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## NATA

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LumCAT: 3-2040-M	
Luminaire: 92.70.135.00	
Report No: NATA0100	Voltage(V): 35.7000
Test No: GC2018102513	Current(A): 0.6000
LampCAT: LUMILEDS LUXEON 1205	Power (W): 21.4200
Lamp flux(lm): 2979.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 79	Width(mm): 79
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 2676.56  
Efficiency(%): 89.85%  
Lumens(lm)/Power(W): 128.30  
Central intensity(cd): 12389.060  
Maximum intensity(cd): 12389.060  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=20.5  
                                  [C90/270]Total=20.5  
Field angle(10%Imax): [C0/180]Total=46.8  
                                  [C90/270]Total=46.8  
Maximum s/h(1/2): C0\_180=0.35 C90\_270=0.35  
Maximum s/h(1/4): C0\_180=0.36 C90\_270=0.36  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 92.25%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 96.234%

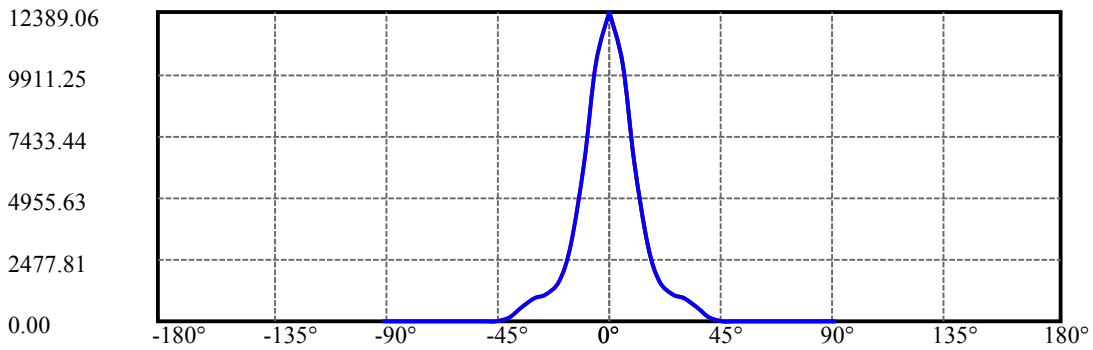
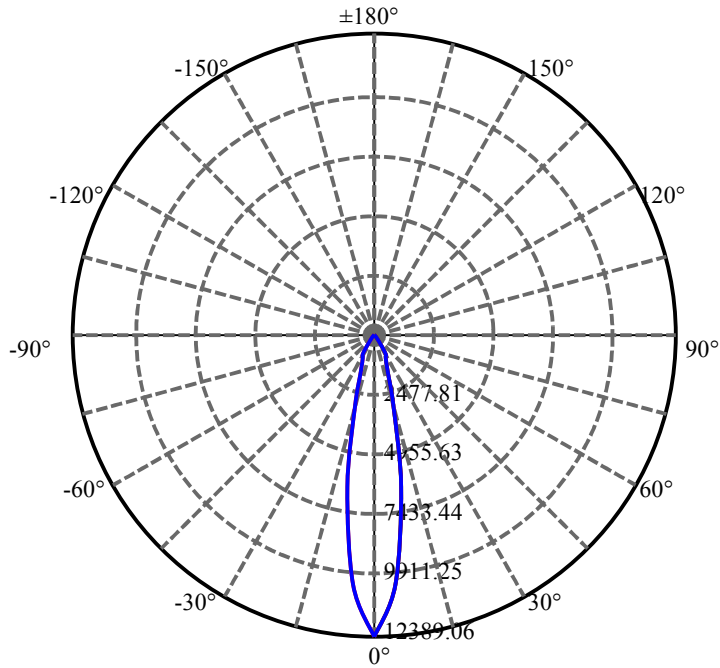
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12389.063	74.089	74.089	2.487%	2.768%
5.0	10289.531	491.565	565.654	16.501%	21.134%
10.0	6367.781	606.105	1171.759	20.346%	43.778%
15.0	3039.820	431.254	1603.013	14.476%	59.891%
20.0	1599.328	299.832	1902.846	10.065%	71.093%
25.0	1069.158	247.673	2150.519	8.314%	80.346%
30.0	922.029	252.699	2403.219	8.483%	89.787%
35.0	556.650	175.010	2578.229	5.875%	96.326%
40.0	121.388	42.769	2620.998	1.436%	97.924%
45.0	16.685	6.467	2627.465	.217%	98.166%
50.0	13.950	5.858	2633.323	.197%	98.384%
55.0	12.607	5.661	2638.983	.190%	98.596%
60.0	11.834	5.617	2644.601	.189%	98.806%
65.0	11.426	5.676	2650.277	.191%	99.018%
70.0	11.166	5.751	2656.028	.193%	99.233%
75.0	10.976	5.811	2661.839	.195%	99.450%
80.0	10.891	5.879	2667.718	.197%	99.670%
85.0	10.807	5.901	2673.62	.198%	99.890%
90.0	10.744	2.945	2676.564	.099%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2403.22	80.67%	89.79%
0-40	2621.00	87.98%	97.92%
0-60	2644.60	88.77%	98.81%
0-90	2673.62	89.75%	99.89%
0-120	2673.62	89.75%	99.89%
0-180	2676.56	89.85%	100.00%
60-90	34.64	1.16%	1.29%
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%
0-24.81	2141.25	71.88%	80.00%

ZONAL LUMEN SUMMARY

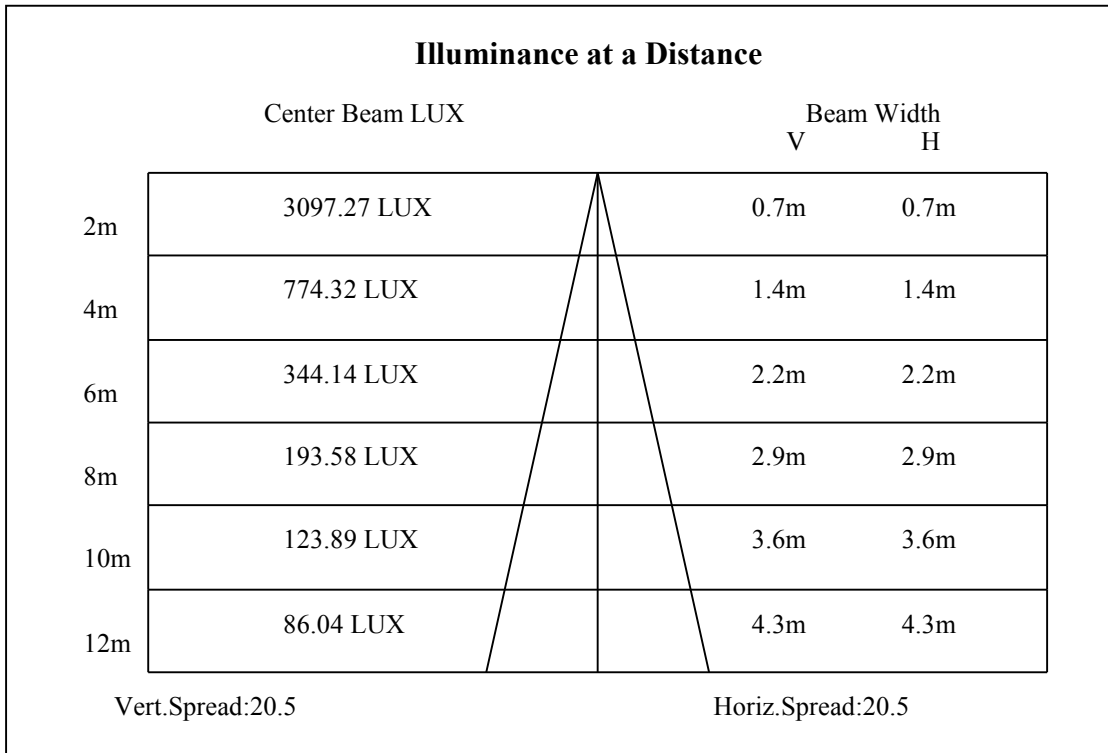
0-10	1171.76
10-20	731.09
20-30	500.37
30-40	217.78
40-50	12.32
50-60	11.28
60-70	11.43
70-80	11.69
80-90	5.90
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

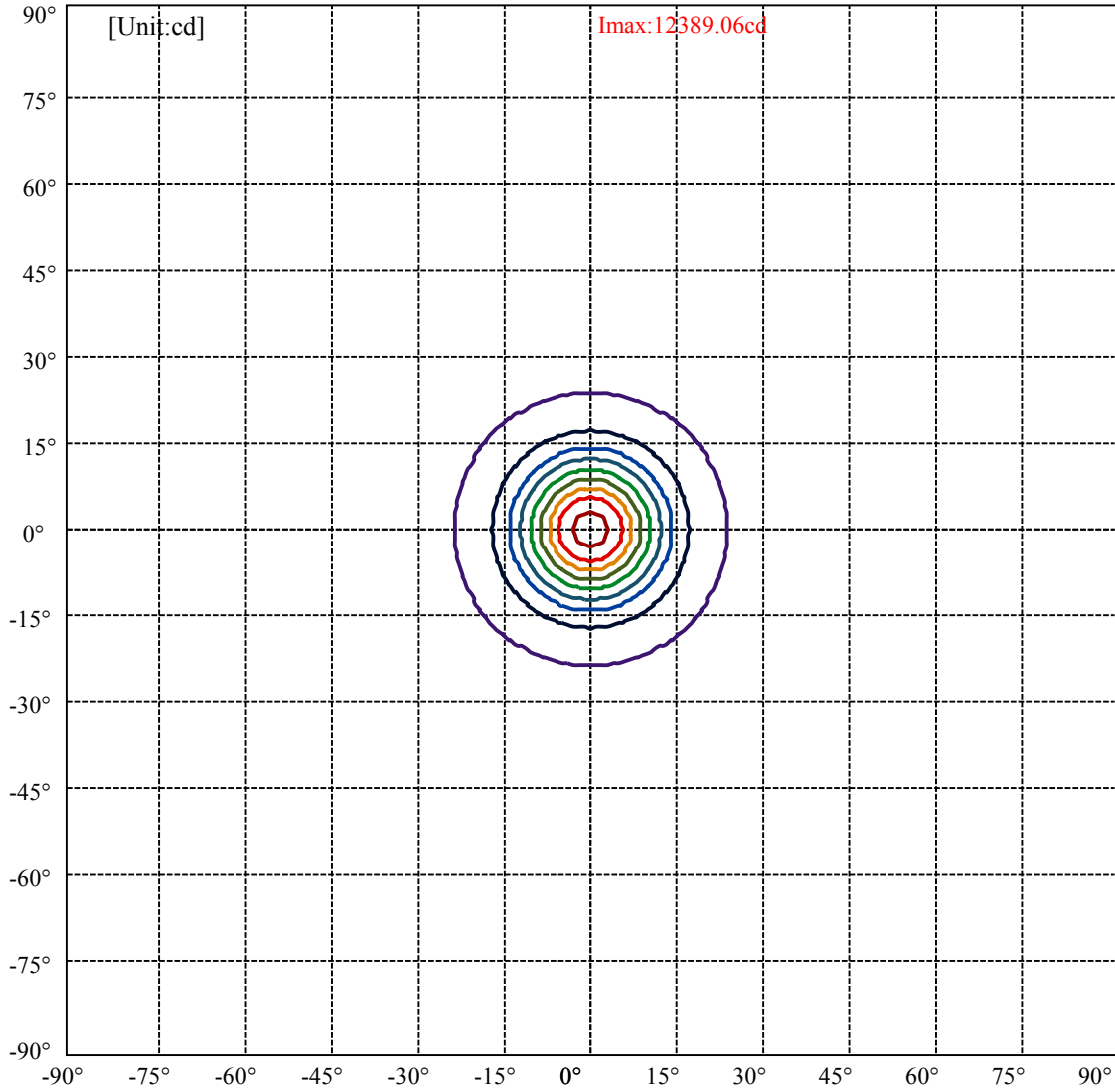


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

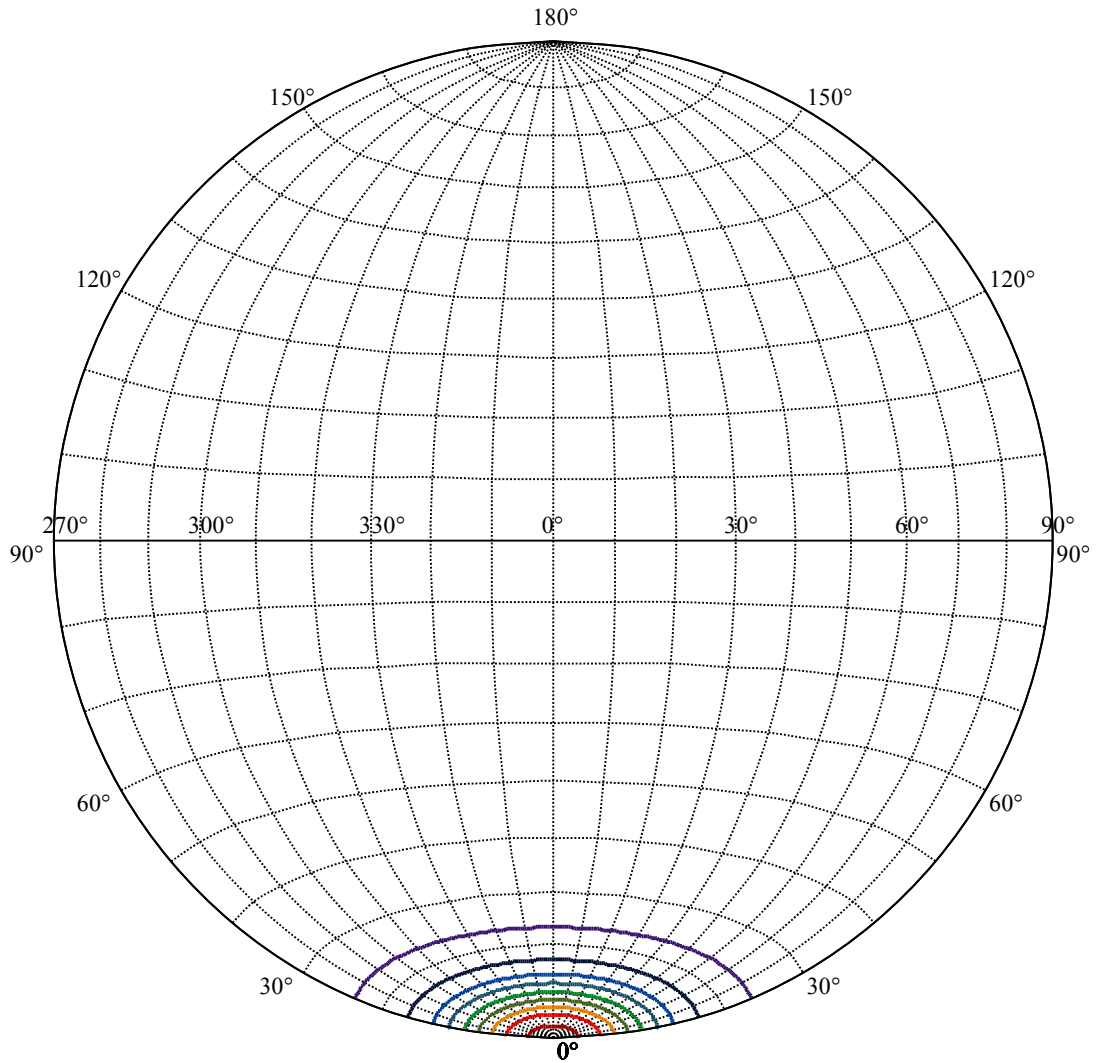
Field angle(10%Imax):C0/180Left:23.4 Right:23.4  
:C90/270Left:23.4 Right:23.4

Beam Angle(50%Imax):C0/180Left:10.3 Right:10.3  
:C90/270Left:10.3 Right:10.3





(10%Imax) 1238.91	—
(20%Imax) 2477.81	—
(30%Imax) 3716.72	—
(40%Imax) 4955.63	—
(50%Imax) 6194.53	—
(60%Imax) 7433.44	—
(70%Imax) 8672.34	—
(80%Imax) 9911.25	—
(90%Imax) 11150.2	—



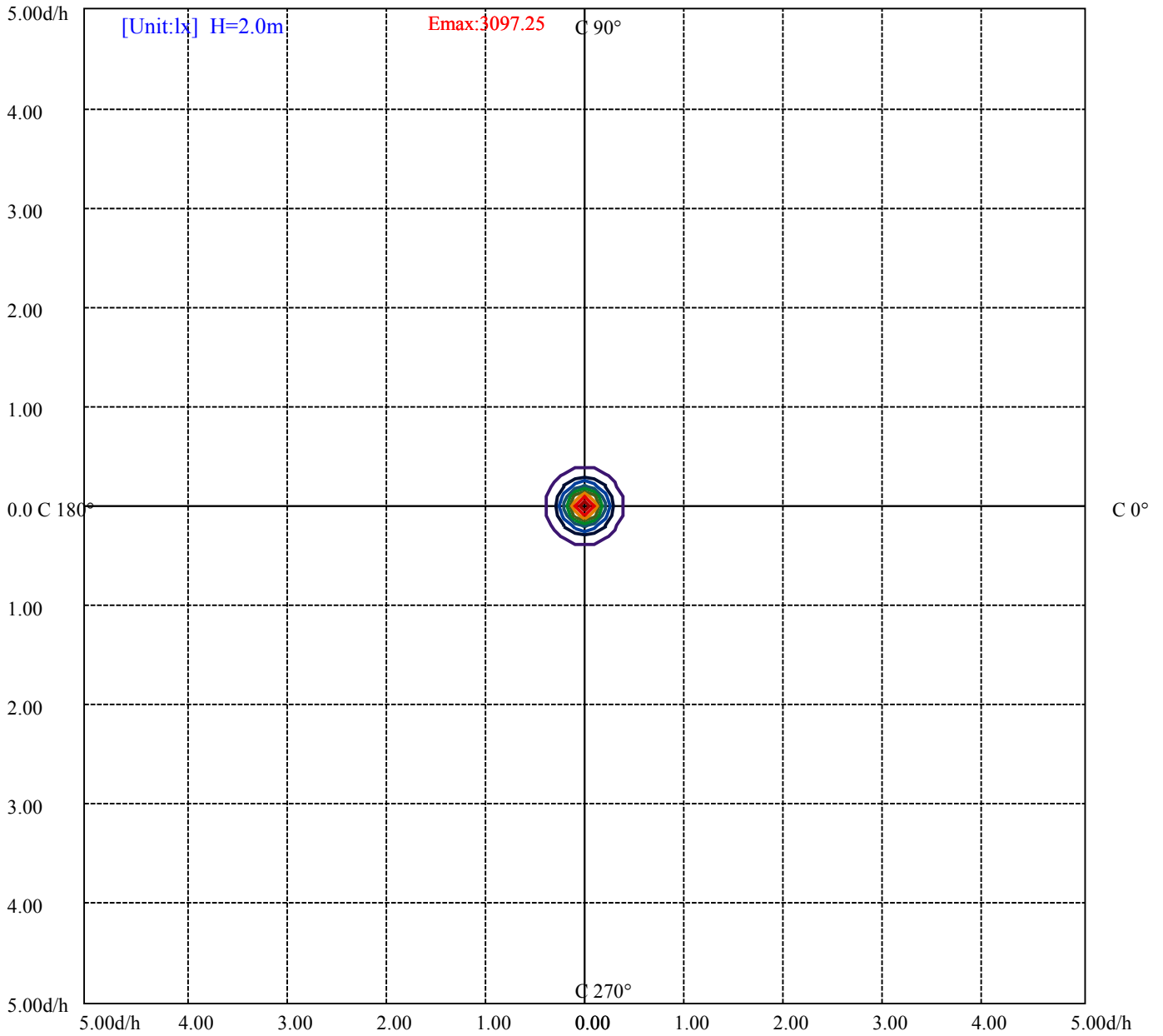
House

[Unit:cd]

Road

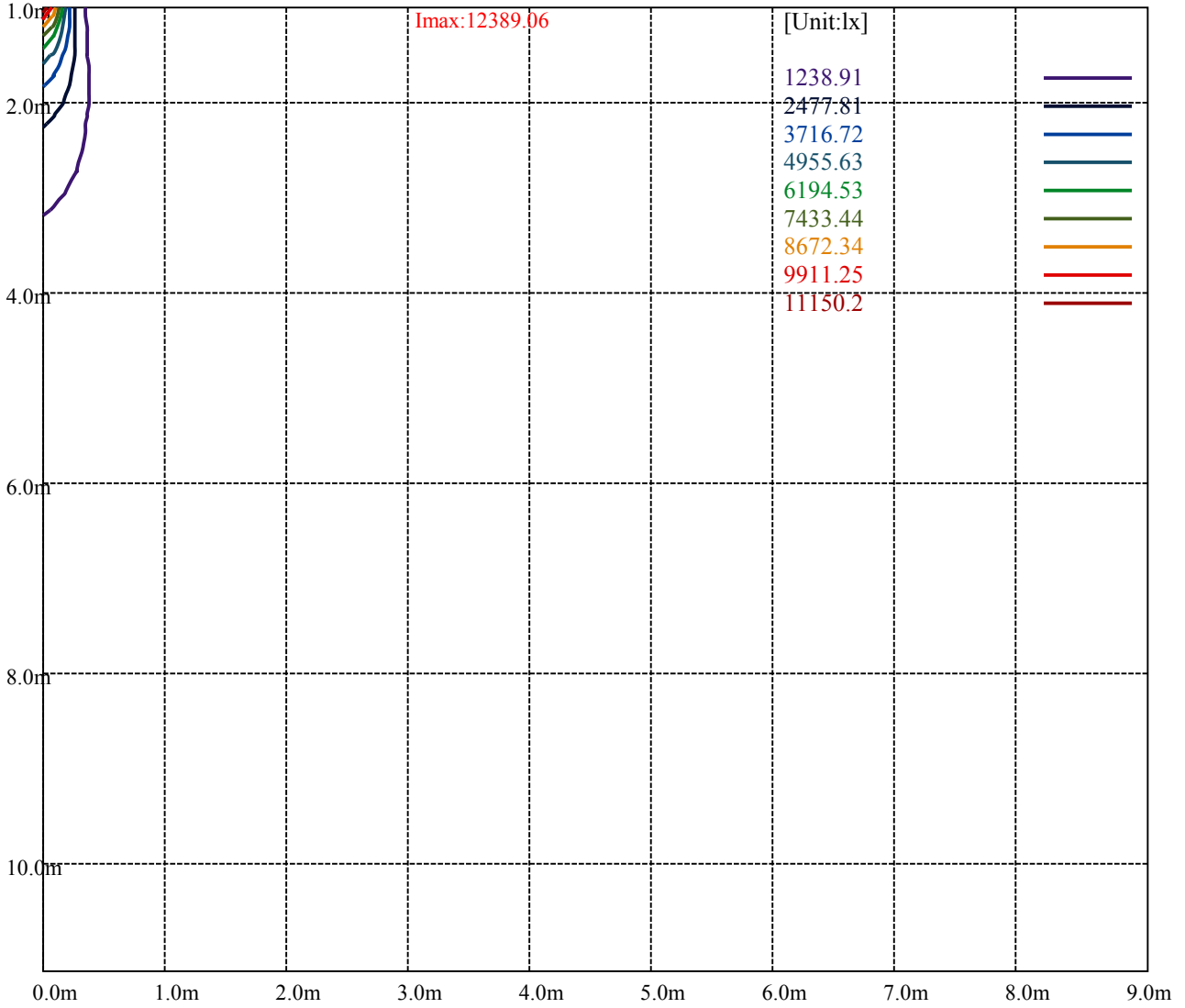
**Imax:12389.06**

(10%Imax)	1238.91	—
(20%Imax)	2477.81	—
(30%Imax)	3716.72	—
(40%Imax)	4955.63	—
(50%Imax)	6194.53	—
(60%Imax)	7433.44	—
(70%Imax)	8672.34	—
(80%Imax)	9911.25	—
(90%Imax)	11150.2	—



- (10%Emax) 309.725
- (20%Emax) 619.45
- (30%Emax) 929.175
- (40%Emax) 1238.9
- (50%Emax) 1548.625
- (60%Emax) 1858.35
- (70%Emax) 2168.075
- (80%Emax) 2477.8
- (90%Emax) 2787.525





Luminance Table

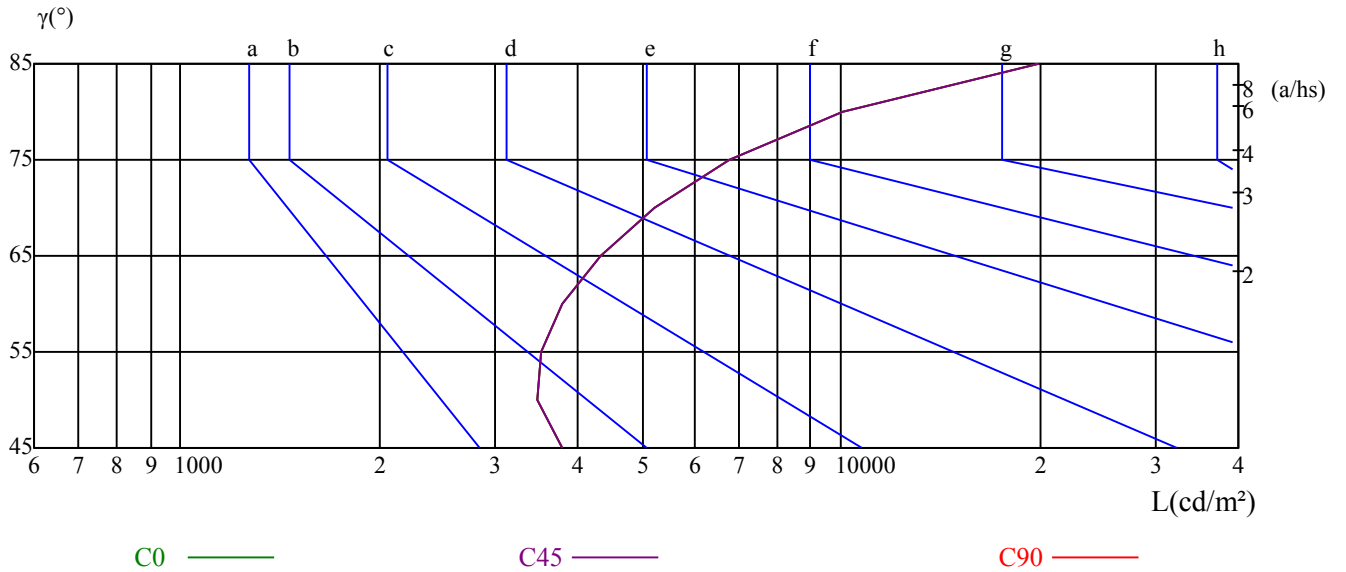
$\gamma$	45	50	55	60	65	70	75	80	85
C0	3781	3477	3522	3792	4332	5231	6795	10050	19868
C45	3781	3477	3522	3792	4332	5231	6795	10050	19868
C90	3781	3477	3522	3792	4332	5231	6795	10050	19868

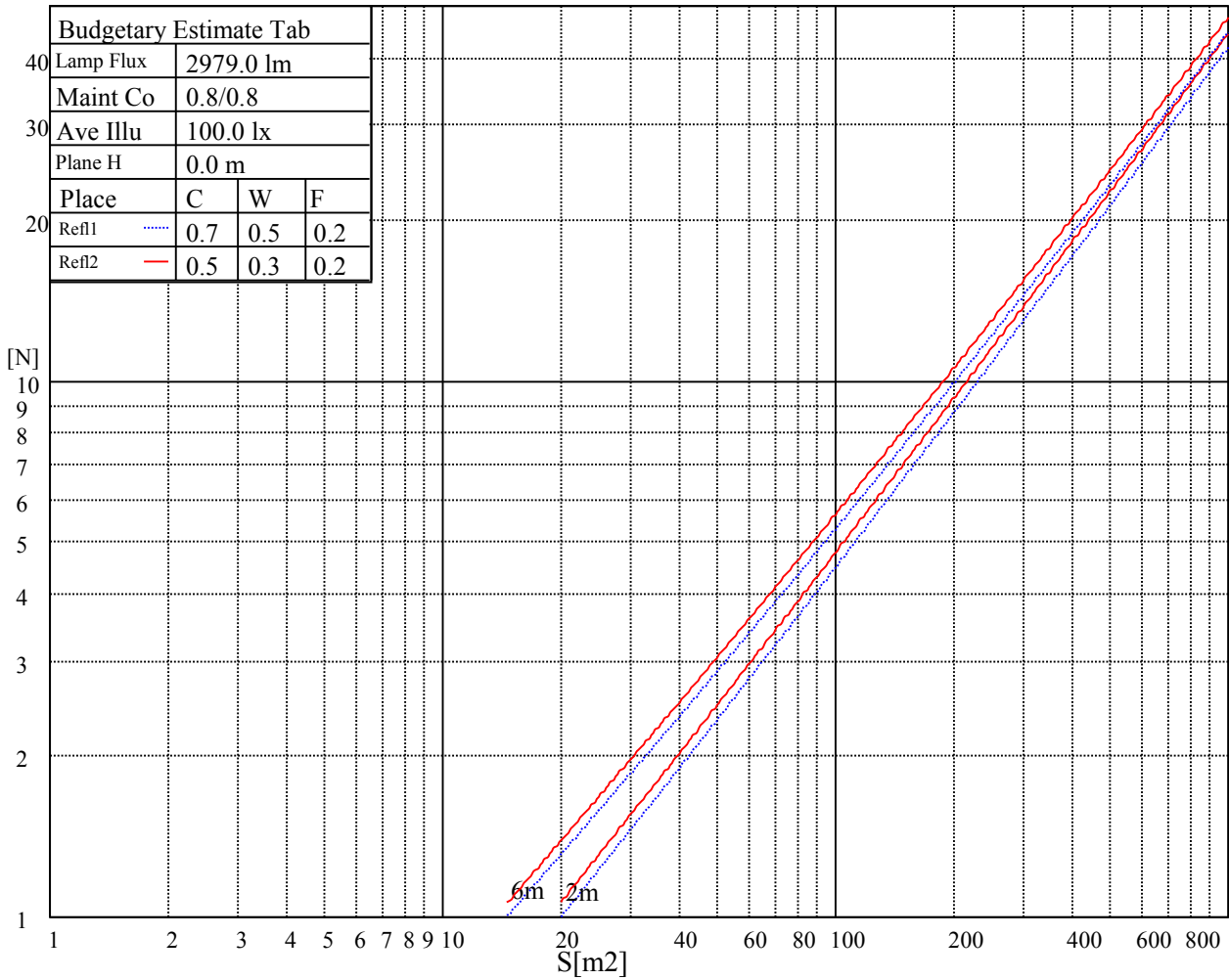
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4332	4332	4332	6795	6795	6795	19868	19868	19868

Glare Table

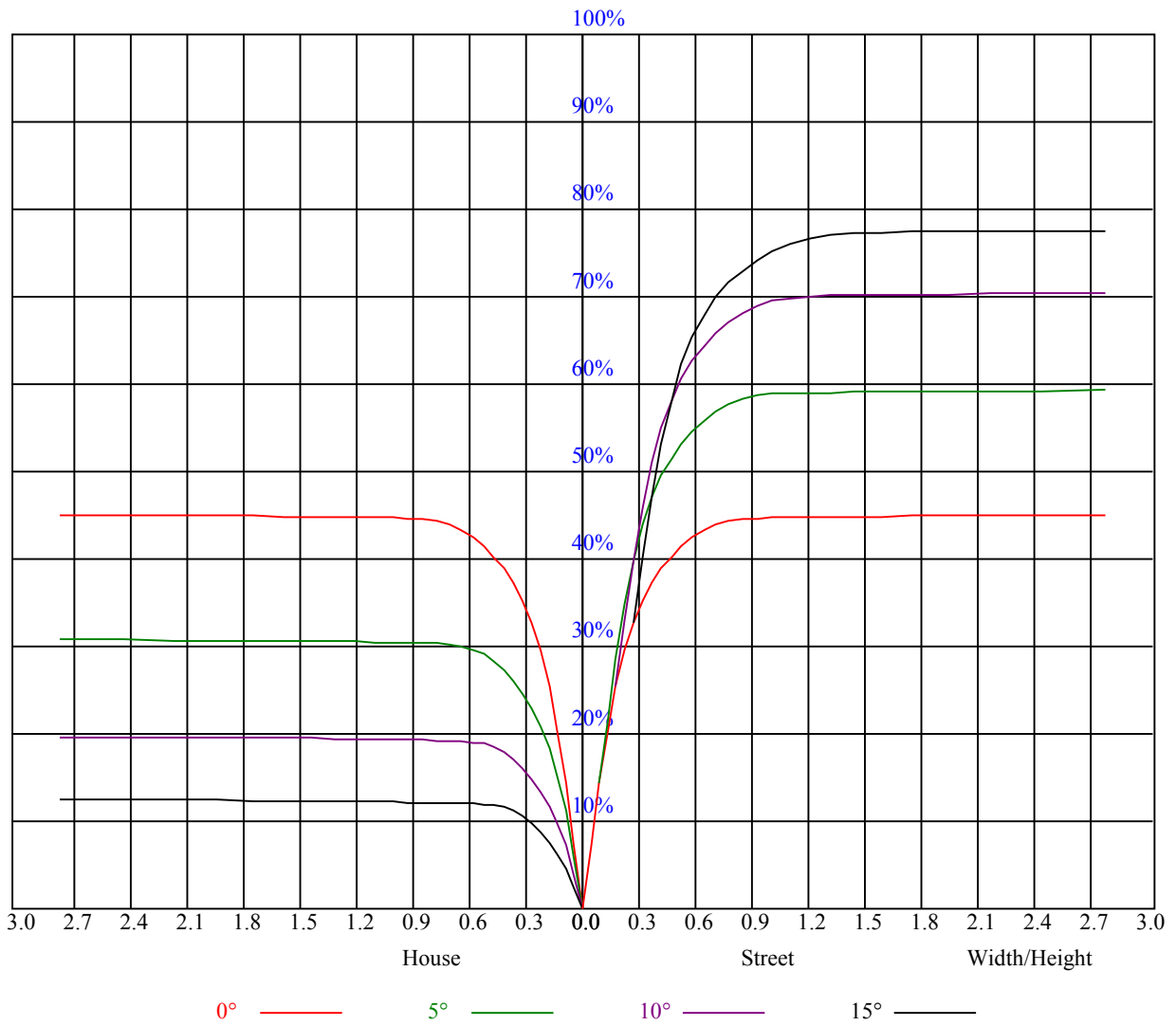
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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	1.10	1.10	1.10	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.01	0.98	0.95	0.98	0.96	0.94	0.95	0.93	0.91	0.91	0.90	0.88	0.88	0.87	0.86	0.84
2	0.95	0.92	0.89	0.94	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.81
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.80	0.83	0.81	0.79	0.78
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.75
5	0.84	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.74	0.72	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.78	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.75	0.72	0.69	0.68
8	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.67
9	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63



NATA 3-2040-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	12076.88	11205.00	7357.50	3616.88	1847.81	1159.31	951.75	697.50	284.06
45.0	12504.38	10631.25	6811.88	3161.25	1639.13	1077.75	928.13	585.00	166.56
90.0	12453.75	9912.38	5718.38	2584.69	1444.50	1017.00	903.38	459.00	32.23
135.0	12521.25	10220.63	6316.88	3054.38	1550.81	1062.00	920.81	501.19	48.15
180.0	12076.88	9331.31	5379.19	2403.56	1428.75	1003.73	880.14	409.67	30.66
225.0	12504.38	10031.63	5742.00	2851.31	1509.19	1033.43	918.34	531.00	44.33
270.0	12453.75	10726.88	6997.50	3515.63	1748.25	1109.25	943.88	691.31	300.94
315.0	12521.25	10257.19	6618.94	3130.88	1626.19	1090.80	929.81	578.53	64.18
360.0	12076.88	11205.00	7357.50	3616.88	1847.81	1159.31	951.75	697.50	284.06

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	18.45	14.51	12.99	11.98	11.53	11.25	11.03	10.91	10.86
45.0	16.99	13.78	12.66	11.93	11.48	11.19	10.97	10.91	10.80
90.0	15.19	13.61	12.32	11.76	11.36	11.14	10.97	10.91	10.80
135.0	15.81	14.12	12.88	11.87	11.48	11.19	11.03	10.86	10.80
180.0	15.08	13.67	12.43	11.70	11.36	11.14	10.97	10.86	10.80
225.0	15.81	13.84	12.38	11.70	11.36	11.08	10.91	10.86	10.80
270.0	18.51	14.01	12.54	11.87	11.42	11.14	10.97	10.91	10.80
315.0	17.66	14.06	12.66	11.87	11.42	11.19	10.97	10.91	10.80
360.0	18.45	14.51	12.99	11.98	11.53	11.25	11.03	10.91	10.86

C/γ(°)	90.0
0.0	10.74
45.0	10.74
90.0	10.74
135.0	10.74
180.0	10.74
225.0	10.74
270.0	10.74
315.0	10.74
360.0	10.74