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LumCAT: 2-2166-M  
Luminaire: 92.70.278.00  
Report No: 221221-B006  
Test No: 221221-C006  
LampCAT: CREE CXA 1830 LES12  
Lamp flux(lm): -1.0  
Number of Lamps: 1  
Length(mm): 0  
Phm Type: C

Voltage(V): 34.7900  
Current(A): 0.4310  
Power (W): 14.9940  
PF: 0.0000  
Ballast type: DC  
Width(mm): 0  
Height(mm): 0

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### Photometric Results

Lumens(lm): 1594.95  
Efficiency(%): 0.00%  
Lumens(lm)/Power(W): 106.37  
Central intensity(cd): 4505.369  
Maximum intensity(cd): 4505.369  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=35.9  
                                  [C90/270]Total=35.9  
Field angle(10%Imax): [C0/180]Total=54.6  
                                  [C90/270]Total=54.6  
Maximum s/h(1/2): C0\_180=0.59 C90\_270=0.59  
Maximum s/h(1/4): C0\_180=0.57 C90\_270=0.57  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 0.00%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.493%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2022/12/21  
Humidity(%): 65.0%

Operator: NT07  
Distance(m): 7.73

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4505.369	0.000	0	.000%	.000%
1.0	4495.584	4.307	4.307	.000%	.270%
2.0	4466.081	12.863	17.169	.000%	1.076%
3.0	4420.968	21.255	38.424	.000%	2.409%
4.0	4355.015	29.376	67.8	.000%	4.251%
5.0	4280.474	37.149	104.95	.000%	6.580%
6.0	4174.114	44.431	149.381	.000%	9.366%
7.0	4061.255	51.117	200.498	.000%	12.571%
8.0	3945.260	57.301	257.799	.000%	16.163%
9.0	3811.040	62.861	320.659	.000%	20.105%
10.0	3649.110	67.512	388.171	.000%	24.338%
11.0	3506.076	71.495	459.666	.000%	28.820%
12.0	3350.196	74.949	534.615	.000%	33.519%
13.0	3166.605	77.338	611.953	.000%	38.368%
14.0	3010.500	79.066	691.019	.000%	43.325%
15.0	2839.458	80.311	771.33	.000%	48.361%
16.0	2653.328	80.485	851.815	.000%	53.407%
17.0	2445.163	79.397	931.212	.000%	58.385%
18.0	2242.601	77.291	1008.503	.000%	63.231%
19.0	2031.599	74.362	1082.865	.000%	67.893%
20.0	1825.003	70.587	1153.452	.000%	72.319%
21.0	1567.169	65.137	1218.588	.000%	76.403%
22.0	1397.665	59.580	1278.168	.000%	80.139%
23.0	1209.361	54.702	1332.871	.000%	83.568%
24.0	1003.953	48.391	1381.262	.000%	86.602%
25.0	812.550	41.303	1422.565	.000%	89.192%
26.0	650.590	34.538	1457.102	.000%	91.357%
27.0	499.094	28.127	1485.23	.000%	93.121%
28.0	345.775	21.390	1506.62	.000%	94.462%
29.0	224.297	14.915	1521.535	.000%	95.397%
30.0	163.402	10.468	1532.002	.000%	96.053%
31.0	89.667	7.043	1539.045	.000%	96.495%
32.0	60.283	4.296	1543.341	.000%	96.764%
33.0	44.852	3.097	1546.438	.000%	96.959%
34.0	33.126	2.360	1548.798	.000%	97.106%
35.0	25.029	1.806	1550.604	.000%	97.220%
36.0	20.219	1.441	1552.045	.000%	97.310%
37.0	16.671	1.203	1553.248	.000%	97.385%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	14.505	1.041	1554.289	.000%	97.451%
39.0	12.922	0.936	1555.225	.000%	97.509%
40.0	11.809	0.863	1556.087	.000%	97.563%
41.0	11.122	0.817	1556.904	.000%	97.615%
42.0	10.524	0.786	1557.69	.000%	97.664%
43.0	10.068	0.763	1558.453	.000%	97.712%
44.0	9.755	0.748	1559.201	.000%	97.759%
45.0	9.471	0.739	1559.94	.000%	97.805%
46.0	9.202	0.730	1560.67	.000%	97.851%
47.0	9.053	0.726	1561.396	.000%	97.896%
48.0	8.873	0.725	1562.121	.000%	97.942%
49.0	8.724	0.723	1562.844	.000%	97.987%
50.0	8.589	0.722	1563.565	.000%	98.032%
51.0	8.477	0.722	1564.288	.000%	98.078%
52.0	8.388	0.724	1565.011	.000%	98.123%
53.0	8.291	0.726	1565.737	.000%	98.168%
54.0	8.223	0.728	1566.465	.000%	98.214%
55.0	8.171	0.732	1567.196	.000%	98.260%
56.0	8.104	0.735	1567.932	.000%	98.306%
57.0	8.067	0.739	1568.671	.000%	98.352%
58.0	8.022	0.744	1569.415	.000%	98.399%
59.0	7.970	0.748	1570.163	.000%	98.446%
60.0	7.947	0.752	1570.915	.000%	98.493%
61.0	7.895	0.756	1571.671	.000%	98.541%
62.0	7.865	0.759	1572.43	.000%	98.588%
63.0	7.828	0.763	1573.193	.000%	98.636%
64.0	7.828	0.768	1573.962	.000%	98.684%
65.0	7.798	0.773	1574.735	.000%	98.733%
66.0	7.775	0.777	1575.512	.000%	98.781%
67.0	7.768	0.782	1576.293	.000%	98.830%
68.0	7.738	0.785	1577.079	.000%	98.880%
69.0	7.723	0.789	1577.868	.000%	98.929%
70.0	7.723	0.793	1578.661	.000%	98.979%
71.0	7.693	0.797	1579.458	.000%	99.029%
72.0	7.671	0.799	1580.257	.000%	99.079%
73.0	7.678	0.803	1581.059	.000%	99.129%
74.0	7.656	0.806	1581.865	.000%	99.180%
75.0	7.641	0.808	1582.674	.000%	99.230%

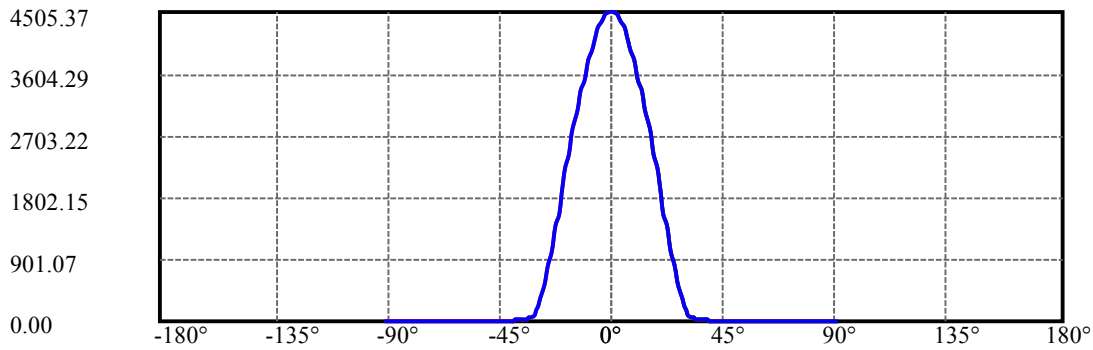
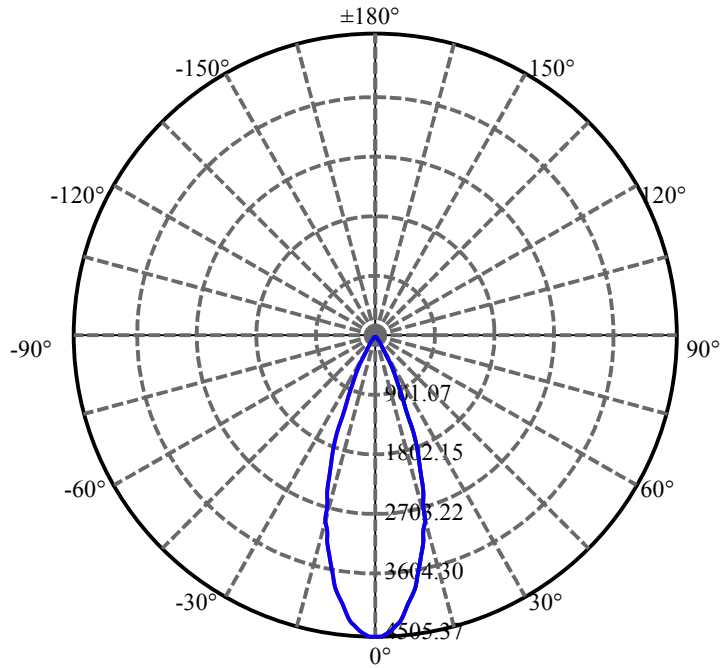
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.641	0.811	1583.485	.000%	99.281%
77.0	7.626	0.814	1584.299	.000%	99.332%
78.0	7.626	0.816	1585.115	.000%	99.383%
79.0	7.611	0.819	1585.934	.000%	99.435%
80.0	7.604	0.820	1586.754	.000%	99.486%
81.0	7.574	0.821	1587.575	.000%	99.538%
82.0	7.551	0.820	1588.395	.000%	99.589%
83.0	7.559	0.821	1589.217	.000%	99.641%
84.0	7.514	0.821	1590.038	.000%	99.692%
85.0	7.499	0.819	1590.857	.000%	99.743%
86.0	7.484	0.819	1591.676	.000%	99.795%
87.0	7.462	0.818	1592.494	.000%	99.846%
88.0	7.469	0.818	1593.312	.000%	99.897%
89.0	7.462	0.818	1594.13	.000%	99.949%
90.0	7.462	0.818	1594.948	.000%	100.000%

## ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1532.00	N.A.	96.05%
0-40	1556.09	N.A.	97.56%
0-60	1570.91	N.A.	98.49%
0-90	1594.13	N.A.	99.95%
0-120	1594.13	N.A.	99.95%
0-180	1594.95	N.A.	100.00%
60-90	23.97	N.A.	1.50%
90-120	0.00	N.A.	0.00%
90-130	0.00	N.A.	0.00%
90-150	0.00	N.A.	0.00%
90-180	0.00	N.A.	0.00%
0-21.96	1275.96	N.A.	80.00%

## ZONAL LUMEN SUMMARY

0-10	388.17
10-20	765.28
20-30	378.55
30-40	24.08
40-50	7.48
50-60	7.35
60-70	7.75
70-80	8.09
80-90	7.38
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: —————

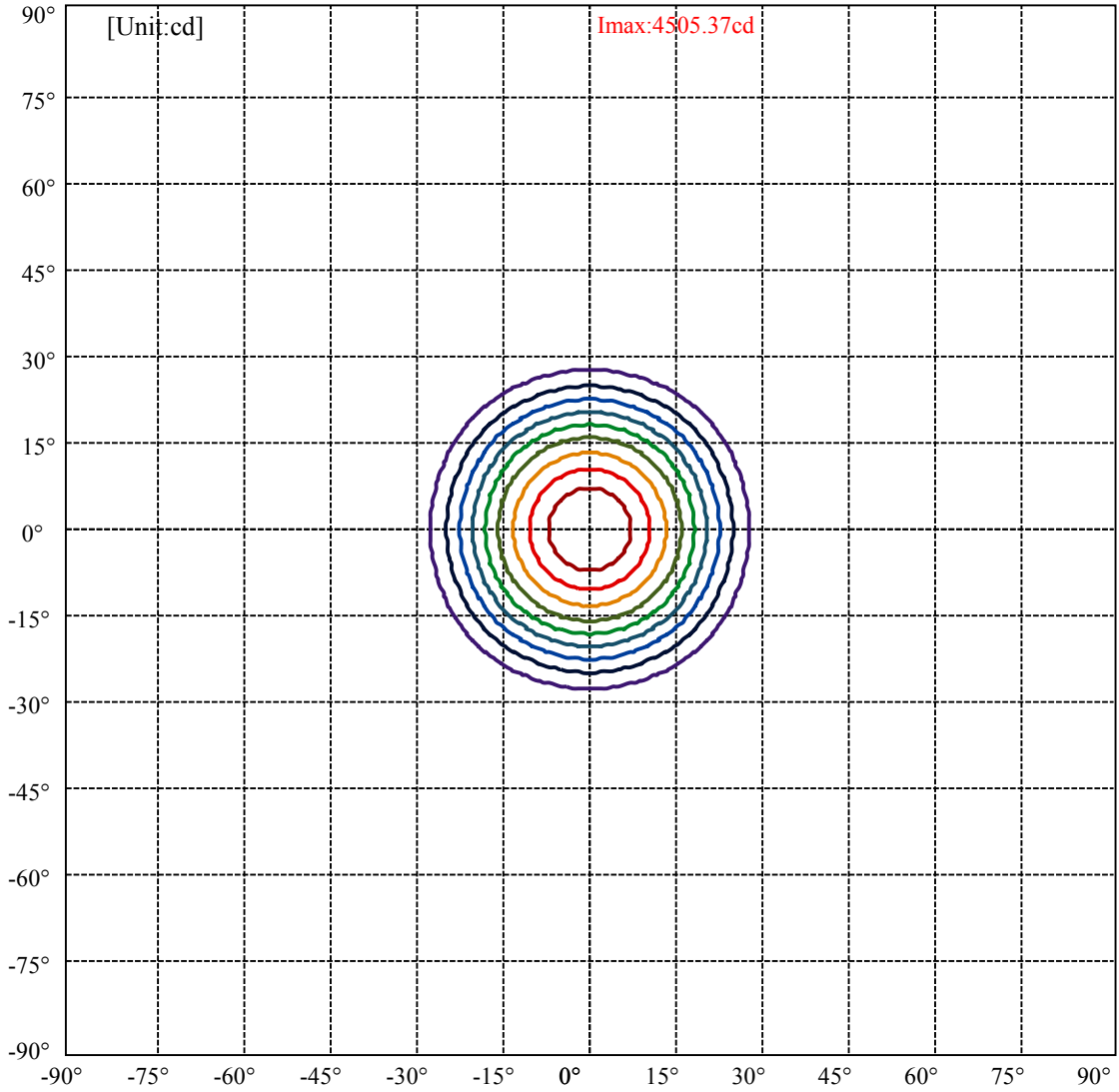
Field angle(10%Imax):C0/180Left:27.3 Right:27.3

:C90/270Left:27.3 Right:27.3

Beam Angle(50%Imax):C0/180Left:18.0 Right:18.0

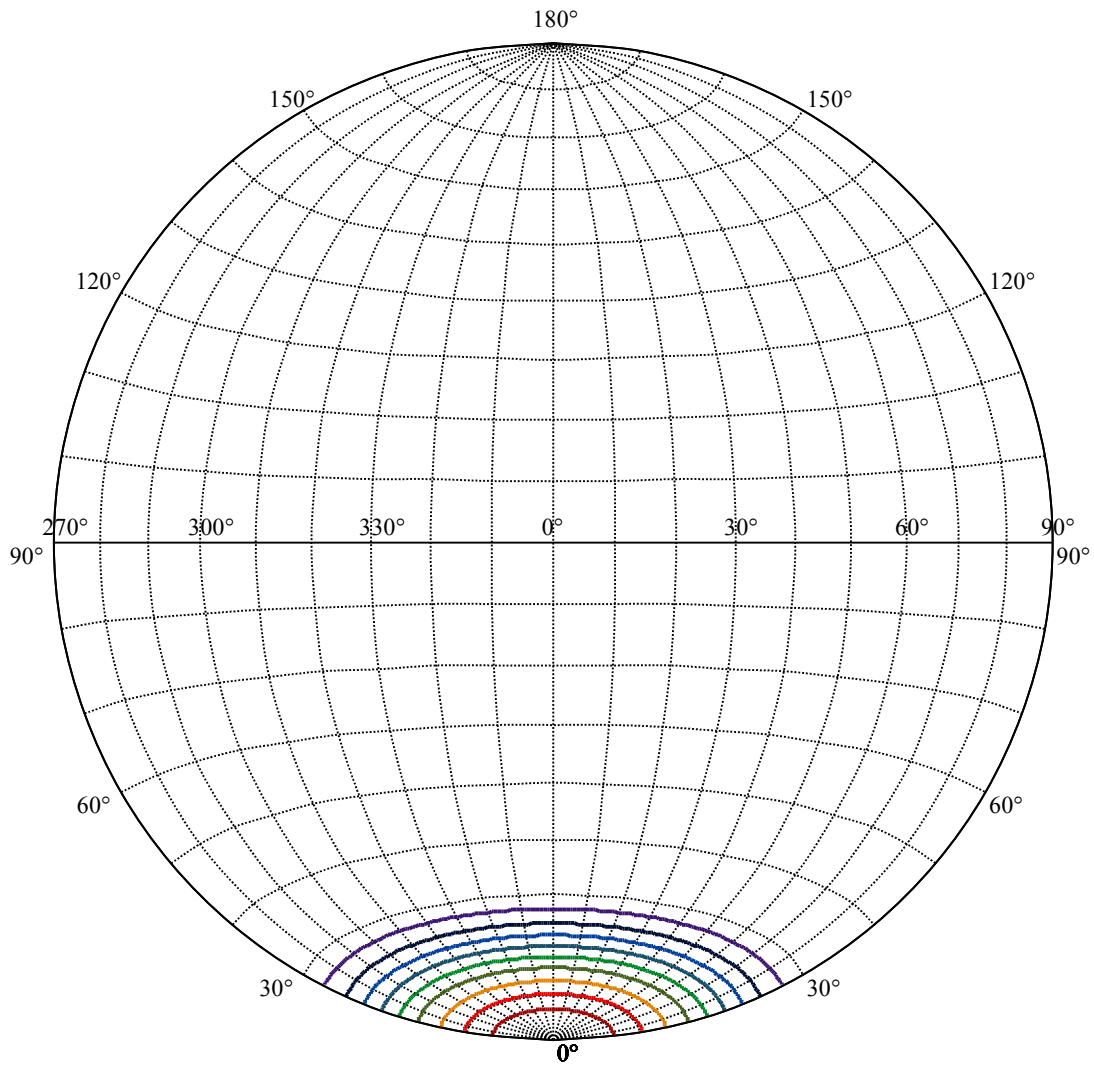
:C90/270Left:18.0 Right:18.0





(10%Imax) 450.537	—
(20%Imax) 901.074	—
(30%Imax) 1351.61	—
(40%Imax) 1802.15	—
(50%Imax) 2252.68	—
(60%Imax) 2703.22	—
(70%Imax) 3153.76	—
(80%Imax) 3604.29	—
(90%Imax) 4054.83	—





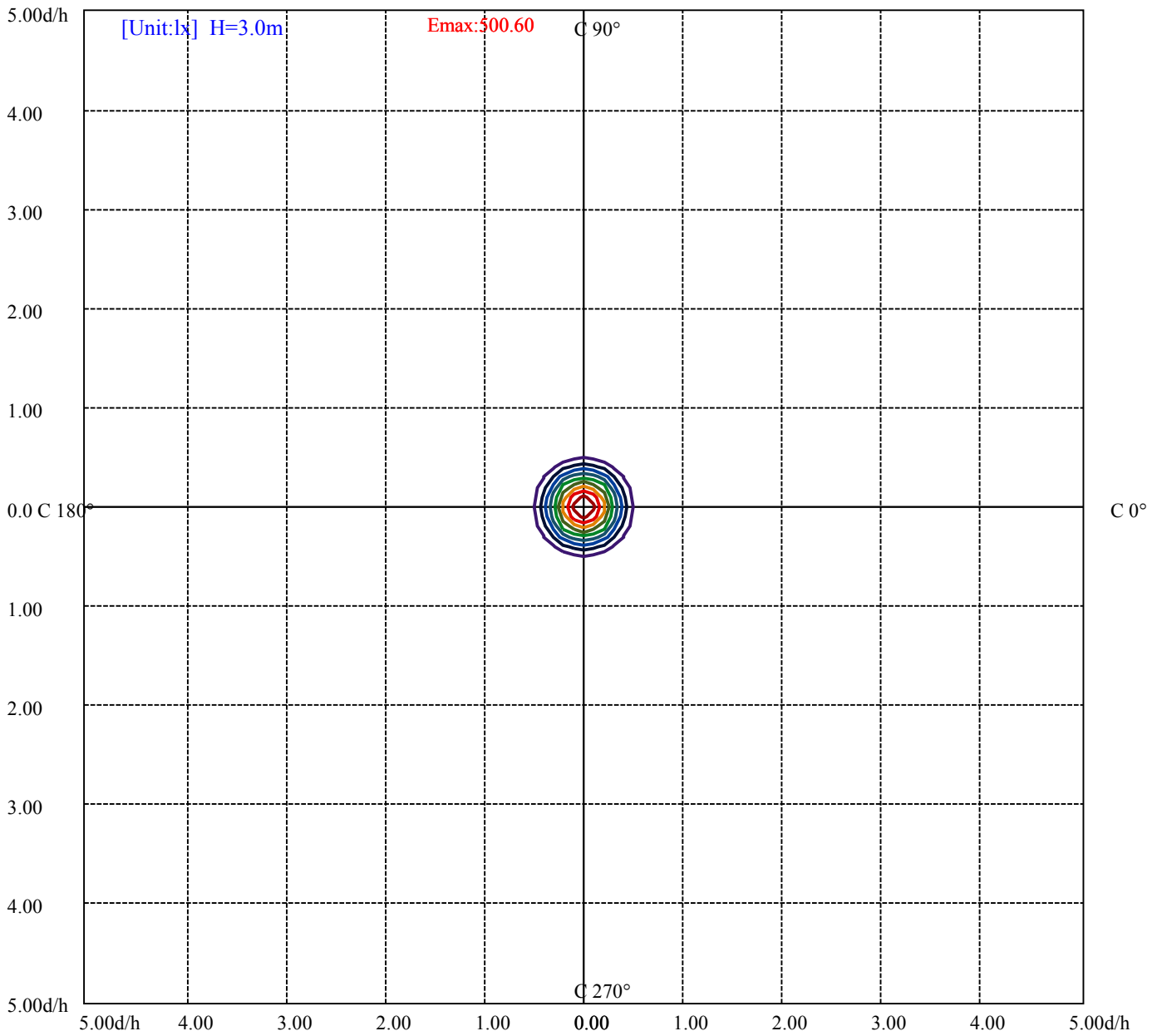
House

[Unit:cd]

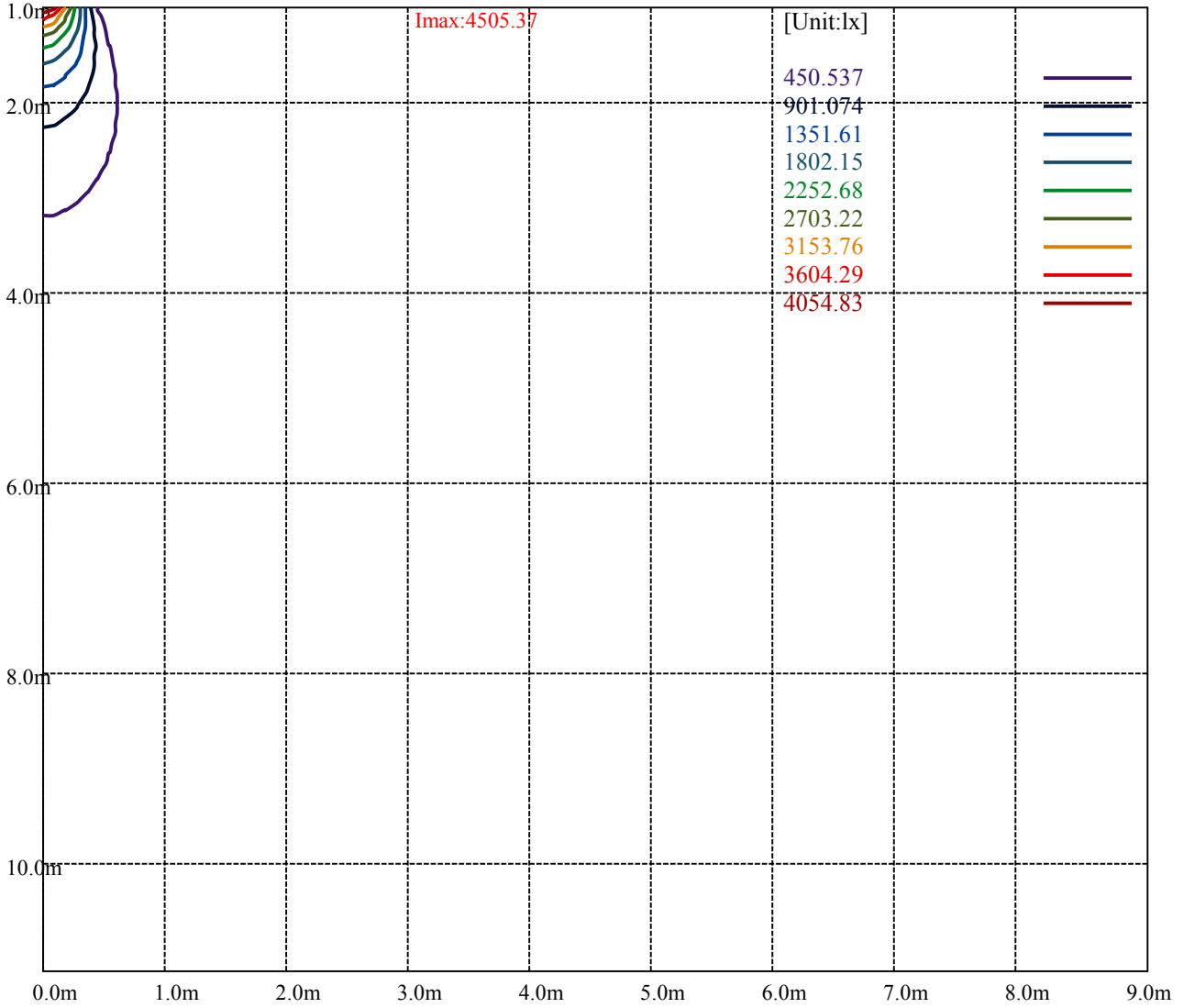
Road

**Imax:4505.37**

(10%Imax) 450.537	—
(20%Imax) 901.074	—
(30%Imax) 1351.61	—
(40%Imax) 1802.15	—
(50%Imax) 2252.68	—
(60%Imax) 2703.22	—
(70%Imax) 3153.76	—
(80%Imax) 3604.29	—
(90%Imax) 4054.83	—



(10%Emax) 50.05967	—
(20%Emax) 100.1192	—
(30%Emax) 150.1789	—
(40%Emax) 200.2389	—
(50%Emax) 250.2978	—
(60%Emax) 300.3578	—
(70%Emax) 350.4178	—
(80%Emax) 400.4767	—
(90%Emax) 450.5367	—



Luminance Table

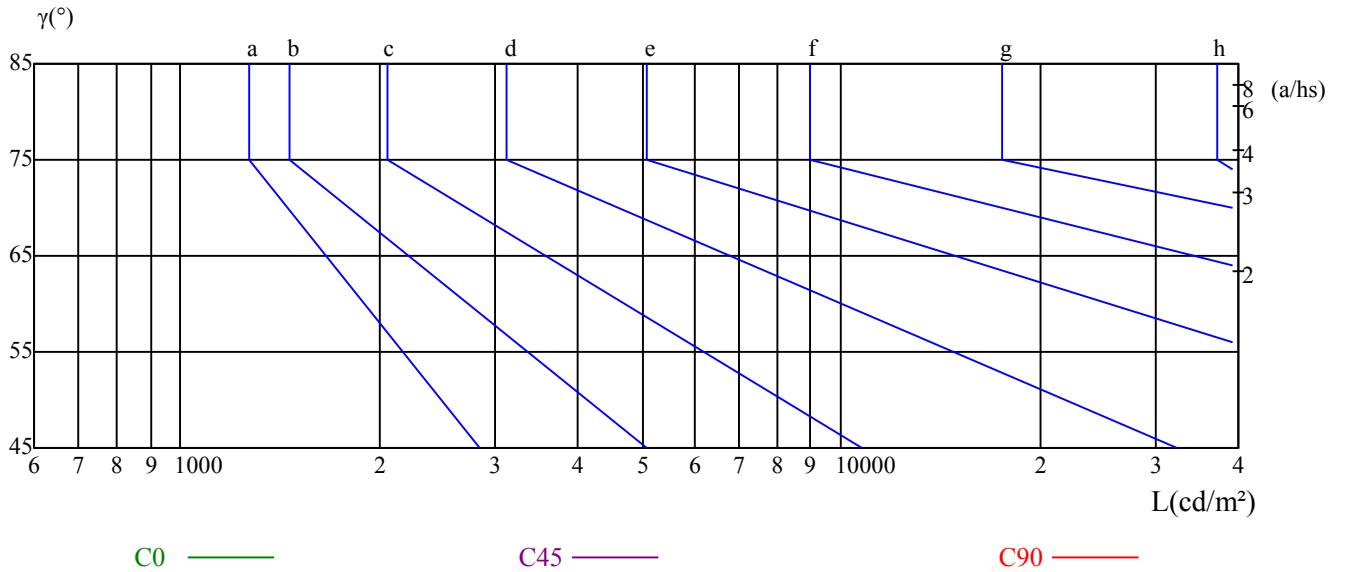
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

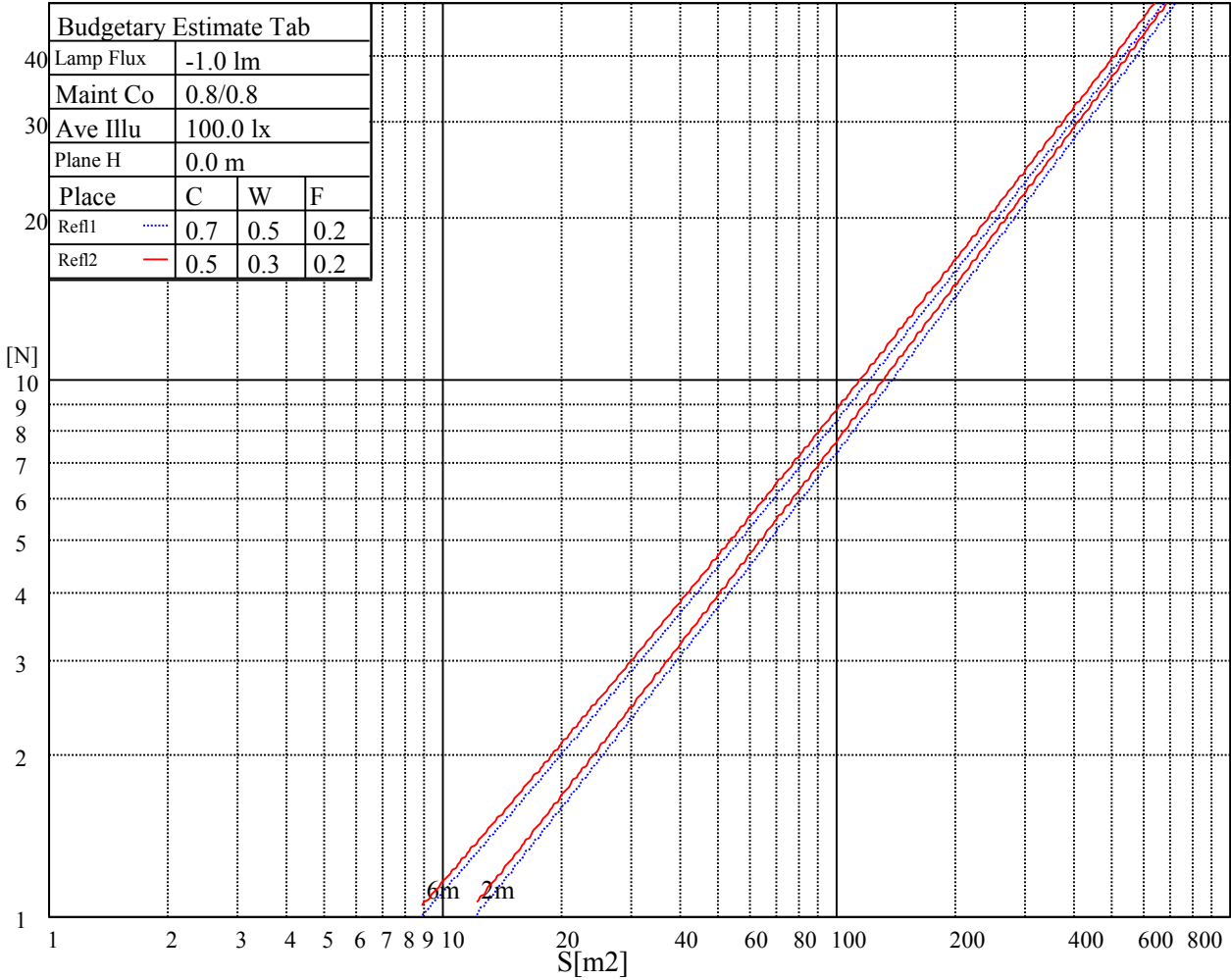
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

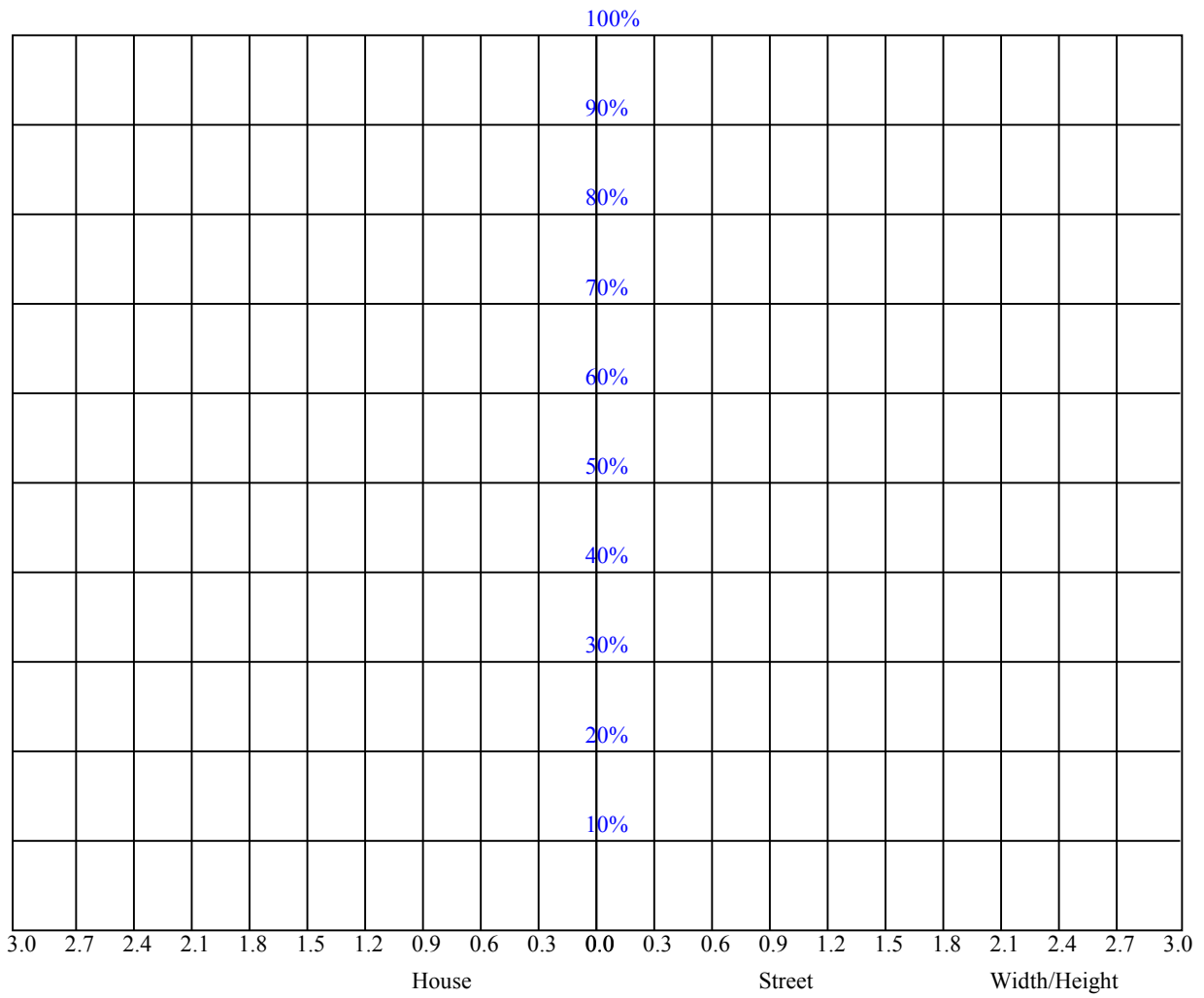
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



## 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	4506.56	4517.32	4511.94	4477.88	4431.87	4372.72	4279.50	4189.28	4085.90
45.0	4513.14	4476.09	4422.91	4369.73	4275.92	4185.09	4078.73	3931.14	3803.87
90.0	4492.82	4458.16	4402.00	4337.46	4245.44	4148.05	4007.63	3882.15	3748.30
135.0	4508.95	4487.44	4445.02	4382.88	4311.77	4226.92	4096.06	3980.14	3855.26
180.0	4506.56	4474.30	4423.51	4363.16	4278.31	4185.69	4063.79	3928.16	3796.70
225.0	4513.14	4522.70	4513.73	4479.67	4441.43	4385.86	4282.49	4204.81	4102.63
270.0	4492.82	4513.73	4513.73	4495.81	4450.40	4397.22	4330.29	4226.32	4128.93
315.0	4508.95	4514.93	4495.81	4461.15	4404.98	4342.24	4254.41	4148.05	4040.49
360.0	4506.56	4517.32	4511.94	4477.88	4431.87	4372.72	4279.50	4189.28	4085.90

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3955.64	3814.03	3677.79	3517.06	3350.35	3199.17	3024.69	2868.74	2684.10
45.0	3667.04	3485.39	3337.20	3185.43	2995.41	2843.04	2679.32	2477.95	2254.48
90.0	3607.88	3424.44	3273.86	3122.09	2930.88	2770.74	2596.26	2381.75	2155.29
135.0	3703.48	3542.75	3392.77	3218.29	3042.62	2884.87	2694.86	2509.62	2281.96
180.0	3657.48	3474.03	3324.65	3170.49	2975.10	2813.76	2637.49	2421.19	2190.54
225.0	3971.78	3827.17	3688.55	3524.82	3352.14	3196.18	3019.31	2859.18	2663.19
270.0	4018.98	3867.21	3734.56	3592.94	3406.51	3252.35	3094.60	2917.14	2731.90
315.0	3906.05	3757.86	3619.23	3470.45	3279.84	3123.88	2969.12	2791.06	2599.85
360.0	3955.64	3814.03	3677.79	3517.06	3350.35	3199.17	3024.69	2868.74	2684.10

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2484.53	2297.50	2104.50	1857.72	1661.13	1471.12	1242.26	1058.22	876.58
45.0	2053.71	1821.87	1617.51	1404.19	1201.03	1024.76	822.80	631.59	479.22
90.0	1949.74	1723.27	1526.09	1177.91	1110.45	932.15	735.56	555.46	409.96
135.0	2044.74	1854.13	1639.02	1396.43	1218.36	1045.08	820.41	645.93	496.55
180.0	1982.60	1753.75	1554.17	1189.50	1120.49	962.32	765.26	561.86	432.61
225.0	2451.66	2253.88	2026.22	1800.95	1603.77	1417.34	1178.98	993.03	813.24
270.0	2555.03	2343.51	2148.12	1923.45	1699.97	1506.97	1299.03	1093.48	908.84
315.0	2418.80	2204.88	1984.39	1787.21	1566.12	1315.16	1167.33	960.83	787.72
360.0	2484.53	2297.50	2104.50	1857.72	1661.13	1471.12	1242.26	1058.22	876.58

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	702.10	500.73	359.11	312.51	141.14	90.29	66.68	48.28	35.07
45.0	337.01	234.95	116.34	77.38	54.14	39.14	30.06	23.18	18.70
90.0	283.05	157.51	97.04	66.86	46.13	34.90	27.01	21.15	17.33
135.0	369.27	305.93	120.22	78.22	55.33	40.21	30.71	23.48	18.70
180.0	301.39	158.29	101.94	68.30	45.29	35.49	27.43	21.93	17.33
225.0	645.21	449.88	314.30	202.56	107.85	70.27	51.03	36.51	27.19
270.0	731.97	524.63	381.82	302.95	153.21	92.02	66.03	47.32	34.48
315.0	622.74	434.28	303.60	198.44	114.25	79.95	59.87	43.14	31.43
360.0	702.10	500.73	359.11	312.51	141.14	90.29	66.68	48.28	35.07

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	26.95	20.85	17.21	14.58	12.85	11.83	10.99	10.46	10.10
45.0	15.95	13.92	12.67	11.71	10.99	10.52	10.10	9.74	9.50
90.0	15.00	13.27	12.19	11.35	10.76	10.40	9.98	9.62	9.38
135.0	15.83	13.86	12.61	11.65	10.99	10.52	10.16	9.74	9.50
180.0	14.94	13.32	12.13	11.35	10.76	10.28	9.86	9.56	9.26
225.0	21.81	17.81	15.24	13.62	12.31	11.53	10.82	10.34	9.98
270.0	26.83	21.09	17.69	15.06	13.32	12.25	11.41	10.76	10.34
315.0	24.44	19.24	16.31	14.04	12.49	11.65	10.88	10.34	9.98
360.0	26.95	20.85	17.21	14.58	12.85	11.83	10.99	10.46	10.10



## 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	9.74	9.38	9.26	9.02	8.84	8.72	8.54	8.48	8.37
45.0	9.26	9.02	8.90	8.78	8.66	8.48	8.43	8.37	8.25
90.0	9.20	8.96	8.84	8.66	8.60	8.48	8.37	8.31	8.25
135.0	9.20	9.02	8.90	8.78	8.60	8.48	8.37	8.31	8.19
180.0	9.08	8.90	8.78	8.60	8.48	8.43	8.31	8.25	8.13
225.0	9.68	9.38	9.14	8.96	8.78	8.60	8.54	8.43	8.37
270.0	9.98	9.62	9.44	9.20	9.02	8.84	8.72	8.54	8.48
315.0	9.62	9.32	9.14	8.96	8.78	8.66	8.54	8.43	8.31
360.0	9.74	9.38	9.26	9.02	8.84	8.72	8.54	8.48	8.37
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.31	8.19	8.19	8.13	8.07	8.07	8.01	7.95	7.89
45.0	8.19	8.19	8.07	8.01	8.01	7.95	7.95	7.89	7.89
90.0	8.13	8.13	8.07	8.01	7.95	7.95	7.89	7.89	7.83
135.0	8.19	8.13	8.01	8.01	8.01	7.89	7.89	7.83	7.77
180.0	8.13	8.07	8.01	8.01	7.95	7.89	7.89	7.83	7.83
225.0	8.25	8.25	8.13	8.13	8.07	8.01	8.01	7.89	7.95
270.0	8.37	8.25	8.25	8.19	8.13	8.07	8.01	8.01	7.95
315.0	8.25	8.19	8.13	8.07	8.01	7.95	7.95	7.89	7.83
360.0	8.31	8.19	8.19	8.13	8.07	8.07	8.01	7.95	7.89
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.89	7.89	7.83	7.83	7.83	7.77	7.77	7.77	7.71
45.0	7.83	7.83	7.83	7.77	7.83	7.77	7.77	7.77	7.77
90.0	7.77	7.77	7.77	7.77	7.77	7.71	7.65	7.71	7.65
135.0	7.77	7.77	7.77	7.71	7.71	7.65	7.65	7.65	7.65
180.0	7.77	7.77	7.77	7.77	7.71	7.77	7.71	7.71	7.65
225.0	7.89	7.89	7.83	7.77	7.77	7.77	7.77	7.77	7.77
270.0	7.89	7.89	7.83	7.83	7.83	7.77	7.77	7.77	7.71
315.0	7.83	7.83	7.77	7.77	7.71	7.71	7.71	7.65	7.65
360.0	7.89	7.89	7.83	7.83	7.83	7.77	7.77	7.77	7.71
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.65	7.65
45.0	7.71	7.71	7.71	7.65	7.65	7.65	7.65	7.65	7.65
90.0	7.65	7.65	7.59	7.59	7.59	7.59	7.59	7.59	7.59
135.0	7.65	7.65	7.59	7.59	7.59	7.59	7.59	7.59	7.53
180.0	7.65	7.65	7.65	7.65	7.65	7.65	7.59	7.59	7.59
225.0	7.65	7.71	7.65	7.65	7.65	7.65	7.65	7.59	7.65
270.0	7.71	7.71	7.71	7.65	7.65	7.59	7.65	7.65	7.59
315.0	7.65	7.65	7.65	7.65	7.65	7.59	7.59	7.59	7.59
360.0	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.65	7.65
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.65	7.59	7.59	7.53	7.53	7.53	7.47	7.47	7.47
45.0	7.59	7.53	7.53	7.47	7.47	7.47	7.41	7.41	7.47
90.0	7.53	7.53	7.53	7.47	7.47	7.47	7.47	7.47	7.47
135.0	7.53	7.53	7.53	7.47	7.47	7.47	7.47	7.47	7.47
180.0	7.53	7.53	7.53	7.47	7.47	7.41	7.53	7.53	7.47
225.0	7.65	7.59	7.65	7.59	7.53	7.47	7.47	7.47	7.41
270.0	7.59	7.59	7.59	7.59	7.53	7.53	7.47	7.47	7.47
315.0	7.53	7.53	7.53	7.53	7.53	7.53	7.41	7.47	7.47
360.0	7.65	7.59	7.59	7.53	7.53	7.53	7.47	7.47	7.47

Intensity data(cd)

C/γ(°)	90.0
0.0	7.41
45.0	7.47
90.0	7.47
135.0	7.47
180.0	7.47
225.0	7.47
270.0	7.47
315.0	7.47
360.0	7.41