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Nata

LumCAT: 2-2538-L	
Luminaire: 92.70.131.00	
Report No: 220915-B006	Voltage(V): 35.4800
Test No: 220915-C006	Current(A): 0.4790
LampCAT: CITIZEN CLU038	Power (W): 16.9940
Lamp flux(lm): 2261.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1963.32
Efficiency(%): 86.84%
Lumens(lm)/Power(W): 115.53
Central intensity(cd): 6425.080
Maximum intensity(cd): 6425.080
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=25.5
 [C90/270]Total=25.5
Field angle(10%Imax): [C0/180]Total=60.3
 [C90/270]Total=60.3
Maximum s/h(1/2): C0_180=0.43 C90_270=0.43
Maximum s/h(1/4): C0_180=0.46 C90_270=0.46
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 86.84%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.997%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6425.080	0.000	0	.000%	.000%
1.0	6399.013	6.136	6.136	.271%	.313%
2.0	6309.010	18.240	24.376	.807%	1.242%
3.0	6168.665	29.843	54.218	1.320%	2.762%
4.0	5997.025	40.722	94.941	1.801%	4.836%
5.0	5756.818	50.564	145.505	2.236%	7.411%
6.0	5483.598	59.071	204.577	2.613%	10.420%
7.0	5189.017	66.245	270.821	2.930%	13.794%
8.0	4864.185	71.949	342.77	3.182%	17.459%
9.0	4513.659	76.002	418.773	3.362%	21.330%
10.0	4153.648	78.436	497.208	3.469%	25.325%
11.0	3794.459	79.418	576.626	3.513%	29.370%
12.0	3455.734	79.255	655.881	3.505%	33.407%
13.0	3126.197	78.111	733.992	3.455%	37.385%
14.0	2796.286	75.807	809.8	3.353%	41.247%
15.0	2547.341	73.360	883.159	3.245%	44.983%
16.0	2314.454	71.239	954.398	3.151%	48.612%
17.0	2083.509	68.488	1022.886	3.029%	52.100%
18.0	1896.856	65.628	1088.514	2.903%	55.443%
19.0	1733.954	63.169	1151.683	2.794%	58.660%
20.0	1565.601	60.391	1212.074	2.671%	61.736%
21.0	1416.913	57.270	1269.344	2.533%	64.653%
22.0	1298.214	54.562	1323.906	2.413%	67.432%
23.0	1178.521	51.969	1375.874	2.299%	70.079%
24.0	1077.800	49.331	1425.205	2.182%	72.592%
25.0	1001.503	47.279	1472.484	2.091%	75.000%
26.0	927.163	45.526	1518.011	2.014%	77.319%
27.0	861.443	43.759	1561.769	1.935%	79.548%
28.0	797.641	42.004	1603.774	1.858%	81.687%
29.0	724.250	39.817	1643.591	1.761%	83.715%
30.0	653.854	37.209	1680.799	1.646%	85.610%
31.0	576.653	34.243	1715.042	1.515%	87.354%
32.0	492.446	30.628	1745.671	1.355%	88.914%
33.0	419.234	26.858	1772.529	1.188%	90.282%
34.0	349.360	23.260	1795.789	1.029%	91.467%
35.0	276.701	19.443	1815.232	.860%	92.457%
36.0	213.968	15.623	1830.855	.691%	93.253%
37.0	163.237	12.302	1843.158	.544%	93.880%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	112.164	9.193	1852.35	.407%	94.348%
39.0	78.829	6.519	1858.869	.288%	94.680%
40.0	59.387	4.820	1863.69	.213%	94.926%
41.0	48.467	3.841	1867.53	.170%	95.121%
42.0	43.097	3.327	1870.857	.147%	95.291%
43.0	40.923	3.112	1873.969	.138%	95.449%
44.0	39.355	3.030	1876.999	.134%	95.604%
45.0	38.346	2.986	1879.985	.132%	95.756%
46.0	37.861	2.980	1882.966	.132%	95.907%
47.0	37.585	3.001	1885.966	.133%	96.060%
48.0	37.286	3.027	1888.993	.134%	96.214%
49.0	37.121	3.056	1892.049	.135%	96.370%
50.0	36.920	3.087	1895.136	.137%	96.527%
51.0	36.531	3.108	1898.243	.137%	96.686%
52.0	36.061	3.115	1901.358	.138%	96.844%
53.0	35.463	3.111	1904.47	.138%	97.003%
54.0	34.268	3.073	1907.543	.136%	97.159%
55.0	33.170	3.010	1910.553	.133%	97.313%
56.0	31.744	2.933	1913.487	.130%	97.462%
57.0	29.914	2.819	1916.306	.125%	97.606%
58.0	28.353	2.694	1919	.119%	97.743%
59.0	26.605	2.569	1921.57	.114%	97.874%
60.0	24.633	2.421	1923.99	.107%	97.997%
61.0	23.199	2.283	1926.273	.101%	98.113%
62.0	21.601	2.159	1928.432	.095%	98.223%
63.0	19.972	2.022	1930.454	.089%	98.326%
64.0	18.762	1.901	1932.354	.084%	98.423%
65.0	17.284	1.784	1934.138	.079%	98.514%
66.0	15.976	1.659	1935.798	.073%	98.598%
67.0	15.028	1.559	1937.357	.069%	98.678%
68.0	13.990	1.470	1938.827	.065%	98.753%
69.0	13.086	1.381	1940.208	.061%	98.823%
70.0	12.556	1.317	1941.525	.058%	98.890%
71.0	12.055	1.272	1942.797	.056%	98.955%
72.0	11.674	1.234	1944.031	.055%	99.018%
73.0	11.443	1.209	1945.239	.053%	99.079%
74.0	11.211	1.191	1946.43	.053%	99.140%
75.0	10.995	1.173	1947.604	.052%	99.200%

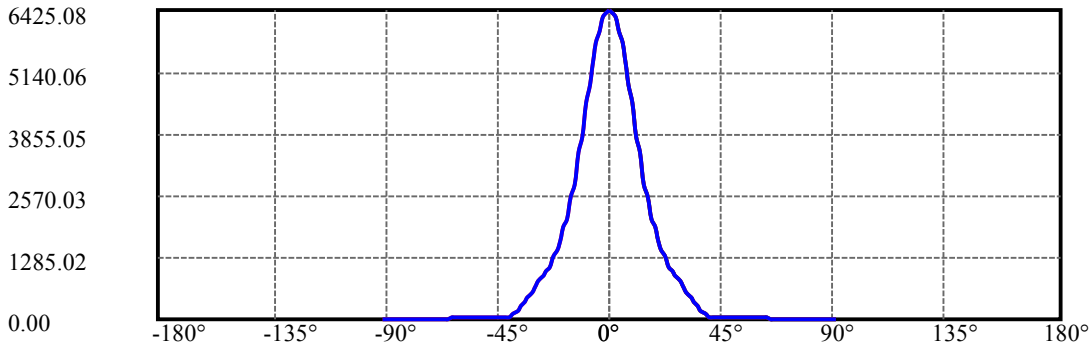
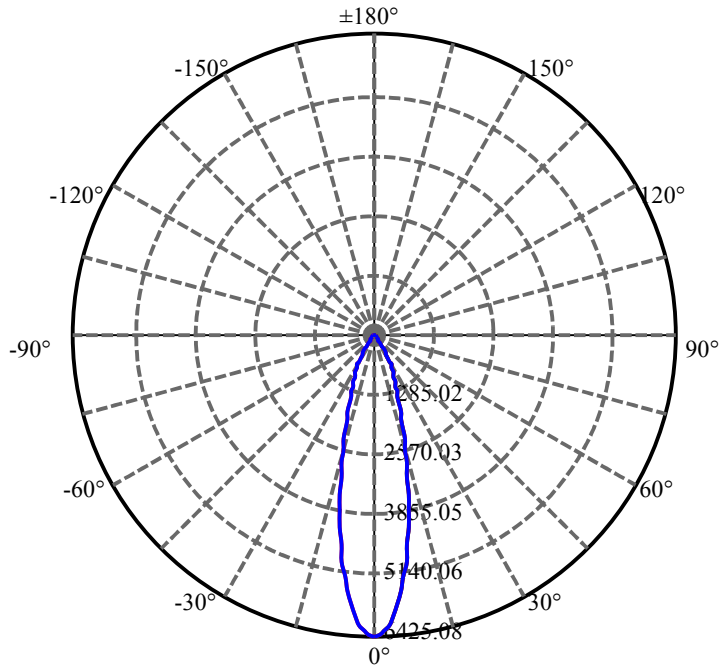
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.800	1.157	1948.761	.051%	99.259%
77.0	10.621	1.142	1949.903	.051%	99.317%
78.0	10.419	1.126	1951.029	.050%	99.374%
79.0	10.225	1.109	1952.138	.049%	99.431%
80.0	10.031	1.092	1953.23	.048%	99.486%
81.0	9.844	1.075	1954.305	.048%	99.541%
82.0	9.680	1.059	1955.364	.047%	99.595%
83.0	9.516	1.043	1956.407	.046%	99.648%
84.0	9.359	1.028	1957.436	.045%	99.701%
85.0	9.217	1.014	1958.449	.045%	99.752%
86.0	9.053	0.999	1959.448	.044%	99.803%
87.0	8.911	0.983	1960.431	.043%	99.853%
88.0	8.799	0.970	1961.401	.043%	99.903%
89.0	8.716	0.960	1962.361	.042%	99.951%
90.0	8.687	0.954	1963.315	.042%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1680.80	74.34%	85.61%
0-40	1863.69	82.43%	94.93%
0-60	1923.99	85.10%	98.00%
0-90	1962.36	86.79%	99.95%
0-120	1962.36	86.79%	99.95%
0-180	1963.32	86.84%	100.00%
60-90	40.79	1.80%	2.08%
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%
0-27.21	1570.65	69.47%	80.00%

ZONAL LUMEN SUMMARY

0-10	497.21
10-20	714.87
20-30	468.73
30-40	182.89
40-50	31.45
50-60	28.85
60-70	17.53
70-80	11.71
80-90	9.13
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: ———

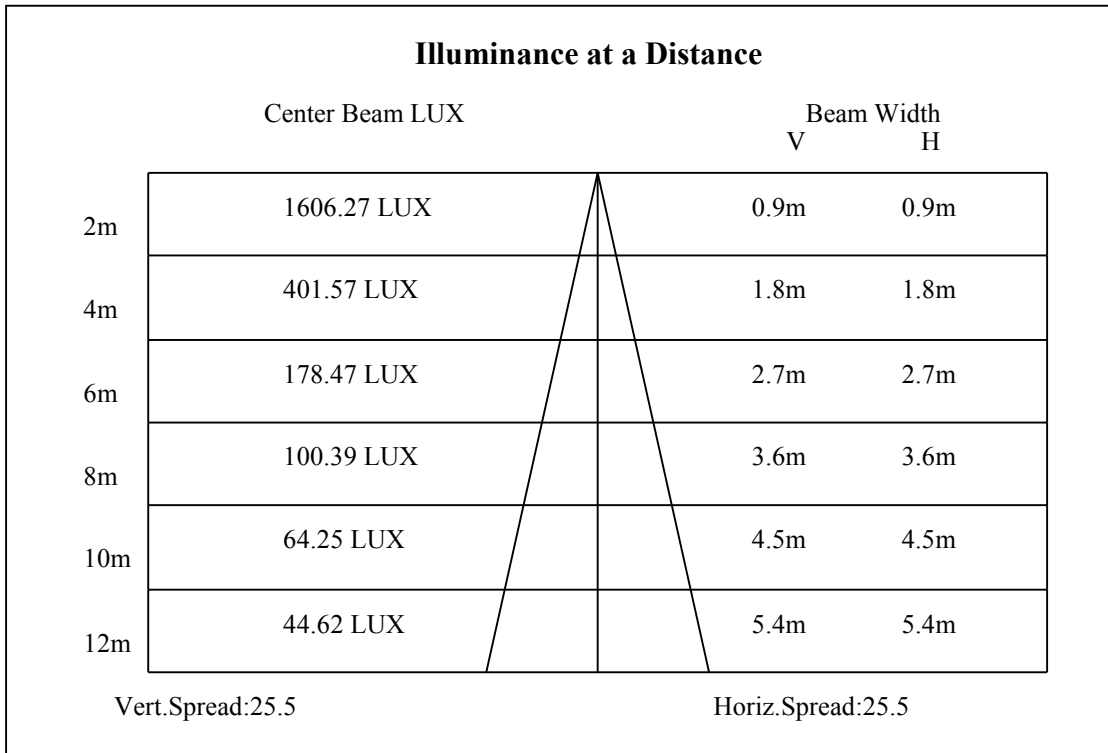
C90/C270: ———

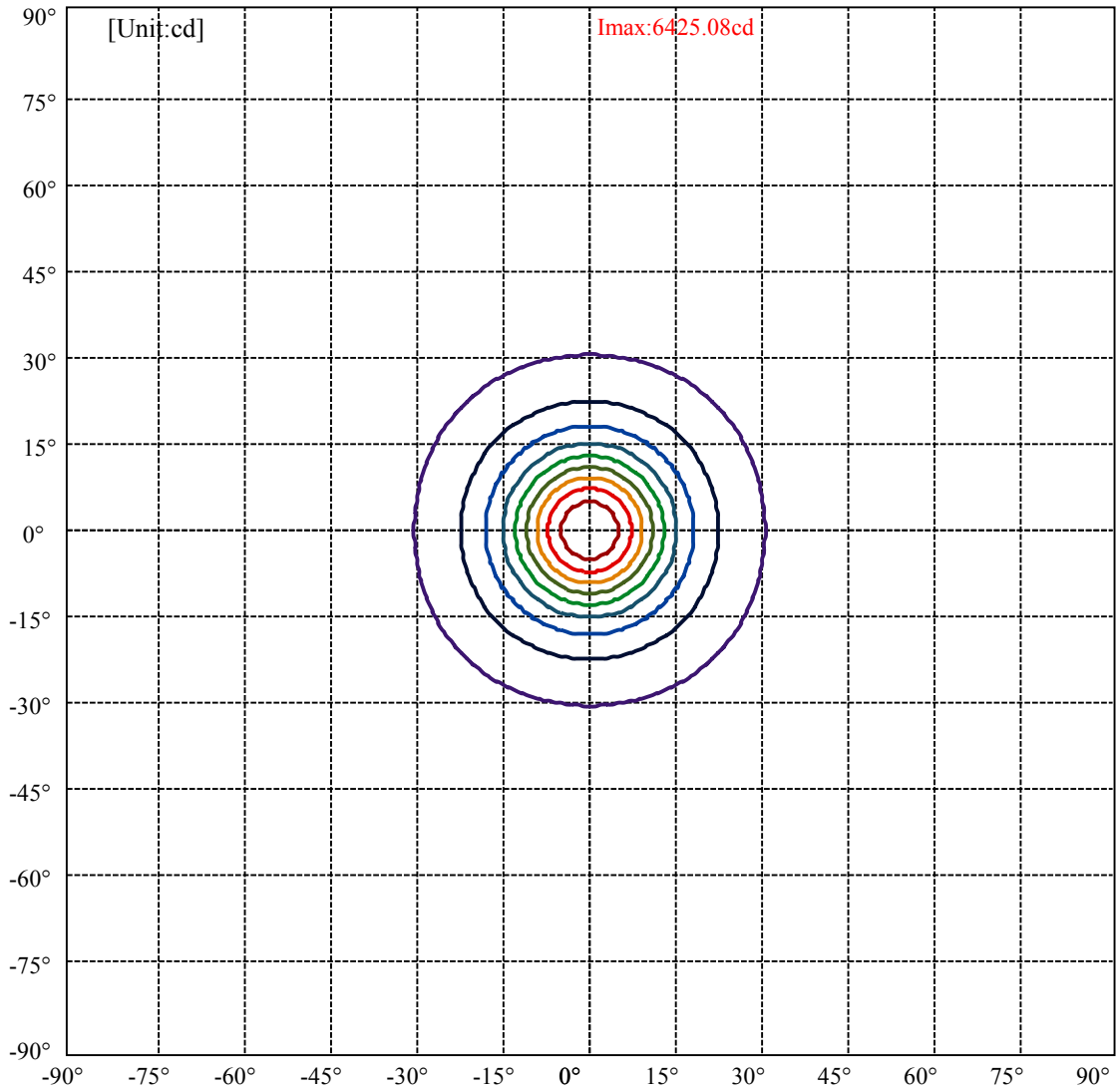
Field angle(10%Imax):C0/180Left:30.1 Right:30.1

:C90/270Left:30.1 Right:30.1

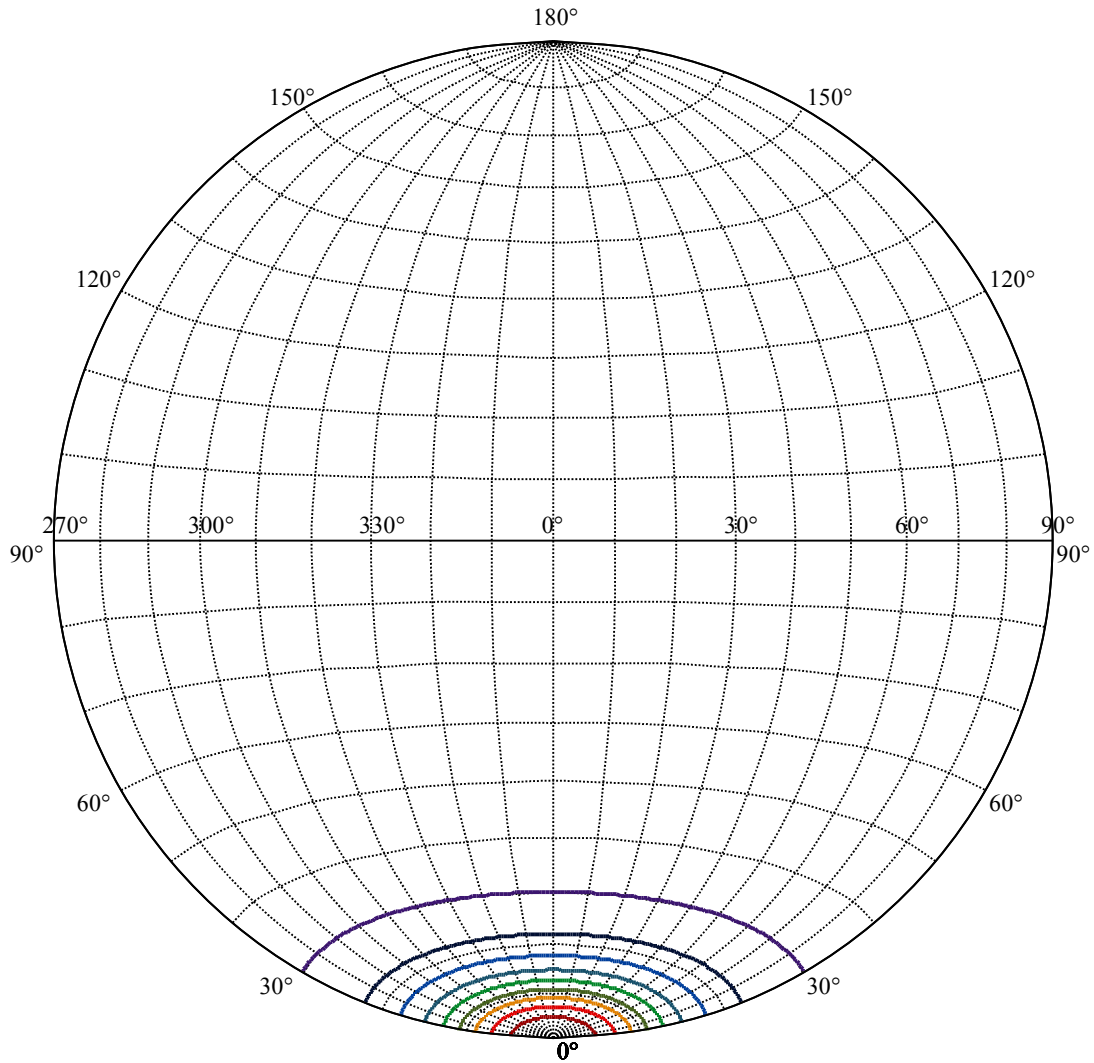
Beam Angle(50%Imax):C0/180Left:12.7 Right:12.7

:C90/270Left:12.7 Right:12.7





(10%Imax) 642.508	—
(20%Imax) 1285.02	—
(30%Imax) 1927.52	—
(40%Imax) 2570.03	—
(50%Imax) 3212.54	—
(60%Imax) 3855.05	—
(70%Imax) 4497.56	—
(80%Imax) 5140.06	—
(90%Imax) 5782.57	—



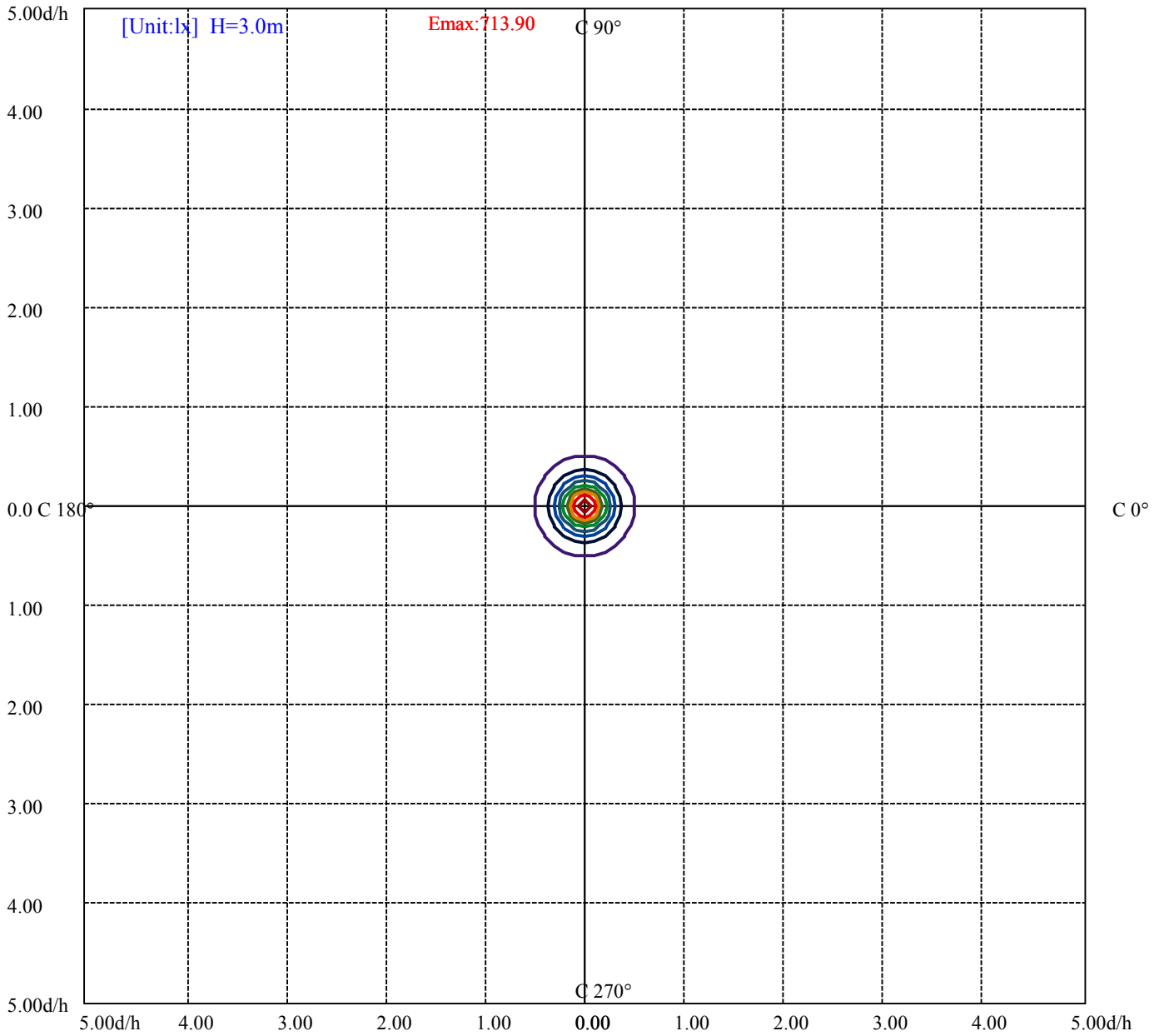
House

[Unit:cd]

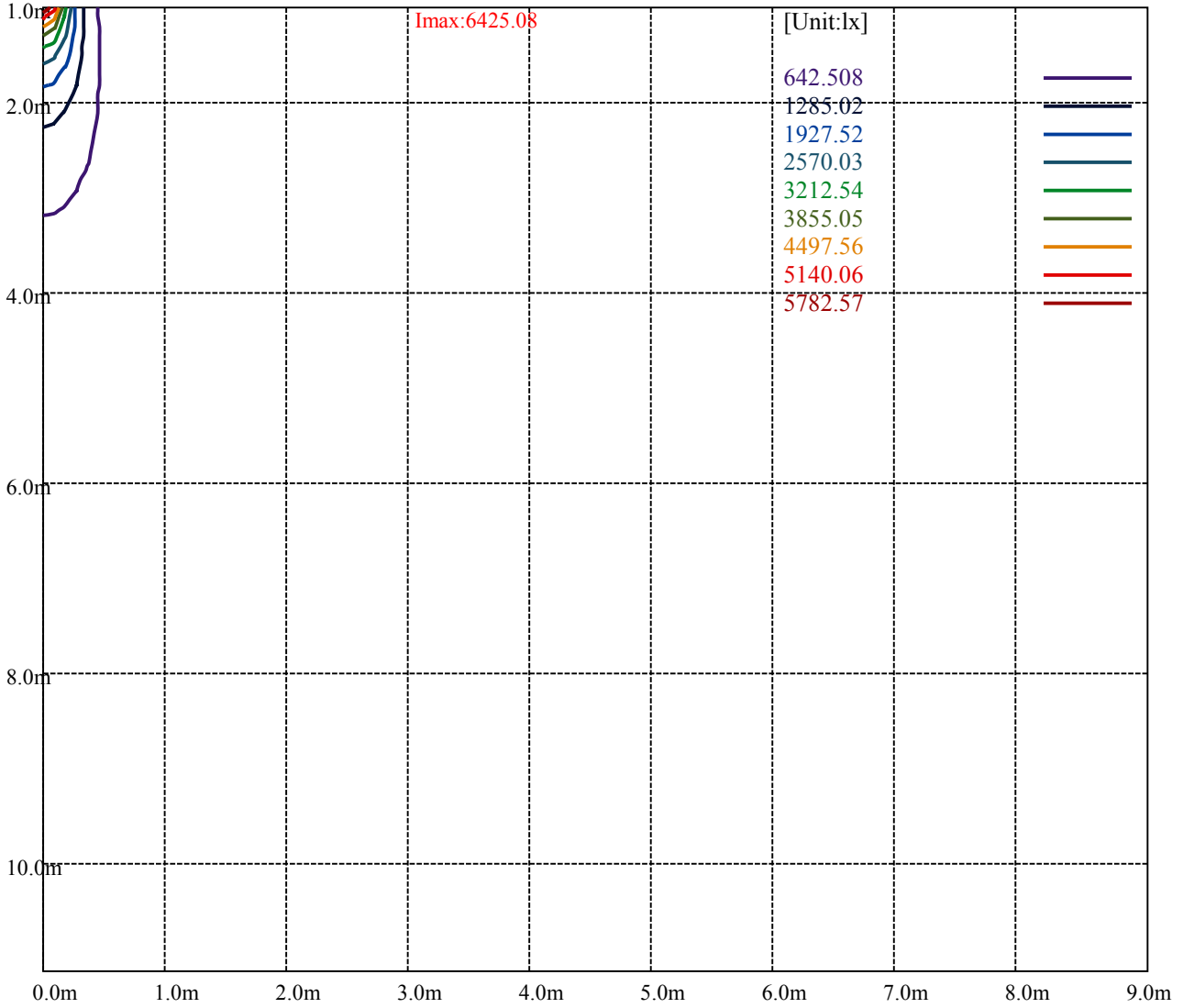
Road

Imax:6425.08

(10%Imax)	642.508	—
(20%Imax)	1285.02	—
(30%Imax)	1927.52	—
(40%Imax)	2570.03	—
(50%Imax)	3212.54	—
(60%Imax)	3855.05	—
(70%Imax)	4497.56	—
(80%Imax)	5140.06	—
(90%Imax)	5782.57	—



- (10%Emax) 71.38978
- (20%Emax) 142.78
- (30%Emax) 214.1689
- (40%Emax) 285.5589
- (50%Emax) 356.9489
- (60%Emax) 428.3389
- (70%Emax) 499.7278
- (80%Emax) 571.1178
- (90%Emax) 642.5078



Luminance Table

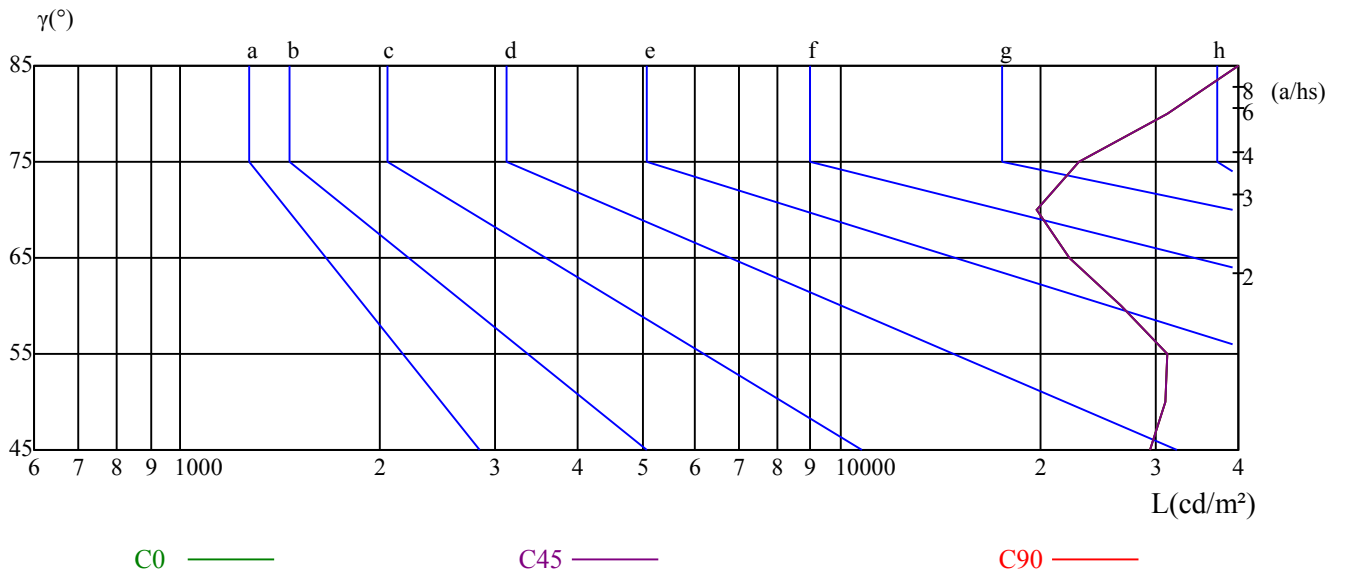
γ	45	50	55	60	65	70	75	80	85
C0	29329	31064	31277	26645	22118	19854	22974	31242	57194
C45	29329	31064	31277	26645	22118	19854	22974	31242	57194
C90	29329	31064	31277	26645	22118	19854	22974	31242	57194

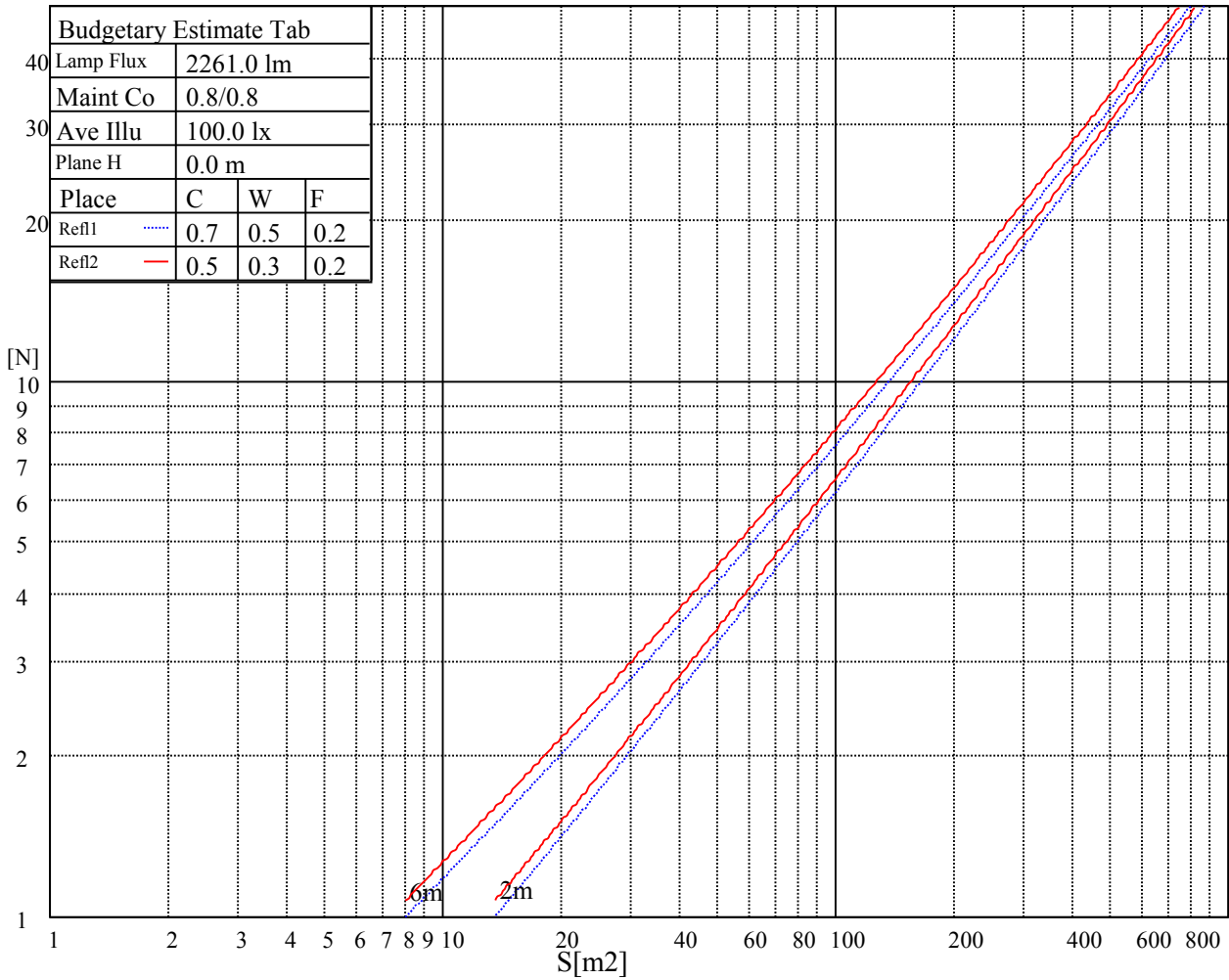
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
22118	22118	22118	22974	22974	22974	57194	57194	57194

Glare Table

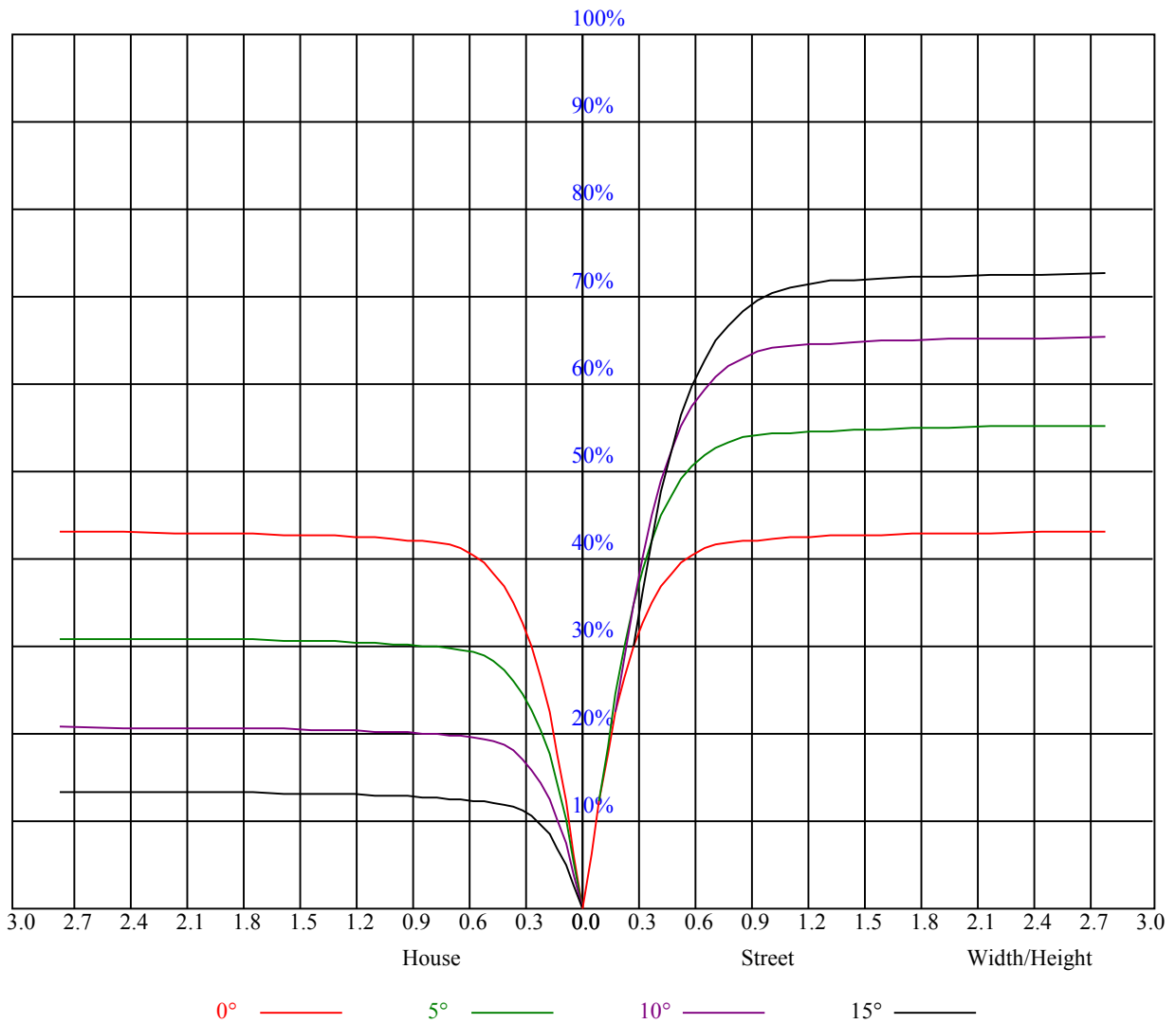
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.03	1.03	1.03	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.89	0.89	0.89	0.87
1	0.97	0.95	0.93	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.84	0.82
2	0.91	0.88	0.85	0.90	0.87	0.85	0.87	0.85	0.83	0.84	0.83	0.81	0.82	0.81	0.79	0.78
3	0.86	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.75	0.74
4	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.76	0.74	0.72	0.71
5	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.72	0.69	0.73	0.71	0.69	0.67
6	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.68	0.66	0.71	0.68	0.66	0.65
7	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
8	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.60
9	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.57
10	0.64	0.59	0.57	0.63	0.59	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.55



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	6447.34	6458.69	6403.12	6290.79	6139.61	5891.64	5661.59	5389.11	5058.68
45.0	6423.44	6315.88	6144.39	5915.54	5690.87	5389.71	5061.07	4741.39	4460.55
90.0	6390.57	6264.49	6084.64	5846.82	5612.59	5300.68	4957.10	4638.62	4266.95
135.0	6438.97	6386.99	6241.19	6087.03	5889.25	5623.94	5308.45	5007.29	4654.75
180.0	6447.34	6394.16	6270.47	6087.63	5898.81	5620.36	5338.92	4994.74	4633.24
225.0	6423.44	6477.81	6465.26	6407.90	6281.82	6128.85	5929.88	5638.88	5358.04
270.0	6390.57	6449.73	6464.07	6424.03	6326.04	6169.49	5938.84	5709.39	5417.80
315.0	6438.97	6444.35	6398.94	6289.59	6137.22	5929.88	5672.94	5392.70	5063.46
360.0	6447.34	6458.69	6403.12	6290.79	6139.61	5891.64	5661.59	5389.11	5058.68
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4706.74	4384.67	4016.59	3673.61	3303.74	2964.34	2693.06	2419.99	2183.37
45.0	4005.24	3645.52	3357.52	2969.12	2663.19	2448.67	2197.11	1987.98	1831.43
90.0	3929.35	3549.32	3186.62	2895.03	2629.13	2353.07	2154.69	1972.44	1766.89
135.0	4265.76	3922.18	3543.35	3223.07	2889.65	2592.08	2373.98	2173.81	1934.80
180.0	4296.83	3906.05	3530.20	3205.74	2912.36	2565.19	2372.79	2167.24	1955.11
225.0	5065.25	4657.14	4320.73	3964.01	3618.04	3205.15	2914.15	2656.61	2394.30
270.0	5083.18	4785.01	4406.18	4066.78	3675.40	3298.96	2996.01	2696.05	2426.57
315.0	4756.93	4379.29	3994.48	3648.51	3318.08	2942.83	2676.93	2441.50	2175.60
360.0	4706.74	4384.67	4016.59	3673.61	3303.74	2964.34	2693.06	2419.99	2183.37
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1996.94	1826.65	1636.63	1499.20	1373.12	1234.49	1133.51	1046.87	961.42
45.0	1646.19	1508.76	1385.67	1236.89	1137.10	1042.09	956.05	899.88	843.11
90.0	1613.33	1474.70	1336.67	1180.90	1107.52	1013.23	942.78	880.34	813.77
135.0	1779.44	1627.07	1453.19	1325.92	1214.18	1106.62	1012.81	943.50	876.58
180.0	1766.89	1613.93	1461.56	1324.12	1184.66	1114.39	1021.24	944.33	887.03
225.0	2161.86	1973.64	1787.21	1616.32	1480.68	1342.05	1183.65	1113.85	1020.46
270.0	2217.43	2025.03	1814.70	1659.94	1519.52	1391.65	1248.24	1147.26	1058.82
315.0	1992.76	1821.87	1649.18	1492.03	1368.94	1183.65	1124.13	1036.00	956.11
360.0	1996.94	1826.65	1636.63	1499.20	1373.12	1234.49	1133.51	1046.87	961.42
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	889.72	834.75	767.82	699.11	616.65	535.39	460.10	381.82	305.93
45.0	767.23	694.93	613.06	529.41	447.55	374.65	308.32	232.32	176.33
90.0	756.71	674.49	576.97	512.08	436.67	344.06	288.07	227.90	166.95
135.0	826.38	758.86	677.60	600.52	515.67	433.21	360.31	304.14	225.39
180.0	831.52	776.31	696.24	611.33	536.58	452.93	371.66	304.62	242.24
225.0	954.25	897.49	833.67	780.13	708.37	615.99	541.54	467.39	385.70
270.0	969.19	907.65	854.47	793.52	718.23	645.93	562.87	487.58	406.92
315.0	896.53	836.66	774.16	704.73	633.50	537.42	460.99	389.11	304.14
360.0	889.72	834.75	767.82	699.11	616.65	535.39	460.10	381.82	305.93
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	265.90	184.22	122.79	83.89	59.87	49.30	44.34	41.59	39.20
45.0	118.73	79.23	56.83	49.65	46.43	43.26	40.81	39.97	39.32
90.0	113.53	75.05	54.67	47.68	45.23	42.48	40.69	39.80	39.08
135.0	163.19	113.29	81.50	53.54	46.43	44.52	40.99	39.56	39.02
180.0	171.31	121.54	80.97	56.94	47.44	44.16	40.81	39.32	38.72
225.0	309.64	247.80	182.25	124.58	83.95	57.12	47.44	43.50	40.03
270.0	329.84	304.74	195.03	134.32	90.29	60.95	46.49	43.32	40.75
315.0	239.61	180.04	123.27	80.01	55.45	45.95	43.20	40.33	38.72
360.0	265.90	184.22	122.79	83.89	59.87	49.30	44.34	41.59	39.20

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	38.30	37.88	37.17	36.87	36.99	36.75	36.45	36.39	35.79
45.0	38.42	37.94	38.12	37.47	37.17	37.17	36.33	35.61	34.54
90.0	38.30	38.00	38.00	37.70	37.23	36.99	36.21	35.61	34.42
135.0	38.42	38.00	37.70	37.70	37.47	36.81	36.69	35.67	35.02
180.0	38.30	37.70	37.58	37.70	37.52	36.99	36.87	36.21	35.61
225.0	38.30	37.82	37.23	36.81	36.75	36.69	36.21	35.91	35.97
270.0	38.72	37.76	37.47	36.69	36.57	36.69	36.57	35.97	35.97
315.0	38.00	37.76	37.41	37.35	37.29	37.29	36.93	37.11	36.39
360.0	38.30	37.88	37.17	36.87	36.99	36.75	36.45	36.39	35.79
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	35.13	34.06	32.63	31.19	29.70	27.96	25.99	24.32	22.71
45.0	32.74	31.43	29.76	27.55	26.17	24.38	22.47	21.27	19.60
90.0	32.45	31.37	29.34	27.31	25.87	23.72	22.23	20.91	19.24
135.0	33.70	32.27	30.77	28.68	26.89	25.51	23.12	21.75	20.55
180.0	34.00	32.57	31.37	29.34	27.37	25.93	23.60	22.17	20.97
225.0	35.02	34.30	33.10	31.61	30.12	28.08	26.35	25.04	23.00
270.0	35.37	34.72	33.70	32.21	30.83	29.28	26.95	25.57	23.96
315.0	35.73	34.66	33.28	31.43	29.88	27.96	26.35	24.56	22.77
360.0	35.13	34.06	32.63	31.19	29.70	27.96	25.99	24.32	22.71
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	21.03	19.54	18.22	16.97	15.66	14.52	13.62	12.85	12.25
45.0	18.11	17.21	15.66	14.46	13.62	12.91	12.25	11.95	11.65
90.0	17.87	16.91	15.06	14.10	13.50	12.61	12.07	11.83	11.59
135.0	18.70	17.27	16.31	14.94	13.86	13.09	12.37	11.89	11.59
180.0	19.00	17.87	16.85	15.06	14.16	13.56	12.43	12.01	11.77
225.0	21.51	20.55	18.58	17.21	16.43	15.00	13.86	13.21	12.31
270.0	22.11	20.91	19.36	17.81	16.91	15.54	14.28	13.62	12.85
315.0	21.45	19.84	18.22	17.27	16.07	14.70	13.80	13.09	12.43
360.0	21.03	19.54	18.22	16.97	15.66	14.52	13.62	12.85	12.25
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	11.83	11.59	11.29	11.11	10.93	10.76	10.52	10.34	10.16
45.0	11.35	11.17	10.99	10.76	10.58	10.40	10.16	9.98	9.86
90.0	11.29	11.11	10.93	10.70	10.52	10.34	10.16	9.92	9.74
135.0	11.35	11.11	10.93	10.70	10.52	10.34	10.16	9.98	9.80
180.0	11.47	11.29	11.05	10.88	10.64	10.52	10.28	10.04	9.92
225.0	11.89	11.59	11.29	11.17	10.99	10.76	10.64	10.46	10.16
270.0	12.19	11.89	11.65	11.35	11.17	10.99	10.76	10.64	10.40
315.0	12.01	11.77	11.53	11.29	11.05	10.88	10.70	10.46	10.22
360.0	11.83	11.59	11.29	11.11	10.93	10.76	10.52	10.34	10.16
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.92	9.80	9.56	9.44	9.32	9.14	8.96	8.78	8.72
45.0	9.62	9.50	9.32	9.20	9.02	8.84	8.72	8.60	8.60
90.0	9.62	9.44	9.32	9.20	9.02	8.84	8.78	8.66	8.66
135.0	9.62	9.44	9.38	9.26	9.14	8.96	8.84	8.84	8.66
180.0	9.74	9.56	9.38	9.26	9.14	8.96	8.84	8.72	8.60
225.0	10.04	9.86	9.68	9.50	9.38	9.20	9.02	8.90	8.78
270.0	10.16	9.98	9.80	9.56	9.38	9.26	9.08	8.96	8.90
315.0	10.04	9.86	9.68	9.44	9.32	9.20	9.02	8.90	8.78
360.0	9.92	9.80	9.56	9.44	9.32	9.14	8.96	8.78	8.72

Intensity data(cd)

C/ γ ($^{\circ}$)	90.0
0.0	8.66
45.0	8.60
90.0	8.66
135.0	8.66
180.0	8.66
225.0	8.72
270.0	8.78
315.0	8.72
360.0	8.66