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NATA

LumCAT: 2-1259-N
Luminaire: 92.70.074.00+92.70.059.00
Report No: NATA0100 Voltage(V): 37.0000
Test No: GC2019012604 Current(A): 0.6000
LampCAT: CREE CXA1816 Power (W): 22.2000
Lamp flux(lm): 2071.0 PF: 0.0000
Number of Lamps: 1 Ballast type: DC
Length(mm): 70 Width(mm): 70
Phm Type: C Height(mm): 0

Photometric Results

Lumens(lm): 1525.05
Efficiency(%): 73.64%
Lumens(lm)/Power(W): 69.50
Central intensity(cd): 3239.859
Maximum intensity(cd): 3239.859
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=35.7
 [C90/270]Total=35.7
Field angle(10%Imax): [C0/180]Total=65.5
 [C90/270]Total=65.5
Maximum s/h(1/2): C0_180=0.60 C90_270=0.60
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(%): 74.50%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.352%

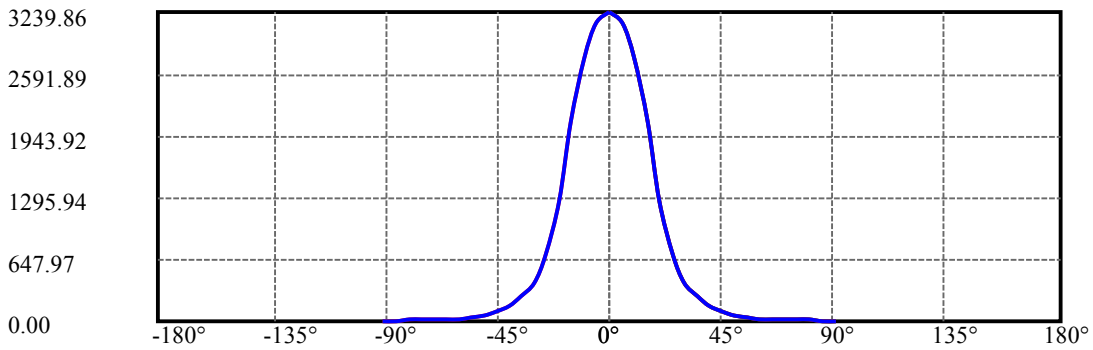
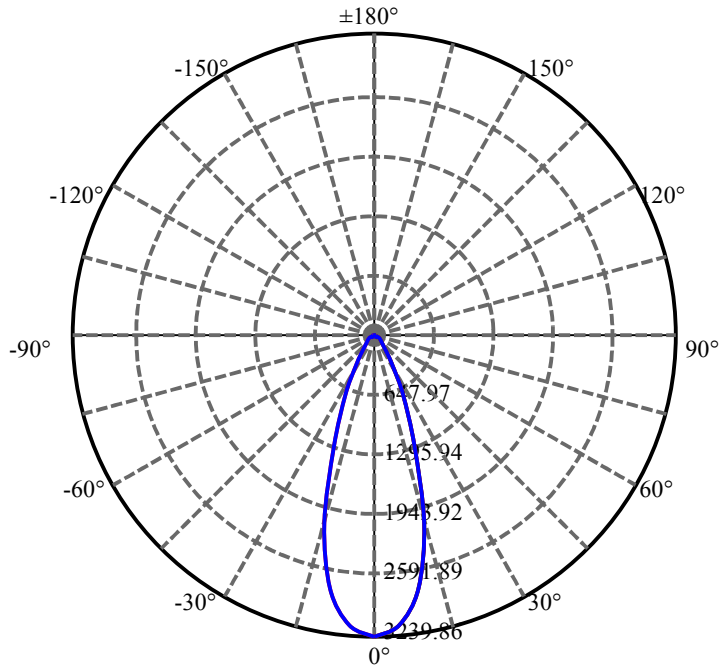
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3239.859	19.375	19.375	.936%	1.270%
5.0	3128.273	149.448	168.823	7.216%	11.070%
10.0	2758.359	262.549	431.372	12.677%	28.286%
15.0	2088.703	296.321	727.693	14.308%	47.716%
20.0	1269.281	237.957	965.65	11.490%	63.319%
25.0	710.599	164.612	1130.263	7.948%	74.113%
30.0	398.419	109.194	1239.457	5.273%	81.273%
35.0	262.758	82.611	1322.067	3.989%	86.690%
40.0	170.508	60.076	1382.144	2.901%	90.629%
45.0	106.404	41.241	1423.385	1.991%	93.333%
50.0	69.237	29.072	1452.457	1.404%	95.240%
55.0	44.501	19.981	1472.438	.965%	96.550%
60.0	30.016	14.249	1486.687	.688%	97.484%
65.0	20.813	10.339	1497.026	.499%	98.162%
70.0	16.973	8.743	1505.769	.422%	98.735%
75.0	13.704	7.256	1513.025	.350%	99.211%
80.0	10.842	5.853	1518.877	.283%	99.595%
85.0	8.093	4.419	1523.297	.213%	99.885%
90.0	6.413	1.757	1525.054	.085%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1239.46	59.85%	81.27%
0-40	1382.14	66.74%	90.63%
0-60	1486.69	71.79%	97.48%
0-90	1523.30	73.55%	99.88%
0-120	1523.30	73.55%	99.88%
0-180	1525.05	73.64%	100.00%
60-90	50.86	2.46%	3.33%
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%
0-29.11	1220.04	58.91%	80.00%

ZONAL LUMEN SUMMARY

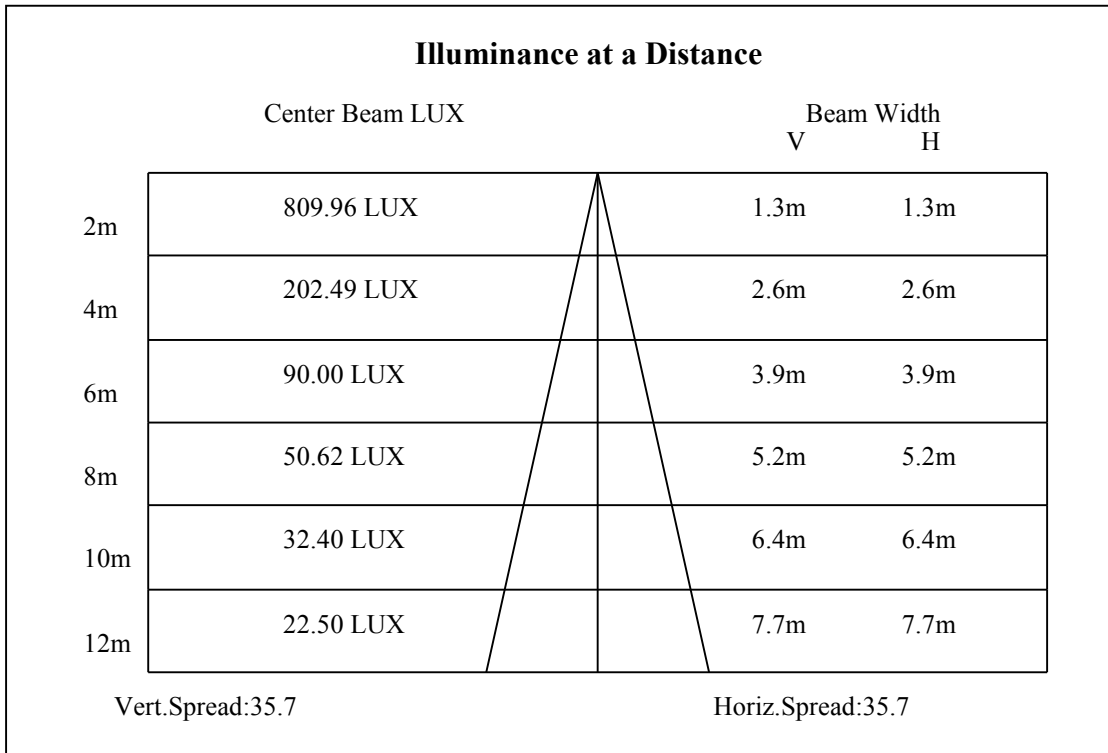
0-10	431.37
10-20	534.28
20-30	273.81
30-40	142.69
40-50	70.31
50-60	34.23
60-70	19.08
70-80	13.11
80-90	4.42
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

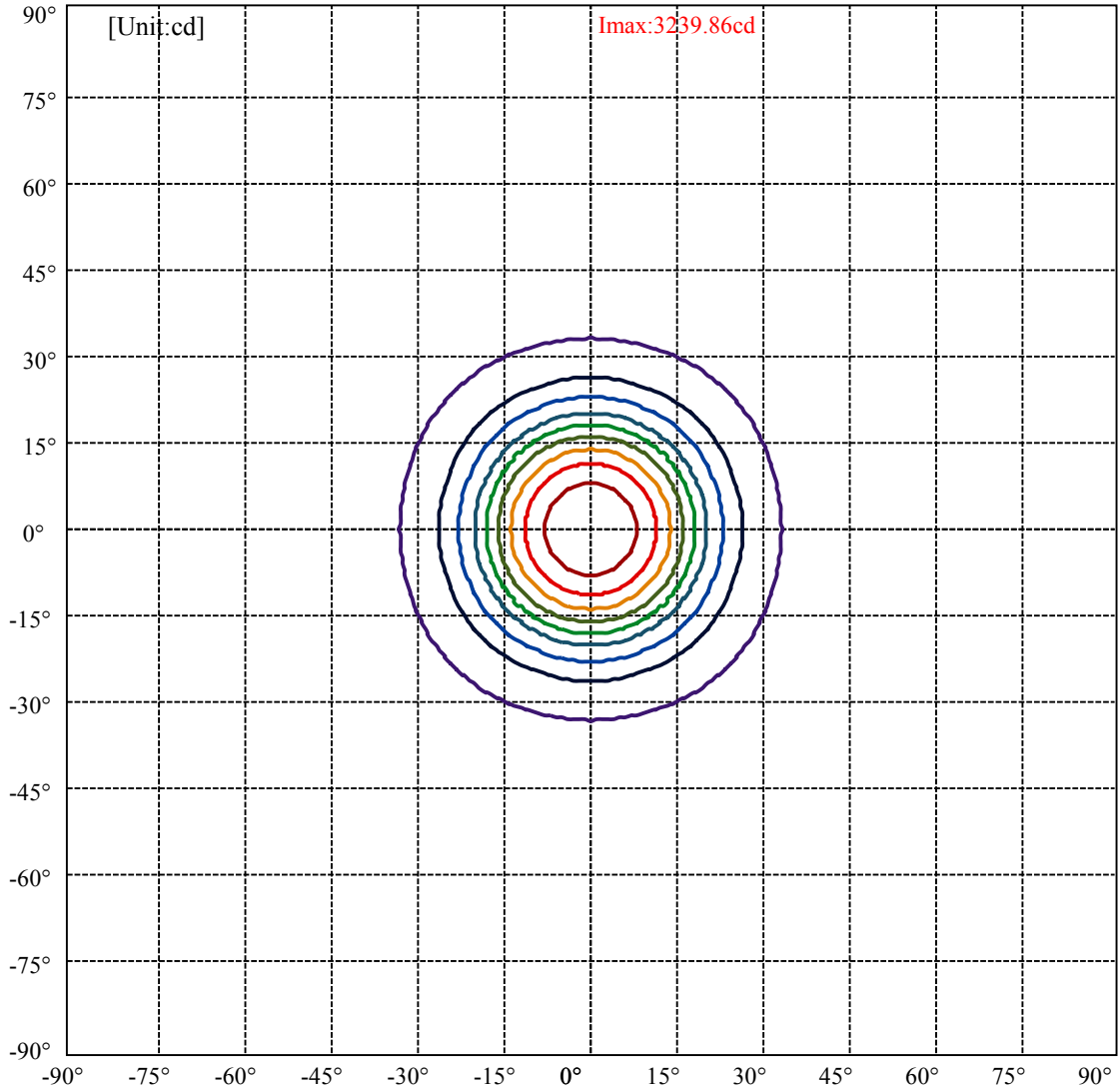


C0(Max): —————
C0/C180: —————
C90/C270: —————

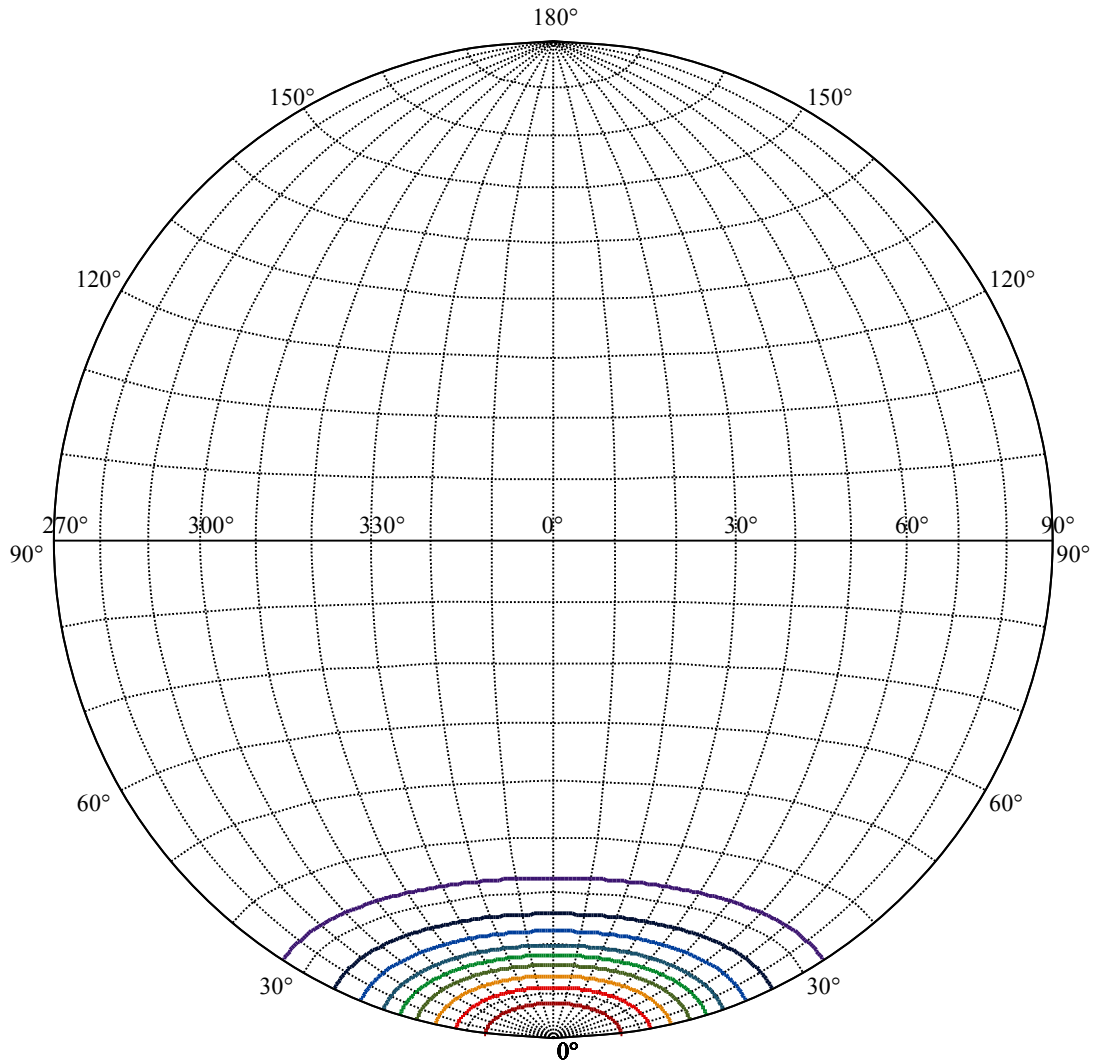
Field angle(10%Imax):C0/180Left:32.7 Right:32.7
:C90/270Left:32.7 Right:32.7

Beam Angle(50%Imax):C0/180Left:17.9 Right:17.9
:C90/270Left:17.9 Right:17.9





(10%Imax) 323.986	—
(20%Imax) 647.972	—
(30%Imax) 971.958	—
(40%Imax) 1295.94	—
(50%Imax) 1619.93	—
(60%Imax) 1943.92	—
(70%Imax) 2267.9	—
(80%Imax) 2591.89	—
(90%Imax) 2915.87	—



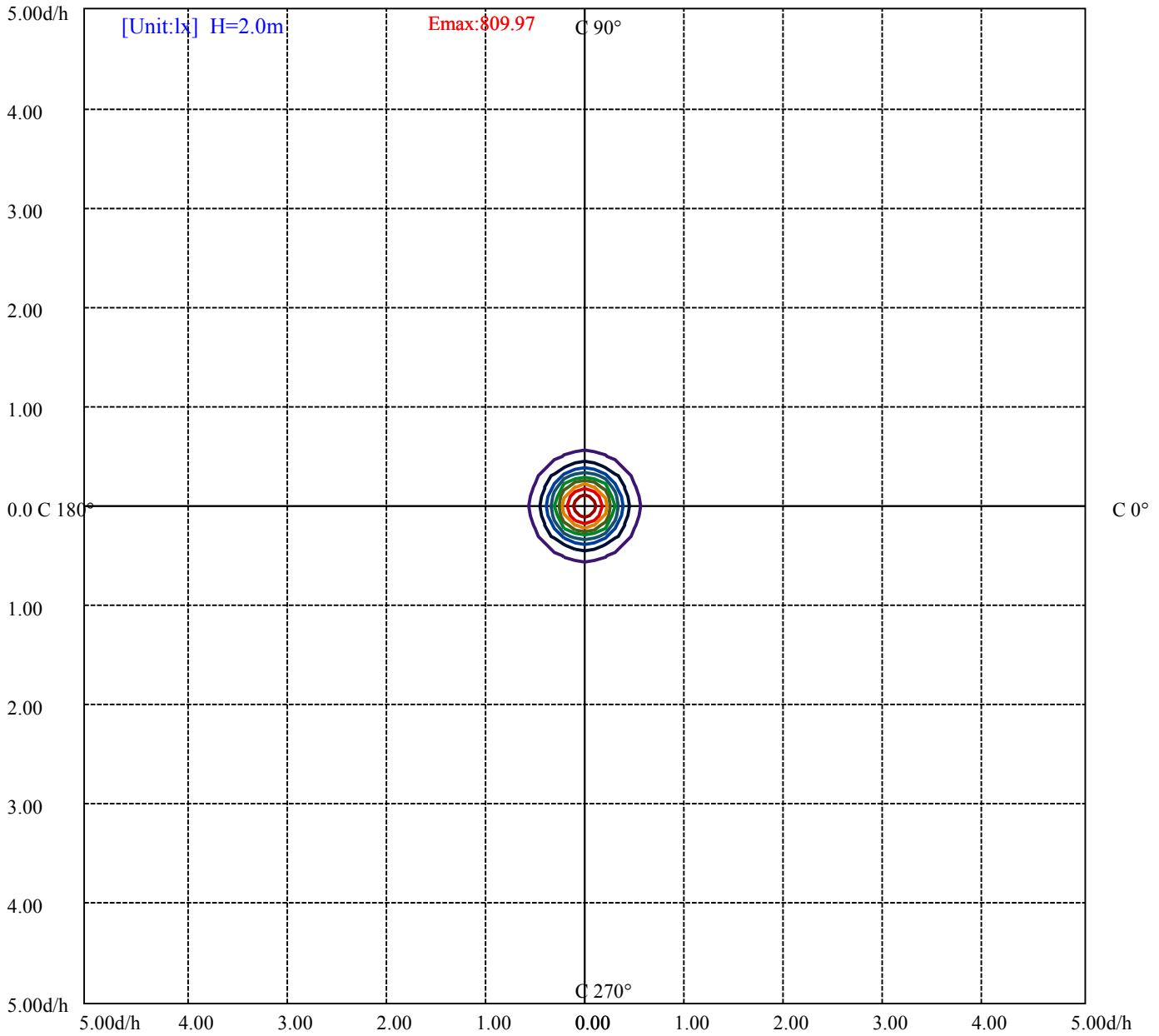
House

[Unit:cd]

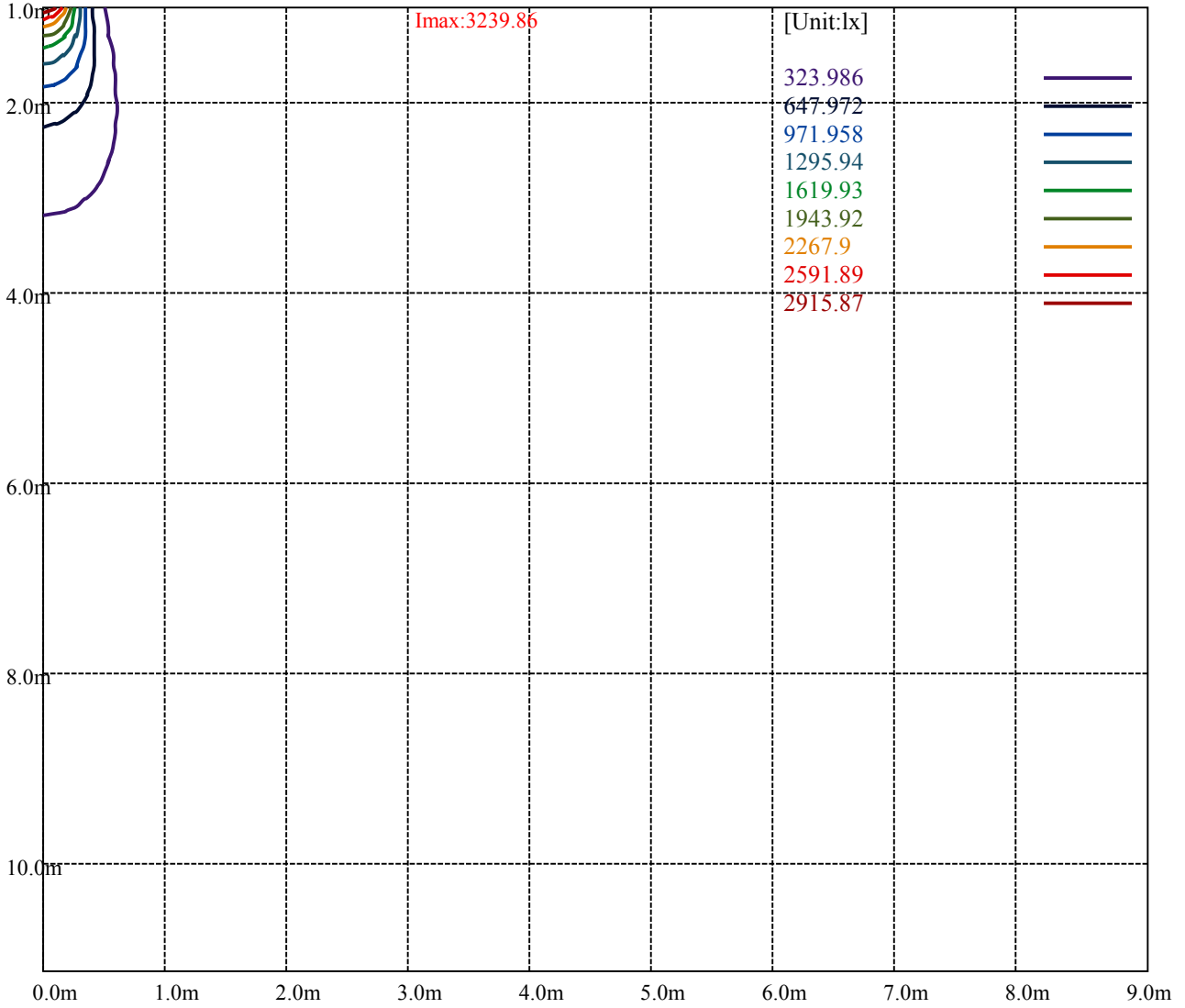
Road

I_{max}:3239.86

(10%I _{max})	323.986	—
(20%I _{max})	647.972	—
(30%I _{max})	971.958	—
(40%I _{max})	1295.94	—
(50%I _{max})	1619.93	—
(60%I _{max})	1943.92	—
(70%I _{max})	2267.9	—
(80%I _{max})	2591.89	—
(90%I _{max})	2915.87	—



(10%Emax) 80.9965	—
(20%Emax) 161.9928	—
(30%Emax) 242.9892	—
(40%Emax) 323.985	—
(50%Emax) 404.9825	—
(60%Emax) 485.9775	—
(70%Emax) 566.975	—
(80%Emax) 647.97	—
(90%Emax) 728.9675	—



Luminance Table

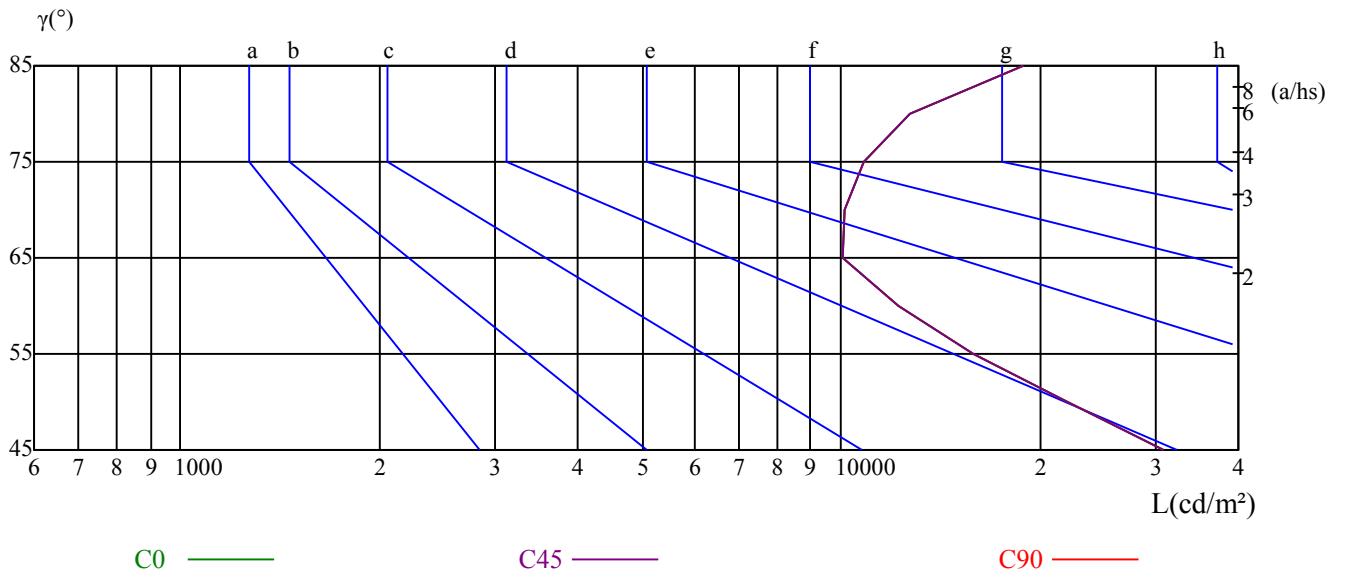
γ	45	50	55	60	65	70	75	80	85
C0	30710	21982	15834	12252	10050	10128	10806	12742	18950
C45	30710	21982	15834	12252	10050	10128	10806	12742	18950
C90	30710	21982	15834	12252	10050	10128	10806	12742	18950

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10050	10050	10050	10806	10806	10806	18950	18950	18950

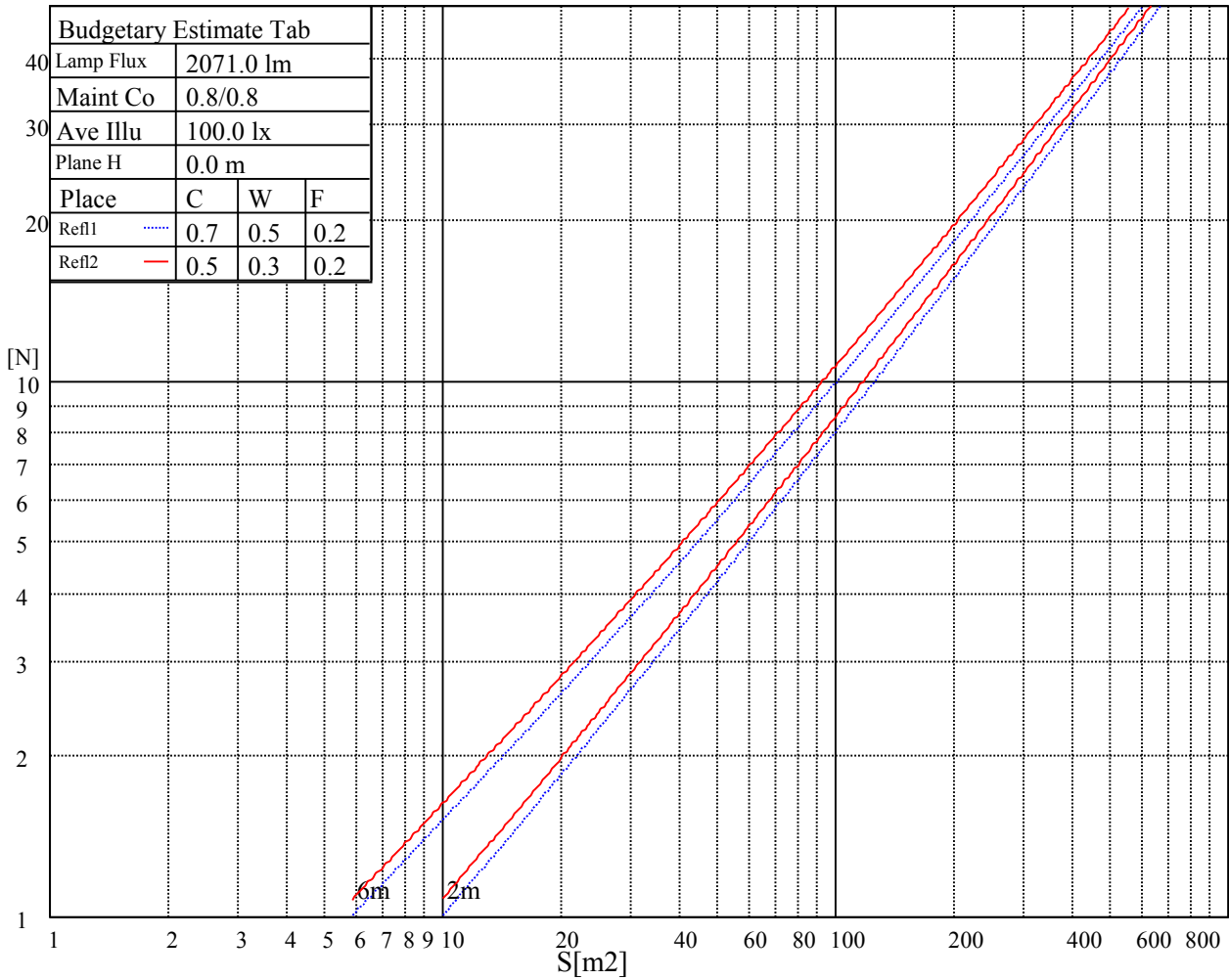
Glare Table

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

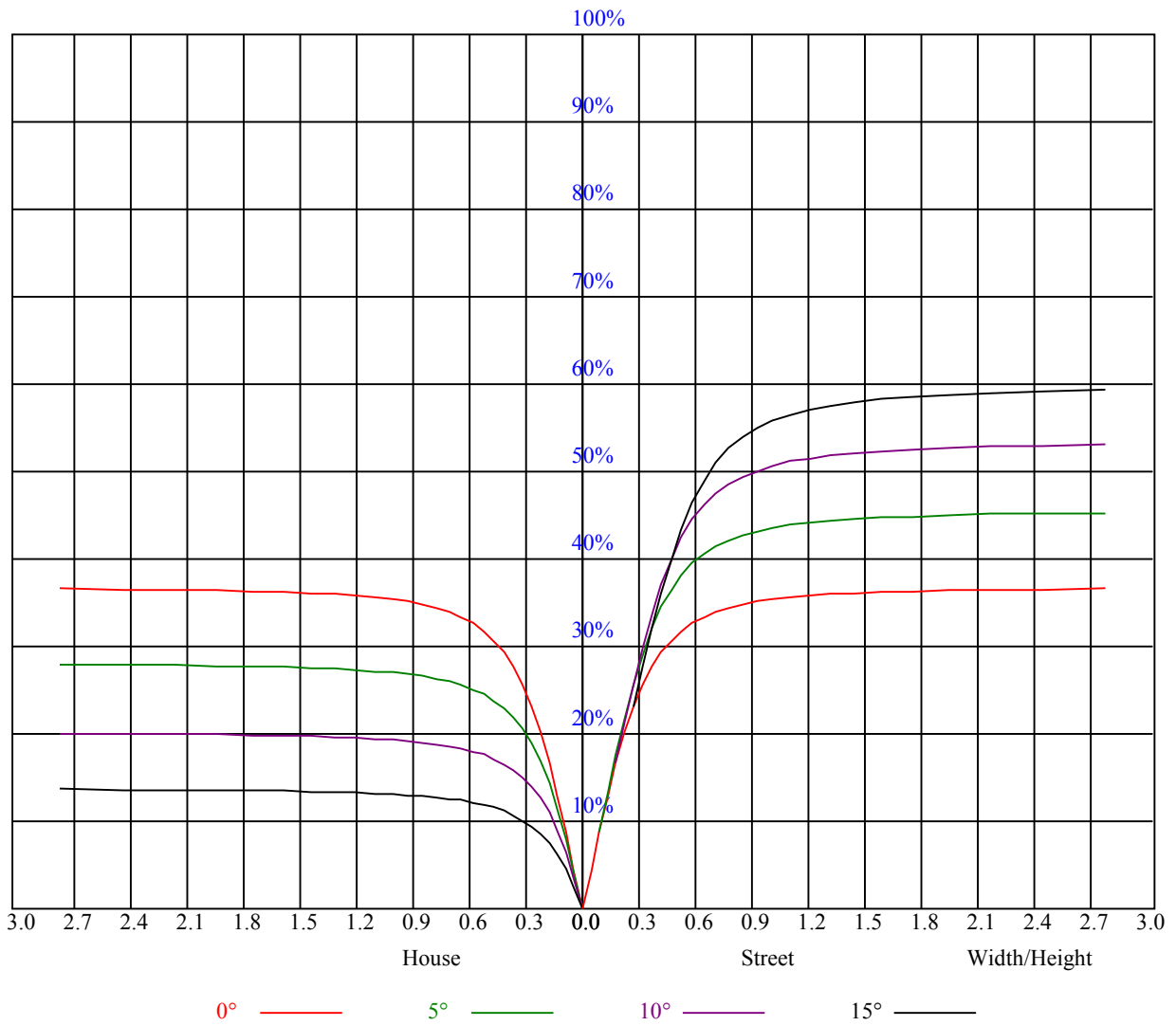
Luminance Limiting Curve



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	13.97	15.01	14.34	15.32	15.64	13.98	15.02	14.35	15.33	15.65
	3H	15.12	16.03	15.50	16.36	16.73	15.10	16.02	15.48	16.35	16.72
	4H	15.74	16.59	16.14	16.94	17.33	15.72	16.57	16.13	16.92	17.31
	6H	16.41	17.19	16.83	17.56	17.96	16.41	17.18	16.83	17.56	17.96
	8H	16.77	17.50	17.20	17.89	18.30	16.77	17.50	17.21	17.90	18.31
	12H	17.40	18.10	17.83	18.48	18.91	17.41	18.11	17.84	18.49	18.92
4H	2H	14.19	15.04	14.59	15.39	15.78	14.19	15.04	14.60	15.39	15.78
	3H	15.62	16.32	16.04	16.73	17.13	15.61	16.31	16.03	16.72	17.12
	4H	16.43	17.05	16.87	17.48	17.92	16.42	17.04	16.86	17.46	17.91
	6H	17.21	17.74	17.68	18.19	18.67	17.21	17.74	17.68	18.19	18.66
	8H	17.69	18.19	18.17	18.64	19.11	17.70	18.20	18.17	18.65	19.12
	12H	18.39	18.82	18.88	19.31	19.78	18.40	18.83	18.89	19.32	19.80
8H	4H	16.72	17.21	17.19	17.66	18.14	16.71	17.20	17.18	17.65	18.13
	6H	17.74	18.14	18.25	18.64	19.13	17.74	18.14	18.25	18.64	19.12
	8H	18.38	18.74	18.91	19.26	19.75	18.39	18.74	18.92	19.27	19.76
	12H	19.44	19.75	19.96	20.25	20.83	19.46	19.76	19.98	20.26	20.84
12H	4H	16.76	17.19	17.25	17.68	18.16	16.75	17.18	17.24	17.67	18.15
	6H	18.19	18.22	18.40	18.70	19.24	18.19	18.22	18.40	18.69	19.24
	8H	18.61	18.92	19.13	19.42	20.00	18.62	18.93	19.14	19.42	20.00
Variation with the observer position at spacings:											
S = 1.0H	1.7/-1.9					1.7/-1.9					
S = 1.5H	2.9/-2.2					2.9/-2.2					
S = 2.0H	4.3/-2.0					4.3/-2.0					
Standard tables:	BK3					BK3					
Uncorrected UGR	2.8					2.8					



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	0.89	0.89	0.89	0.87	0.87	0.87	0.83	0.83	0.83	0.79	0.79	0.79	0.76	0.76	0.76	0.75
1	0.82	0.80	0.78	0.80	0.78	0.77	0.77	0.76	0.74	0.74	0.73	0.72	0.72	0.71	0.70	0.69
2	0.77	0.74	0.71	0.75	0.73	0.70	0.73	0.71	0.69	0.71	0.69	0.67	0.69	0.67	0.66	0.65
3	0.72	0.69	0.66	0.71	0.68	0.66	0.69	0.67	0.65	0.68	0.65	0.64	0.66	0.64	0.63	0.61
4	0.69	0.65	0.62	0.68	0.64	0.62	0.66	0.63	0.61	0.65	0.62	0.60	0.63	0.61	0.60	0.58
5	0.65	0.61	0.59	0.65	0.61	0.58	0.63	0.60	0.58	0.62	0.59	0.57	0.61	0.59	0.57	0.56
6	0.62	0.58	0.56	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.59	0.56	0.54	0.53
7	0.60	0.56	0.53	0.59	0.56	0.53	0.58	0.55	0.53	0.57	0.55	0.52	0.57	0.54	0.52	0.51
8	0.57	0.53	0.51	0.57	0.53	0.51	0.56	0.53	0.50	0.55	0.52	0.50	0.55	0.52	0.50	0.49
9	0.55	0.51	0.49	0.55	0.51	0.49	0.54	0.51	0.49	0.54	0.51	0.48	0.53	0.50	0.48	0.47
10	0.53	0.49	0.47	0.53	0.49	0.47	0.52	0.49	0.47	0.52	0.49	0.47	0.51	0.49	0.47	0.46



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	3240.56	3135.94	2810.25	2207.25	1455.19	792.00	455.63	286.88	178.20
45.0	3237.75	3135.38	2813.63	2149.88	1383.19	772.31	420.19	291.38	181.58
90.0	3242.81	3117.94	2685.94	2004.75	1107.34	634.11	365.96	232.37	160.76
135.0	3238.31	3162.94	2798.44	2155.50	1374.75	717.75	394.88	285.75	172.86
180.0	3240.56	3095.44	2679.75	1958.06	1113.36	648.17	356.51	226.18	157.56
225.0	3237.75	3121.31	2735.44	2028.94	1104.58	657.84	379.52	239.01	162.90
270.0	3242.81	3150.56	2828.25	2180.81	1501.88	774.00	425.25	295.31	181.29
315.0	3238.31	3106.69	2715.19	2024.44	1113.98	688.61	389.42	245.19	168.92
360.0	3240.56	3135.94	2810.25	2207.25	1455.19	792.00	455.63	286.88	178.20
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	116.27	74.53	47.87	33.47	21.94	17.66	14.23	11.53	8.55
45.0	110.64	71.27	45.96	31.56	21.38	17.38	14.18	11.19	8.33
90.0	97.54	66.38	42.47	28.07	20.42	16.76	13.44	10.46	7.93
135.0	106.31	70.31	44.66	29.48	20.98	17.04	13.73	10.97	7.99
180.0	98.55	64.13	40.89	27.56	19.63	16.09	13.16	10.24	7.71
225.0	104.12	66.71	42.86	28.91	20.14	16.43	13.22	10.52	7.88
270.0	113.51	72.17	47.36	31.73	21.38	17.49	14.06	11.08	8.21
315.0	104.29	68.40	43.93	29.36	20.64	16.93	13.61	10.74	8.16
360.0	116.27	74.53	47.87	33.47	21.94	17.66	14.23	11.53	8.55
C/ γ (°)	90.0								
0.0	6.41								
45.0	6.41								
90.0	6.41								
135.0	6.41								
180.0	6.41								
225.0	6.41								
270.0	6.41								
315.0	6.41								
360.0	6.41								