



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 1709-M
Luminaire: 92.70.125.00
Report No: NATA0100
Test No: GC2018070605
LampCAT: NICHIA NTCWT012B-V3
Lamp flux(lm): 741.0
Number of Lamps: 1
Length(mm): 46
Phm Type: C

Voltage(V): 38.4000
Current(A): 0.2000
Power (W): 7.6800
PF: 0.0000
Ballast type: DC
Width(mm): 46
Height(mm): 0

Photometric Results

Lumens(lm): 673.30
Efficiency(%): 90.86%
Lumens(lm)/Power(W): 87.67
Central intensity(cd): 4367.349
Maximum intensity(cd): 4367.349
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=12.0
[C90/270]Total=12.0
Field angle(10%Imax): [C0/180]Total=32.5
[C90/270]Total=32.5
Maximum s/h(1/2): C0_180=0.21 C90_270=0.21
Maximum s/h(1/4): C0_180=0.23 C90_270=0.23
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.41%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.128%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4367.349	4.179	4.179	.564%	.621%
2.0	3977.825	30.446	34.625	4.109%	5.143%
4.0	3074.074	47.029	81.654	6.347%	12.128%
6.0	2185.739	50.107	131.761	6.762%	19.570%
8.0	1435.293	43.809	175.57	5.912%	26.076%
10.0	929.765	35.409	210.978	4.778%	31.335%
12.0	676.017	30.825	241.803	4.160%	35.913%
14.0	527.413	27.983	269.786	3.776%	40.069%
16.0	443.163	26.790	296.576	3.615%	44.048%
18.0	389.593	26.403	322.979	3.563%	47.970%
20.0	346.642	26.001	348.981	3.509%	51.832%
22.0	308.096	25.312	374.293	3.416%	55.591%
24.0	280.017	24.978	399.271	3.371%	59.301%
26.0	262.454	25.232	424.503	3.405%	63.048%
28.0	250.135	25.754	450.258	3.476%	66.874%
30.0	241.491	26.481	476.739	3.574%	70.807%
32.0	232.772	27.052	503.791	3.651%	74.824%
34.0	225.126	27.609	531.4	3.726%	78.925%
36.0	217.170	27.995	559.395	3.778%	83.083%
38.0	209.579	28.298	587.693	3.819%	87.286%
40.0	195.492	27.559	615.252	3.719%	91.379%
42.0	154.564	22.682	637.934	3.061%	94.748%
44.0	90.733	13.823	651.757	1.865%	96.801%
46.0	34.954	5.514	657.272	.744%	97.620%
48.0	12.174	1.984	659.256	.268%	97.914%
50.0	8.334	1.400	660.656	.189%	98.122%
52.0	6.146	1.062	661.718	.143%	98.280%
54.0	4.694	0.833	662.551	.112%	98.404%
56.0	4.150	0.755	663.305	.102%	98.516%
58.0	3.778	0.703	664.008	.095%	98.620%
60.0	3.599	0.684	664.692	.092%	98.722%
62.0	3.413	0.661	665.353	.089%	98.820%
64.0	3.269	0.644	665.997	.087%	98.916%
66.0	3.083	0.618	666.615	.083%	99.007%
68.0	2.987	0.607	667.222	.082%	99.098%
70.0	2.884	0.594	667.816	.080%	99.186%
72.0	2.829	0.590	668.406	.080%	99.274%
74.0	2.780	0.586	668.993	.079%	99.361%

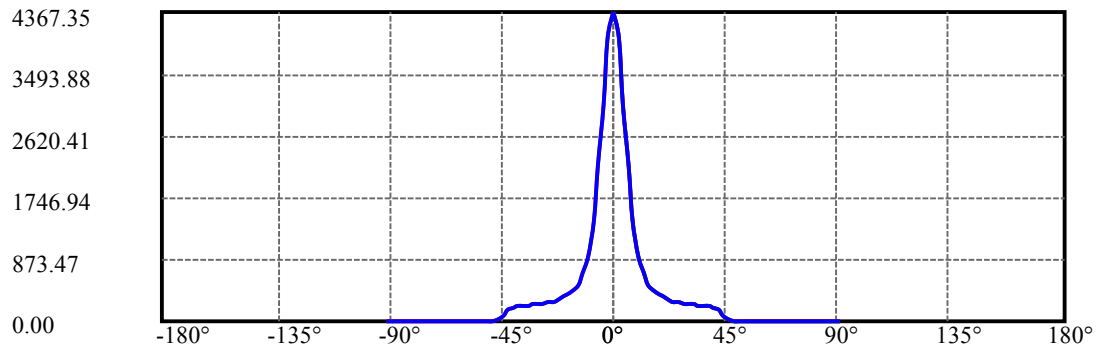
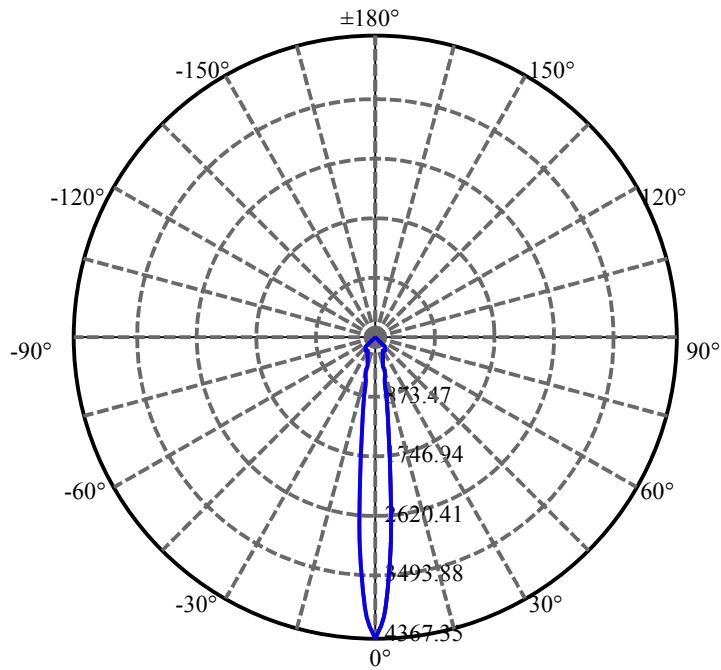
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.725	0.580	669.572	.078%	99.447%
78.0	2.712	0.582	670.154	.078%	99.533%
80.0	2.670	0.577	670.731	.078%	99.619%
82.0	2.656	0.577	671.308	.078%	99.704%
84.0	2.629	0.573	671.881	.077%	99.790%
86.0	2.601	0.569	672.45	.077%	99.874%
88.0	2.581	0.566	673.016	.076%	99.958%
90.0	2.567	0.281	673.297	.038%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	476.74	64.34%	70.81%
0-40	615.25	83.03%	91.38%
0-60	664.69	89.70%	98.72%
0-90	673.02	90.83%	99.96%
0-120	673.02	90.83%	99.96%
0-180	673.30	90.86%	100.00%
60-90	9.01	1.22%	1.34%
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%
0-34.52	538.64	72.69%	80.00%

ZONAL LUMEN SUMMARY

0-10	210.98
10-20	138.00
20-30	127.76
30-40	138.51
40-50	45.40
50-60	4.04
60-70	3.12
70-80	2.91
80-90	2.29
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: —————

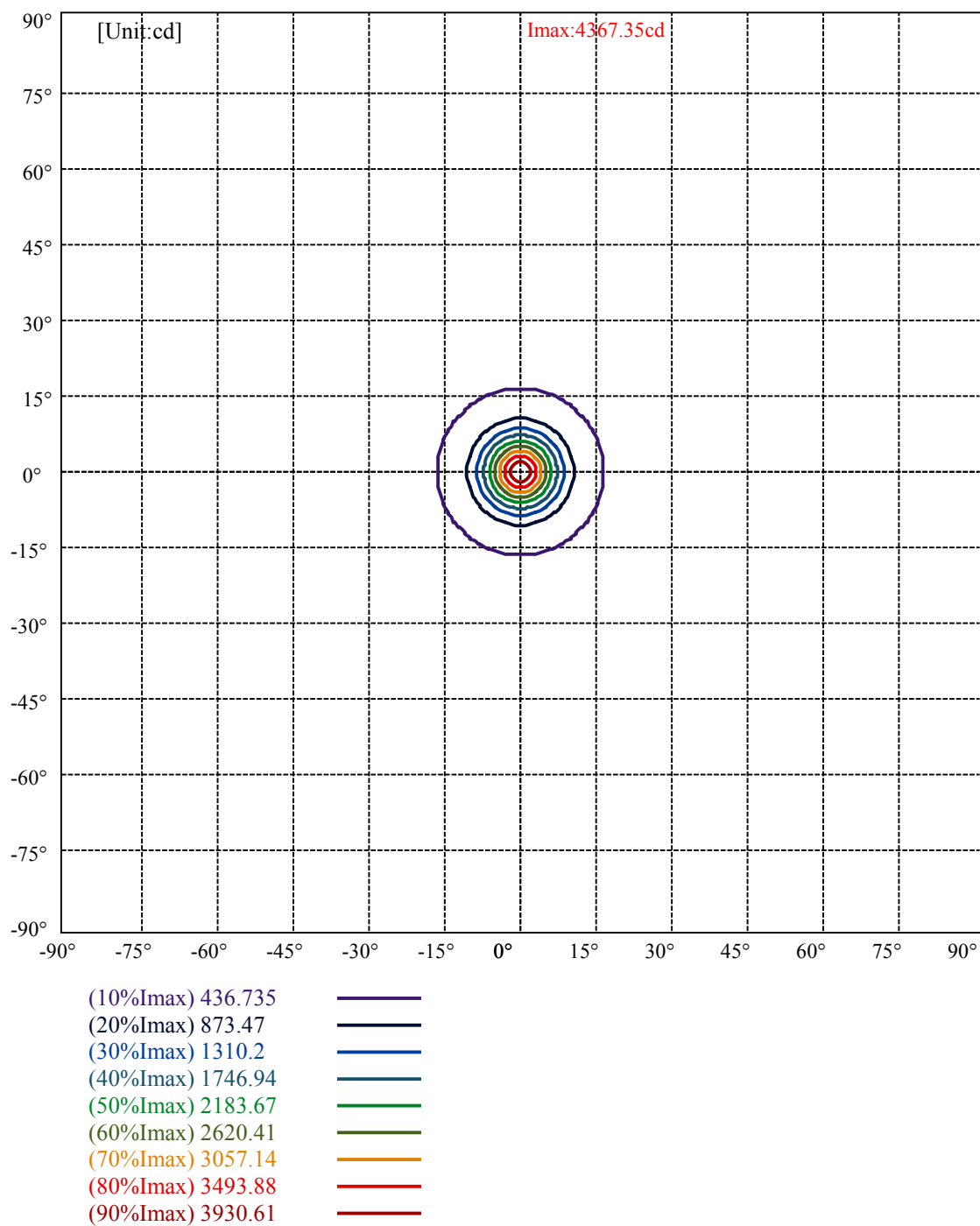
C90/C270: —————

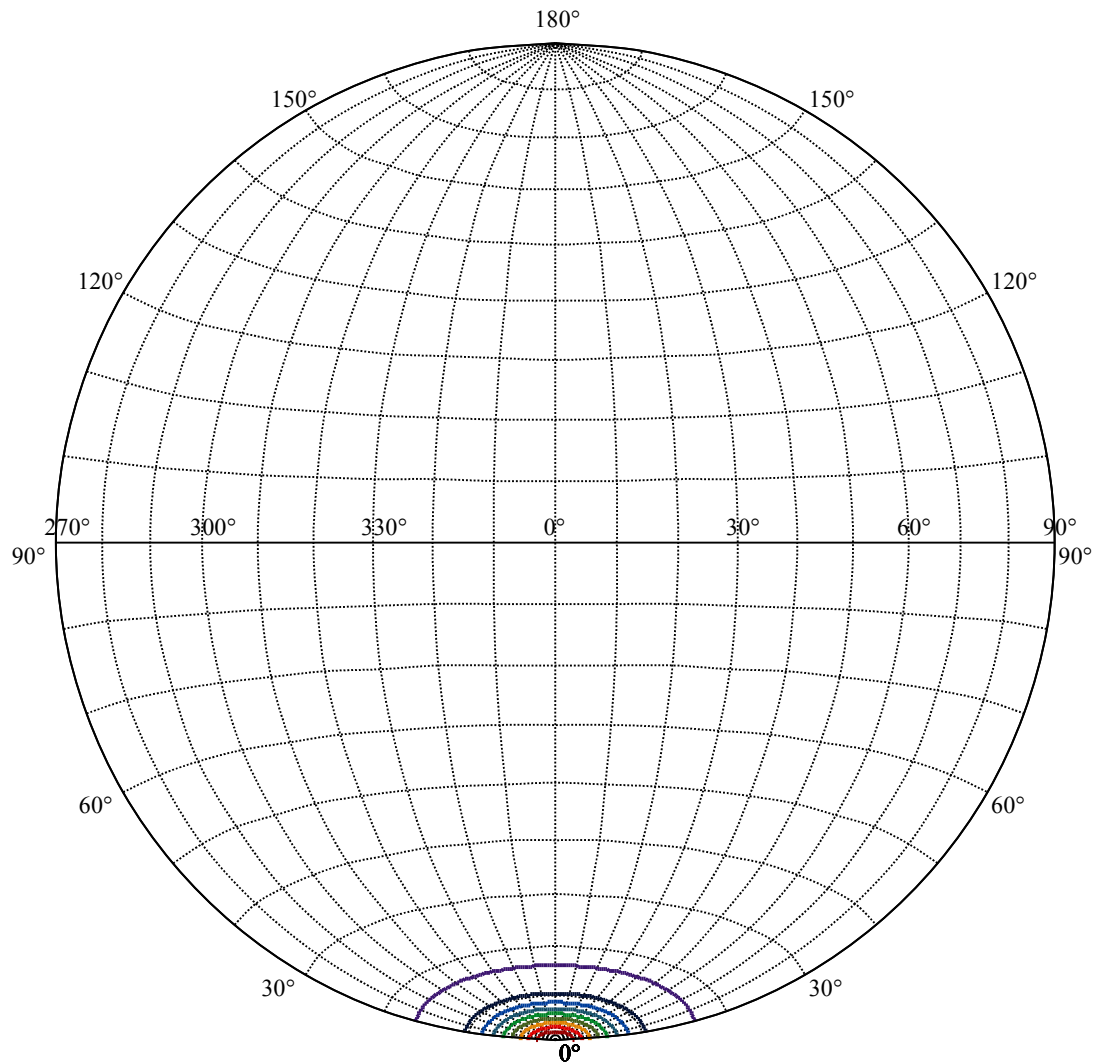
Field angle(10%Imax):C0/180Left:16.2 Right:16.2

:C90/270Left:16.2 Right:16.2

Beam Angle(50%Imax):C0/180Left:6.0 Right:6.0

:C90/270Left:6.0 Right:6.0





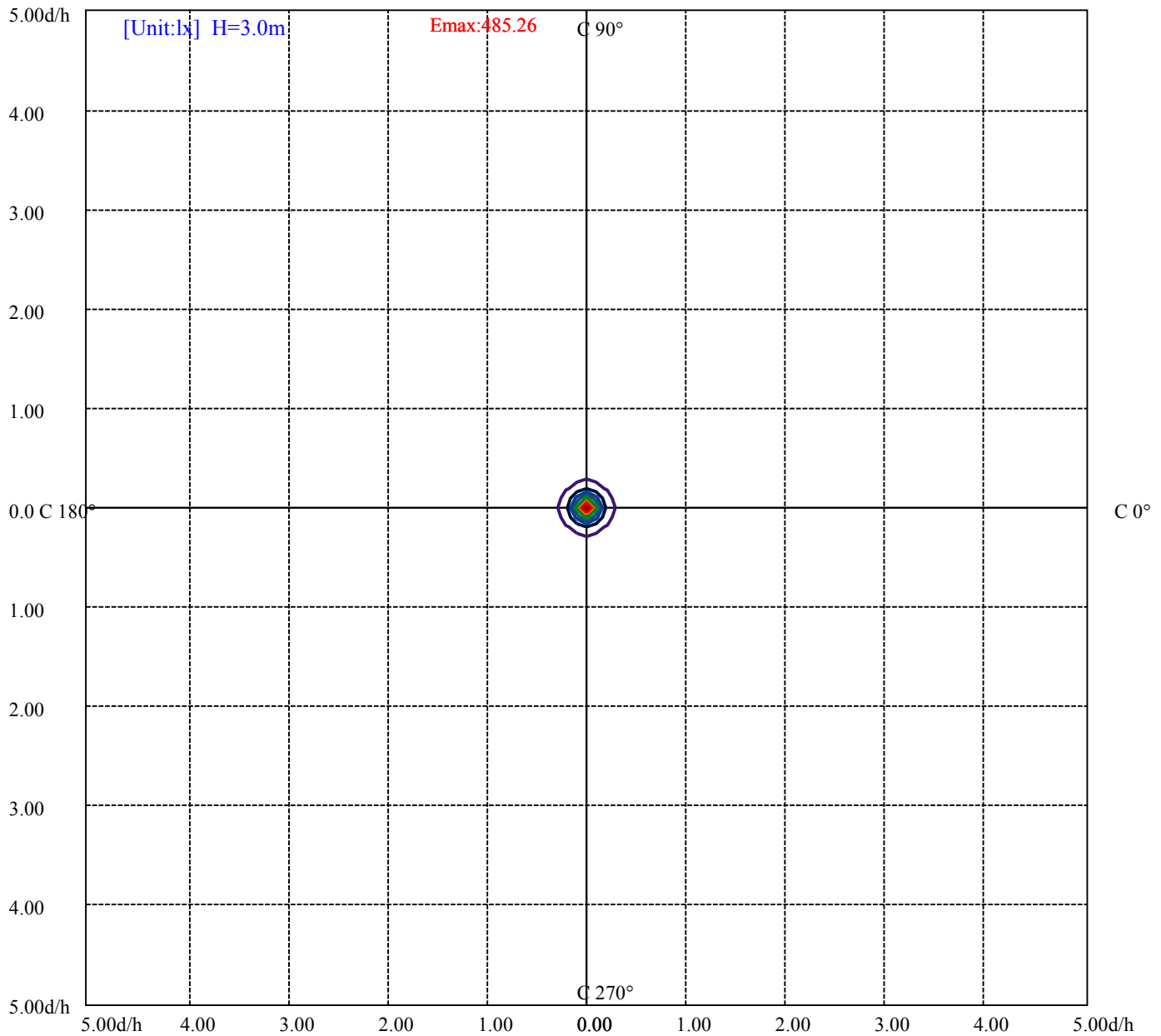
House

[Unit:cd]

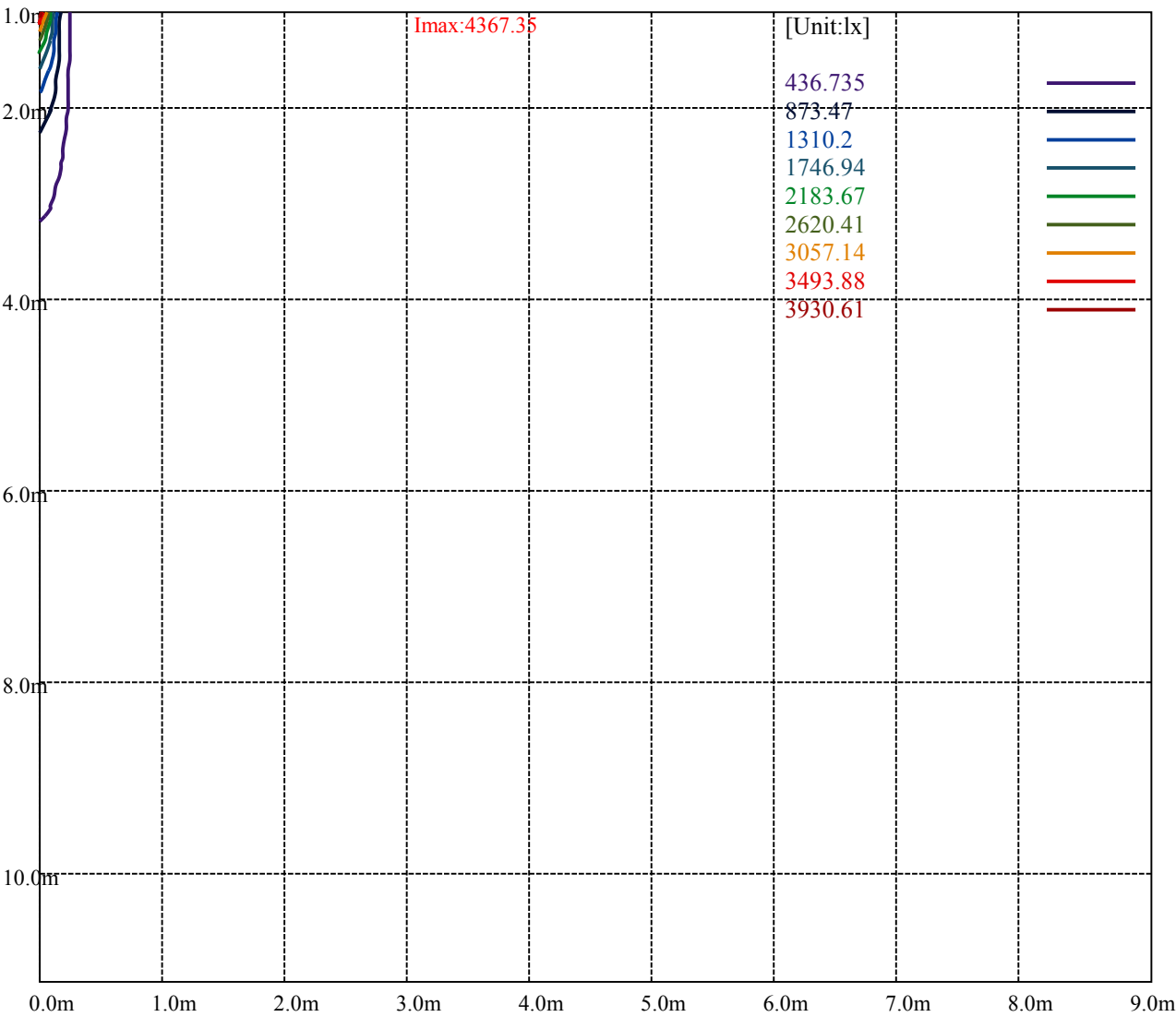
Road

Imax:4367.35

(10%Imax)	436.735	—
(20%Imax)	873.47	—
(30%Imax)	1310.2	—
(40%Imax)	1746.94	—
(50%Imax)	2183.67	—
(60%Imax)	2620.41	—
(70%Imax)	3057.14	—
(80%Imax)	3493.88	—
(90%Imax)	3930.61	—



(10%Emax)	48.52578	—
(20%Emax)	97.05155	—
(30%Emax)	145.5778	—
(40%Emax)	194.1033	—
(50%Emax)	242.6289	—
(60%Emax)	291.1544	—
(70%Emax)	339.68	—
(80%Emax)	388.2067	—
(90%Emax)	436.7322	—



Luminance Table

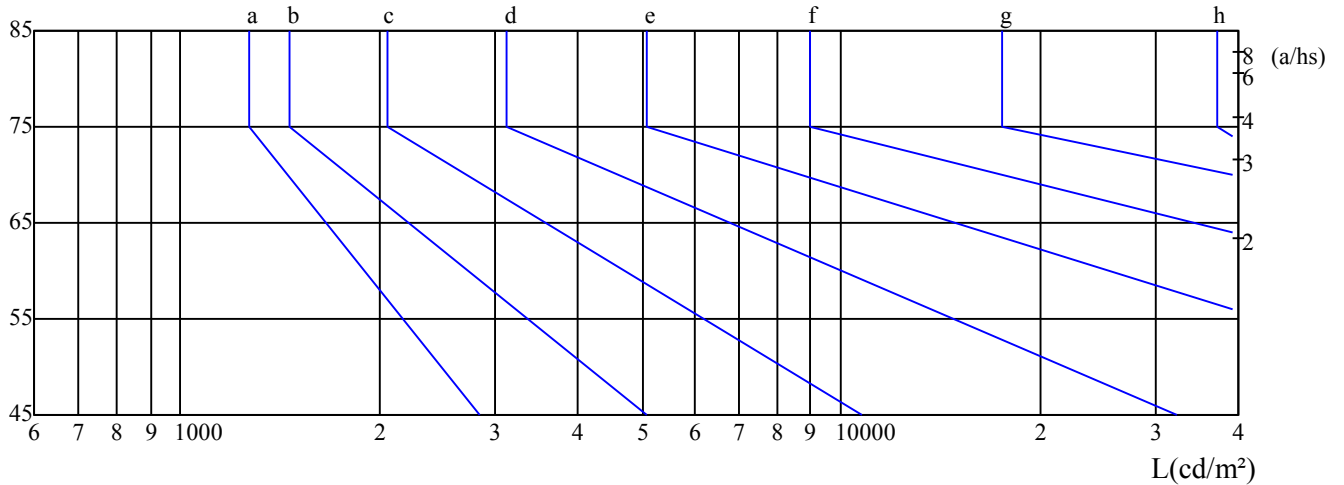
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

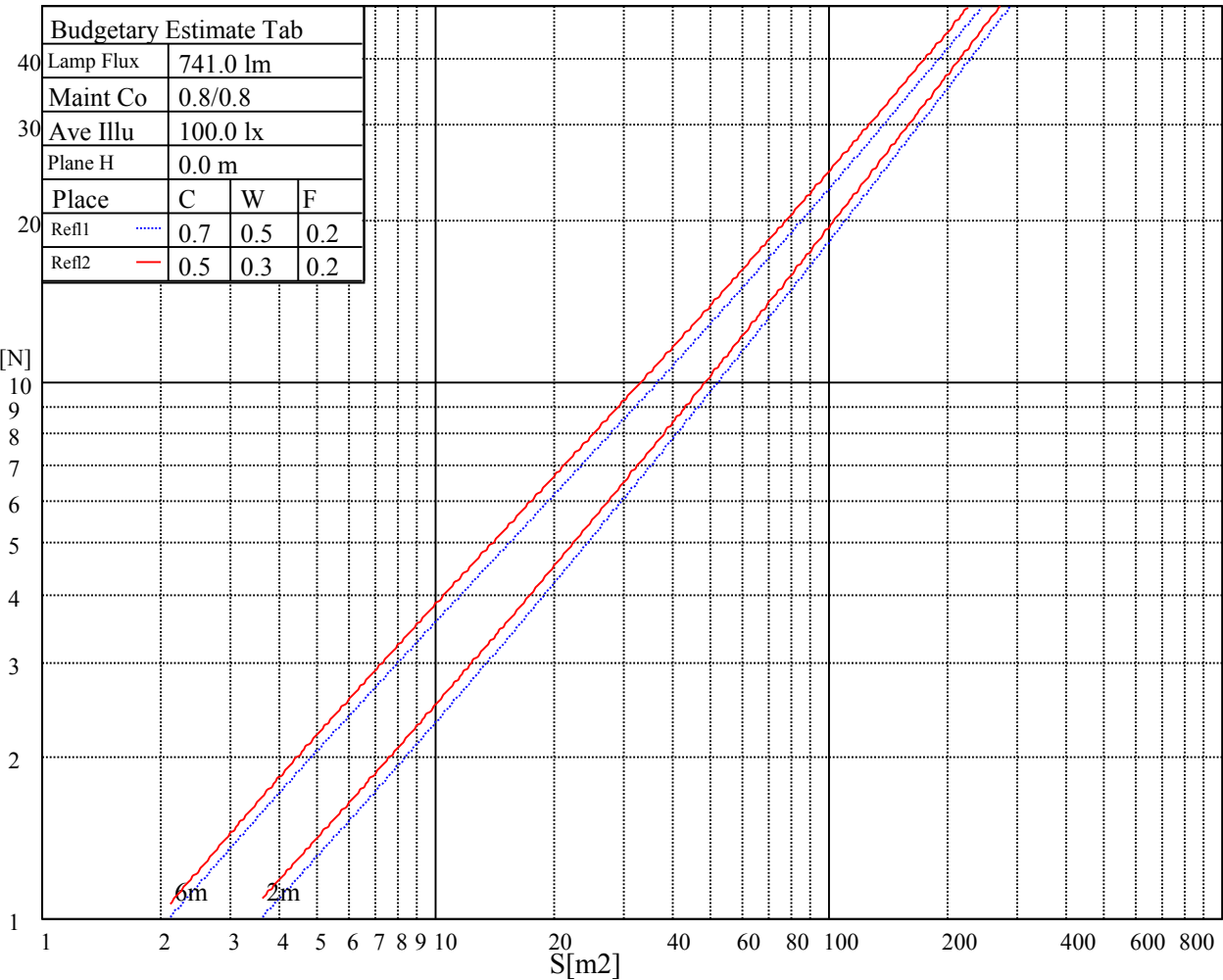
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

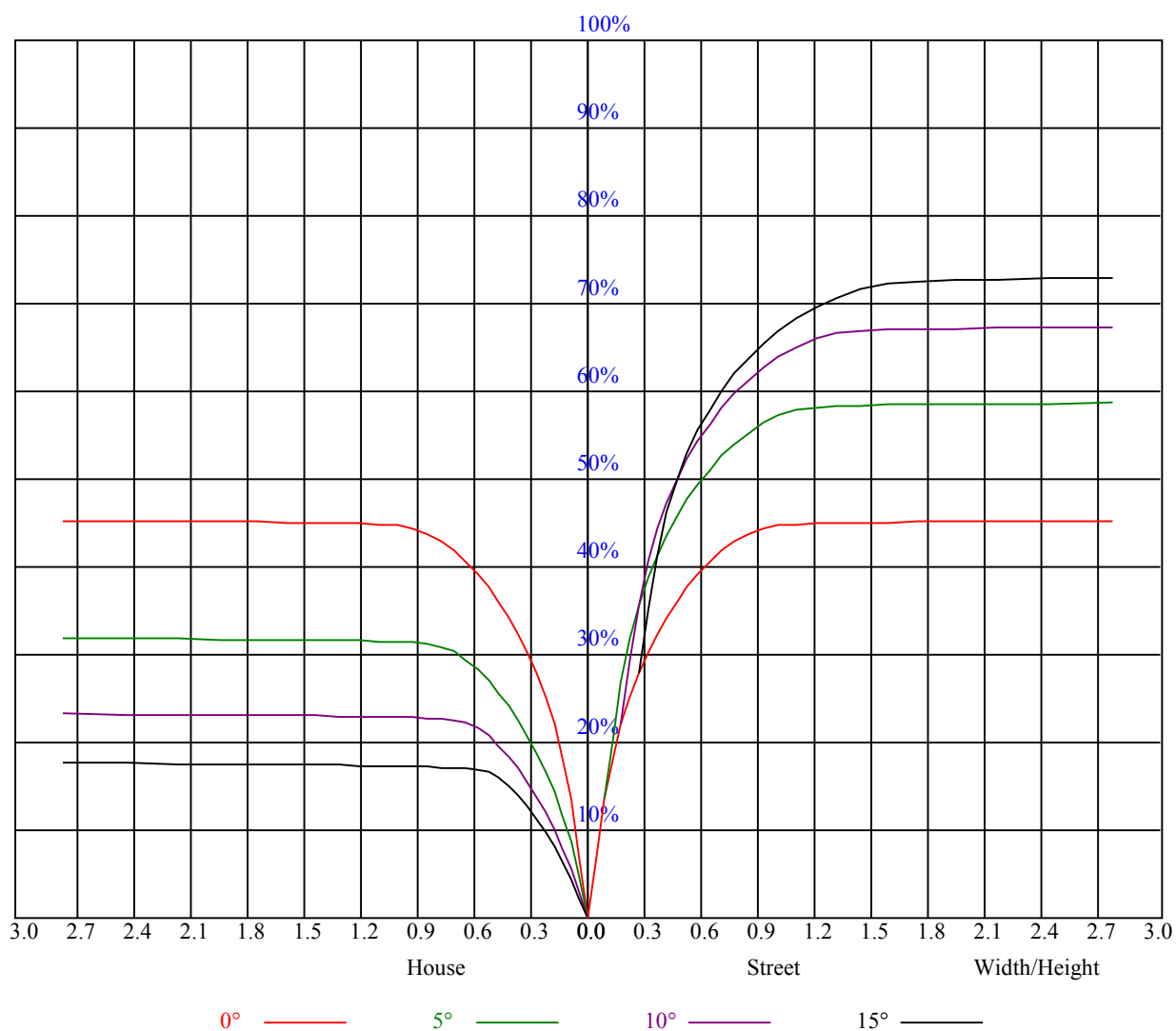
C0 ———

C45 ———

C90 ———



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	1.09	1.09	1.09	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.01	0.99	0.97	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.85
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.88	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.89	0.85	0.81	0.88	0.84	0.81	0.86	0.82	0.79	0.83	0.81	0.78	0.81	0.79	0.77	0.76
4	0.84	0.79	0.76	0.83	0.79	0.75	0.81	0.78	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
5	0.80	0.75	0.71	0.79	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.72	0.69	0.68
6	0.76	0.71	0.67	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.66	0.65
7	0.72	0.67	0.64	0.72	0.67	0.64	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.62
8	0.69	0.64	0.61	0.69	0.64	0.61	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.59
9	0.66	0.61	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.56
10	0.64	0.59	0.56	0.63	0.59	0.56	0.63	0.58	0.56	0.62	0.58	0.55	0.61	0.58	0.55	0.54



Nata 1709-M

Intensity data(cd)									
Appendix Page: 15 Total:16									
C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	4413.87	4467.28	3690.43	2631.70	1815.76	1145.17	786.76	602.87	490.00
45.0	4209.61	4364.32	3688.23	2730.25	1865.86	1182.61	801.62	588.55	475.69
90.0	4361.57	3932.68	2967.54	2096.00	1382.47	898.47	658.31	518.74	439.13
135.0	4484.34	3860.55	2902.57	2078.38	1346.13	876.50	652.97	511.47	429.99
180.0	4413.87	3596.83	2572.24	1793.74	1072.17	753.01	585.75	473.98	411.38
225.0	4209.61	3420.65	2443.40	1637.93	1055.54	717.50	554.47	461.87	404.17
270.0	4361.57	3973.97	3068.84	2147.75	1413.30	902.37	667.83	521.38	436.60
315.0	4484.34	4206.31	3259.34	2370.18	1531.12	962.50	700.43	540.43	458.34
360.0	4413.87	4467.28	3690.43	2631.70	1815.76	1145.17	786.76	602.87	490.00
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	419.53	370.53	328.14	291.80	278.03	254.75	245.17	235.86	227.60
45.0	414.57	363.92	323.18	289.05	265.59	253.92	243.90	234.60	227.05
90.0	381.10	341.02	300.00	273.91	255.96	244.73	237.18	227.93	220.78
135.0	382.64	340.25	305.01	278.59	259.43	248.69	240.49	231.35	224.08
180.0	367.17	327.92	291.30	269.45	254.58	244.56	236.96	229.20	220.56
225.0	359.79	321.53	287.39	265.65	255.79	246.60	238.17	231.35	224.52
270.0	390.90	349.06	312.72	284.64	265.76	255.08	246.65	237.51	229.59
315.0	401.03	358.91	317.01	287.06	264.49	252.76	243.40	234.38	226.83
360.0	419.53	370.53	328.14	291.80	278.03	254.75	245.17	235.86	227.60
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	219.84	211.53	203.76	179.92	128.06	60.51	16.96	9.97	7.49
45.0	219.56	211.14	204.09	187.74	133.02	70.14	19.82	9.52	7.65
90.0	212.85	206.35	197.49	157.08	89.58	29.79	9.97	7.82	5.67
135.0	215.66	207.95	195.29	143.86	77.96	22.24	10.41	8.15	5.67
180.0	213.62	206.13	177.50	125.47	55.61	14.20	9.74	7.10	4.90
225.0	215.99	209.21	179.26	122.39	53.40	12.88	9.25	7.05	5.07
270.0	221.11	213.40	205.09	158.01	93.05	34.36	10.46	8.37	6.66
315.0	218.74	210.92	201.45	162.03	95.19	35.51	10.79	8.70	6.06
360.0	219.84	211.53	203.76	179.92	128.06	60.51	16.96	9.97	7.49
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	5.29	4.68	4.02	3.80	3.58	3.41	3.08	3.03	2.92
45.0	5.23	4.29	3.85	3.69	3.47	3.36	3.14	3.03	2.92
90.0	4.29	3.85	3.63	3.47	3.30	3.14	3.03	2.92	2.81
135.0	4.79	3.91	3.63	3.47	3.30	3.19	3.08	2.97	2.86
180.0	4.13	3.91	3.63	3.52	3.36	3.25	3.08	2.97	2.86
225.0	4.24	3.91	3.69	3.52	3.36	3.25	3.08	2.97	2.92
270.0	5.01	4.51	3.91	3.63	3.47	3.30	3.14	3.03	2.92
315.0	4.57	4.13	3.85	3.69	3.47	3.25	3.03	2.97	2.86
360.0	5.29	4.68	4.02	3.80	3.58	3.41	3.08	3.03	2.92
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	2.86	2.75	2.75	2.70	2.70	2.64	2.64	2.64	2.59
45.0	2.86	2.81	2.75	2.75	2.70	2.70	2.70	2.64	2.59
90.0	2.81	2.75	2.70	2.70	2.64	2.64	2.59	2.59	2.59
135.0	2.81	2.75	2.70	2.70	2.64	2.64	2.64	2.59	2.59
180.0	2.81	2.81	2.70	2.70	2.64	2.64	2.64	2.59	2.53
225.0	2.86	2.81	2.75	2.75	2.70	2.70	2.64	2.59	2.59
270.0	2.81	2.81	2.75	2.70	2.70	2.64	2.59	2.59	2.59
315.0	2.81	2.75	2.70	2.70	2.64	2.64	2.59	2.59	2.59
360.0	2.86	2.75	2.75	2.70	2.70	2.64	2.64	2.64	2.59

Intensity data(cd)

Appendix Page: 16 Total:16

C/ γ (°)	90.0
0.0	2.53
45.0	2.59
90.0	2.53
135.0	2.59
180.0	2.53
225.0	2.59
270.0	2.59
315.0	2.59
360.0	2.53