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NATA

LumCAT: 4-1985-M

Luminaire:

Report No: NATA0100

Voltage(V): 18.2000

Test No: GC2018112608

Current(A): 0.6100

LampCAT: XICATO XTM LES19

Power (W): 11.1020

Lamp flux(lm): 1097.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 100

Width(mm): 100

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 942.36

Efficiency(%): 85.90%

Lumens(lm)/Power(W): 85.38

Central intensity(cd): 1079.058

Maximum intensity(cd): 1079.058

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=61.1

[C90/270]Total=61.1

Field angle(10%Imax): [C0/180]Total=77.8

[C90/270]Total=77.8

Maximum s/h(1/2): C0_180=0.96 C90_270=0.96

Maximum s/h(1/4): C0_180=0.90 C90_270=0.90

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.41%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.135%

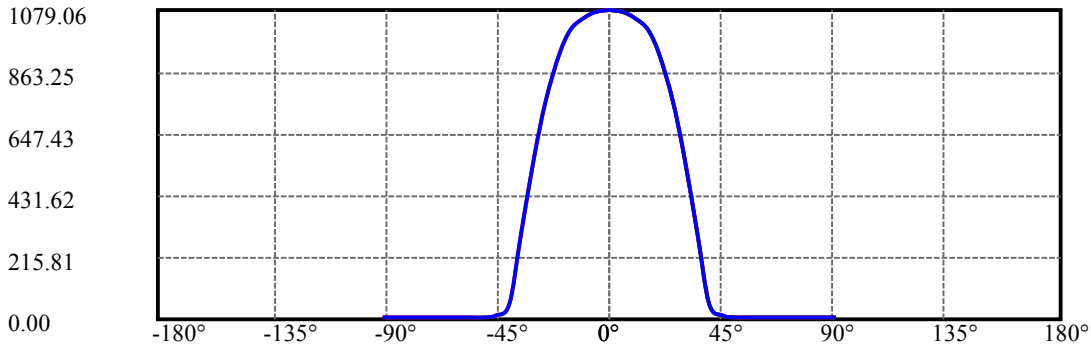
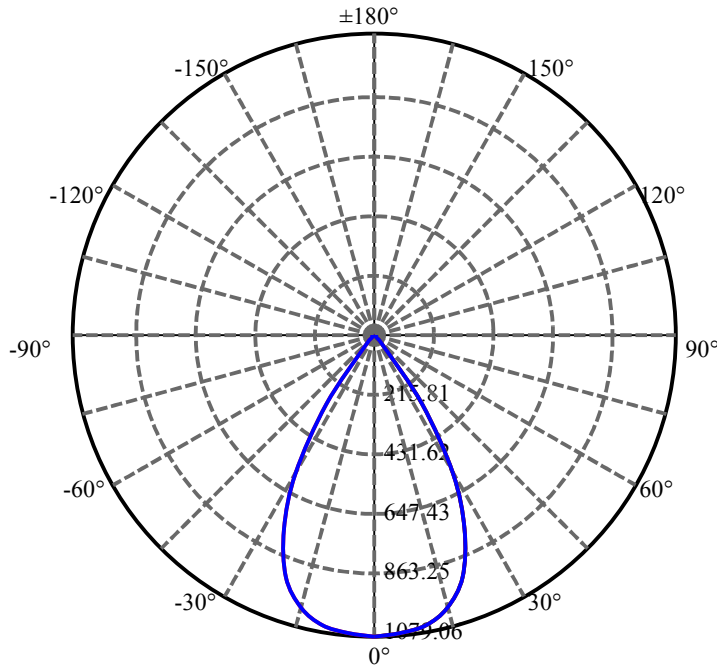
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1079.058	6.453	6.453	.588%	.685%
5.0	1070.395	51.136	57.589	4.661%	6.111%
10.0	1054.540	100.374	157.964	9.150%	16.763%
15.0	1012.901	143.699	301.662	13.099%	32.011%
20.0	922.008	172.853	474.515	15.757%	50.354%
25.0	765.000	177.214	651.729	16.154%	69.159%
30.0	569.292	156.025	807.754	14.223%	85.716%
35.0	298.245	93.768	901.522	8.548%	95.666%
40.0	53.880	18.984	920.506	1.731%	97.681%
45.0	10.230	3.965	924.471	.361%	98.102%
50.0	4.549	1.910	926.382	.174%	98.304%
55.0	4.205	1.888	928.269	.172%	98.505%
60.0	4.148	1.969	930.239	.180%	98.714%
65.0	4.120	2.047	932.286	.187%	98.931%
70.0	4.127	2.126	934.412	.194%	99.157%
75.0	4.106	2.174	936.586	.198%	99.387%
80.0	4.120	2.224	938.81	.203%	99.623%
85.0	4.451	2.430	941.24	.222%	99.881%
90.0	4.085	1.120	942.36	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	807.75	73.63%	85.72%
0-40	920.51	83.91%	97.68%
0-60	930.24	84.80%	98.71%
0-90	941.24	85.80%	99.88%
0-120	941.24	85.80%	99.88%
0-180	942.36	85.90%	100.00%
60-90	12.97	1.18%	1.38%
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%
0-28.27	753.89	68.72%	80.00%

ZONAL LUMEN SUMMARY

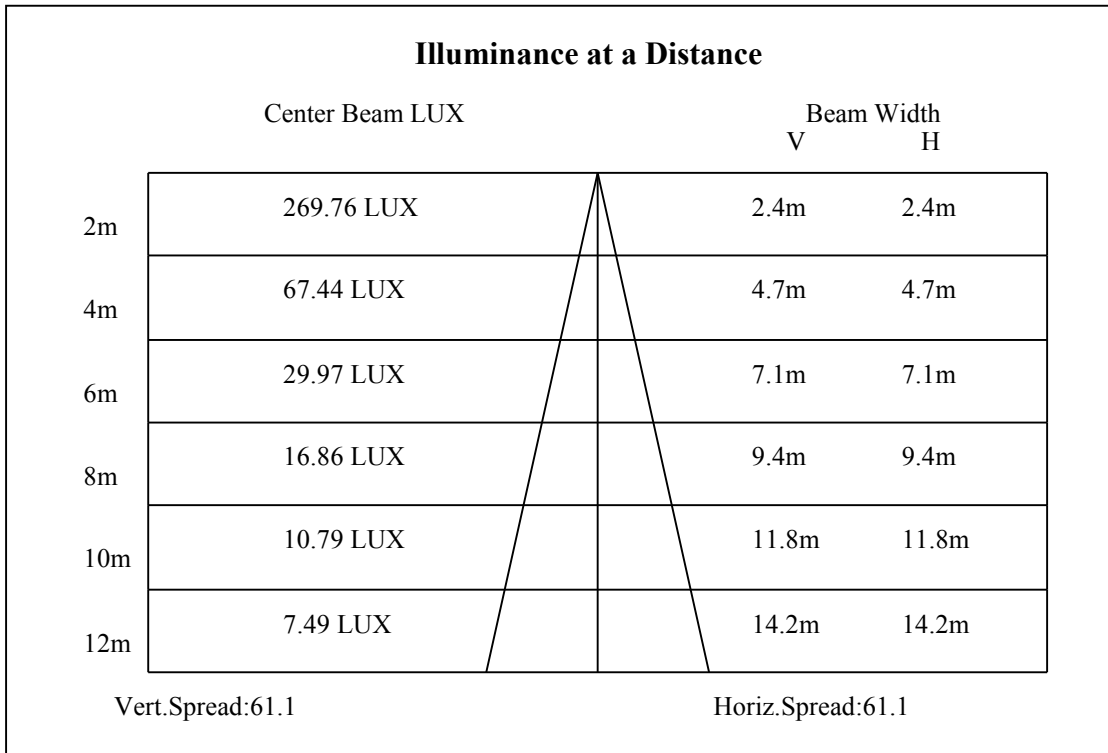
0-10	157.96
10-20	316.55
20-30	333.24
30-40	112.75
40-50	5.88
50-60	3.86
60-70	4.17
70-80	4.40
80-90	2.43
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

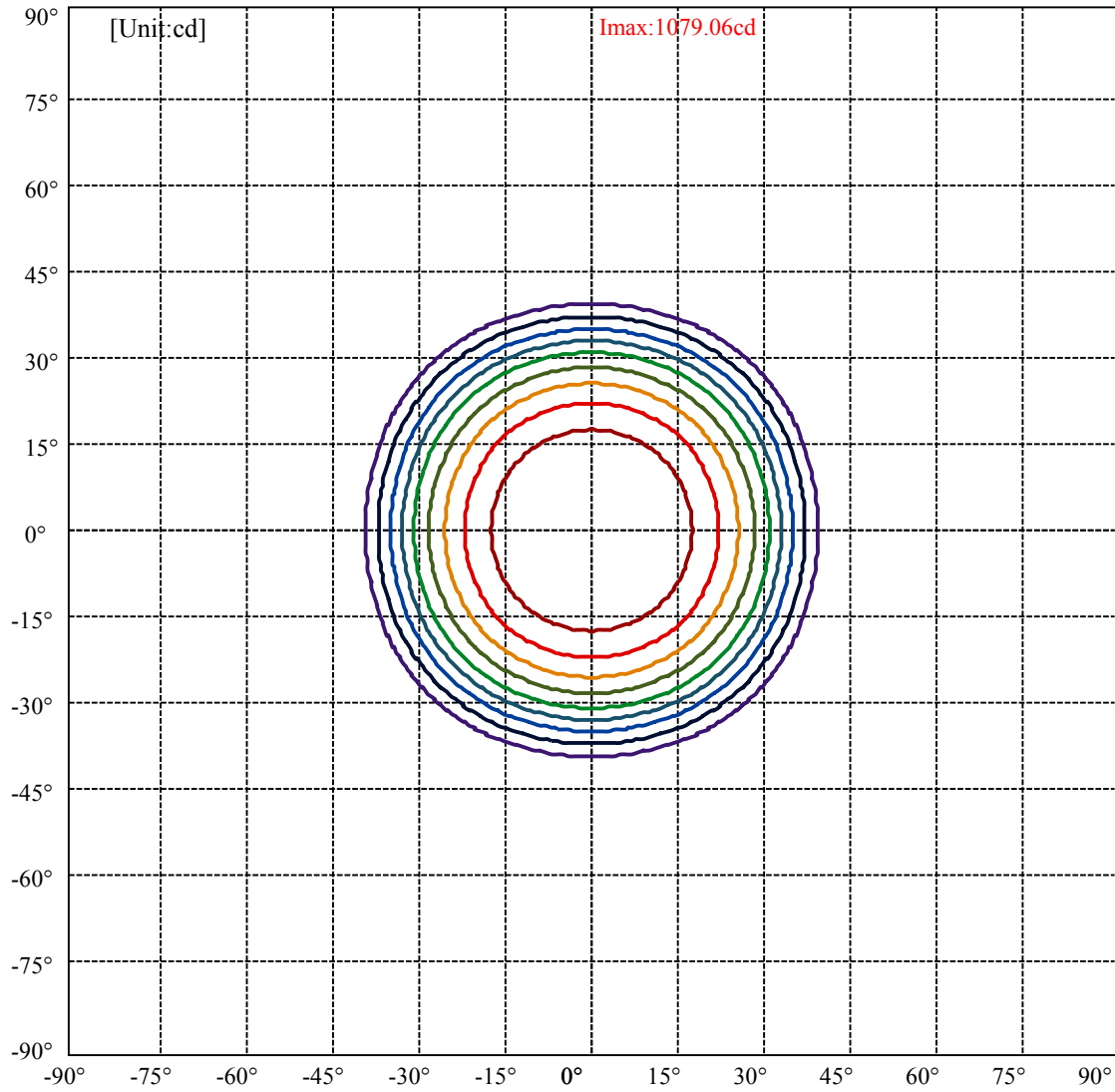


C0(Max): ———
 C0/C180: ———
 C90/C270: ———

Field angle(10%Imax):C0/180Left:38.9 Right:38.9
 :C90/270Left:38.9 Right:38.9

Beam Angle(50%Imax):C0/180Left:30.5 Right:30.5
 :C90/270Left:30.5 Right:30.5



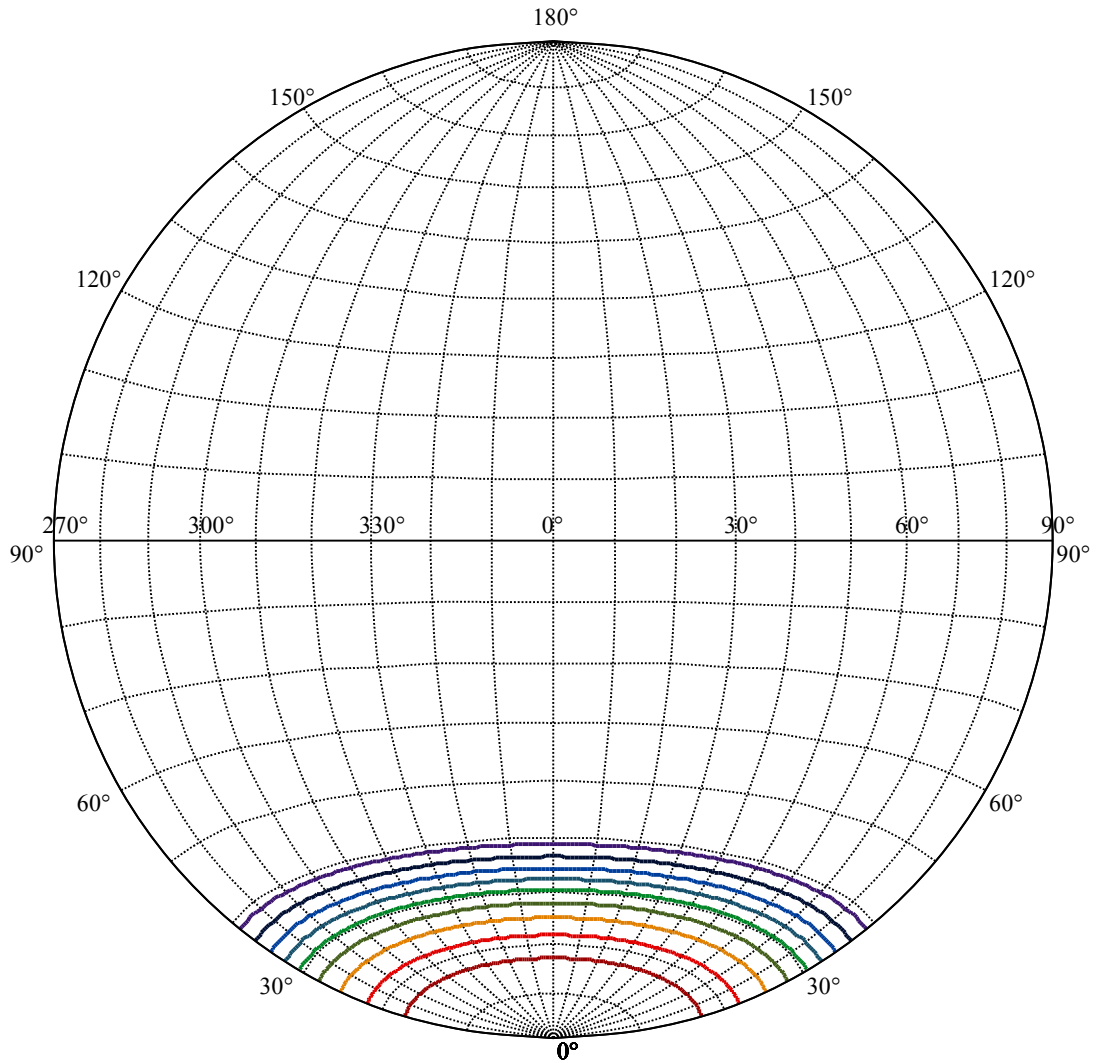


(10%Imax) 107.906	—
(20%Imax) 215.812	—
(30%Imax) 323.717	—
(40%Imax) 431.623	—
(50%Imax) 539.529	—
(60%Imax) 647.435	—
(70%Imax) 755.341	—
(80%Imax) 863.246	—
(90%Imax) 971.152	—

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/11/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50



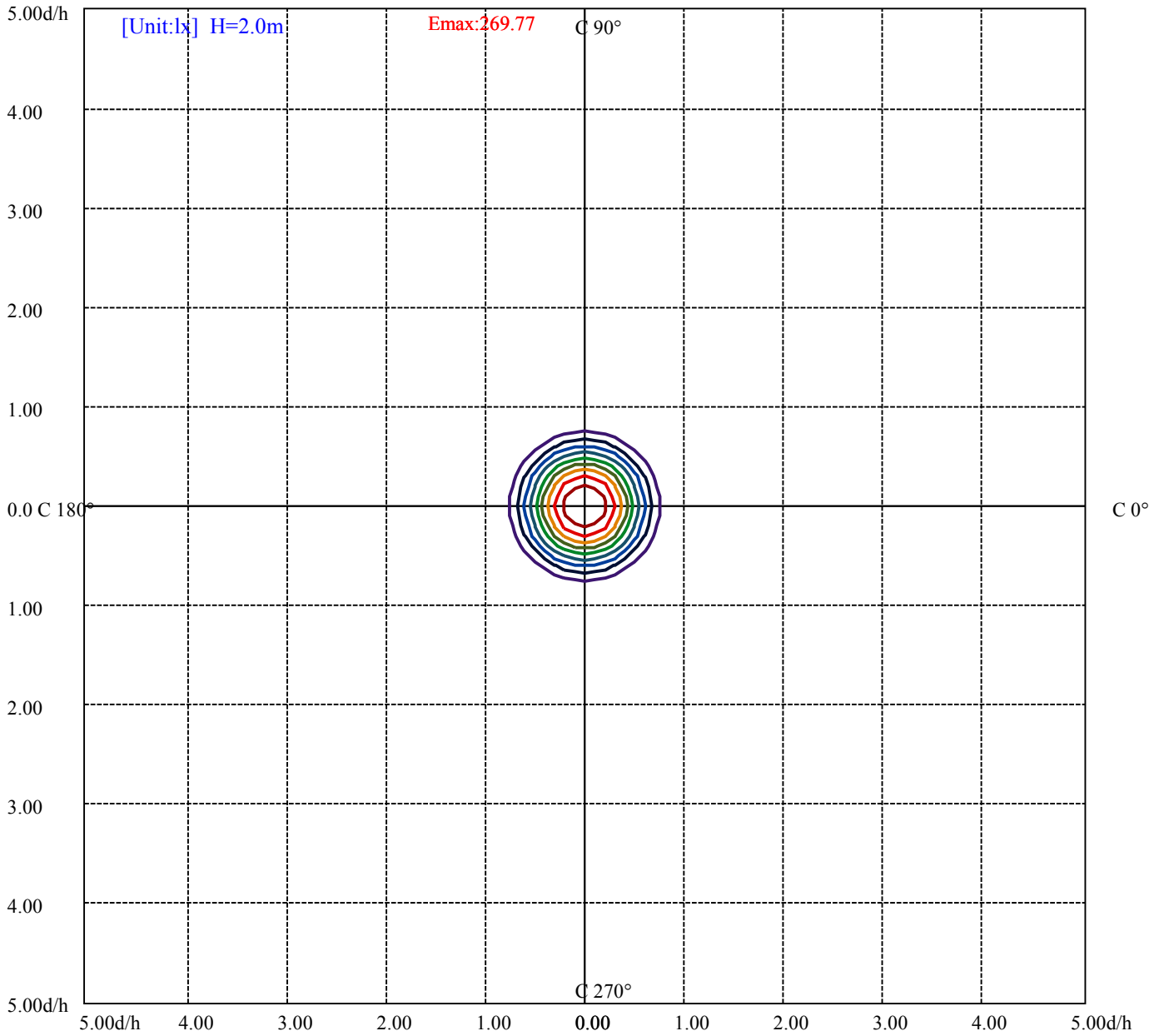
House

[Unit:cd]

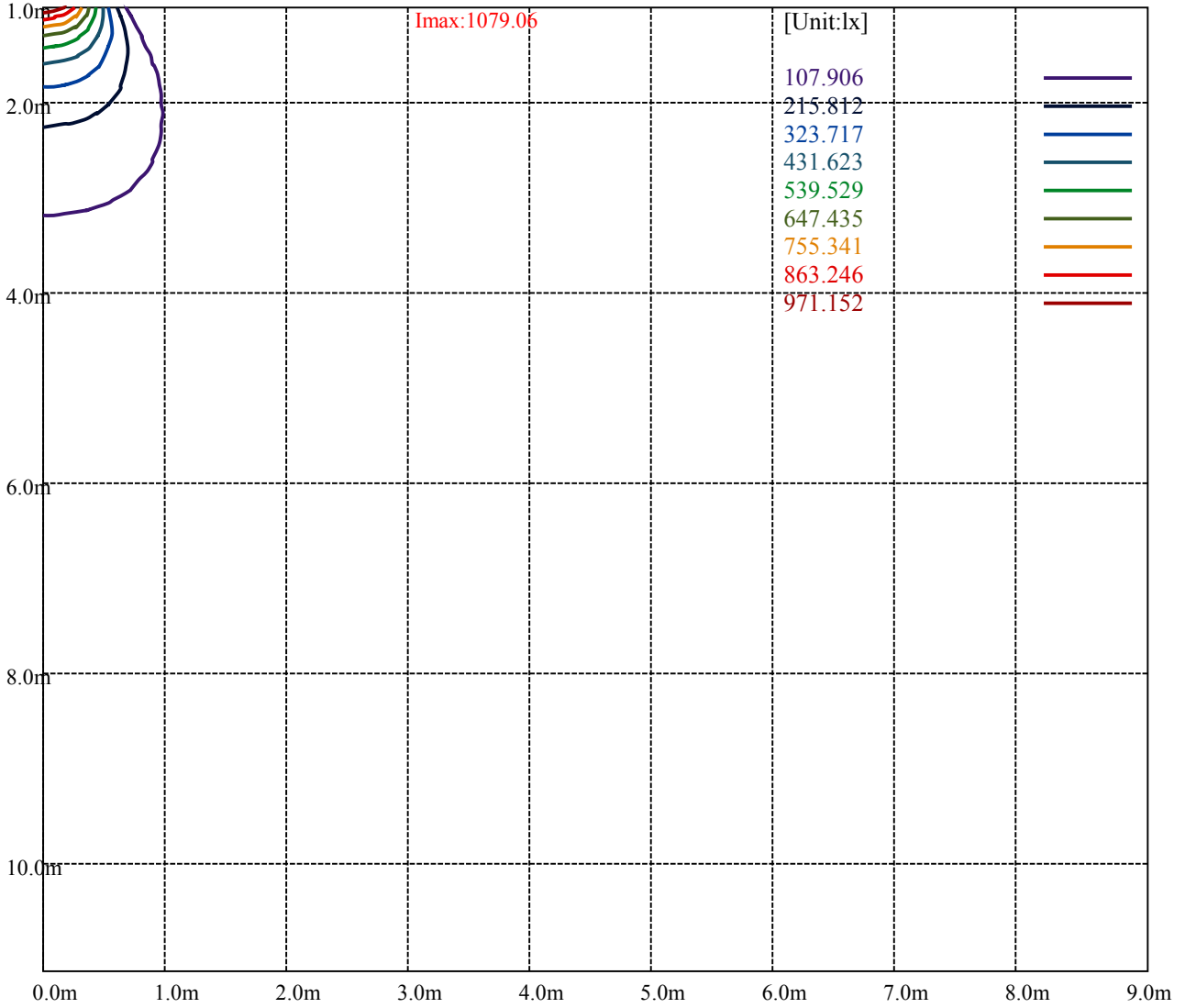
Road

Imax:1079.06

(10%Imax)	107.906	—
(20%Imax)	215.812	—
(30%Imax)	323.717	—
(40%Imax)	431.623	—
(50%Imax)	539.529	—
(60%Imax)	647.435	—
(70%Imax)	755.341	—
(80%Imax)	863.246	—
(90%Imax)	971.152	—



- (10%Emax) 26.9765
- (20%Emax) 53.953
- (30%Emax) 80.92925
- (40%Emax) 107.9057
- (50%Emax) 134.8822
- (60%Emax) 161.8587
- (70%Emax) 188.835
- (80%Emax) 215.8115
- (90%Emax) 242.788



Luminance Table

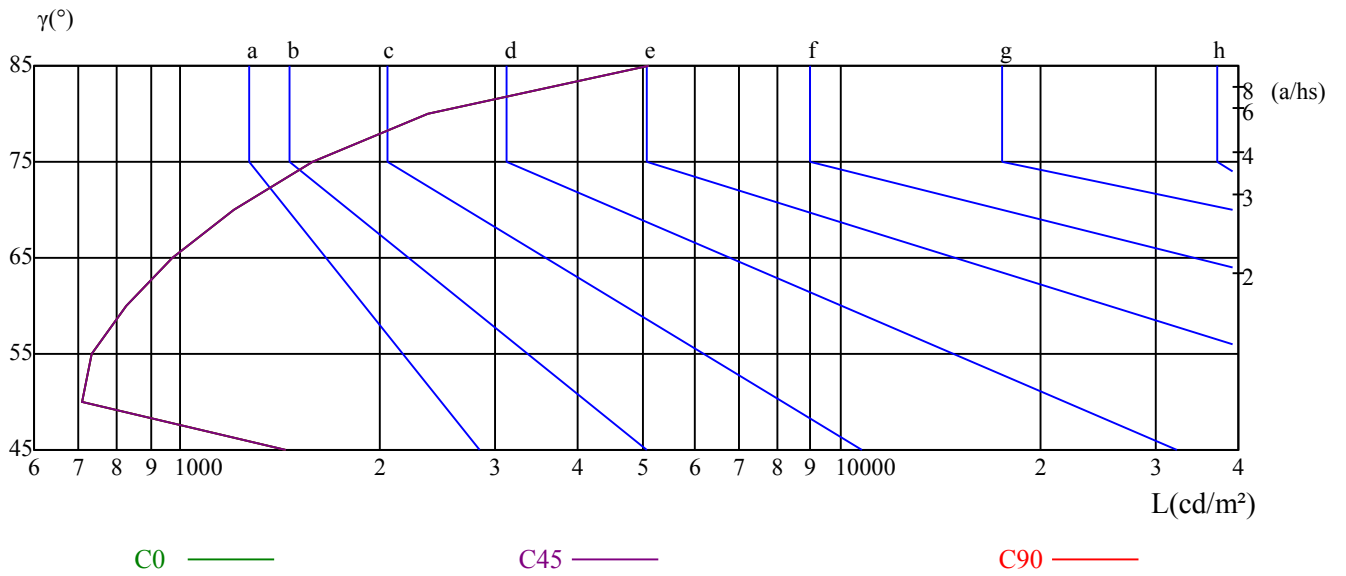
γ	45	50	55	60	65	70	75	80	85
C0	1447	708	733	830	975	1207	1587	2373	5107
C45	1447	708	733	830	975	1207	1587	2373	5107
C90	1447	708	733	830	975	1207	1587	2373	5107

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
975	975	975	1587	1587	1587	5107	5107	5107

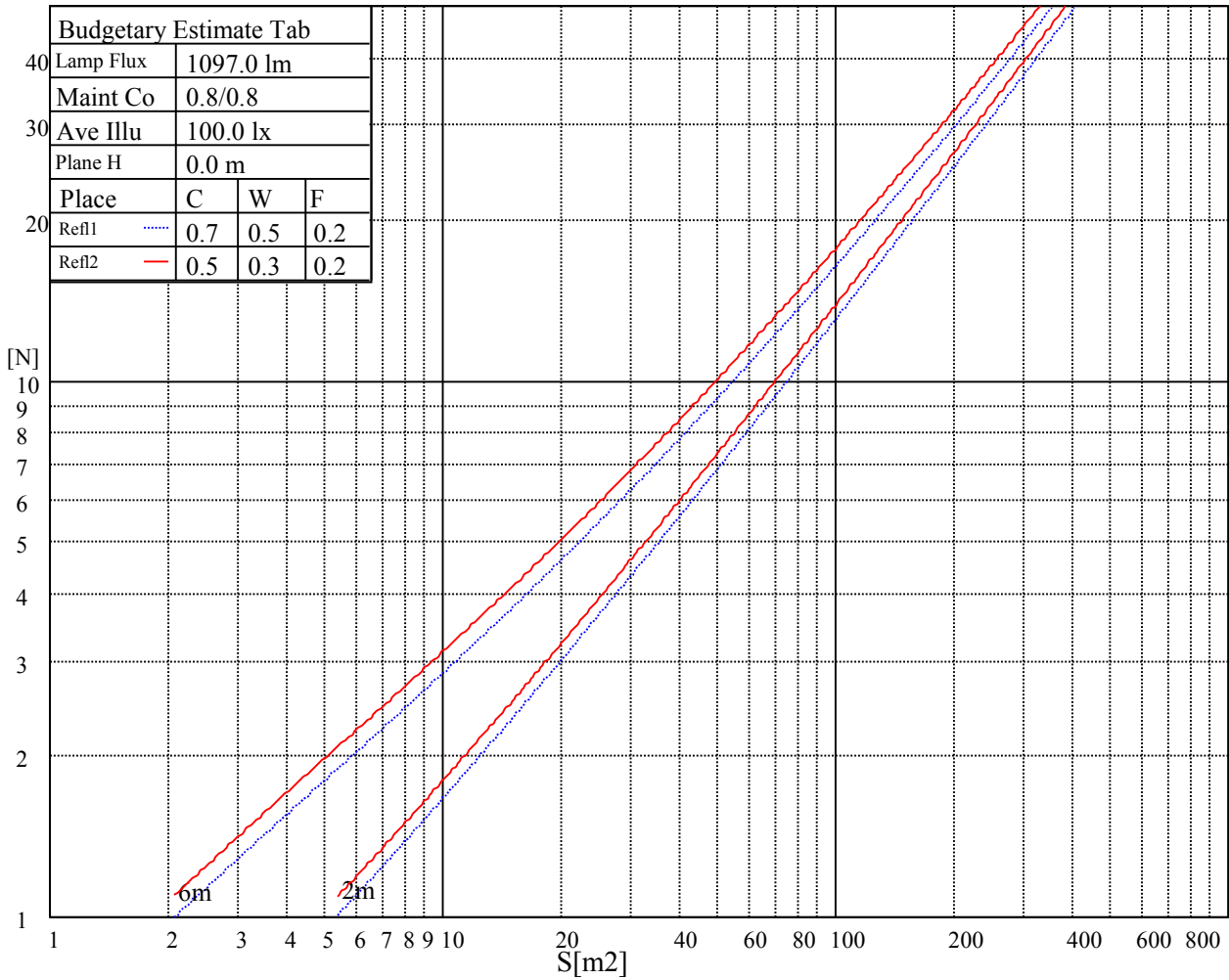
Glare Table

Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
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

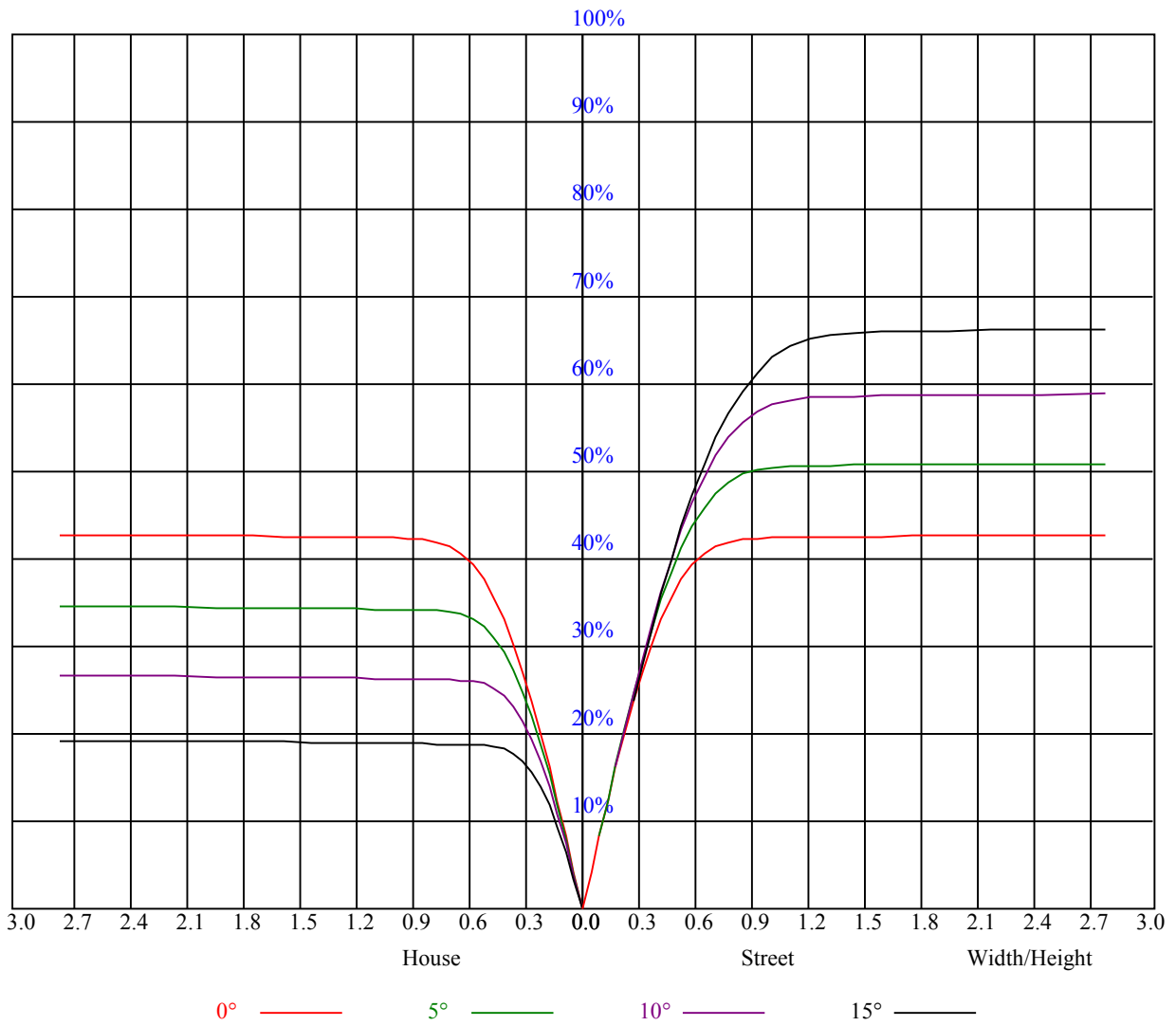
Luminance Limiting Curve



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	-0.10	0.81	0.26	1.13	1.44	-0.14	0.78	0.23	1.09	1.41
	3H	3.35	4.16	3.73	4.49	4.86	3.32	4.13	3.70	4.46	4.83
	4H	5.19	5.94	5.60	6.30	6.69	5.18	5.92	5.58	6.28	6.67
	6H	7.26	7.94	7.68	8.32	8.72	7.25	7.93	7.67	8.31	8.71
	8H	8.40	9.05	8.84	9.44	9.85	8.42	9.07	8.86	9.46	9.87
	12H	10.25	10.86	10.69	11.25	11.68	10.35	10.96	10.79	11.35	11.78
4H	2H	0.89	1.64	1.29	1.99	2.38	0.86	1.61	1.27	1.97	2.36
	3H	4.55	5.16	4.97	5.57	5.98	4.53	5.14	4.95	5.55	5.96
	4H	6.55	7.10	6.99	7.53	7.98	6.53	7.08	6.97	7.51	7.96
	6H	8.77	9.24	9.24	9.69	10.16	8.76	9.23	9.23	9.68	10.15
	8H	10.02	10.45	10.49	10.91	11.38	10.04	10.48	10.52	10.93	11.40
8H	12H	11.76	12.14	12.25	12.62	13.10	11.85	12.23	12.35	12.72	13.20
	4H	7.31	7.75	7.79	8.20	8.68	7.30	7.74	7.78	8.19	8.66
	6H	9.81	10.15	10.32	10.66	11.14	9.80	10.15	10.31	10.65	11.14
	8H	11.27	11.57	11.80	12.10	12.59	11.29	11.60	11.83	12.12	12.62
12H	12H	13.14	13.41	13.67	13.90	14.49	13.23	13.49	13.76	13.99	14.58
	4H	7.54	7.91	8.03	8.40	8.88	7.53	7.90	8.02	8.39	8.87
	6H	10.37	10.47	10.70	10.94	11.49	10.37	10.47	10.70	10.94	11.49
	8H	11.77	12.03	12.30	12.53	13.11	11.80	12.06	12.32	12.56	13.14
Variation with the observer position at spacings:											
S = 1.0H	5.9/-9.7					5.9/-9.7					
S = 1.5H	8.3/-7.4					8.3/-7.4					
S = 2.0H	9.9/-5.8					9.9/-5.8					
Standard tables:	BK2					BK2					
Uncorrected UGR	-2.2					-2.2					



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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.95	0.93	0.91	0.94	0.92	0.90	0.90	0.88	0.87	0.87	0.86	0.84	0.84	0.83	0.82	0.80
2	0.90	0.86	0.83	0.88	0.85	0.82	0.85	0.83	0.81	0.83	0.81	0.79	0.80	0.79	0.77	0.76
3	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
4	0.80	0.75	0.72	0.79	0.75	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.74	0.71	0.69	0.68
5	0.75	0.71	0.67	0.75	0.70	0.67	0.73	0.69	0.67	0.72	0.68	0.66	0.70	0.68	0.65	0.64
6	0.72	0.67	0.64	0.71	0.66	0.63	0.70	0.66	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61
7	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.58
8	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.55
9	0.62	0.57	0.54	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.53	0.52
10	0.59	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.54	0.51	0.57	0.53	0.51	0.50



NATA 4-1985-M

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	1077.36	1072.07	1055.36	1019.42	935.10	784.52	602.66	337.22	67.73
45.0	1079.94	1082.81	1070.44	1021.73	924.86	759.43	557.61	306.06	46.18
90.0	1081.52	1085.46	1072.24	1015.26	907.48	727.20	507.71	220.33	28.58
135.0	1077.41	1080.00	1070.44	1034.94	931.16	763.76	572.06	291.49	46.01
180.0	1077.36	1065.71	1053.79	1006.99	904.39	747.68	543.15	254.93	38.81
225.0	1079.94	1060.88	1041.64	998.94	920.98	771.92	578.87	313.59	57.32
270.0	1081.52	1059.53	1035.79	1007.55	936.45	800.38	617.68	369.45	91.35
315.0	1077.41	1056.71	1036.63	998.38	915.64	765.11	574.59	292.89	55.07
360.0	1077.36	1072.07	1055.36	1019.42	935.10	784.52	602.66	337.22	67.73
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	11.48	4.56	4.16	4.11	4.05	4.11	4.05	4.11	4.11
45.0	9.06	4.50	4.22	4.16	4.16	4.16	4.11	4.16	5.06
90.0	7.48	4.33	4.22	4.16	4.11	4.16	4.11	4.11	4.16
135.0	9.28	4.50	4.22	4.22	4.16	4.16	4.11	4.16	5.46
180.0	9.28	4.39	4.22	4.16	4.16	4.11	4.16	4.11	4.50
225.0	11.25	4.61	4.22	4.11	4.11	4.11	4.11	4.11	4.16
270.0	13.05	5.06	4.22	4.16	4.11	4.11	4.11	4.11	4.11
315.0	10.97	4.44	4.16	4.11	4.11	4.11	4.11	4.11	4.05
360.0	11.48	4.56	4.16	4.11	4.05	4.11	4.05	4.11	4.11
C/γ(°)	90.0								
0.0	4.11								
45.0	4.11								
90.0	4.11								
135.0	4.05								
180.0	4.11								
225.0	4.05								
270.0	4.11								
315.0	4.05								
360.0	4.11								