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Nata

LumCAT: 1655-N	
Luminaire: 92.70.043.00	
Report No: NATA0100	Voltage(V): 37.3000
Test No: GC2018092611	Current(A): 0.2000
LampCAT: CITIZEN CLU7A2-1201C9	Power (W): 7.4600
Lamp flux(lm): 762.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 32	Width(mm): 32
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 637.95
Efficiency(%): 83.72%
Lumens(lm)/Power(W): 87.00
Central intensity(cd): 1952.297
Maximum intensity(cd): 1952.297
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=27.9
 [C90/270]Total=27.9
Field angle(10%Imax): [C0/180]Total=63.0
 [C90/270]Total=63.0
Maximum s/h(1/2): C0_180=0.47 C90_270=0.47
Maximum s/h(1/4): C0_180=0.49 C90_270=0.49
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 85.17%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.626%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/9/26
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

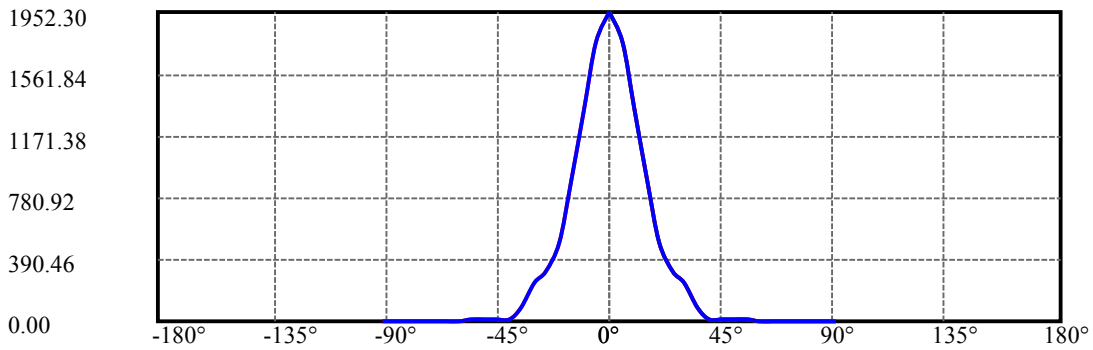
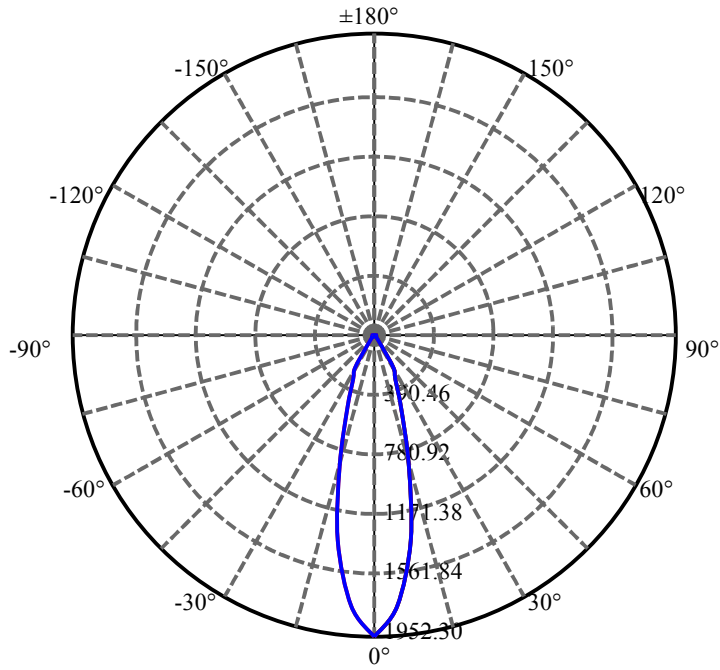
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1952.297	11.675	11.675	1.532%	1.830%
5.0	1762.102	84.181	95.857	11.047%	15.026%
10.0	1347.666	128.275	224.132	16.834%	35.133%
15.0	874.737	124.097	348.229	16.286%	54.586%
20.0	496.540	93.088	441.317	12.216%	69.178%
25.0	313.383	72.596	513.913	9.527%	80.558%
30.0	243.914	66.849	580.763	8.773%	91.036%
35.0	84.171	26.463	607.226	3.473%	95.185%
40.0	17.747	6.253	613.479	.821%	96.165%
45.0	11.088	4.298	617.776	.564%	96.838%
50.0	8.712	3.658	621.434	.480%	97.412%
55.0	6.806	3.056	624.491	.401%	97.891%
60.0	5.534	2.627	627.117	.345%	98.303%
65.0	4.641	2.305	629.423	.303%	98.664%
70.0	4.163	2.144	631.567	.281%	99.000%
75.0	3.790	2.007	633.573	.263%	99.315%
80.0	3.354	1.810	635.384	.238%	99.598%
85.0	3.227	1.762	637.146	.231%	99.875%
90.0	2.918	0.800	637.946	.105%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	580.76	76.22%	91.04%
0-40	613.48	80.51%	96.16%
0-60	627.12	82.30%	98.30%
0-90	637.15	83.61%	99.87%
0-120	637.15	83.61%	99.87%
0-180	637.95	83.72%	100.00%
60-90	12.66	1.66%	1.98%
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	510.36	66.98%	80.00%

ZONAL LUMEN SUMMARY

0-10	224.13
10-20	217.19
20-30	139.45
30-40	32.72
40-50	7.96
50-60	5.68
60-70	4.45
70-80	3.82
80-90	1.76
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: ———

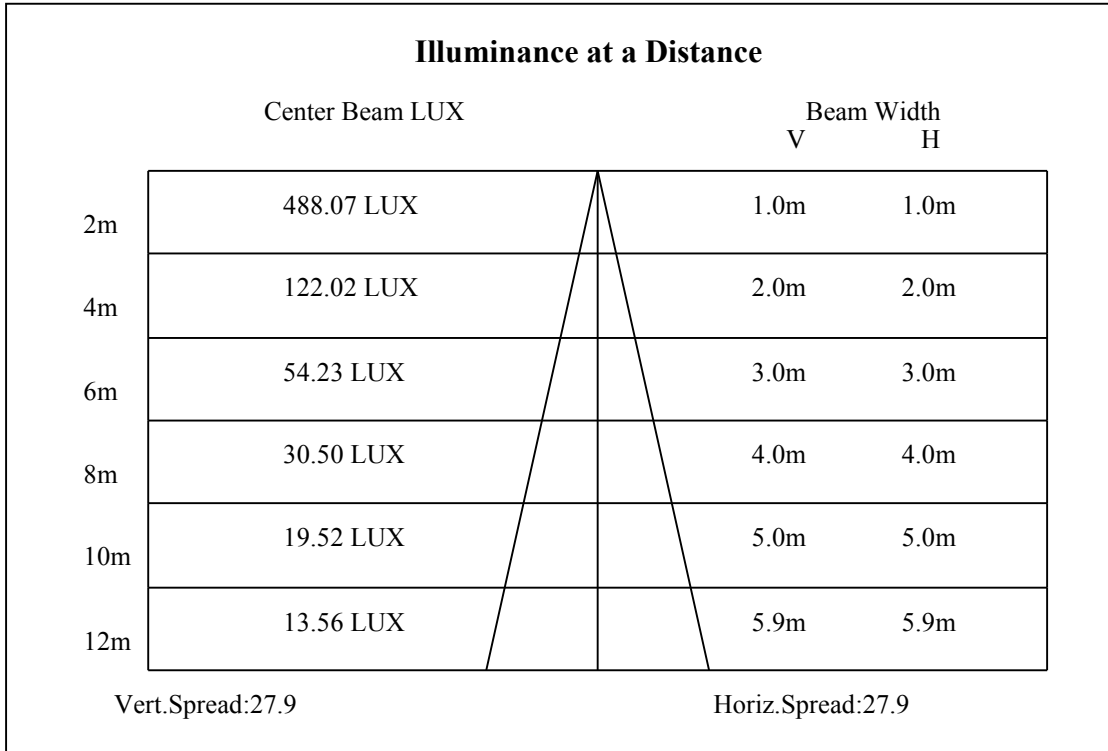
C90/C270: ———

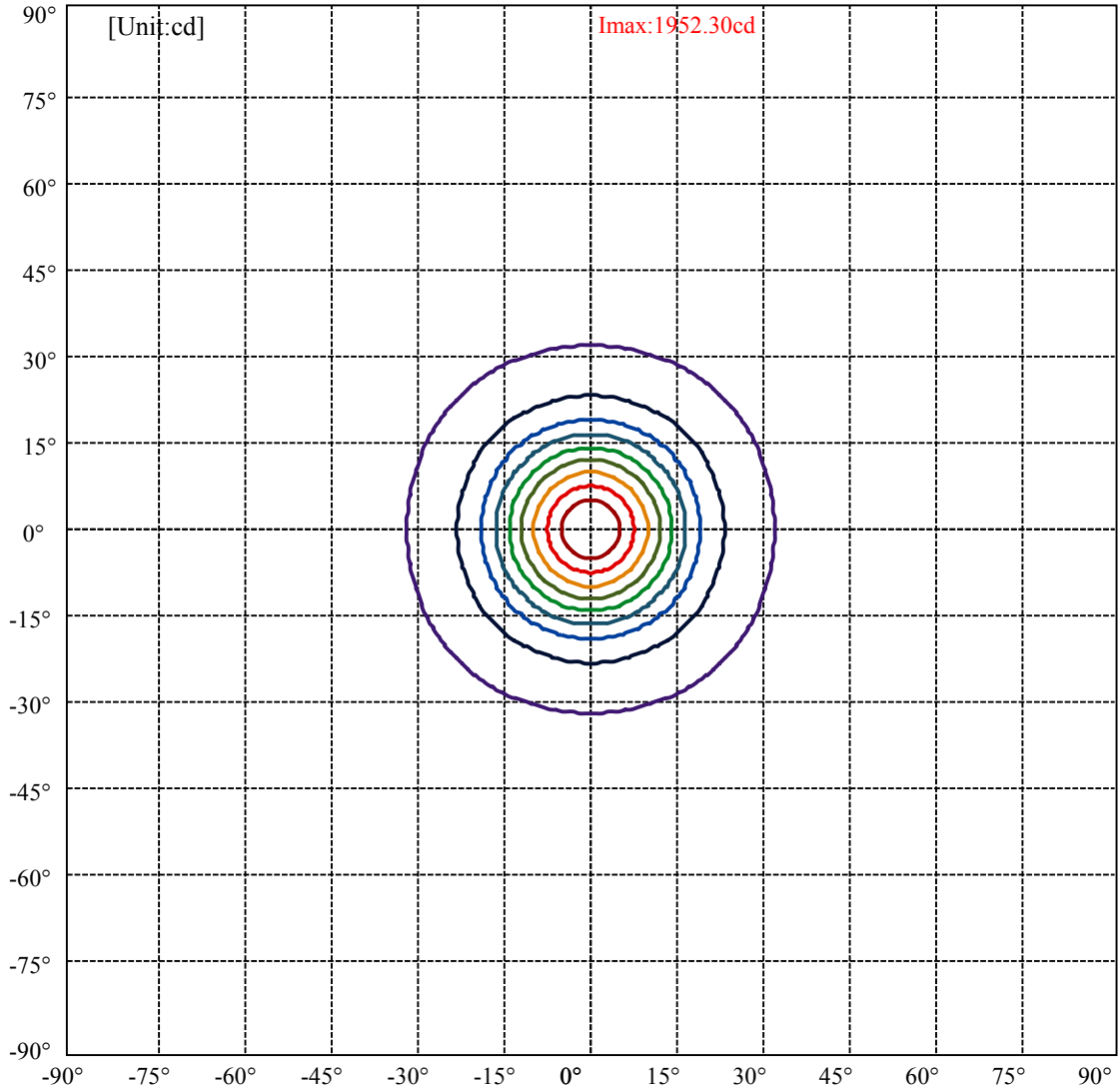
Field angle(10%Imax):C0/180Left:31.5 Right:31.5

:C90/270Left:31.5 Right:31.5

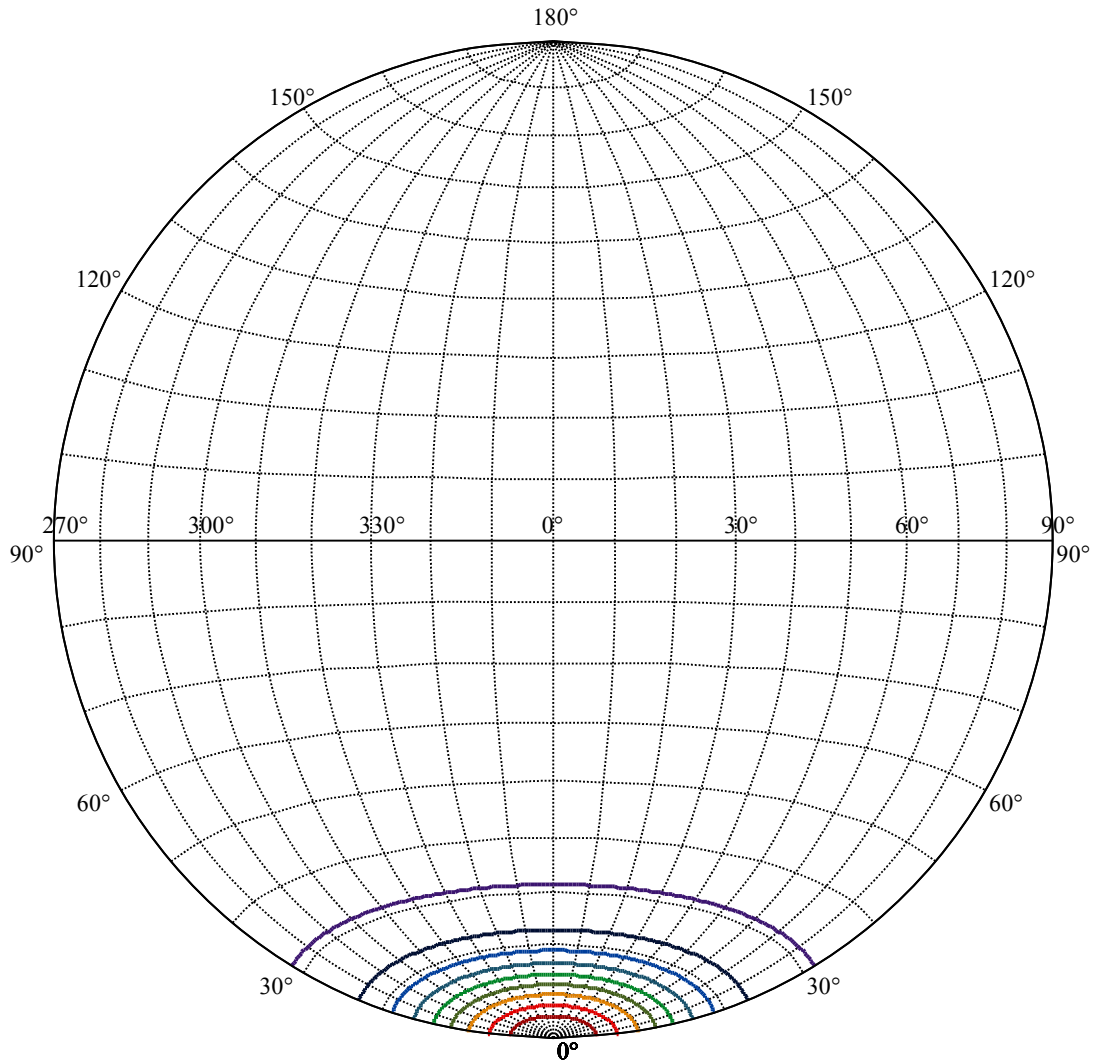
Beam Angle(50%Imax):C0/180Left:13.9 Right:13.9

:C90/270Left:13.9 Right:13.9





(10%Imax) 195.23	—
(20%Imax) 390.459	—
(30%Imax) 585.689	—
(40%Imax) 780.919	—
(50%Imax) 976.148	—
(60%Imax) 1171.38	—
(70%Imax) 1366.61	—
(80%Imax) 1561.84	—
(90%Imax) 1757.07	—



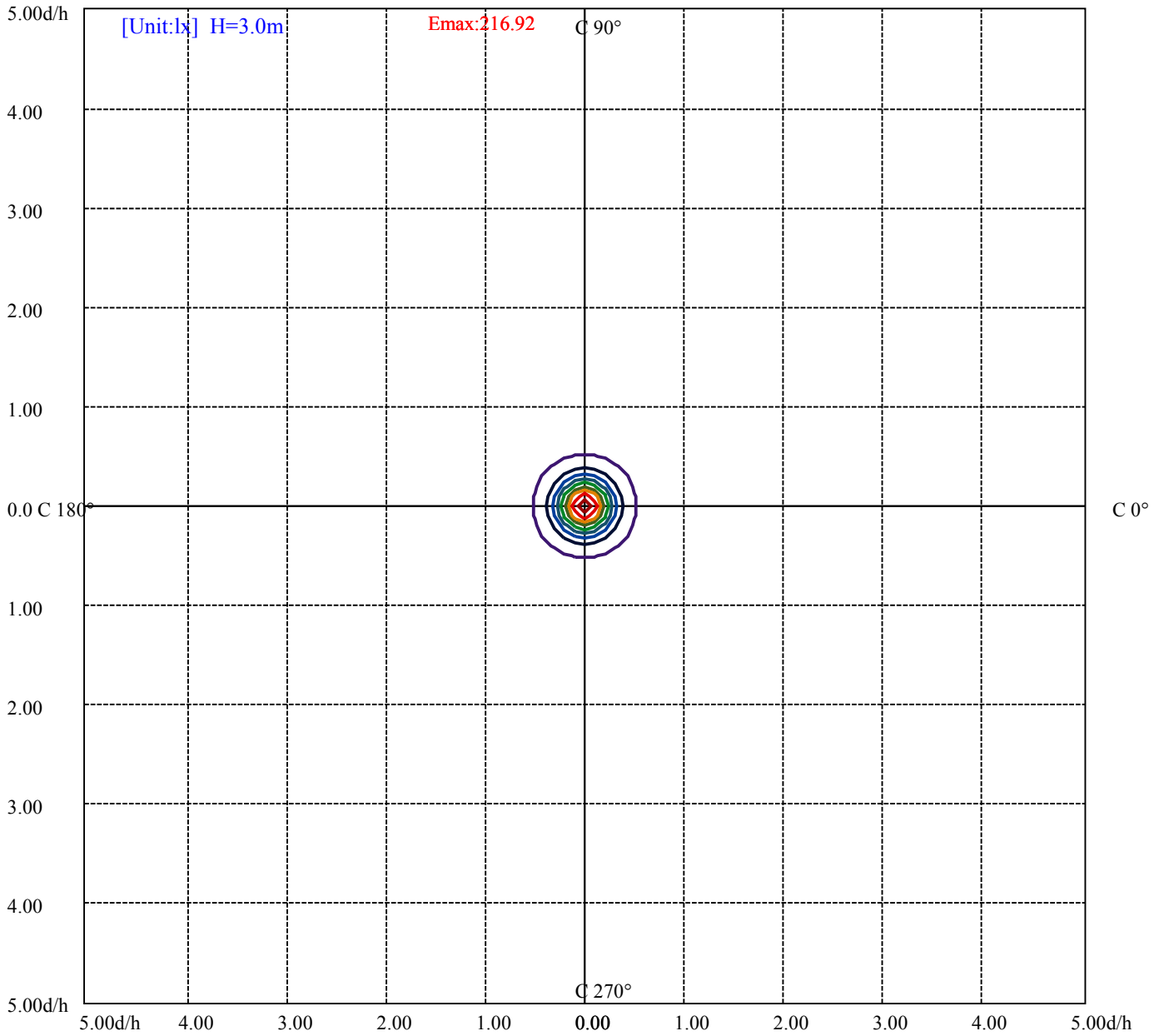
House

[Unit:cd]

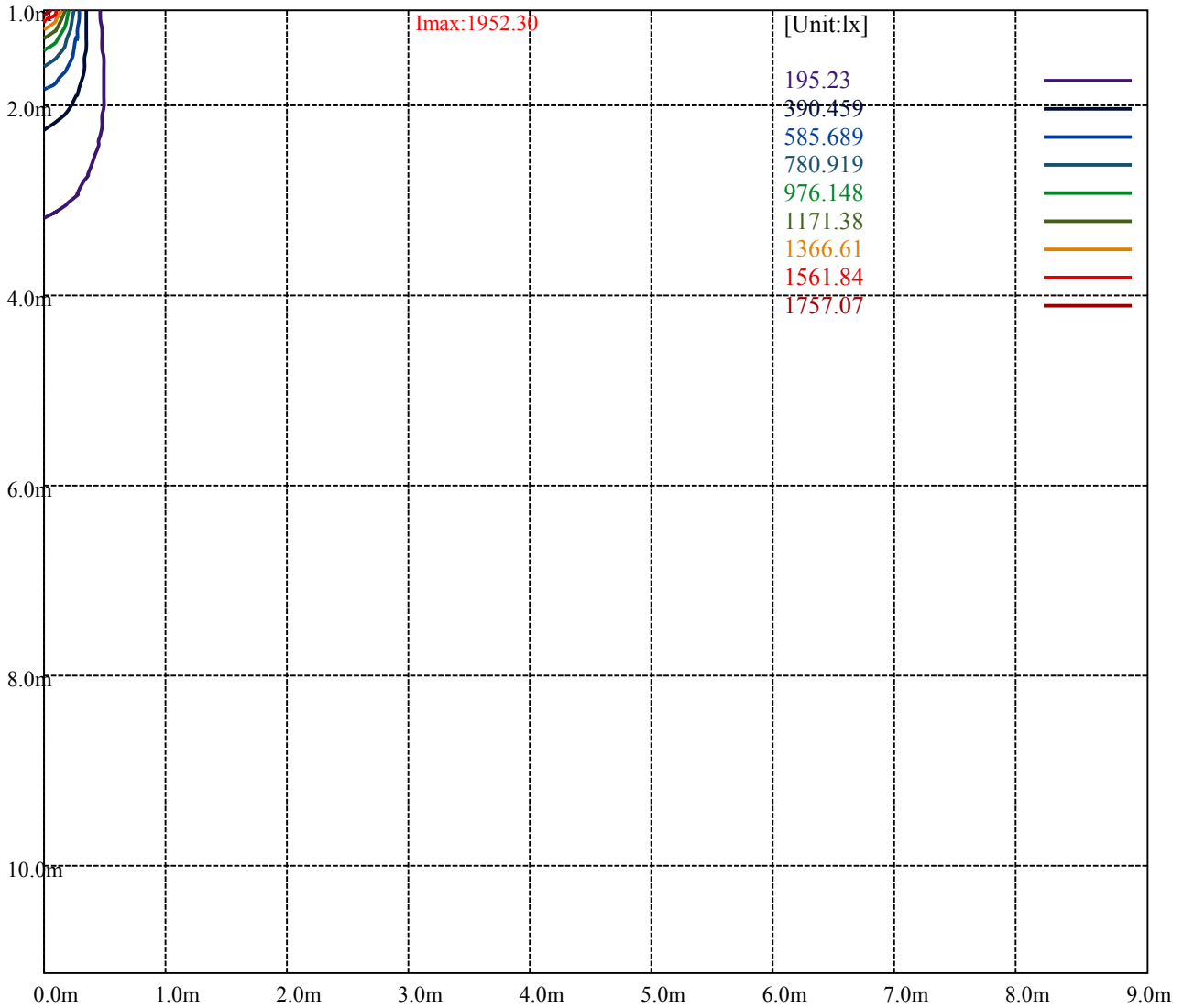
Road

Imax:1952.30

(10%Imax) 195.23	—
(20%Imax) 390.459	—
(30%Imax) 585.689	—
(40%Imax) 780.919	—
(50%Imax) 976.148	—
(60%Imax) 1171.38	—
(70%Imax) 1366.61	—
(80%Imax) 1561.84	—
(90%Imax) 1757.07	—



(10%Emax) 21.69211	—
(20%Emax) 43.38422	—
(30%Emax) 65.07633	—
(40%Emax) 86.76845	—
(50%Emax) 108.4607	—
(60%Emax) 130.1522	—
(70%Emax) 151.8444	—
(80%Emax) 173.5367	—
(90%Emax) 195.2289	—



Luminance Table

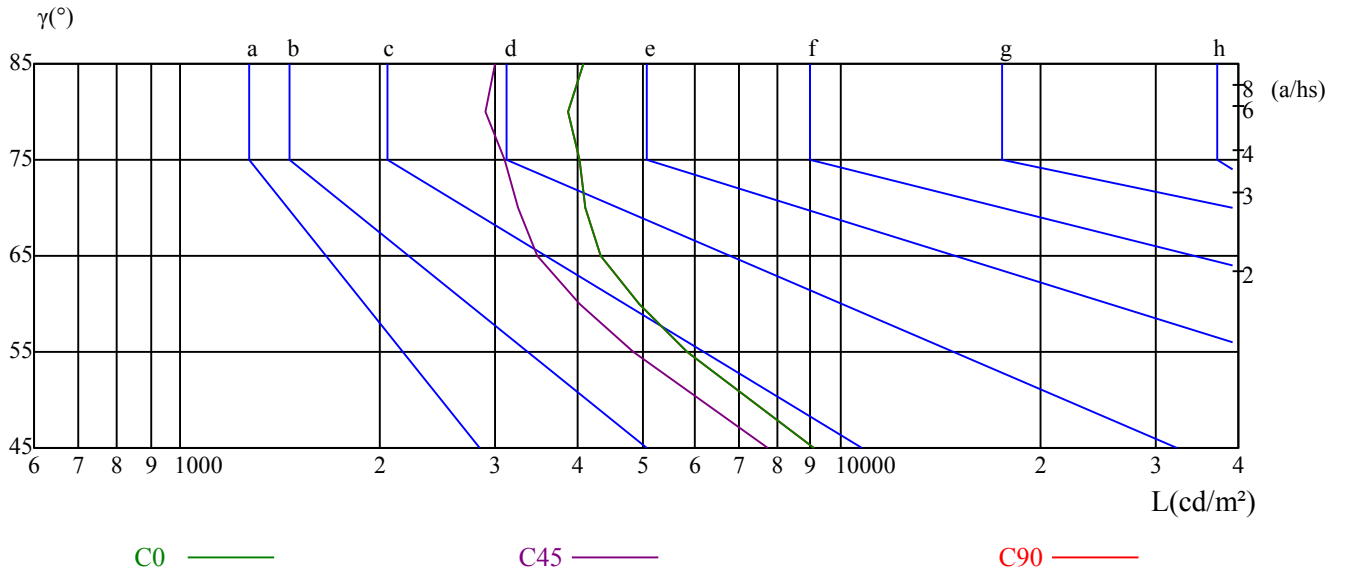
γ	45	50	55	60	65	70	75	80	85
C0	9075	7275	5847	4933	4334	4114	4010	3850	4082
C45	7764	6131	4852	4027	3476	3237	3089	2896	2985
C90	9075	7275	5847	4933	4334	4114	4010	3850	4082

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10723	10723	10723	14300	14300	14300	36162	36162	36162

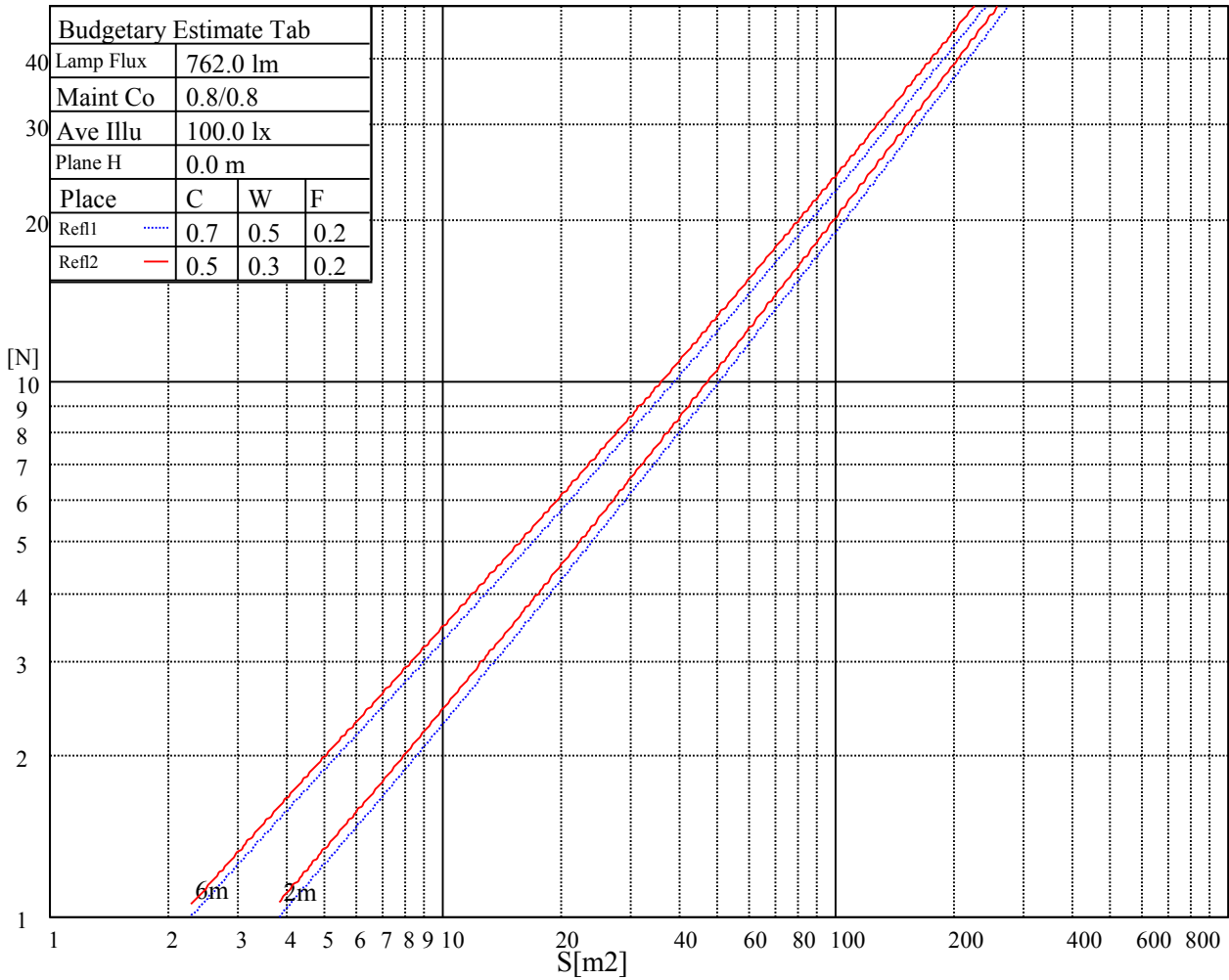
Glare Table

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

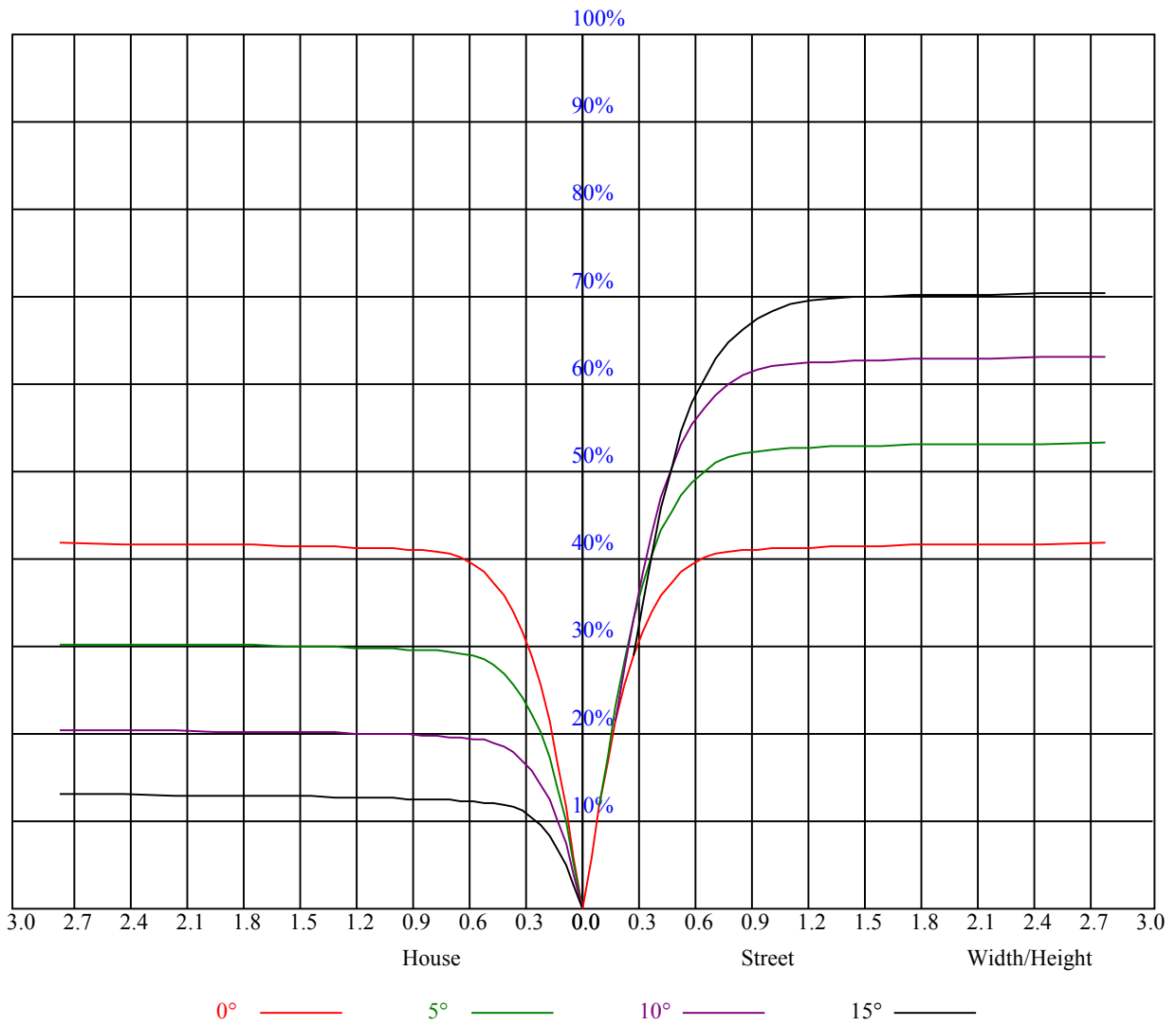
Luminance Limiting Curve



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	10.83	11.78	11.20	12.09	12.40	11.16	12.10	11.52	12.41	12.73
	3H	12.24	13.07	12.62	13.41	13.78	12.51	13.34	12.89	13.67	14.04
	4H	13.01	13.79	13.42	14.14	14.53	13.24	14.01	13.64	14.36	14.75
	6H	13.78	14.49	14.20	14.86	15.26	14.00	14.70	14.42	15.08	15.47
	8H	14.17	14.83	14.61	15.22	15.63	14.39	15.05	14.83	15.45	15.86
	12H	14.82	15.45	15.25	15.83	16.27	15.07	15.70	15.50	16.08	16.51
4H	2H	11.06	11.83	11.47	12.19	12.58	11.34	12.11	11.75	12.47	12.86
	3H	12.75	13.39	13.17	13.80	14.20	12.97	13.60	13.38	14.01	14.42
	4H	13.70	14.26	14.14	14.69	15.14	13.87	14.44	14.31	14.86	15.31
	6H	14.55	15.04	15.02	15.49	15.96	14.73	15.21	15.20	15.66	16.14
	8H	15.05	15.50	15.52	15.95	16.43	15.24	15.69	15.72	16.14	16.62
	12H	15.75	16.14	16.24	16.63	17.10	15.97	16.36	16.46	16.85	17.32
8H	4H	13.96	14.41	14.44	14.86	15.34	14.11	14.56	14.59	15.01	15.49
	6H	15.02	15.38	15.53	15.88	16.37	15.17	15.53	15.69	16.04	16.52
	8H	15.66	15.98	16.19	16.50	17.00	15.83	16.15	16.36	16.67	17.17
	12H	16.54	16.81	17.06	17.31	17.89	16.74	17.01	17.26	17.51	18.09
12H	4H	13.99	14.38	14.48	14.87	15.35	14.14	14.53	14.63	15.02	15.49
	6H	15.35	15.44	15.66	15.91	16.46	15.50	15.59	15.81	16.06	16.61
	8H	15.85	16.12	16.37	16.62	17.20	16.01	16.28	16.53	16.78	17.36
Variation with the observer position at spacings:											
S = 1.0H	5.3/-4.1					5.3/-4.1					
S = 1.5H	7.4/-3.4					7.4/-3.4					
S = 2.0H	8.8/-2.9					8.8/-2.9					
Standard tables:	BK2					BK2					
Uncorrected UGR	-1.6					-1.6					



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	1.01	1.01	1.01	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.85
1	0.93	0.91	0.89	0.92	0.90	0.88	0.88	0.86	0.85	0.85	0.84	0.82	0.82	0.81	0.80	0.78
2	0.88	0.85	0.82	0.87	0.84	0.82	0.84	0.82	0.80	0.82	0.80	0.78	0.79	0.78	0.76	0.75
3	0.84	0.80	0.77	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.76	0.74	0.77	0.75	0.73	0.72
4	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.75	0.72	0.70	0.69
5	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.68	0.72	0.70	0.68	0.67
6	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.68	0.65	0.64
7	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62
8	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
9	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.61	0.59	0.59
10	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.57



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	1949.06	1830.94	1433.25	923.06	518.06	327.38	262.46	109.35	17.94
45.0	1949.06	1767.94	1418.06	867.94	482.63	317.81	260.61	88.93	16.20
90.0	1945.13	1650.94	1122.08	734.51	422.44	272.87	201.43	36.28	15.30
135.0	1965.94	1703.81	1299.94	849.38	499.50	302.63	227.31	67.61	17.72
180.0	1949.06	1704.94	1227.38	829.86	487.24	315.06	251.55	57.71	17.61
225.0	1949.06	1731.38	1344.94	866.42	497.64	314.21	243.62	79.76	18.51
270.0	1945.13	1874.25	1505.25	1006.88	565.31	348.19	247.67	128.98	20.36
315.0	1965.94	1832.63	1430.44	919.86	499.50	308.93	256.67	104.74	18.34
360.0	1949.06	1830.94	1433.25	923.06	518.06	327.38	262.46	109.35	17.94
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	10.69	8.38	6.64	5.40	4.61	4.11	3.77	3.49	3.38
45.0	10.01	7.99	6.36	5.29	4.50	3.99	3.77	3.32	3.21
90.0	10.01	7.71	6.08	5.06	4.44	4.11	3.71	3.26	3.21
135.0	11.48	9.23	6.98	5.74	4.73	4.28	3.83	3.38	3.15
180.0	11.70	9.56	7.71	6.19	4.95	4.44	3.88	3.43	3.38
225.0	11.81	9.28	7.14	5.79	4.73	4.16	3.77	3.32	3.26
270.0	12.15	9.28	7.20	5.63	4.73	4.22	3.88	3.38	3.15
315.0	10.86	8.27	6.36	5.18	4.44	3.99	3.71	3.26	3.09
360.0	10.69	8.38	6.64	5.40	4.61	4.11	3.77	3.49	3.38
C/ γ (°)	90.0								
0.0	2.87								
45.0	2.81								
90.0	2.81								
135.0	2.98								
180.0	3.15								
225.0	3.04								
270.0	2.81								
315.0	2.87								
360.0	2.87								