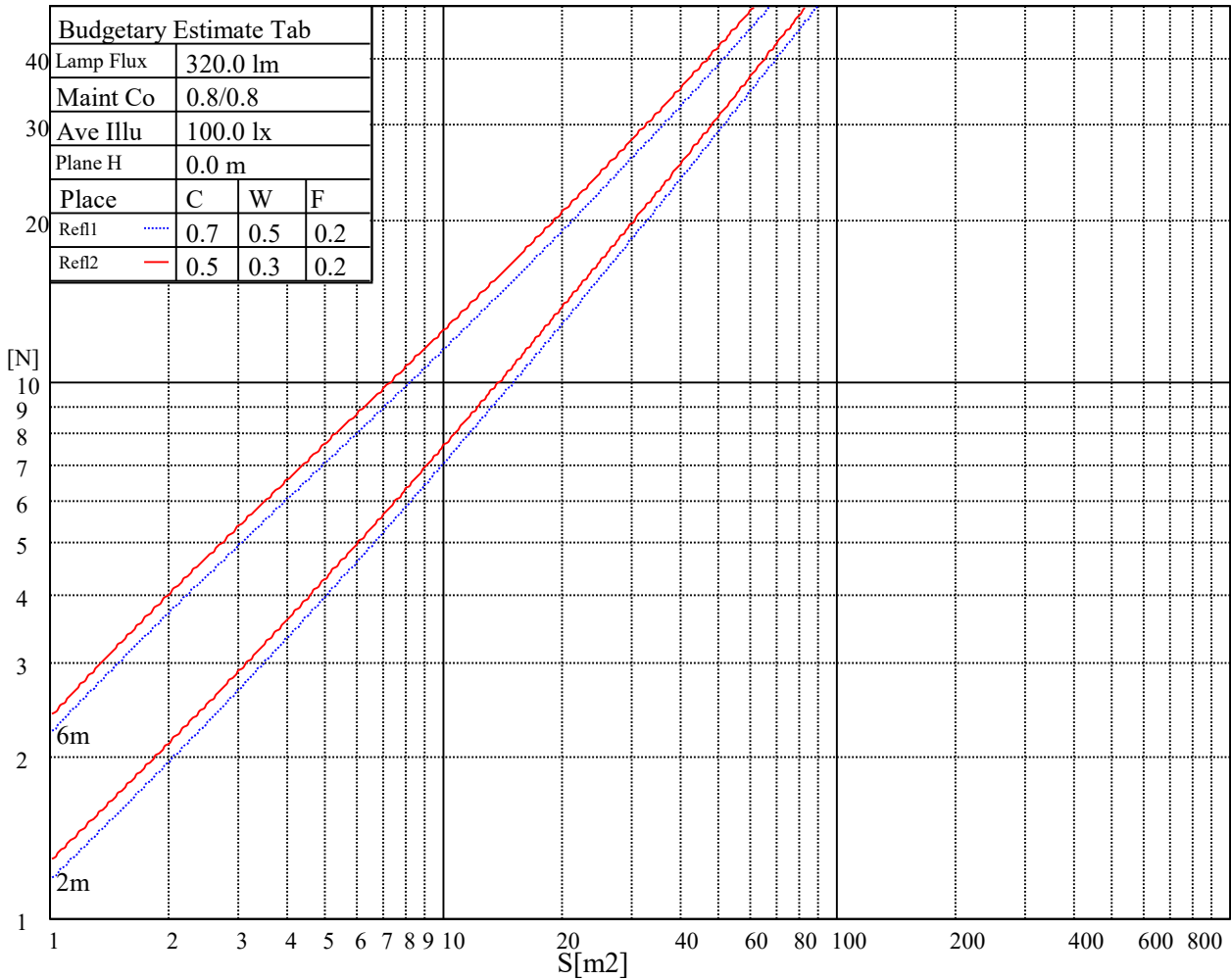
Glare Table

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

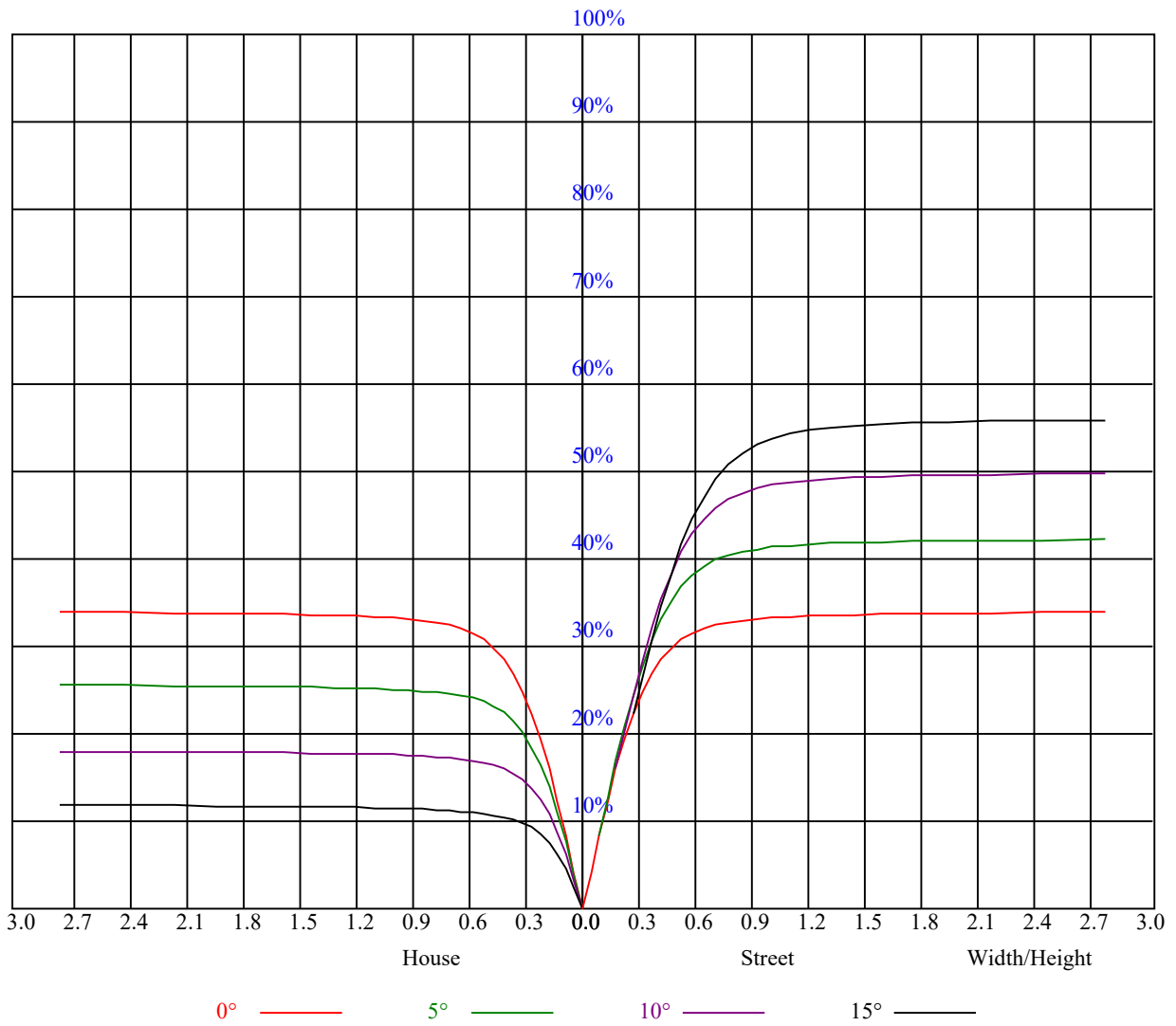
Luminance Limiting Curve



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	10.55	11.52	10.91	11.83	12.15	9.39	10.36	9.76	10.67	10.99
	3H	11.90	12.76	12.28	13.09	13.46	10.24	11.09	10.62	11.43	11.80
	4H	13.25	14.04	13.65	14.39	14.78	10.93	11.72	11.33	12.07	12.46
	6H	14.10	14.83	14.52	15.21	15.60	11.90	12.62	12.32	13.00	13.40
	8H	14.59	15.28	15.03	15.67	16.08	12.59	13.28	13.03	13.67	14.08
	12H	15.84	16.49	16.27	16.87	17.31	13.96	14.61	14.39	14.99	15.42
4H	2H	10.77	11.56	11.17	11.91	12.30	9.80	10.59	10.21	10.95	11.34
	3H	12.47	13.12	12.89	13.53	13.94	11.03	11.68	11.45	12.09	12.50
	4H	14.07	14.66	14.51	15.08	15.53	12.01	12.59	12.45	13.02	13.47
	6H	15.55	16.04	16.02	16.49	16.97	13.51	14.01	13.99	14.46	14.94
	8H	16.11	16.58	16.59	17.03	17.51	14.31	14.77	14.78	15.22	15.70
	12H	17.35	17.76	17.85	18.25	18.72	15.63	16.03	16.12	16.52	17.00
8H	4H	14.37	14.84	14.85	15.29	15.76	12.67	13.14	13.15	13.59	14.06
	6H	16.00	16.37	16.51	16.88	17.36	14.38	14.75	14.89	15.26	15.74
	8H	16.87	17.20	17.40	17.72	18.22	15.49	15.82	16.02	16.34	16.84
	12H	18.52	18.81	19.04	19.30	19.89	17.15	17.43	17.67	17.93	18.51
12H	4H	14.41	14.82	14.91	15.31	15.78	12.80	13.20	13.29	13.69	14.17
	6H	16.45	16.52	16.72	16.99	17.54	14.98	15.05	15.26	15.52	16.07
	8H	17.27	17.56	17.80	18.06	18.64	16.07	16.36	16.60	16.86	17.44
Variation with the observer position at spacings:											
S = 1.0H	3.6/-2.9					3.6/-2.9					
S = 1.5H	5.3/-2.6					5.3/-2.6					
S = 2.0H	6.3/-2.5					6.3/-2.5					
Standard tables:	BK4					BK4					
Uncorrected UGR	-5.4					-5.4					



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	0.82	0.82	0.82	0.80	0.80	0.80	0.77	0.77	0.77	0.73	0.73	0.73	0.70	0.70	0.70	0.69
1	0.77	0.75	0.74	0.75	0.74	0.72	0.72	0.71	0.70	0.70	0.69	0.68	0.67	0.67	0.66	0.65
2	0.72	0.69	0.67	0.71	0.68	0.66	0.69	0.67	0.65	0.67	0.65	0.64	0.65	0.63	0.62	0.61
3	0.68	0.65	0.62	0.67	0.64	0.62	0.65	0.63	0.61	0.63	0.61	0.60	0.62	0.60	0.59	0.58
4	0.64	0.61	0.58	0.63	0.60	0.58	0.62	0.59	0.57	0.61	0.58	0.56	0.59	0.57	0.56	0.55
5	0.61	0.57	0.55	0.60	0.57	0.54	0.59	0.56	0.54	0.58	0.55	0.53	0.57	0.55	0.53	0.52
6	0.58	0.54	0.52	0.57	0.54	0.51	0.56	0.53	0.51	0.55	0.53	0.51	0.55	0.52	0.50	0.50
7	0.55	0.52	0.49	0.55	0.51	0.49	0.54	0.51	0.49	0.53	0.50	0.48	0.52	0.50	0.48	0.47
8	0.53	0.49	0.47	0.52	0.49	0.47	0.52	0.49	0.46	0.51	0.48	0.46	0.50	0.48	0.46	0.45
9	0.50	0.47	0.44	0.50	0.47	0.44	0.50	0.46	0.44	0.49	0.46	0.44	0.48	0.46	0.44	0.43
10	0.48	0.45	0.43	0.48	0.45	0.42	0.48	0.44	0.42	0.47	0.44	0.42	0.47	0.44	0.42	0.41



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	471.12	479.82	443.42	357.76	252.43	156.97	77.85	32.59	15.36
45.0	480.31	485.21	441.55	361.39	259.65	157.90	86.60	39.48	20.04
90.0	481.52	456.42	399.76	308.26	213.84	131.75	68.88	29.18	14.98
135.0	480.26	445.85	381.60	295.27	201.18	117.93	63.65	30.34	16.02
180.0	471.12	422.89	346.14	254.91	161.70	88.97	44.93	19.82	10.24
225.0	480.31	434.45	359.90	263.55	170.62	100.04	49.33	23.62	13.21
270.0	481.52	458.78	397.78	302.70	207.40	120.19	60.07	25.71	13.10
315.0	480.26	465.83	412.65	316.46	215.00	121.34	62.76	29.01	14.92
360.0	471.12	479.82	443.42	357.76	252.43	156.97	77.85	32.59	15.36
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	8.31	4.96	3.08	2.04	1.16	0.88	0.88	0.88	0.94
45.0	10.79	6.55	4.02	2.75	2.04	1.54	1.54	1.16	1.60
90.0	8.31	5.40	3.58	2.53	1.71	1.54	1.71	0.94	1.27
135.0	9.14	5.45	3.47	2.37	1.54	1.10	1.16	0.99	1.43
180.0	6.00	3.74	2.31	1.43	0.94	0.88	0.88	0.88	0.88
225.0	7.49	4.62	3.08	2.26	1.71	1.65	1.71	0.94	2.75
270.0	7.98	5.07	3.41	2.37	1.60	1.71	2.04	0.94	1.21
315.0	8.70	5.23	3.30	2.20	1.49	1.10	1.16	0.94	1.16
360.0	8.31	4.96	3.08	2.04	1.16	0.88	0.88	0.88	0.94
C/ γ (°)	90.0								
0.0	0.88								
45.0	3.30								
90.0	2.09								
135.0	1.16								
180.0	0.88								
225.0	4.18								
270.0	1.32								
315.0	1.21								
360.0	0.88								