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## Nata

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LumCAT: 2-1680-M  
Luminaire: 92.70.125.00  
Report No: NATA0100  
Test No: GC2018070518  
LampCAT: NICHIA NTCWT012B-V3  
Lamp flux(lm): 745.0  
Number of Lamps: 1  
Length(mm): 70  
Phm Type: C

Voltage(V): 38.8000  
Current(A): 0.2000  
Power (W): 7.7600  
PF: 0.0000  
Ballast type: DC  
Width(mm): 70  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 674.50  
Efficiency(%): 90.54%  
Lumens(lm)/Power(W): 86.92  
Central intensity(cd): 2610.912  
Maximum intensity(cd): 2610.912  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=24.5  
                                  [C90/270]Total=24.5  
Field angle(10%Imax): [C0/180]Total=49.3  
                                  [C90/270]Total=49.3  
Maximum s/h(1/2): C0\_180=0.42 C90\_270=0.42  
Maximum s/h(1/4): C0\_180=0.38 C90\_270=0.38  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 92.55%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 96.604%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2018/7/5  
Humidity(%): 60.0%

Operator: NT07  
Distance(m): 7.42

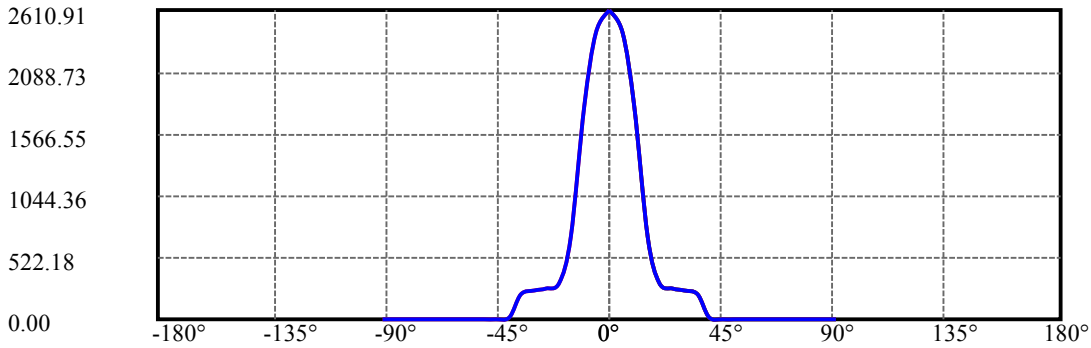
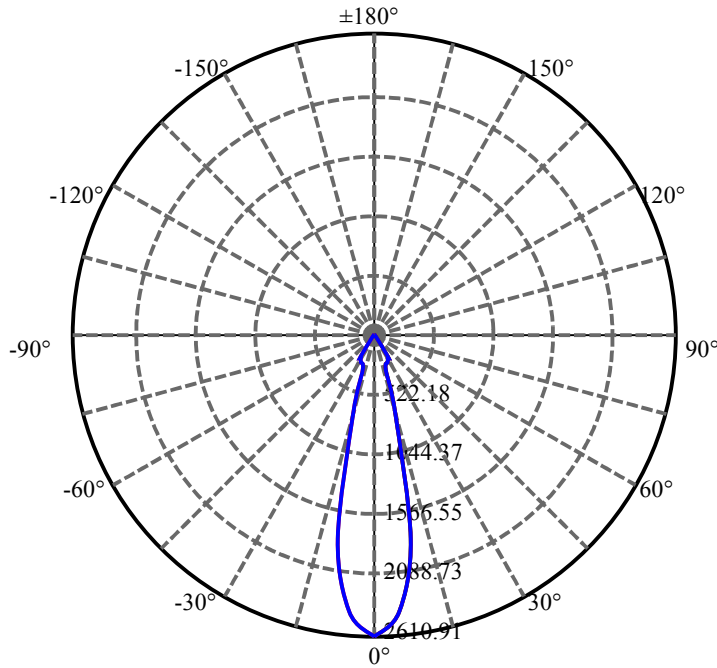
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2610.912	15.614	15.614	2.096%	2.315%
5.0	2410.369	115.151	130.765	15.457%	19.387%
10.0	1798.073	171.146	301.911	22.973%	44.761%
15.0	703.414	99.792	401.703	13.395%	59.556%
20.0	312.459	58.578	460.281	7.863%	68.241%
25.0	257.017	59.539	519.82	7.992%	77.068%
30.0	235.586	64.567	584.387	8.667%	86.640%
35.0	214.300	67.376	651.763	9.044%	96.629%
40.0	22.635	7.975	659.738	1.070%	97.812%
45.0	4.453	1.726	661.464	.232%	98.068%
50.0	3.709	1.558	663.021	.209%	98.299%
55.0	3.393	1.523	664.545	.204%	98.524%
60.0	3.186	1.513	666.057	.203%	98.749%
65.0	3.049	1.515	667.572	.203%	98.973%
70.0	2.952	1.521	669.092	.204%	99.199%
75.0	2.890	1.530	670.623	.205%	99.426%
80.0	2.877	1.553	672.176	.208%	99.656%
85.0	2.842	1.552	673.728	.208%	99.886%
90.0	2.808	0.770	674.497	.103%	100.000%

## ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	584.39	78.44%	86.64%
0-40	659.74	88.56%	97.81%
0-60	666.06	89.40%	98.75%
0-90	673.73	90.43%	99.89%
0-120	673.73	90.43%	99.89%
0-180	674.50	90.54%	100.00%
60-90	9.18	1.23%	1.36%
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%
0-26.53	539.60	72.43%	80.00%

## ZONAL LUMEN SUMMARY

0-10	301.91
10-20	158.37
20-30	124.11
30-40	75.35
40-50	3.28
50-60	3.04
60-70	3.04
70-80	3.08
80-90	1.55
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: —————

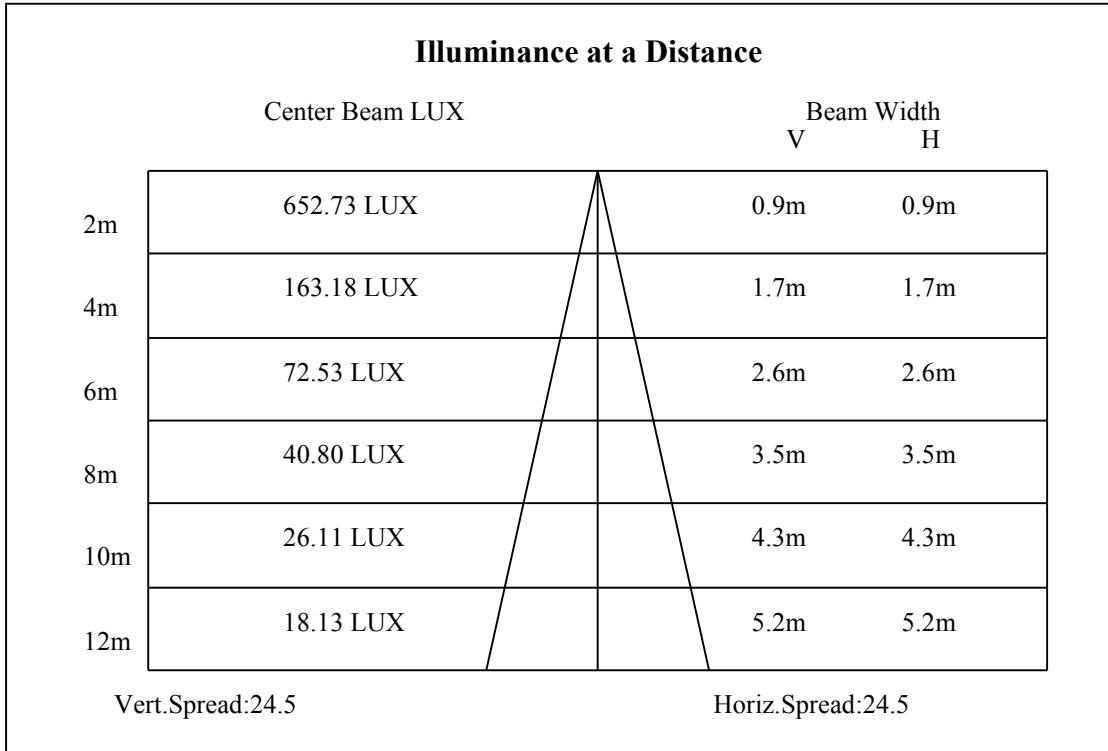
C90/C270: —————

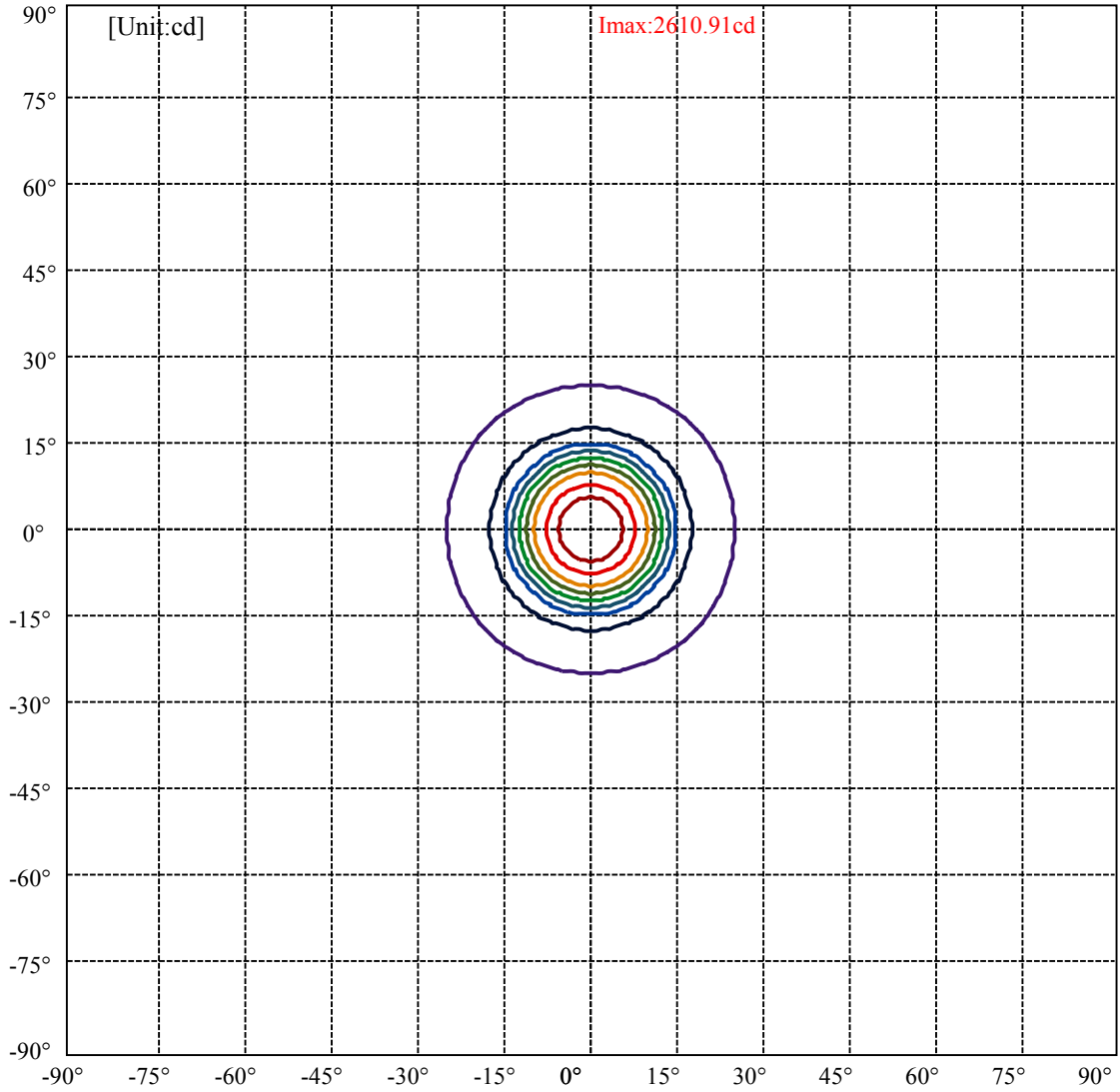
Field angle(10%Imax):C0/180Left:24.6 Right:24.6

:C90/270Left:24.6 Right:24.6

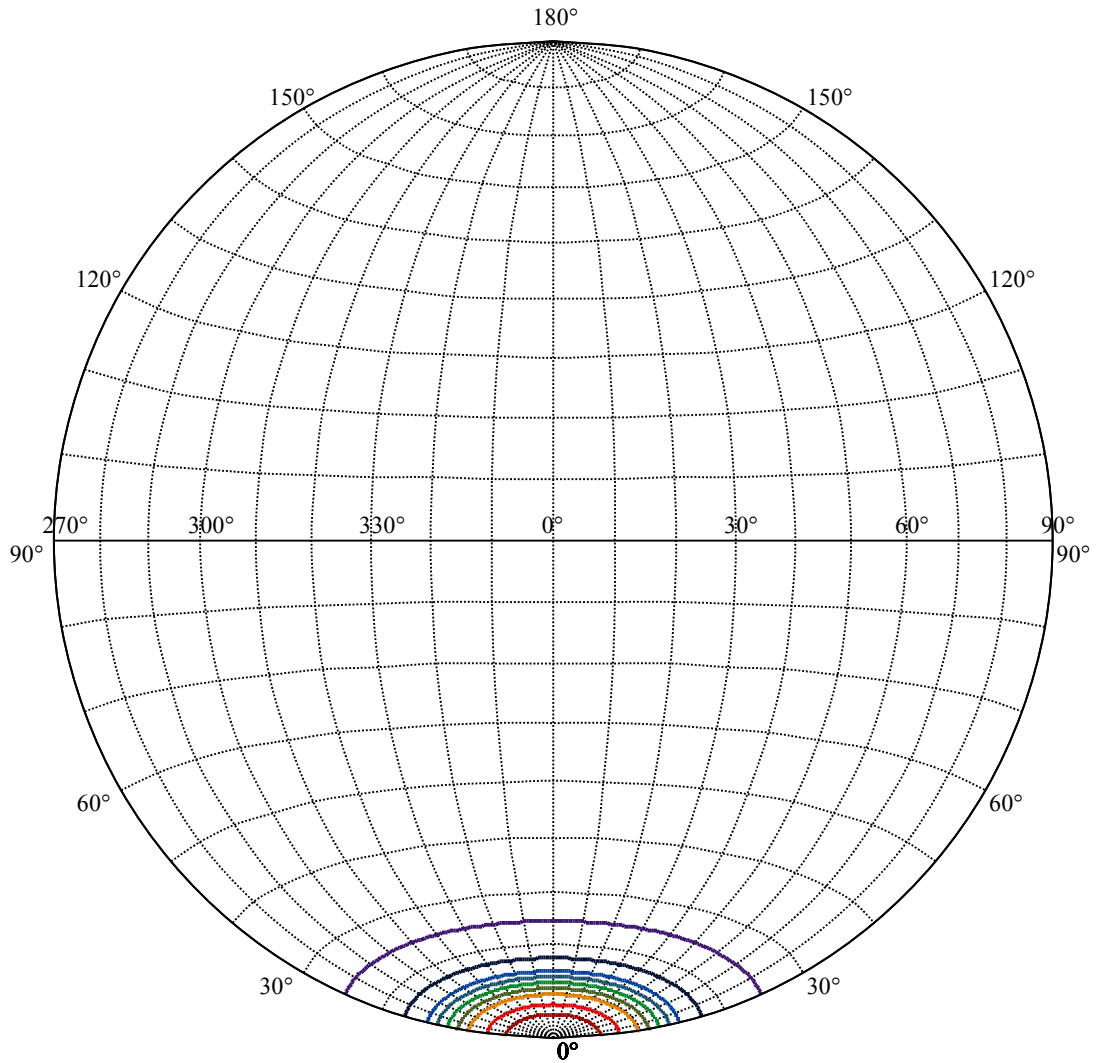
Beam Angle(50%Imax):C0/180Left:12.3 Right:12.3

:C90/270Left:12.3 Right:12.3





(10%Imax) 261.091	—
(20%Imax) 522.182	—
(30%Imax) 783.274	—
(40%Imax) 1044.36	—
(50%Imax) 1305.46	—
(60%Imax) 1566.55	—
(70%Imax) 1827.64	—
(80%Imax) 2088.73	—
(90%Imax) 2349.82	—



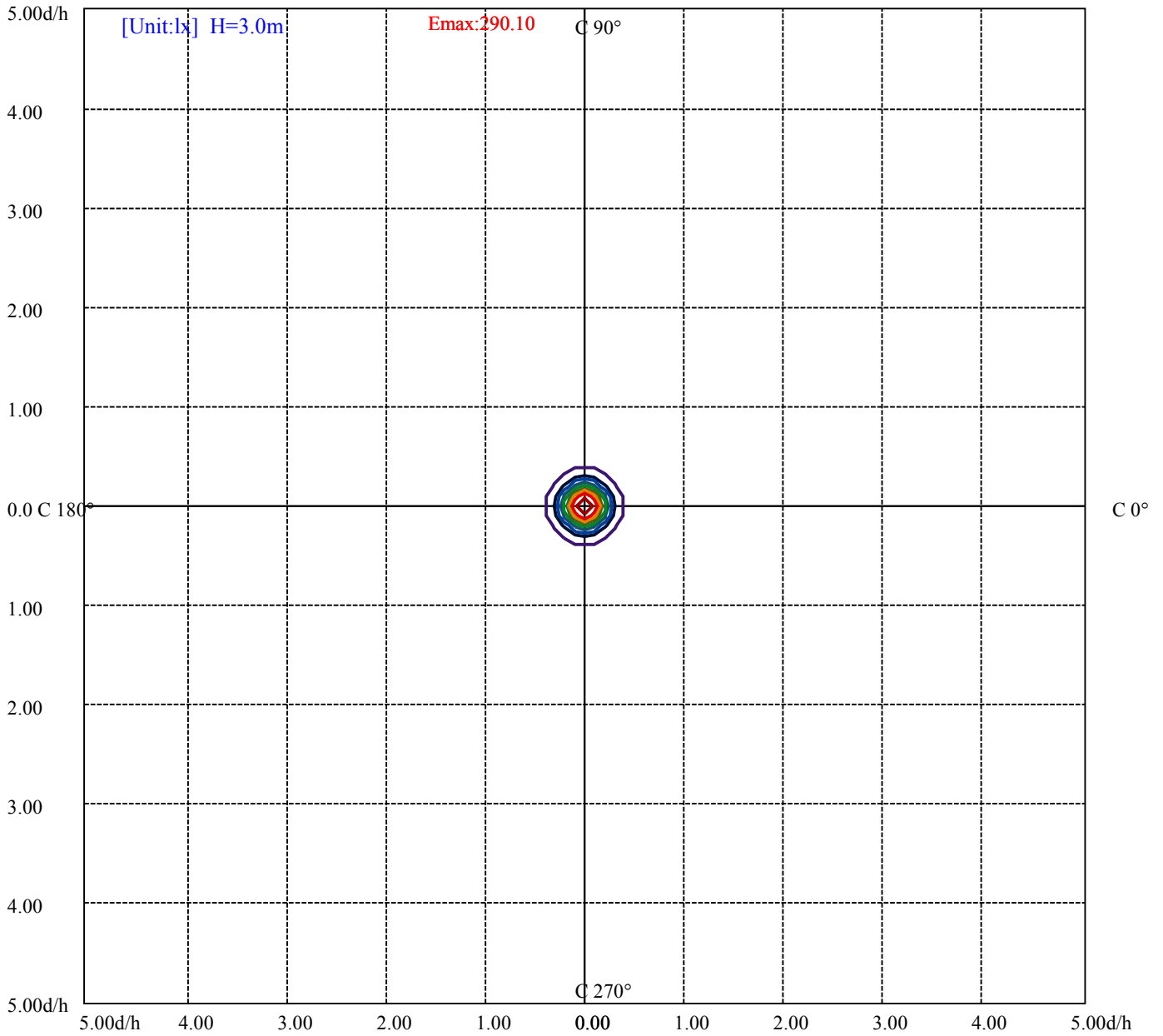
House

[Unit:cd]

Road

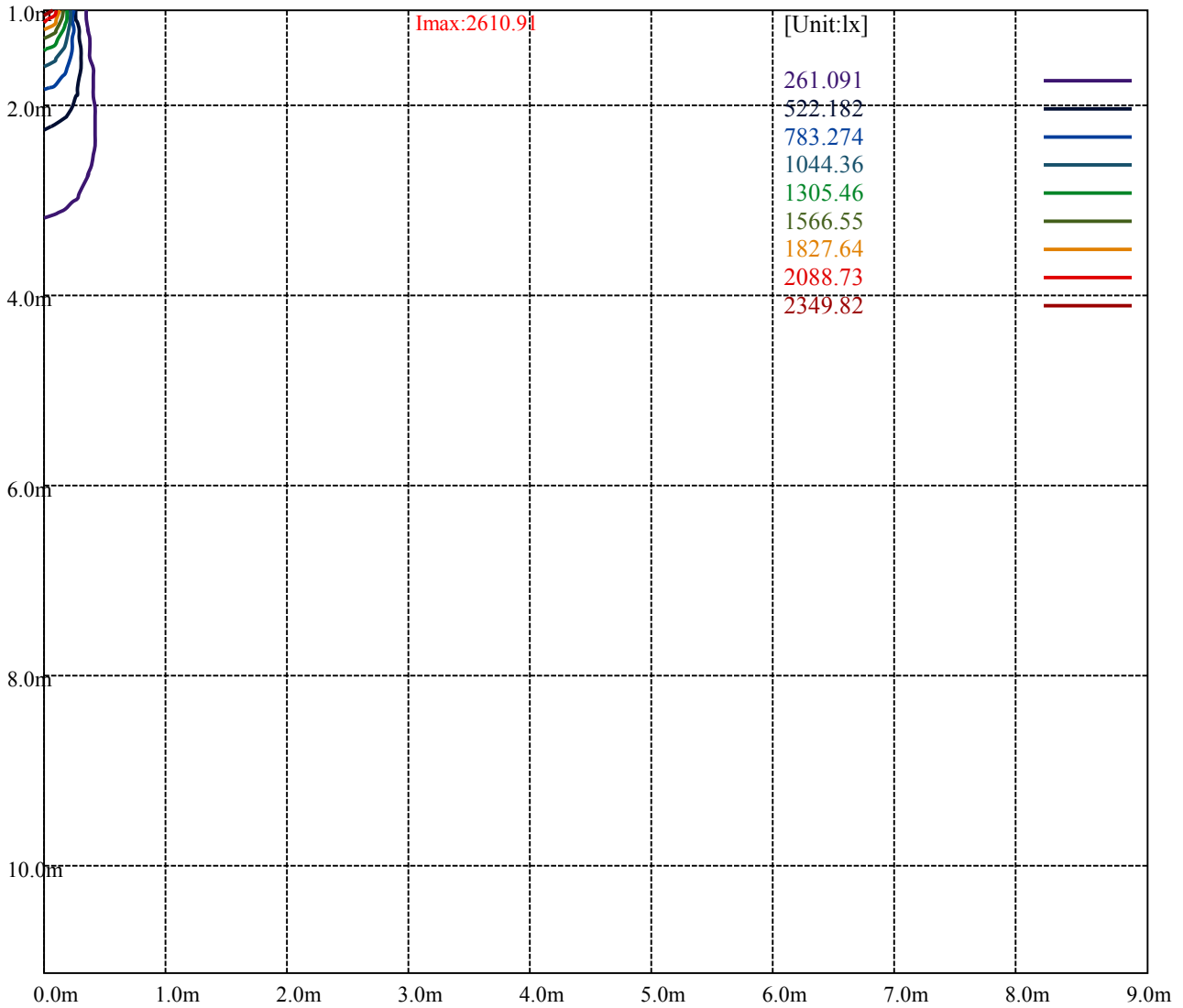
**Imax:2610.91**

(10%Imax) 261.091	—
(20%Imax) 522.182	—
(30%Imax) 783.274	—
(40%Imax) 1044.36	—
(50%Imax) 1305.46	—
(60%Imax) 1566.55	—
(70%Imax) 1827.64	—
(80%Imax) 2088.73	—
(90%Imax) 2349.82	—



- (10%Emax) 29.01011
- (20%Emax) 58.02011
- (30%Emax) 87.03022
- (40%Emax) 116.04
- (50%Emax) 145.05
- (60%Emax) 174.06
- (70%Emax) 203.07
- (80%Emax) 232.08
- (90%Emax) 261.0911





Luminance Table

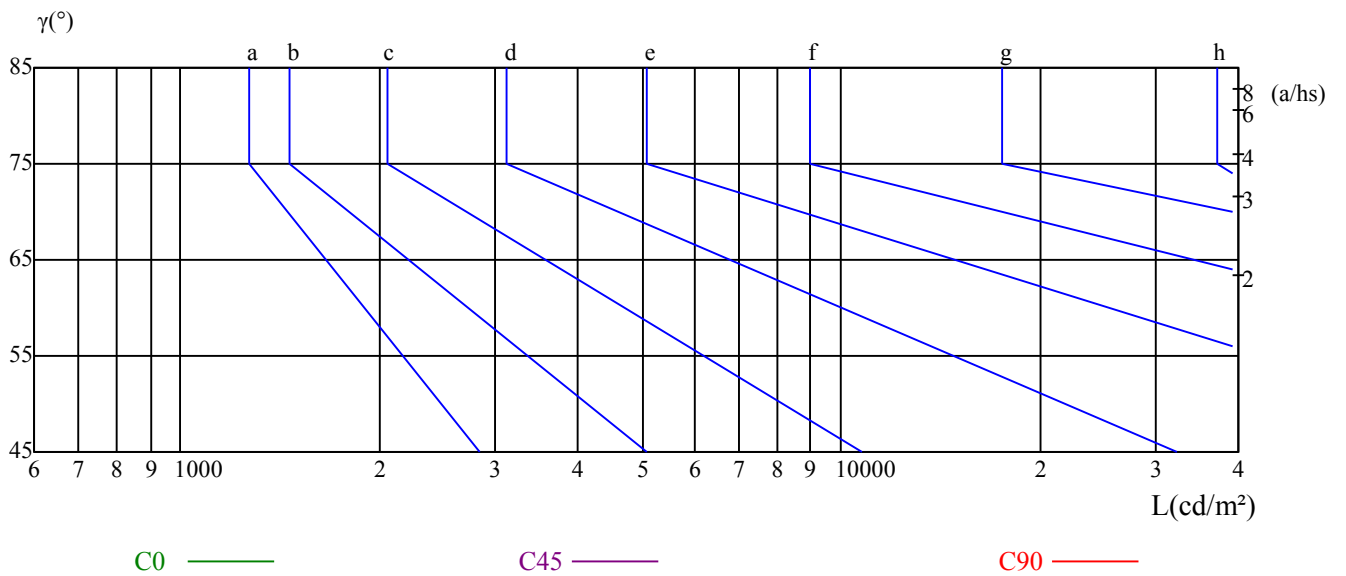
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

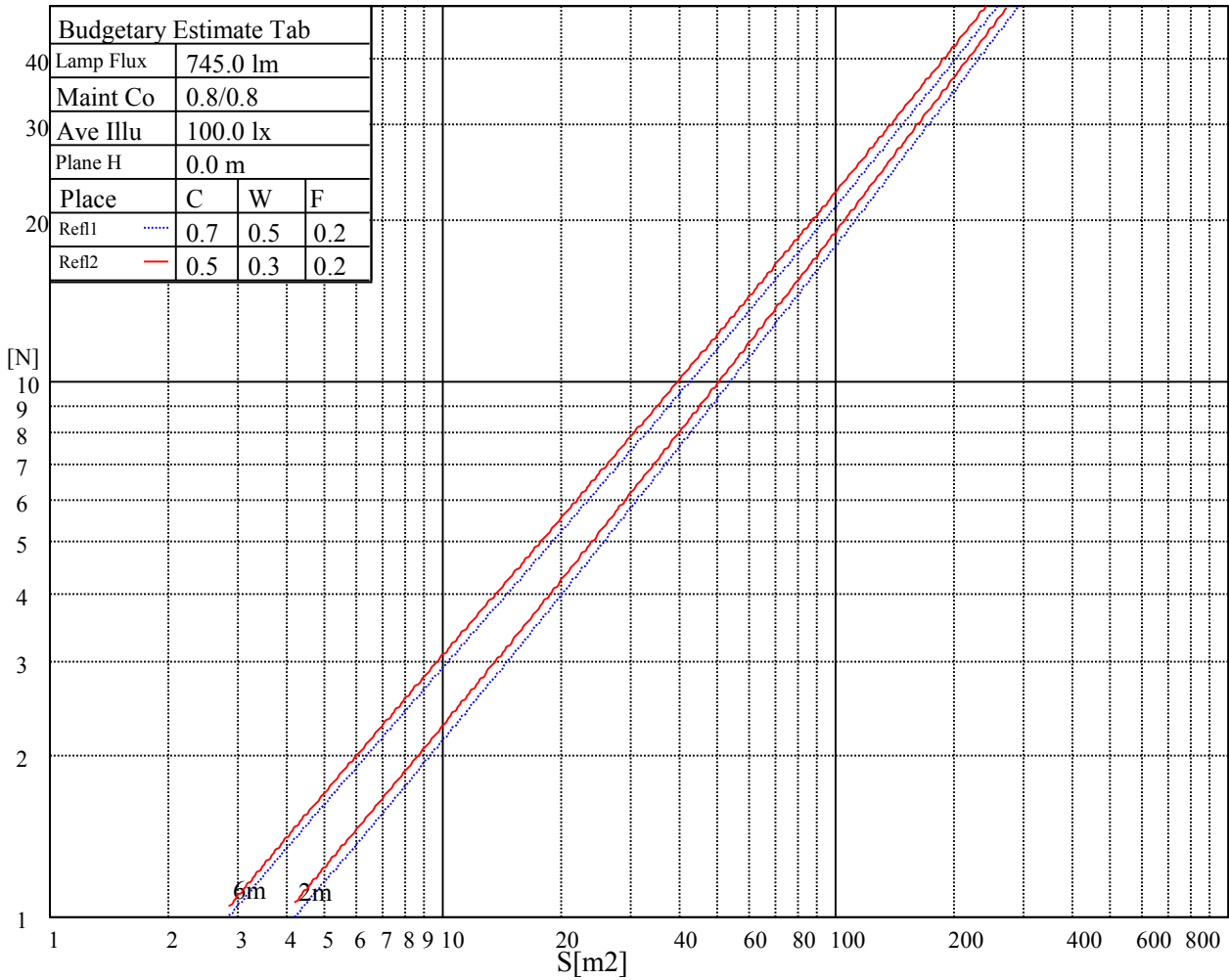
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

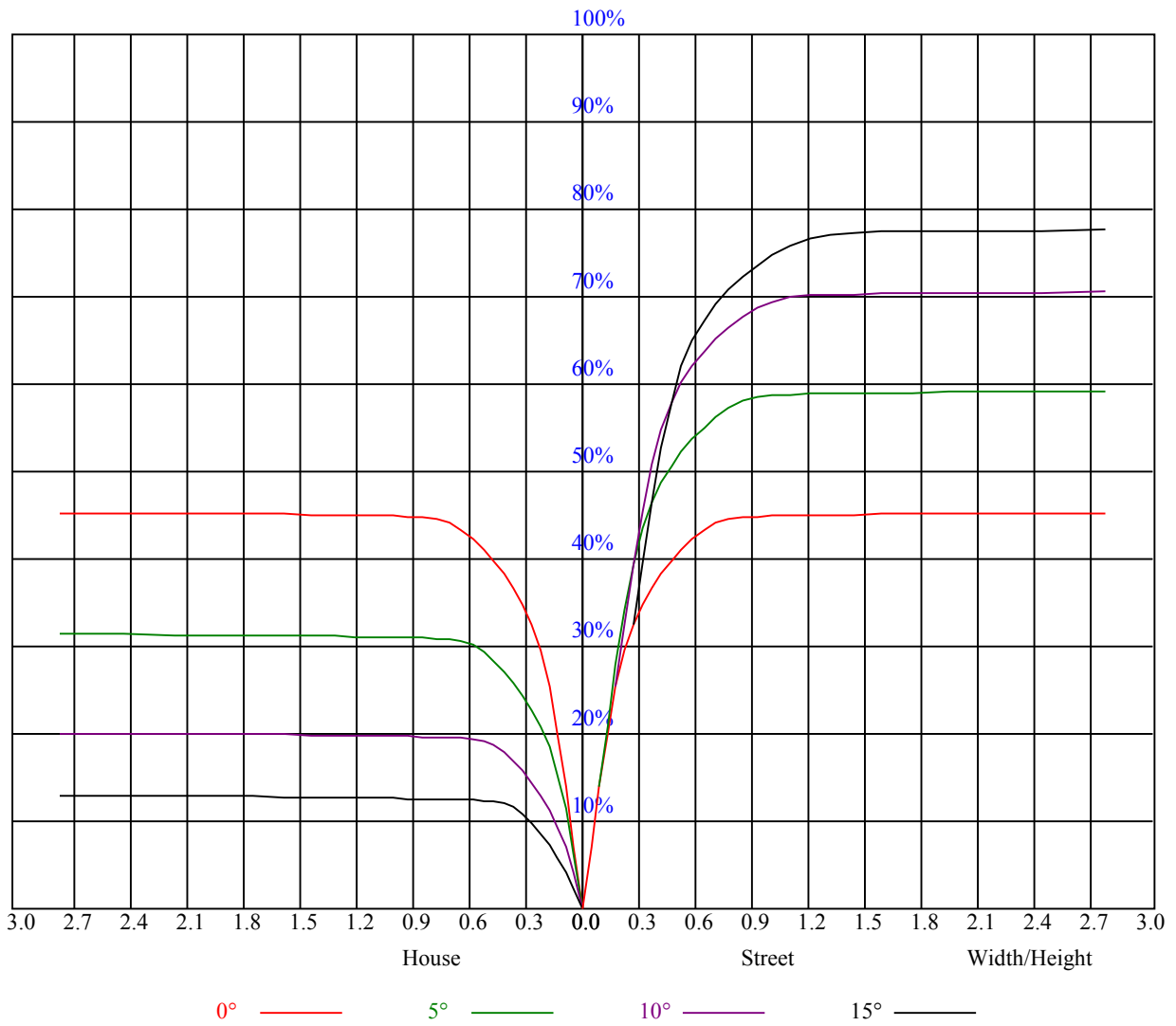
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.93
1	1.01	0.99	0.96	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.90	0.89	0.89	0.88	0.86	0.85
2	0.96	0.92	0.89	0.94	0.91	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.84	0.83	0.81
3	0.92	0.87	0.84	0.90	0.87	0.84	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.78
4	0.88	0.83	0.80	0.87	0.83	0.80	0.85	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.80	0.77	0.83	0.79	0.76	0.82	0.78	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.77	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.74	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	0.72	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63



Nata 2-1680-M

Intensity data(cd)

<b>C/γ(°)</b>	<b>0.0</b>	<b>5.0</b>	<b>10.0</b>	<b>15.0</b>	<b>20.0</b>	<b>25.0</b>	<b>30.0</b>	<b>35.0</b>	<b>40.0</b>
<b>0.0</b>	2611.33	2394.95	1728.22	620.49	307.77	257.06	237.62	218.68	11.95
<b>45.0</b>	2604.17	2430.19	1804.20	704.72	313.82	255.79	236.25	217.09	13.54
<b>90.0</b>	2617.93	2365.22	1635.18	557.94	292.29	251.50	232.89	199.63	9.80
<b>135.0</b>	2610.22	2437.35	1945.14	812.08	333.09	263.67	234.15	214.78	40.96
<b>180.0</b>	2611.33	2419.18	1842.19	778.88	321.20	254.31	232.28	214.78	30.50
<b>225.0</b>	2604.17	2396.05	1805.85	692.61	302.87	250.67	231.73	213.12	22.41
<b>270.0</b>	2617.93	2458.82	2000.75	872.09	334.74	268.23	242.30	223.25	41.57
<b>315.0</b>	2610.22	2381.19	1623.06	588.50	293.89	254.91	237.46	213.07	10.35
<b>360.0</b>	2611.33	2394.95	1728.22	620.49	307.77	257.06	237.62	218.68	11.95
<b>C/γ(°)</b>	<b>45.0</b>	<b>50.0</b>	<b>55.0</b>	<b>60.0</b>	<b>65.0</b>	<b>70.0</b>	<b>75.0</b>	<b>80.0</b>	<b>85.0</b>
<b>0.0</b>	4.35	3.63	3.36	3.14	3.03	2.92	2.86	2.86	2.81
<b>45.0</b>	4.29	3.63	3.36	3.19	3.03	2.97	2.92	2.92	2.86
<b>90.0</b>	3.96	3.58	3.30	3.14	3.03	2.92	2.86	2.86	2.81
<b>135.0</b>	4.79	3.74	3.47	3.19	3.08	2.97	2.86	2.86	2.81
<b>180.0</b>	4.40	3.80	3.41	3.19	3.08	2.97	2.92	2.86	2.86
<b>225.0</b>	4.51	3.74	3.41	3.19	3.03	2.97	2.97	2.92	2.92
<b>270.0</b>	5.18	3.85	3.47	3.25	3.08	2.97	2.86	2.86	2.86
<b>315.0</b>	4.13	3.69	3.36	3.19	3.03	2.92	2.86	2.86	2.81
<b>360.0</b>	4.35	3.63	3.36	3.14	3.03	2.92	2.86	2.86	2.81
<b>C/γ(°)</b>	<b>90.0</b>								
<b>0.0</b>	2.81								
<b>45.0</b>	2.81								
<b>90.0</b>	2.81								
<b>135.0</b>	2.81								
<b>180.0</b>	2.81								
<b>225.0</b>	2.81								
<b>270.0</b>	2.81								
<b>315.0</b>	2.81								
<b>360.0</b>	2.81								