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## NATA

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LumCAT: 4-2270-A

Luminaire:

Report No: NATA0100

Voltage(V): 64.0000

Test No: GC2018101014

Current(A): 0.4200

LampCAT: BRIDGELUX VERO SE 29B

Power (W): 26.8800

Lamp flux(lm): 4386.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 100

Width(mm): 100

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 3886.82

Efficiency(%): 88.62%

Lumens(lm)/Power(W): 146.05

Central intensity(cd): 7119.141

Maximum intensity(cd): 7119.141

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=41.6

[C90/270]Total=41.6

Field angle(10%Imax): [C0/180]Total=73.2

[C90/270]Total=73.2

Maximum s/h(1/2): C0\_180=0.67 C90\_270=0.67

Maximum s/h(1/4): C0\_180=0.67 C90\_270=0.67

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.51%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.726%

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Equipment:  
Temperature(°C): 25.0

Date: 2018/10/10  
Humidity(%): 60.0%

Operator: NT07  
Distance(m): 7.50

Zonal flux distribution table

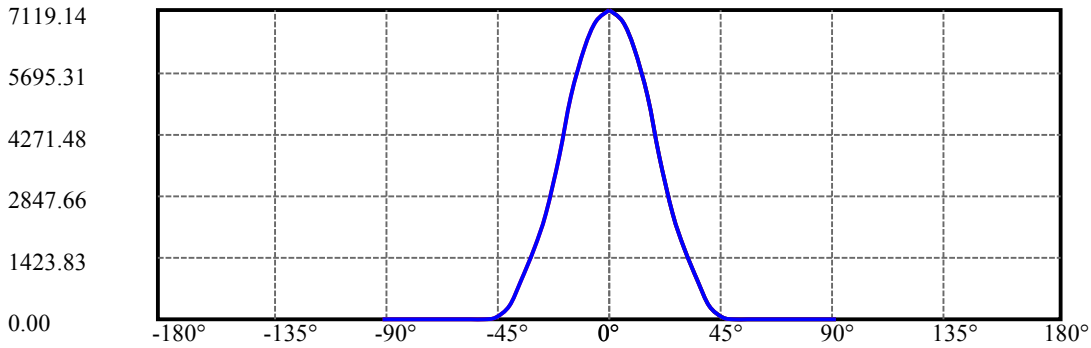
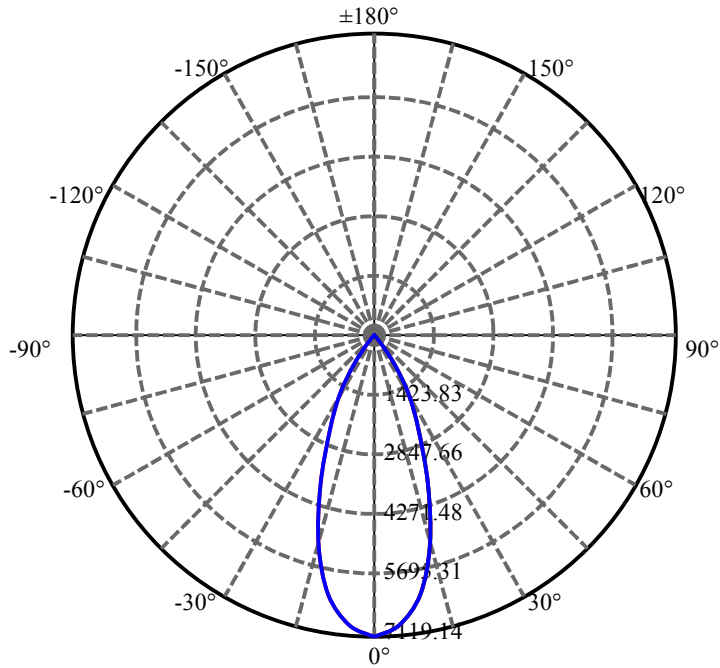
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7119.141	42.574	42.574	.971%	1.095%
5.0	6868.406	328.127	370.7	7.481%	9.537%
10.0	6228.000	592.800	963.501	13.516%	24.789%
15.0	5110.102	724.962	1688.462	16.529%	43.441%
20.0	3773.672	707.465	2395.928	16.130%	61.642%
25.0	2439.844	565.197	2961.125	12.886%	76.184%
30.0	1617.898	443.415	3404.54	10.110%	87.592%
35.0	899.993	282.957	3687.496	6.451%	94.872%
40.0	313.650	110.510	3798.007	2.520%	97.715%
45.0	30.094	11.664	3809.671	.266%	98.015%
50.0	21.537	9.043	3818.714	.206%	98.248%
55.0	19.673	8.834	3827.547	.201%	98.475%
60.0	18.738	8.895	3836.443	.203%	98.704%
65.0	18.162	9.022	3845.465	.206%	98.936%
70.0	17.838	9.188	3854.653	.209%	99.172%
75.0	17.494	9.262	3863.915	.211%	99.411%
80.0	17.177	9.273	3873.188	.211%	99.649%
85.0	16.770	9.157	3882.345	.209%	99.885%
90.0	16.327	4.475	3886.819	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	3404.54	77.62%	87.59%
0-40	3798.01	86.59%	97.72%
0-60	3836.44	87.47%	98.70%
0-90	3882.34	88.52%	99.88%
0-120	3882.34	88.52%	99.88%
0-180	3886.82	88.62%	100.00%
60-90	54.80	1.25%	1.41%
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%
0-26.67	3109.46	70.90%	80.00%

ZONAL LUMEN SUMMARY

0-10	963.50
10-20	1432.43
20-30	1008.61
30-40	393.47
40-50	20.71
50-60	17.73
60-70	18.21
70-80	18.53
80-90	9.16
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: —————

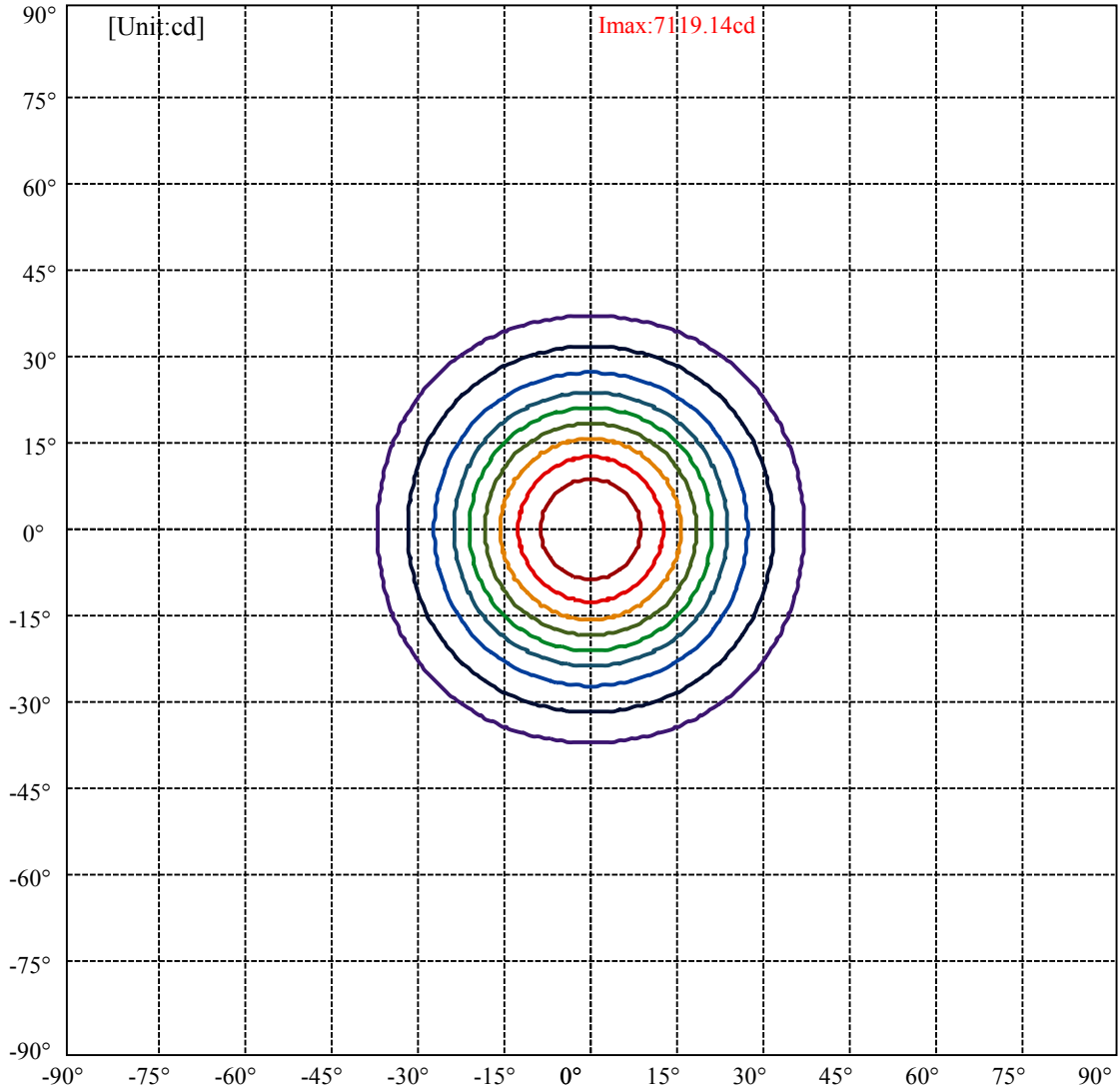
Field angle(10%Imax):C0/180Left:36.6 Right:36.6

:C90/270Left:36.6 Right:36.6

Beam Angle(50%Imax):C0/180Left:20.8 Right:20.8

:C90/270Left:20.8 Right:20.8



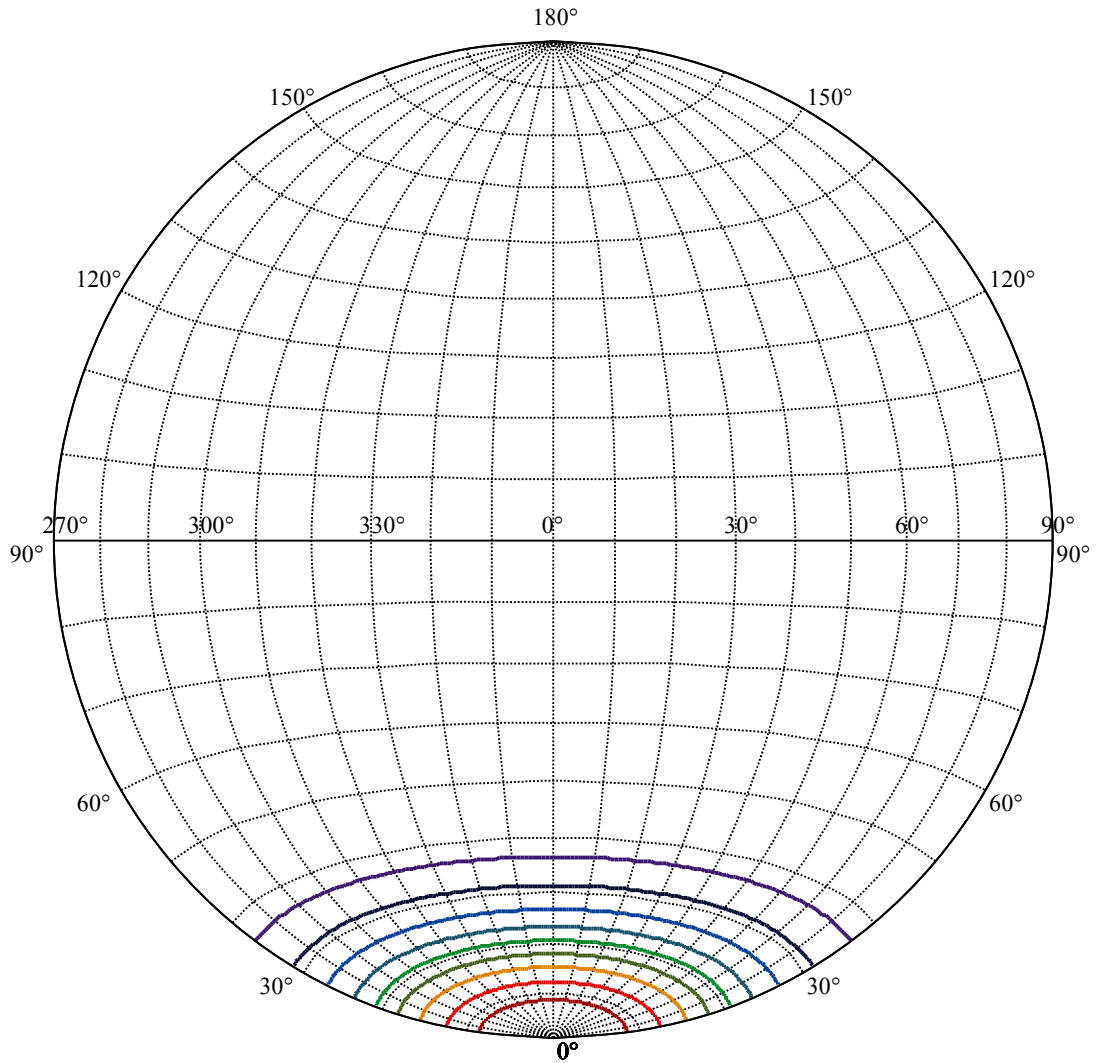


(10%Imax) 711.914	—
(20%Imax) 1423.83	—
(30%Imax) 2135.74	—
(40%Imax) 2847.66	—
(50%Imax) 3559.57	—
(60%Imax) 4271.48	—
(70%Imax) 4983.4	—
(80%Imax) 5695.31	—
(90%Imax) 6407.23	—

Equipment:  
Temperature(°C): 25.0

Date: 2018/10/10  
Humidity(%): 60.0%

Operator: NT07  
Distance(m): 7.50



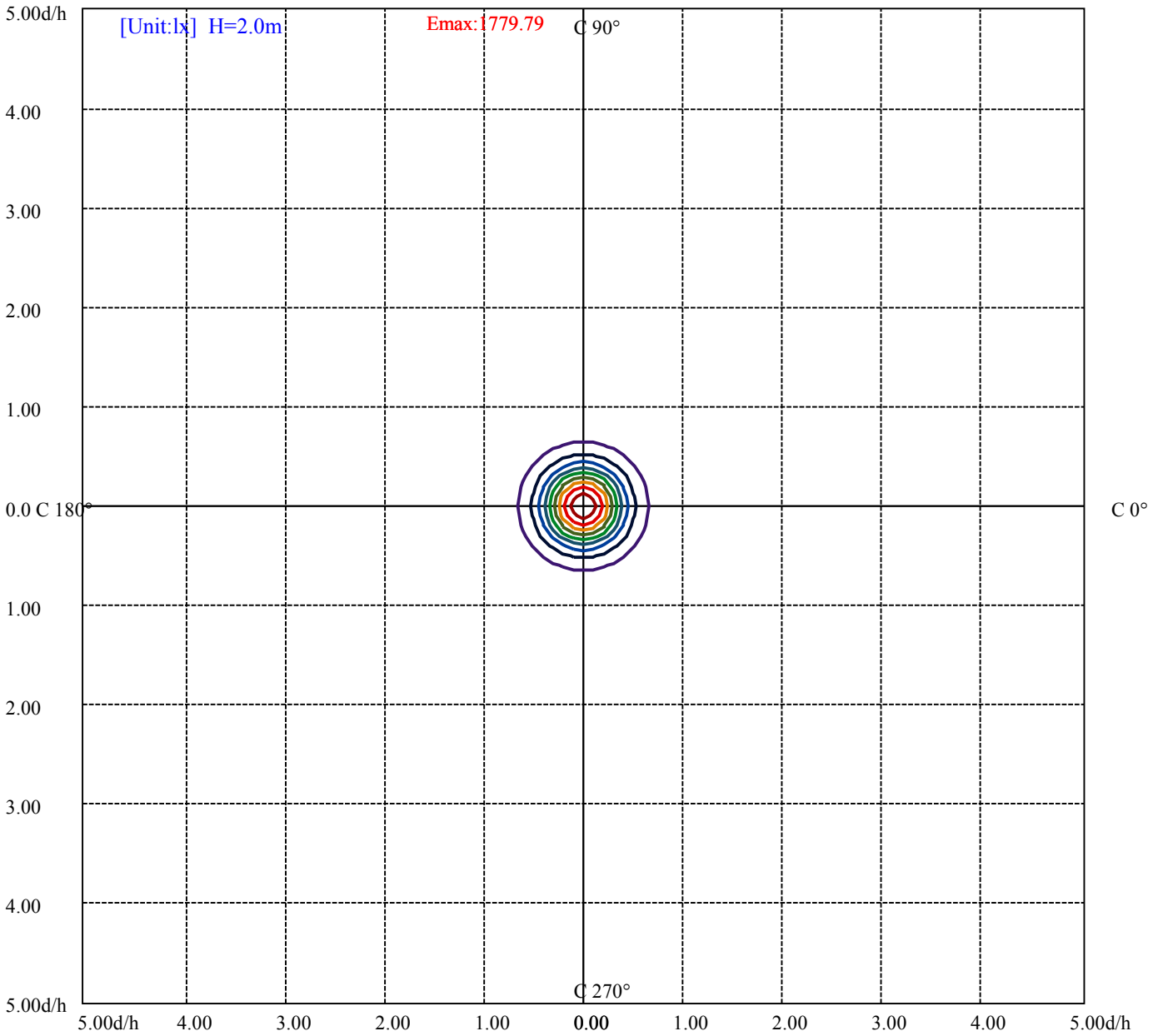
House

[Unit:cd]

Road

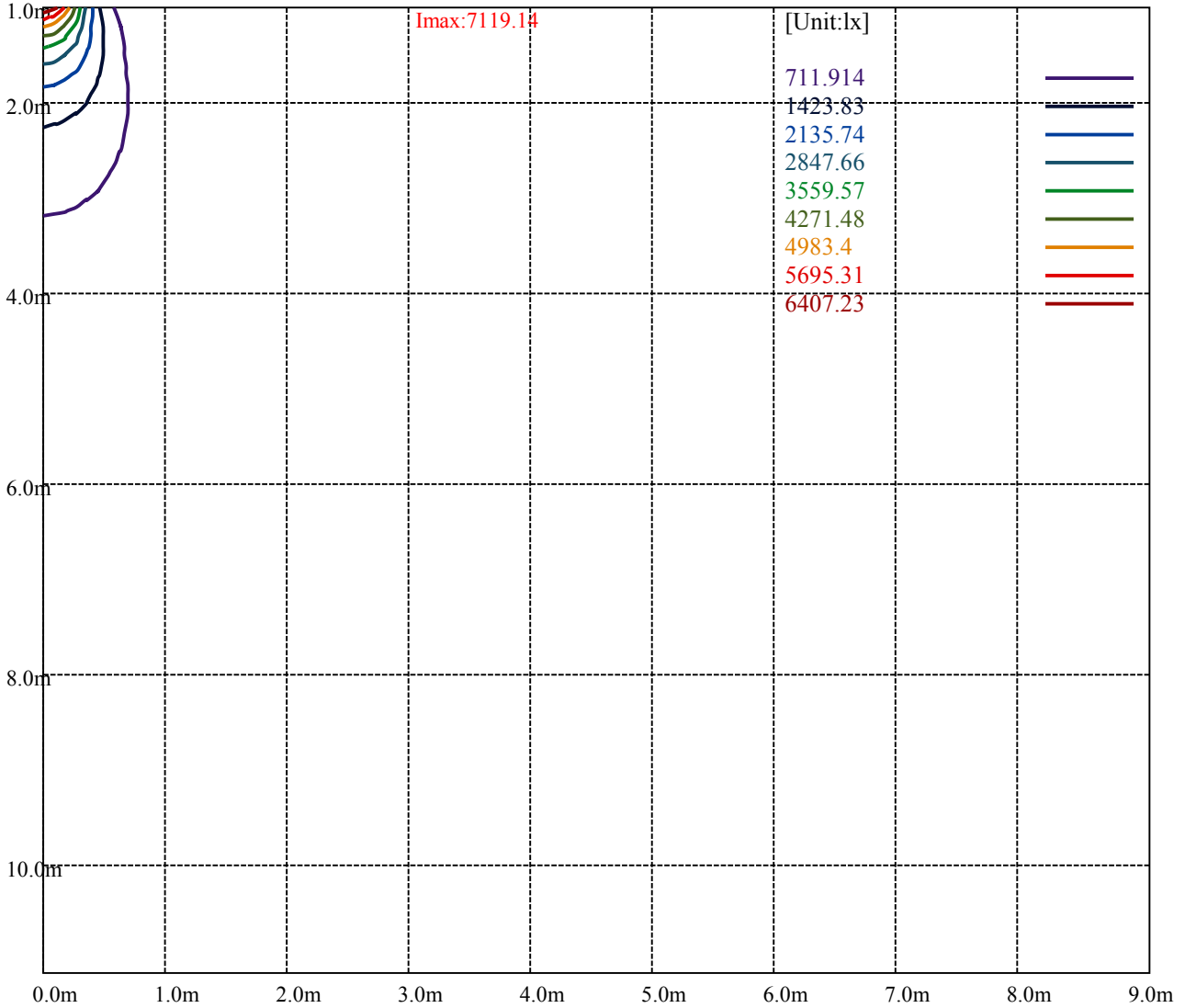
Imax:7119.14

(10%Imax)	711.914	—
(20%Imax)	1423.83	—
(30%Imax)	2135.74	—
(40%Imax)	2847.66	—
(50%Imax)	3559.57	—
(60%Imax)	4271.48	—
(70%Imax)	4983.4	—
(80%Imax)	5695.31	—
(90%Imax)	6407.23	—



- (10%Emax) 177.9783
- (20%Emax) 355.9575
- (30%Emax) 533.935
- (40%Emax) 711.9125
- (50%Emax) 889.8925
- (60%Emax) 1067.87
- (70%Emax) 1245.848
- (80%Emax) 1423.828
- (90%Emax) 1601.805





Luminance Table

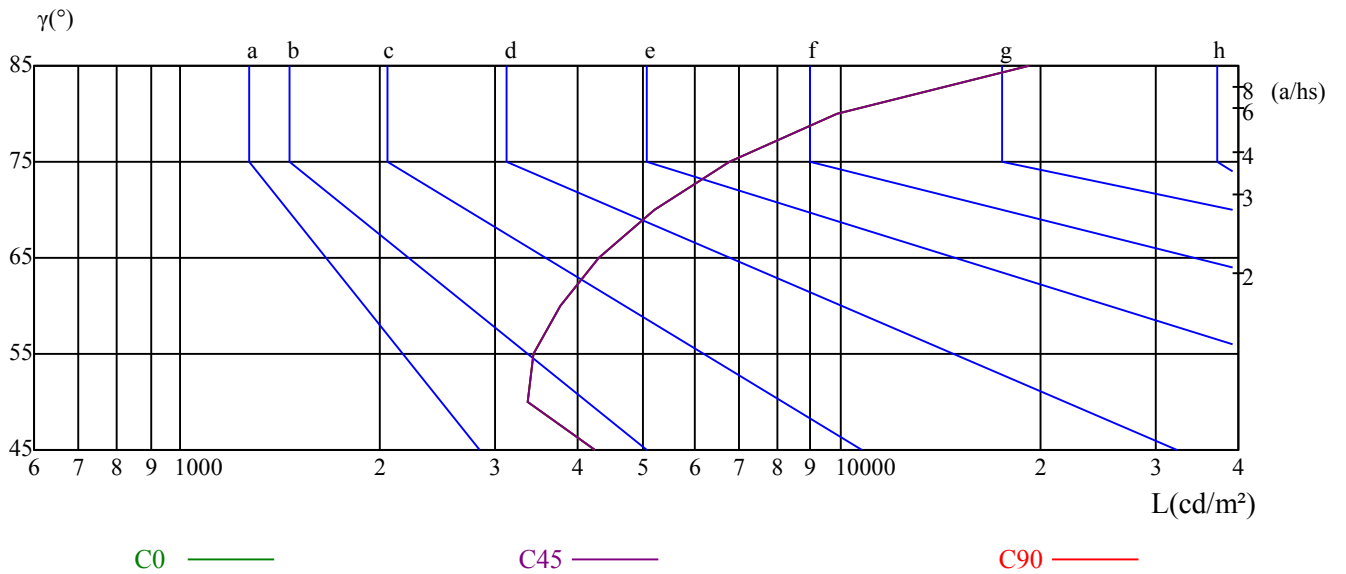
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4256	3351	3430	3748	4297	5216	6759	9892	19241
C45	4256	3351	3430	3748	4297	5216	6759	9892	19241
C90	4256	3351	3430	3748	4297	5216	6759	9892	19241

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4297	4297	4297	6759	6759	6759	19241	19241	19241

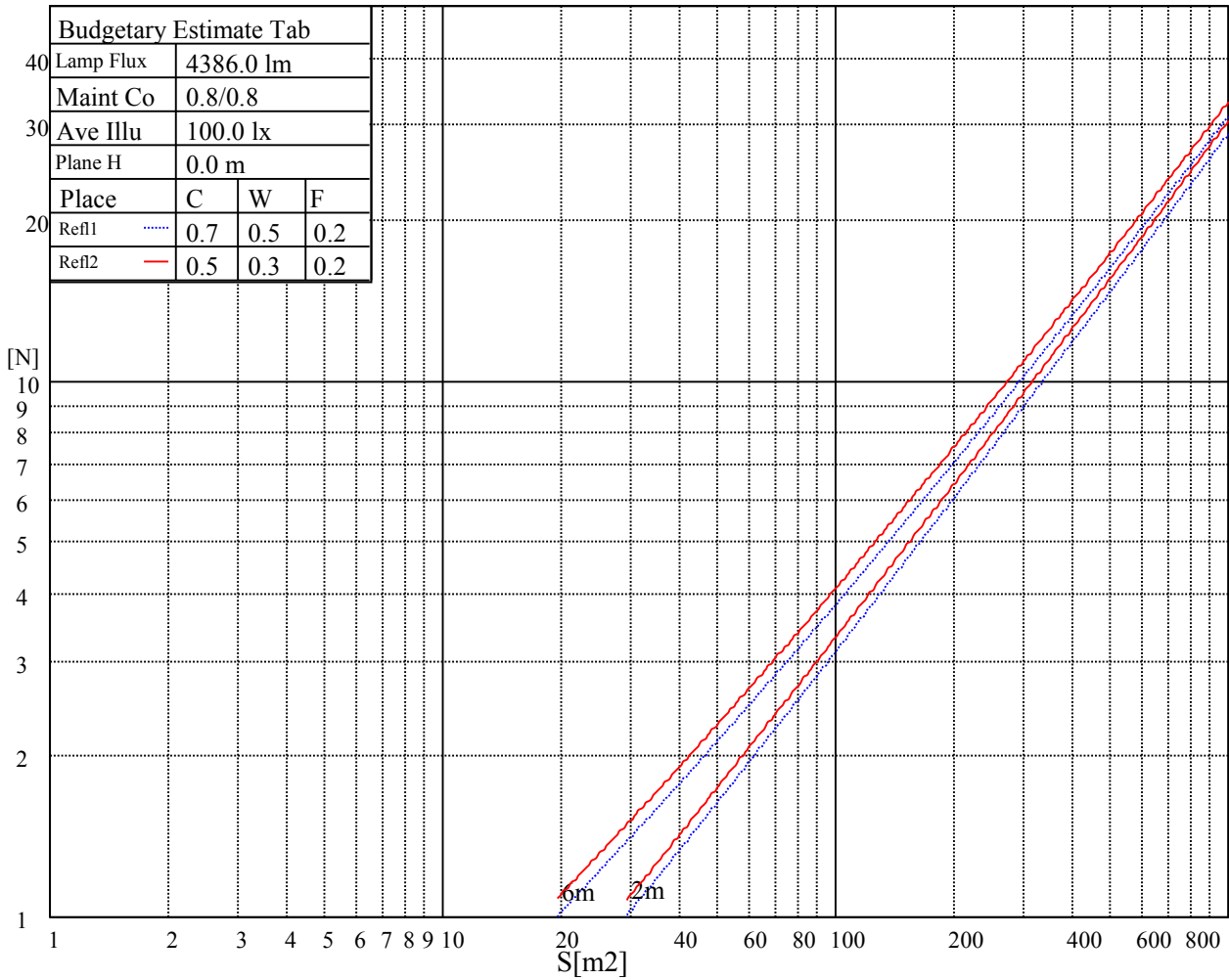
Glare Table

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

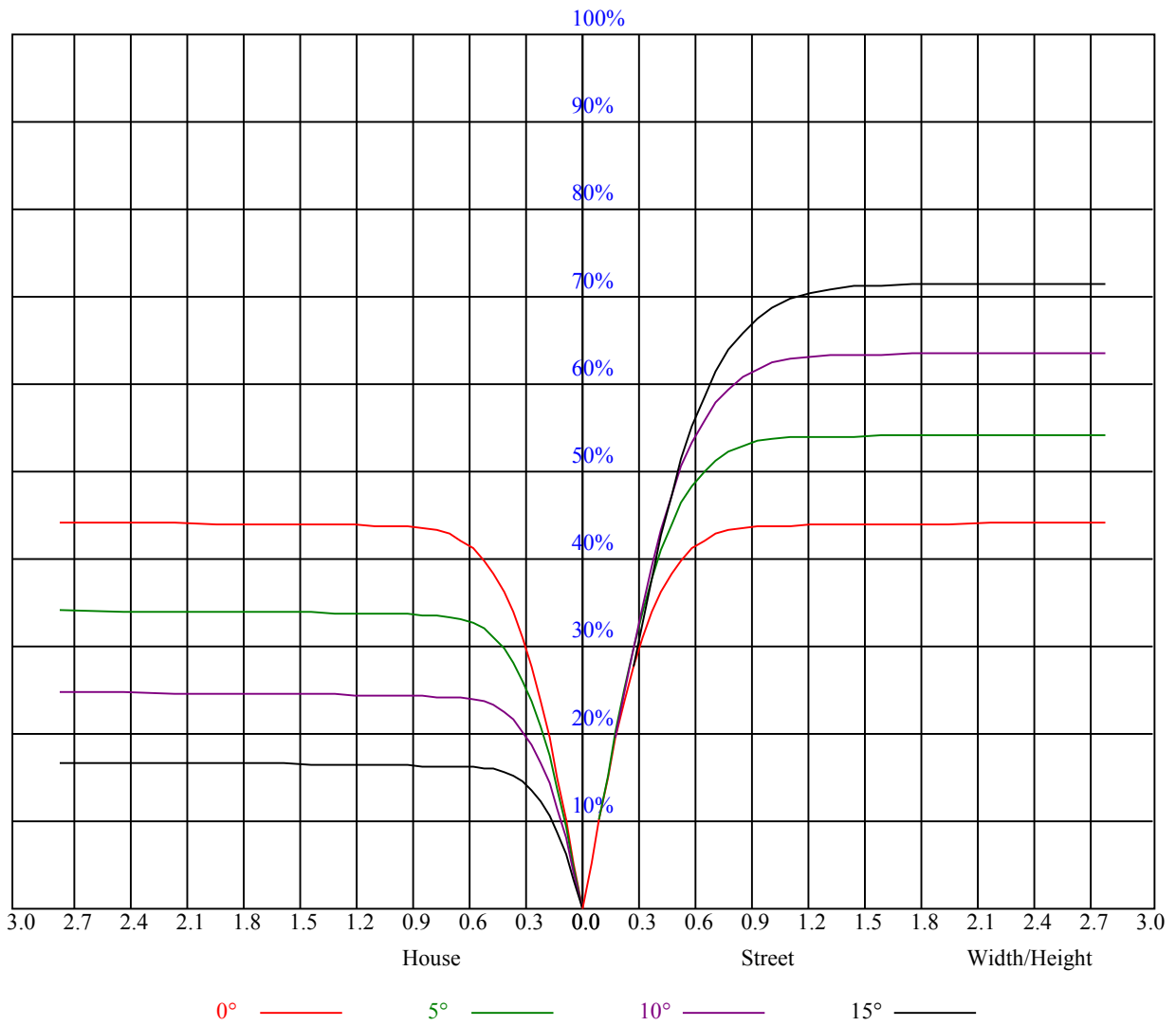
Luminance Limiting Curve



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	0.70	1.62	1.07	1.93	2.24	0.55	1.46	0.91	1.77	2.09
	3H	3.90	4.71	4.29	5.05	5.42	3.75	4.56	4.13	4.89	5.26
	4H	5.64	6.39	6.05	6.75	7.14	5.51	6.26	5.92	6.61	7.00
	6H	7.58	8.26	8.00	8.64	9.04	7.46	8.14	7.88	8.52	8.92
	8H	8.65	9.29	9.08	9.68	10.09	8.52	9.16	8.96	9.56	9.97
	12H	10.37	10.98	10.81	11.37	11.80	10.24	10.85	10.67	11.23	11.67
4H	2H	1.59	2.34	2.00	2.69	3.08	1.48	2.23	1.89	2.58	2.97
	3H	5.04	5.65	5.45	6.06	6.47	4.93	5.54	5.34	5.95	6.36
	4H	6.95	7.49	7.38	7.92	8.37	6.85	7.40	7.29	7.82	8.27
	6H	9.02	9.49	9.49	9.94	10.42	8.93	9.40	9.40	9.85	10.33
	8H	10.19	10.63	10.67	11.08	11.55	10.10	10.53	10.57	10.98	11.46
8H	12H	11.82	12.20	12.32	12.69	13.17	11.71	12.09	12.20	12.58	13.06
	4H	7.66	8.10	8.14	8.55	9.02	7.59	8.02	8.06	8.47	8.95
	6H	10.01	10.36	10.52	10.86	11.35	9.94	10.29	10.45	10.79	11.28
	8H	11.37	11.67	11.90	12.20	12.70	11.29	11.59	11.82	12.12	12.62
12H	12H	13.14	13.40	13.67	13.90	14.49	13.04	13.30	13.57	13.80	14.39
	4H	7.86	8.23	8.35	8.72	9.20	7.79	8.17	8.29	8.66	9.14
	6H	10.53	10.63	10.86	11.10	11.65	10.46	10.57	10.80	11.04	11.59
	8H	11.81	12.07	12.33	12.57	13.15	11.74	12.00	12.26	12.50	13.08
Variation with the observer position at spacings:											
S = 1.0H	5.3/-7.6					5.3/-7.6					
S = 1.5H	7.5/-5.7					7.5/-5.7					
S = 2.0H	8.8/-4.2					8.8/-4.2					
Standard tables:	BK3					BK3					
Uncorrected UGR	1.5					1.5					



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	1.07	1.07	1.07	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	0.99	0.96	0.94	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.87	0.87	0.86	0.85	0.83
2	0.93	0.90	0.87	0.92	0.89	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.81	0.79
3	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.75
4	0.84	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
6	0.76	0.72	0.68	0.76	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	0.70	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61
9	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.65	0.62	0.59	0.58
10	0.65	0.60	0.58	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.56



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	7125.75	6767.44	6151.50	4901.06	3490.31	2214.56	1514.25	759.94	288.56
45.0	7137.00	6845.63	6227.44	5062.50	3653.44	2410.88	1609.88	872.44	300.38
90.0	7124.06	6869.81	6168.94	5077.13	3688.31	2345.63	1565.44	894.15	283.28
135.0	7089.75	7021.13	6495.19	5575.50	4291.88	2844.00	1931.06	1190.25	482.63
180.0	7125.75	6968.25	6393.38	5375.25	4060.13	2705.06	1841.63	1047.94	418.89
225.0	7137.00	6885.00	6252.75	5150.81	3804.19	2436.19	1707.75	917.94	304.93
270.0	7124.06	6867.00	6231.38	5099.63	3898.13	2441.81	1668.38	894.94	303.75
315.0	7089.75	6723.00	5903.44	4638.94	3303.00	2120.63	1104.81	622.35	126.79
360.0	7125.75	6767.44	6151.50	4901.06	3490.31	2214.56	1514.25	759.94	288.56

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	24.02	20.81	19.07	18.34	17.83	17.72	17.38	16.93	16.48
45.0	29.48	22.28	20.31	19.29	18.62	18.28	17.78	17.38	16.88
90.0	29.59	22.44	20.36	19.35	18.68	18.17	17.78	17.38	16.93
135.0	43.14	22.44	20.08	18.84	18.28	17.89	17.61	17.27	16.76
180.0	32.46	21.21	19.24	18.34	17.78	17.44	17.27	16.99	16.59
225.0	29.59	21.32	19.58	18.73	18.17	17.78	17.38	17.27	16.99
270.0	29.14	21.43	19.80	18.79	18.17	17.83	17.44	17.21	16.93
315.0	23.34	20.36	18.96	18.23	17.78	17.61	17.33	16.99	16.59
360.0	24.02	20.81	19.07	18.34	17.83	17.72	17.38	16.93	16.48

C/γ(°)	90.0
0.0	16.14
45.0	16.37
90.0	16.37
135.0	16.37
180.0	16.31
225.0	16.48
270.0	16.37
315.0	16.20
360.0	16.14