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Nata

LumCAT: 2-1678-M
Luminaire: 92.70.132.00
Report No: NT201712190
Test No: GC2017121901
LampCAT: NICHIA NFCWL036B-V2
Lamp flux(lm): 1719.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 35.0000
Current(A): 0.3500
Power (W): 12.2500
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 1500.03
Efficiency(%): 87.26%
Lumens(lm)/Power(W): 122.45
Central intensity(cd): 20975.110
Maximum intensity(cd): 20975.110
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=9.7
 [C90/270]Total=9.7
Field angle(10%Imax): [C0/180]Total=19.6
 [C90/270]Total=19.6
Maximum s/h(1/2): C0_180=0.17 C90_270=0.17
Maximum s/h(1/4): C0_180=0.17 C90_270=0.17
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.26%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.524%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/12/23
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	20975.111	0.000	0	.000%	.000%
1.0	20450.699	19.821	19.821	1.153%	1.321%
2.0	18661.367	56.137	75.959	3.266%	5.064%
3.0	16161.806	83.286	159.244	4.845%	10.616%
4.0	12933.161	97.390	256.635	5.666%	17.109%
5.0	10127.969	99.208	355.842	5.771%	23.722%
6.0	7235.168	91.248	447.09	5.308%	29.805%
7.0	5189.066	77.117	524.207	4.486%	34.946%
8.0	3635.787	63.158	587.365	3.674%	39.157%
9.0	2613.527	50.647	638.012	2.946%	42.533%
10.0	1948.171	41.282	679.294	2.401%	45.285%
11.0	1429.264	33.748	713.042	1.963%	47.535%
12.0	1171.270	28.428	741.469	1.654%	49.430%
13.0	1025.749	26.073	767.542	1.517%	51.168%
14.0	920.371	24.910	792.452	1.449%	52.829%
15.0	850.738	24.315	816.767	1.414%	54.450%
16.0	799.474	24.180	840.947	1.407%	56.062%
17.0	757.067	24.240	865.187	1.410%	57.678%
18.0	726.944	24.468	889.655	1.423%	59.309%
19.0	704.061	24.897	914.551	1.448%	60.969%
20.0	682.369	25.376	939.927	1.476%	62.660%
21.0	662.060	25.816	965.743	1.502%	64.381%
22.0	646.734	26.301	992.043	1.530%	66.135%
23.0	631.462	26.820	1018.863	1.560%	67.923%
24.0	616.198	27.278	1046.142	1.587%	69.741%
25.0	604.003	27.745	1073.886	1.614%	71.591%
26.0	592.524	28.244	1102.131	1.643%	73.474%
27.0	581.230	28.716	1130.847	1.671%	75.388%
28.0	570.529	29.160	1160.007	1.696%	77.332%
29.0	559.070	29.554	1189.56	1.719%	79.302%
30.0	546.951	29.862	1219.423	1.737%	81.293%
31.0	536.752	30.158	1249.581	1.754%	83.304%
32.0	527.206	30.481	1280.062	1.773%	85.336%
33.0	517.468	30.777	1310.838	1.790%	87.387%
34.0	503.580	30.900	1341.738	1.798%	89.447%
35.0	457.292	29.841	1371.579	1.736%	91.437%
36.0	384.473	26.802	1398.381	1.559%	93.223%
37.0	304.076	22.457	1420.838	1.306%	94.720%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	234.038	17.962	1438.799	1.045%	95.918%
39.0	118.357	12.028	1450.828	.700%	96.720%
40.0	60.514	6.238	1457.066	.363%	97.136%
41.0	31.348	3.271	1460.337	.190%	97.354%
42.0	22.305	1.949	1462.286	.113%	97.484%
43.0	16.696	1.445	1463.731	.084%	97.580%
44.0	13.248	1.130	1464.861	.066%	97.655%
45.0	11.899	0.966	1465.828	.056%	97.720%
46.0	10.949	0.894	1466.721	.052%	97.779%
47.0	10.578	0.856	1467.578	.050%	97.836%
48.0	10.275	0.843	1468.42	.049%	97.893%
49.0	10.000	0.833	1469.253	.048%	97.948%
50.0	9.745	0.823	1470.076	.048%	98.003%
51.0	9.504	0.814	1470.891	.047%	98.057%
52.0	9.284	0.806	1471.697	.047%	98.111%
53.0	9.077	0.799	1472.496	.046%	98.164%
54.0	8.864	0.791	1473.286	.046%	98.217%
55.0	8.699	0.784	1474.07	.046%	98.269%
56.0	8.534	0.779	1474.849	.045%	98.321%
57.0	8.334	0.771	1475.62	.045%	98.373%
58.0	8.183	0.764	1476.384	.044%	98.423%
59.0	8.059	0.759	1477.143	.044%	98.474%
60.0	7.901	0.754	1477.897	.044%	98.524%
61.0	7.804	0.749	1478.647	.044%	98.574%
62.0	7.694	0.747	1479.394	.043%	98.624%
63.0	7.591	0.743	1480.137	.043%	98.674%
64.0	7.508	0.741	1480.878	.043%	98.723%
65.0	7.426	0.739	1481.617	.043%	98.772%
66.0	7.364	0.738	1482.355	.043%	98.821%
67.0	7.309	0.738	1483.093	.043%	98.871%
68.0	7.240	0.737	1483.83	.043%	98.920%
69.0	7.192	0.736	1484.566	.043%	98.969%
70.0	7.144	0.736	1485.302	.043%	99.018%
71.0	7.089	0.736	1486.038	.043%	99.067%
72.0	7.047	0.735	1486.773	.043%	99.116%
73.0	7.013	0.735	1487.508	.043%	99.165%
74.0	6.985	0.736	1488.244	.043%	99.214%
75.0	6.944	0.736	1488.98	.043%	99.263%

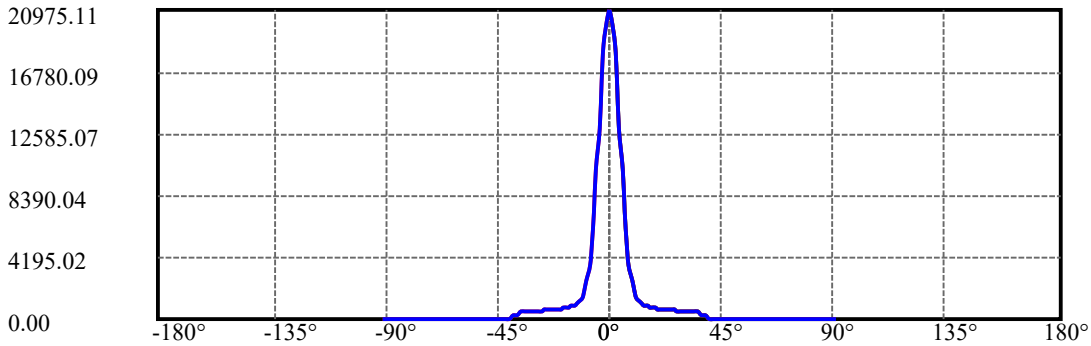
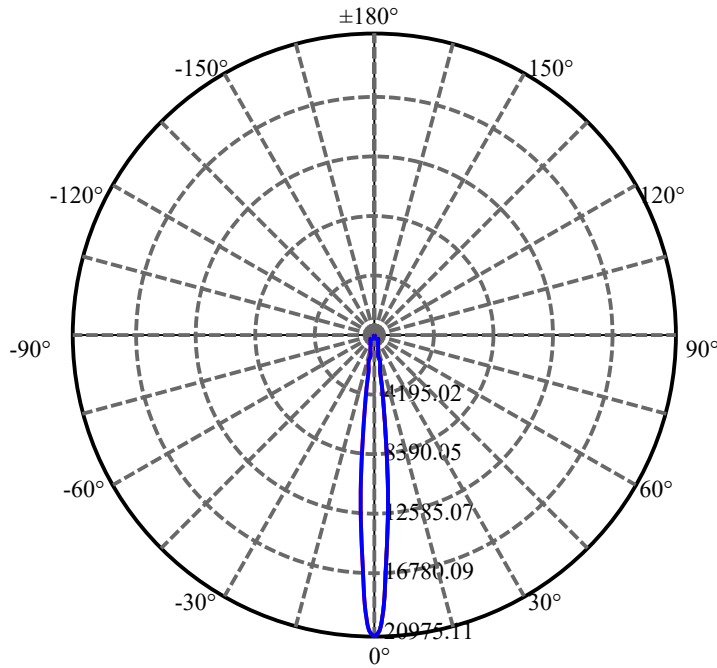
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	6.923	0.736	1489.716	.043%	99.312%
77.0	6.889	0.736	1490.452	.043%	99.361%
78.0	6.861	0.736	1491.189	.043%	99.410%
79.0	6.848	0.737	1491.925	.043%	99.459%
80.0	6.841	0.738	1492.663	.043%	99.509%
81.0	6.799	0.738	1493.401	.043%	99.558%
82.0	6.799	0.737	1494.138	.043%	99.607%
83.0	6.786	0.739	1494.877	.043%	99.656%
84.0	6.779	0.739	1495.616	.043%	99.706%
85.0	6.744	0.738	1496.354	.043%	99.755%
86.0	6.731	0.737	1497.09	.043%	99.804%
87.0	6.738	0.737	1497.827	.043%	99.853%
88.0	6.710	0.737	1498.564	.043%	99.902%
89.0	6.703	0.735	1499.299	.043%	99.951%
90.0	6.682	0.734	1500.033	.043%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1219.42	70.94%	81.29%
0-40	1457.07	84.76%	97.14%
0-60	1477.90	85.97%	98.52%
0-90	1499.30	87.22%	99.95%
0-120	1499.30	87.22%	99.95%
0-180	1500.03	87.26%	100.00%
60-90	22.16	1.29%	1.48%
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%
0-29.35	1200.03	69.81%	80.00%

ZONAL LUMEN SUMMARY

0-10	679.29
10-20	260.63
20-30	279.50
30-40	237.64
40-50	13.01
50-60	7.82
60-70	7.40
70-80	7.36
80-90	6.64
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: —————

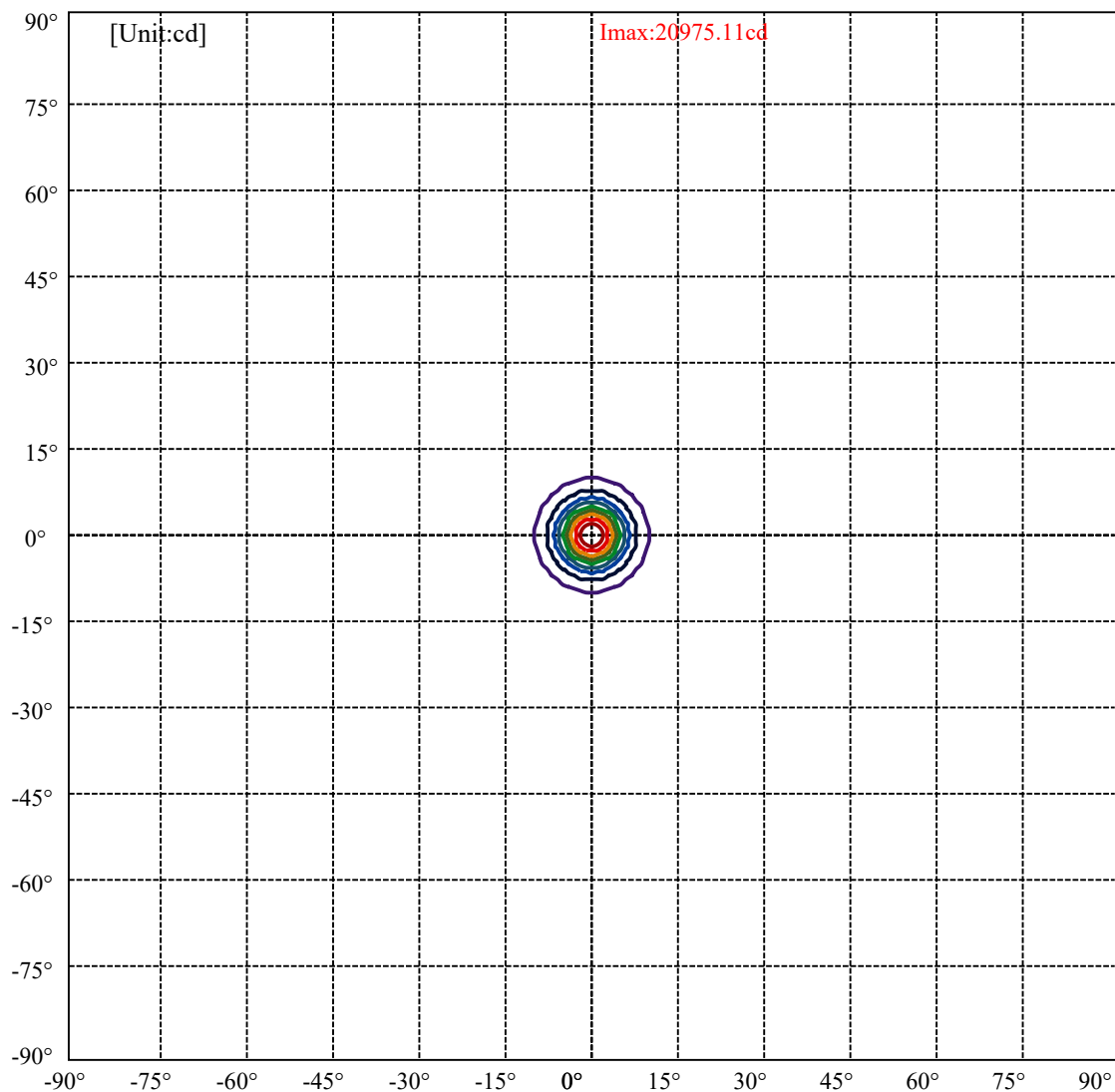
C90/C270: —————

Field angle(10%Imax):C0/180Left:9.8 Right:9.8

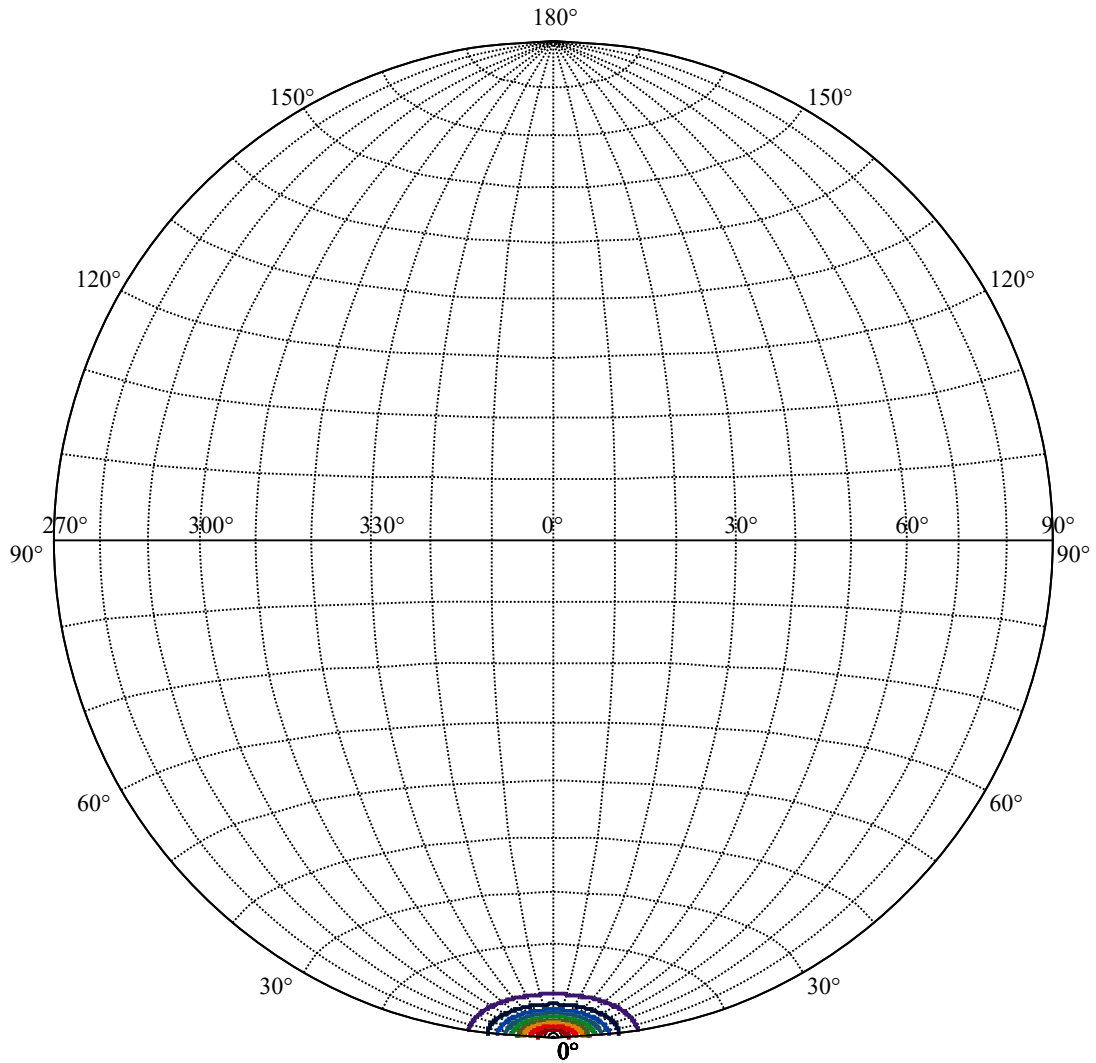
:C90/270Left:9.8 Right:9.8

Beam Angle(50%Imax):C0/180Left:4.9 Right:4.9

:C90/270Left:4.9 Right:4.9



(10%I _{max}) 2097.51	—
(20%I _{max}) 4195.02	—
(30%I _{max}) 6292.53	—
(40%I _{max}) 8390.04	—
(50%I _{max}) 10487.6	—
(60%I _{max}) 12585.1	—
(70%I _{max}) 14682.6	—
(80%I _{max}) 16780.1	—
(90%I _{max}) 18877.6	—



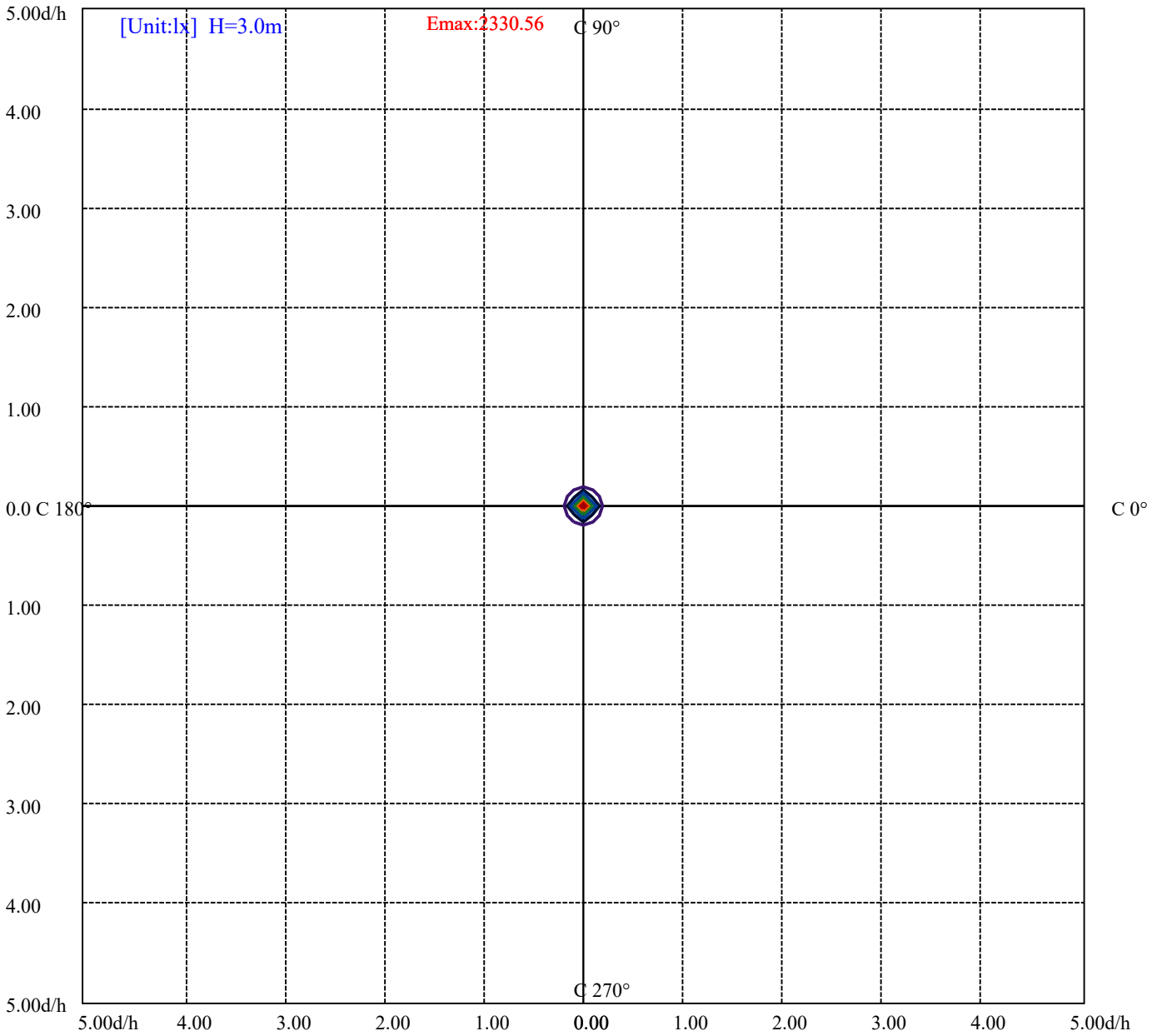
House

[Unit:cd]

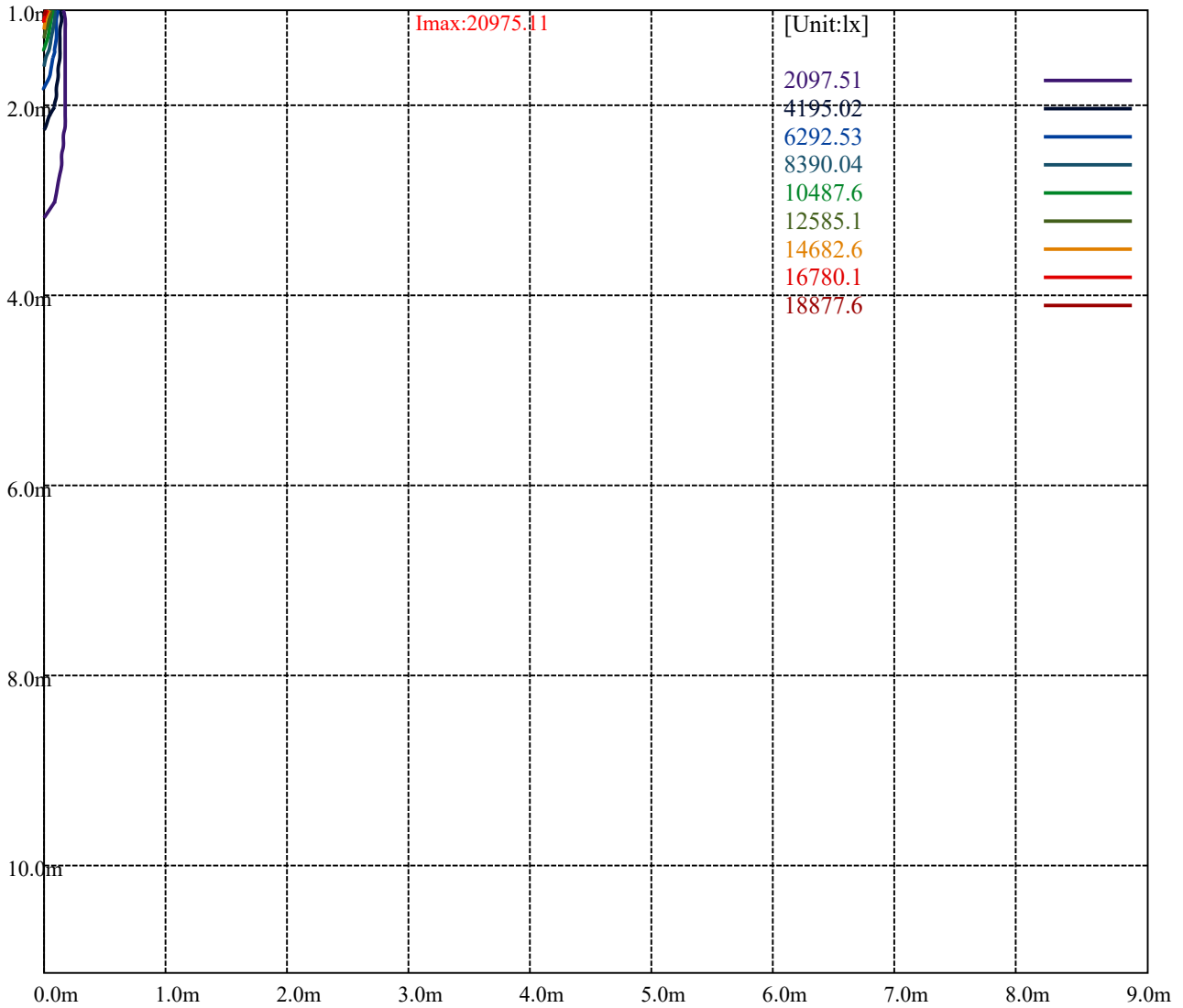
Road

Imax:20975.11

(10%Imax)	2097.51	—
(20%Imax)	4195.02	—
(30%Imax)	6292.53	—
(40%Imax)	8390.04	—
(50%Imax)	10487.6	—
(60%Imax)	12585.1	—
(70%Imax)	14682.6	—
(80%Imax)	16780.1	—
(90%Imax)	18877.6	—



(10%Emax) 233.0556	—
(20%Emax) 466.1122	—
(30%Emax) 699.1677	—
(40%Emax) 932.2233	—
(50%Emax) 1165.278	—
(60%Emax) 1398.333	—
(70%Emax) 1631.389	—
(80%Emax) 1864.444	—
(90%Emax) 2097.5	—



Luminance Table

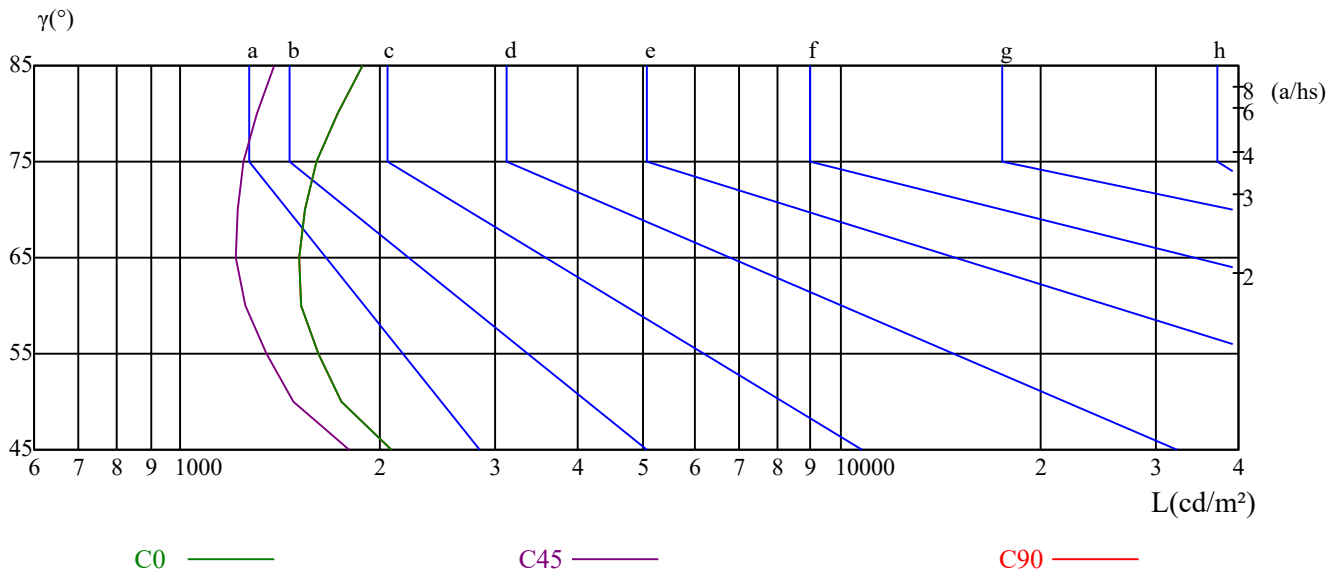
γ	45	50	55	60	65	70	75	80	85
C0	2090	1752	1614	1526	1508	1541	1611	1731	1892
C45	1799	1485	1347	1252	1216	1219	1246	1306	1386
C90	2090	1752	1614	1526	1508	1541	1611	1731	1892

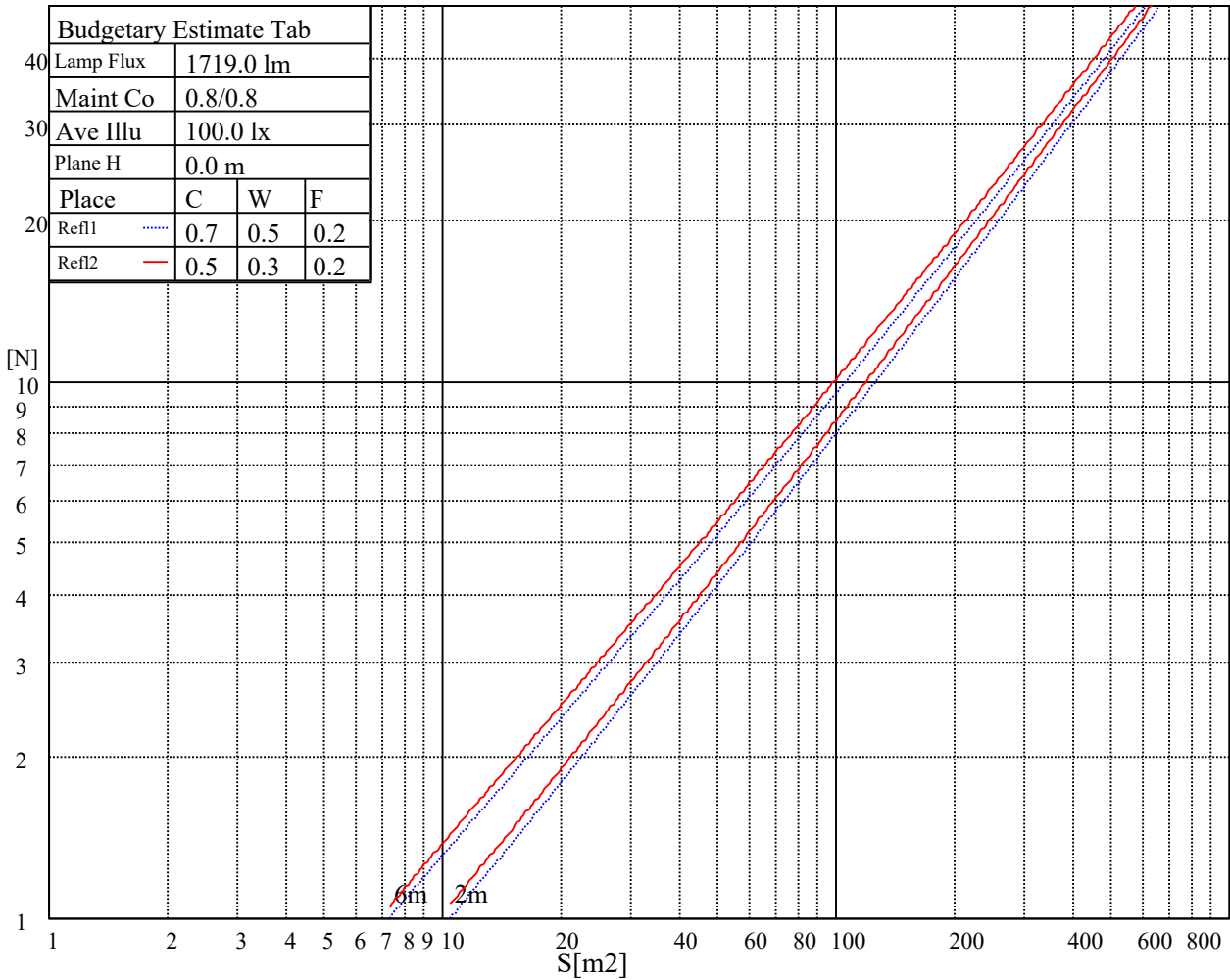
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3586	3586	3586	5475	5475	5475	15793	15793	15793

Glare Table

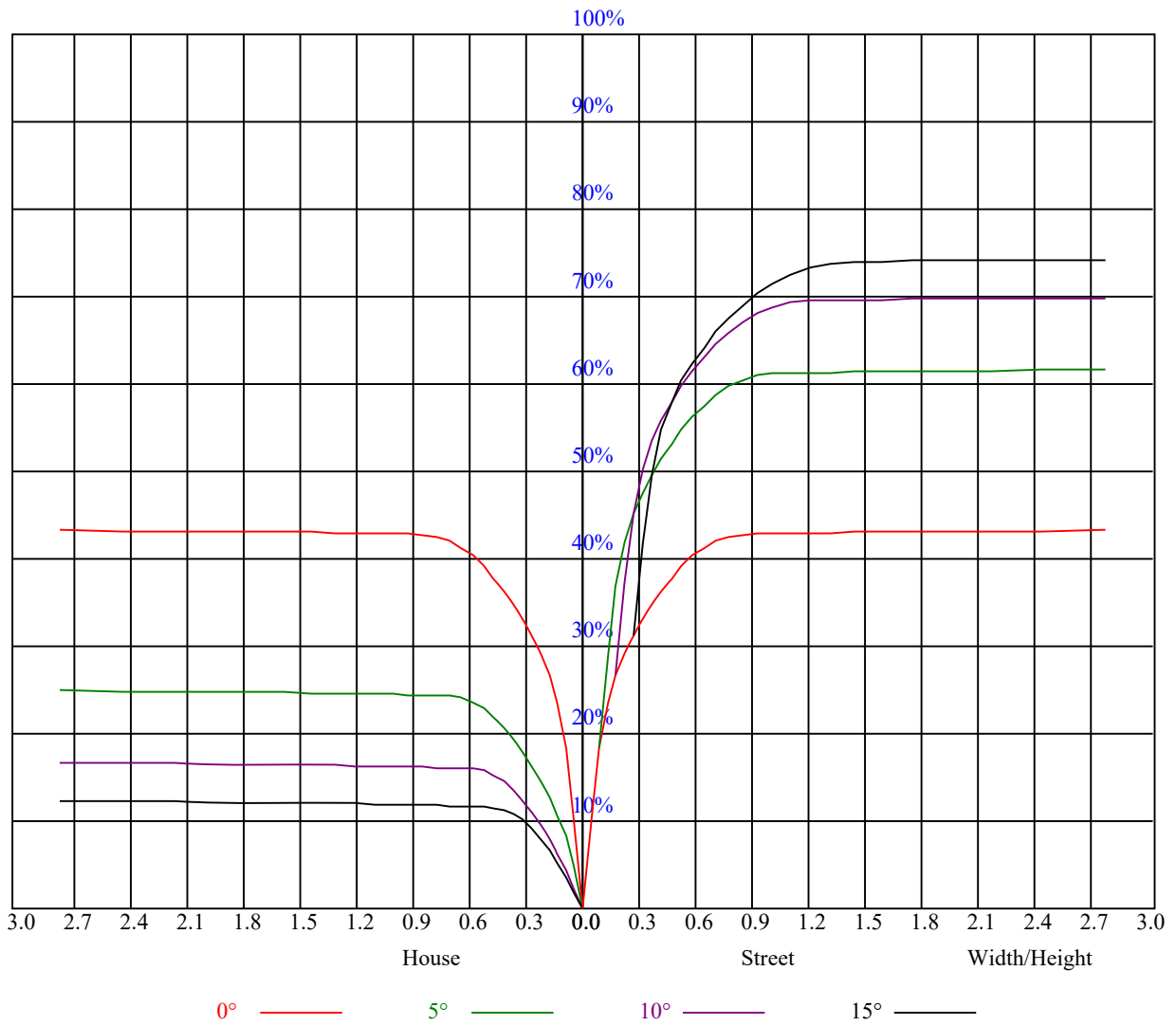
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.98	0.96	0.94	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.83
2	0.93	0.90	0.87	0.91	0.89	0.87	0.89	0.86	0.85	0.86	0.84	0.83	0.84	0.82	0.81	0.80
3	0.88	0.85	0.82	0.87	0.84	0.82	0.85	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.78	0.77
4	0.84	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.76	0.74	0.72	0.71
6	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.69
7	0.75	0.71	0.69	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
8	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
9	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
10	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61



Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	20877.39	21185.70	20260.76	18080.52	15415.79	12018.81	8803.52	6458.12	4855.97
45.0	20954.47	20888.40	19357.83	17166.59	14446.80	11121.39	8016.21	5753.39	3947.54
90.0	20921.43	19930.42	17832.77	14980.85	10646.26	8616.33	6237.89	4418.28	2906.43
135.0	21147.16	20348.85	18119.06	15674.56	12905.22	10119.37	7014.19	5021.14	3589.68
180.0	20877.39	19390.86	17260.18	14292.64	10644.60	8336.64	6053.45	4127.03	2853.57
225.0	20954.47	20001.99	17524.45	14914.78	10788.30	9001.72	6057.86	4330.74	3122.80
270.0	20921.43	20937.95	19489.97	17298.72	14523.88	11110.38	7988.68	5802.94	3986.08
315.0	21147.16	20921.43	19445.92	16885.80	14094.44	10699.11	7709.55	5600.89	3824.22
360.0	20877.39	21185.70	20260.76	18080.52	15415.79	12018.81	8803.52	6458.12	4855.97
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3083.16	2840.91	1688.58	1314.20	1102.23	981.11	889.16	820.34	776.30
45.0	2868.44	2057.46	1543.78	1254.74	1059.84	932.10	859.43	805.48	755.37
90.0	2204.46	1629.12	1182.61	1081.42	963.16	873.19	817.81	773.65	737.15
135.0	2824.39	1839.43	1490.93	1183.71	1021.30	934.86	850.62	801.62	763.08
180.0	2114.72	1594.98	1197.48	1090.83	972.74	878.65	821.66	778.88	741.83
225.0	2210.51	1661.05	1342.28	1085.93	982.15	900.39	833.06	788.74	753.28
270.0	2884.96	2058.01	1552.04	1266.85	1073.05	947.52	877.05	822.54	775.19
315.0	2717.58	1904.40	1436.42	1092.48	1031.54	915.15	857.12	804.54	754.33
360.0	3083.16	2840.91	1688.58	1314.20	1102.23	981.11	889.16	820.34	776.30
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	739.96	714.63	690.96	670.04	652.97	636.45	620.49	607.82	596.26
45.0	725.64	701.42	677.74	659.58	646.36	629.85	615.53	603.42	590.76
90.0	708.58	687.43	669.16	648.84	633.86	620.27	604.41	593.01	582.39
135.0	726.19	702.52	682.70	657.92	642.51	627.64	611.68	600.11	590.20
180.0	712.65	690.96	669.60	650.22	635.08	620.10	607.77	595.05	583.49
225.0	726.03	706.32	688.76	669.10	654.79	640.64	623.84	611.90	601.00
270.0	746.56	723.44	697.56	679.40	663.43	648.56	632.05	618.83	606.72
315.0	729.94	705.77	682.48	661.39	644.88	628.19	613.82	601.88	589.38
360.0	739.96	714.63	690.96	670.04	652.97	636.45	620.49	607.82	596.26
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	583.05	572.59	563.23	551.11	540.10	531.84	522.49	512.58	490.00
45.0	579.74	568.73	558.27	546.16	534.05	524.14	514.78	504.87	458.07
90.0	571.38	560.47	548.03	536.41	526.78	516.65	506.46	489.73	437.97
135.0	578.64	568.73	557.72	546.16	535.70	527.44	516.43	505.97	467.98
180.0	573.96	564.60	549.68	539.77	530.96	520.23	511.20	486.97	416.72
225.0	589.38	578.09	564.60	552.49	543.02	533.06	522.60	501.34	437.20
270.0	594.61	582.50	572.59	558.27	547.26	538.45	528.54	520.28	488.90
315.0	579.08	568.51	558.44	545.22	536.14	525.84	517.25	506.90	461.48
360.0	583.05	572.59	563.23	551.11	540.10	531.84	522.49	512.58	490.00
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	428.34	355.66	280.24	159.61	91.39	43.82	25.49	20.54	15.64
45.0	390.35	314.92	286.84	138.63	75.26	34.47	23.51	17.40	13.05
90.0	356.21	272.53	187.91	95.19	46.36	26.65	21.03	15.25	13.05
135.0	392.00	311.62	280.79	117.99	58.08	29.18	22.02	16.30	12.94
180.0	342.84	256.95	152.89	84.73	39.15	24.28	19.32	13.87	11.73
225.0	351.65	271.32	188.95	93.43	43.38	26.48	20.65	14.87	12.77
270.0	421.18	338.05	282.99	137.31	71.74	34.96	23.12	17.73	13.10
315.0	393.21	311.56	211.69	119.97	58.75	30.94	23.29	17.62	13.71
360.0	428.34	355.66	280.24	159.61	91.39	43.82	25.49	20.54	15.64

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	13.05	11.73	11.01	10.68	10.35	10.02	9.80	9.52	9.30
45.0	11.67	10.96	10.63	10.30	10.02	9.80	9.52	9.30	9.08
90.0	12.17	10.63	10.41	10.13	9.86	9.63	9.41	9.19	8.97
135.0	11.23	10.79	10.52	10.24	9.97	9.74	9.47	9.25	9.08
180.0	10.96	10.68	10.24	10.02	9.80	9.52	9.36	9.14	8.97
225.0	12.06	10.68	10.35	10.08	9.86	9.58	9.30	9.14	8.92
270.0	11.56	11.01	10.68	10.35	10.02	9.80	9.52	9.30	9.08
315.0	12.50	11.12	10.79	10.41	10.13	9.86	9.63	9.41	9.19
360.0	13.05	11.73	11.01	10.68	10.35	10.02	9.80	9.52	9.30
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.08	8.86	8.70	8.48	8.31	8.15	7.98	7.87	7.76
45.0	8.92	8.75	8.59	8.37	8.20	8.09	7.87	7.82	7.71
90.0	8.75	8.59	8.42	8.26	8.15	7.98	7.87	7.76	7.65
135.0	8.86	8.70	8.53	8.37	8.20	8.09	7.93	7.82	7.71
180.0	8.75	8.59	8.42	8.26	8.09	7.98	7.87	7.76	7.65
225.0	8.75	8.59	8.42	8.20	8.09	7.98	7.82	7.76	7.65
270.0	8.86	8.75	8.59	8.37	8.20	8.09	7.93	7.82	7.71
315.0	8.92	8.75	8.59	8.37	8.20	8.09	7.93	7.82	7.71
360.0	9.08	8.86	8.70	8.48	8.31	8.15	7.98	7.87	7.76
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.65	7.54	7.49	7.43	7.38	7.27	7.27	7.16	7.10
45.0	7.60	7.49	7.43	7.38	7.32	7.27	7.16	7.16	7.10
90.0	7.54	7.49	7.38	7.32	7.27	7.21	7.16	7.10	7.05
135.0	7.65	7.54	7.43	7.38	7.32	7.27	7.21	7.16	7.10
180.0	7.54	7.49	7.43	7.32	7.27	7.21	7.21	7.16	7.10
225.0	7.54	7.49	7.38	7.32	7.27	7.21	7.16	7.10	7.05
270.0	7.60	7.54	7.43	7.38	7.32	7.27	7.21	7.16	7.10
315.0	7.60	7.49	7.43	7.38	7.32	7.21	7.16	7.16	7.10
360.0	7.65	7.54	7.49	7.43	7.38	7.27	7.27	7.16	7.10
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.10	7.05	6.99	6.94	6.94	6.94	6.88	6.88	6.88
45.0	7.05	7.05	6.99	6.99	6.94	6.94	6.88	6.88	6.88
90.0	7.05	6.99	6.99	6.94	6.88	6.88	6.83	6.83	6.83
135.0	7.05	6.99	6.99	6.99	6.94	6.88	6.88	6.88	6.83
180.0	7.05	7.05	6.99	6.94	6.94	6.88	6.88	6.83	6.83
225.0	6.99	6.99	6.99	6.88	6.94	6.88	6.83	6.83	6.83
270.0	7.05	6.99	6.99	6.94	6.94	6.88	6.88	6.83	6.83
315.0	7.05	6.99	6.94	6.94	6.88	6.83	6.83	6.83	6.83
360.0	7.10	7.05	6.99	6.94	6.94	6.94	6.88	6.88	6.88
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.83	6.83	6.83	6.77	6.77	6.77	6.77	6.72	6.72
45.0	6.83	6.88	6.83	6.83	6.83	6.77	6.77	6.72	6.72
90.0	6.77	6.77	6.77	6.77	6.72	6.72	6.72	6.72	6.72
135.0	6.77	6.77	6.77	6.77	6.72	6.72	6.72	6.72	6.72
180.0	6.77	6.77	6.77	6.77	6.77	6.72	6.72	6.66	6.72
225.0	6.83	6.83	6.77	6.77	6.72	6.72	6.72	6.72	6.66
270.0	6.77	6.77	6.77	6.77	6.72	6.72	6.77	6.72	6.72
315.0	6.83	6.77	6.77	6.77	6.72	6.72	6.72	6.72	6.66
360.0	6.83	6.83	6.83	6.77	6.77	6.77	6.77	6.72	6.72

Intensity data(cd)

C/ γ (°)	90.0
0.0	6.66
45.0	6.66
90.0	6.72
135.0	6.72
180.0	6.66
225.0	6.66
270.0	6.72
315.0	6.66
360.0	6.66