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Nata

LumCAT: 2-1570-A

Luminaire: 92.70.046.00+92.70.147.00

Report No: NT2017092517

Voltage(V): 37.3000

Test No: GC2017092517

Current(A): 0.3000

LampCAT: CXA1512

Power (W): 11.1900

Lamp flux(lm): 1390.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 65

Width(mm): 65

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1171.89

Efficiency(%): 84.31%

Lumens(lm)/Power(W): 104.73

Central intensity(cd): 9758.059

Maximum intensity(cd): 9758.059

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=14.1

[C90/270]Total=14.1

Field angle(10%Imax): [C0/180]Total=31.7

[C90/270]Total=31.7

Beam angle of C0 plane : 14.07

Average BeamAngle(IEC 61341):14.07

Maximum s/h(1/2): C0_180=0.24 C90_270=0.24

Maximum s/h(1/4): C0_180=0.25 C90_270=0.25

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.43%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.387%

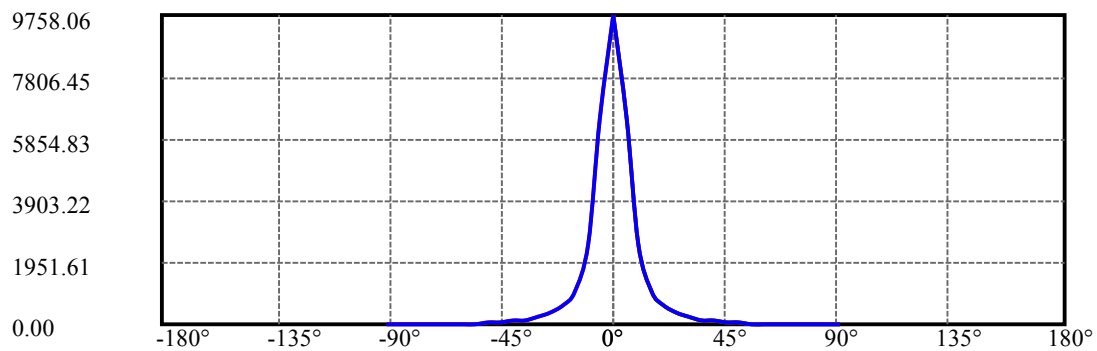
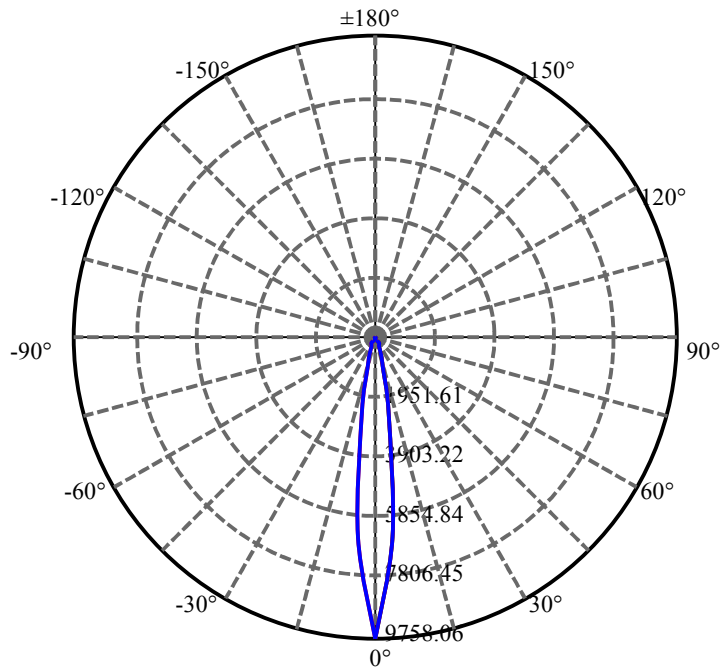
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9758.059	58.355	58.355	4.198%	4.980%
5.0	6489.016	310.002	368.357	22.302%	31.433%
10.0	2535.210	241.309	609.666	17.360%	52.024%
15.0	1051.653	149.196	758.862	10.734%	64.755%
20.0	596.178	111.768	870.63	8.041%	74.293%
25.0	365.306	84.624	955.254	6.088%	81.514%
30.0	248.889	68.213	1023.467	4.907%	87.335%
35.0	147.826	46.476	1069.944	3.344%	91.301%
40.0	95.337	33.591	1103.534	2.417%	94.167%
45.0	55.621	21.558	1125.092	1.551%	96.007%
50.0	31.795	13.351	1138.443	.960%	97.146%
55.0	11.748	5.275	1143.718	.379%	97.596%
60.0	8.713	4.136	1147.854	.298%	97.949%
65.0	8.369	4.157	1152.011	.299%	98.304%
70.0	8.348	4.300	1156.311	.309%	98.670%
75.0	8.424	4.460	1160.771	.321%	99.051%
80.0	9.346	5.045	1165.816	.363%	99.482%
85.0	8.788	4.799	1170.615	.345%	99.891%
90.0	4.659	1.277	1171.892	.092%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1023.47	73.63%	87.33%
0-40	1103.53	79.39%	94.17%
0-60	1147.85	82.58%	97.95%
0-90	1170.61	84.22%	99.89%
0-120	1170.61	84.22%	99.89%
0-180	1171.89	84.31%	100.00%
60-90	26.90	1.94%	2.30%
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%
0-23.95	937.51	67.45%	80.00%

ZONAL LUMEN SUMMARY

0-10	609.67
10-20	260.96
20-30	152.84
30-40	80.07
40-50	34.91
50-60	9.41
60-70	8.46
70-80	9.50
80-90	4.80
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: —————

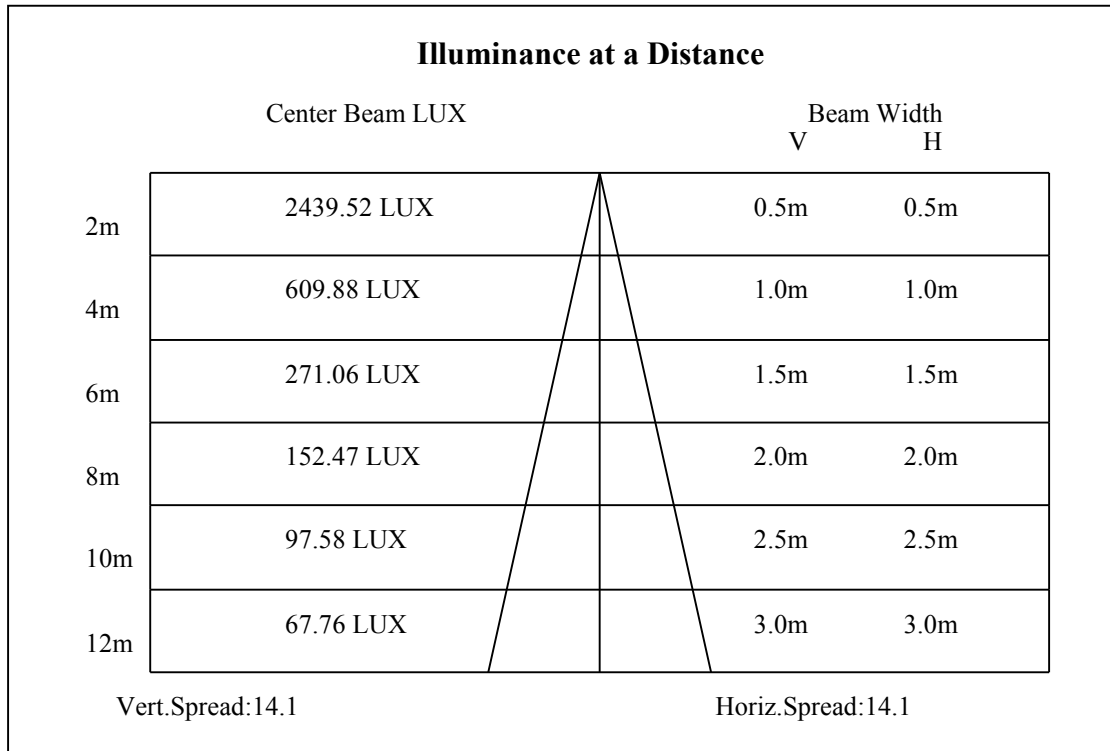
C90/C270: —————

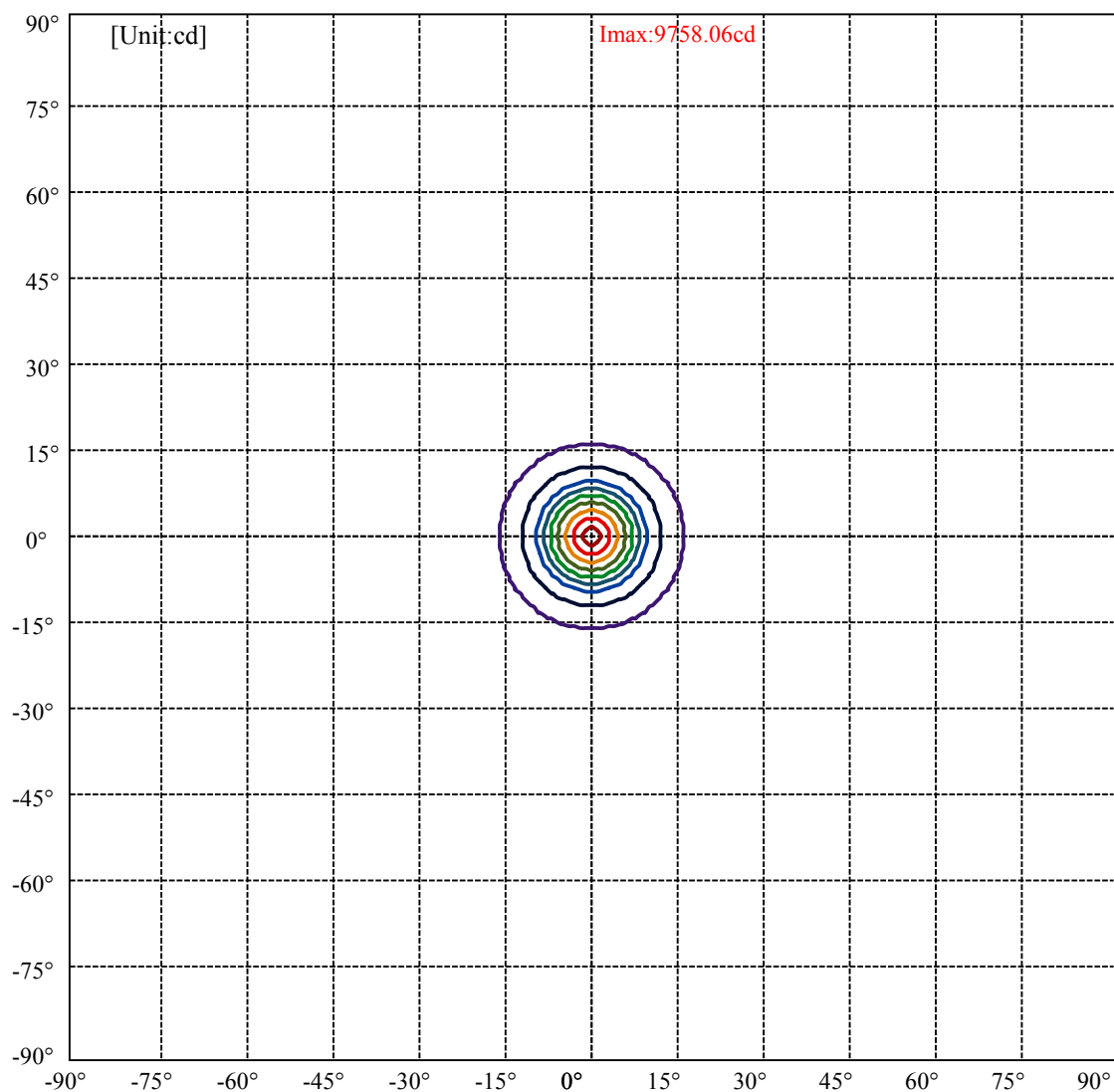
Field angle(10%Imax):C0/180Left:15.8 Right:15.8

:C90/270Left:15.8 Right:15.8

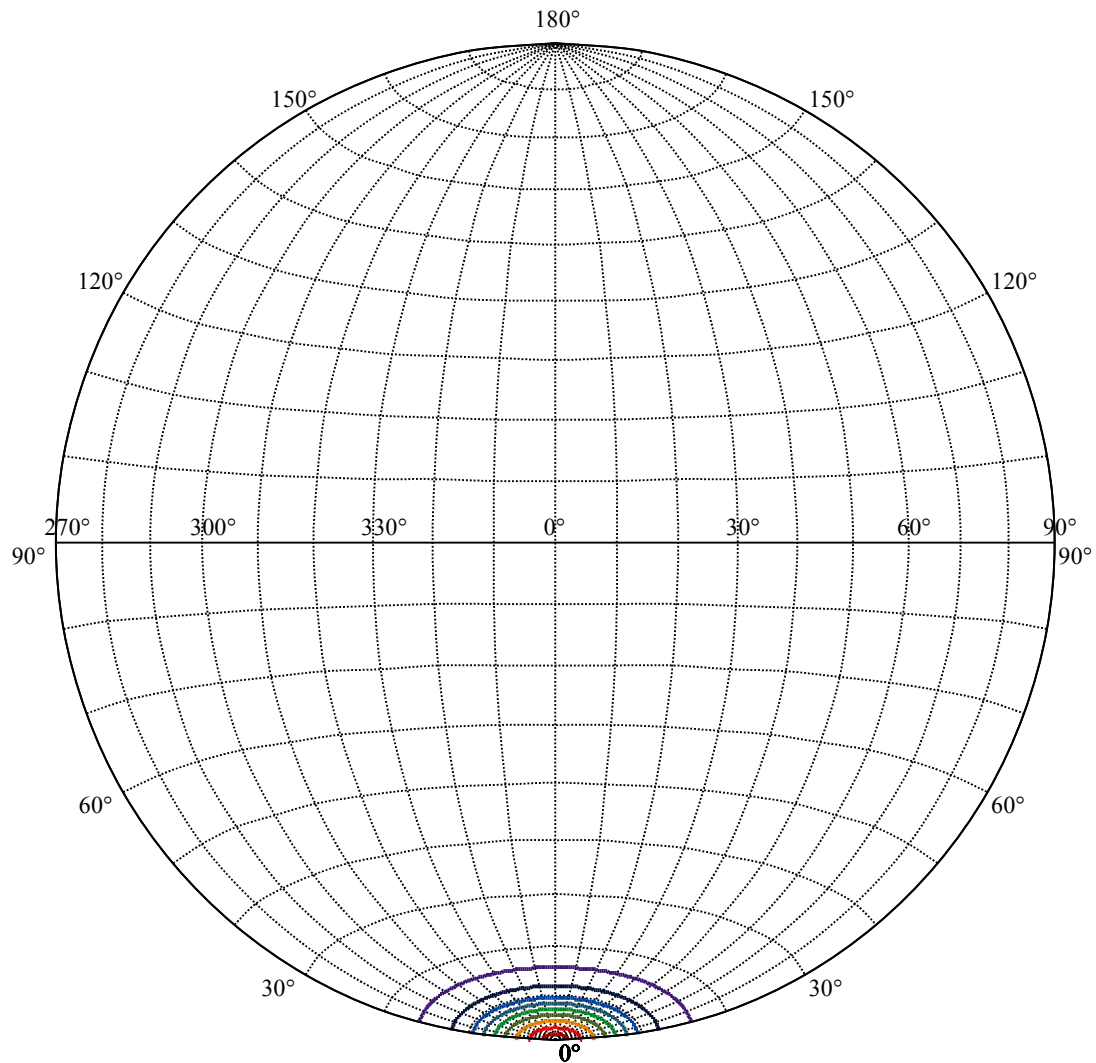
Beam Angle(50%Imax):C0/180Left:7.0 Right:7.0

:C90/270Left:7.0 Right:7.0





(10%Imax) 975.806	—
(20%Imax) 1951.61	—
(30%Imax) 2927.42	—
(40%Imax) 3903.22	—
(50%Imax) 4879.03	—
(60%Imax) 5854.83	—
(70%Imax) 6830.64	—
(80%Imax) 7806.45	—
(90%Imax) 8782.25	—



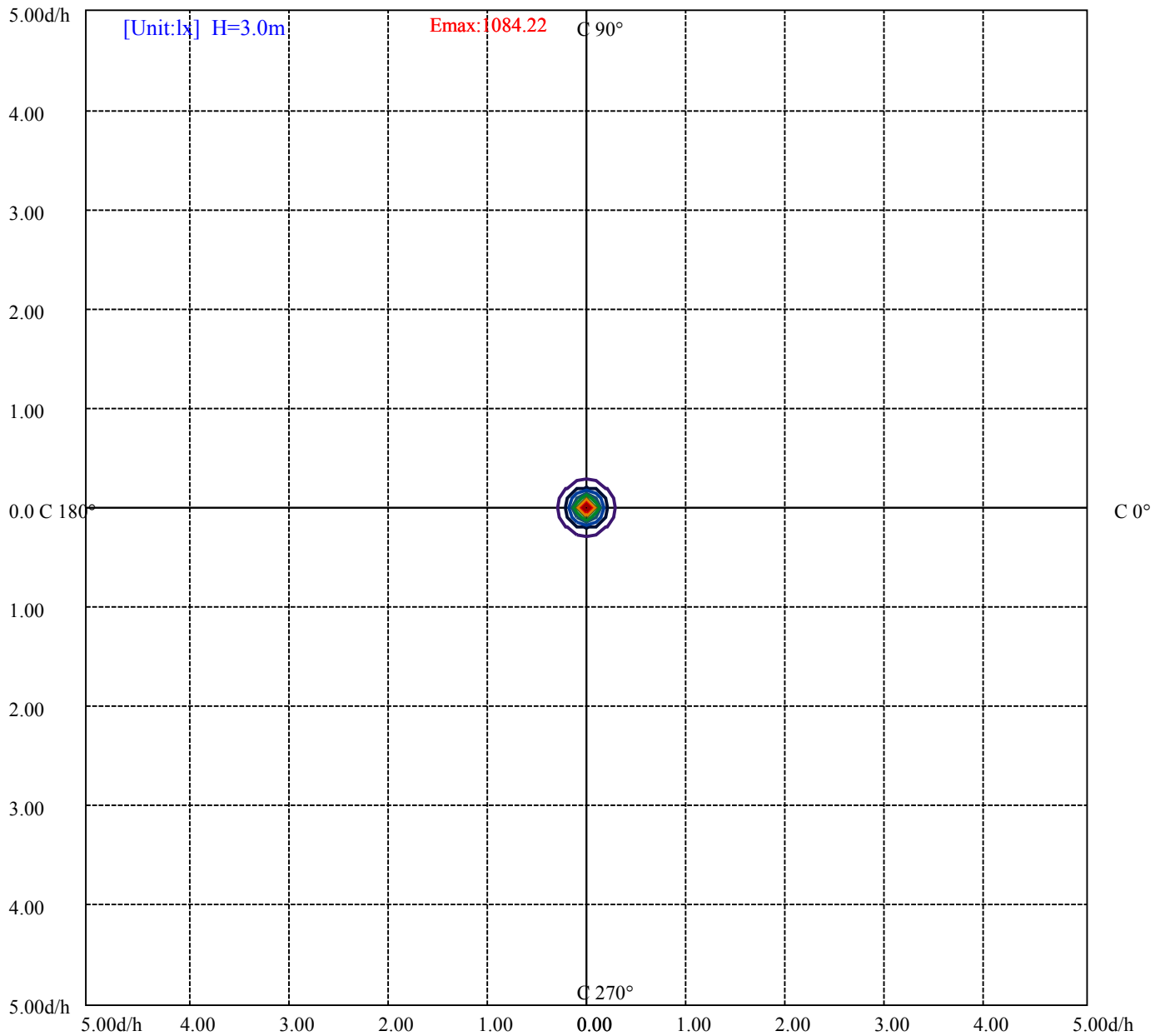
House

[Unit:cd]

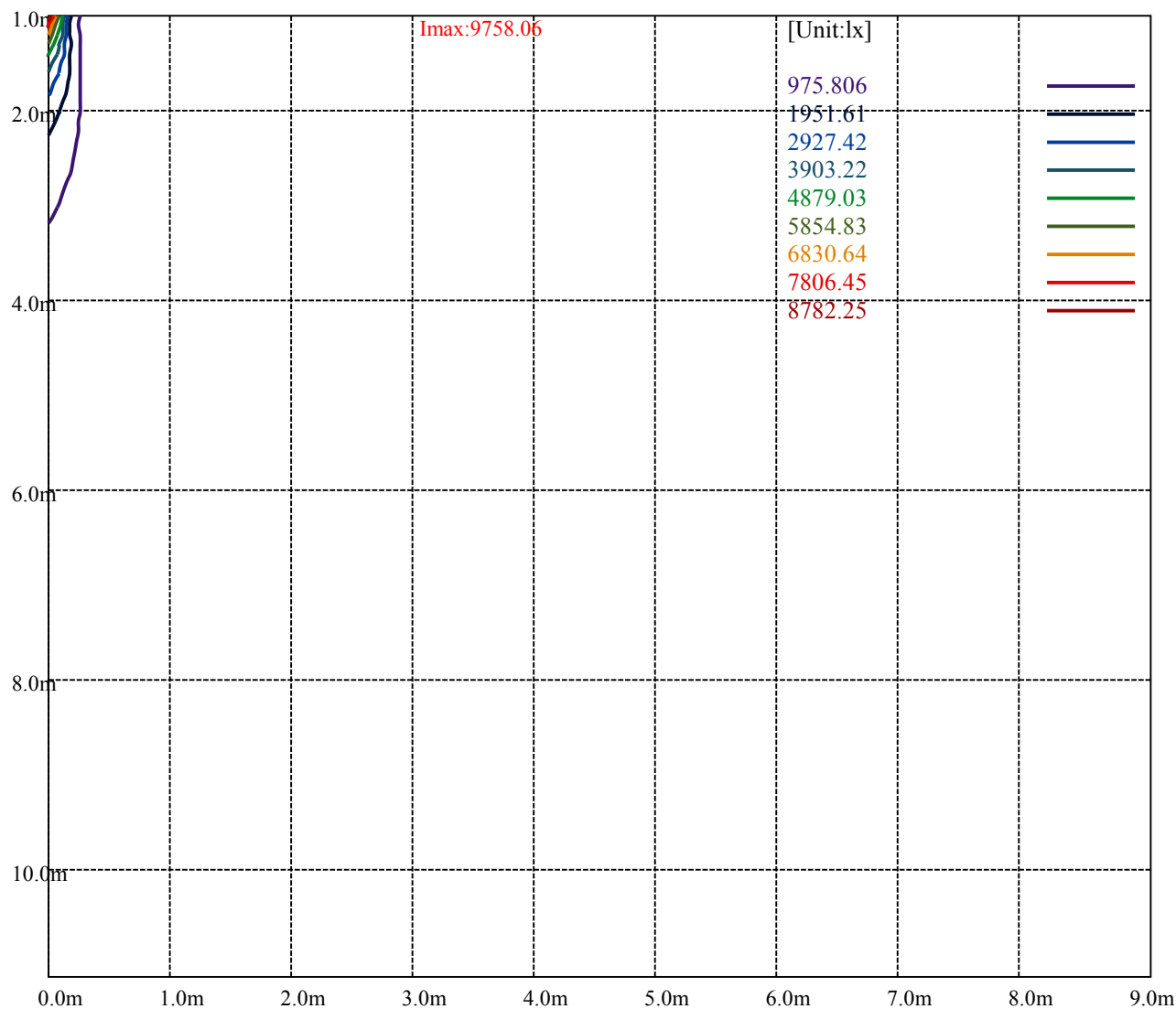
Road

Imax:9758.06

(10%Imax)	975.806	—
(20%Imax)	1951.61	—
(30%Imax)	2927.42	—
(40%Imax)	3903.22	—
(50%Imax)	4879.03	—
(60%Imax)	5854.83	—
(70%Imax)	6830.64	—
(80%Imax)	7806.45	—
(90%Imax)	8782.25	—



(10%Emax)	108.4218	—
(20%Emax)	216.8433	—
(30%Emax)	325.2655	—
(40%Emax)	433.6866	—
(50%Emax)	542.1089	—
(60%Emax)	650.5311	—
(70%Emax)	758.9522	—
(80%Emax)	867.3745	—
(90%Emax)	975.7956	—



Luminance Table

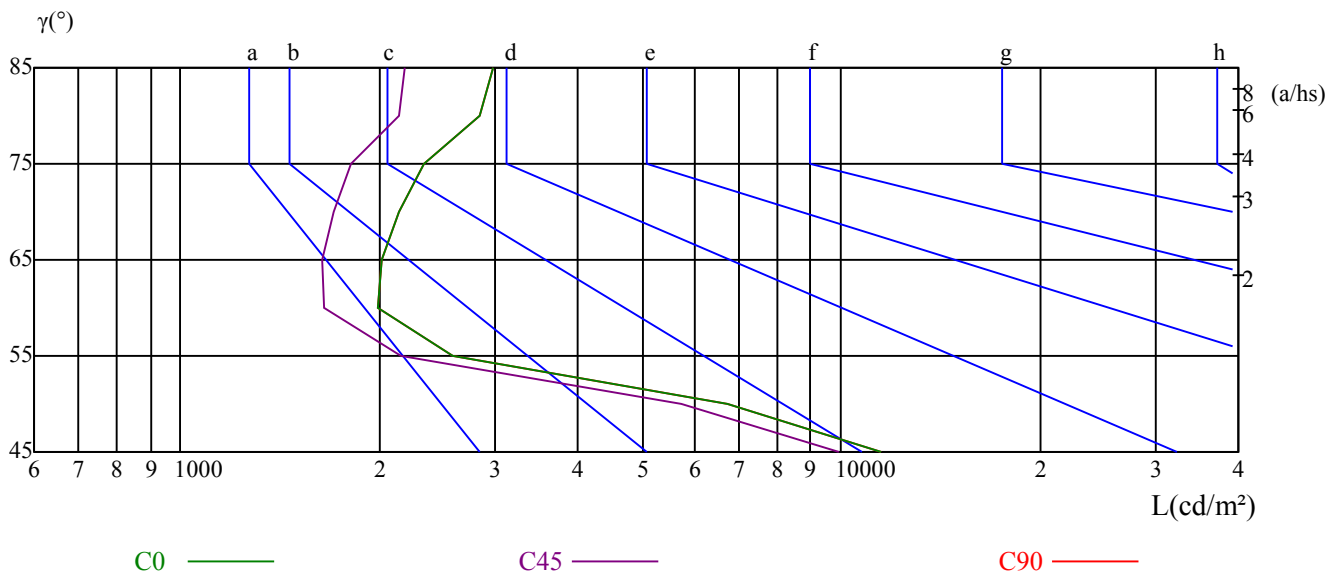
γ	45	50	55	60	65	70	75	80	85
C0	11525	6754	2580	1996	2020	2147	2337	2837	2971
C45	9954	5747	2161	1645	1635	1704	1813	2146	2180
C90	11525	6754	2580	1996	2020	2147	2337	2837	2971

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4687	4687	4687	7703	7703	7703	23866	23866	23866

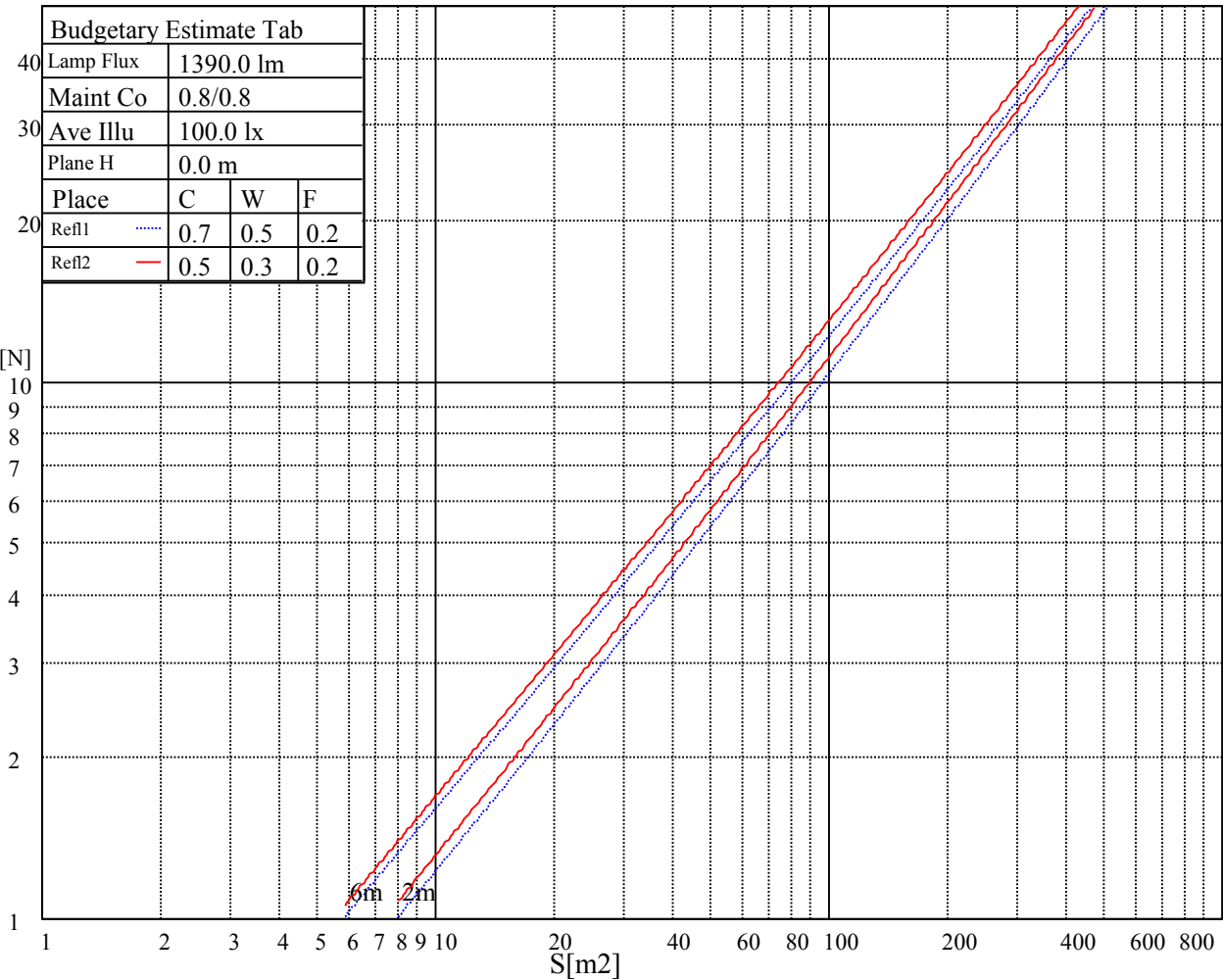
Glare Table

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

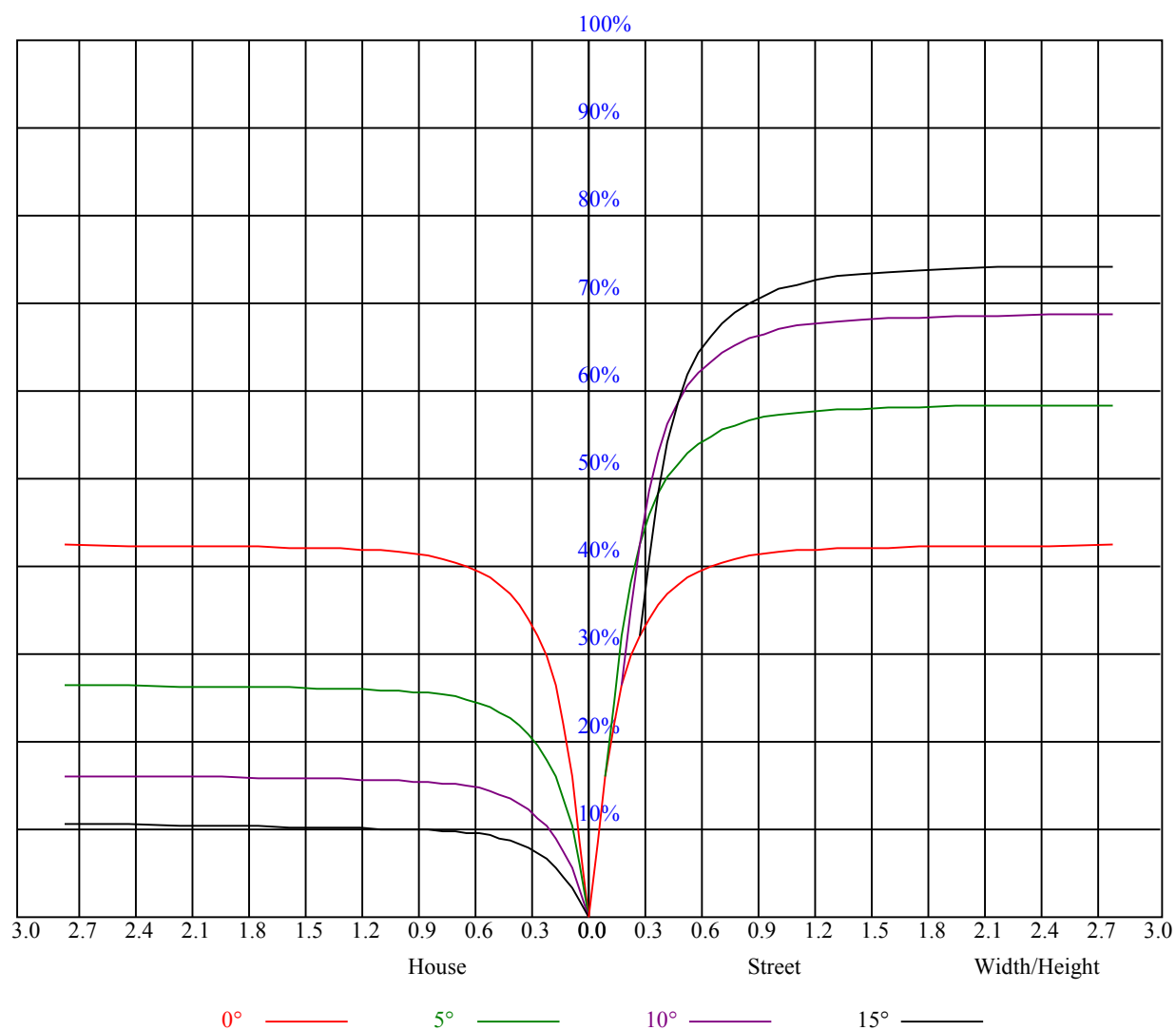
Luminance Limiting Curve



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	5.42	6.39	5.78	6.70	7.02	5.48	6.45	5.85	6.77	7.08
	3H	7.33	8.19	7.72	8.53	8.90	7.29	8.15	7.67	8.48	8.85
	4H	8.49	9.29	8.90	9.64	10.03	8.44	9.23	8.85	9.59	9.98
	6H	9.89	10.62	10.31	11.00	11.39	9.98	10.71	10.40	11.08	11.48
	8H	10.61	11.30	11.05	11.69	12.10	10.72	11.40	11.15	11.80	12.21
	12H	11.71	12.36	12.14	12.75	13.18	11.73	12.39	12.17	12.77	13.20
4H	2H	5.75	6.54	6.15	6.90	7.29	5.80	6.60	6.21	6.95	7.34
	3H	8.02	8.68	8.44	9.09	9.49	7.98	8.63	8.40	9.04	9.45
	4H	9.39	9.98	9.83	10.40	10.85	9.35	9.93	9.79	10.36	10.81
	6H	10.73	11.23	11.20	11.68	12.16	10.80	11.30	11.27	11.75	12.23
	8H	11.63	12.10	12.11	12.55	13.02	11.72	12.19	12.20	12.64	13.11
	12H	12.77	13.17	13.26	13.66	14.14	12.78	13.18	13.27	13.67	14.15
8H	4H	9.86	10.33	10.33	10.78	11.25	9.82	10.29	10.30	10.74	11.22
	6H	11.51	11.89	12.02	12.39	12.88	11.59	11.96	12.10	12.46	12.95
	8H	12.56	12.89	13.09	13.41	13.91	12.64	12.97	13.17	13.50	13.99
	12H	13.79	14.08	14.31	14.58	15.16	13.79	14.08	14.31	14.58	15.16
12H	4H	9.98	10.39	10.47	10.87	11.35	9.94	10.35	10.43	10.84	11.31
	6H	11.99	12.06	12.26	12.53	13.08	12.06	12.12	12.33	12.60	13.15
	8H	12.86	13.15	13.38	13.65	14.23	12.93	13.22	13.46	13.72	14.30
Variation with the observer position at spacings:											
S = 1.0H		2.7/-3.6					2.7/-3.6				
S = 1.5H		4.1/-2.8					4.1/-2.8				
S = 2.0H		5.2/-2.3					5.2/-2.3				
Standard tables:		BK3					BK3				
Uncorrected UGR		-3.3					-3.3				



RHOC	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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.94	0.91	0.88	0.92	0.89	0.86	0.88	0.86	0.83	0.85	0.83	0.81	0.82	0.80	0.79	0.77
2	0.89	0.85	0.81	0.87	0.84	0.81	0.84	0.81	0.79	0.82	0.79	0.77	0.79	0.77	0.75	0.74
3	0.85	0.80	0.77	0.84	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.71
4	0.81	0.77	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.69
5	0.78	0.74	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.67
6	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
7	0.73	0.69	0.66	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.63
8	0.71	0.67	0.64	0.71	0.66	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62
9	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.61	0.61
10	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.59



Nata 2-1570-A

Intensity data(cd)										Appendix Page: 15 Total:15	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	9744.98	6894.71	2832.65	1145.17	659.58	394.75	278.59	158.67	104.22		
45.0	9738.38	6970.14	2809.53	1097.27	591.31	349.06	245.83	144.03	97.06		
90.0	9857.30	6460.32	2432.39	996.30	543.19	336.61	214.83	133.24	88.48		
135.0	9691.58	7105.58	3033.61	1167.20	643.61	401.36	278.59	154.43	102.13		
180.0	9744.98	6150.35	2169.22	977.86	575.23	354.34	221.16	144.80	88.97		
225.0	9738.38	6153.10	2190.69	960.57	570.71	349.11	224.96	144.52	91.39		
270.0	9857.30	6410.22	2777.60	1073.60	605.07	371.08	279.14	150.74	95.74		
315.0	9691.58	5767.71	2035.99	995.25	580.73	366.13	248.03	152.18	94.70		
360.0	9744.98	6894.71	2832.65	1145.17	659.58	394.75	278.59	158.67	104.22		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	61.66	36.39	13.32	8.86	8.26	8.37	8.37	9.86	8.26		
45.0	61.99	35.29	12.94	8.70	8.48	8.53	8.59	9.97	8.53		
90.0	53.18	32.37	10.85	8.75	8.59	8.42	8.53	9.14	8.70		
135.0	58.52	33.14	13.93	8.48	7.98	7.87	7.93	7.49	7.93		
180.0	48.72	28.24	10.13	8.70	8.04	8.09	8.26	9.69	8.81		
225.0	51.26	29.29	11.18	8.92	8.92	9.03	9.41	12.00	9.80		
270.0	56.05	30.45	11.62	8.92	8.59	8.42	8.31	8.92	9.47		
315.0	53.57	29.18	10.02	8.37	8.09	8.04	7.98	7.71	8.81		
360.0	61.66	36.39	13.32	8.86	8.26	8.37	8.37	9.86	8.26		
C/γ(°)	90.0										
0.0	4.68										
45.0	4.68										
90.0	4.62										
135.0	4.62										
180.0	4.62										
225.0	4.73										
270.0	4.68										
315.0	4.62										
360.0	4.68										