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Nata

LumCAT: 2-1674-M
Luminaire: 92.70.135.00
Report No: NATA0100
Test No: GC2018070405
LampCAT: NICHIA NFCWD096B-V3
Lamp flux(lm): 2202.0
Number of Lamps: 1
Length(mm): 71
Phm Type: C

Voltage(V): 33.9000
Current(A): 0.5000
Power (W): 16.9500
PF: 0.0000
Ballast type: DC
Width(mm): 71
Height(mm): 0

Photometric Results

Lumens(lm): 1987.10
Efficiency(%): 90.24%
Lumens(lm)/Power(W): 117.23
Central intensity(cd): 14694.550
Maximum intensity(cd): 14694.550
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=15.1
 [C90/270]Total=15.1
Field angle(10%Imax): [C0/180]Total=30.0
 [C90/270]Total=30.0
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.25 C90_270=0.25
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.87%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.035%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/7/4
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	14694.553	14.062	14.062	.639%	.708%
2.0	14177.023	108.510	122.572	4.928%	6.168%
4.0	12270.915	187.727	310.299	8.525%	15.616%
6.0	9734.687	223.163	533.462	10.135%	26.846%
8.0	6663.201	203.378	736.839	9.236%	37.081%
10.0	3970.447	151.208	888.047	6.867%	44.691%
12.0	2573.777	117.359	1005.406	5.330%	50.597%
14.0	1673.935	88.813	1094.22	4.033%	55.066%
16.0	1254.515	75.837	1170.056	3.444%	58.883%
18.0	1045.796	70.875	1240.931	3.219%	62.449%
20.0	920.818	69.070	1310.002	3.137%	65.925%
22.0	841.372	69.124	1379.126	3.139%	69.404%
24.0	785.545	70.073	1449.198	3.182%	72.930%
26.0	740.398	71.182	1520.381	3.233%	76.512%
28.0	707.199	72.814	1593.195	3.307%	80.177%
30.0	682.920	74.887	1668.082	3.401%	83.945%
32.0	655.997	76.239	1744.321	3.462%	87.782%
34.0	584.259	71.653	1815.973	3.254%	91.388%
36.0	456.473	58.844	1874.817	2.672%	94.349%
38.0	306.939	41.444	1916.261	1.882%	96.435%
40.0	158.232	22.306	1938.567	1.013%	97.557%
42.0	45.697	6.706	1945.273	.305%	97.895%
44.0	17.893	2.726	1947.999	.124%	98.032%
46.0	13.158	2.076	1950.075	.094%	98.137%
48.0	10.351	1.687	1951.762	.077%	98.222%
50.0	9.580	1.609	1953.371	.073%	98.303%
52.0	9.360	1.618	1954.989	.073%	98.384%
54.0	9.139	1.622	1956.61	.074%	98.466%
56.0	8.974	1.632	1958.242	.074%	98.548%
58.0	8.809	1.638	1959.88	.074%	98.630%
60.0	8.754	1.663	1961.543	.076%	98.714%
62.0	8.644	1.674	1963.217	.076%	98.798%
64.0	8.589	1.693	1964.91	.077%	98.883%
66.0	8.534	1.710	1966.62	.078%	98.969%
68.0	8.479	1.724	1968.344	.078%	99.056%
70.0	8.424	1.736	1970.08	.079%	99.143%
72.0	8.424	1.757	1971.837	.080%	99.232%
74.0	8.369	1.764	1973.601	.080%	99.321%

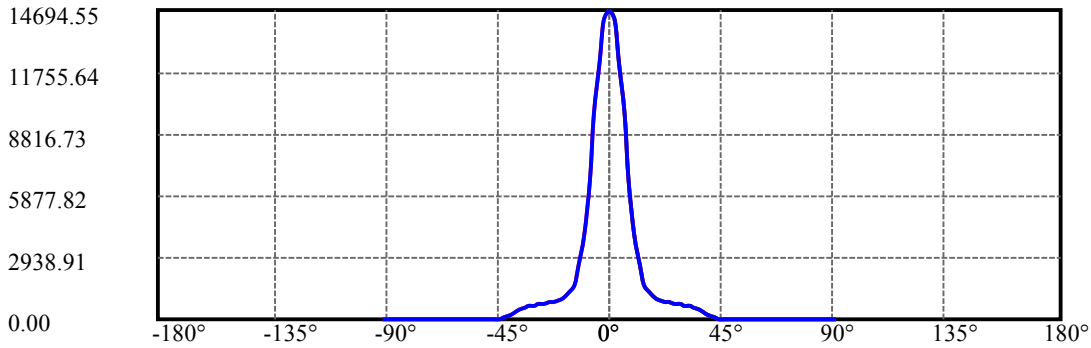
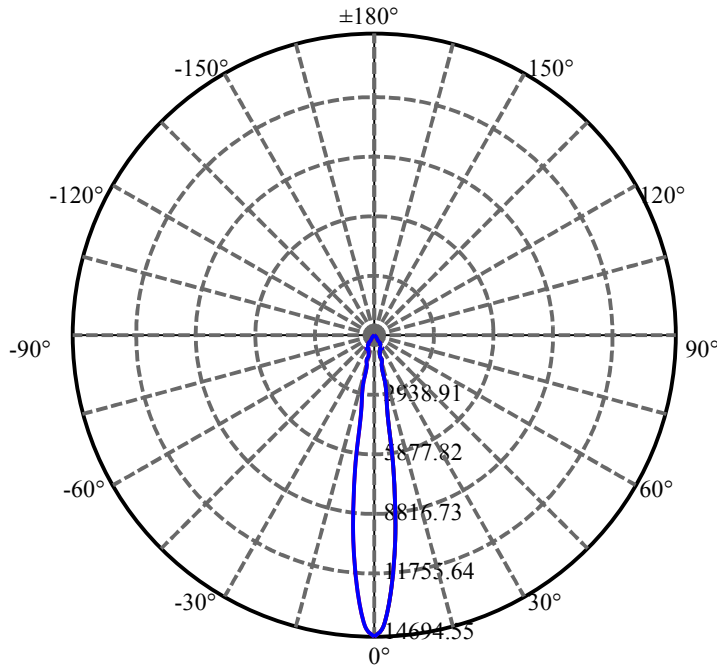
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.369	1.781	1975.382	.081%	99.410%
78.0	8.314	1.783	1977.165	.081%	99.500%
80.0	8.314	1.796	1978.961	.082%	99.590%
82.0	8.314	1.806	1980.766	.082%	99.681%
84.0	8.314	1.813	1982.58	.082%	99.772%
86.0	8.258	1.807	1984.386	.082%	99.863%
88.0	8.258	1.810	1986.196	.082%	99.954%
90.0	8.258	0.906	1987.102	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1668.08	75.75%	83.95%
0-40	1938.57	88.04%	97.56%
0-60	1961.54	89.08%	98.71%
0-90	1986.20	90.20%	99.95%
0-120	1986.20	90.20%	99.95%
0-180	1987.10	90.24%	100.00%
60-90	26.32	1.20%	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%
0-27.90	1589.68	72.19%	80.00%

ZONAL LUMEN SUMMARY

0-10	888.05
10-20	421.95
20-30	358.08
30-40	270.49
40-50	14.80
50-60	8.17
60-70	8.54
70-80	8.88
80-90	7.24
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



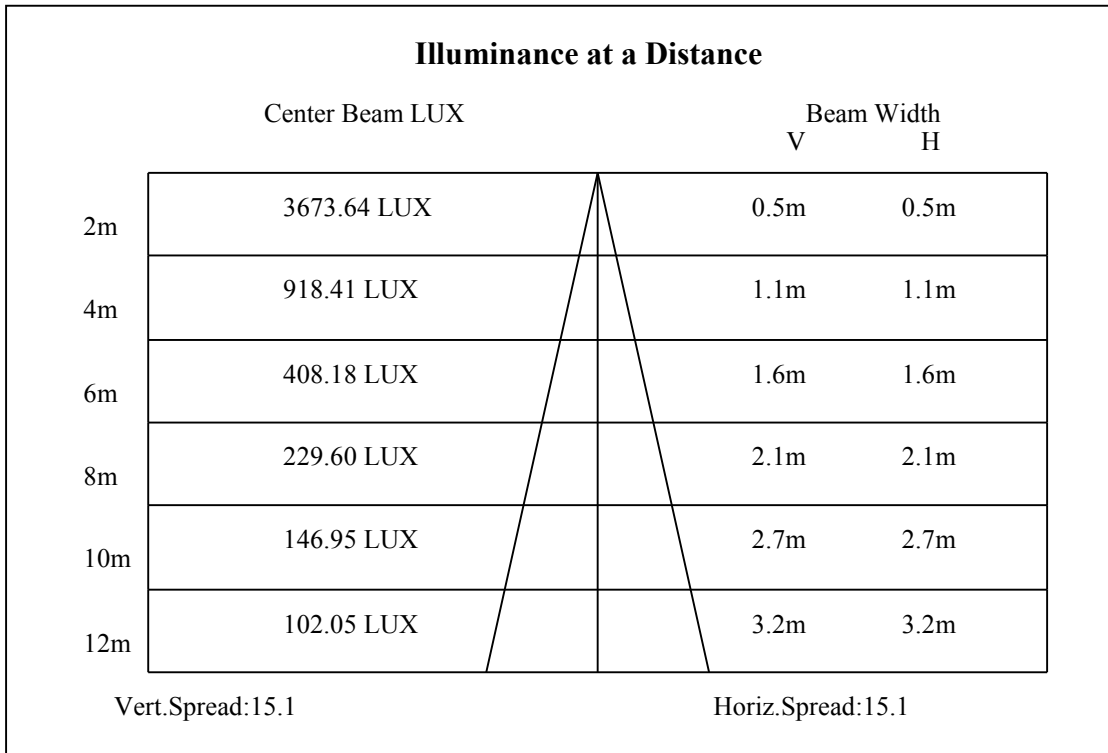
C0(Max): —————

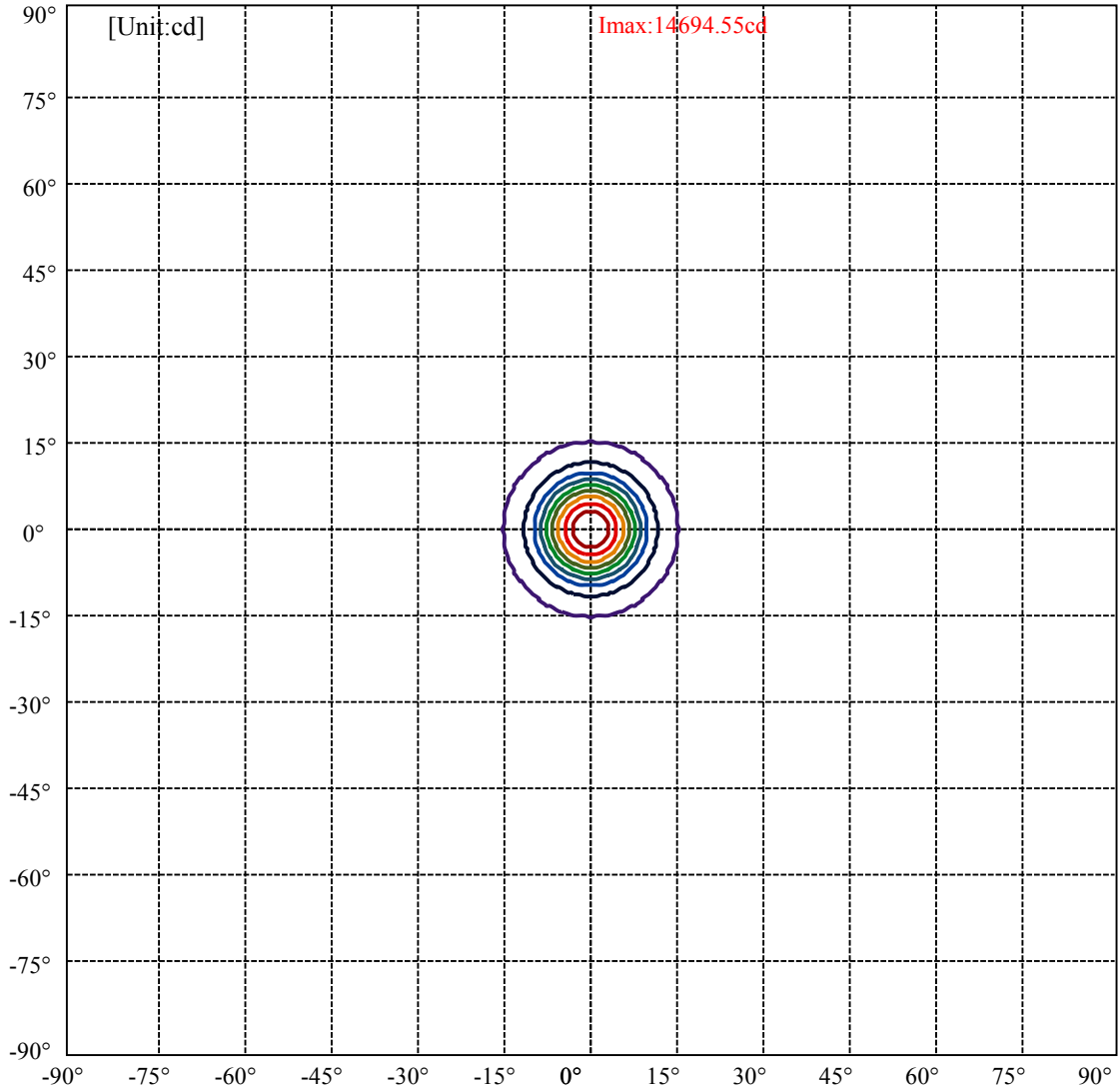
C0/C180: —————

C90/C270: —————

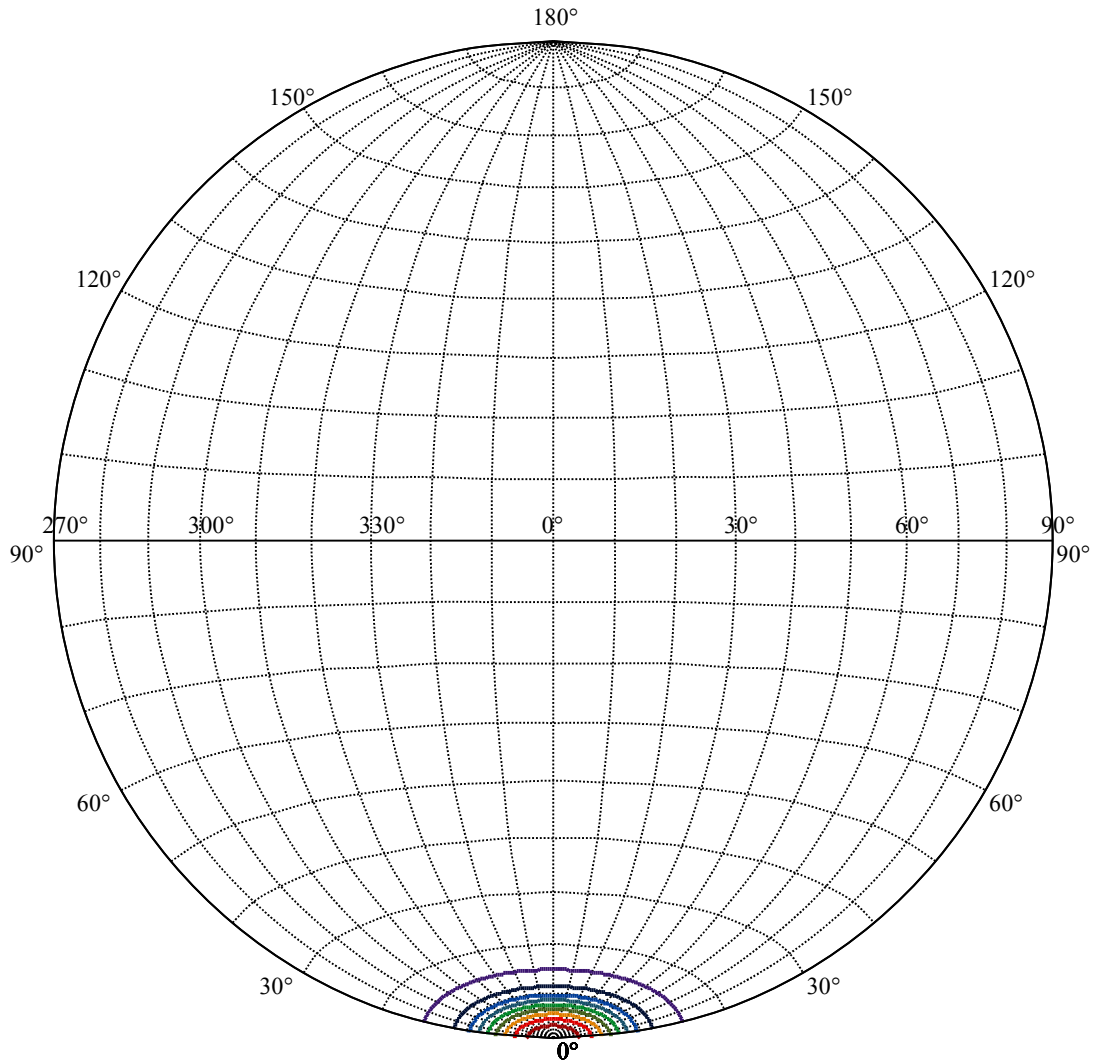
Field angle(10%Imax):C0/180Left:15.0 Right:15.0
:C90/270Left:15.0 Right:15.0

Beam Angle(50%Imax):C0/180Left:7.6 Right:7.6
:C90/270Left:7.6 Right:7.6





(10%Imax) 1469.46	—
(20%Imax) 2938.91	—
(30%Imax) 4408.37	—
(40%Imax) 5877.82	—
(50%Imax) 7347.28	—
(60%Imax) 8816.73	—
(70%Imax) 10286.2	—
(80%Imax) 11755.6	—
(90%Imax) 13225.1	—



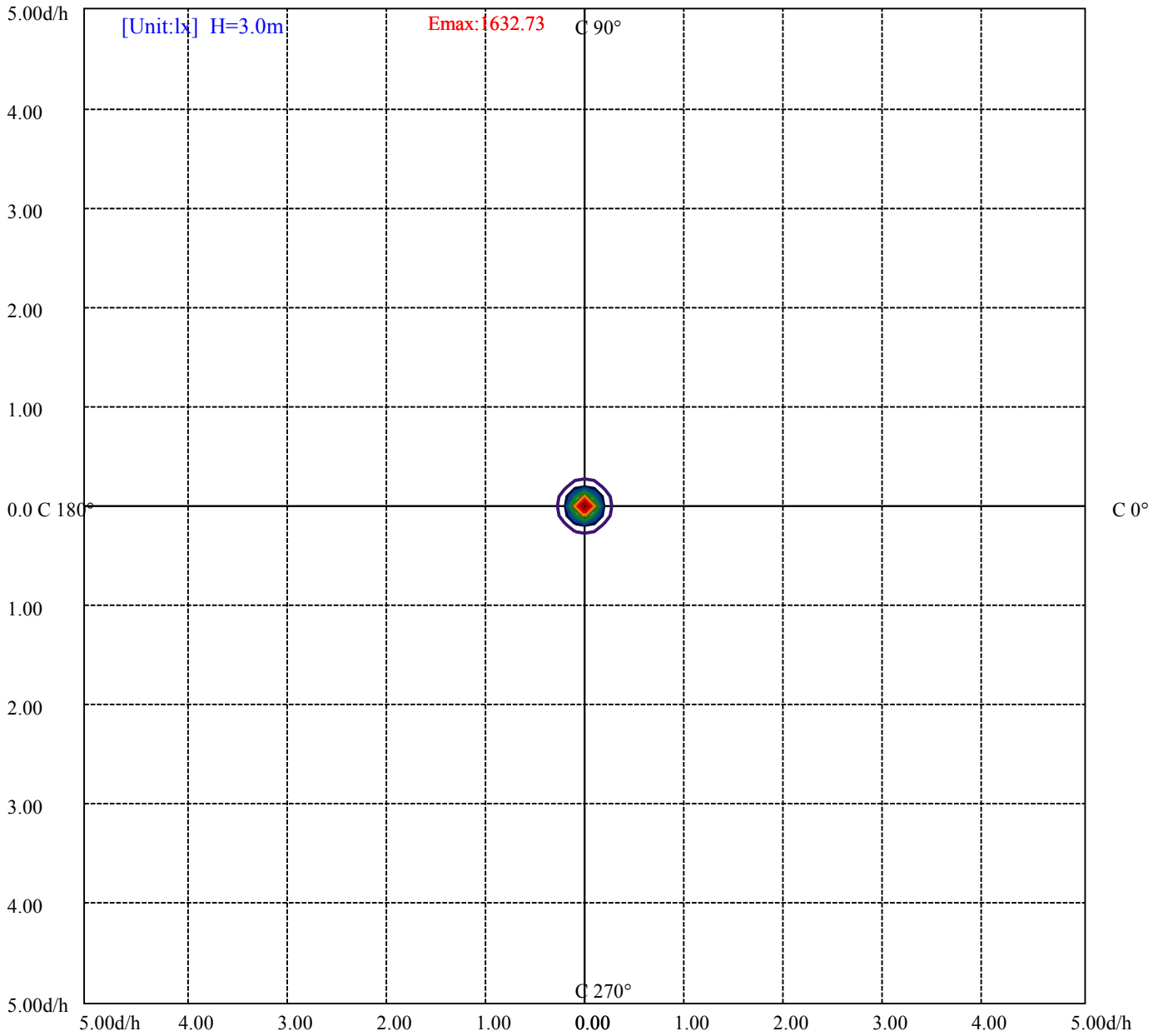
House

[Unit:cd]

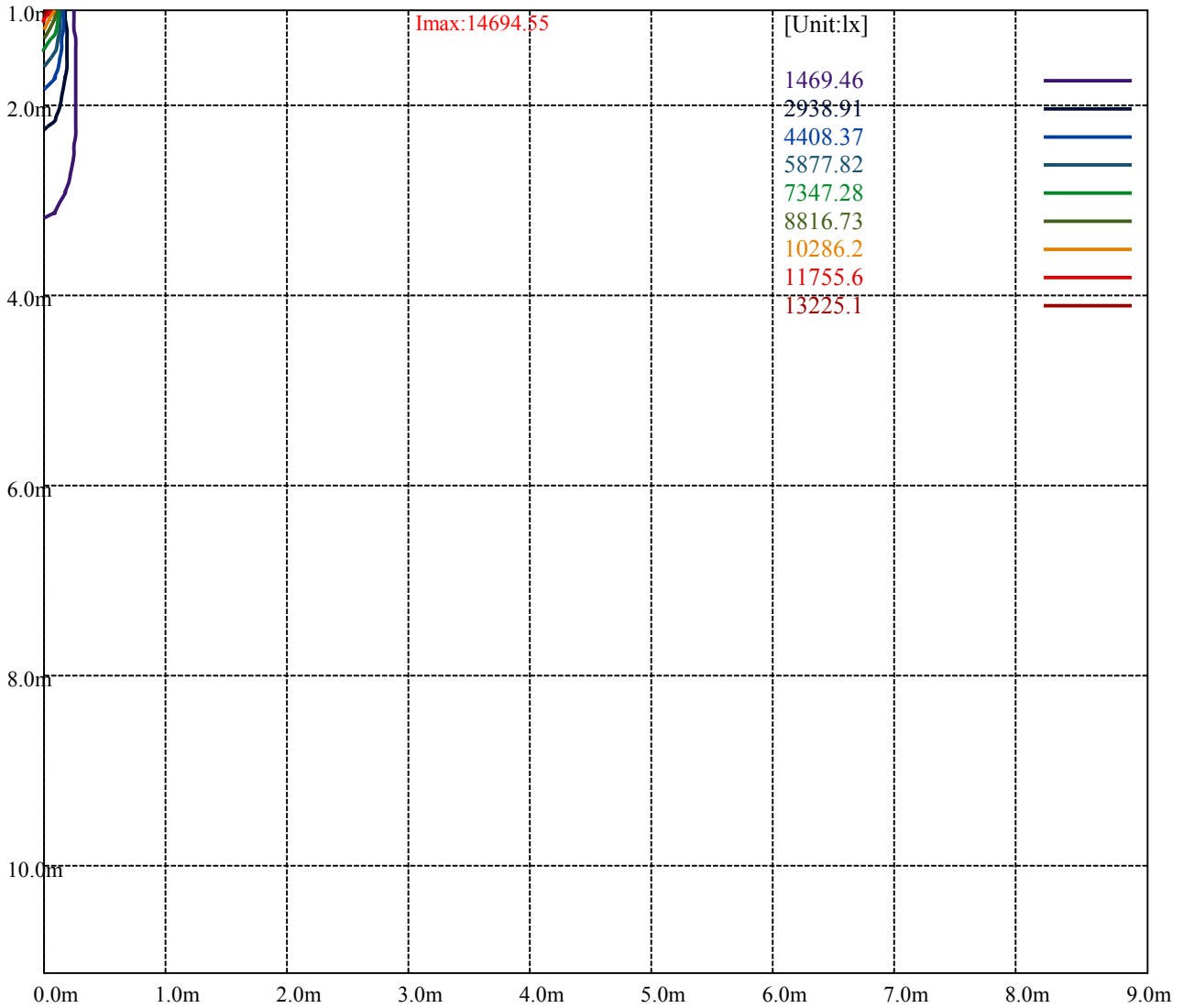
Road

Imax:14694.55

(10%Imax)	1469.46	—
(20%Imax)	2938.91	—
(30%Imax)	4408.37	—
(40%Imax)	5877.82	—
(50%Imax)	7347.28	—
(60%Imax)	8816.73	—
(70%Imax)	10286.2	—
(80%Imax)	11755.6	—
(90%Imax)	13225.1	—



(10%Emax) 163.2722	—
(20%Emax) 326.5444	—
(30%Emax) 489.8167	—
(40%Emax) 653.09	—
(50%Emax) 816.3622	—
(60%Emax) 979.6345	—
(70%Emax) 1142.911	—
(80%Emax) 1306.178	—
(90%Emax) 1469.456	—



Luminance Table

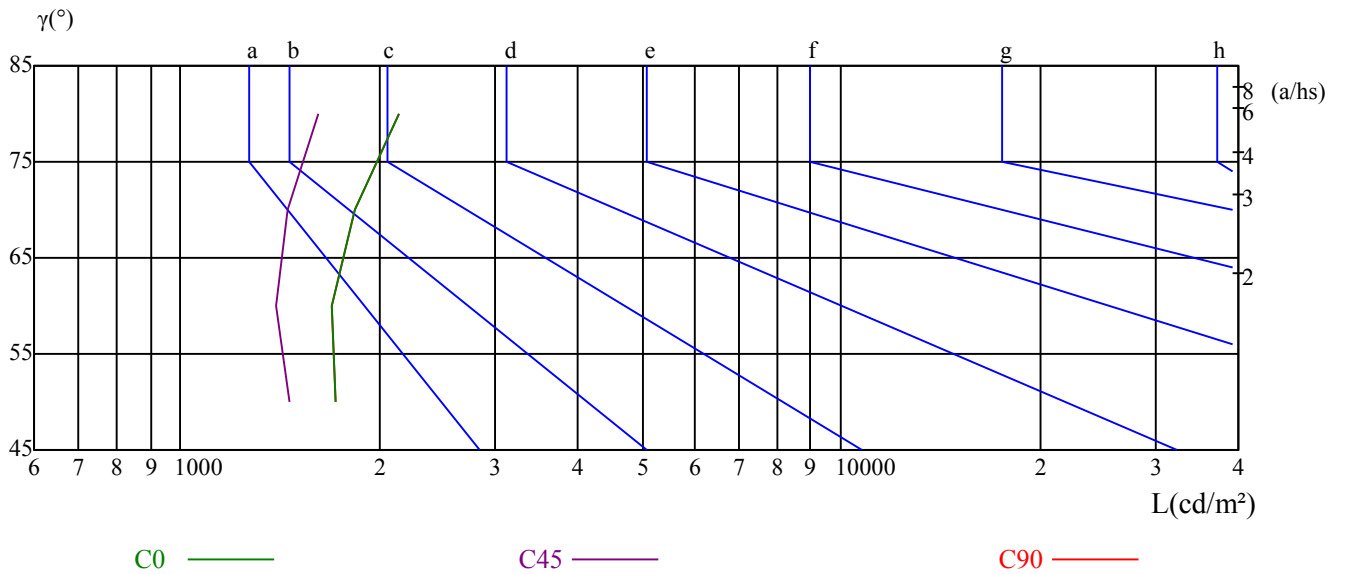
γ	45	50	55	60	65	70	75	80	85
C0	0	1717	0	1695	0	1834	0	2142	0
C45	0	1463	0	1398	0	1457	0	1621	0
C90	0	1717	0	1695	0	1834	0	2142	0

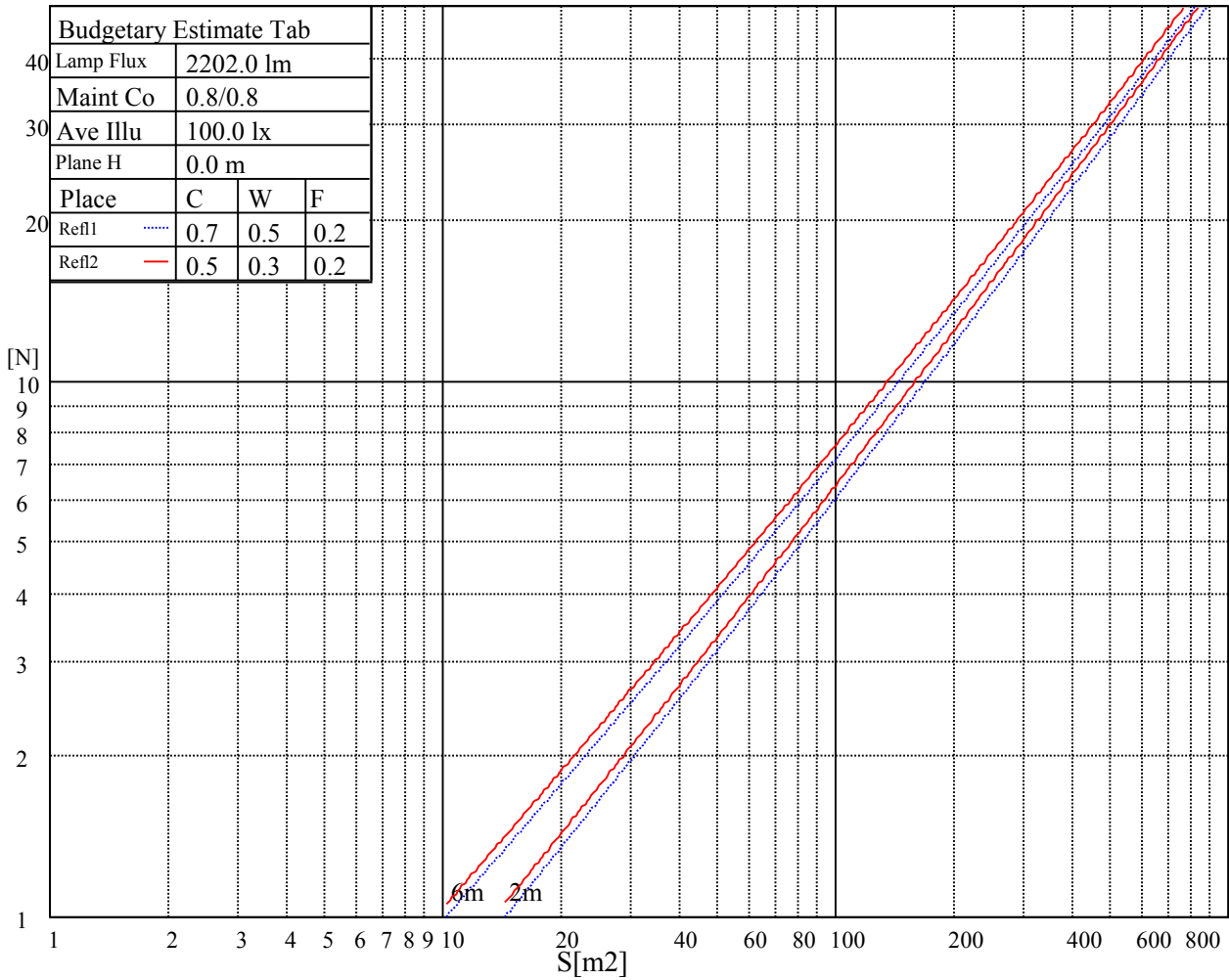
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4290	4290	4290	6710	6710	6710	19549	19549	19549

Glare Table

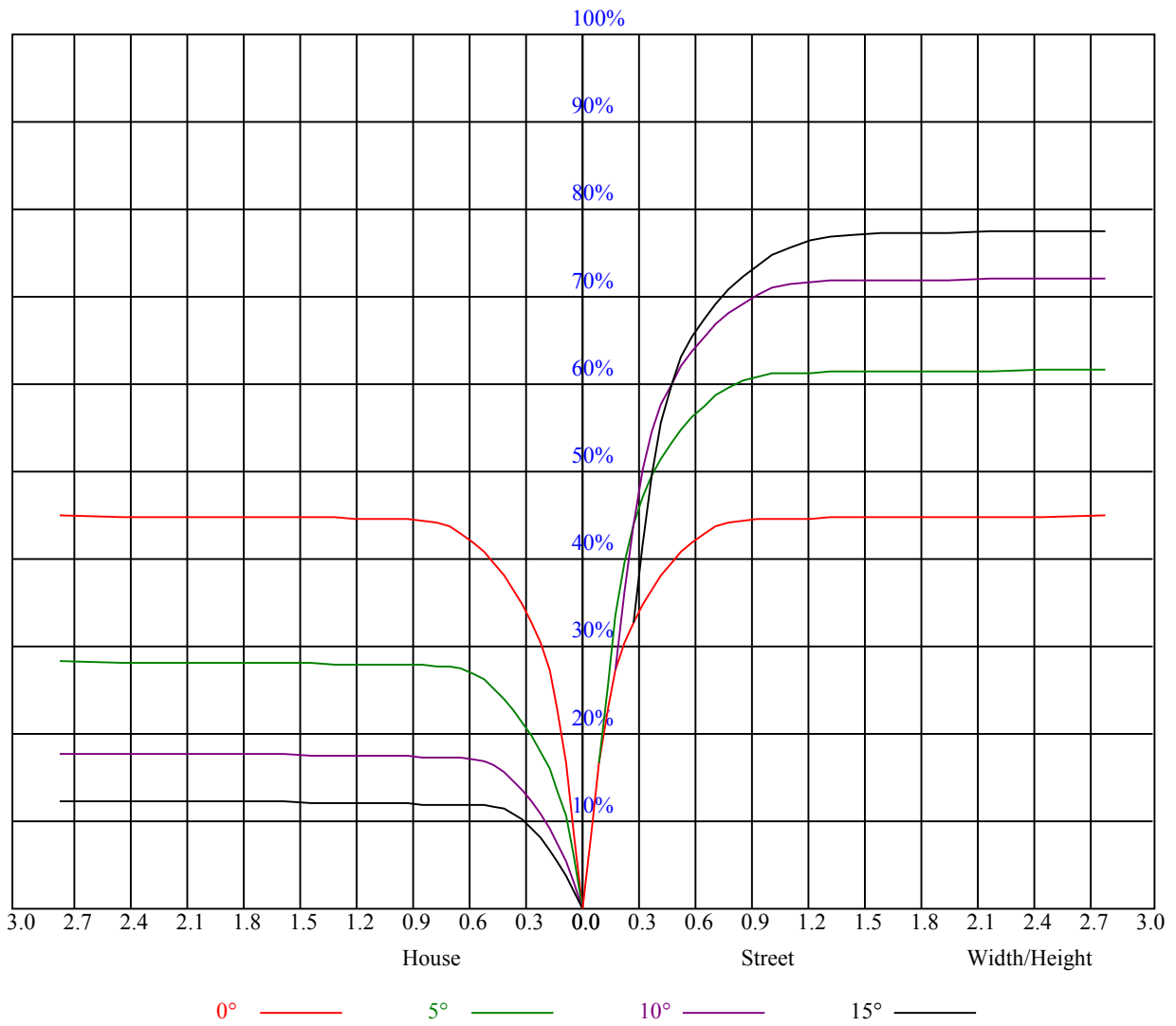
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	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	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.96	0.93	0.90	0.94	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.84	0.82
3	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.79
4	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	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	0.77	0.82	0.79	0.76	0.80	0.78	0.75	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	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	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.75	0.71	0.69	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	0.67	0.73	0.69	0.67	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	0.65	0.70	0.67	0.64	0.69	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	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52
45.0	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52
90.0	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52
135.0	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52
180.0	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52
225.0	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52
270.0	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52
315.0	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52
360.0	14694.55	14177.02	12270.92	9734.69	6663.20	3970.45	2573.78	1673.93	1254.52

C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26
45.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26
90.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26
135.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26
180.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26
225.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26
270.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26
315.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26
360.0	1045.80	920.82	841.37	785.54	740.40	707.20	682.92	656.00	584.26

C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	9.36
45.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	9.36
90.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	9.36
135.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	9.36
180.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	9.36
225.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	9.36
270.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	9.36
315.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	9.36
360.0	456.47	306.94	158.23	45.70	17.89	13.16	10.35	9.58	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	8.81	8.75	8.64	8.59	8.53	8.48	8.42
45.0	9.14	8.97	8.81	8.75	8.64	8.59	8.53	8.48	8.42
90.0	9.14	8.97	8.81	8.75	8.64	8.59	8.53	8.48	8.42
135.0	9.14	8.97	8.81	8.75	8.64	8.59	8.53	8.48	8.42
180.0	9.14	8.97	8.81	8.75	8.64	8.59	8.53	8.48	8.42
225.0	9.14	8.97	8.81	8.75	8.64	8.59	8.53	8.48	8.42
270.0	9.14	8.97	8.81	8.75	8.64	8.59	8.53	8.48	8.42
315.0	9.14	8.97	8.81	8.75	8.64	8.59	8.53	8.48	8.42
360.0	9.14	8.97	8.81	8.75	8.64	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	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26
45.0	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26
90.0	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26
135.0	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26
180.0	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26
225.0	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26
270.0	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26
315.0	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26
360.0	8.42	8.37	8.37	8.31	8.31	8.31	8.31	8.26	8.26

Intensity data(cd)

C/γ(°)	90.0
0.0	8.26
45.0	8.26
90.0	8.26
135.0	8.26
180.0	8.26
225.0	8.26
270.0	8.26
315.0	8.26
360.0	8.26