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Nata

LumCAT: 3-1377-E	
Luminaire: 92.76.233.00	
Report No: NATA0100	Voltage(V): 218.2000
Test No: 2017010903	Current(A): 0.0290
LampCAT: CITIZEN CLU241	Power (W): 6.3000
Lamp flux(lm): 639.1	PF: 0.9860
Number of Lamps: 1	Ballast type:
Length(mm): 80	Width(mm): 80
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 570.02
Efficiency(%): 89.19%
Lumens(lm)/Power(W): 92.73
Central intensity(cd): 2460.746
Maximum intensity(cd): 2460.746
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=19.3
 [C90/270]Total=19.3
Field angle(10%Imax): [C0/180]Total=54.8
 [C90/270]Total=54.8
Maximum s/h(1/2): C0_180=0.33 C90_270=0.33
Maximum s/h(1/4): C0_180=0.37 C90_270=0.37
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.41%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.069%

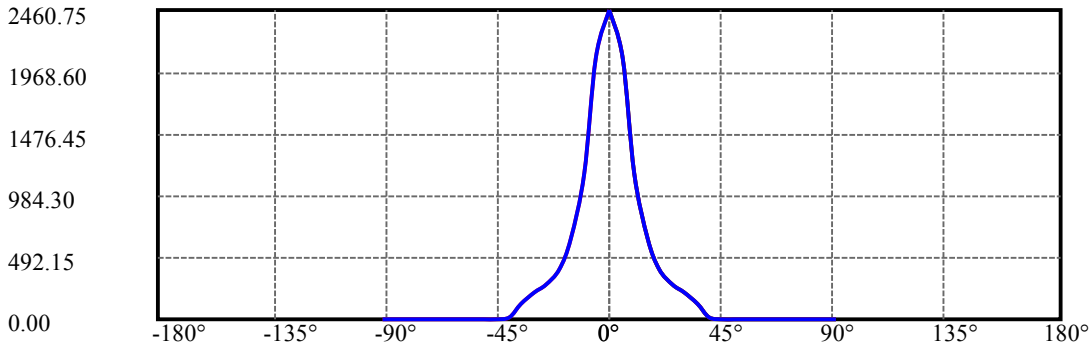
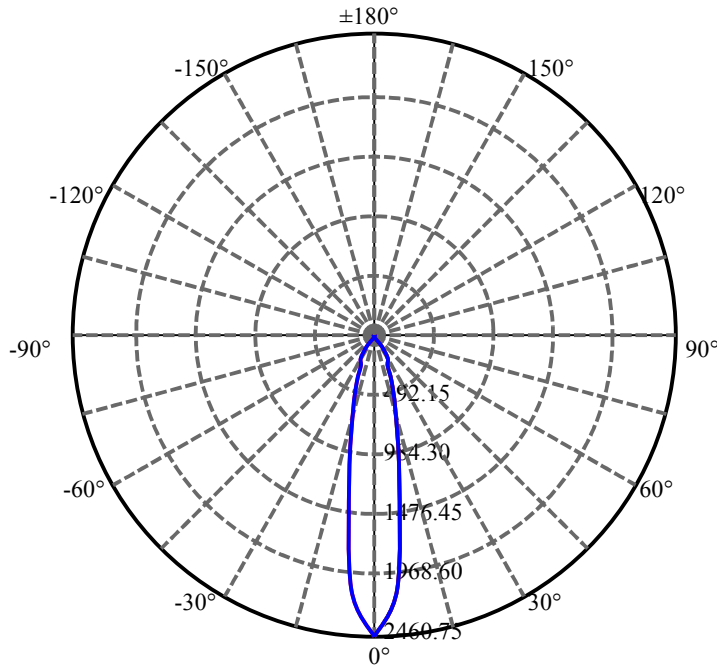
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2460.746	14.716	14.716	2.303%	2.582%
5.0	2079.962	99.367	114.082	15.548%	20.014%
10.0	1165.461	110.932	225.015	17.357%	39.475%
15.0	637.457	90.435	315.45	14.150%	55.340%
20.0	404.451	75.824	391.274	11.864%	68.642%
25.0	269.852	62.512	453.786	9.781%	79.609%
30.0	219.992	60.293	514.079	9.434%	90.186%
35.0	118.227	37.170	551.249	5.816%	96.707%
40.0	11.465	4.040	555.289	.632%	97.415%
45.0	4.487	1.739	557.028	.272%	97.721%
50.0	3.214	1.350	558.377	.211%	97.957%
55.0	3.097	1.391	559.768	.218%	98.201%
60.0	3.076	1.460	561.228	.228%	98.457%
65.0	3.090	1.535	562.763	.240%	98.727%
70.0	3.434	1.769	564.532	.277%	99.037%
75.0	3.152	1.669	566.201	.261%	99.330%
80.0	2.863	1.545	567.746	.242%	99.601%
85.0	2.829	1.545	569.291	.242%	99.872%
90.0	2.663	0.730	570.021	.114%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	514.08	80.44%	90.19%
0-40	555.29	86.88%	97.42%
0-60	561.23	87.81%	98.46%
0-90	569.29	89.08%	99.87%
0-120	569.29	89.08%	99.87%
0-180	570.02	89.19%	100.00%
60-90	9.52	1.49%	1.67%
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%
0-25.19	456.02	71.35%	80.00%

ZONAL LUMEN SUMMARY

0-10	225.01
10-20	166.26
20-30	122.80
30-40	41.21
40-50	3.09
50-60	2.85
60-70	3.30
70-80	3.21
80-90	1.54
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



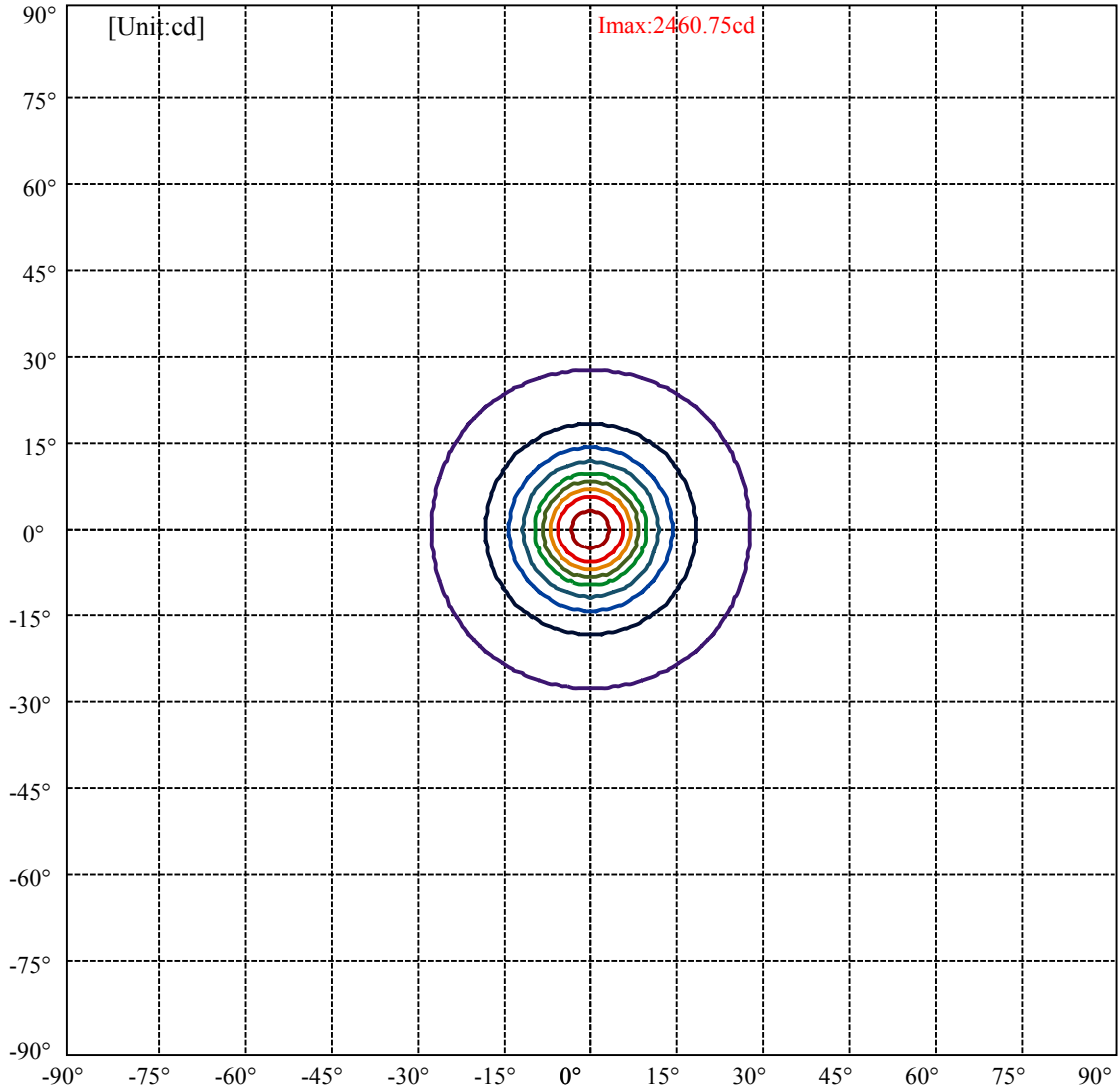
C0(Max): —————

C0/C180: —————

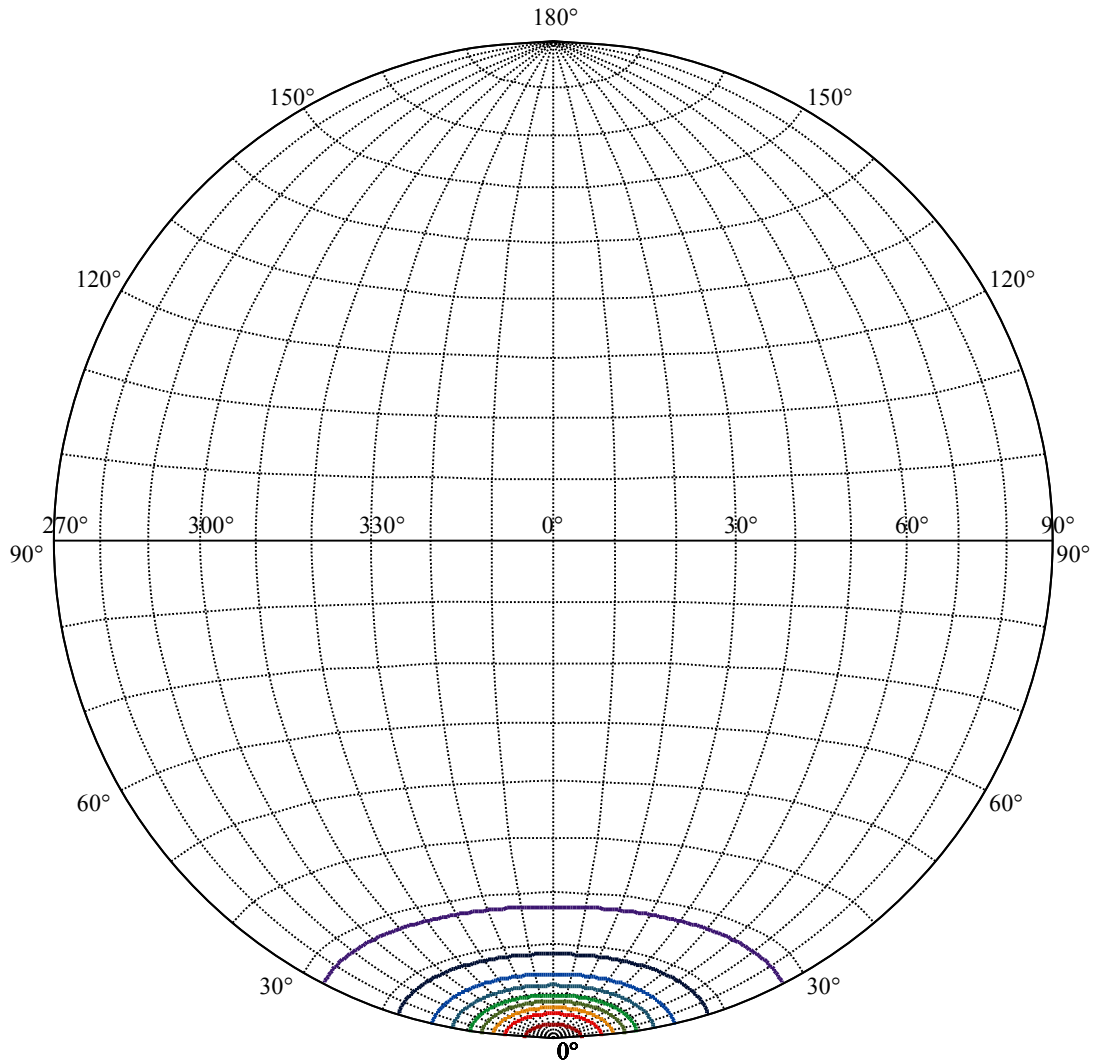
C90/C270: —————

Field angle(10%Imax):C0/180Left:27.4 Right:27.4
:C90/270Left:27.4 Right:27.4

Beam Angle(50%Imax):C0/180Left:9.6 Right:9.6
:C90/270Left:9.6 Right:9.6



(10%Imax) 246.075	—
(20%Imax) 492.149	—
(30%Imax) 738.224	—
(40%Imax) 984.298	—
(50%Imax) 1230.37	—
(60%Imax) 1476.45	—
(70%Imax) 1722.52	—
(80%Imax) 1968.6	—
(90%Imax) 2214.67	—



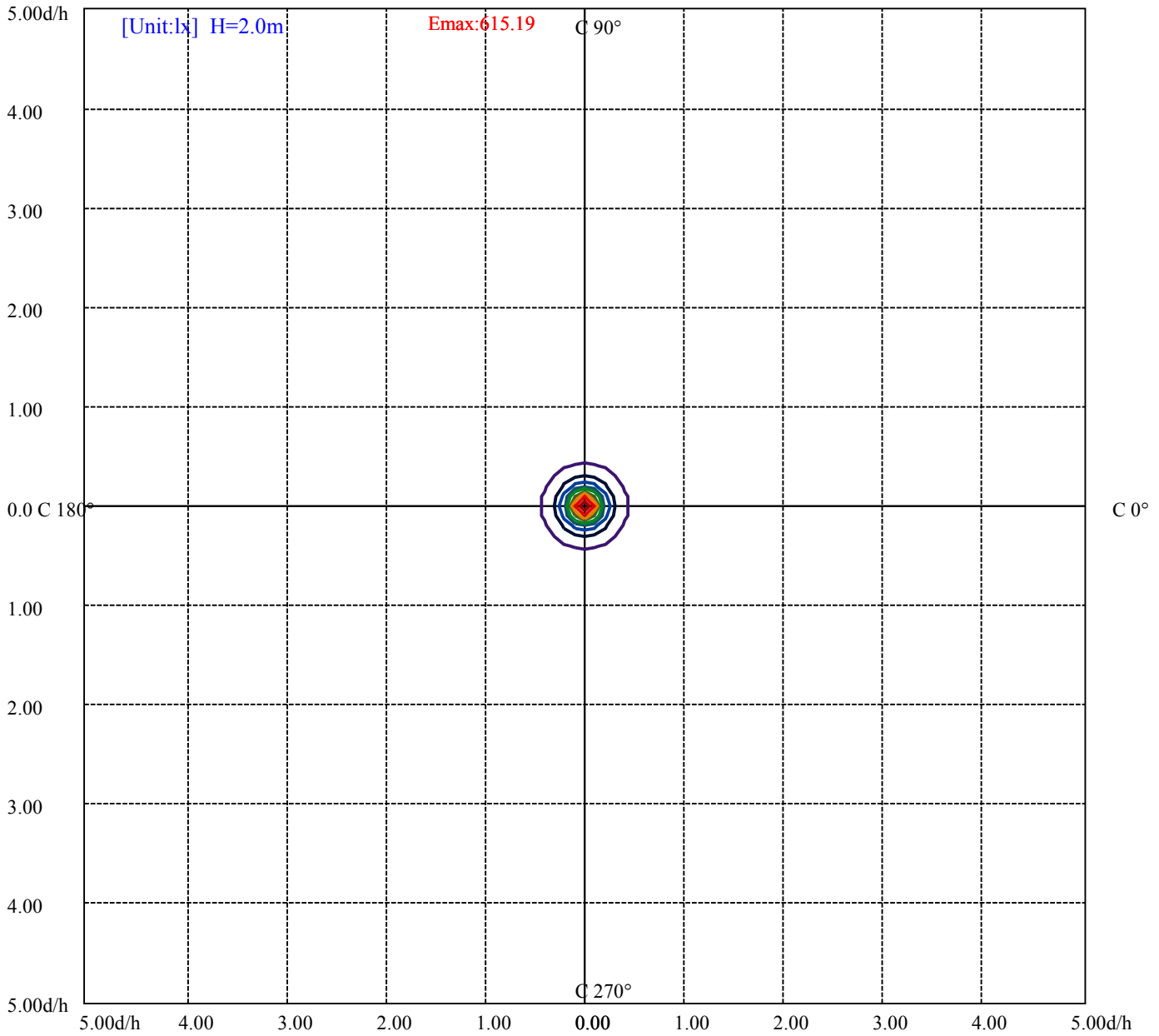
House

[Unit:cd]

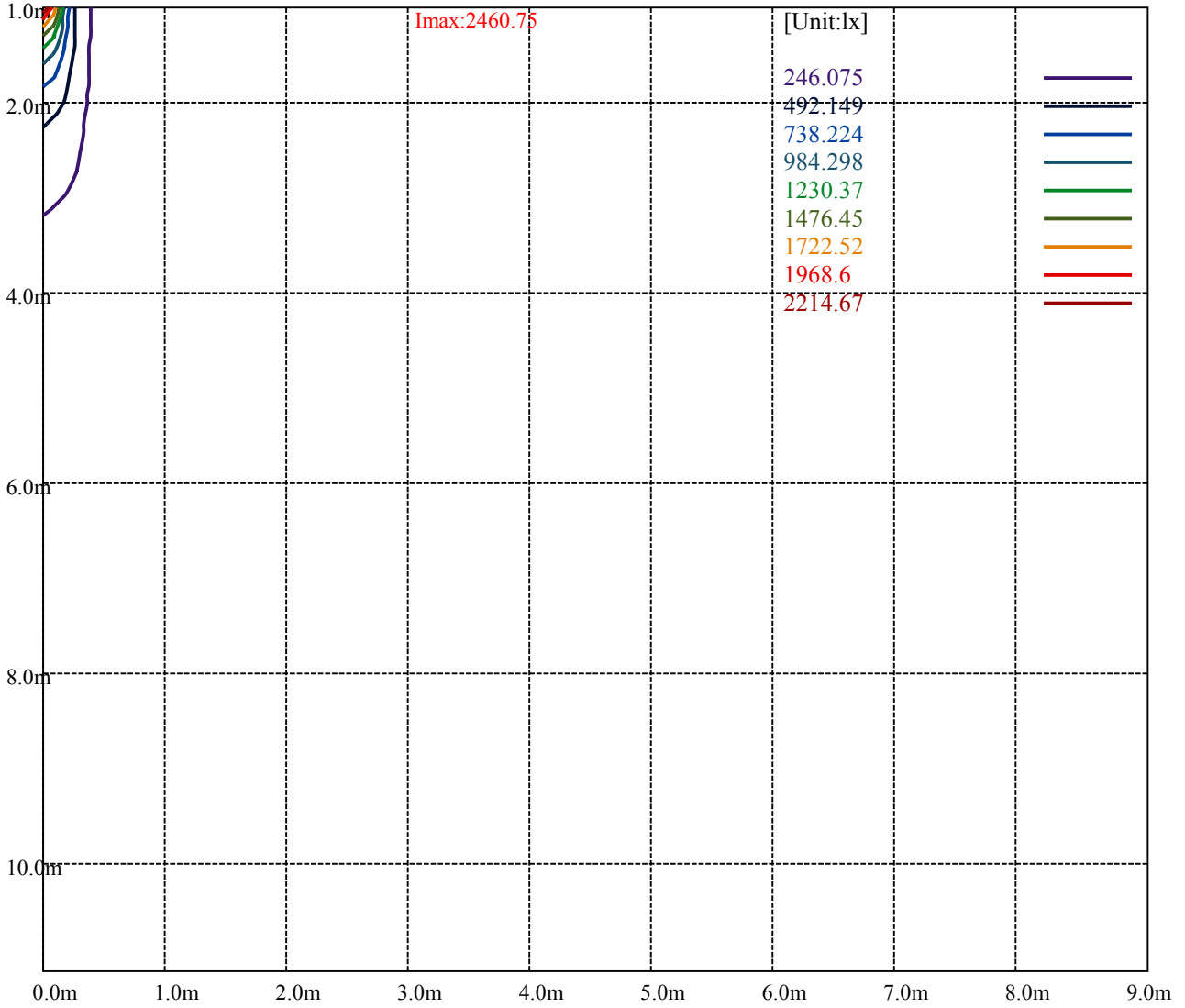
Road

Imax:2460.75

(10%Imax) 246.075	—
(20%Imax) 492.149	—
(30%Imax) 738.224	—
(40%Imax) 984.298	—
(50%Imax) 1230.37	—
(60%Imax) 1476.45	—
(70%Imax) 1722.52	—
(80%Imax) 1968.6	—
(90%Imax) 2214.67	—



(10%Emax) 61.51825	—
(20%Emax) 123.0368	—
(30%Emax) 184.555	—
(40%Emax) 246.0735	—
(50%Emax) 307.5925	—
(60%Emax) 369.11	—
(70%Emax) 430.6275	—
(80%Emax) 492.1475	—
(90%Emax) 553.665	—



Luminance Table

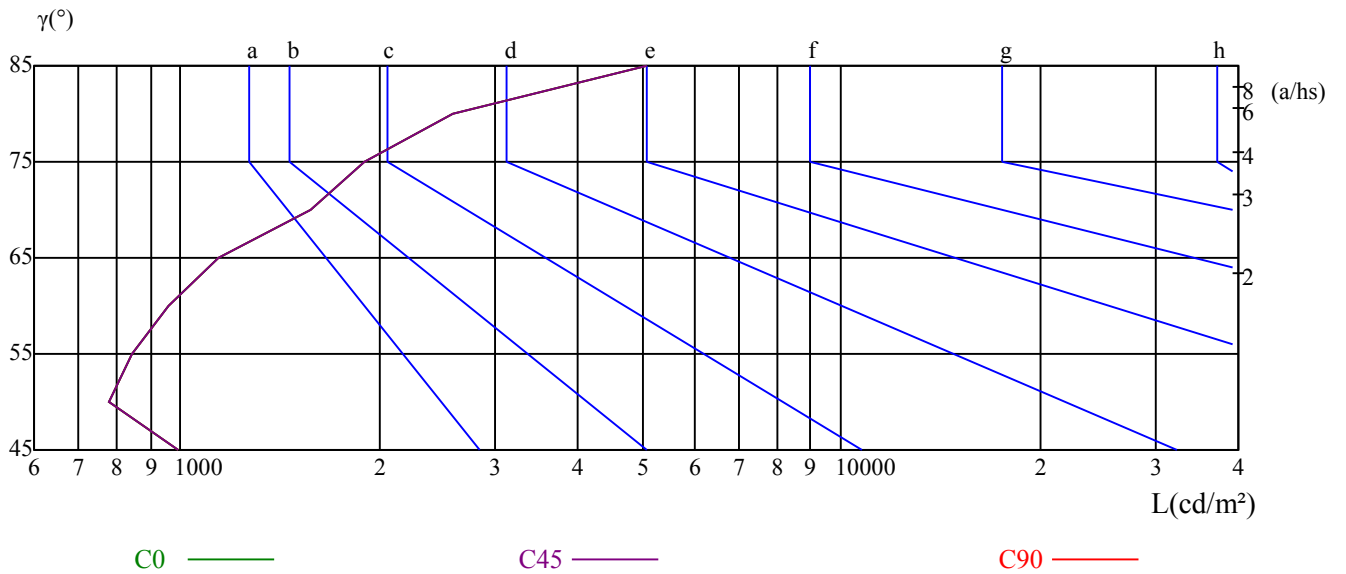
γ	45	50	55	60	65	70	75	80	85
C0	992	781	844	961	1142	1569	1903	2576	5071
C45	992	781	844	961	1142	1569	1903	2576	5071
C90	992	781	844	961	1142	1569	1903	2576	5071

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1142	1142	1142	1903	1903	1903	5071	5071	5071

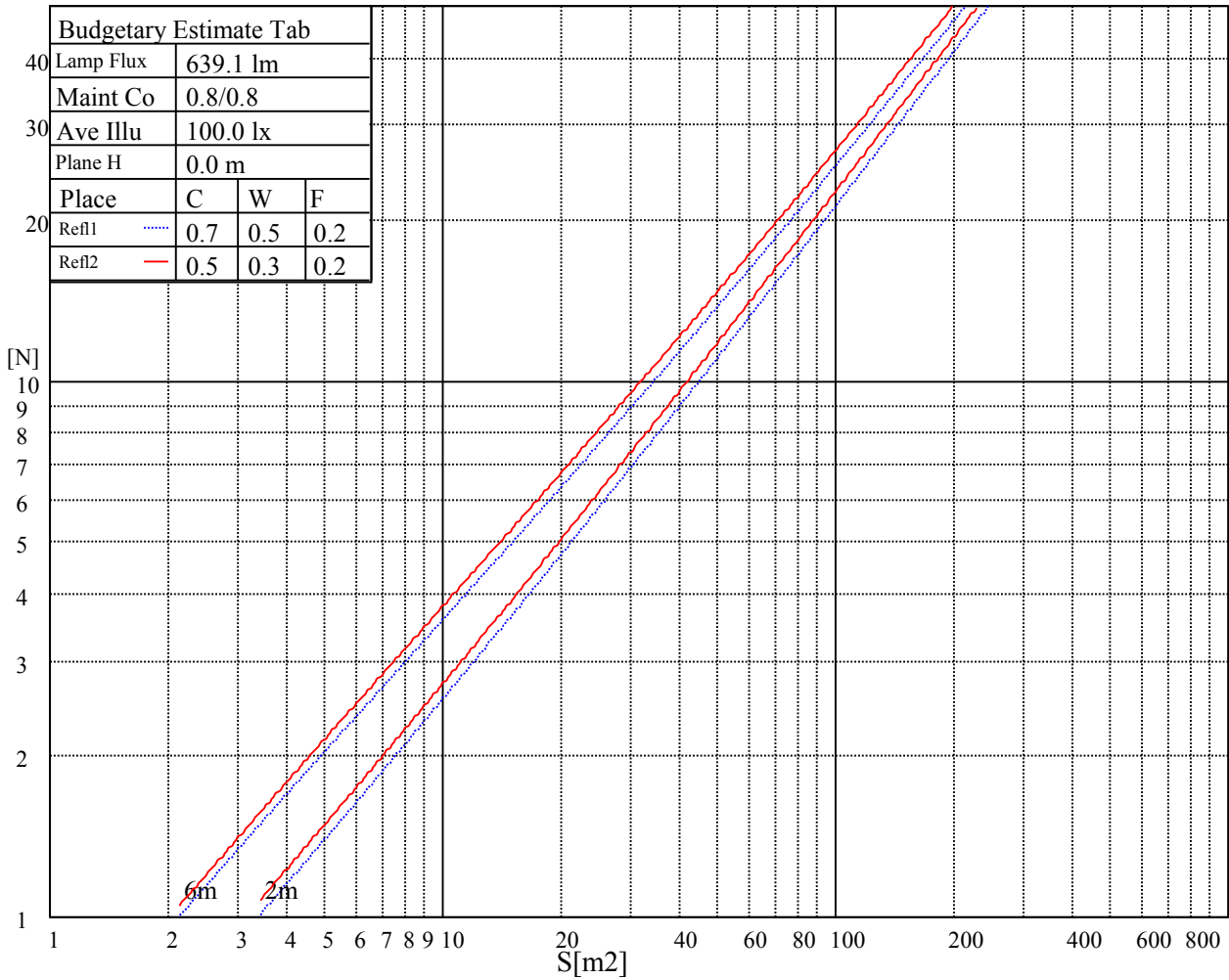
Glare Table

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

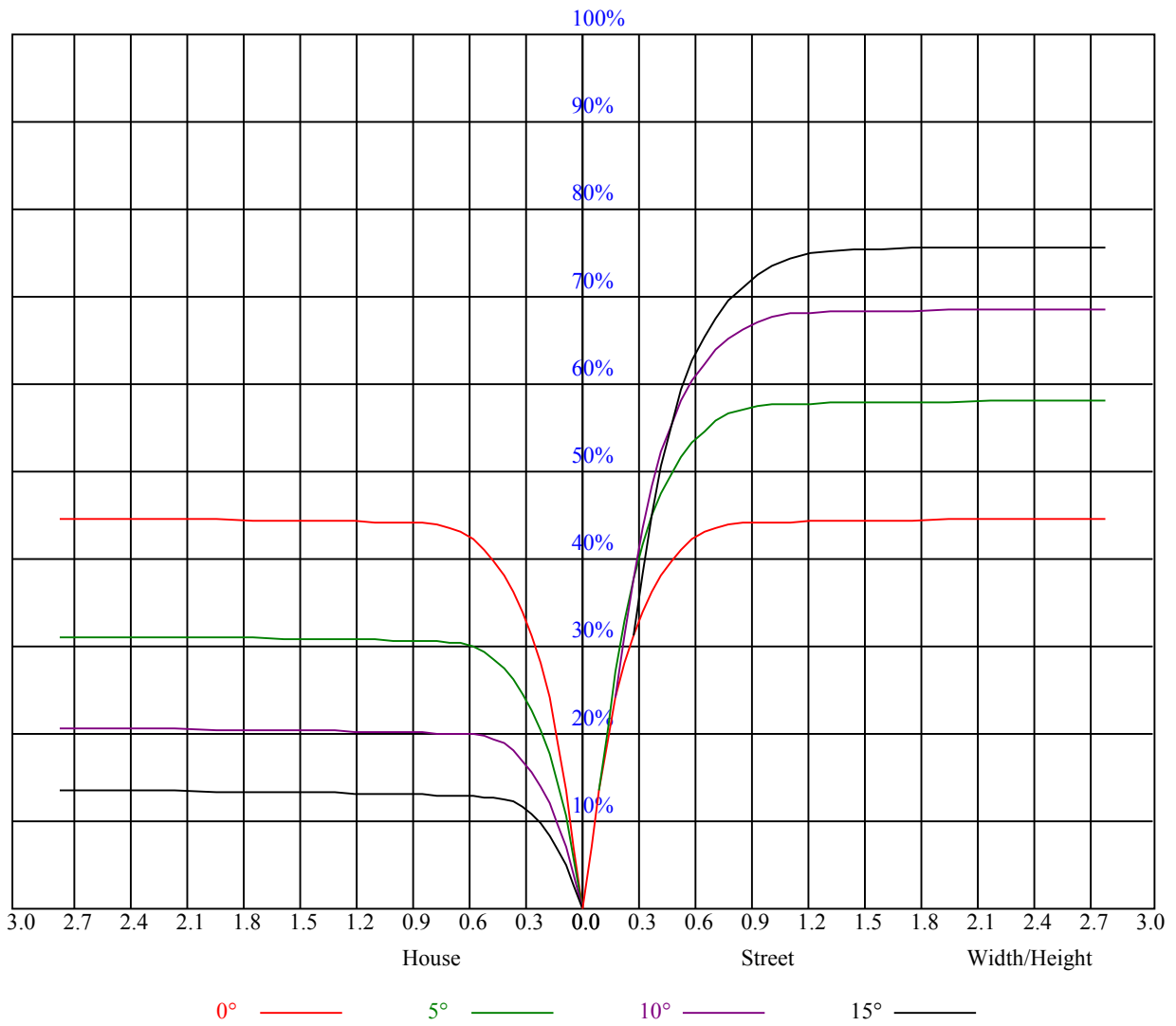
Luminance Limiting Curve



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	2.93	3.85	3.30	4.16	4.48	2.69	3.60	3.05	3.92	4.23
	3H	7.20	8.01	7.58	8.34	8.71	6.12	6.93	6.50	7.26	7.63
	4H	8.99	9.74	9.40	10.10	10.49	7.90	8.65	8.30	9.00	9.39
	6H	10.62	11.31	11.04	11.69	12.09	9.81	10.50	10.23	10.87	11.27
	8H	11.52	12.16	11.95	12.55	12.96	10.86	11.50	11.29	11.89	12.31
	12H	13.06	13.68	13.50	14.06	14.49	12.56	13.18	13.00	13.56	13.99
4H	2H	3.96	4.71	4.37	5.06	5.45	3.79	4.54	4.20	4.90	5.29
	3H	8.36	8.98	8.78	9.39	9.80	7.51	8.13	7.93	8.54	8.95
	4H	10.27	10.82	10.71	11.24	11.69	9.41	9.96	9.85	10.39	10.84
	6H	12.01	12.49	12.49	12.94	13.41	11.39	11.86	11.86	12.31	12.79
	8H	13.02	13.46	13.49	13.91	14.38	12.51	12.95	12.99	13.40	13.88
	12H	14.50	14.87	14.99	15.36	15.84	14.10	14.47	14.59	14.96	15.44
8H	4H	10.90	11.34	11.38	11.79	12.27	10.25	10.69	10.73	11.14	11.62
	6H	12.93	13.27	13.44	13.78	14.26	12.47	12.82	12.98	13.32	13.81
	8H	14.13	14.44	14.67	14.96	15.46	13.77	14.08	14.31	14.60	15.10
	12H	15.78	16.04	16.31	16.54	17.13	15.48	15.74	16.00	16.24	16.82
12H	4H	11.05	11.43	11.54	11.92	12.39	10.45	10.83	10.95	11.32	11.80
	6H	13.41	13.51	13.74	13.98	14.53	13.01	13.11	13.34	13.58	14.13
	8H	14.55	14.81	15.07	15.31	15.89	14.23	14.50	14.76	15.00	15.58
Variation with the observer position at spacings:											
S = 1.0H	5.3/-5.6					5.3/-5.6					
S = 1.5H	7.2/-4.1					7.2/-4.1					
S = 2.0H	8.3/-3.1					8.3/-3.1					
Standard tables:	BK3					BK3					
Uncorrected UGR	-4.0					-4.0					



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	1.09	1.09	1.09	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.97	0.94	0.98	0.95	0.93	0.94	0.92	0.90	0.90	0.89	0.87	0.87	0.86	0.85	0.83
2	0.94	0.91	0.88	0.93	0.89	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.81	0.80
3	0.90	0.86	0.82	0.89	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.86	0.82	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
5	0.82	0.78	0.75	0.82	0.77	0.74	0.80	0.76	0.74	0.79	0.75	0.73	0.77	0.75	0.72	0.71
6	0.79	0.75	0.72	0.79	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.67
8	0.74	0.70	0.67	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.65
9	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61



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	2464.32	2012.86	1173.80	635.35	399.16	278.03	221.38	115.95	10.63
45.0	2463.22	2139.49	1253.63	645.81	414.57	278.03	222.92	142.71	11.23
90.0	2469.28	2115.27	1084.89	620.32	400.76	260.09	218.24	115.78	10.96
135.0	2451.66	2301.91	1490.38	753.72	450.36	283.54	224.91	159.11	20.81
180.0	2464.32	2163.72	1078.89	652.58	425.48	265.54	217.97	123.99	11.29
225.0	2463.22	2006.81	1087.58	606.45	404.39	264.66	219.95	111.60	8.92
270.0	2469.28	2070.67	1150.13	643.06	392.00	280.24	223.42	102.46	8.59
315.0	2440.65	1828.97	1004.39	542.36	348.89	248.69	211.14	74.22	9.30
360.0	2464.32	2012.86	1173.80	635.35	399.16	278.03	221.38	115.95	10.63
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	5.45	2.86	2.75	2.70	2.64	2.70	2.70	2.64	2.53
45.0	4.68	3.19	3.03	2.97	3.08	3.08	2.97	2.81	2.75
90.0	4.84	3.08	2.97	2.92	2.81	2.81	2.75	2.70	2.70
135.0	5.12	3.47	3.25	3.19	3.08	2.97	2.92	2.86	2.86
180.0	4.68	3.36	3.25	3.08	3.03	2.97	2.92	2.86	2.86
225.0	3.80	3.14	2.97	2.92	2.92	3.74	3.85	2.92	2.86
270.0	3.74	3.19	3.19	3.41	3.63	5.18	3.91	2.97	2.92
315.0	3.58	3.41	3.36	3.41	3.52	4.02	3.19	3.14	3.14
360.0	5.45	2.86	2.75	2.70	2.64	2.70	2.70	2.64	2.53
C/ γ (°)	90.0								
0.0	2.42								
45.0	2.64								
90.0	2.59								
135.0	2.81								
180.0	2.81								
225.0	2.75								
270.0	2.64								
315.0	2.64								
360.0	2.42								