



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: 3-1701-N  
Luminaire: 92.70.045.00+92.70.061.00  
Report No: NATA0100  
Test No: GC2018070216  
LampCAT: NICHIA NFCWD096B-V3  
Lamp flux(lm): 2246.0  
Number of Lamps: 1  
Length(mm): 86  
Phm Type: C

Voltage(V): 33.9000  
Current(A): 0.5000  
Power (W): 16.9500  
PF: 0.0000  
Ballast type: DC  
Width(mm): 86  
Height(mm): 0

---

## Photometric Results

---

Lumens(lm): 1801.02  
Efficiency(%): 80.19%  
Lumens(lm)/Power(W): 106.91  
Central intensity(cd): 11874.980  
Maximum intensity(cd): 11874.980  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=17.2  
                                  [C90/270]Total=17.2  
Field angle(10%Imax): [C0/180]Total=31.8  
                                  [C90/270]Total=31.8  
Maximum s/h(1/2): C0\_180=0.30 C90\_270=0.30  
Maximum s/h(1/4): C0\_180=0.29 C90\_270=0.29  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 80.68%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.153%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11874.977	11.364	11.364	.506%	.631%
2.0	11466.872	87.767	99.13	3.908%	5.504%
4.0	10343.446	158.240	257.37	7.045%	14.290%
6.0	8661.679	198.565	455.935	8.841%	25.315%
8.0	6624.661	202.201	658.136	9.003%	36.542%
10.0	4422.818	168.436	826.572	7.499%	45.895%
12.0	2734.307	124.678	951.25	5.551%	52.817%
14.0	1586.374	84.168	1035.418	3.747%	57.491%
16.0	1168.428	70.633	1106.051	3.145%	61.412%
18.0	979.433	66.378	1172.428	2.955%	65.098%
20.0	837.642	62.831	1235.26	2.797%	68.587%
22.0	716.759	58.886	1294.146	2.622%	71.856%
24.0	606.260	54.080	1348.226	2.408%	74.859%
26.0	513.064	49.326	1397.552	2.196%	77.598%
28.0	437.127	45.007	1442.559	2.004%	80.097%
30.0	377.253	41.368	1483.928	1.842%	82.394%
32.0	321.798	37.399	1521.327	1.665%	84.470%
34.0	280.444	34.393	1555.72	1.531%	86.380%
36.0	244.210	31.481	1587.201	1.402%	88.128%
38.0	210.866	28.472	1615.672	1.268%	89.709%
40.0	183.737	25.902	1641.574	1.153%	91.147%
42.0	157.289	23.082	1664.656	1.028%	92.429%
44.0	128.619	19.595	1684.251	.872%	93.517%
46.0	103.265	16.291	1700.542	.725%	94.421%
48.0	84.752	13.813	1714.355	.615%	95.188%
50.0	69.123	11.613	1725.968	.517%	95.833%
52.0	56.605	9.783	1735.751	.436%	96.376%
54.0	44.988	7.982	1743.733	.355%	96.819%
56.0	36.172	6.577	1750.31	.293%	97.184%
58.0	29.579	5.501	1755.811	.245%	97.490%
60.0	24.762	4.703	1760.514	.209%	97.751%
62.0	21.100	4.086	1764.6	.182%	97.978%
64.0	19.063	3.758	1768.358	.167%	98.186%
66.0	17.818	3.570	1771.927	.159%	98.385%
68.0	16.613	3.378	1775.306	.150%	98.572%
70.0	15.588	3.212	1778.518	.143%	98.751%
72.0	14.611	3.047	1781.566	.136%	98.920%
74.0	13.819	2.913	1784.479	.130%	99.082%

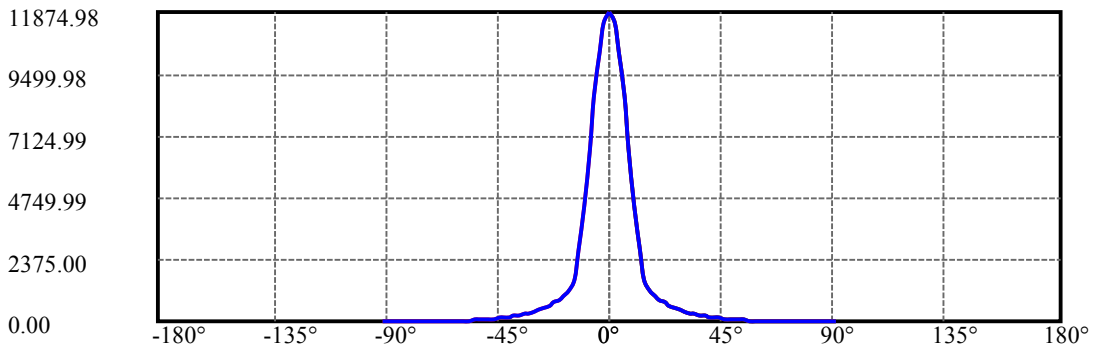
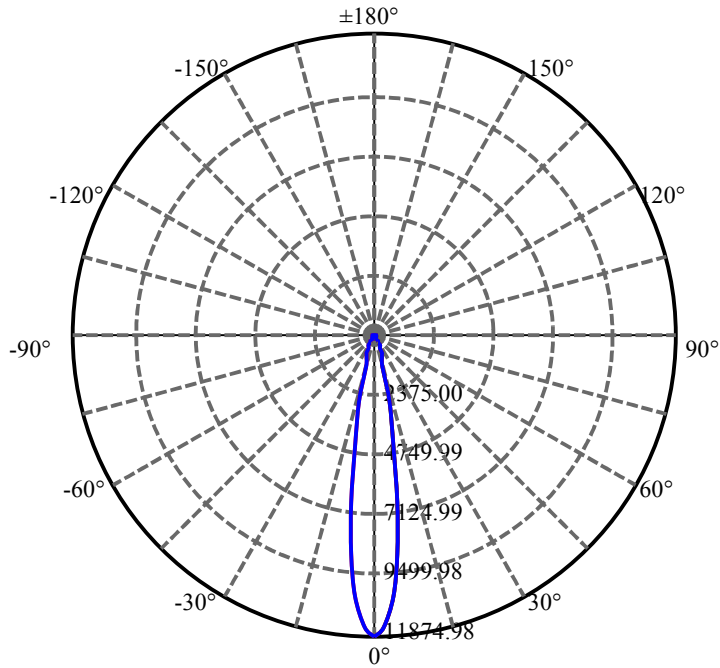
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.117	2.791	1787.27	.124%	99.237%
78.0	12.326	2.644	1789.914	.118%	99.383%
80.0	11.362	2.454	1792.368	.109%	99.520%
82.0	10.385	2.255	1794.624	.100%	99.645%
84.0	9.428	2.056	1796.68	.092%	99.759%
86.0	8.444	1.847	1798.528	.082%	99.862%
88.0	7.687	1.685	1800.213	.075%	99.955%
90.0	7.364	0.807	1801.02	.036%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1483.93	66.07%	82.39%
0-40	1641.57	73.09%	91.15%
0-60	1760.51	78.38%	97.75%
0-90	1800.21	80.15%	99.96%
0-120	1800.21	80.15%	99.96%
0-180	1801.02	80.19%	100.00%
60-90	44.40	1.98%	2.47%
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%
0-27.92	1440.82	64.15%	80.00%

ZONAL LUMEN SUMMARY

0-10	826.57
10-20	408.69
20-30	248.67
30-40	157.65
40-50	84.39
50-60	34.55
60-70	18.00
70-80	13.85
80-90	7.84
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



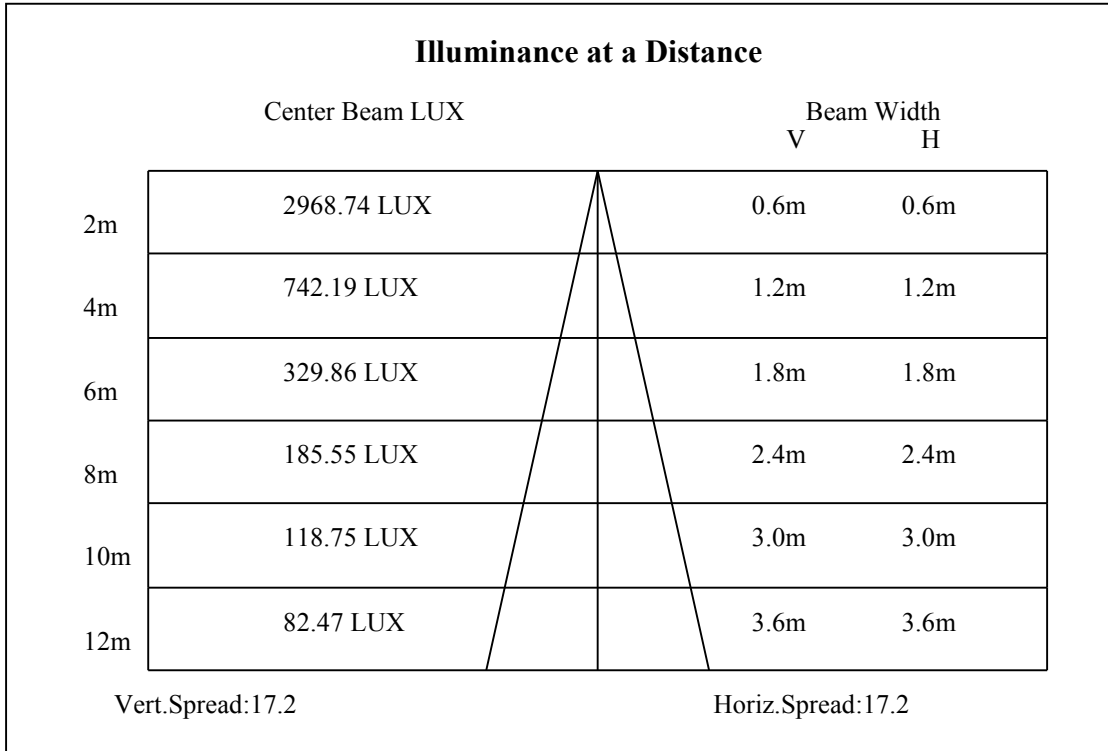
C0(Max): —————

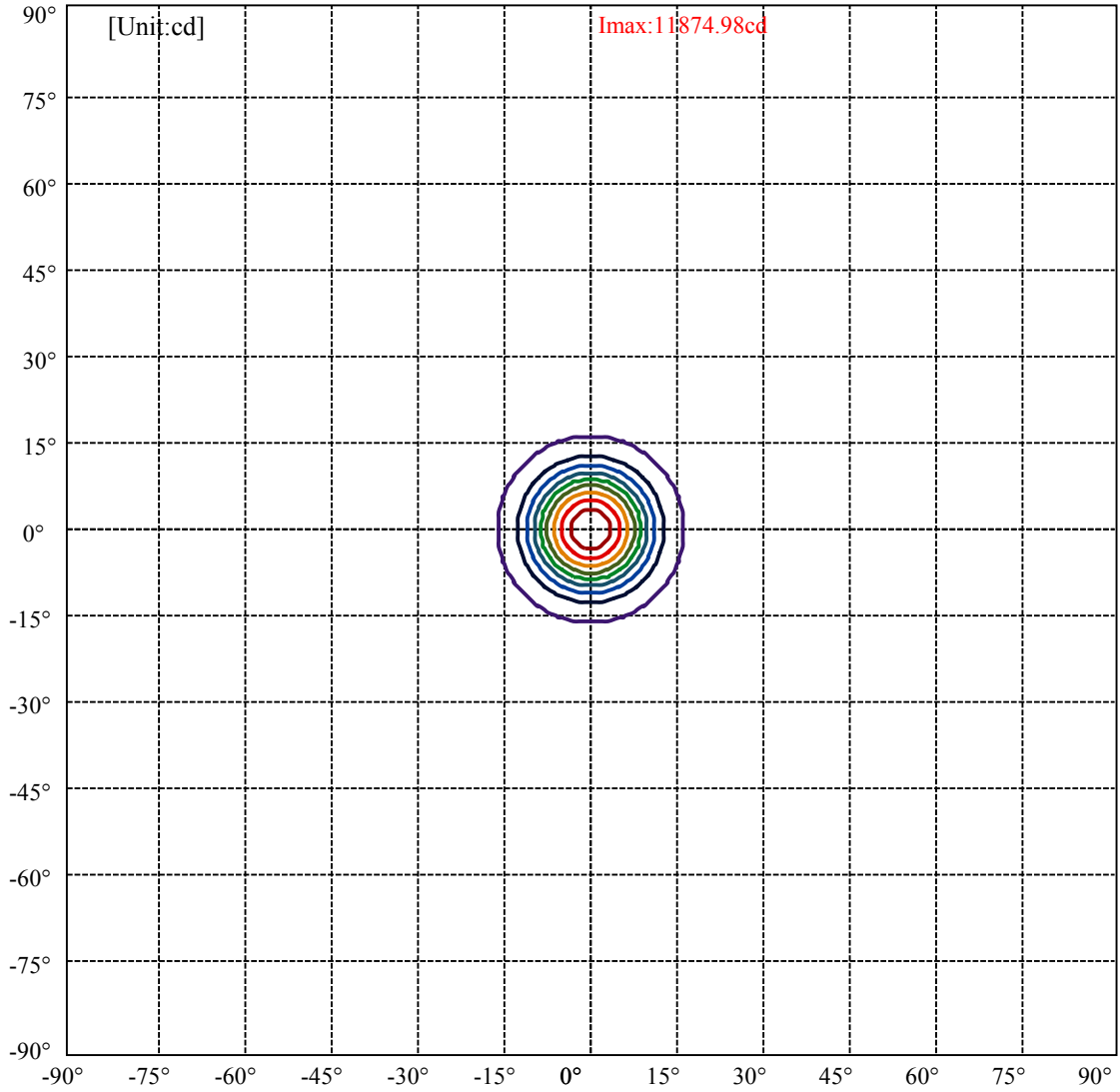
C0/C180: —————

C90/C270: —————

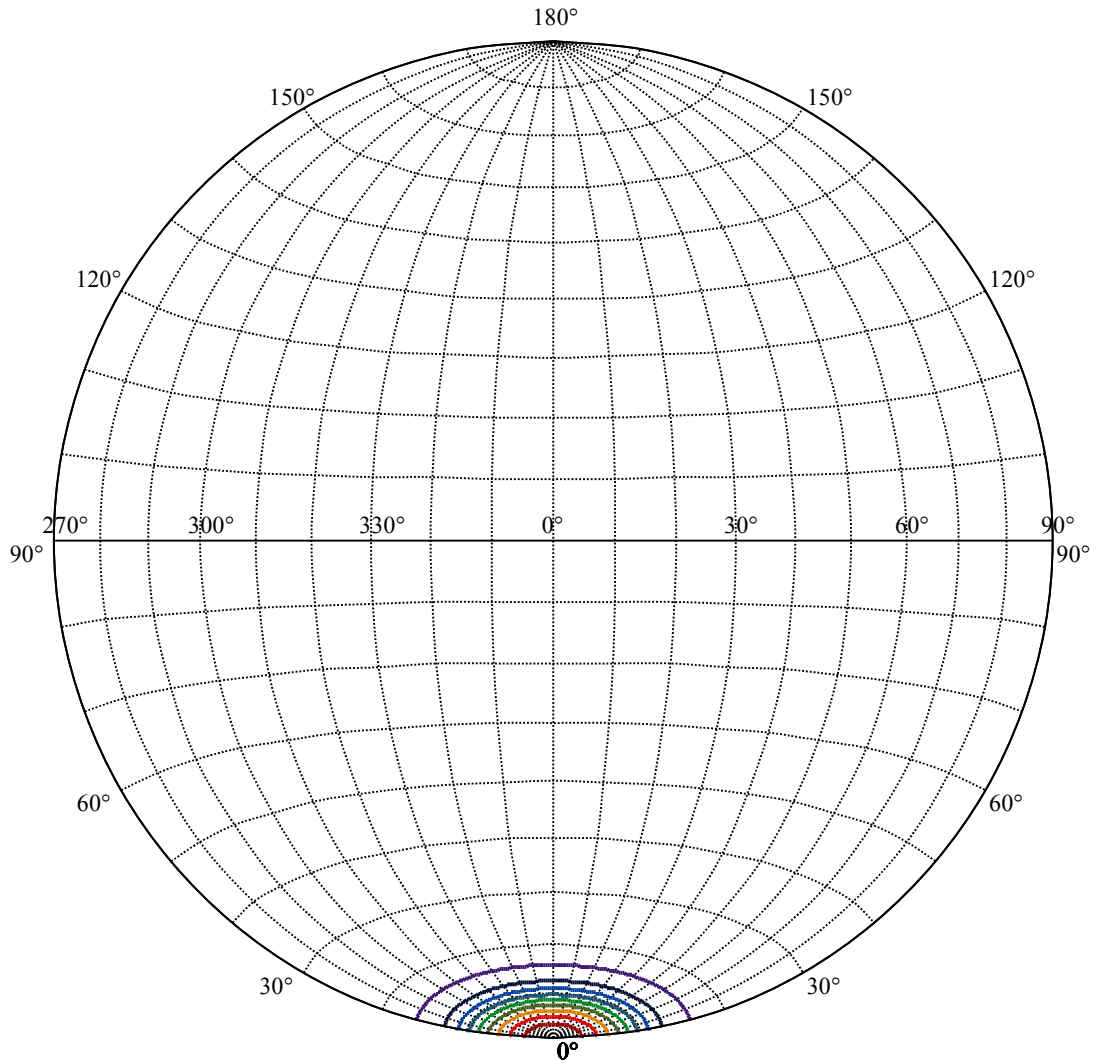
Field angle(10%Imax):C0/180Left:15.9 Right:15.9  
:C90/270Left:15.9 Right:15.9

Beam Angle(50%Imax):C0/180Left:8.6 Right:8.6  
:C90/270Left:8.6 Right:8.6





(10%Imax) 1187.5	—
(20%Imax) 2375	—
(30%Imax) 3562.49	—
(40%Imax) 4749.99	—
(50%Imax) 5937.49	—
(60%Imax) 7124.99	—
(70%Imax) 8312.48	—
(80%Imax) 9499.98	—
(90%Imax) 10687.5	—



House

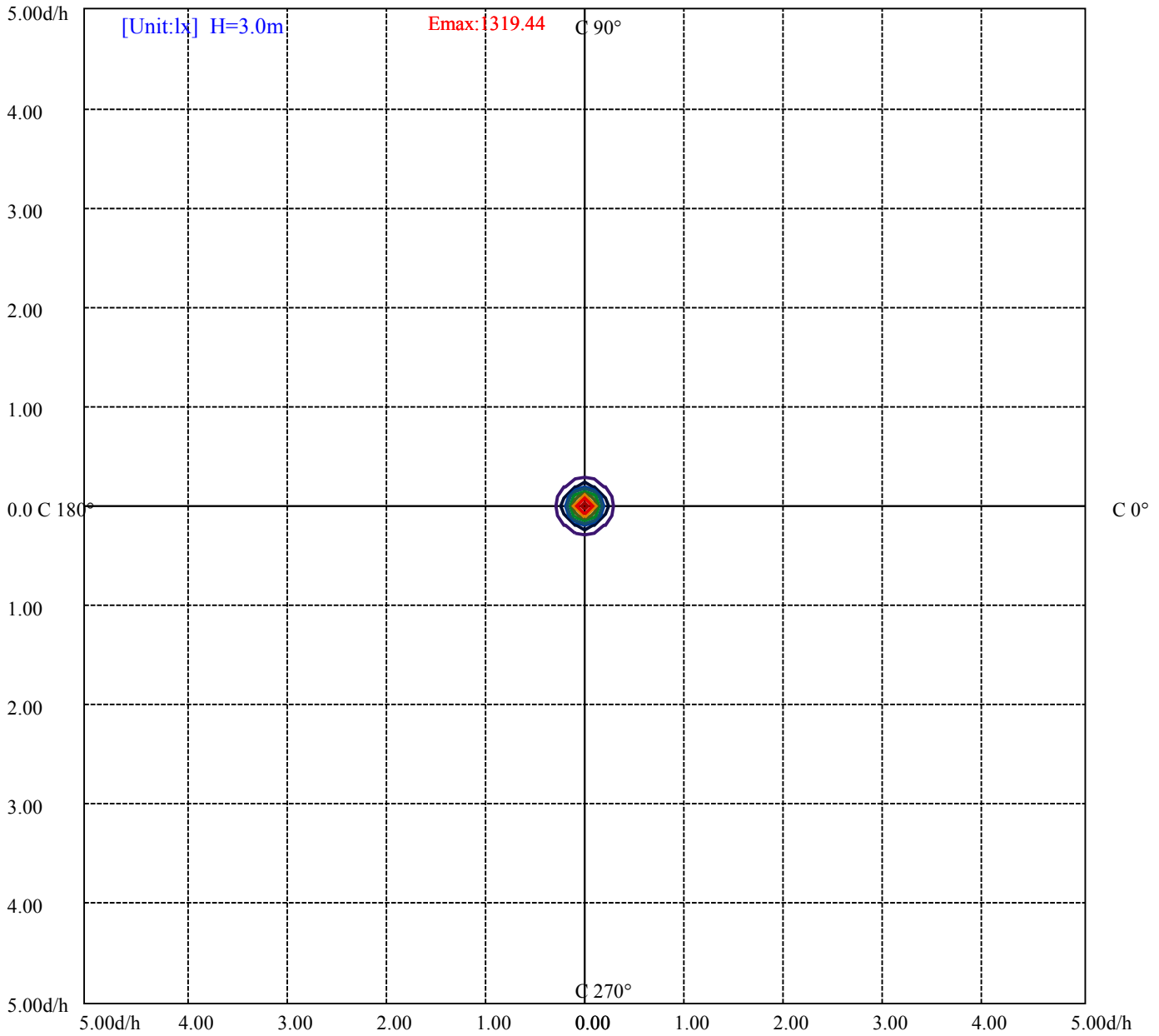
[Unit:cd]

Road

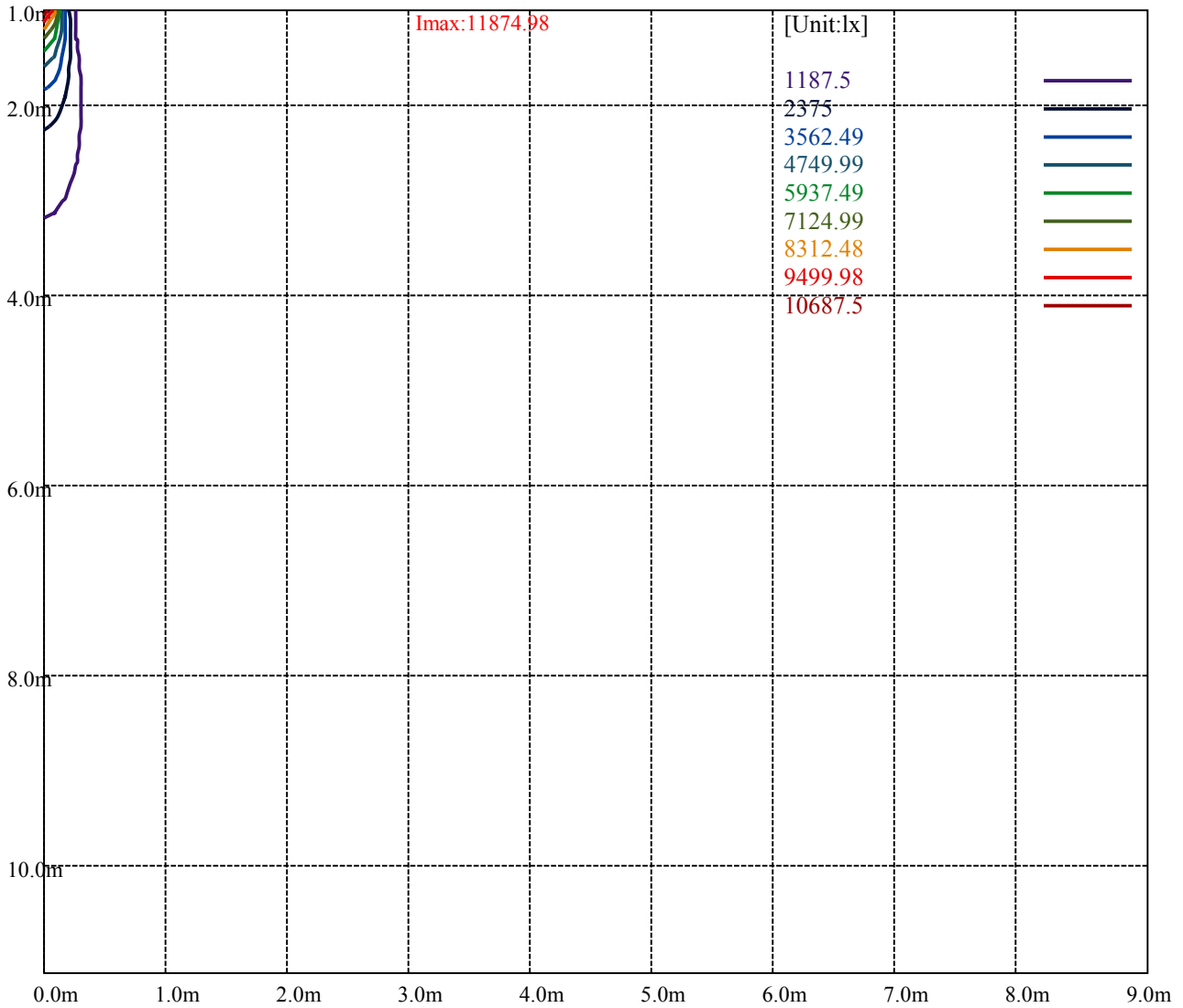
**Imax:11874.98**

(10%Imax) 1187.5	—
(20%Imax) 2375	—
(30%Imax) 3562.49	—
(40%Imax) 4749.99	—
(50%Imax) 5937.49	—
(60%Imax) 7124.99	—
(70%Imax) 8312.48	—
(80%Imax) 9499.98	—
(90%Imax) 10687.5	—





(10%Emax) 131.9433	—
(20%Emax) 263.8878	—
(30%Emax) 395.8311	—
(40%Emax) 527.7756	—
(50%Emax) 659.7189	—
(60%Emax) 791.6633	—
(70%Emax) 923.6067	—
(80%Emax) 1055.551	—
(90%Emax) 1187.5	—



Luminance Table

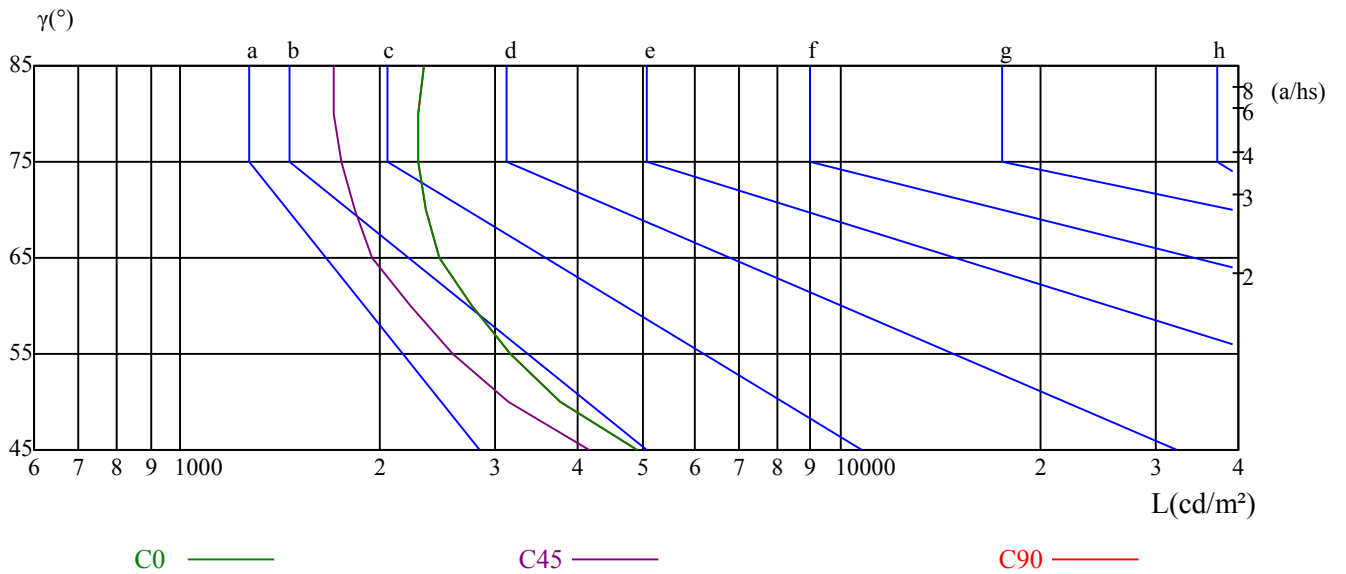
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4917	3770	3151	2759	2462	2351	2291	2290	2335
C45	4161	3142	2586	2228	1955	1832	1750	1711	1701
C90	4917	3770	3151	2759	2462	2351	2291	2290	2335

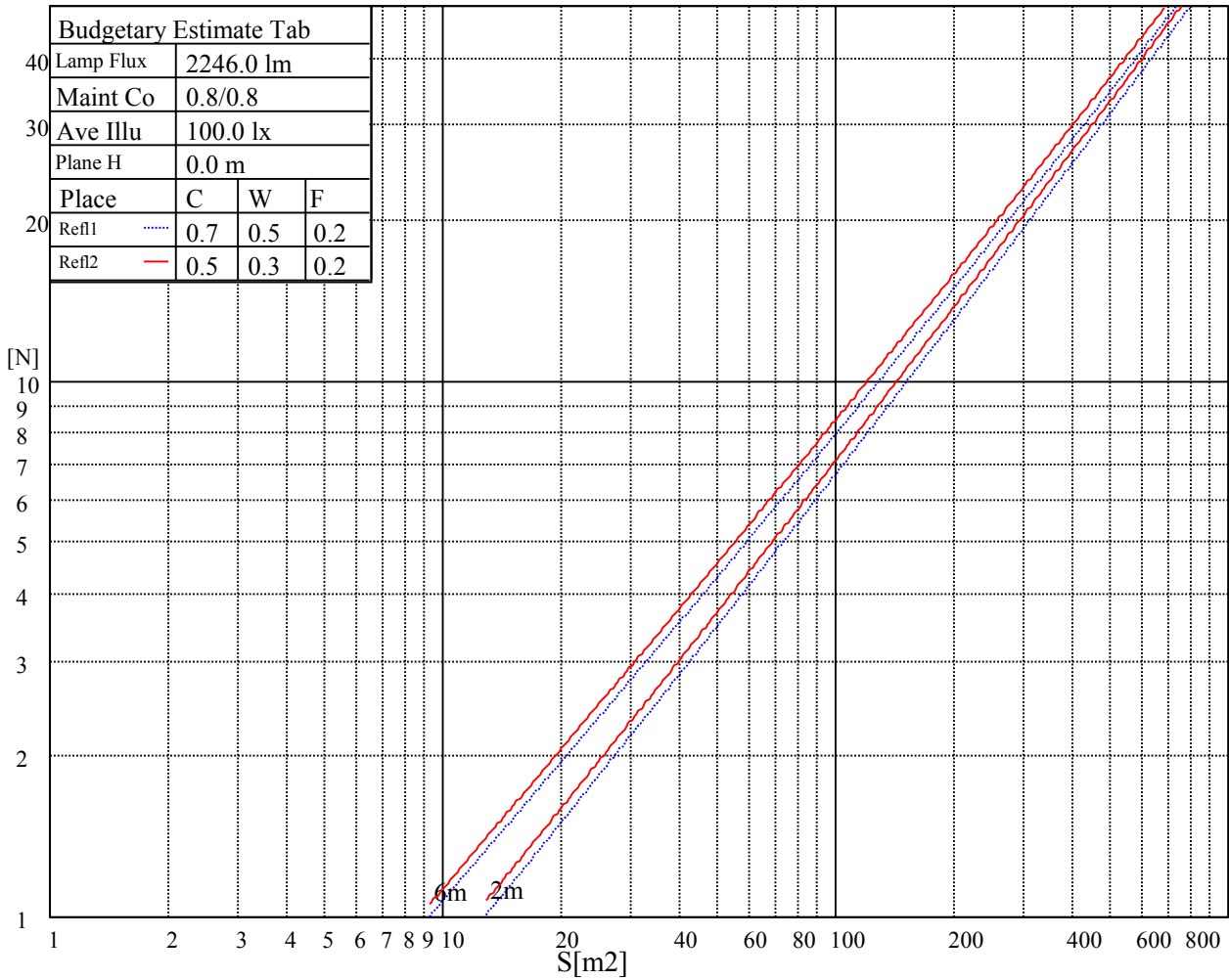
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6594	6594	6594	8981	8981	8981	23219	23219	23219

Glare Table

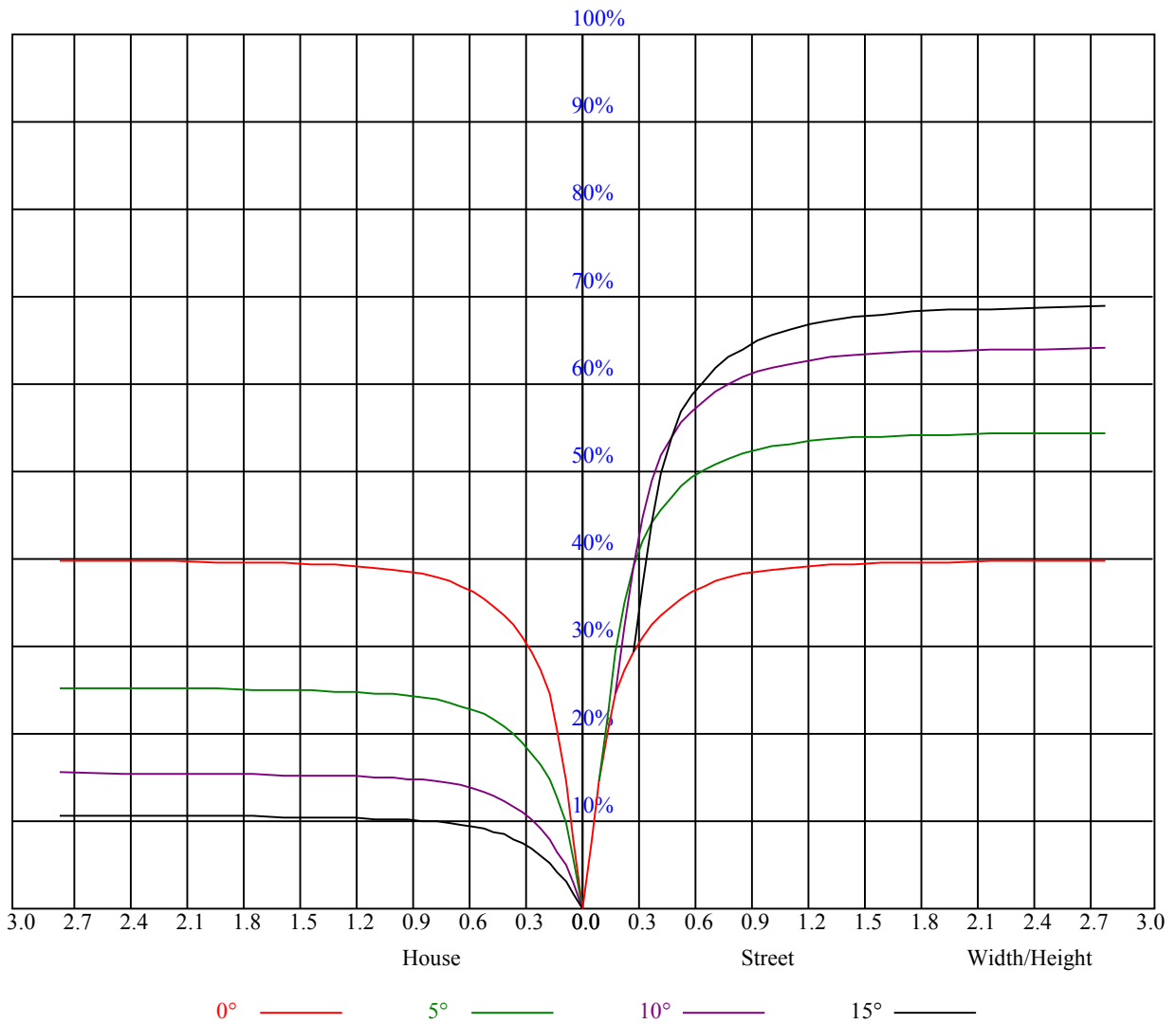
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.96	0.96	0.96	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.82	0.82	0.82	0.81
1	0.90	0.88	0.86	0.88	0.86	0.85	0.85	0.83	0.82	0.82	0.81	0.80	0.79	0.78	0.77	0.76
2	0.85	0.82	0.80	0.84	0.81	0.79	0.81	0.79	0.77	0.79	0.77	0.75	0.76	0.75	0.74	0.73
3	0.81	0.77	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.74	0.72	0.71	0.70
4	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.73	0.71	0.69	0.72	0.70	0.68	0.67
5	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.67	0.66	0.65
6	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.63
7	0.69	0.65	0.63	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.62	0.61
8	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.59
9	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.63	0.60	0.58	0.63	0.60	0.58	0.57
10	0.63	0.60	0.57	0.63	0.60	0.57	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.56



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	11930.72	11468.25	10339.59	8809.02	6826.99	4558.67	2791.36	1597.74	1212.34
45.0	11859.15	11875.67	11176.45	9711.95	7944.64	5780.92	3600.69	2031.03	1378.61
90.0	11892.18	11815.10	10941.36	9498.33	7593.38	5458.29	3529.67	1963.31	1337.32
135.0	11831.62	11842.63	11126.90	9684.42	7790.48	5659.80	3787.88	1999.65	1269.05
180.0	11930.72	11600.38	10418.32	8645.51	6373.88	4178.23	2485.25	1406.14	1073.60
225.0	11859.15	10977.15	9311.69	7297.18	4987.01	2772.64	1660.50	1097.77	972.63
270.0	11892.18	11192.97	9755.99	7696.88	5758.90	3551.14	2038.19	1277.86	1032.86
315.0	11804.09	10962.83	9677.26	7950.14	5722.01	3422.86	1980.93	1317.50	1071.01
360.0	11930.72	11468.25	10339.59	8809.02	6826.99	4558.67	2791.36	1597.74	1212.34
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1031.21	883.10	764.73	650.22	555.52	475.14	417.33	360.07	312.17
45.0	1141.87	967.34	831.90	700.32	593.51	502.11	431.64	365.57	314.37
90.0	1068.42	902.98	769.80	655.94	556.12	475.74	409.01	350.87	306.39
135.0	1037.81	880.35	765.83	650.22	547.81	463.57	398.06	331.44	280.24
180.0	917.85	795.34	678.35	576.06	482.18	412.48	354.34	302.65	261.68
225.0	837.30	718.82	604.08	503.38	421.13	361.00	305.89	261.74	229.03
270.0	884.21	760.33	649.67	546.71	464.13	396.96	350.16	300.61	278.03
315.0	916.80	792.87	669.71	567.25	484.11	410.01	351.59	301.43	261.63
360.0	1031.21	883.10	764.73	650.22	555.52	475.14	417.33	360.07	312.17
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	278.59	234.82	204.75	173.32	141.88	113.31	91.72	74.38	60.62
45.0	280.24	237.62	210.70	184.33	154.82	123.82	100.92	82.09	67.17
90.0	264.66	228.37	196.44	169.96	140.34	114.30	92.66	75.81	63.15
135.0	243.90	210.76	185.87	163.52	136.93	110.94	91.12	74.05	62.49
180.0	228.15	198.53	169.46	145.95	118.32	94.53	78.68	65.24	52.74
225.0	199.91	176.84	156.36	129.00	102.96	83.69	69.21	56.82	46.47
270.0	226.45	194.95	170.12	141.61	113.97	89.91	75.15	61.33	49.33
315.0	231.79	205.03	176.18	150.63	119.75	95.63	78.57	63.26	50.87
360.0	278.59	234.82	204.75	173.32	141.88	113.31	91.72	74.38	60.62
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	46.91	37.22	30.67	25.00	21.03	19.32	18.00	16.68	15.69
45.0	53.46	41.84	33.86	28.02	23.45	20.26	18.88	17.51	16.35
90.0	49.88	39.92	32.65	27.20	22.57	19.88	18.55	17.29	16.24
135.0	50.32	40.08	32.32	27.03	22.52	19.49	18.33	17.07	16.08
180.0	42.39	34.47	28.35	24.11	20.43	18.72	17.51	16.41	15.31
225.0	37.00	30.61	25.55	21.69	19.32	18.11	16.90	15.86	14.87
270.0	39.26	32.32	26.59	22.68	19.93	18.50	17.40	16.24	15.25
315.0	40.69	32.92	26.65	22.35	19.55	18.22	16.96	15.86	14.92
360.0	46.91	37.22	30.67	25.00	21.03	19.32	18.00	16.68	15.69
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	14.59	13.82	13.27	12.39	11.40	10.35	9.36	8.42	7.65
45.0	15.31	14.42	13.65	12.94	12.06	11.01	10.13	9.08	8.09
90.0	15.14	14.26	13.49	12.77	11.84	10.90	9.91	8.86	7.93
135.0	15.03	14.15	13.38	12.55	11.73	10.68	9.80	8.86	7.98
180.0	14.42	13.65	12.99	12.28	11.23	10.30	9.36	8.42	7.65
225.0	13.98	13.32	12.66	11.78	10.85	9.91	8.86	7.98	7.43
270.0	14.37	13.65	12.94	12.17	11.12	10.13	9.19	7.98	7.38
315.0	14.04	13.27	12.55	11.73	10.68	9.80	8.81	7.93	7.38
360.0	14.59	13.82	13.27	12.39	11.40	10.35	9.36	8.42	7.65

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>7.38</b>
<b>45.0</b>	<b>7.43</b>
<b>90.0</b>	<b>7.38</b>
<b>135.0</b>	<b>7.43</b>
<b>180.0</b>	<b>7.32</b>
<b>225.0</b>	<b>7.32</b>
<b>270.0</b>	<b>7.32</b>
<b>315.0</b>	<b>7.32</b>
<b>360.0</b>	<b>7.38</b>