



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

NATA

LumCAT: 2-1122-A4
Luminaire: 99.02.73.172+92.76.365.00
Report No: NATA0100
Test No: GC2019011607
LampCAT: CITIZEN CMT1922
Lamp flux(lm): 2875.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 35.6000
Current(A): 0.6000
Power (W): 21.3600
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 2616.18
Efficiency(%): 91.00%
Lumens(lm)/Power(W): 124.02
Central intensity(cd): 5918.836
Maximum intensity(cd): 5918.836
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=35.0
 [C90/270]Total=35.0
Field angle(10%Imax): [C0/180]Total=71.0
 [C90/270]Total=71.0
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.58 C90_270=0.58
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.14%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.549%

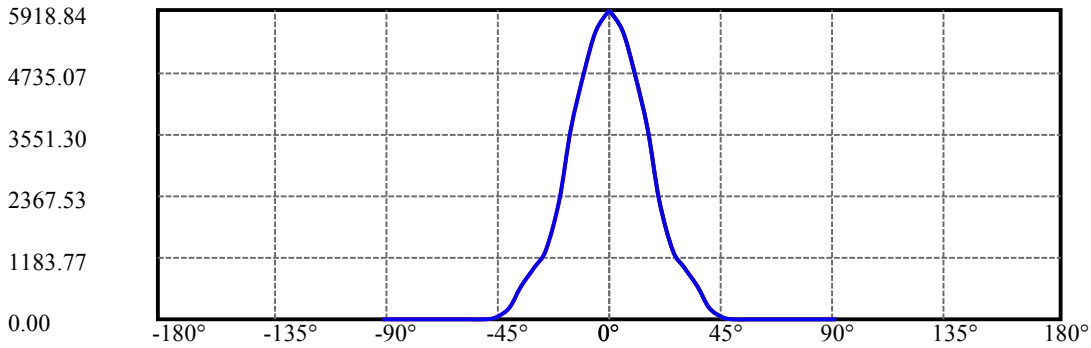
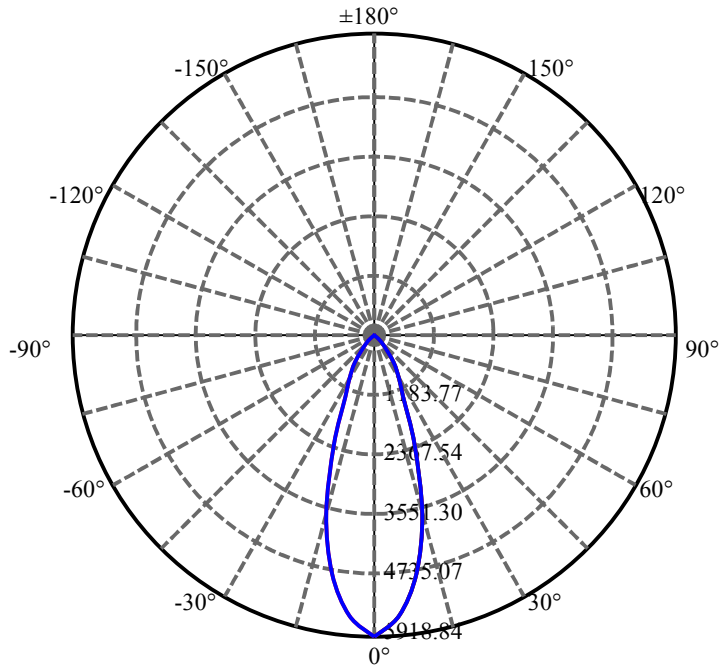
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5918.836	35.396	35.396	1.231%	1.353%
5.0	5514.961	263.468	298.864	9.164%	11.424%
10.0	4751.086	452.223	751.087	15.729%	28.709%
15.0	3627.000	514.557	1265.643	17.898%	48.378%
20.0	2297.461	430.714	1696.358	14.981%	64.841%
25.0	1340.445	310.518	2006.875	10.801%	76.710%
30.0	1001.236	274.407	2281.283	9.545%	87.199%
35.0	633.881	199.291	2480.574	6.932%	94.817%
40.0	217.041	76.471	2557.046	2.660%	97.740%
45.0	25.516	9.890	2566.935	.344%	98.118%
50.0	13.788	5.790	2572.725	.201%	98.339%
55.0	12.713	5.708	2578.433	.199%	98.557%
60.0	12.073	5.731	2584.164	.199%	98.776%
65.0	11.566	5.746	2589.91	.200%	98.996%
70.0	11.257	5.798	2595.708	.202%	99.218%
75.0	11.004	5.826	2601.534	.203%	99.440%
80.0	10.856	5.860	2607.395	.204%	99.664%
85.0	10.744	5.867	2613.261	.204%	99.888%
90.0	10.645	2.918	2616.179	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2281.28	79.35%	87.20%
0-40	2557.05	88.94%	97.74%
0-60	2584.16	89.88%	98.78%
0-90	2613.26	90.90%	99.89%
0-120	2613.26	90.90%	99.89%
0-180	2616.18	91.00%	100.00%
60-90	34.83	1.21%	1.33%
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%
0-26.57	2092.94	72.80%	80.00%

ZONAL LUMEN SUMMARY

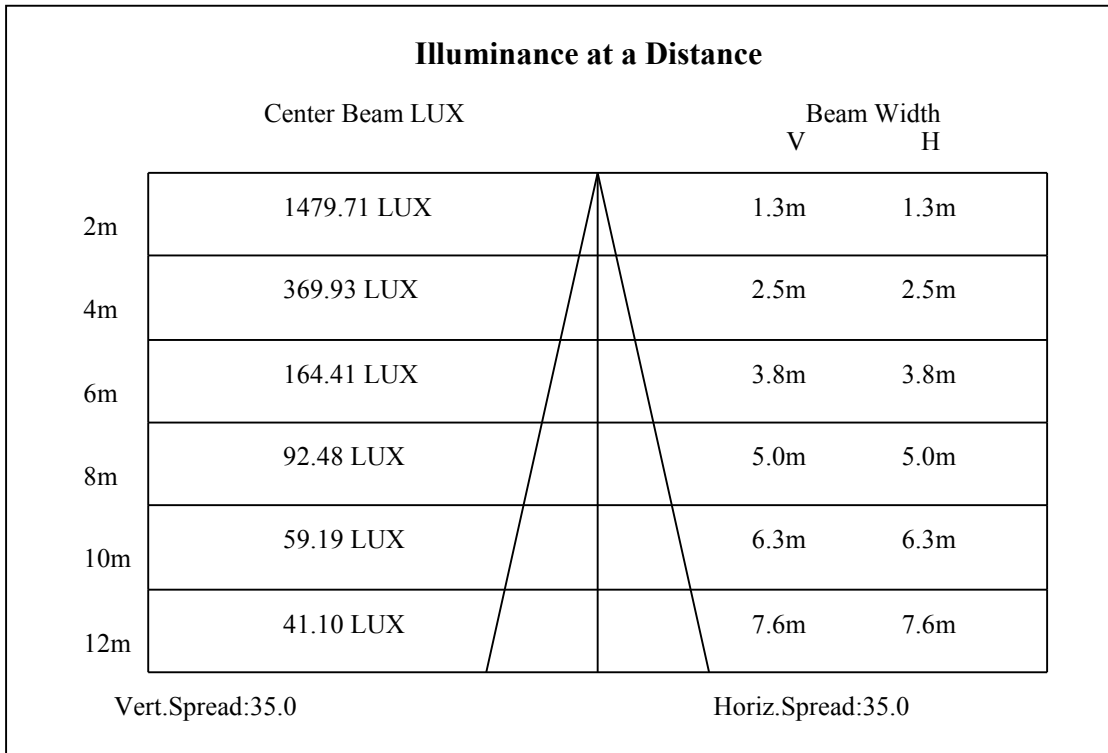
0-10	751.09
10-20	945.27
20-30	584.93
30-40	275.76
40-50	15.68
50-60	11.44
60-70	11.54
70-80	11.69
80-90	5.87
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

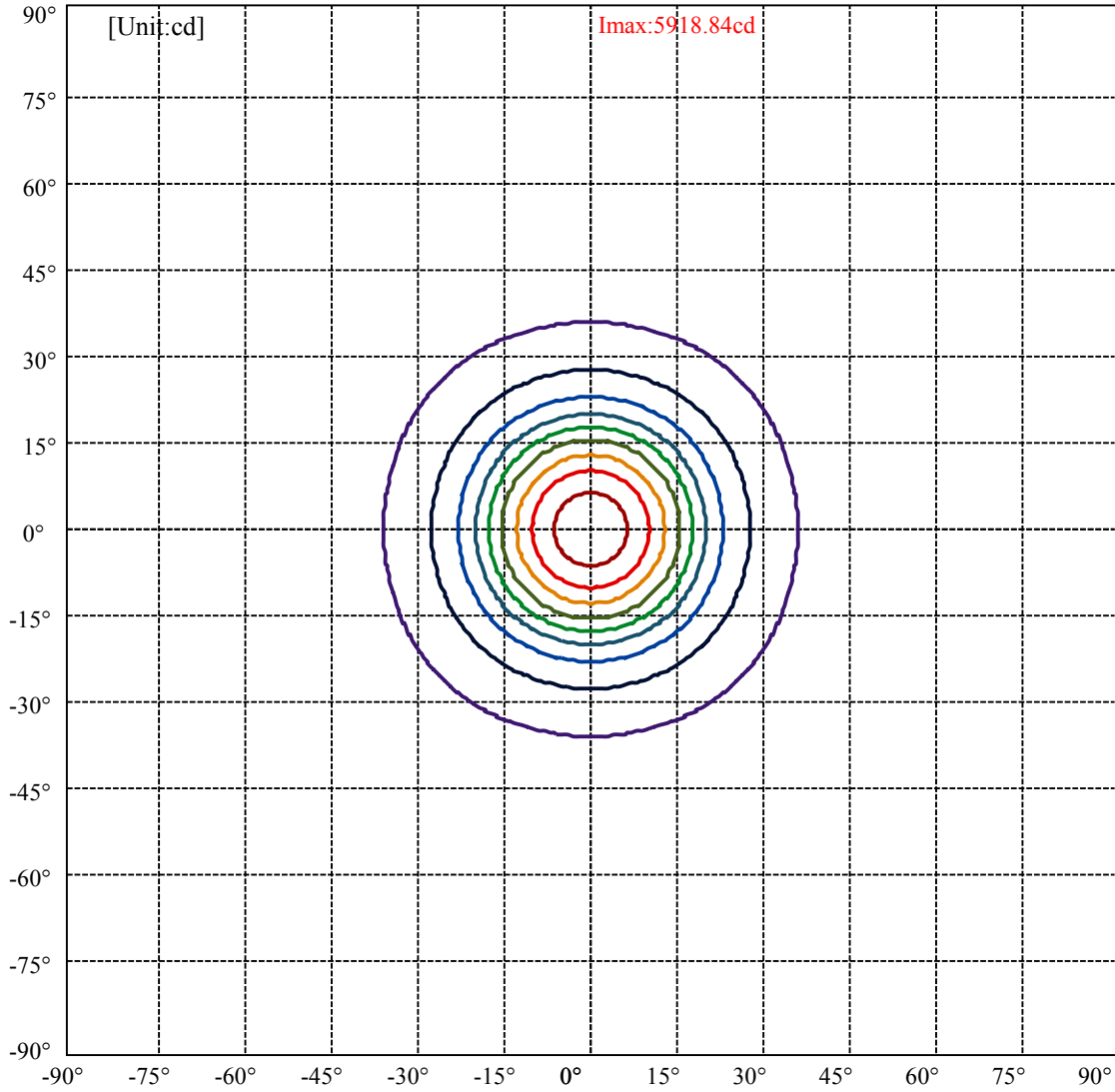


C0(Max): ———
C0/C180: ———
C90/C270: ———

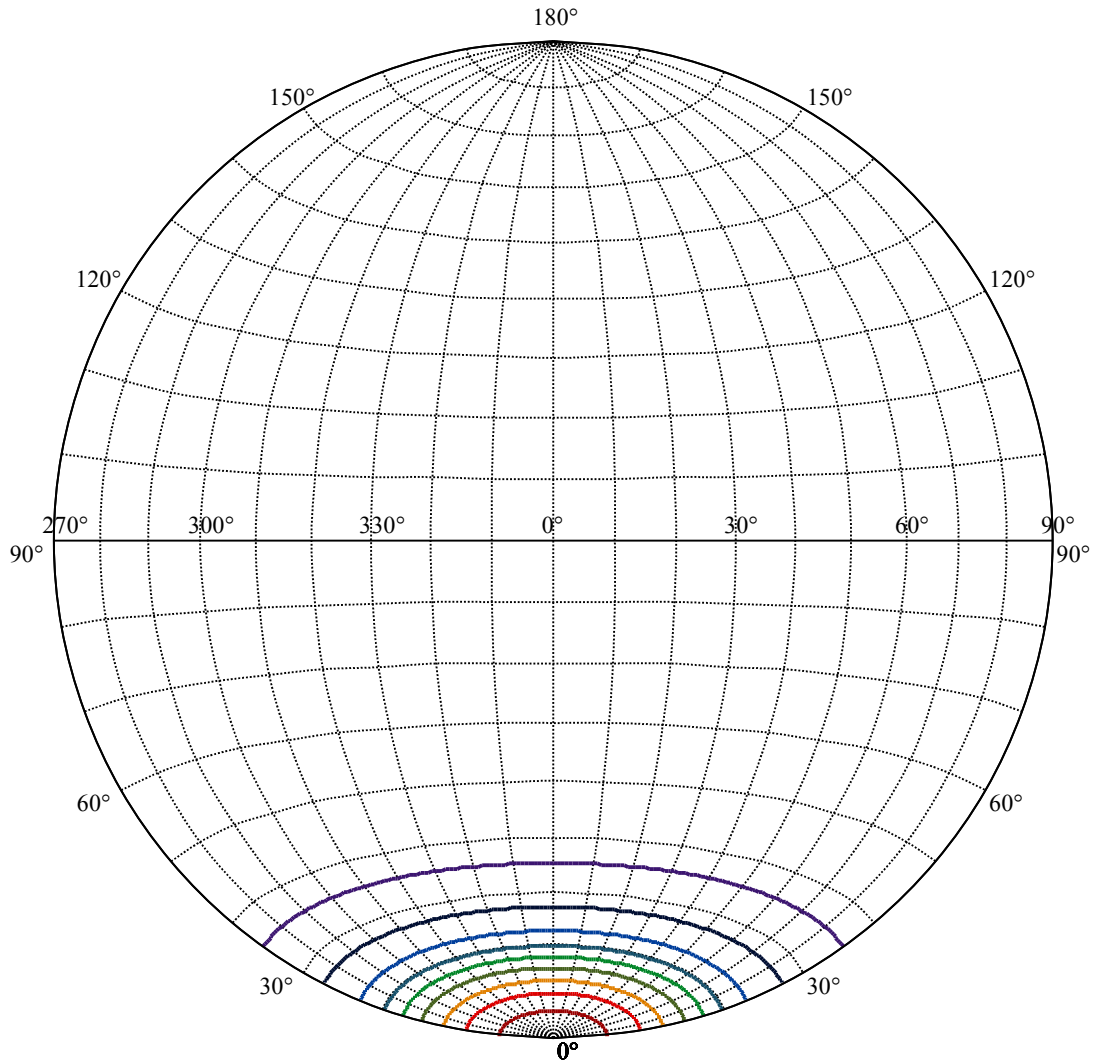
Field angle(10%Imax):C0/180Left:35.5 Right:35.5
:C90/270Left:35.5 Right:35.5

Beam Angle(50%Imax):C0/180Left:17.5 Right:17.5
:C90/270Left:17.5 Right:17.5





(10%Imax) 591.884	—
(20%Imax) 1183.77	—
(30%Imax) 1775.65	—
(40%Imax) 2367.53	—
(50%Imax) 2959.42	—
(60%Imax) 3551.3	—
(70%Imax) 4143.19	—
(80%Imax) 4735.07	—
(90%Imax) 5326.95	—



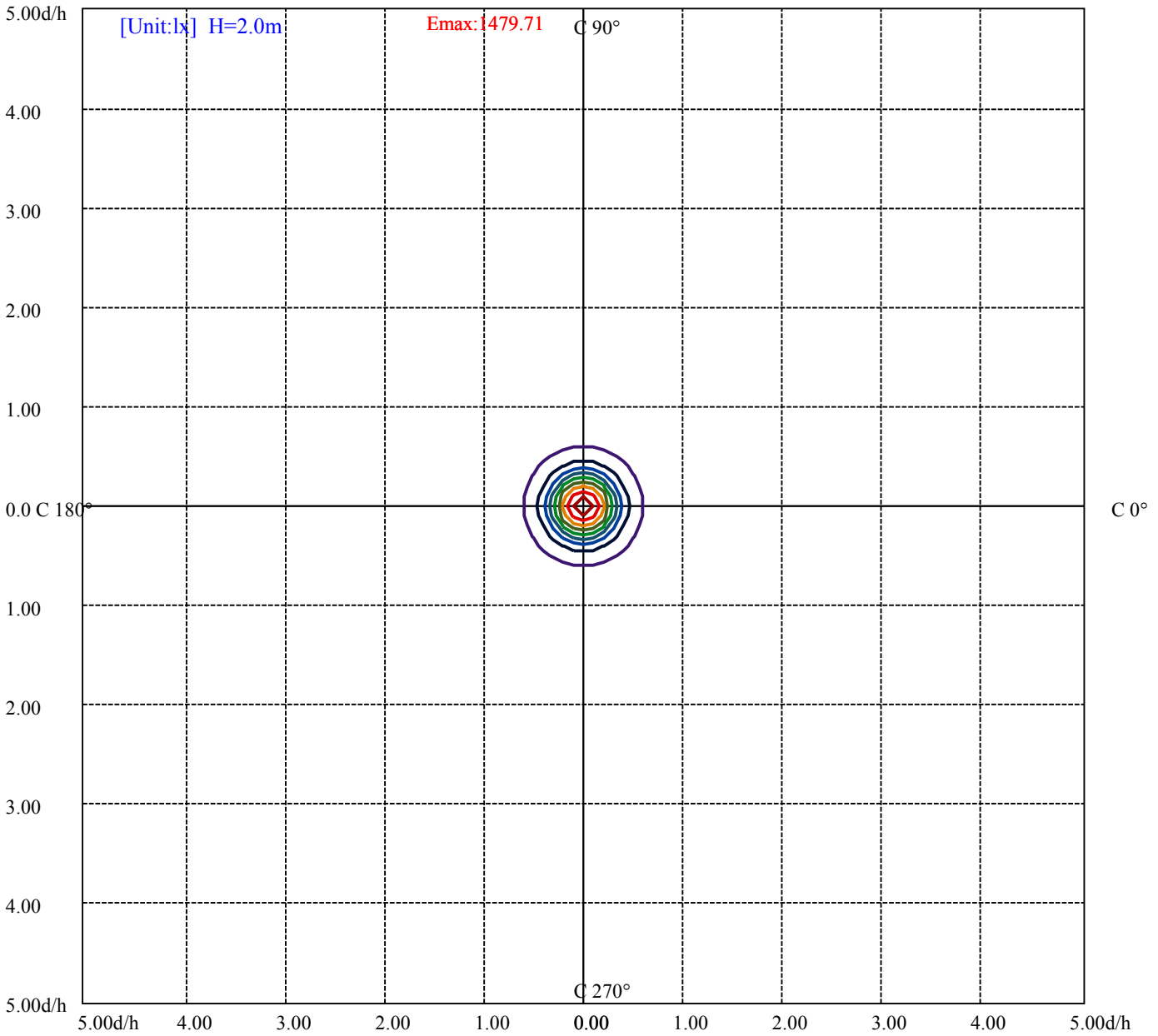
House

[Unit:cd]

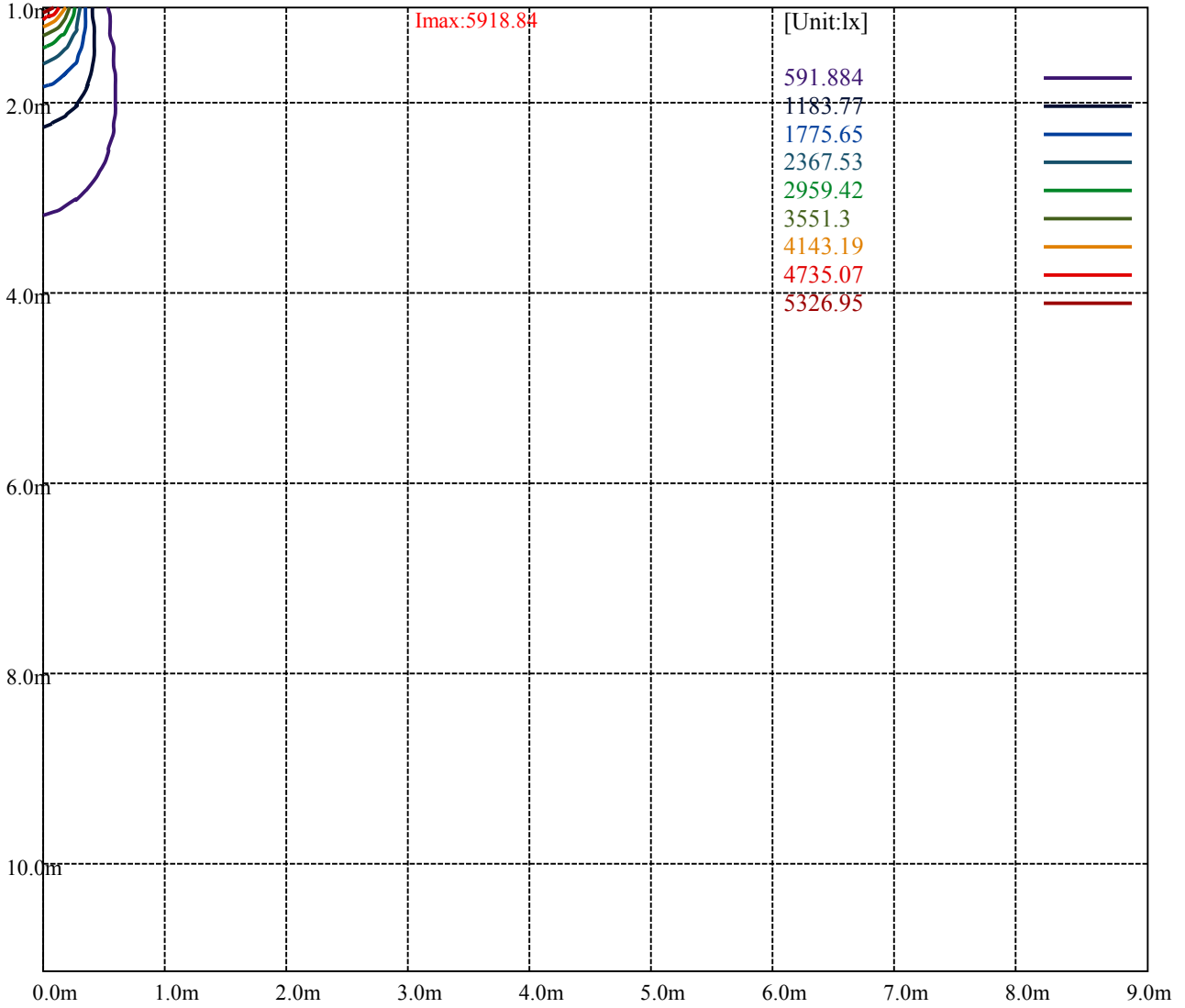
Road

Imax:5918.84

(10%Imax) 591.884	—
(20%Imax) 1183.77	—
(30%Imax) 1775.65	—
(40%Imax) 2367.53	—
(50%Imax) 2959.42	—
(60%Imax) 3551.3	—
(70%Imax) 4143.19	—
(80%Imax) 4735.07	—
(90%Imax) 5326.95	—



- (10%Emax) 147.9705
- (20%Emax) 295.94
- (30%Emax) 443.9125
- (40%Emax) 591.8825
- (50%Emax) 739.8525
- (60%Emax) 887.8225
- (70%Emax) 1035.795
- (80%Emax) 1183.765
- (90%Emax) 1331.735



Luminance Table

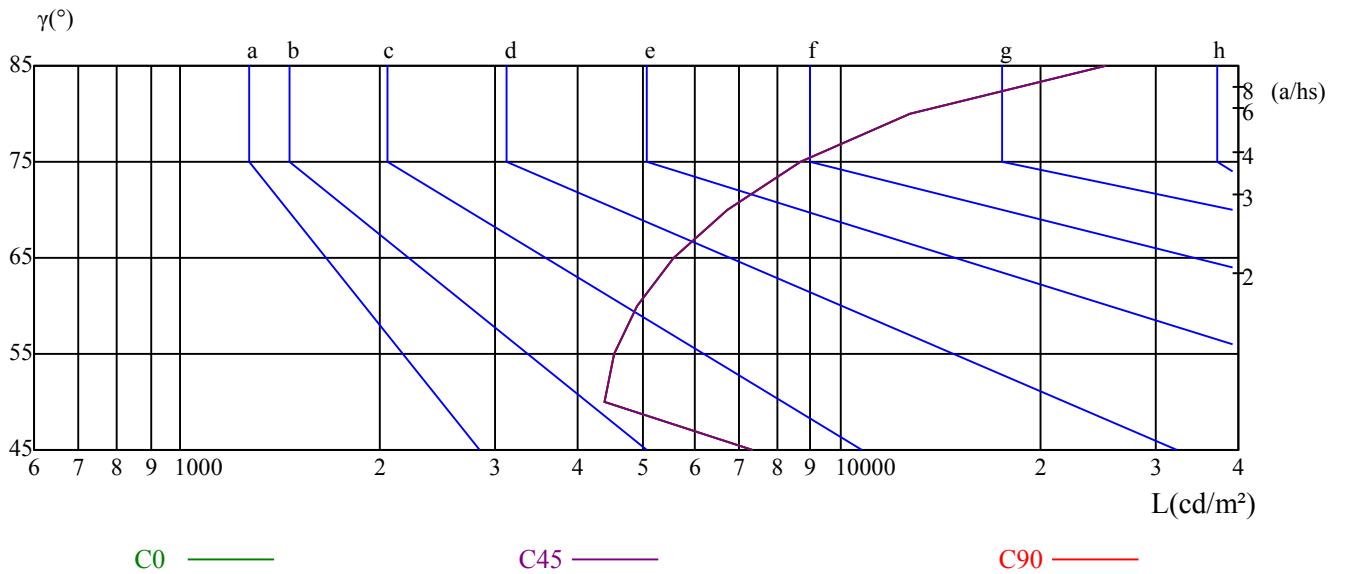
γ	45	50	55	60	65	70	75	80	85
C0	7364	4378	4523	4928	5585	6717	8677	12759	25157
C45	7364	4378	4523	4928	5585	6717	8677	12759	25157
C90	7364	4378	4523	4928	5585	6717	8677	12759	25157

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5585	5585	5585	8677	8677	8677	25157	25157	25157

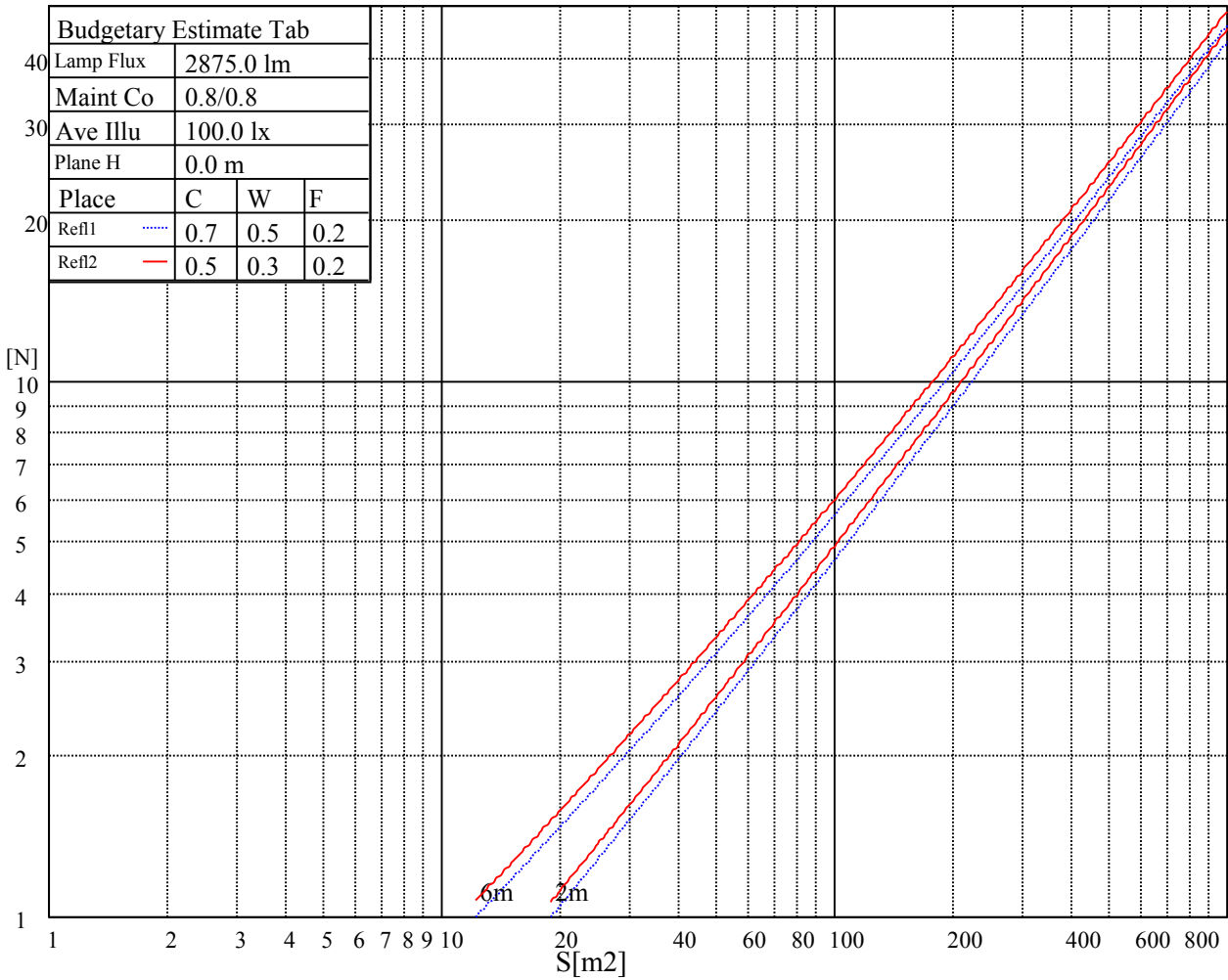
Glare Table

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

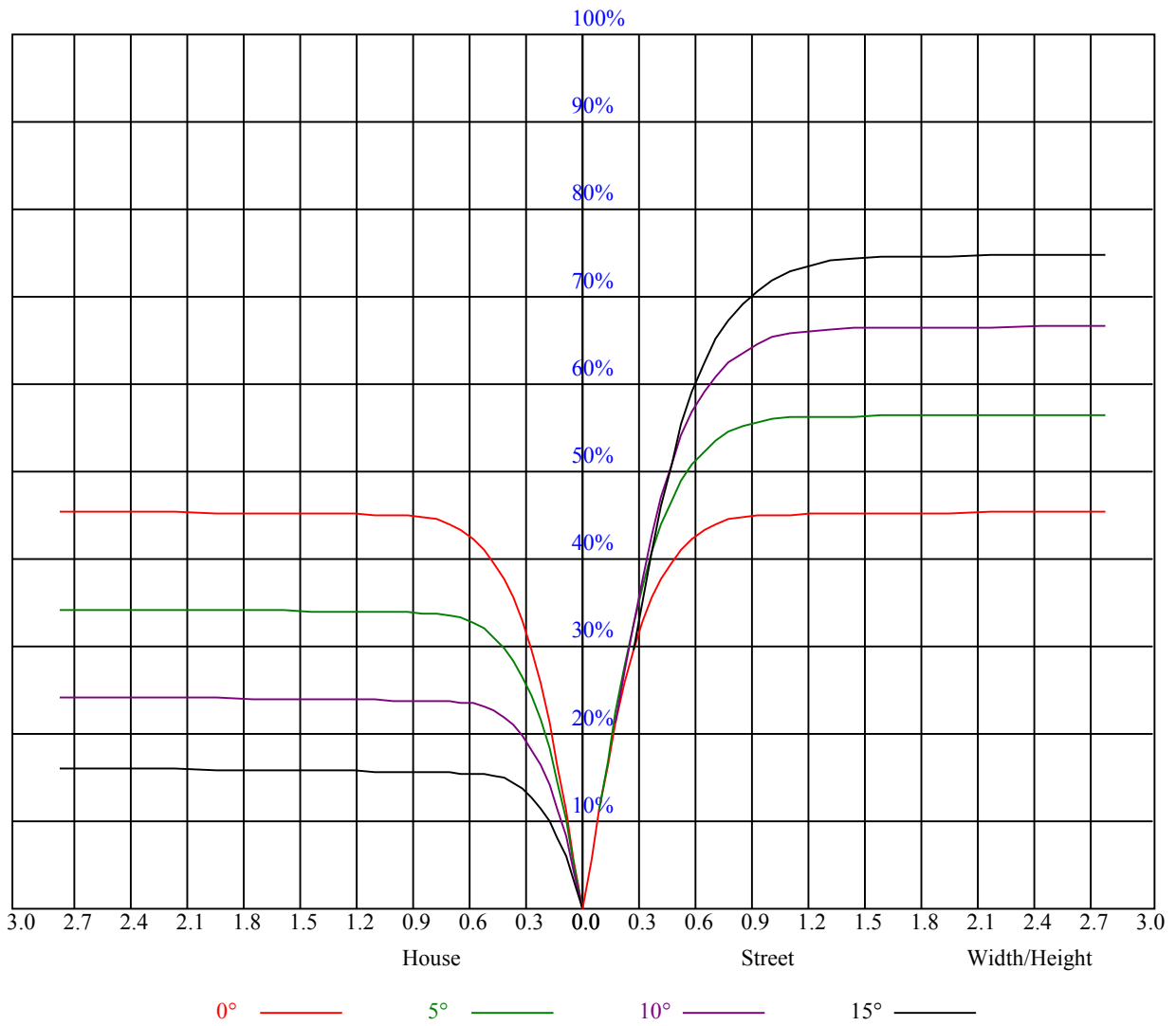
Luminance Limiting Curve



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	2.81	3.73	3.18	4.04	4.35	2.83	3.75	3.20	4.06	4.37
	3H	5.94	6.75	6.33	7.08	7.45	5.95	6.76	6.34	7.10	7.47
	4H	7.64	8.39	8.05	8.75	9.14	7.65	8.40	8.06	8.75	9.15
	6H	9.57	10.25	9.99	10.63	11.02	9.58	10.26	10.00	10.64	11.04
	8H	10.64	11.28	11.08	11.67	12.08	10.66	11.30	11.09	11.69	12.10
	12H	12.38	12.99	12.82	13.38	13.81	12.41	13.02	12.84	13.40	13.84
4H	2H	3.69	4.44	4.10	4.79	5.18	3.70	4.45	4.11	4.81	5.20
	3H	7.07	7.68	7.49	8.09	8.50	7.08	7.69	7.50	8.10	8.51
	4H	8.94	9.49	9.38	9.92	10.37	8.95	9.50	9.39	9.93	10.37
	6H	11.03	11.50	11.50	11.95	12.43	11.04	11.51	11.52	11.96	12.44
	8H	12.20	12.64	12.68	13.09	13.57	12.22	12.66	12.70	13.11	13.58
	12H	13.85	14.22	14.34	14.71	15.19	13.87	14.25	14.37	14.74	15.22
8H	4H	9.66	10.10	10.14	10.55	11.02	9.67	10.10	10.14	10.55	11.03
	6H	12.02	12.37	12.53	12.87	13.36	12.04	12.38	12.55	12.89	13.37
	8H	13.38	13.69	13.92	14.21	14.71	13.40	13.71	13.94	14.23	14.73
	12H	15.17	15.43	15.70	15.93	16.51	15.19	15.45	15.72	15.95	16.53
12H	4H	9.86	10.24	10.36	10.73	11.21	9.87	10.24	10.36	10.73	11.21
	6H	12.54	12.64	12.88	13.12	13.67	12.55	12.66	12.89	13.13	13.68
	8H	13.83	14.09	14.35	14.59	15.17	13.85	14.11	14.37	14.61	15.19
Variation with the observer position at spacings:											
S = 1.0H	5.1/-7.8					5.1/-7.8					
S = 1.5H	7.4/-5.9					7.4/-5.9					
S = 2.0H	8.8/-4.5					8.8/-4.5					
Standard tables:	BK2					BK2					
Uncorrected UGR	2.2					2.2					



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	1.10	1.10	1.10	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.02	0.99	0.97	1.00	0.97	0.95	0.96	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.85
2	0.96	0.92	0.89	0.94	0.91	0.88	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.84	0.83	0.81
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.80	0.83	0.81	0.79	0.78
4	0.87	0.82	0.79	0.86	0.82	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.74
5	0.83	0.78	0.75	0.82	0.78	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.71
6	0.79	0.75	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
7	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.68	0.65	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.63
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.68	0.64	0.62	0.61
10	0.68	0.63	0.61	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.59



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	5919.75	5552.44	4876.88	3823.88	2510.44	1545.19	1069.88	722.81	293.63
45.0	5924.25	5523.19	4784.63	3623.06	2277.56	1374.19	999.56	623.81	289.69
90.0	5916.38	5423.06	4609.13	3346.88	2071.13	1110.21	941.79	559.97	112.11
135.0	5918.63	5560.31	4821.19	3694.50	2330.44	1366.31	1001.25	644.06	304.31
180.0	5919.75	5457.38	4604.06	3438.00	2088.00	1104.98	947.19	543.71	88.93
225.0	5924.25	5536.13	4746.94	3659.06	2340.56	1356.75	997.99	628.48	163.97
270.0	5909.06	5627.25	4885.31	3878.44	2575.13	1490.06	1047.38	735.19	307.13
315.0	5918.63	5439.94	4680.56	3552.19	2186.44	1375.88	1004.85	613.01	176.57
360.0	5919.75	5552.44	4876.88	3823.88	2510.44	1545.19	1069.88	722.81	293.63

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	34.76	14.18	12.94	12.26	11.70	11.31	11.03	10.86	10.74
45.0	27.23	13.50	12.60	11.98	11.53	11.25	11.03	10.86	10.69
90.0	21.54	13.22	12.38	11.81	11.36	11.14	10.91	10.80	10.69
135.0	26.89	13.61	12.60	12.04	11.53	11.25	10.97	10.86	10.74
180.0	21.09	13.50	12.60	11.98	11.48	11.19	10.97	10.86	10.86
225.0	21.15	13.89	12.71	12.04	11.59	11.25	11.03	10.91	10.74
270.0	26.21	14.46	12.99	12.26	11.70	11.36	11.08	10.86	10.74
315.0	25.26	13.95	12.88	12.21	11.64	11.31	11.03	10.86	10.74
360.0	34.76	14.18	12.94	12.26	11.70	11.31	11.03	10.86	10.74

C/γ(°)	90.0
0.0	10.63
45.0	10.63
90.0	10.69
135.0	10.69
180.0	10.63
225.0	10.63
270.0	10.63
315.0	10.63
360.0	10.63