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Nata

LumCAT: 2-1572-A

Luminaire: 92.70.188.00+92.70.147.00

Report No: NT2017092618

Voltage(V): 35.4000

Test No: GC2017092618

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): 980.20

Efficiency(%): 82.58%

Lumens(lm)/Power(W): 92.30

Central intensity(cd): 2369.421

Maximum intensity(cd): 2369.421

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=33.6

[C90/270]Total=33.6

Field angle(10%Imax): [C0/180]Total=62.2

[C90/270]Total=62.2

Beam angle of C0 plane : 33.59

Aveage BeamAngle(IEC 61341):33.59

Maximum s/h(1/2): C0_180=0.55 C90_270=0.55

Maximum s/h(1/4): C0_180=0.56 C90_270=0.56

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 83.69%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.396%

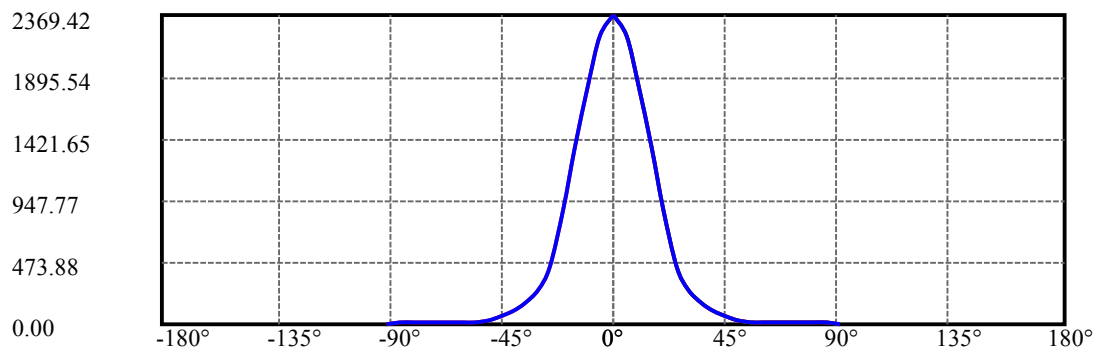
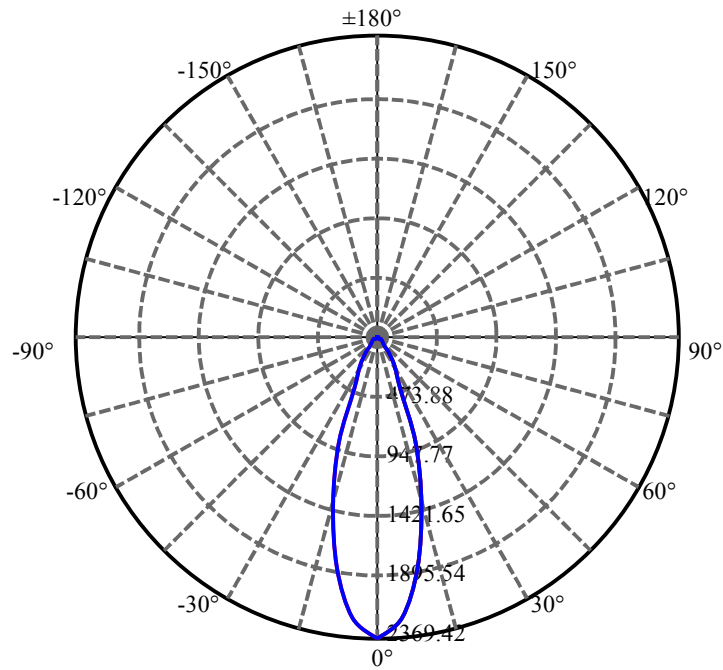
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2369.421	14.170	14.17	1.194%	1.446%
5.0	2214.850	105.811	119.98	8.914%	12.240%
10.0	1845.766	175.686	295.666	14.801%	30.164%
15.0	1355.076	192.242	487.908	16.196%	49.776%
20.0	879.932	164.964	652.873	13.898%	66.606%
25.0	445.991	103.315	756.188	8.704%	77.146%
30.0	260.073	71.278	827.466	6.005%	84.418%
35.0	155.699	48.952	876.417	4.124%	89.412%
40.0	99.198	34.951	911.368	2.944%	92.978%
45.0	57.878	22.433	933.801	1.890%	95.266%
50.0	33.591	14.105	947.906	1.188%	96.705%
55.0	13.413	6.023	953.929	.507%	97.320%
60.0	7.818	3.711	957.64	.313%	97.698%
65.0	7.763	3.856	961.497	.325%	98.092%
70.0	7.804	4.020	965.516	.339%	98.502%
75.0	8.100	4.289	969.805	.361%	98.939%
80.0	8.781	4.740	974.546	.399%	99.423%
85.0	8.300	4.532	979.078	.382%	99.885%
90.0	4.102	1.124	980.202	.095%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	827.47	69.71%	84.42%
0-40	911.37	76.78%	92.98%
0-60	957.64	80.68%	97.70%
0-90	979.08	82.48%	99.89%
0-120	979.08	82.48%	99.89%
0-180	980.20	82.58%	100.00%
60-90	25.15	2.12%	2.57%
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%
0-26.96	784.16	66.06%	80.00%

ZONAL LUMEN SUMMARY

0-10	295.67
10-20	357.21
20-30	174.59
30-40	83.90
40-50	36.54
50-60	9.73
60-70	7.88
70-80	9.03
80-90	4.53
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: —————

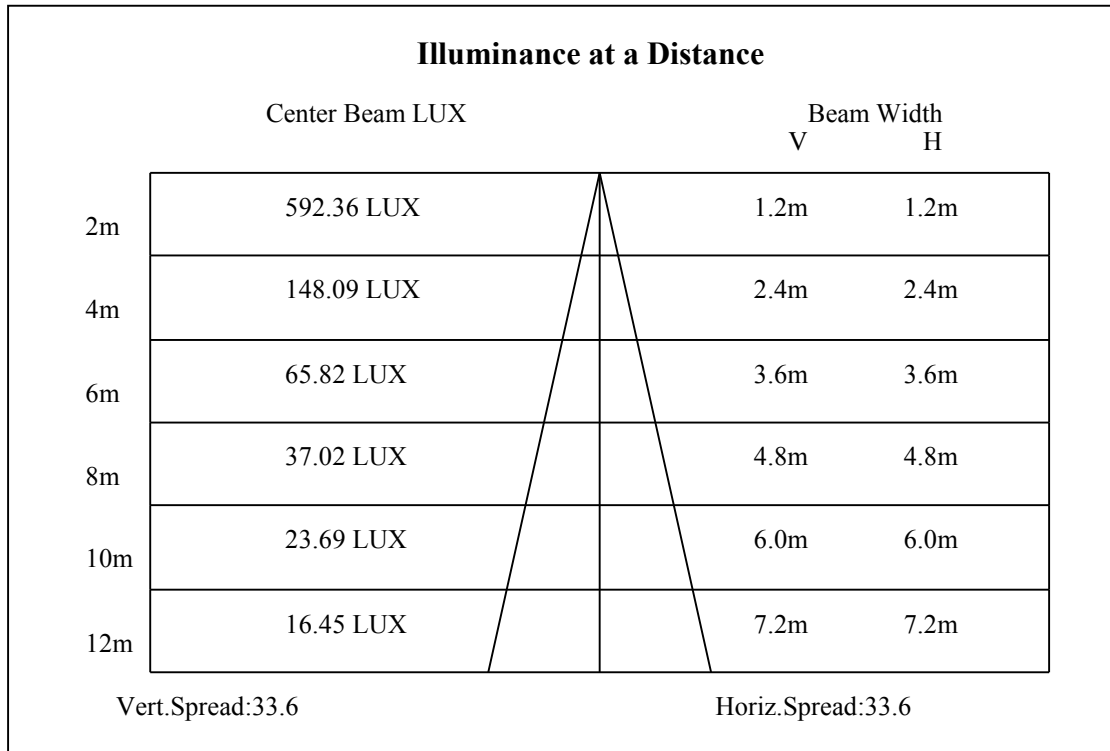
C90/C270: —————

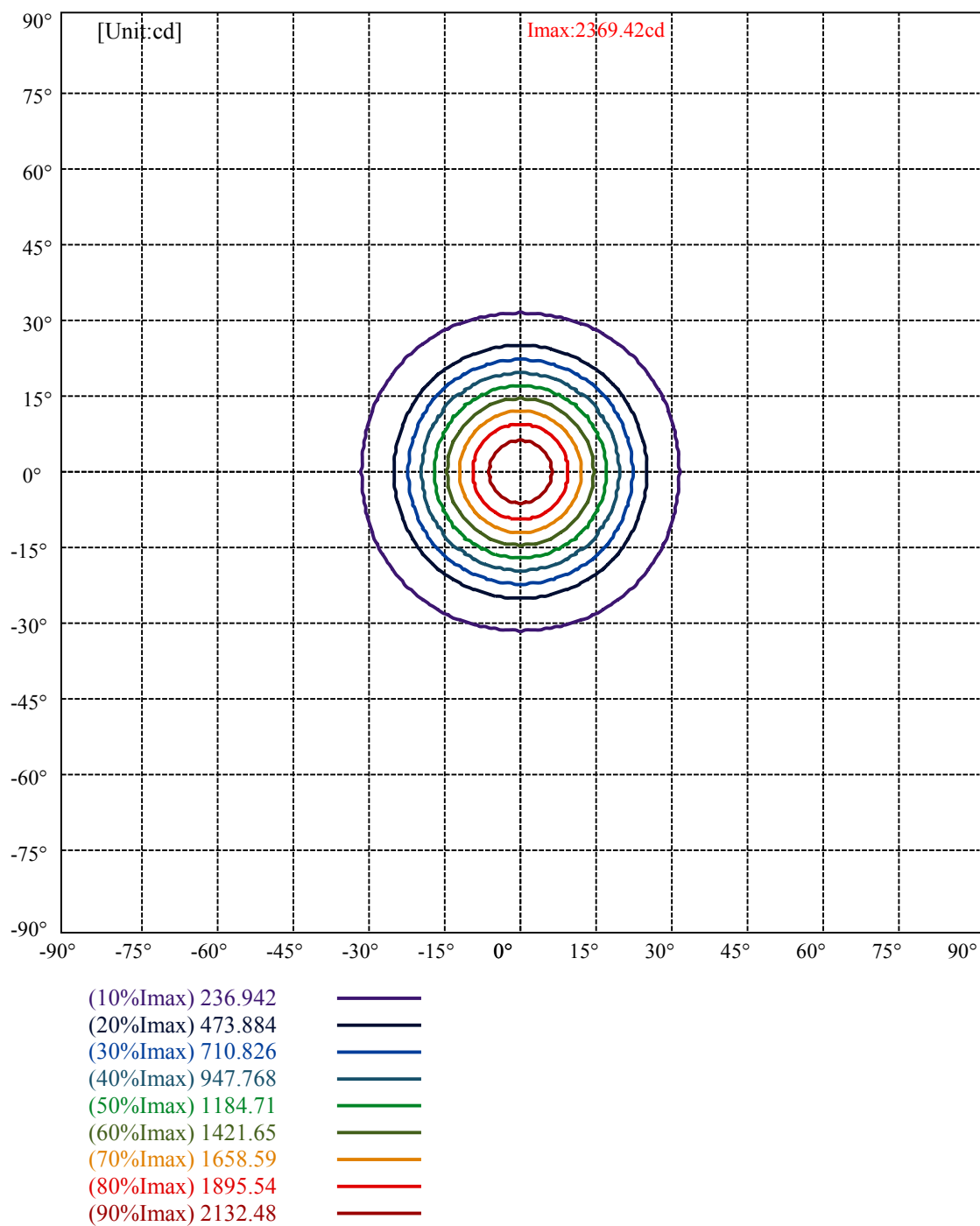
Field angle(10%Imax):C0/180Left:31.1 Right:31.1

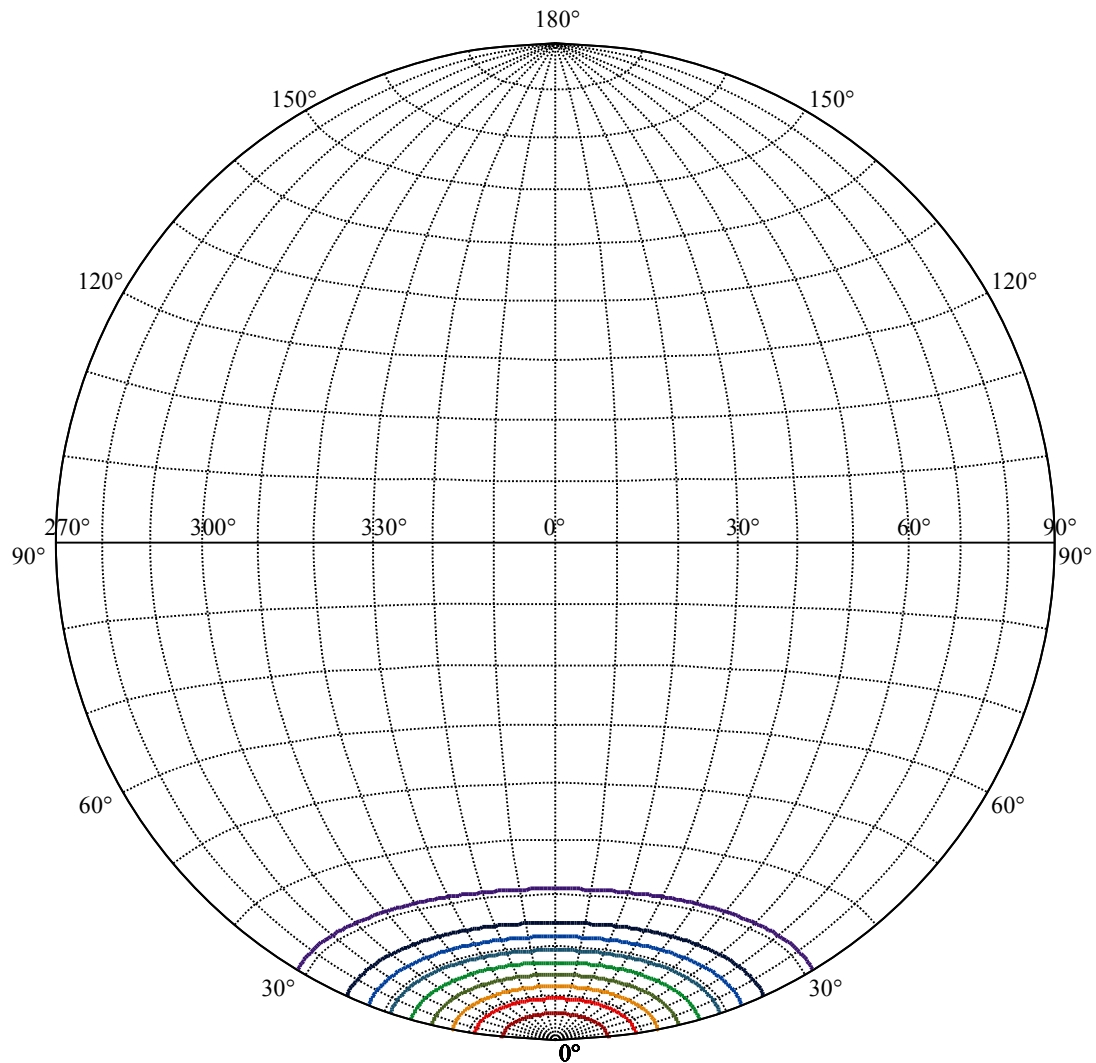
:C90/270Left:31.1 Right:31.1

Beam Angle(50%Imax):C0/180Left:16.8 Right:16.8

:C90/270Left:16.8 Right:16.8







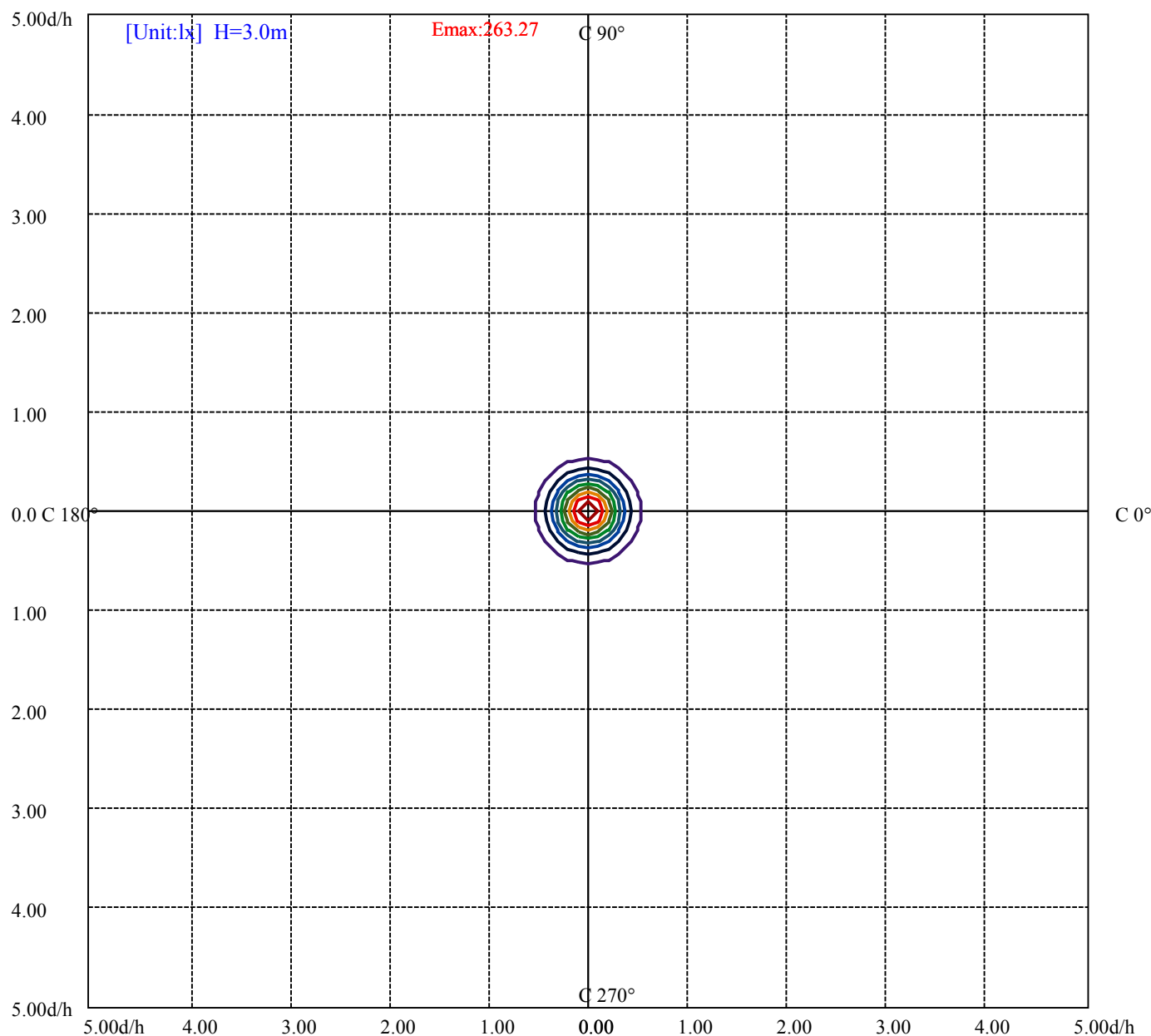
House

[Unit:cd]

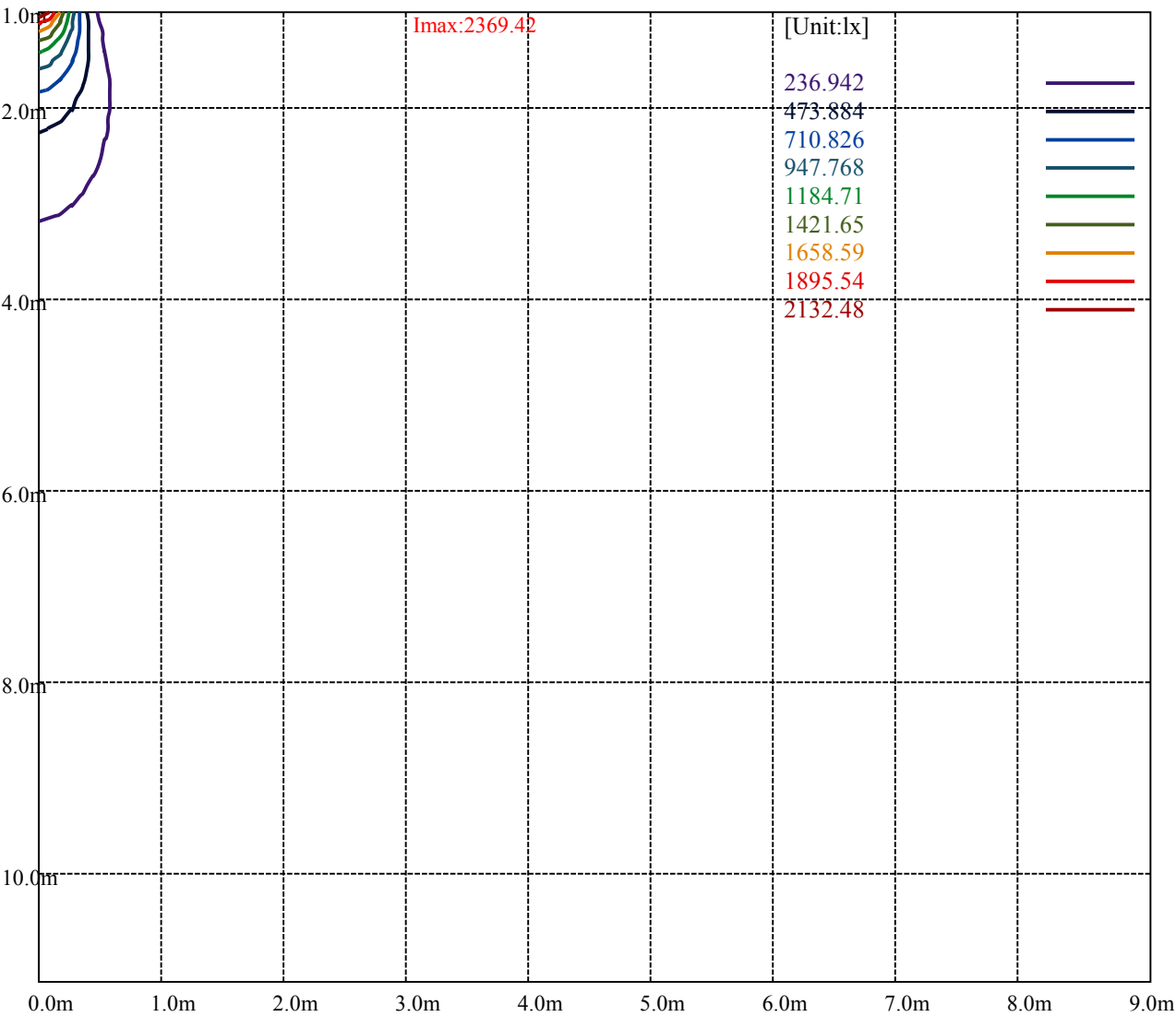
Road

Imax:2369.42

(10%Imax)	236.942	—
(20%Imax)	473.884	—
(30%Imax)	710.826	—
(40%Imax)	947.768	—
(50%Imax)	1184.71	—
(60%Imax)	1421.65	—
(70%Imax)	1658.59	—
(80%Imax)	1895.54	—
(90%Imax)	2132.48	—



(10%Emax)	26.32689	—
(20%Emax)	52.65367	—
(30%Emax)	78.98056	—
(40%Emax)	105.3074	—
(50%Emax)	131.6344	—
(60%Emax)	157.9611	—
(70%Emax)	184.2878	—
(80%Emax)	210.6144	—
(90%Emax)	236.9411	—



Luminance Table

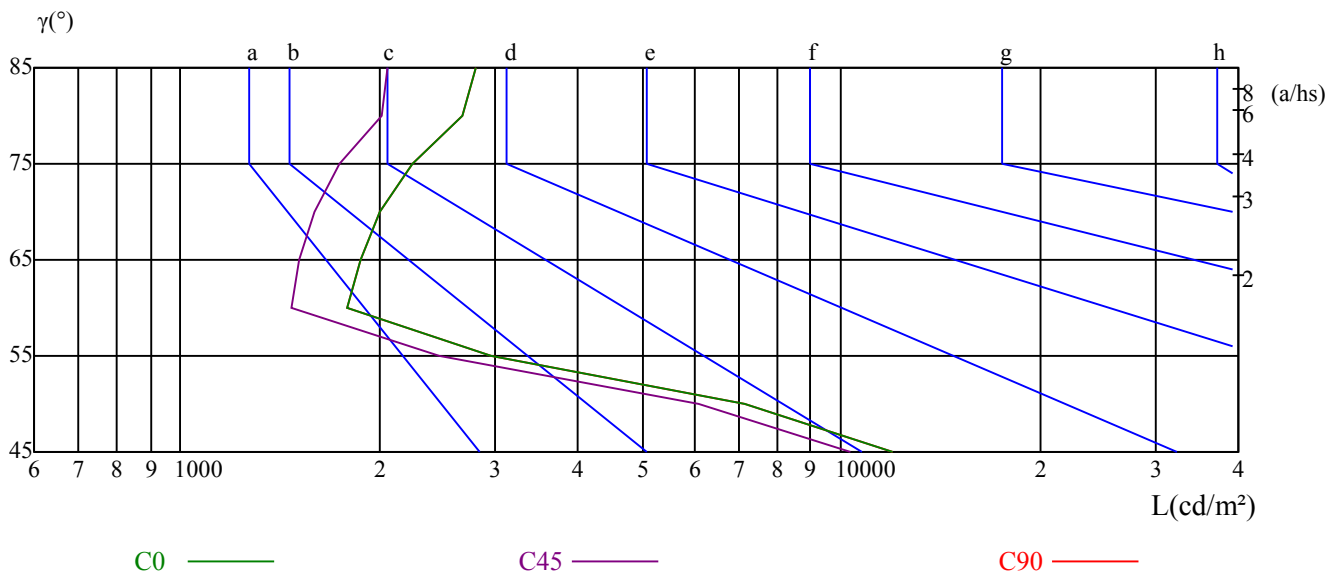
γ	45	50	55	60	65	70	75	80	85
C0	11993	7136	2946	1791	1874	2007	2247	2666	2806
C45	10358	6072	2468	1476	1517	1593	1744	2017	2059
C90	11993	7136	2946	1791	1874	2007	2247	2666	2806

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4348	4348	4348	7407	7407	7407	22539	22539	22539

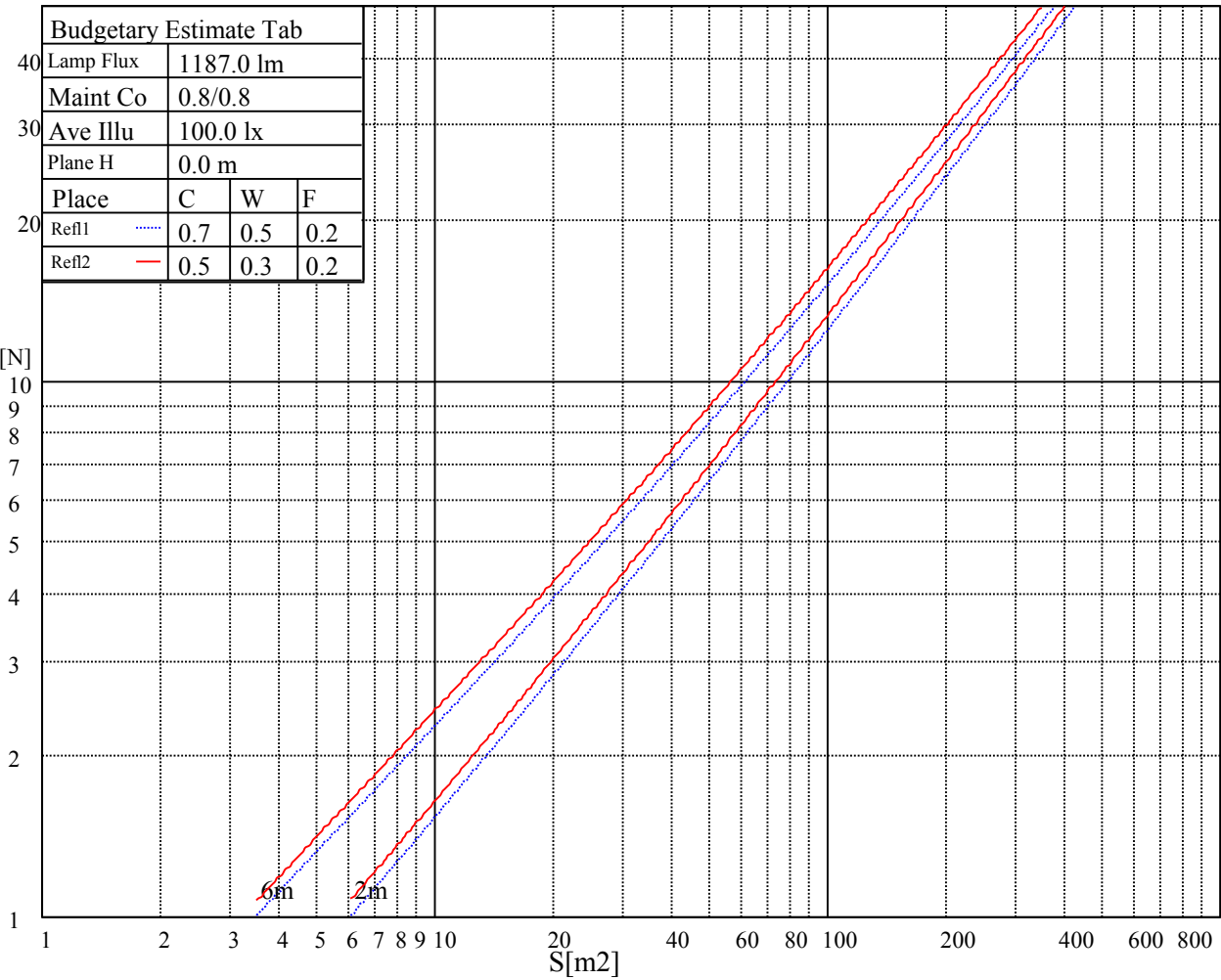
Glare Table

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

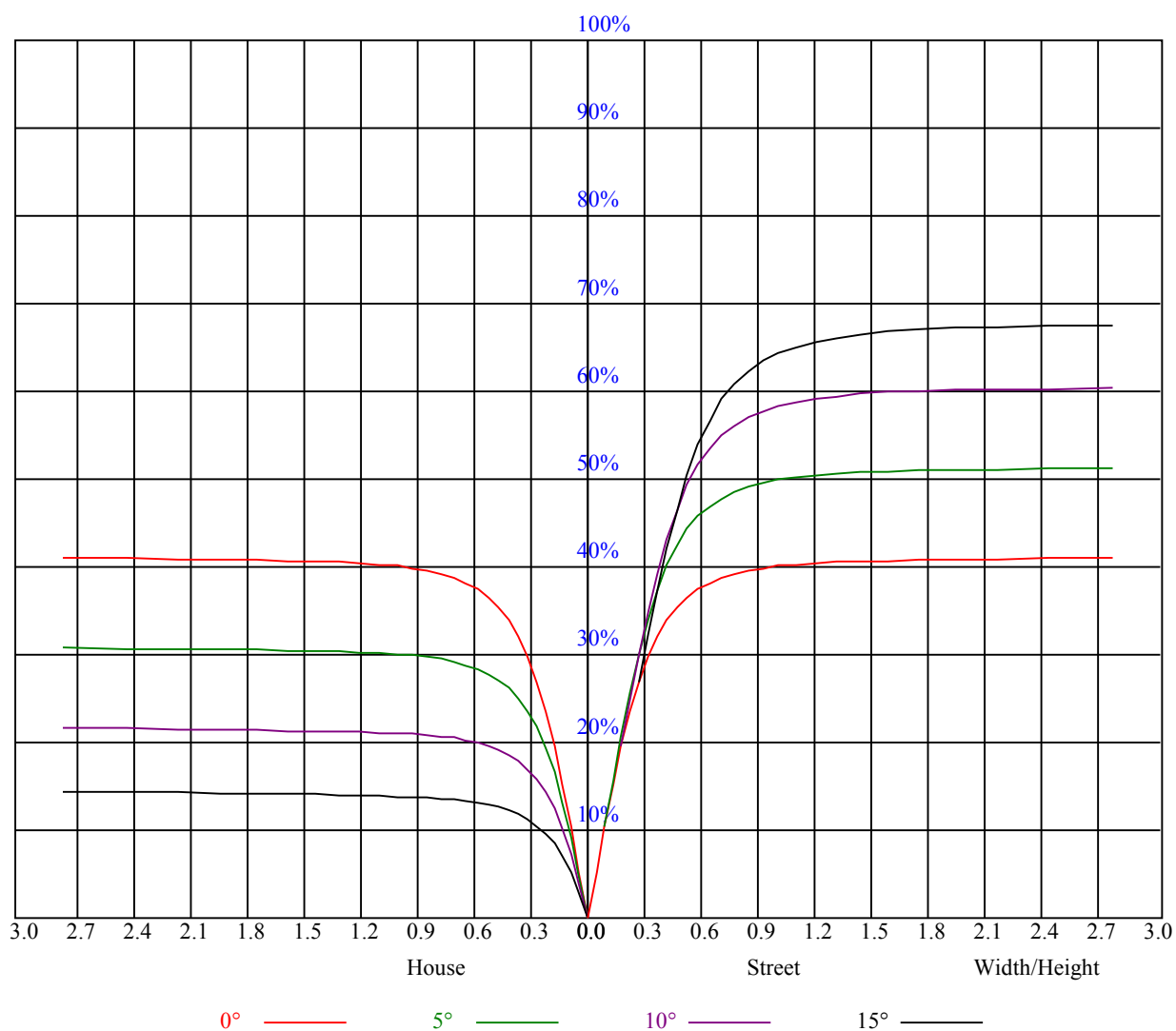
Luminance Limiting Curve



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	7.10	8.10	7.46	8.41	8.73	6.62	7.63	6.99	7.94	8.25
	3H	8.75	9.63	9.13	9.97	10.33	8.15	9.04	8.54	9.37	9.74
	4H	9.97	10.79	10.37	11.14	11.53	9.19	10.01	9.59	10.36	10.75
	6H	11.48	12.23	11.90	12.61	13.00	10.49	11.24	10.91	11.62	12.02
	8H	12.18	12.89	12.62	13.28	13.69	11.18	11.89	11.61	12.28	12.69
	12H	13.14	13.81	13.57	14.20	14.63	12.23	12.90	12.66	13.29	13.72
4H	2H	7.27	8.10	7.68	8.45	8.84	6.87	7.69	7.27	8.04	8.43
	3H	9.30	9.97	9.71	10.38	10.79	8.78	9.46	9.20	9.86	10.27
	4H	10.75	11.35	11.19	11.77	12.22	10.05	10.65	10.48	11.07	11.52
	6H	12.19	12.70	12.66	13.15	13.63	11.31	11.83	11.78	12.28	12.75
	8H	13.08	13.56	13.55	14.01	14.49	12.18	12.66	12.66	13.11	13.59
	12H	14.09	14.51	14.58	15.00	15.48	13.28	13.70	13.77	14.19	14.67
8H	4H	11.12	11.60	11.59	12.05	12.53	10.53	11.01	11.00	11.46	11.94
	6H	12.85	13.24	13.36	13.74	14.22	12.11	12.49	12.62	13.00	13.48
	8H	13.88	14.23	14.41	14.75	15.25	13.12	13.47	13.66	13.99	14.49
	12H	15.01	15.31	15.53	15.81	16.39	14.32	14.62	14.84	15.12	15.70
12H	4H	11.20	11.62	11.69	12.11	12.59	10.66	11.08	11.15	11.57	12.05
	6H	13.31	13.36	13.55	13.83	14.38	12.64	12.68	12.87	13.15	13.70
	8H	14.13	14.43	14.65	14.93	15.51	13.45	13.75	13.97	14.25	14.82
Variation with the observer position at spacings:											
S = 1.0H		2.8/-3.9					2.8/-3.9				
S = 1.5H		4.4/-3.1					4.4/-3.1				
S = 2.0H		5.5/-2.5					5.5/-2.5				
Standard tables:		BK3					BK3				
Uncorrected UGR		-2.6					-2.6				



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	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.84
1	0.92	0.90	0.87	0.90	0.88	0.86	0.87	0.85	0.83	0.83	0.82	0.81	0.81	0.80	0.79	0.77
2	0.87	0.83	0.80	0.85	0.82	0.80	0.82	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.75	0.73
3	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.70
4	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.72	0.70	0.68	0.67
5	0.74	0.70	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
6	0.71	0.67	0.64	0.71	0.67	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.61
7	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.59
8	0.66	0.62	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
9	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.55
10	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.53



Nata 2-1572-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	2361.37	2227.58	1880.73	1435.32	916.69	453.11	283.54	162.47	100.04		
45.0	2374.58	2220.42	1902.75	1414.95	911.18	454.77	278.03	163.30	102.90		
90.0	2372.93	2186.84	1774.47	1326.31	824.47	410.56	236.30	149.75	93.05		
135.0	2369.63	2248.50	1902.20	1449.08	981.66	516.98	282.44	172.49	110.33		
180.0	2361.37	2207.21	1837.23	1370.35	877.05	448.10	252.32	153.17	99.38		
225.0	2374.58	2206.66	1838.88	1365.95	851.45	432.14	239.00	145.90	95.80		
270.0	2372.93	2240.24	1870.27	1385.22	898.52	466.88	285.19	156.64	103.12		
315.0	2367.98	2181.33	1759.60	1093.42	778.44	385.39	223.75	141.88	88.97		
360.0	2361.37	2227.58	1880.73	1435.32	916.69	453.11	283.54	162.47	100.04		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	57.70	33.69	12.22	7.43	7.43	7.60	7.87	9.14	9.14		
45.0	61.72	34.41	12.44	8.53	8.64	8.75	8.92	9.41	8.92		
90.0	54.51	30.78	11.56	8.09	8.04	8.09	9.08	9.91	8.53		
135.0	62.98	38.59	16.96	7.43	7.21	7.16	7.16	7.82	8.09		
180.0	56.87	33.09	13.49	7.32	7.16	7.05	6.99	6.94	6.94		
225.0	57.04	32.43	13.27	7.82	7.60	7.43	7.54	8.31	7.93		
270.0	61.44	35.57	17.12	8.53	8.70	8.92	9.47	10.24	8.48		
315.0	50.76	30.17	10.24	7.38	7.32	7.43	7.76	8.48	8.37		
360.0	57.70	33.69	12.22	7.43	7.43	7.60	7.87	9.14	9.14		
C/γ(°)	90.0										
0.0	4.02										
45.0	4.13										
90.0	4.07										
135.0	4.18										
180.0	4.13										
225.0	4.18										
270.0	4.07										
315.0	4.02										
360.0	4.02										