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## Nata

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LumCAT: 2-1742-M	
Luminaire: 92.70.136.00	
Report No: NATA0100	Voltage(V): 51.2500
Test No: NT2017071305	Current(A): 0.8000
LampCAT: CITIZEN CLU044	Power (W): 41.0000
Lamp flux(lm): 5855.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 5155.94  
Efficiency(%): 88.06%  
Lumens(lm)/Power(W): 126.99  
Central intensity(cd): 9309.747  
Maximum intensity(cd): 9309.747  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=42.0  
                                  [C90/270]Total=42.0  
Field angle(10%Imax): [C0/180]Total=73.1  
                                  [C90/270]Total=73.1  
Maximum s/h(1/2): C0\_180=0.68 C90\_270=0.68  
Maximum s/h(1/4): C0\_180=0.66 C90\_270=0.66  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 88.93%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.815%

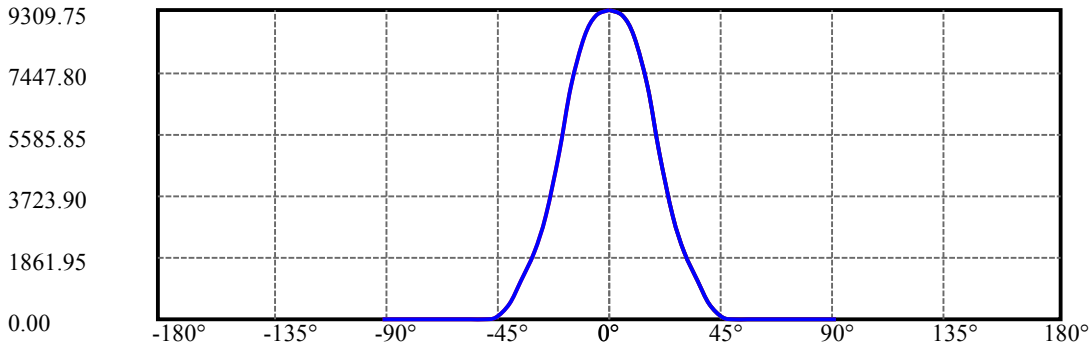
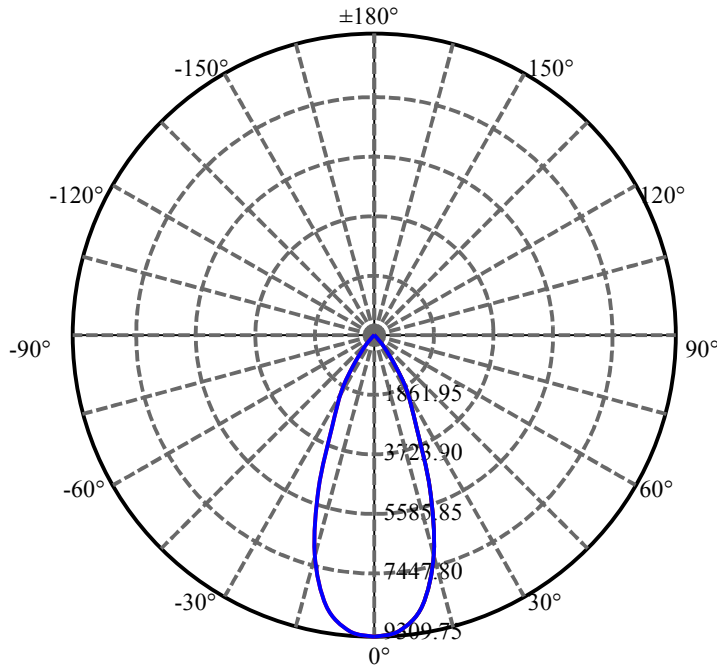
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9309.747	55.674	55.674	.951%	1.080%
5.0	9161.784	437.689	493.363	7.475%	9.569%
10.0	8482.278	807.369	1300.732	13.789%	25.228%
15.0	6993.110	992.101	2292.833	16.945%	44.470%
20.0	5040.226	944.912	3237.745	16.139%	62.796%
25.0	3118.855	722.492	3960.237	12.340%	76.809%
30.0	2009.092	550.629	4510.866	9.404%	87.489%
35.0	1132.649	356.103	4866.969	6.082%	94.395%
40.0	473.581	166.860	5033.829	2.850%	97.632%
45.0	69.690	27.011	5060.84	.461%	98.156%
50.0	25.405	10.667	5071.508	.182%	98.362%
55.0	23.617	10.604	5082.112	.181%	98.568%
60.0	22.796	10.821	5092.933	.185%	98.778%
65.0	22.268	11.062	5103.996	.189%	98.993%
70.0	21.920	11.290	5115.286	.193%	99.212%
75.0	21.697	11.488	5126.774	.196%	99.434%
80.0	21.537	11.626	5138.4	.199%	99.660%
85.0	21.447	11.711	5150.111	.200%	99.887%
90.0	21.259	5.826	5155.937	.100%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	4510.87	77.04%	87.49%
0-40	5033.83	85.97%	97.63%
0-60	5092.93	86.98%	98.78%
0-90	5150.11	87.96%	99.89%
0-120	5150.11	87.96%	99.89%
0-180	5155.94	88.06%	100.00%
60-90	68.00	1.16%	1.32%
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%
0-26.49	4124.75	70.45%	80.00%

ZONAL LUMEN SUMMARY

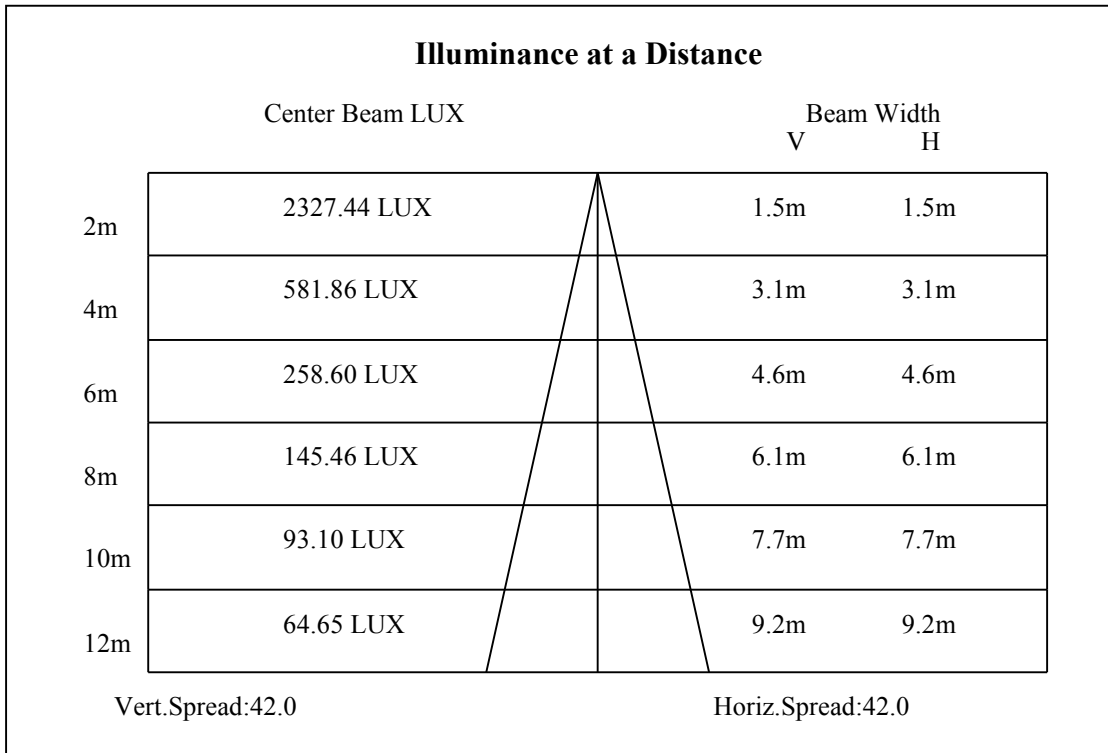
0-10	1300.73
10-20	1937.01
20-30	1273.12
30-40	522.96
40-50	37.68
50-60	21.43
60-70	22.35
70-80	23.11
80-90	11.71
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

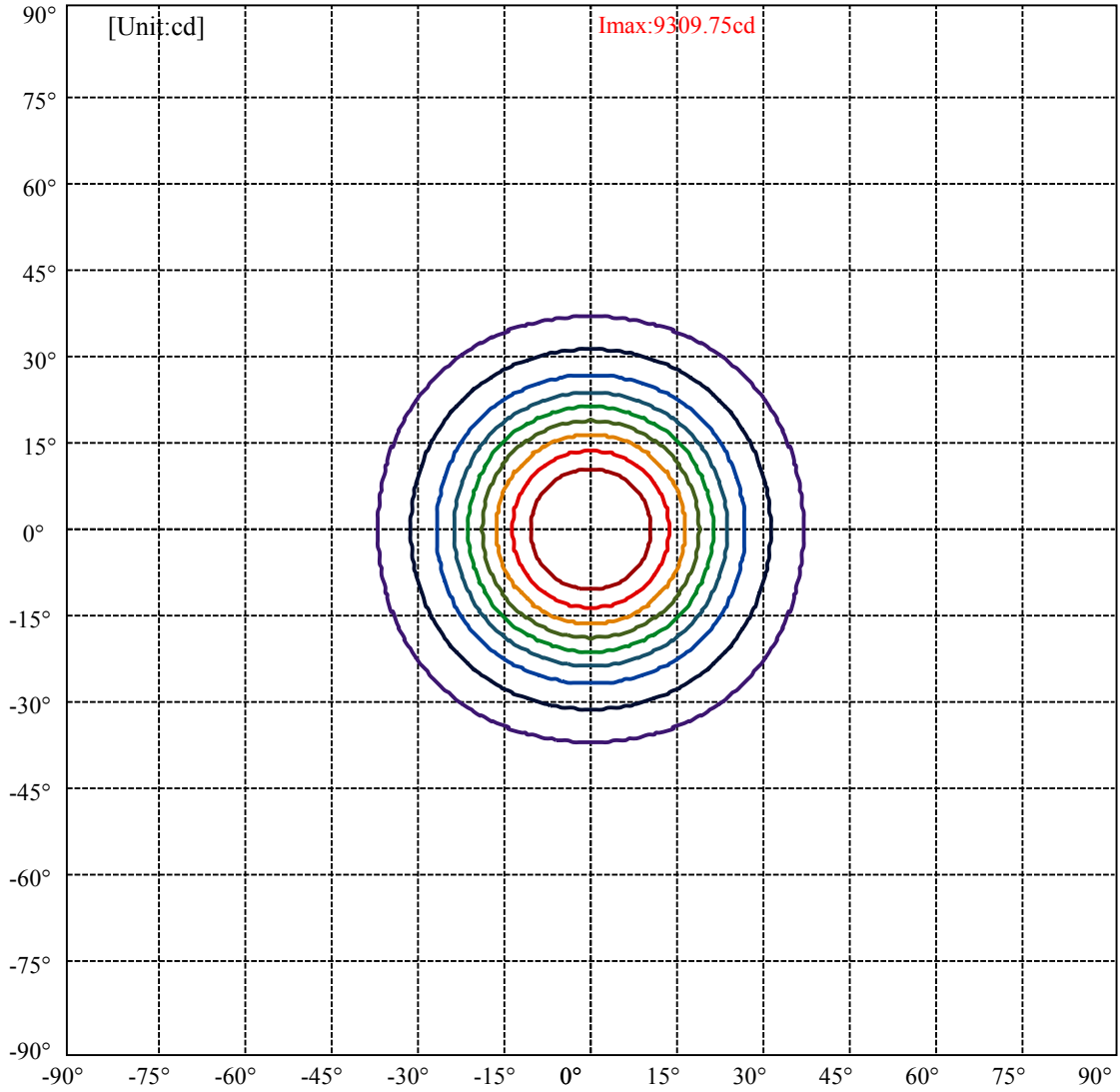


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

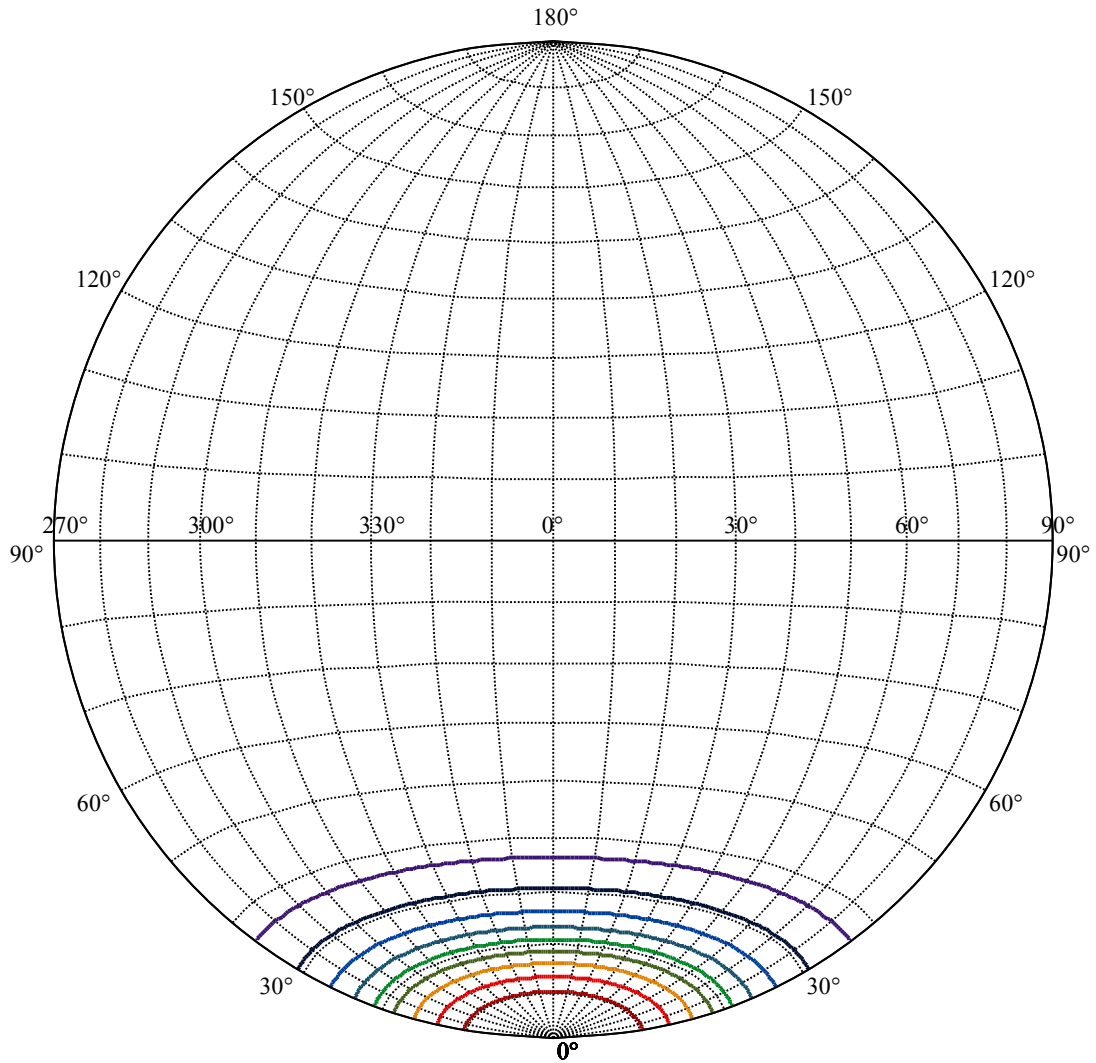
Field angle(10%Imax):C0/180Left:36.5 Right:36.5  
:C90/270Left:36.5 Right:36.5

Beam Angle(50%Imax):C0/180Left:21.0 Right:21.0  
:C90/270Left:21.0 Right:21.0





(10%Imax) 930.975	—
(20%Imax) 1861.95	—
(30%Imax) 2792.92	—
(40%Imax) 3723.9	—
(50%Imax) 4654.87	—
(60%Imax) 5585.85	—
(70%Imax) 6516.82	—
(80%Imax) 7447.8	—
(90%Imax) 8378.77	—



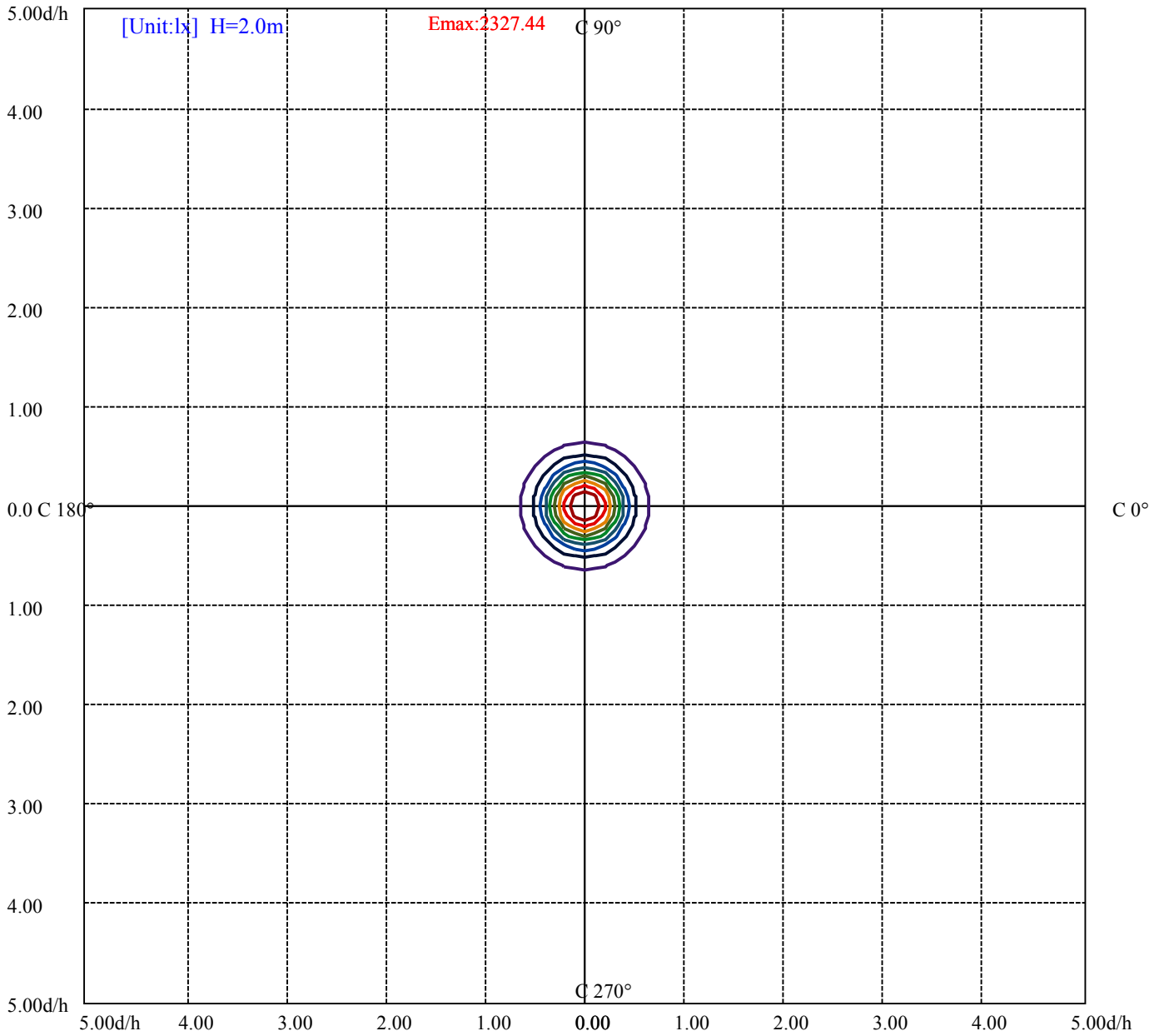
House

[Unit:cd]

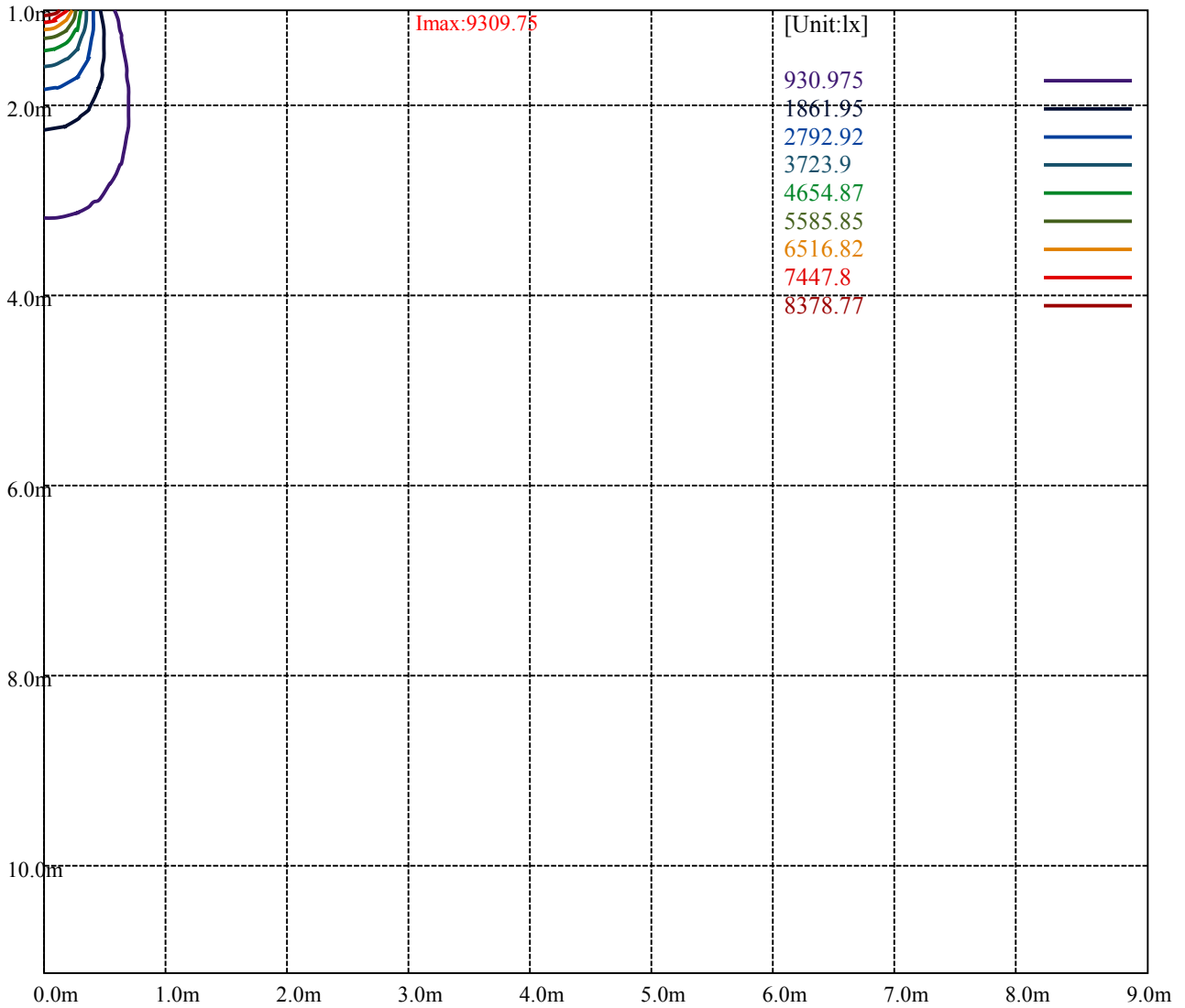
Road

Imax:9309.75

(10%Imax) 930.975	—
(20%Imax) 1861.95	—
(30%Imax) 2792.92	—
(40%Imax) 3723.9	—
(50%Imax) 4654.87	—
(60%Imax) 5585.85	—
(70%Imax) 6516.82	—
(80%Imax) 7447.8	—
(90%Imax) 8378.77	—







Luminance Table

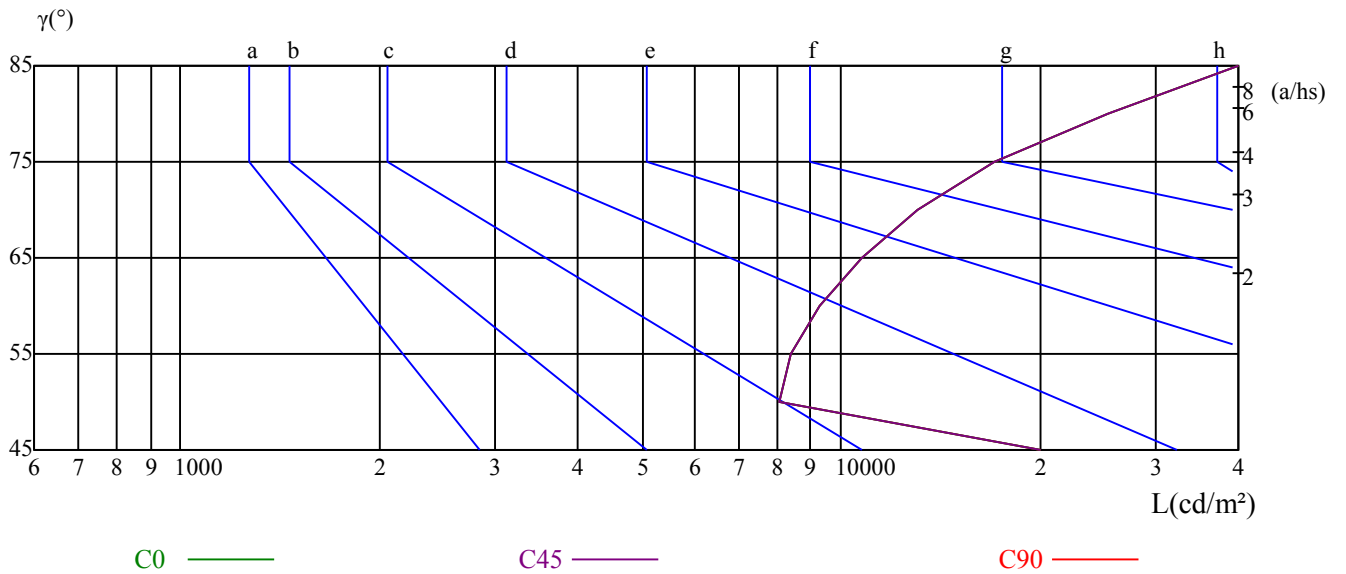
$\gamma$	45	50	55	60	65	70	75	80	85
C0	20114	8066	8403	9305	10753	13079	17108	25312	50219
C45	20114	8066	8403	9305	10753	13079	17108	25312	50219
C90	20114	8066	8403	9305	10753	13079	17108	25312	50219

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10753	10753	10753	17108	17108	17108	50219	50219	50219

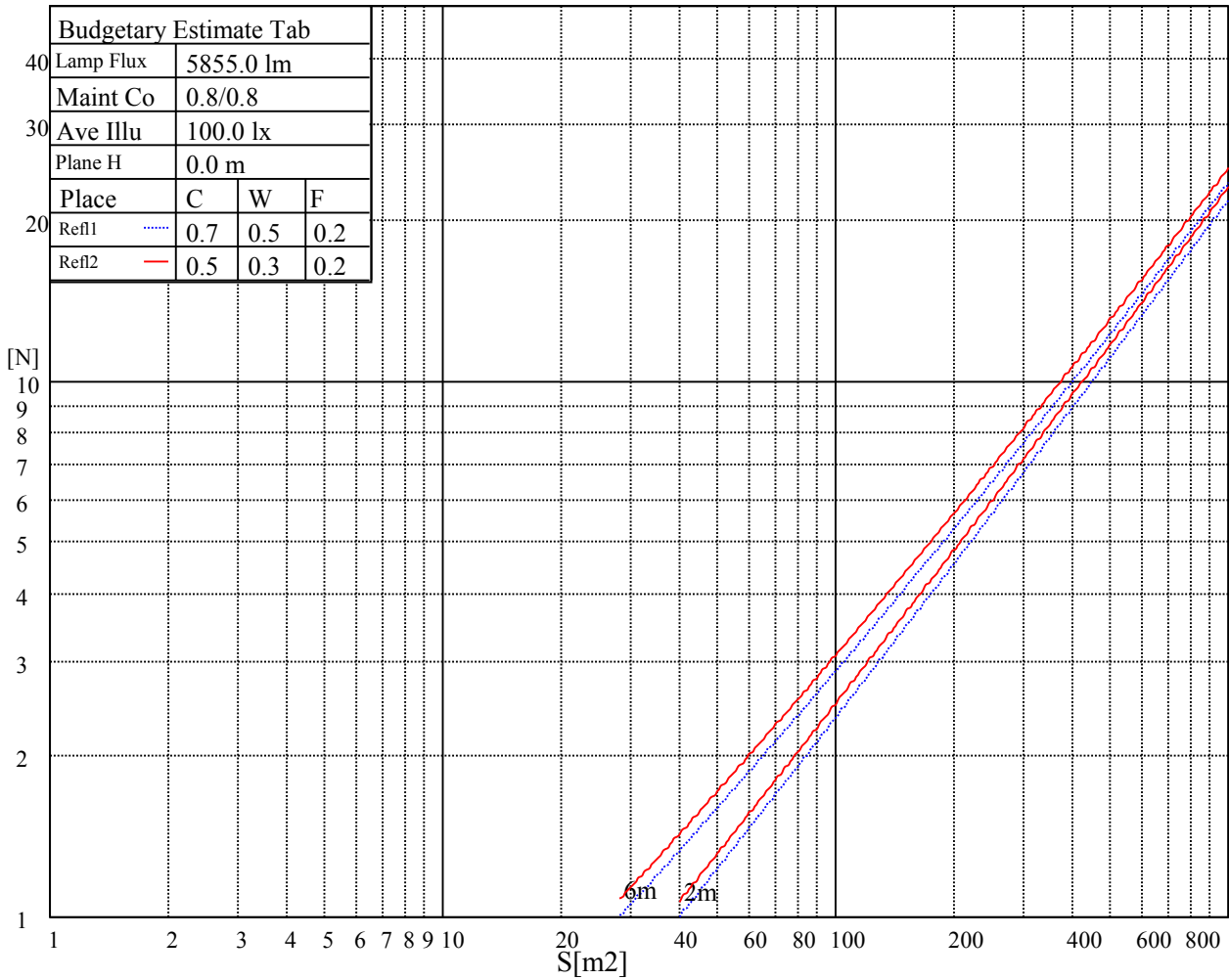
Glare Table

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

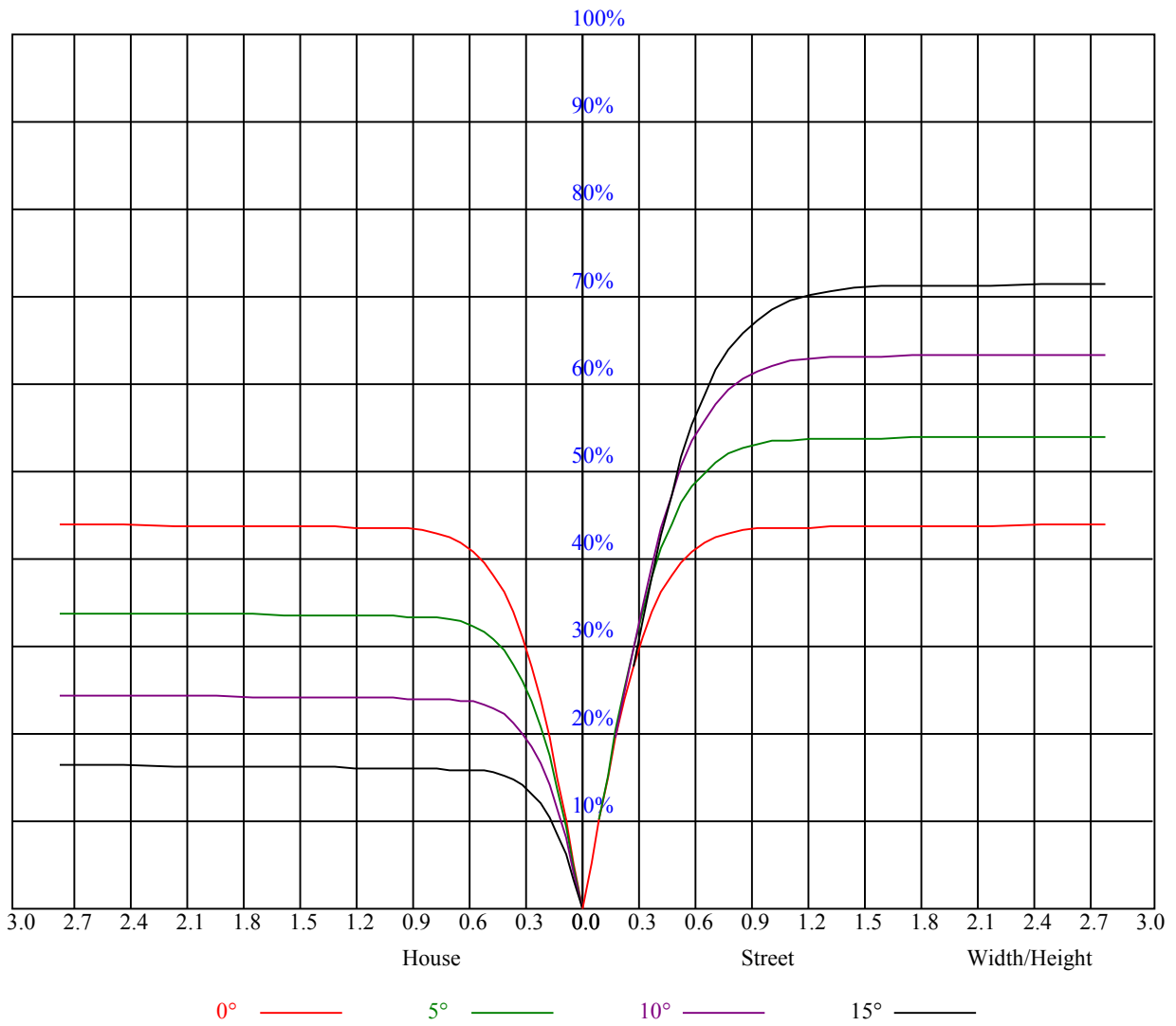
Luminance Limiting Curve



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	2.41	3.33	2.78	3.64	3.96	2.51	3.43	2.87	3.74	4.05
	3H	5.70	6.51	6.08	6.85	7.22	5.77	6.58	6.15	6.91	7.28
	4H	7.49	8.24	7.90	8.60	8.99	7.54	8.29	7.95	8.65	9.04
	6H	9.51	10.19	9.93	10.57	10.97	9.55	10.23	9.97	10.61	11.01
	8H	10.62	11.26	11.05	11.65	12.06	10.65	11.29	11.09	11.69	12.10
	12H	12.41	13.02	12.84	13.41	13.84	12.43	13.05	12.87	13.43	13.86
4H	2H	3.36	4.11	3.77	4.46	4.85	3.42	4.17	3.83	4.53	4.92
	3H	6.87	7.49	7.29	7.90	8.31	6.92	7.53	7.34	7.95	8.35
	4H	8.83	9.38	9.27	9.80	10.25	8.86	9.41	9.30	9.84	10.29
	6H	11.00	11.47	11.47	11.92	12.39	11.02	11.49	11.49	11.94	12.42
	8H	12.20	12.64	12.68	13.09	13.57	12.23	12.67	12.71	13.12	13.59
8H	12H	13.89	14.27	14.38	14.76	15.23	13.91	14.28	14.40	14.77	15.25
	4H	9.57	10.01	10.05	10.46	10.94	9.60	10.03	10.07	10.49	10.96
	6H	12.01	12.36	12.52	12.86	13.35	12.03	12.38	12.54	12.88	13.37
	8H	13.41	13.72	13.94	14.24	14.74	13.43	13.73	13.96	14.26	14.75
12H	12H	15.22	15.49	15.75	15.98	16.57	15.24	15.50	15.76	16.00	16.58
	4H	9.79	10.16	10.28	10.65	11.13	9.81	10.19	10.30	10.68	11.15
	6H	12.54	12.64	12.87	13.12	13.67	12.56	12.66	12.89	13.13	13.68
8H	13.86	14.13	14.39	14.63	15.21	13.88	14.14	14.40	14.64	15.22	
Variation with the observer position at spacings:											
S = 1.0H	5.1/-7.7					5.1/-7.7					
S = 1.5H	7.3/-5.8					7.3/-5.8					
S = 2.0H	8.7/-4.4					8.7/-4.4					
Standard tables:	BK2					BK2					
Uncorrected UGR	4.4					4.4					



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	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.98	0.96	0.94	0.96	0.94	0.92	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.83
2	0.93	0.89	0.86	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.83	0.82	0.80	0.79
3	0.88	0.84	0.81	0.87	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.76	0.75
4	0.83	0.79	0.76	0.82	0.79	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
6	0.76	0.72	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
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.60
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	0.61	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	0.62	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	9297.71	9207.56	8740.08	7508.51	5683.14	3597.32	2313.99	1331.19	593.25
45.0	9324.98	9212.57	8689.44	7295.92	5363.14	3276.77	2118.10	1182.04	498.08
90.0	9312.74	9131.87	8298.21	6827.34	4803.29	2894.44	1926.10	1077.30	437.87
135.0	9301.61	9195.87	8557.55	6999.86	5121.06	3122.05	2006.80	1228.23	517.00
180.0	9297.71	9092.91	8272.61	6600.28	4408.16	2808.74	1751.36	898.66	314.49
225.0	9324.98	9156.91	8460.71	6879.65	4882.31	3039.69	1932.22	1045.42	411.21
270.0	9312.74	9171.38	8551.98	7160.69	5137.76	3225.57	2085.27	1218.77	564.31
315.0	9305.50	9125.19	8287.64	6672.63	4922.94	2986.26	1938.90	1079.59	452.45
360.0	9297.71	9207.56	8740.08	7508.51	5683.14	3597.32	2313.99	1331.19	593.25

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	180.42	27.99	24.21	23.26	22.54	22.15	21.87	21.70	21.48
45.0	63.50	25.43	23.93	23.10	22.54	22.15	21.82	21.65	21.54
90.0	50.70	24.54	23.21	22.59	22.09	21.82	21.65	21.54	21.43
135.0	57.43	25.21	23.43	22.59	22.15	21.82	21.59	21.43	21.31
180.0	37.62	24.71	23.60	22.76	22.32	21.93	21.70	21.59	21.43
225.0	45.13	25.32	23.71	22.87	22.37	21.93	21.76	21.54	21.48
270.0	70.18	25.15	23.60	22.65	22.15	21.82	21.65	21.48	21.48
315.0	52.54	24.88	23.26	22.54	21.98	21.76	21.54	21.37	21.43
360.0	180.42	27.99	24.21	23.26	22.54	22.15	21.87	21.70	21.48

C/γ(°)	90.0
0.0	21.20
45.0	21.37
90.0	21.26
135.0	21.20
180.0	21.20
225.0	21.37
270.0	21.26
315.0	21.20
360.0	21.20