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Nata

LumCAT: 2-1571-A

Luminaire: 92.70.188.00+92.70.147.00

Report No: NT2017092617

Voltage(V): 35.4000

Test No: GC2017092617

Current(A): 0.3000

LampCAT: LUMILEDS 1203

Power (W): 10.6200

Lamp flux(lm): 1187.0

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): 977.27

Efficiency(%): 82.33%

Lumens(lm)/Power(W): 92.02

Central intensity(cd): 3708.186

Maximum intensity(cd): 3708.186

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=23.7

[C90/270]Total=23.7

Field angle(10%Imax): [C0/180]Total=49.7

[C90/270]Total=49.7

Beam angle of C0 plane : 23.73

Average BeamAngle(IEC 61341):23.73

Maximum s/h(1/2): C0_180=0.40 C90_270=0.40

Maximum s/h(1/4): C0_180=0.42 C90_270=0.42

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 84.12%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.526%

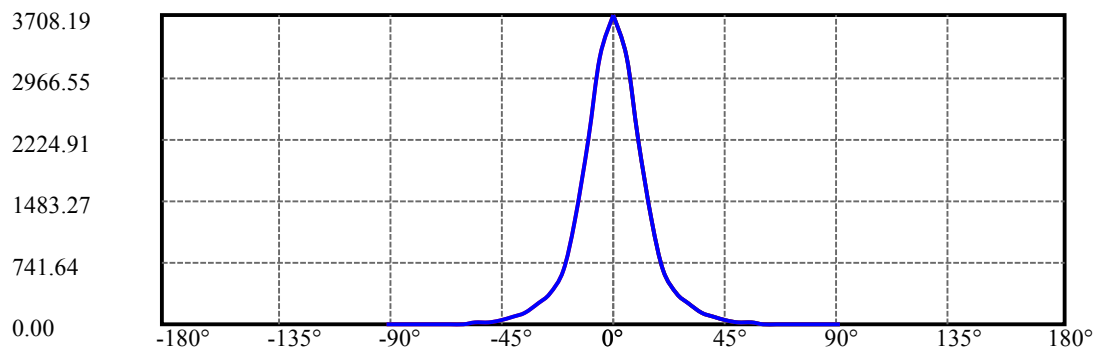
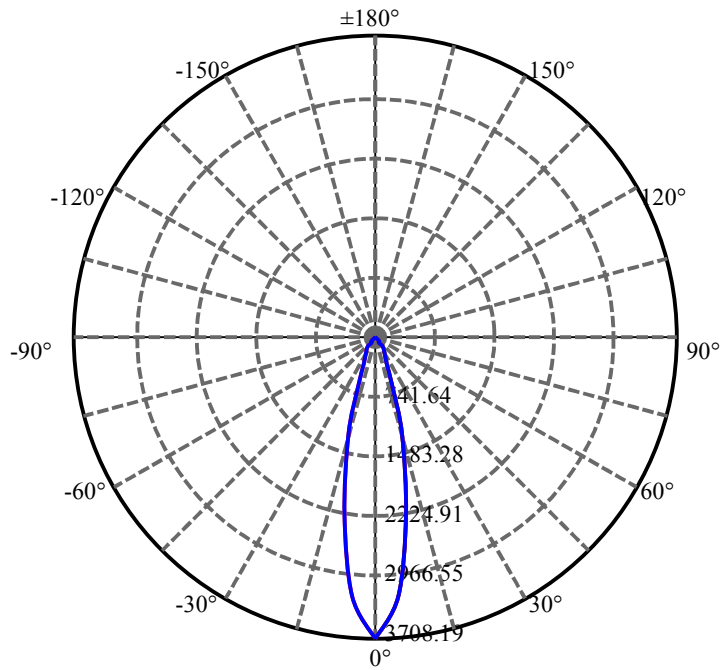
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3708.186	22.176	22.176	1.868%	2.269%
5.0	3196.230	152.695	174.87	12.864%	17.894%
10.0	2219.805	211.288	386.158	17.800%	39.514%
15.0	1238.542	175.710	561.868	14.803%	57.493%
20.0	650.911	122.029	683.897	10.280%	69.980%
25.0	361.865	83.827	767.724	7.062%	78.558%
30.0	242.193	66.378	834.102	5.592%	85.350%
35.0	148.033	46.541	880.643	3.921%	90.112%
40.0	90.506	31.888	912.531	2.686%	93.375%
45.0	50.652	19.632	932.164	1.654%	95.384%
50.0	27.838	11.689	943.853	.985%	96.580%
55.0	13.241	5.945	949.798	.501%	97.189%
60.0	8.534	4.051	953.849	.341%	97.603%
65.0	8.031	3.990	957.839	.336%	98.011%
70.0	8.045	4.144	961.983	.349%	98.435%
75.0	8.458	4.478	966.461	.377%	98.894%
80.0	9.318	5.030	971.491	.424%	99.408%
85.0	8.561	4.675	976.166	.394%	99.887%
90.0	4.040	1.107	977.273	.093%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	834.10	70.27%	85.35%
0-40	912.53	76.88%	93.38%
0-60	953.85	80.36%	97.60%
0-90	976.17	82.24%	99.89%
0-120	976.17	82.24%	99.89%
0-180	977.27	82.33%	100.00%
60-90	26.37	2.22%	2.70%
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%
0-26.06	781.82	65.87%	80.00%

ZONAL LUMEN SUMMARY

0-10	386.16
10-20	297.74
20-30	150.20
30-40	78.43
40-50	31.32
50-60	10.00
60-70	8.13
70-80	9.51
80-90	4.67
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: —————

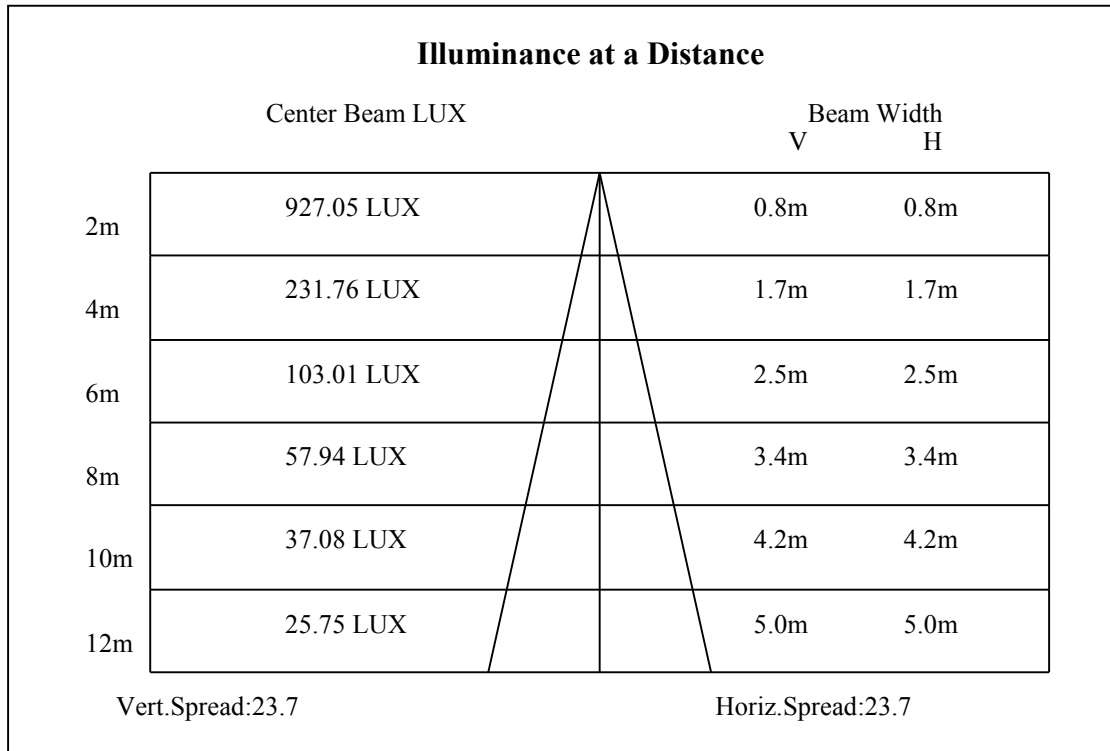
C90/C270: —————

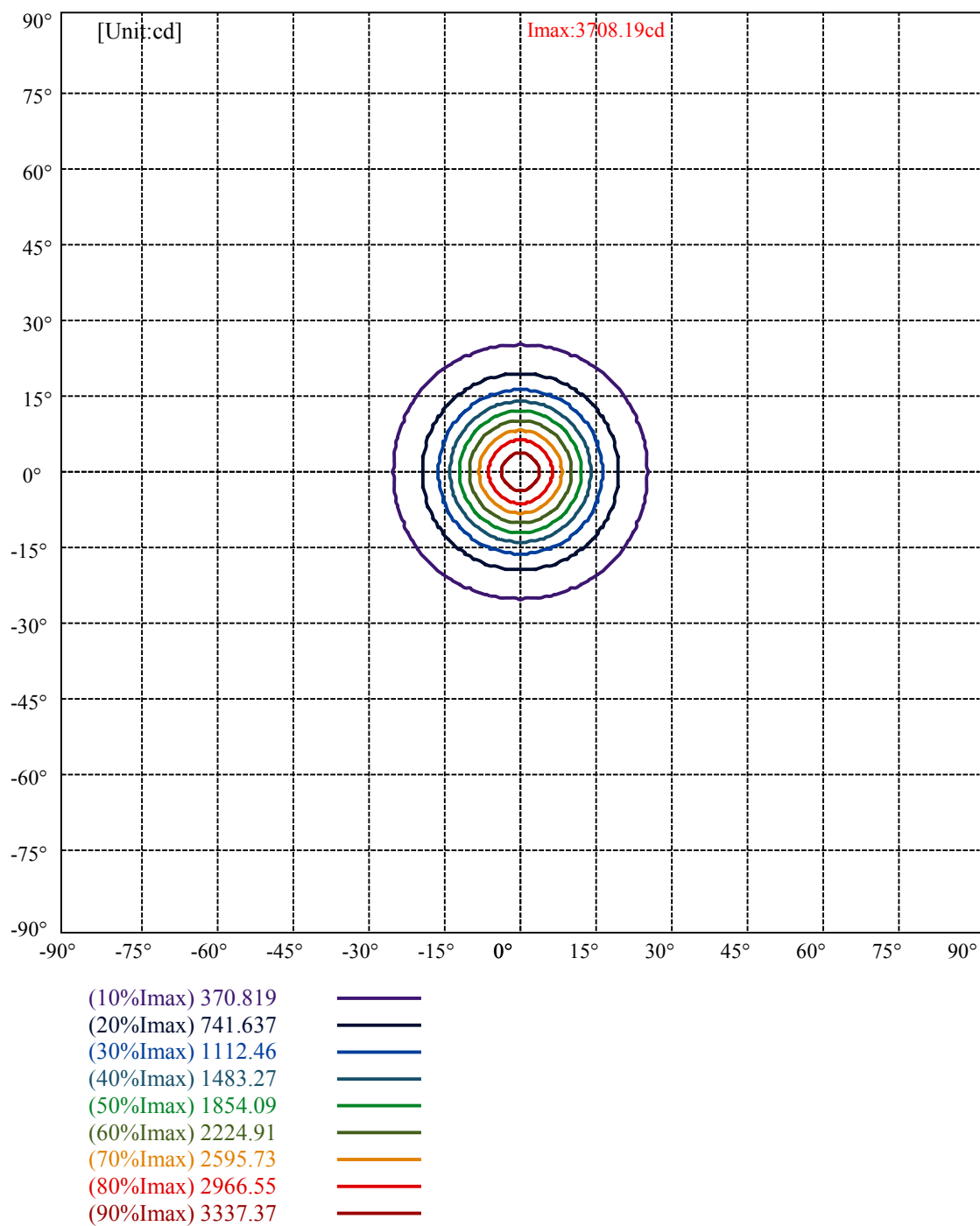
Field angle(10%Imax):C0/180Left:24.8 Right:24.8

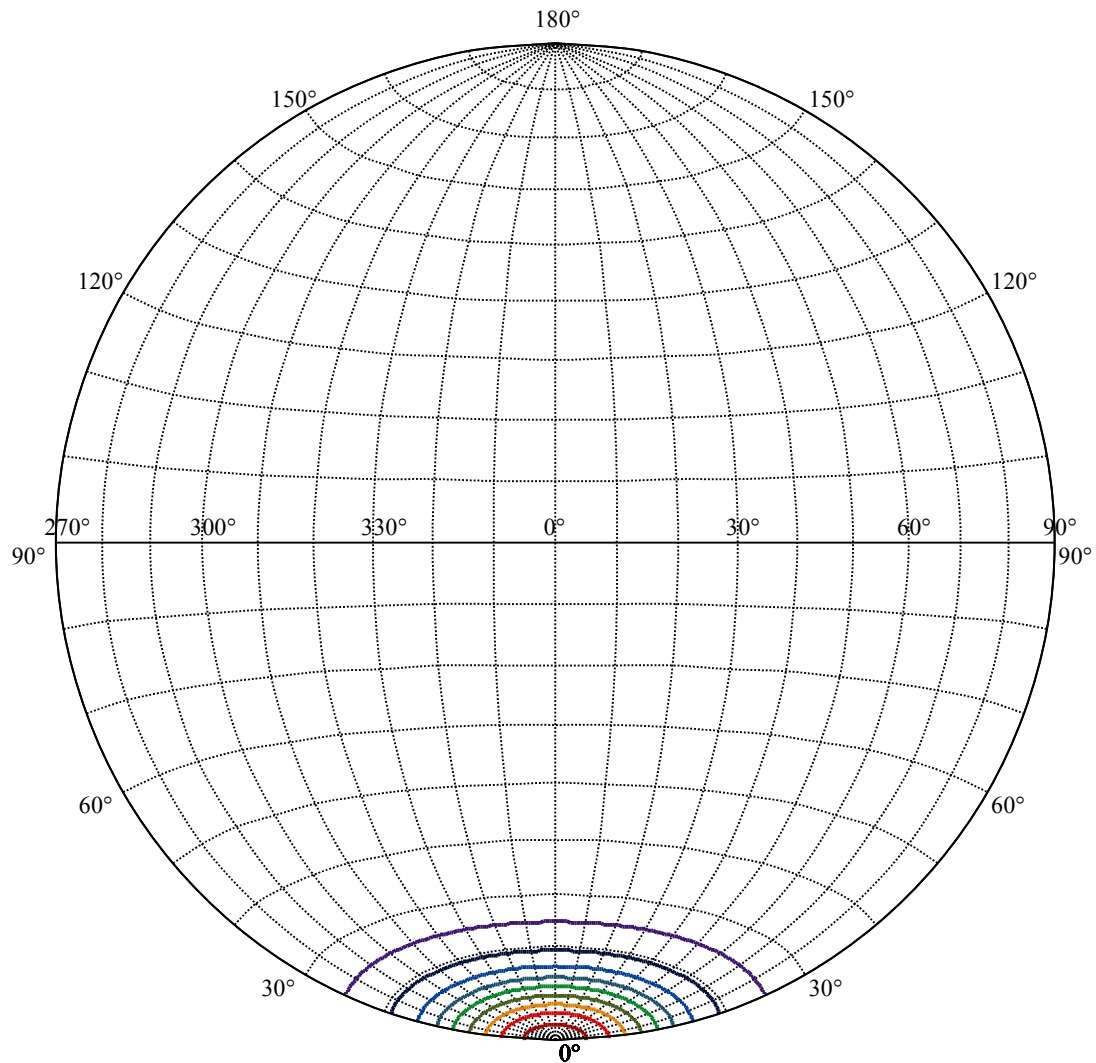
:C90/270Left:24.8 Right:24.8

Beam Angle(50%Imax):C0/180Left:11.9 Right:11.9

:C90/270Left:11.9 Right:11.9







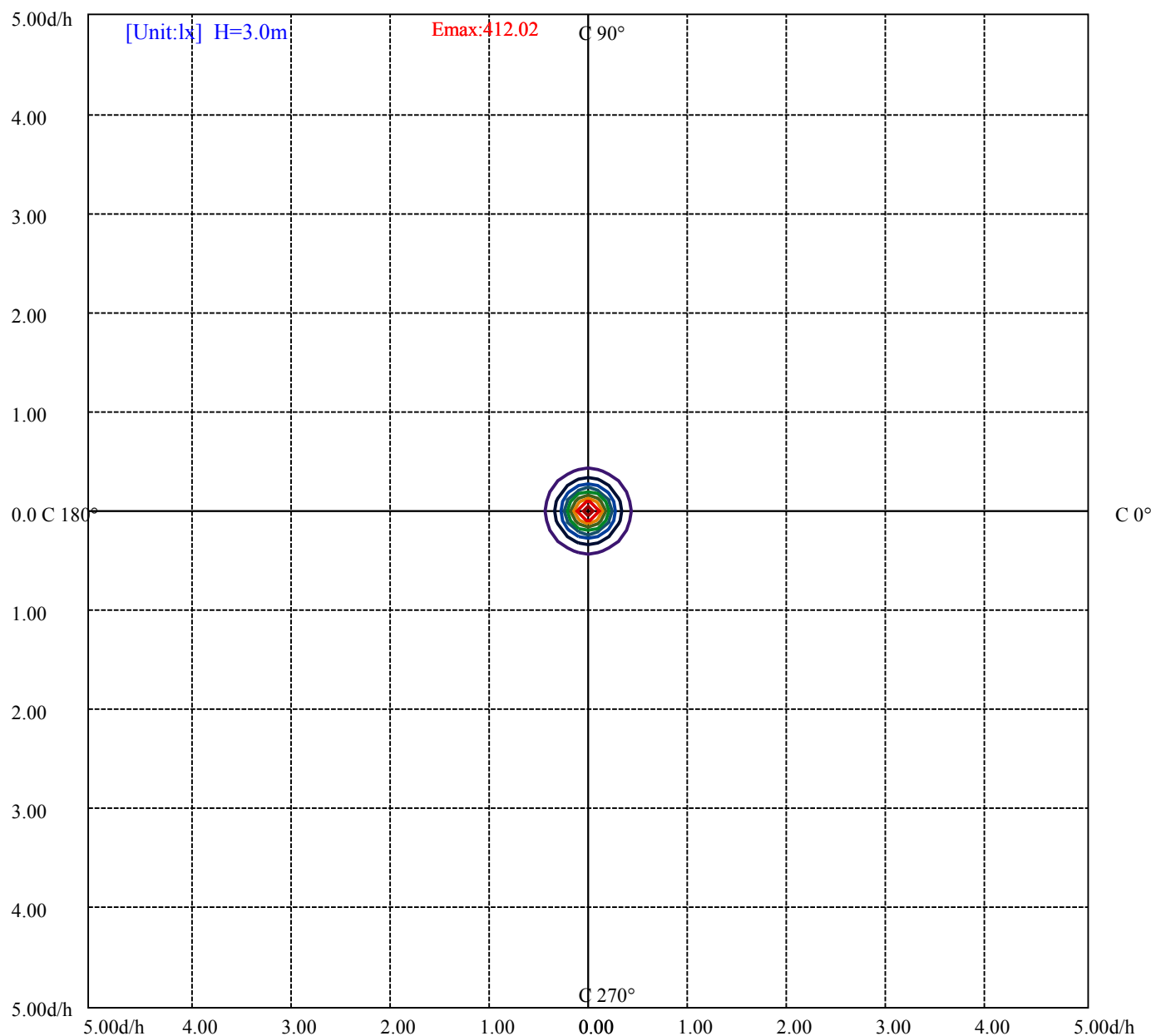
House

[Unit:cd]

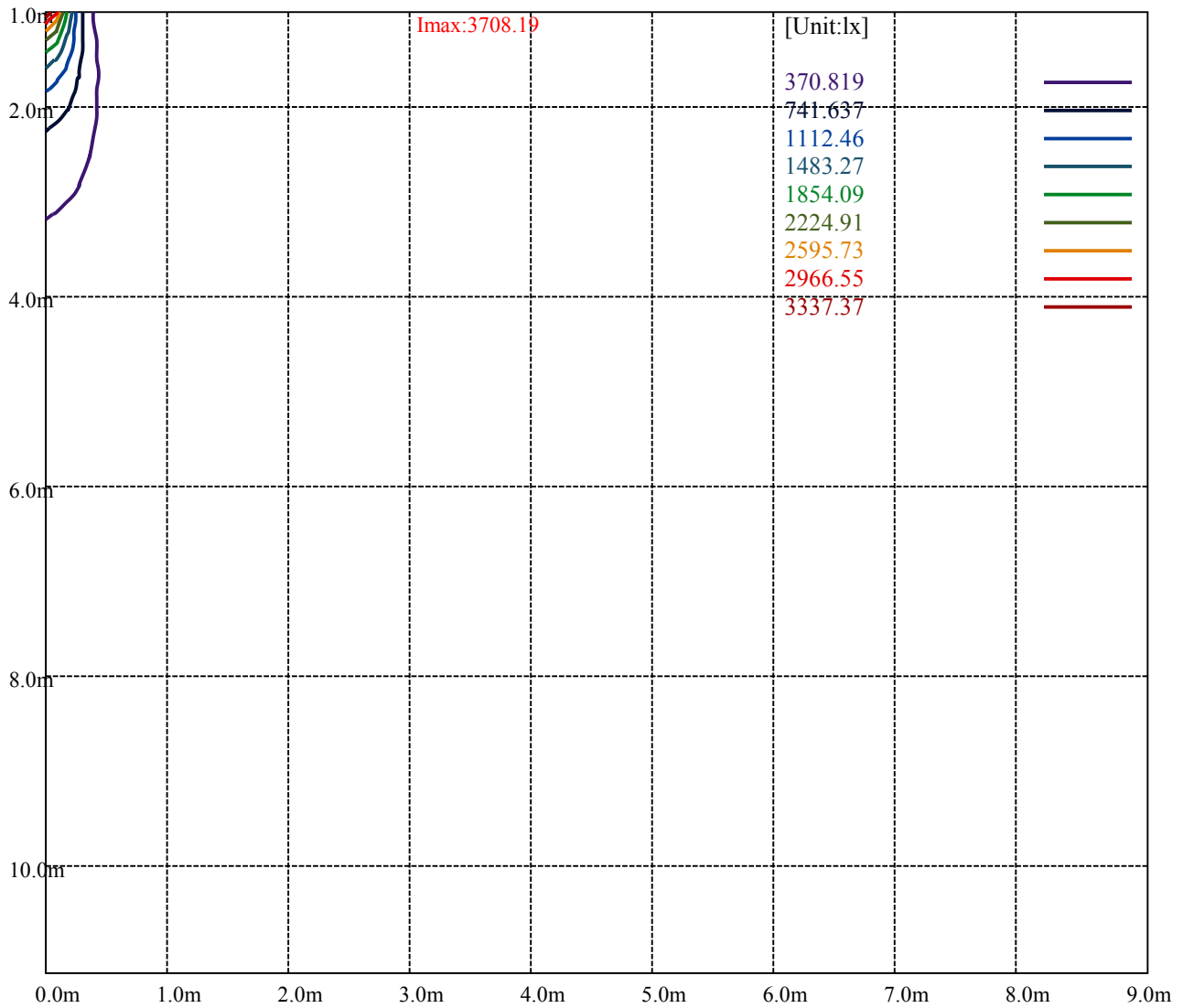
Road

Imax:3708.19

(10%Imax)	370.819	—
(20%Imax)	741.637	—
(30%Imax)	1112.46	—
(40%Imax)	1483.27	—
(50%Imax)	1854.09	—
(60%Imax)	2224.91	—
(70%Imax)	2595.73	—
(80%Imax)	2966.55	—
(90%Imax)	3337.37	—



(10%Emax)	41.20189	—
(20%Emax)	82.40378	—
(30%Emax)	123.6056	—
(40%Emax)	164.8078	—
(50%Emax)	206.01	—
(60%Emax)	247.2111	—
(70%Emax)	288.4133	—
(80%Emax)	329.6156	—
(90%Emax)	370.8167	—



Luminance Table

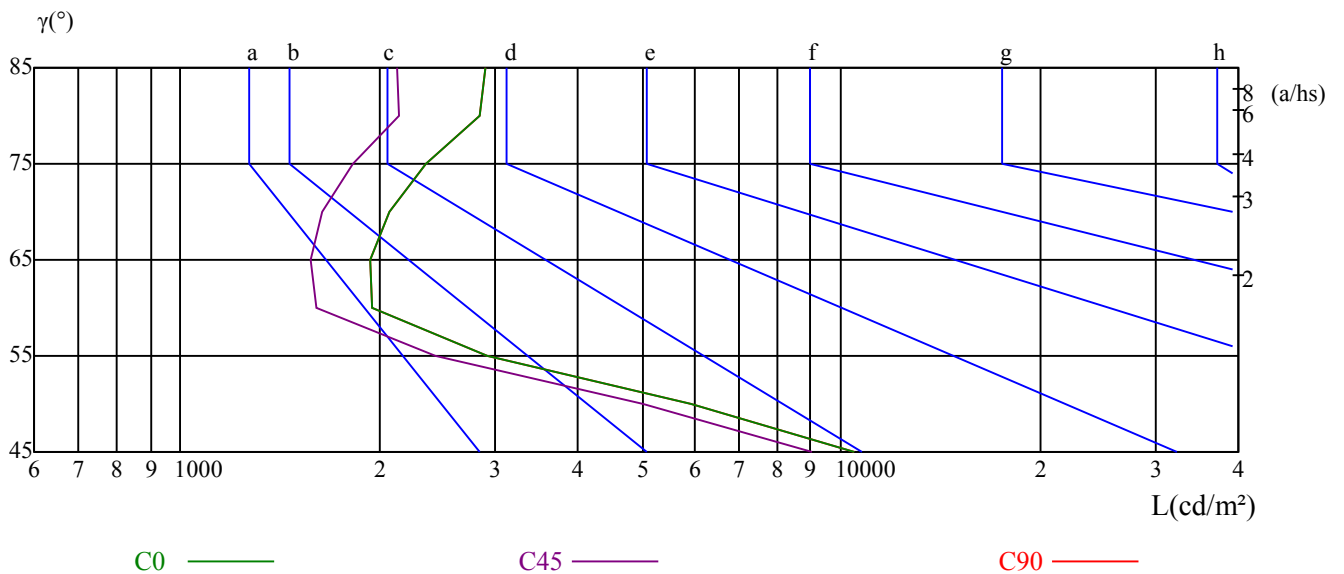
γ	45	50	55	60	65	70	75	80	85
C0	10496	5914	2908	1955	1939	2069	2346	2829	2894
C45	9065	5032	2436	1611	1569	1642	1821	2140	2124
C90	10496	5914	2908	1955	1939	2069	2346	2829	2894

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4498	4498	4498	7735	7735	7735	23250	23250	23250

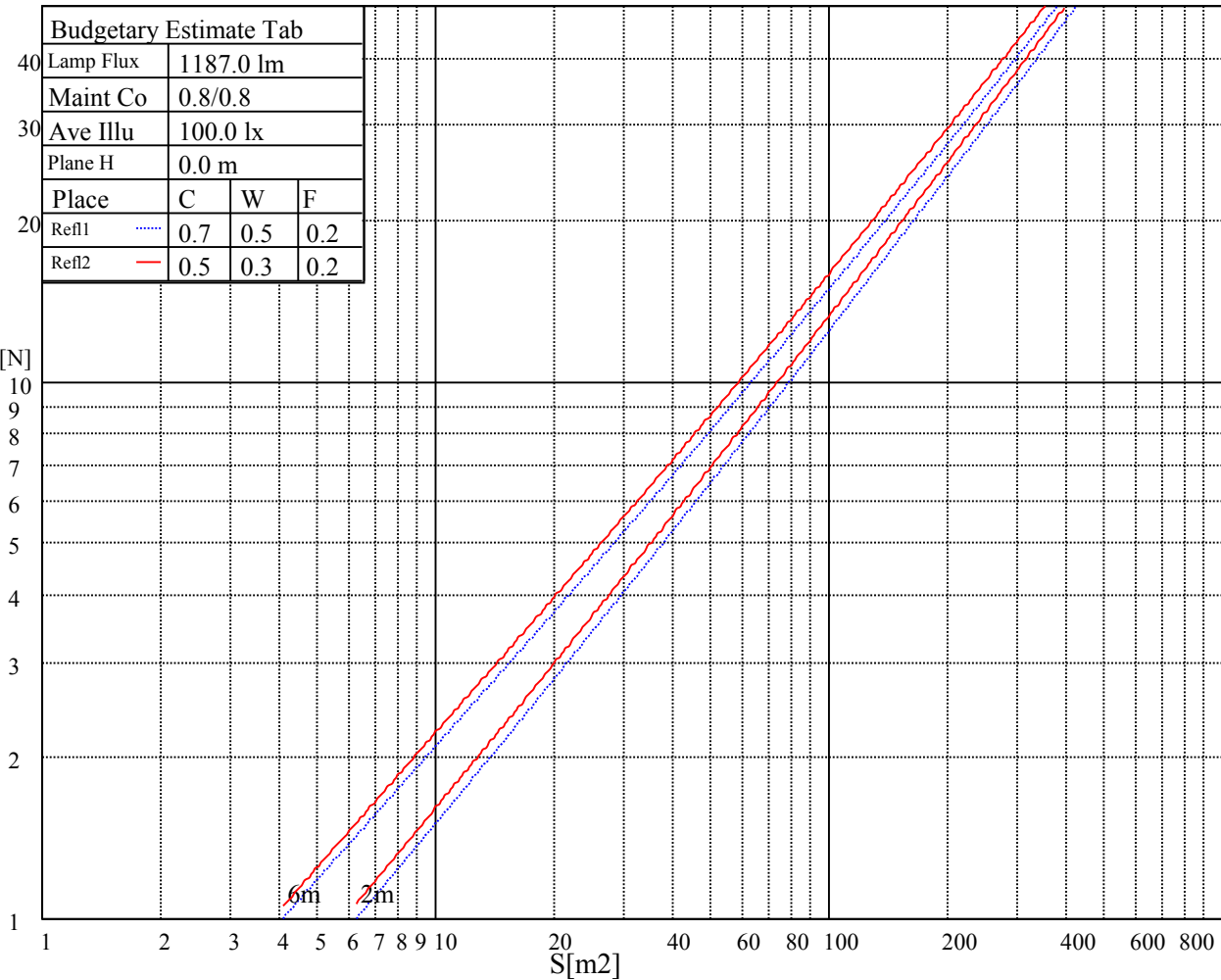
Glare Table

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

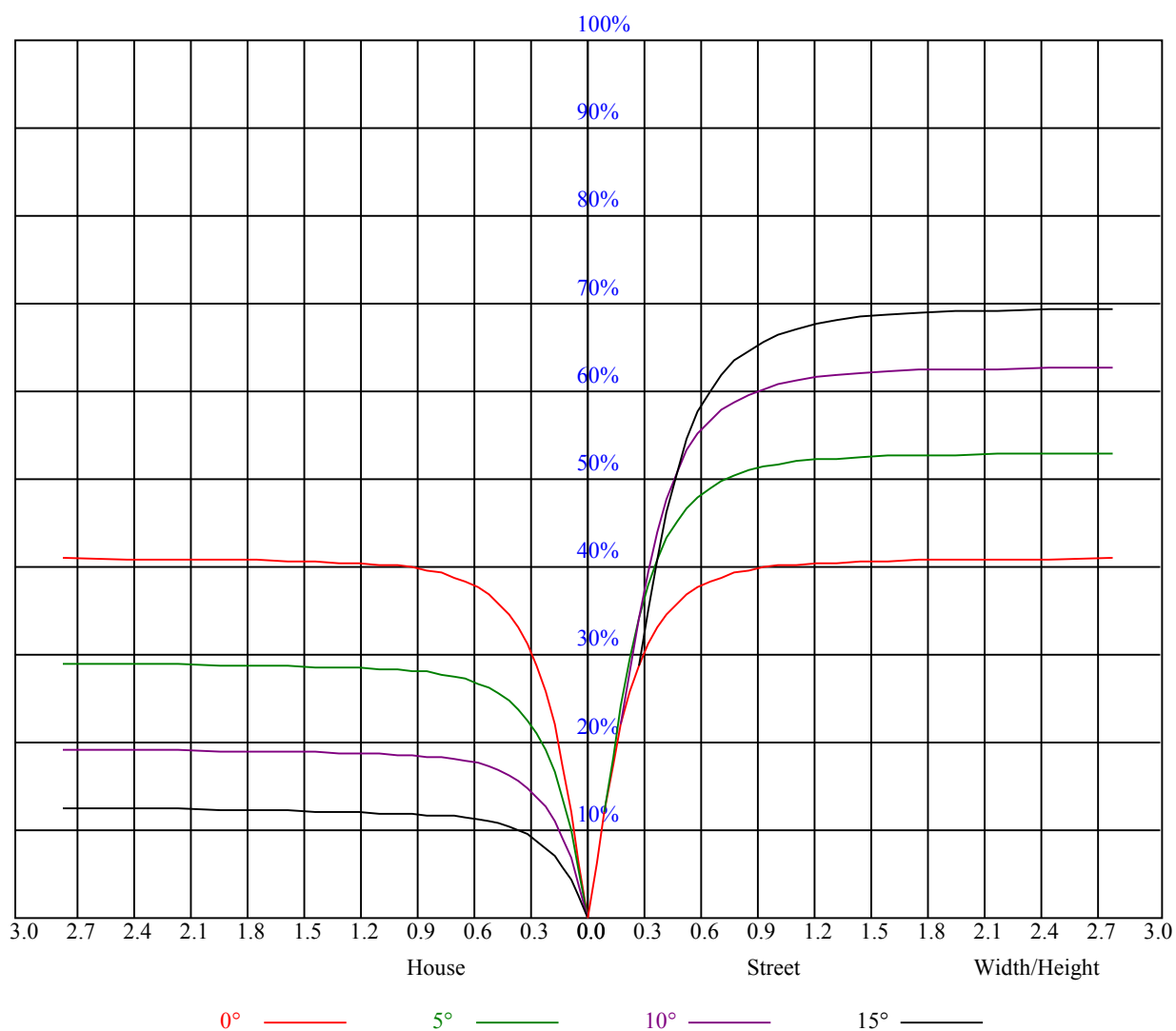
Luminance Limiting Curve



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	7.39	8.38	7.75	8.69	9.01	6.78	7.77	7.14	8.08	8.40
	3H	8.96	9.84	9.34	10.17	10.54	8.38	9.26	8.76	9.59	9.96
	4H	10.14	10.96	10.55	11.31	11.70	9.45	10.27	9.86	10.62	11.01
	6H	11.63	12.38	12.05	12.75	13.15	10.82	11.57	11.24	11.94	12.34
	8H	12.33	13.03	12.76	13.42	13.83	11.51	12.22	11.95	12.61	13.02
	12H	13.29	13.96	13.72	14.34	14.78	12.53	13.20	12.97	13.59	14.02
4H	2H	7.56	8.38	7.97	8.73	9.12	7.04	7.86	7.45	8.21	8.60
	3H	9.52	10.19	9.93	10.59	11.00	9.03	9.70	9.45	10.11	10.52
	4H	10.94	11.54	11.38	11.96	12.41	10.34	10.94	10.78	11.37	11.82
	6H	12.35	12.87	12.82	13.32	13.79	11.65	12.17	12.12	12.62	13.09
	8H	13.24	13.72	13.72	14.18	14.65	12.53	13.01	13.00	13.46	13.94
	12H	14.26	14.68	14.75	15.17	15.65	13.59	14.01	14.08	14.50	14.98
8H	4H	11.35	11.83	11.83	12.28	12.76	10.85	11.34	11.33	11.79	12.26
	6H	13.08	13.46	13.59	13.96	14.45	12.49	12.88	13.00	13.38	13.86
	8H	14.10	14.45	14.64	14.97	15.47	13.51	13.85	14.04	14.37	14.87
	12H	15.23	15.52	15.75	16.02	16.60	14.66	14.96	15.18	15.46	16.04
12H	4H	11.45	11.87	11.94	12.36	12.83	11.00	11.41	11.49	11.90	12.38
	6H	13.55	13.60	13.79	14.07	14.62	13.02	13.07	13.26	13.54	14.09
	8H	14.37	14.67	14.90	15.17	15.75	13.83	14.13	14.36	14.63	15.21
Variation with the observer position at spacings:											
S = 1.0H		2.8/-3.4					2.8/-3.4				
S = 1.5H		4.2/-2.7					4.2/-2.7				
S = 2.0H		5.2/-2.1					5.2/-2.1				
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	1.00	1.00	1.00	0.98	0.98	0.98	0.93	0.93	0.93	0.89	0.89	0.89	0.86	0.86	0.86	0.84
1	0.92	0.89	0.87	0.90	0.88	0.86	0.86	0.85	0.83	0.83	0.82	0.80	0.80	0.79	0.78	0.76
2	0.87	0.83	0.80	0.85	0.82	0.79	0.82	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.74	0.73
3	0.82	0.78	0.75	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.74	0.72	0.75	0.73	0.71	0.70
4	0.79	0.74	0.71	0.78	0.74	0.71	0.76	0.73	0.70	0.74	0.71	0.69	0.73	0.70	0.68	0.67
5	0.75	0.71	0.68	0.75	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
6	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.63
7	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.61
8	0.67	0.63	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.65	0.62	0.60	0.59
9	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.57
10	0.63	0.59	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.58	0.56	0.56



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	3699.24	3284.11	2327.23	1425.96	714.63	394.75	282.44	157.13	92.94		
45.0	3709.70	3291.82	2358.62	1390.72	710.23	399.71	284.09	160.60	99.38		
90.0	3726.77	3221.90	2214.37	1094.30	648.89	363.87	230.96	152.01	94.15		
135.0	3697.04	3398.63	2421.93	1479.92	753.17	409.62	280.79	163.52	100.64		
180.0	3699.24	3061.69	2162.62	1088.30	606.61	354.07	227.77	141.38	86.77		
225.0	3709.70	3096.37	2071.77	1084.50	572.64	309.69	210.26	132.58	81.26		
270.0	3726.77	3223.55	2191.80	1275.11	621.04	339.15	212.13	144.30	89.08		
315.0	3697.04	2991.76	2010.11	1069.53	580.07	324.06	209.10	132.74	79.83		
360.0	3699.24	3284.11	2327.23	1425.96	714.63	394.75	282.44	157.13	92.94		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	53.07	28.24	12.61	8.15	7.82	7.87	7.98	9.19	9.41		
45.0	55.61	30.39	15.20	9.25	8.53	8.59	9.03	10.13	9.14		
90.0	52.74	30.06	14.65	9.03	8.37	8.37	9.25	10.13	8.86		
135.0	54.84	30.50	15.64	8.04	7.54	7.43	7.60	8.48	8.42		
180.0	47.84	26.65	11.62	7.98	7.49	7.43	7.54	7.93	6.88		
225.0	47.46	26.59	12.28	8.75	8.20	8.26	8.97	9.52	8.42		
270.0	50.87	27.97	14.15	9.14	8.59	8.64	9.25	10.08	8.59		
315.0	42.78	22.30	9.80	7.93	7.71	7.76	8.04	9.08	8.75		
360.0	53.07	28.24	12.61	8.15	7.82	7.87	7.98	9.19	9.41		
C/γ(°)	90.0										
0.0	3.96										
45.0	4.07										
90.0	4.07										
135.0	4.13										
180.0	4.02										
225.0	4.07										
270.0	4.02										
315.0	3.96										
360.0	3.96										