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Nata

LumCAT: 2-1932-A

Luminaire: 92.70.131.00

Report No:

Test No: GC20190701305

LampCAT: CITIZEN CLU038

Lamp flux(lm): 874.0

Number of Lamps: 1

Length(mm): 58

Phm Type: C

Voltage(V):

Current(A):

Power (W): 6.5700

PF:

Ballast type:

Width(mm): 58

Height(mm): 0

Photometric Results

Lumens(lm): 796.96

Efficiency(%): 91.18%

Lumens(lm)/Power(W): 121.30

Central intensity(cd): 3982.078

Maximum intensity(cd): 3982.078

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=18.5

[C90/270]Total=18.5

Field angle(10%Imax): [C0/180]Total=46.2

[C90/270]Total=46.2

Maximum s/h(1/2): C0_180=0.32 C90_270=0.32

Maximum s/h(1/4): C0_180=0.34 C90_270=0.34

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.18%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.484%

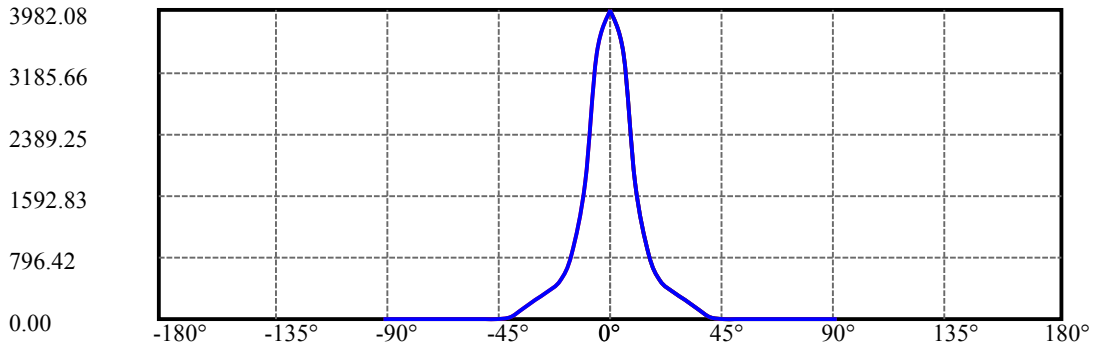
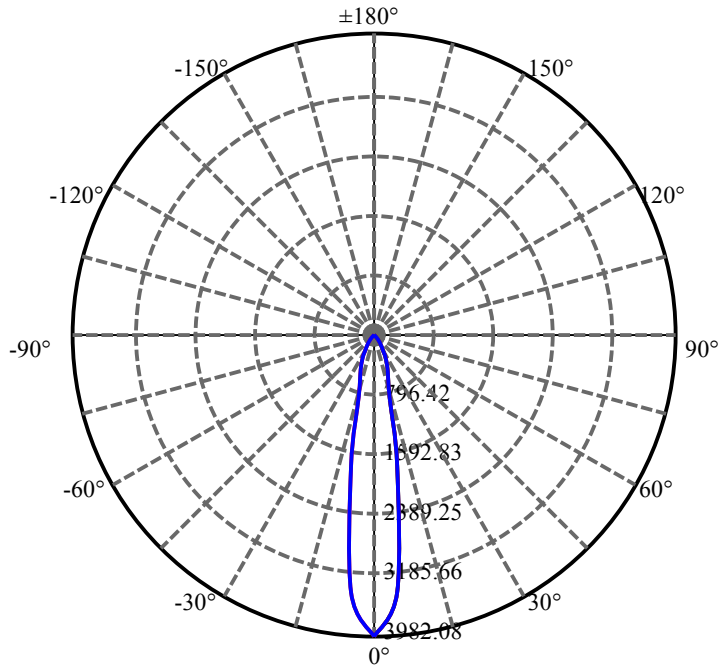
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3982.079	0.000	0	.000%	.000%
5.0	3406.008	88.322	88.322	10.106%	11.082%
10.0	1747.308	184.350	272.673	21.093%	34.214%
15.0	830.307	152.902	425.575	17.495%	53.400%
20.0	493.102	109.067	534.643	12.479%	67.086%
25.0	340.629	87.443	622.086	10.005%	78.058%
30.0	253.512	75.189	697.275	8.603%	87.492%
35.0	115.242	54.302	751.576	6.213%	94.306%
40.0	19.730	22.519	774.095	2.577%	97.132%
45.0	5.885	4.743	778.838	.543%	97.727%
50.0	4.704	2.140	780.978	.245%	97.995%
55.0	4.247	1.946	782.924	.223%	98.239%
60.0	4.191	1.950	784.874	.223%	98.484%
65.0	4.064	2.007	786.881	.230%	98.736%
70.0	3.790	1.989	788.87	.228%	98.985%
75.0	3.952	2.024	790.893	.232%	99.239%
80.0	4.071	2.147	793.04	.246%	99.509%
85.0	3.530	2.065	795.106	.236%	99.768%
90.0	3.227	1.850	796.956	.212%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	697.27	79.78%	87.49%
0-40	774.10	88.57%	97.13%
0-60	784.87	89.80%	98.48%
0-90	795.11	90.97%	99.77%
0-120	795.11	90.97%	99.77%
0-180	796.96	91.18%	100.00%
60-90	12.18	1.39%	1.53%
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%
0-26.03	637.56	72.95%	80.00%

ZONAL LUMEN SUMMARY

0-10	272.67
10-20	261.97
20-30	162.63
30-40	76.82
40-50	6.88
50-60	3.90
60-70	4.00
70-80	4.17
80-90	2.07
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



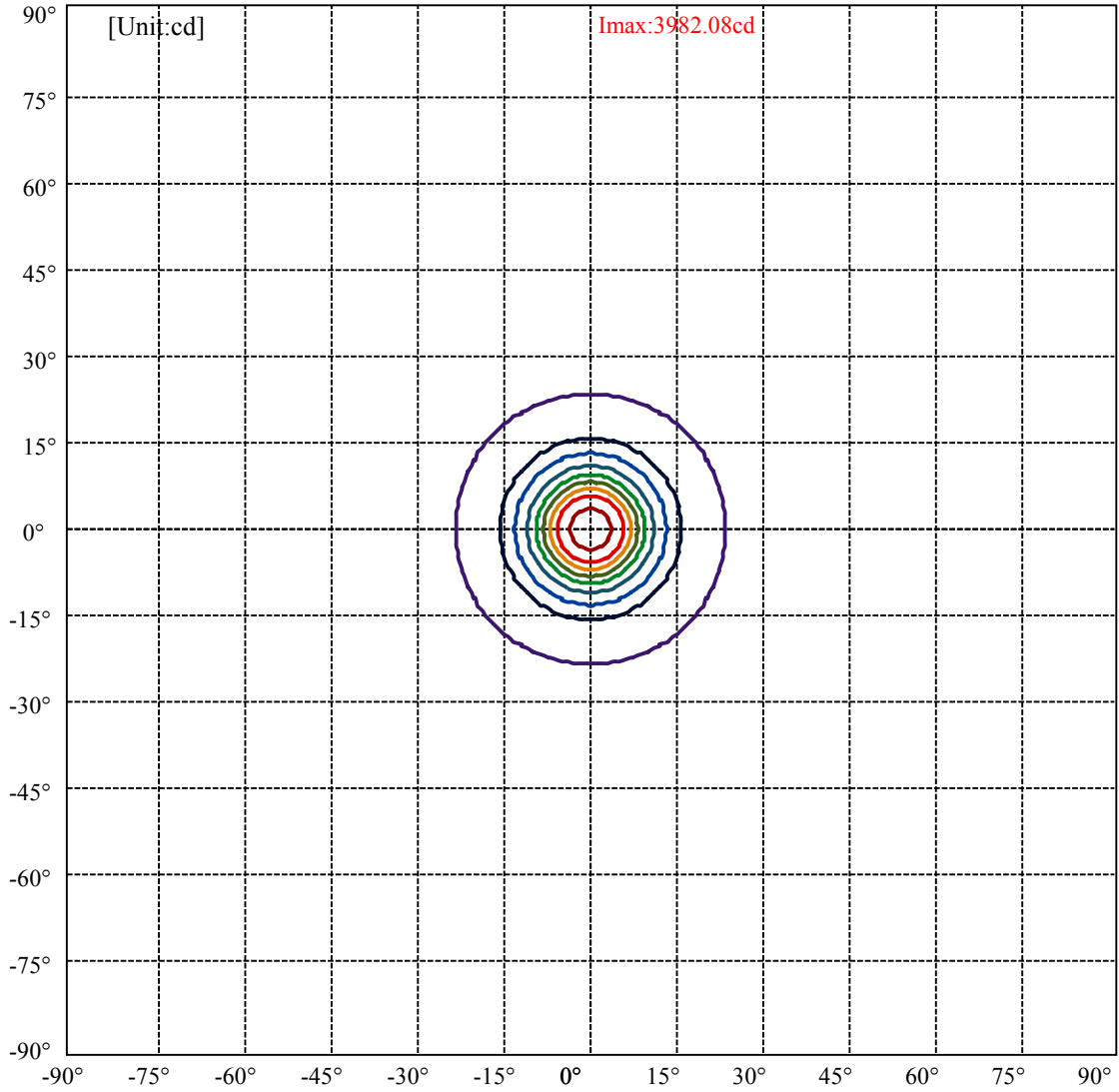
C0(Max): —————

C0/C180: —————

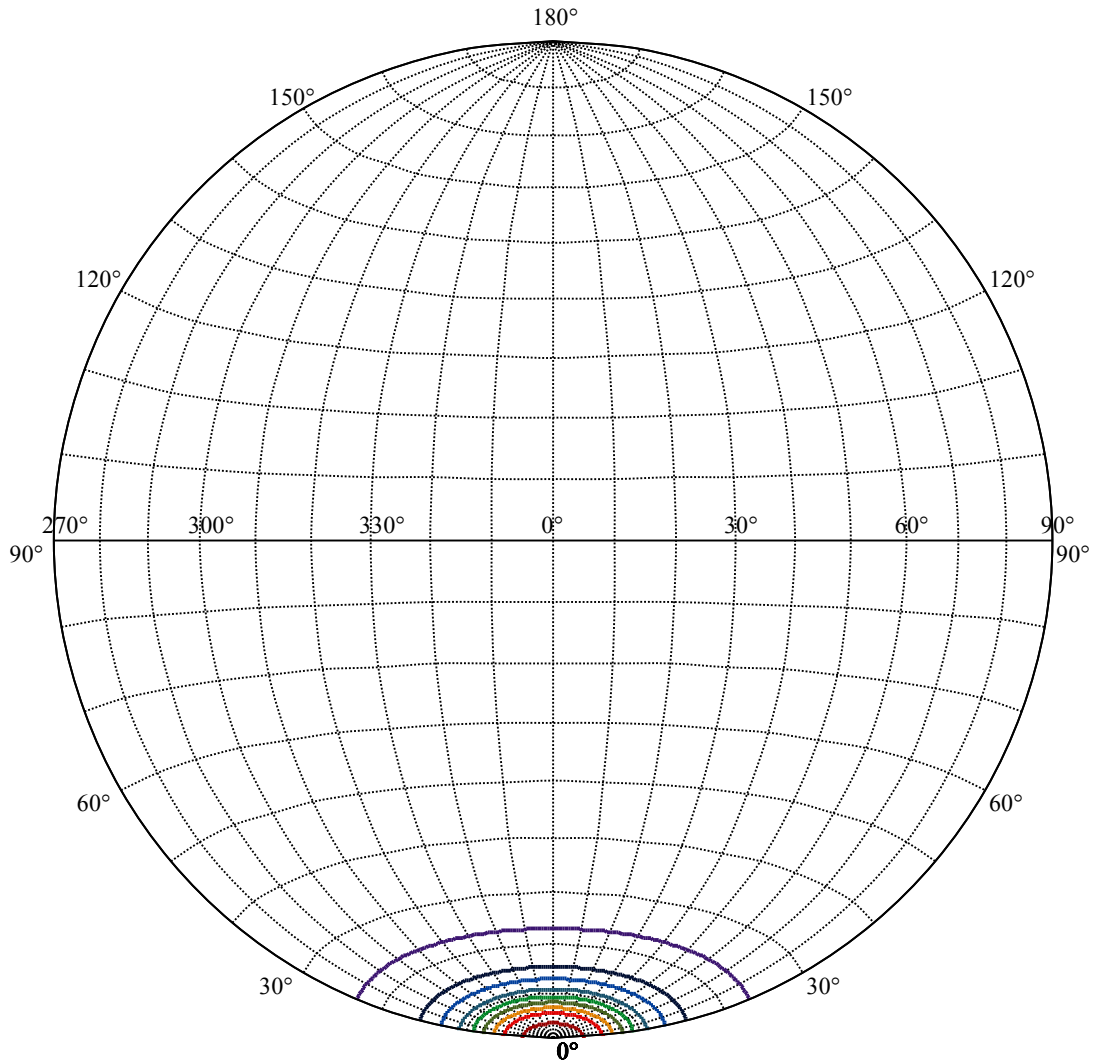
C90/C270: —————

Field angle(10%Imax):C0/180Left:23.1 Right:23.1
:C90/270Left:23.1 Right:23.1

Beam Angle(50%Imax):C0/180Left:9.3 Right:9.3
:C90/270Left:9.3 Right:9.3



(10%Imax) 398.208	—
(20%Imax) 796.416	—
(30%Imax) 1194.62	—
(40%Imax) 1592.83	—
(50%Imax) 1991.04	—
(60%Imax) 2389.25	—
(70%Imax) 2787.45	—
(80%Imax) 3185.66	—
(90%Imax) 3583.87	—



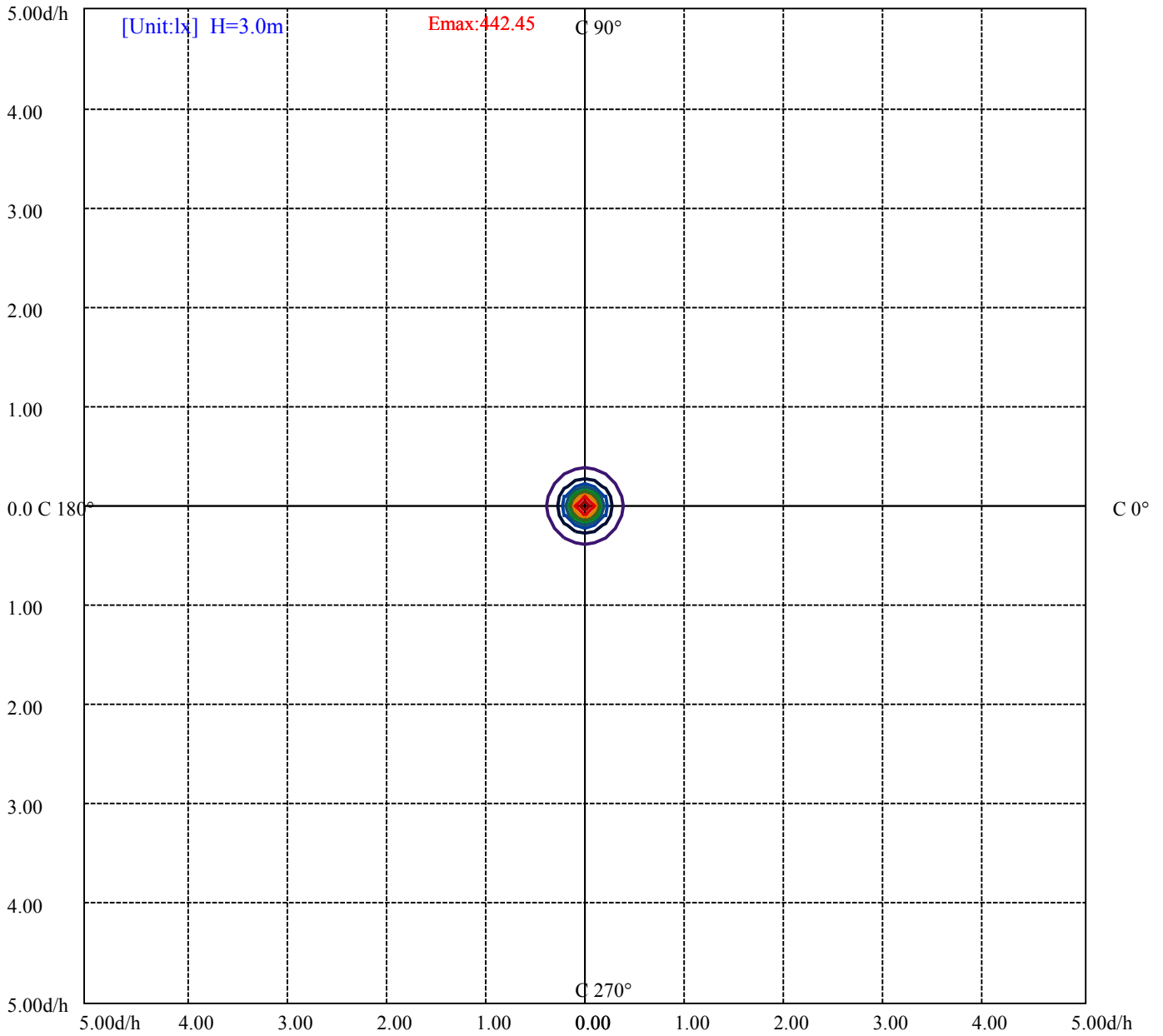
House

[Unit:cd]

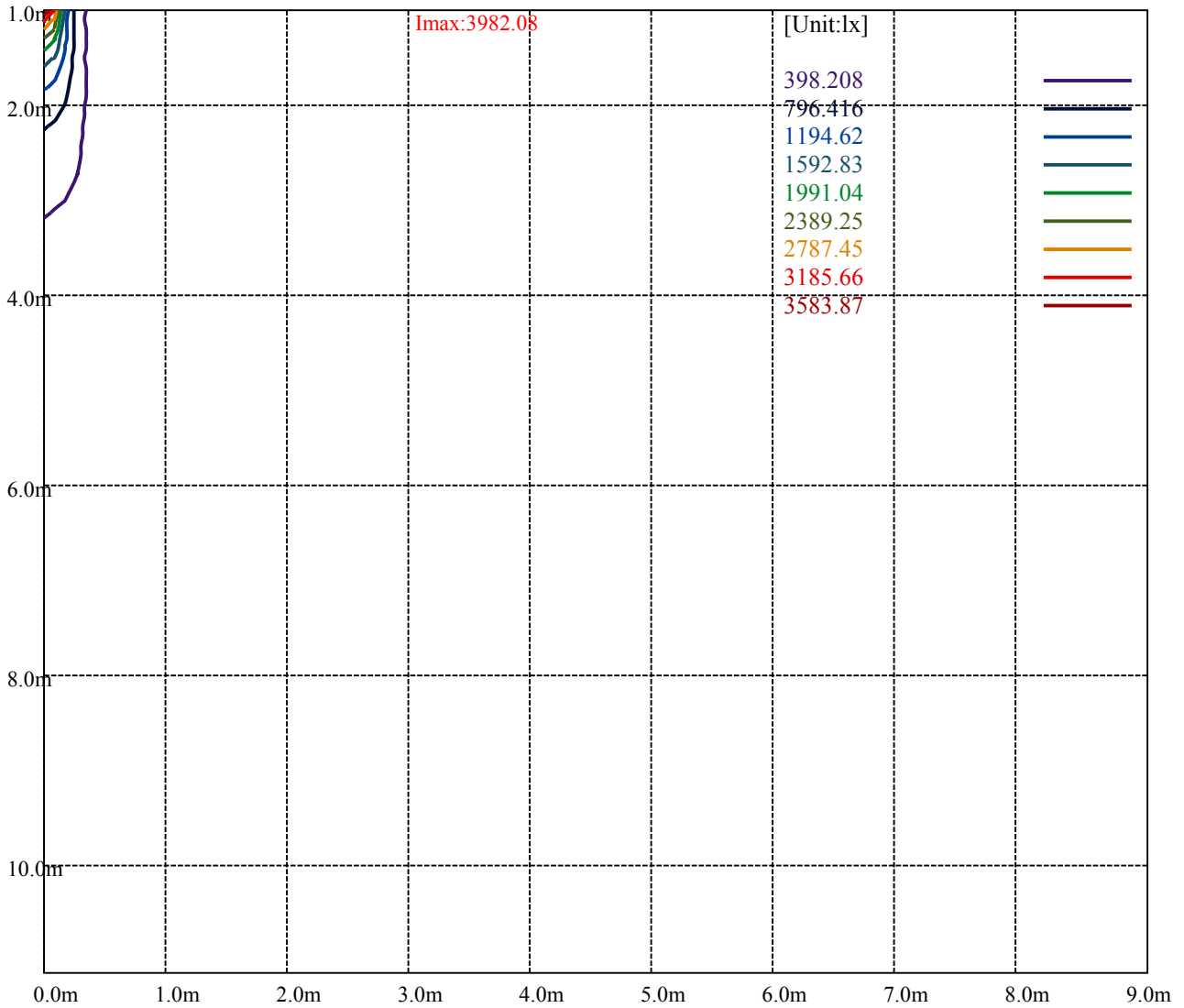
Road

I_{max}:3982.08

(10%I _{max})	398.208	—
(20%I _{max})	796.416	—
(30%I _{max})	1194.62	—
(40%I _{max})	1592.83	—
(50%I _{max})	1991.04	—
(60%I _{max})	2389.25	—
(70%I _{max})	2787.45	—
(80%I _{max})	3185.66	—
(90%I _{max})	3583.87	—



- (10%Emax) 44.24511
- (20%Emax) 88.49022
- (30%Emax) 132.7355
- (40%Emax) 176.98
- (50%Emax) 221.2256
- (60%Emax) 265.4711
- (70%Emax) 309.7155
- (80%Emax) 353.9611
- (90%Emax) 398.2056



Luminance Table

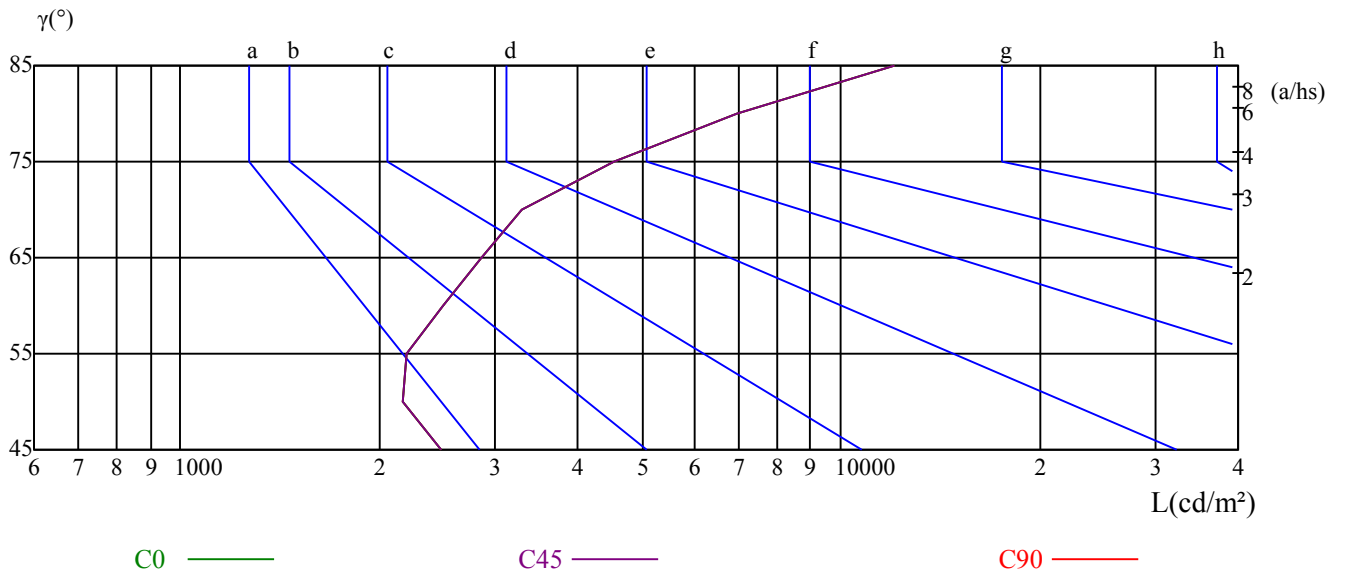
γ	45	50	55	60	65	70	75	80	85
C0	2474	2175	2201	2492	2859	3294	4539	6969	12039
C45	2474	2175	2201	2492	2859	3294	4539	6969	12039
C90	2474	2175	2201	2492	2859	3294	4539	6969	12039

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2859	2859	2859	4539	4539	4539	12039	12039	12039

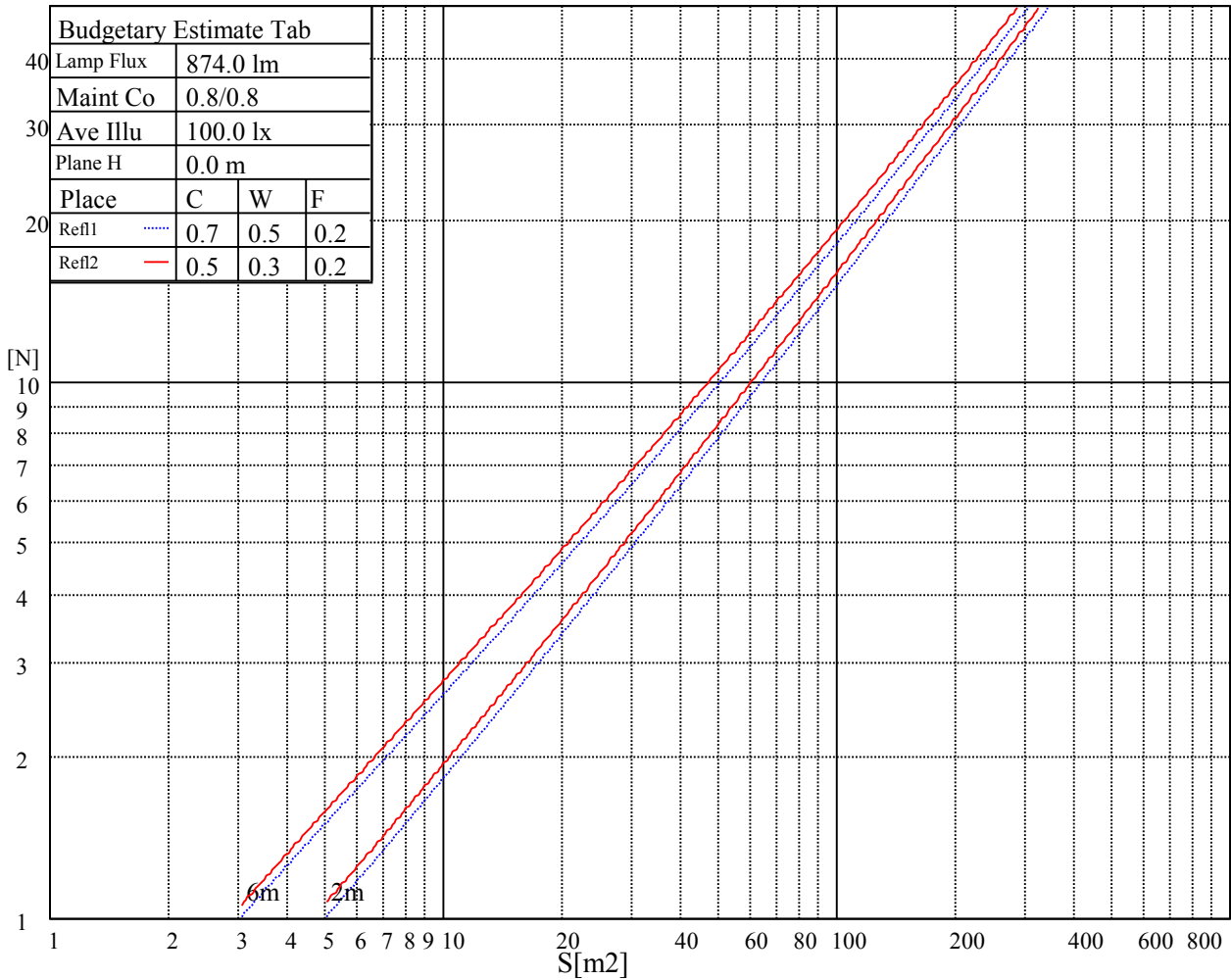
Glare Table

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

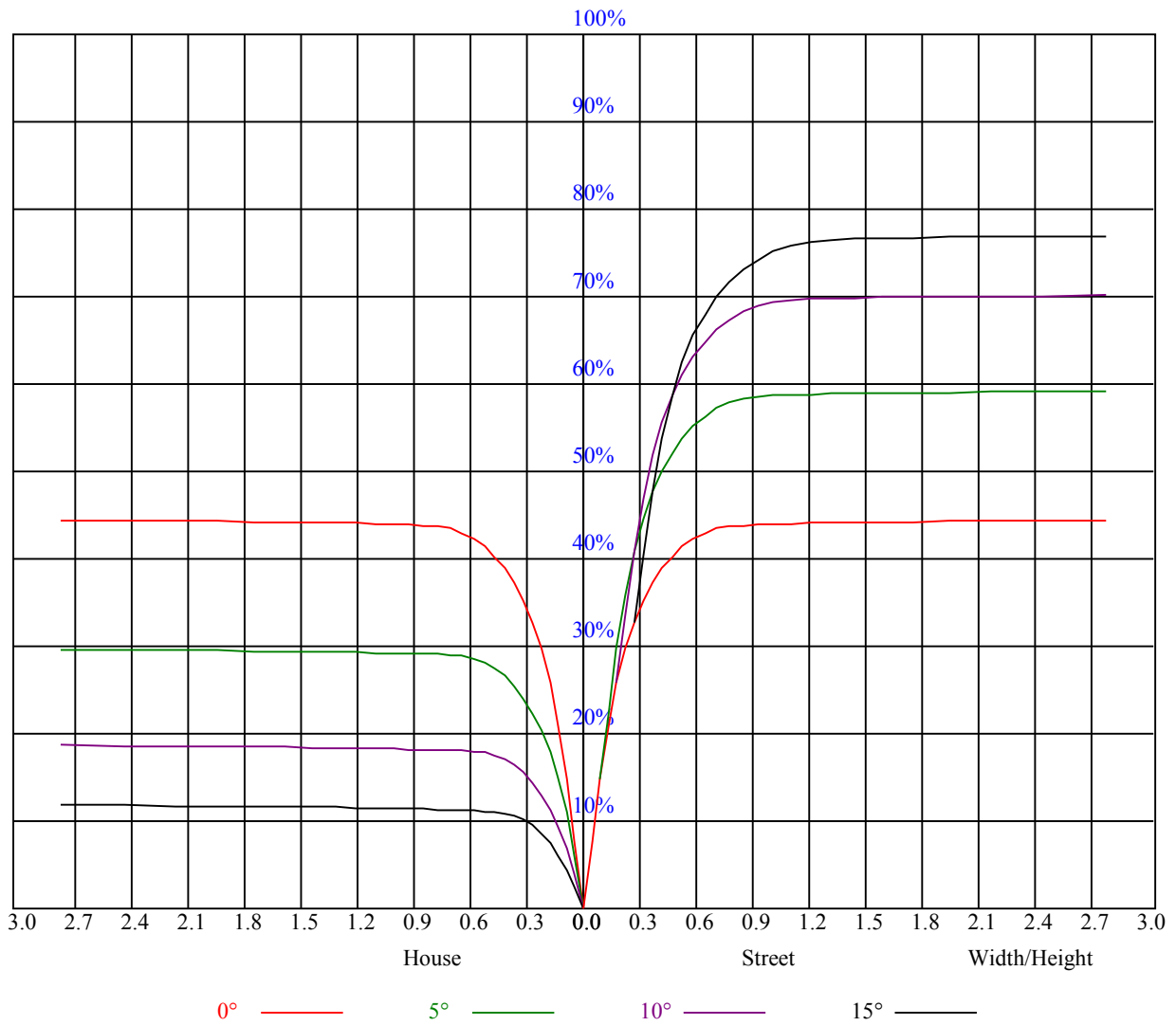
Luminance Limiting Curve



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	5.11	6.03	5.48	6.34	6.65	4.64	5.55	5.00	5.87	6.18
	3H	8.20	9.01	8.59	9.35	9.71	7.76	8.57	8.14	8.90	9.27
	4H	10.03	10.78	10.44	11.13	11.52	9.47	10.22	9.88	10.57	10.96
	6H	12.24	12.92	12.66	13.30	13.69	11.48	12.17	11.90	12.54	12.94
	8H	13.32	13.96	13.76	14.36	14.77	12.56	13.20	13.00	13.60	14.01
	12H	14.89	15.50	15.32	15.88	16.31	14.25	14.87	14.69	15.25	15.68
4H	2H	6.01	6.76	6.42	7.11	7.50	5.68	6.43	6.09	6.79	7.18
	3H	9.34	9.95	9.75	10.36	10.77	9.01	9.62	9.43	10.03	10.44
	4H	11.37	11.92	11.81	12.34	12.79	10.92	11.47	11.36	11.89	12.34
	6H	13.58	14.05	14.05	14.50	14.97	12.98	13.45	13.46	13.90	14.38
	8H	14.79	15.23	15.27	15.68	16.16	14.17	14.61	14.65	15.06	15.54
	12H	16.29	16.66	16.78	17.15	17.63	15.75	16.13	16.24	16.62	17.10
8H	4H	12.15	12.59	12.63	13.04	13.51	11.80	12.24	12.28	12.69	13.17
	6H	14.66	15.00	15.17	15.50	15.99	14.17	14.52	14.68	15.02	15.51
	8H	16.01	16.32	16.55	16.84	17.34	15.50	15.81	16.04	16.33	16.83
	12H	17.62	17.88	18.14	18.38	18.96	17.17	17.43	17.70	17.93	18.52
12H	4H	12.36	12.73	12.85	13.22	13.70	12.07	12.45	12.56	12.94	13.41
	6H	15.17	15.27	15.50	15.74	16.29	14.75	14.85	15.08	15.32	15.87
	8H	16.43	16.69	16.96	17.19	17.78	15.99	16.25	16.52	16.75	17.34
Variation with the observer position at spacings:											
S = 1.0H	5.2/-4.9					5.2/-4.9					
S = 1.5H	6.7/-3.6					6.7/-3.6					
S = 2.0H	7.6/-2.4					7.6/-2.4					
Standard tables:	BK4					BK4					
Uncorrected UGR	-1.5					-1.5					



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	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.02	1.00	0.98	1.00	0.98	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.87
2	0.97	0.94	0.91	0.95	0.93	0.90	0.92	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.85	0.83
3	0.92	0.88	0.86	0.91	0.88	0.85	0.89	0.86	0.84	0.86	0.84	0.82	0.85	0.83	0.81	0.80
4	0.88	0.84	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.82	0.80	0.78	0.77
5	0.84	0.80	0.77	0.84	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.76	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.75	0.72	0.70	0.69
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.70	0.67	0.66
9	0.73	0.69	0.66	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
10	0.71	0.67	0.64	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62



Nata 2-1932-A

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	4026.94	3092.06	1530.56	709.88	452.25	331.88	257.23	85.56	8.78
45.0	4005.00	2963.25	1291.50	644.06	402.19	301.50	196.09	72.17	9.39
90.0	3935.81	2925.56	1083.49	672.13	426.21	317.76	212.23	81.06	9.17
135.0	3960.56	3623.63	2073.38	932.06	546.75	368.44	285.19	141.69	25.54
180.0	4026.94	3740.06	2218.50	909.90	537.98	365.68	278.38	140.12	28.24
225.0	4005.00	3884.63	2296.69	1098.84	563.57	357.98	281.53	159.75	34.71
270.0	3935.81	3796.88	2374.88	978.19	567.56	354.94	288.00	154.69	33.81
315.0	3960.56	3222.00	1109.48	697.39	448.31	326.87	229.44	86.91	8.21
360.0	4026.94	3092.06	1530.56	709.88	452.25	331.88	257.23	85.56	8.78
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	5.12	4.33	3.99	3.83	3.77	3.54	3.49	3.43	3.49
45.0	6.02	5.18	4.84	5.06	4.22	4.39	5.68	5.51	3.60
90.0	5.01	4.44	4.28	4.44	4.11	3.88	4.56	5.12	3.71
135.0	5.63	4.22	3.88	3.83	3.77	3.71	3.66	4.11	3.66
180.0	5.29	4.22	3.88	3.83	3.71	3.66	3.54	3.83	3.43
225.0	8.27	5.85	4.73	4.50	4.73	3.83	3.66	3.71	3.54
270.0	6.98	5.23	4.50	4.28	4.50	3.77	3.54	3.49	3.43
315.0	4.78	4.16	3.88	3.77	3.71	3.54	3.49	3.38	3.38
360.0	5.12	4.33	3.99	3.83	3.77	3.54	3.49	3.43	3.49
C/γ(°)	90.0								
0.0	3.21								
45.0	3.21								
90.0	3.21								
135.0	3.26								
180.0	3.21								
225.0	3.26								
270.0	3.26								
315.0	3.21								
360.0	3.21								