



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: 2-1674-M  
Luminaire: 92.70.135.00  
Report No: NATA0100  
Test No: GC2018062002  
LampCAT: NICHIA NFCW108B-V3  
Lamp flux(lm): 2254.8  
Number of Lamps: 1  
Length(mm): 71  
Phm Type: C

Voltage(V): 33.9000  
Current(A): 0.4900  
Power (W): 16.6110  
PF: 0.0000  
Ballast type: DC  
Width(mm): 71  
Height(mm): 0

---

## Photometric Results

---

Lumens(lm): 2027.16  
Efficiency(%): 89.91%  
Lumens(lm)/Power(W): 122.04  
Central intensity(cd): 12854.290  
Maximum intensity(cd): 12854.290  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=16.6  
                                  [C90/270]Total=16.6  
Field angle(10%Imax): [C0/180]Total=33.7  
                                  [C90/270]Total=33.7  
Maximum s/h(1/2): C0\_180=0.29 C90\_270=0.29  
Maximum s/h(1/4): C0\_180=0.28 C90\_270=0.28  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.44%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.132%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12854.293	12.301	12.301	.546%	.607%
2.0	12510.190	95.752	108.053	4.247%	5.330%
4.0	11229.097	171.789	279.842	7.619%	13.805%
6.0	9261.106	212.306	492.148	9.416%	24.278%
8.0	6766.707	206.537	698.685	9.160%	34.466%
10.0	4372.029	166.502	865.187	7.384%	42.680%
12.0	2872.636	130.986	996.173	5.809%	49.141%
14.0	1946.381	103.269	1099.441	4.580%	54.236%
16.0	1412.128	85.364	1184.806	3.786%	58.447%
18.0	1121.162	75.983	1260.789	3.370%	62.195%
20.0	974.017	73.061	1333.849	3.240%	65.799%
22.0	876.305	71.994	1405.843	3.193%	69.350%
24.0	811.476	72.386	1478.229	3.210%	72.921%
26.0	762.338	73.292	1551.521	3.251%	76.537%
28.0	725.499	74.698	1626.219	3.313%	80.222%
30.0	698.074	76.548	1702.768	3.395%	83.998%
32.0	665.226	77.311	1780.079	3.429%	87.812%
34.0	583.185	71.521	1851.6	3.172%	91.340%
36.0	455.695	58.743	1910.343	2.605%	94.237%
38.0	309.314	41.764	1952.108	1.852%	96.298%
40.0	168.968	23.820	1975.927	1.056%	97.473%
42.0	57.899	8.497	1984.424	.377%	97.892%
44.0	19.428	2.960	1987.384	.131%	98.038%
46.0	13.275	2.094	1989.478	.093%	98.141%
48.0	10.399	1.695	1991.173	.075%	98.225%
50.0	9.649	1.621	1992.794	.072%	98.305%
52.0	9.422	1.628	1994.422	.072%	98.385%
54.0	9.236	1.639	1996.061	.073%	98.466%
56.0	9.084	1.652	1997.713	.073%	98.547%
58.0	8.967	1.668	1999.38	.074%	98.630%
60.0	8.864	1.684	2001.064	.075%	98.713%
62.0	8.809	1.706	2002.77	.076%	98.797%
64.0	8.720	1.719	2004.489	.076%	98.882%
66.0	8.692	1.741	2006.23	.077%	98.968%
68.0	8.644	1.758	2007.988	.078%	99.054%
70.0	8.596	1.771	2009.759	.079%	99.142%
72.0	8.575	1.789	2011.548	.079%	99.230%
74.0	8.561	1.805	2013.353	.080%	99.319%

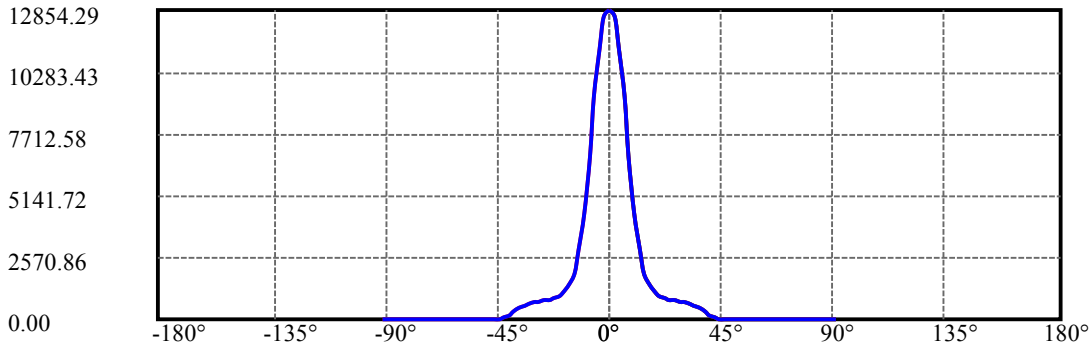
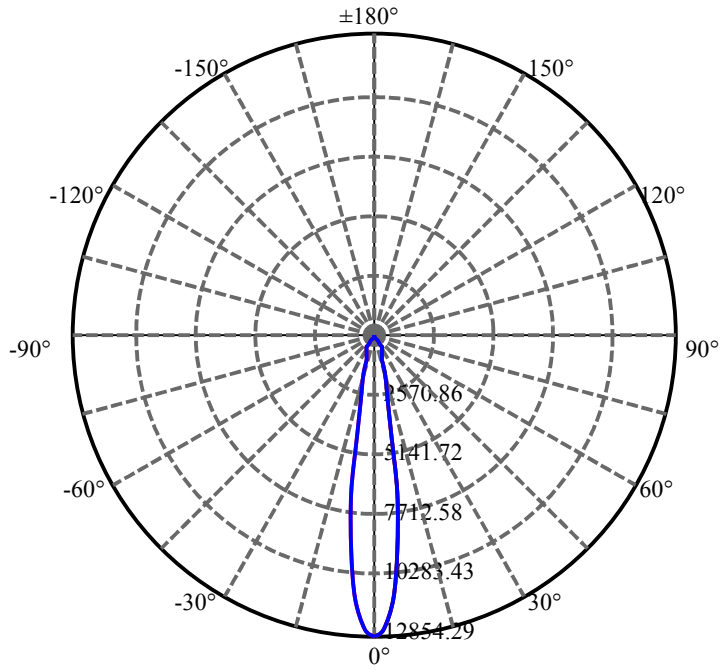
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.520	1.813	2015.166	.080%	99.408%
78.0	8.513	1.826	2016.992	.081%	99.498%
80.0	8.513	1.839	2018.831	.082%	99.589%
82.0	8.486	1.843	2020.673	.082%	99.680%
84.0	8.492	1.852	2022.526	.082%	99.771%
86.0	8.479	1.855	2024.381	.082%	99.863%
88.0	8.451	1.852	2026.233	.082%	99.954%
90.0	8.444	0.926	2027.159	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1702.77	75.52%	84.00%
0-40	1975.93	87.63%	97.47%
0-60	2001.06	88.75%	98.71%
0-90	2026.23	89.87%	99.95%
0-120	2026.23	89.87%	99.95%
0-180	2027.16	89.91%	100.00%
60-90	26.85	1.19%	1.32%
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%
0-27.88	1621.73	71.92%	80.00%

ZONAL LUMEN SUMMARY

0-10	865.19
10-20	468.66
20-30	368.92
30-40	273.16
40-50	16.87
50-60	8.27
60-70	8.70
70-80	9.07
80-90	7.40
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): —————

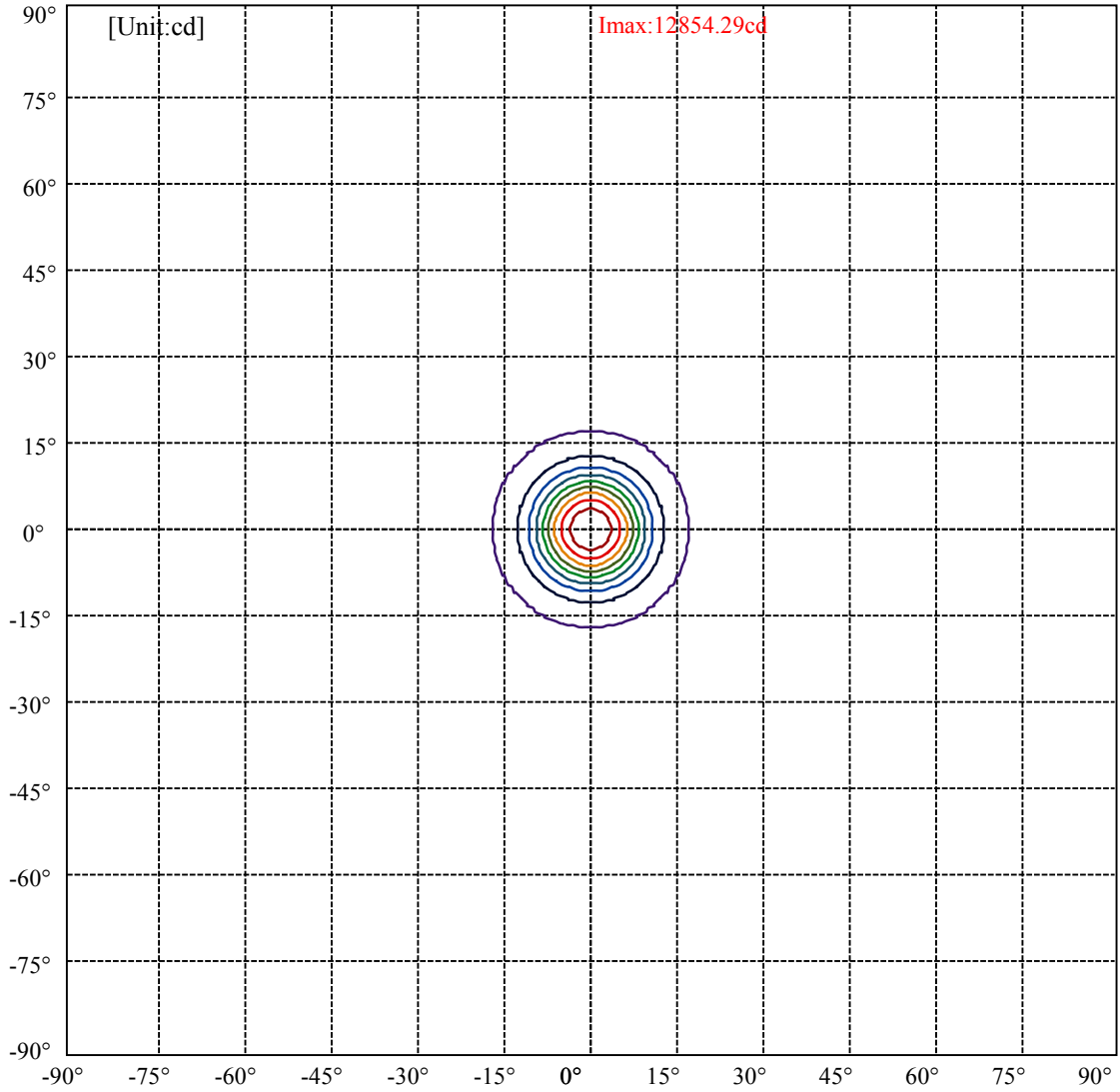
C0/C180: —————

C90/C270: —————

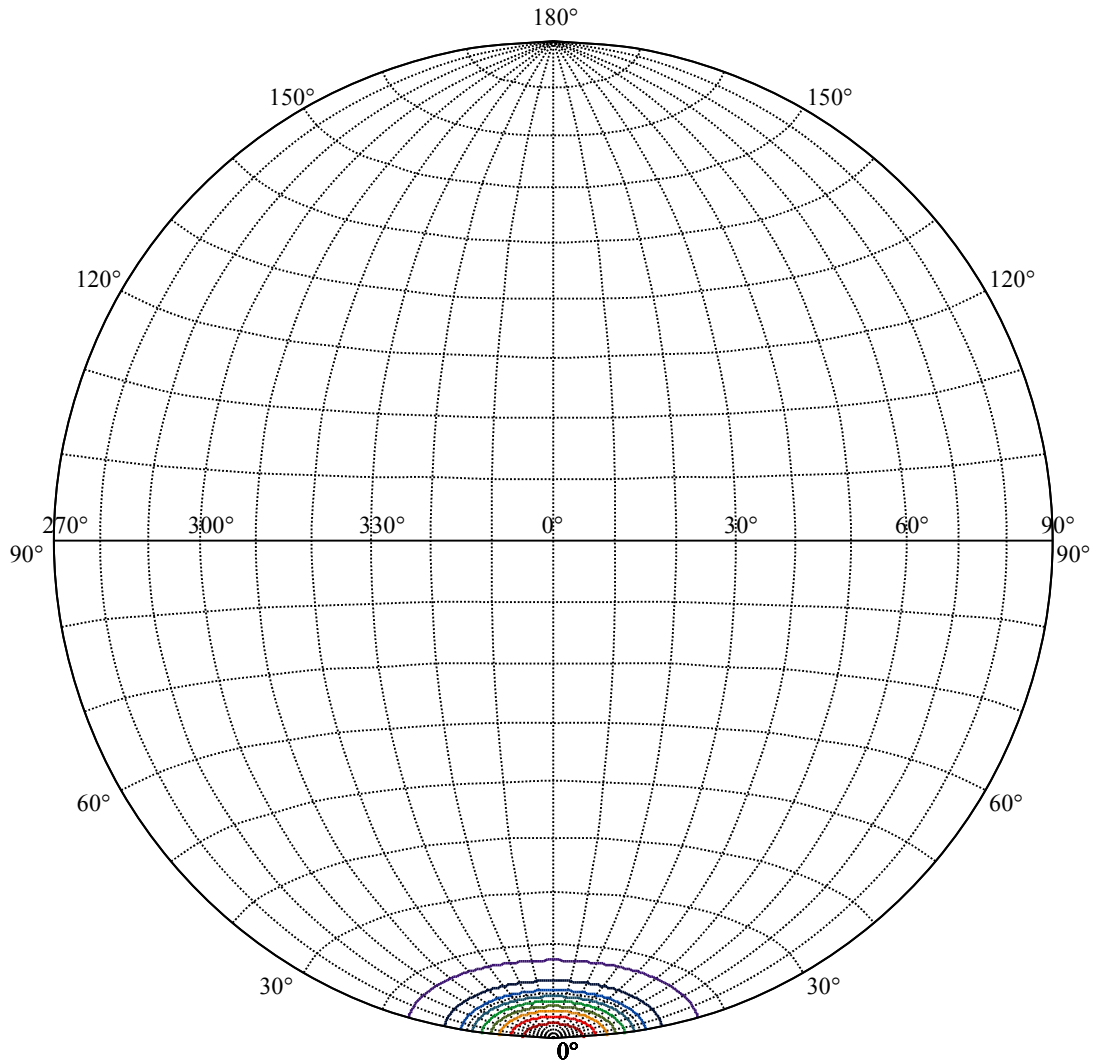
Field angle(10%Imax):C0/180Left:16.9 Right:16.9  
:C90/270Left:16.9 Right:16.9

Beam Angle(50%Imax):C0/180Left:8.3 Right:8.3  
:C90/270Left:8.3 Right:8.3





(10%Imax) 1285.43	—
(20%Imax) 2570.86	—
(30%Imax) 3856.29	—
(40%Imax) 5141.72	—
(50%Imax) 6427.15	—
(60%Imax) 7712.58	—
(70%Imax) 8998	—
(80%Imax) 10283.4	—
(90%Imax) 11568.9	—



House

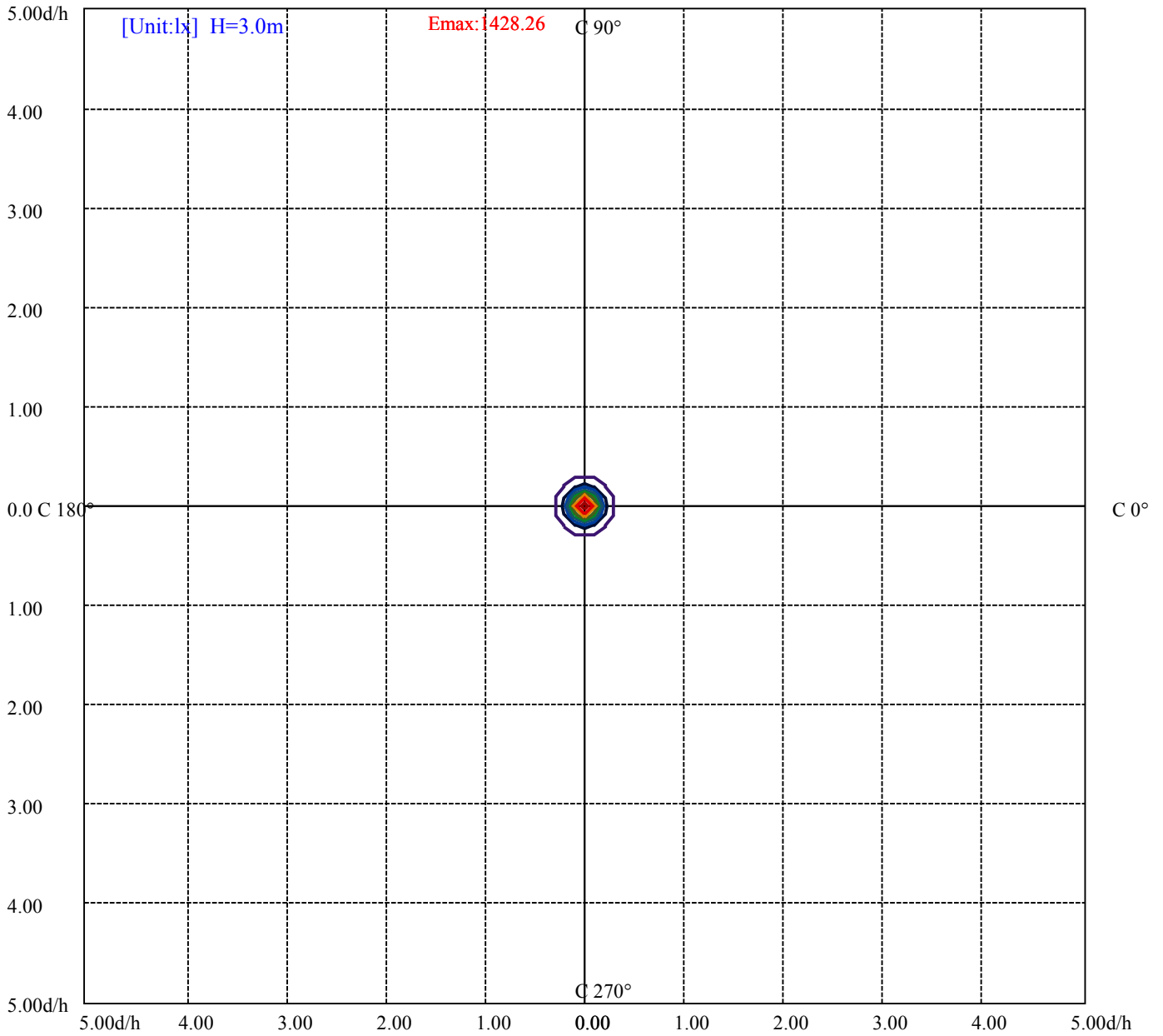
[Unit:cd]

Road

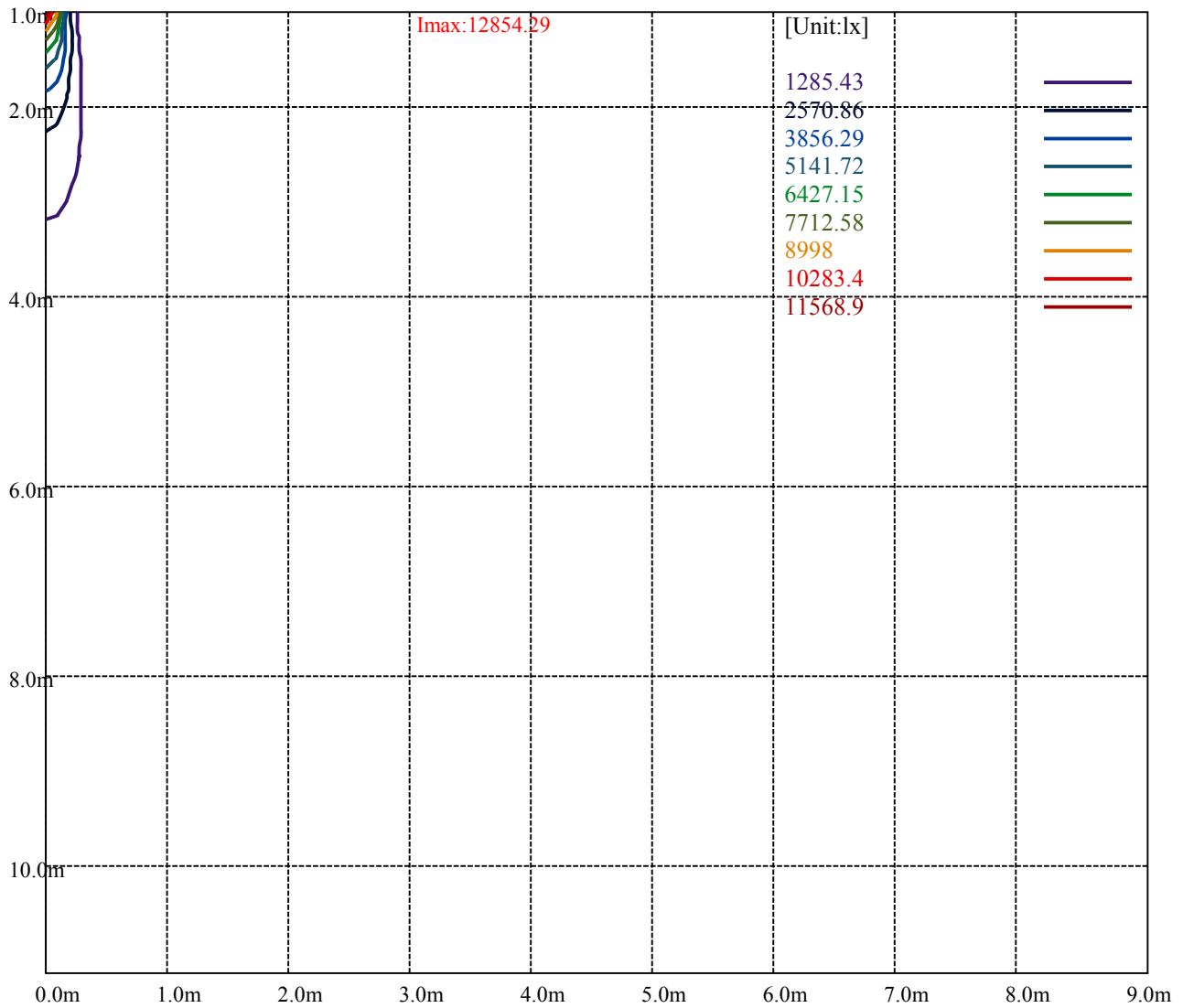
**Imax:12854.29**

(10%Imax) 1285.43	—
(20%Imax) 2570.86	—
(30%Imax) 3856.29	—
(40%Imax) 5141.72	—
(50%Imax) 6427.15	—
(60%Imax) 7712.58	—
(70%Imax) 8998	—
(80%Imax) 10283.4	—
(90%Imax) 11568.9	—





- (10%Emax) 142.8256
- (20%Emax) 285.65
- (30%Emax) 428.4756
- (40%Emax) 571.3011
- (50%Emax) 714.1255
- (60%Emax) 856.9511
- (70%Emax) 999.7767
- (80%Emax) 1142.6
- (90%Emax) 1285.422



Luminance Table

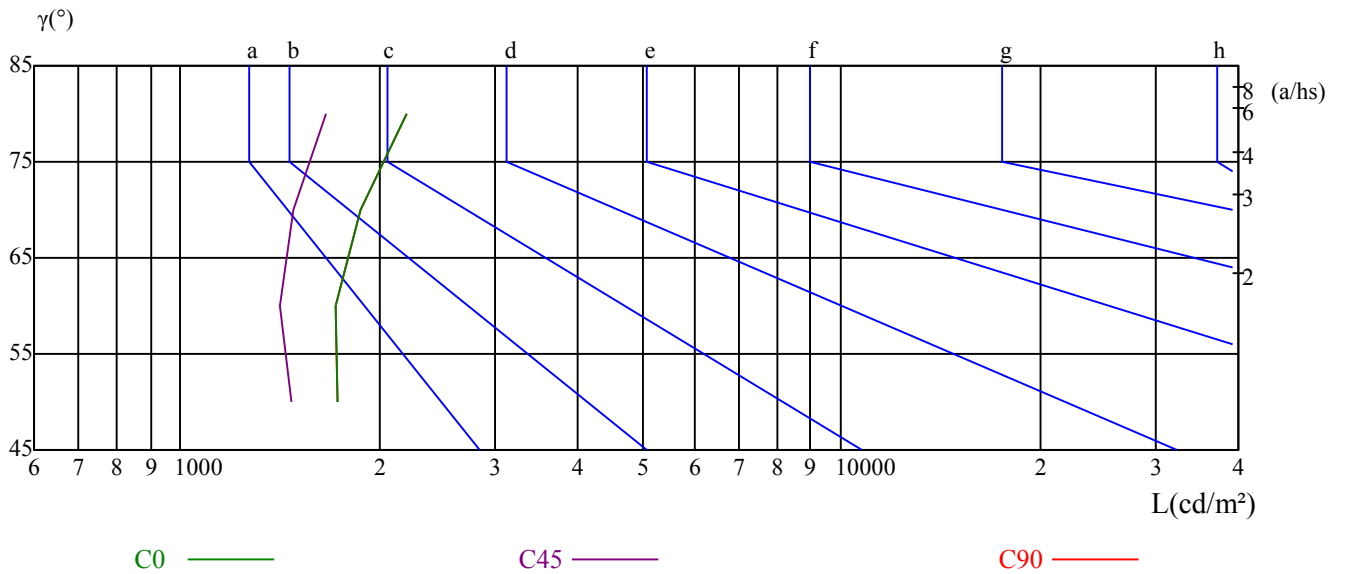
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	1729	0	1716	0	1871	0	2193	0
C45	0	1474	0	1416	0	1487	0	1660	0
C90	0	1729	0	1716	0	1871	0	2193	0

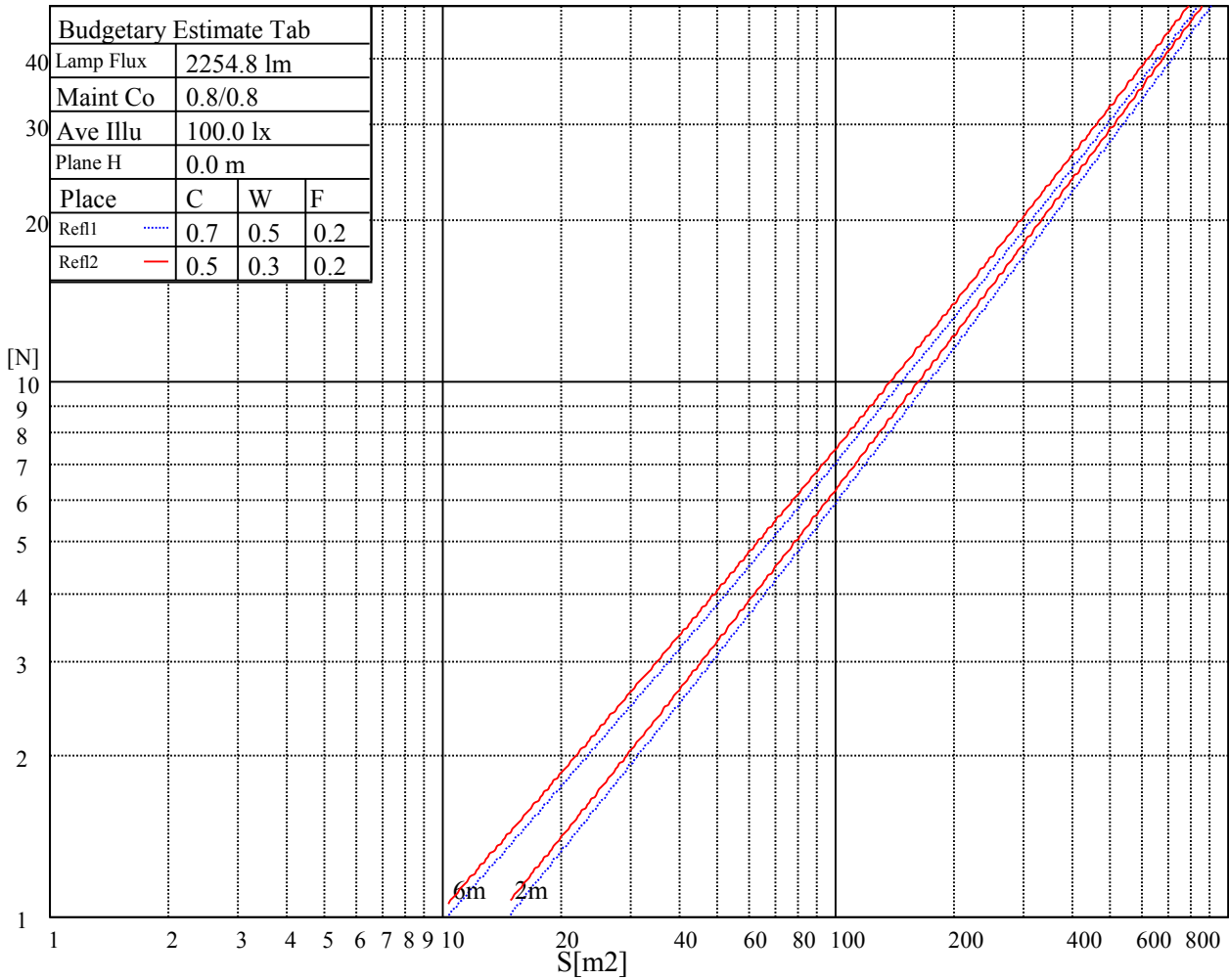
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4277	4290	4277	6752	6794	6752	19674	19925	19643

Glare Table

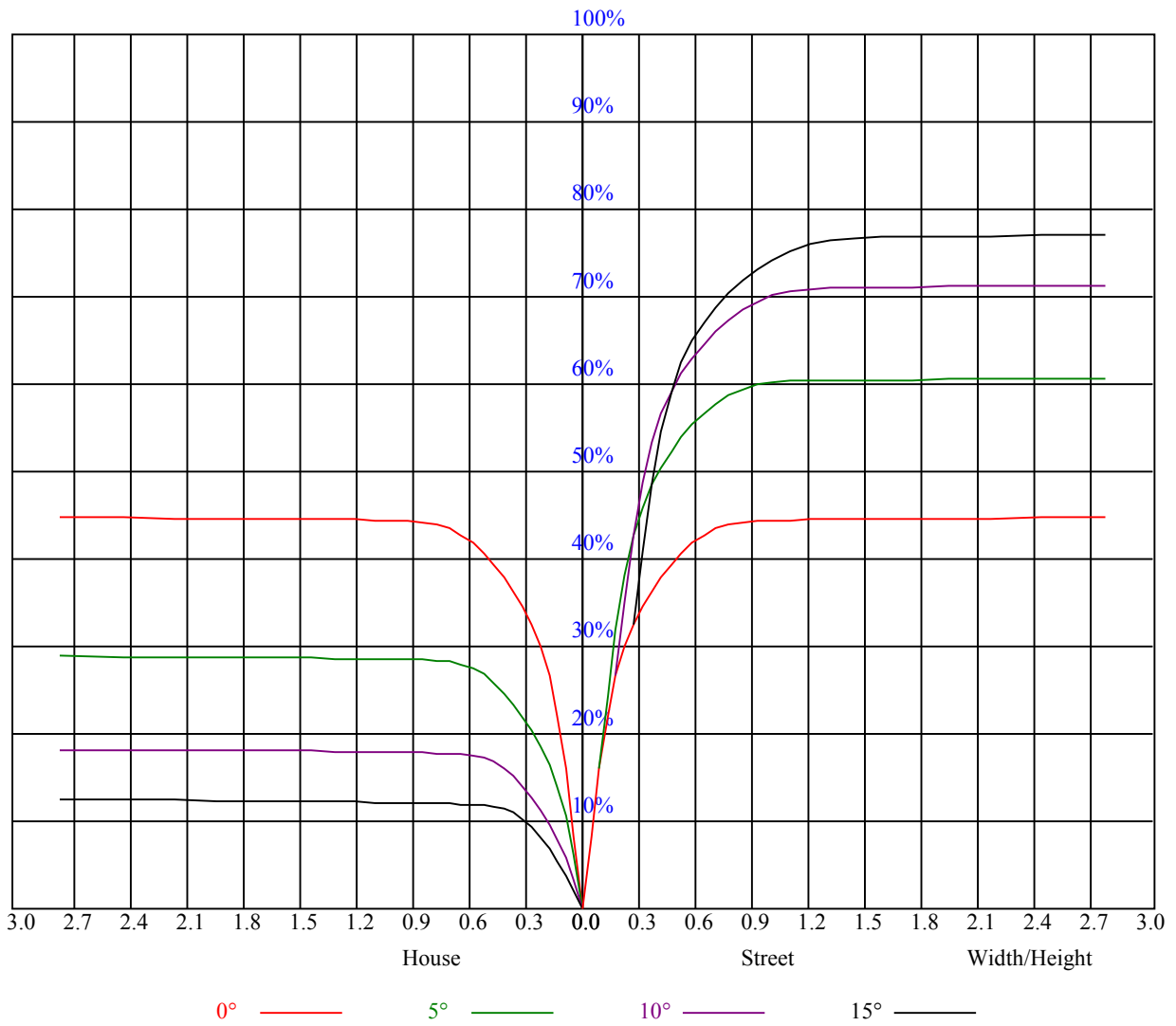
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.01	0.99	0.97	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.85
2	0.96	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.91	0.87	0.84	0.90	0.86	0.84	0.88	0.85	0.82	0.85	0.83	0.81	0.84	0.82	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
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	0.80	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.76	0.74	0.72	0.71
7	0.78	0.73	0.71	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
9	0.73	0.69	0.66	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
10	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63



Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	12712.52	12811.62	12150.95	10576.33	8269.47	5643.28	3705.30	2780.35	1649.49
45.0	12932.75	12514.32	11374.65	9144.87	6573.73	4321.93	2851.92	1797.04	1375.31
90.0	12855.67	12272.07	10737.65	8463.82	5854.70	3592.43	2408.72	1690.23	1316.95
135.0	12916.23	12316.12	10912.18	8737.45	6215.87	3909.00	2796.87	1790.43	1343.38
180.0	12712.52	11936.23	10139.19	7581.82	5218.80	3227.41	2100.40	1548.74	1219.50
225.0	12932.75	12646.46	10948.52	9524.21	7015.29	4480.49	2806.22	1902.20	1427.06
270.0	12855.67	12806.12	11958.25	10119.37	7652.84	5043.17	3319.90	2075.08	1515.70
315.0	12916.23	12778.59	11611.39	9940.98	7332.96	4758.52	2991.76	1986.99	1449.64
360.0	12712.52	12811.62	12150.95	10576.33	8269.47	5643.28	3705.30	2780.35	1649.49
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1261.34	1038.36	921.64	842.36	784.00	739.96	711.33	684.90	650.77
45.0	1116.54	955.78	868.79	802.72	757.58	722.89	694.26	661.23	571.49
90.0	1078.17	940.64	847.37	784.72	741.28	708.58	685.84	644.38	534.10
135.0	1104.43	952.48	864.94	803.82	757.03	721.79	694.81	664.53	573.69
180.0	1024.98	909.31	831.57	778.50	736.71	707.20	678.02	632.82	526.12
225.0	1091.38	994.59	885.97	818.96	769.58	735.06	704.50	674.72	587.12
270.0	1205.74	1014.14	907.88	839.61	784.00	739.41	713.53	684.35	612.78
315.0	1086.70	986.83	882.28	821.11	768.53	729.11	702.30	674.88	609.42
360.0	1261.34	1038.36	921.64	842.36	784.00	739.96	711.33	684.90	650.77
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	545.06	394.20	285.74	107.58	28.57	16.30	11.56	9.63	9.36
45.0	436.05	289.60	159.28	48.89	18.44	12.50	9.91	9.69	9.47
90.0	409.12	271.32	121.45	37.99	16.57	11.18	9.91	9.63	9.41
135.0	447.06	286.29	156.58	41.73	17.62	12.39	10.08	9.69	9.52
180.0	385.01	235.64	93.60	25.33	15.47	11.18	9.74	9.52	9.36
225.0	444.80	309.86	159.00	49.99	18.99	13.93	10.19	9.69	9.41
270.0	491.10	346.30	189.94	75.26	19.99	14.42	11.18	9.69	9.47
315.0	487.36	341.29	186.15	76.42	19.77	14.31	10.63	9.63	9.36
360.0	545.06	394.20	285.74	107.58	28.57	16.30	11.56	9.63	9.36
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	9.14	8.97	8.86	8.70	8.70	8.59	8.53	8.48	8.42
45.0	9.30	9.14	8.97	8.97	8.86	8.75	8.81	8.70	8.70
90.0	9.25	9.14	9.03	8.92	8.86	8.75	8.70	8.70	8.64
135.0	9.36	9.14	9.08	8.97	8.92	8.86	8.81	8.81	8.70
180.0	9.19	9.08	8.97	8.86	8.86	8.81	8.75	8.70	8.59
225.0	9.25	9.08	8.97	8.86	8.81	8.70	8.70	8.64	8.59
270.0	9.25	9.08	8.97	8.86	8.75	8.70	8.64	8.59	8.59
315.0	9.14	9.03	8.86	8.75	8.70	8.59	8.59	8.53	8.53
360.0	9.14	8.97	8.86	8.70	8.70	8.59	8.53	8.48	8.42
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	8.48	8.42	8.37	8.37	8.42	8.37	8.42	8.42	8.37
45.0	8.64	8.64	8.53	8.59	8.53	8.53	8.53	8.53	8.53
90.0	8.64	8.59	8.59	8.64	8.53	8.59	8.53	8.48	8.48
135.0	8.64	8.64	8.70	8.53	8.59	8.59	8.59	8.53	8.53
180.0	8.59	8.59	8.53	8.48	8.53	8.42	8.48	8.48	8.42
225.0	8.59	8.53	8.48	8.53	8.53	8.48	8.48	8.48	8.42
270.0	8.53	8.59	8.53	8.53	8.53	8.48	8.48	8.48	8.48
315.0	8.48	8.48	8.42	8.42	8.42	8.42	8.42	8.42	8.37
360.0	8.48	8.42	8.37	8.37	8.42	8.37	8.42	8.42	8.37

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>8.37</b>
<b>45.0</b>	<b>8.48</b>
<b>90.0</b>	<b>8.48</b>
<b>135.0</b>	<b>8.48</b>
<b>180.0</b>	<b>8.42</b>
<b>225.0</b>	<b>8.48</b>
<b>270.0</b>	<b>8.42</b>
<b>315.0</b>	<b>8.42</b>
<b>360.0</b>	<b>8.37</b>