



NATA LIGHTNG CO.,LTD.
www.nata.cn
Email:info@nata.cn
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,Ching

Nata

LumCAT: 1-0920-M
Luminaire: 99.02.73.179+92.76.853.00
Report No: 220606-B009
Test No: 220606-C009
LampCAT: CREE CXA1512
Lamp flux(lm): 1404.6
Number of Lamps: 1
Length(mm): 43
Phm Type: C

Voltage(V): 38.0300
Current(A): 0.3610
Power (W): 13.7280
PF: 0.0000
Ballast type: DC
Width(mm): 43
Height(mm): 0

Photometric Results

Lumens(lm): 1034.16
Efficiency(%): 73.62%
Lumens(lm)/Power(W): 75.33
Central intensity(cd): 3915.757
Maximum intensity(cd): 3915.757
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=30.7
 [C90/270]Total=30.7
Field angle(10%Imax): [C0/180]Total=47.0
 [C90/270]Total=47.0
Maximum s/h(1/2): C0_180=0.51 C90_270=0.51
Maximum s/h(1/4): C0_180=0.49 C90_270=0.49
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 73.62%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.573%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3915.757	0.000	0	.000%	.000%
1.0	3905.748	3.742	3.742	.266%	.362%
2.0	3875.797	11.169	14.911	.795%	1.442%
3.0	3827.099	18.423	33.334	1.312%	3.223%
4.0	3757.113	25.387	58.721	1.807%	5.678%
5.0	3673.907	31.968	90.689	2.276%	8.769%
6.0	3559.555	38.014	128.702	2.706%	12.445%
7.0	3435.045	43.415	172.118	3.091%	16.643%
8.0	3307.921	48.258	220.376	3.436%	21.310%
9.0	3150.994	52.346	272.722	3.727%	26.371%
10.0	2975.246	55.440	328.162	3.947%	31.732%
11.0	2811.971	57.826	385.988	4.117%	37.324%
12.0	2637.045	59.566	445.554	4.241%	43.084%
13.0	2418.200	59.993	505.547	4.271%	48.885%
14.0	2227.140	59.460	565.007	4.233%	54.634%
15.0	2033.092	58.486	623.493	4.164%	60.290%
16.0	1817.758	56.426	679.919	4.017%	65.746%
17.0	1574.369	52.825	732.744	3.761%	70.854%
18.0	1397.060	48.992	781.736	3.488%	75.592%
19.0	1170.761	44.675	826.411	3.181%	79.911%
20.0	979.888	39.363	865.774	2.802%	83.718%
21.0	790.986	34.004	899.778	2.421%	87.006%
22.0	606.641	28.086	927.864	2.000%	89.722%
23.0	459.395	22.368	950.232	1.592%	91.885%
24.0	327.087	17.195	967.428	1.224%	93.547%
25.0	211.286	12.241	979.669	.872%	94.731%
26.0	162.946	8.834	988.503	.629%	95.585%
27.0	93.102	6.264	994.767	.446%	96.191%
28.0	57.662	3.817	998.584	.272%	96.560%
29.0	39.489	2.542	1001.126	.181%	96.806%
30.0	25.193	1.746	1002.872	.124%	96.975%
31.0	17.956	1.201	1004.073	.085%	97.091%
32.0	14.610	0.933	1005.006	.066%	97.181%
33.0	12.563	0.801	1005.807	.057%	97.259%
34.0	11.017	0.714	1006.52	.051%	97.328%
35.0	9.934	0.651	1007.171	.046%	97.390%
36.0	9.180	0.609	1007.779	.043%	97.449%
37.0	8.560	0.579	1008.358	.041%	97.505%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	8.104	0.556	1008.914	.040%	97.559%
39.0	7.693	0.539	1009.453	.038%	97.611%
40.0	7.327	0.524	1009.977	.037%	97.662%
41.0	7.051	0.512	1010.489	.036%	97.711%
42.0	6.789	0.503	1010.992	.036%	97.760%
43.0	6.543	0.494	1011.486	.035%	97.808%
44.0	6.341	0.486	1011.972	.035%	97.855%
45.0	6.169	0.481	1012.453	.034%	97.901%
46.0	5.990	0.476	1012.929	.034%	97.947%
47.0	5.856	0.471	1013.4	.034%	97.993%
48.0	5.729	0.468	1013.868	.033%	98.038%
49.0	5.617	0.466	1014.334	.033%	98.083%
50.0	5.497	0.463	1014.797	.033%	98.128%
51.0	5.415	0.462	1015.259	.033%	98.173%
52.0	5.333	0.461	1015.72	.033%	98.217%
53.0	5.236	0.460	1016.18	.033%	98.262%
54.0	5.176	0.459	1016.639	.033%	98.306%
55.0	5.101	0.459	1017.098	.033%	98.350%
56.0	5.049	0.459	1017.556	.033%	98.395%
57.0	5.004	0.460	1018.016	.033%	98.439%
58.0	4.974	0.461	1018.477	.033%	98.484%
59.0	4.930	0.463	1018.94	.033%	98.529%
60.0	4.885	0.464	1019.404	.033%	98.573%
61.0	4.847	0.464	1019.869	.033%	98.618%
62.0	4.825	0.466	1020.335	.033%	98.663%
63.0	4.818	0.469	1020.804	.033%	98.709%
64.0	4.773	0.471	1021.274	.034%	98.754%
65.0	4.750	0.471	1021.745	.034%	98.800%
66.0	4.743	0.474	1022.219	.034%	98.846%
67.0	4.728	0.476	1022.695	.034%	98.892%
68.0	4.713	0.478	1023.174	.034%	98.938%
69.0	4.706	0.480	1023.654	.034%	98.984%
70.0	4.706	0.483	1024.137	.034%	99.031%
71.0	4.706	0.486	1024.624	.035%	99.078%
72.0	4.706	0.489	1025.113	.035%	99.125%
73.0	4.706	0.492	1025.605	.035%	99.173%
74.0	4.706	0.495	1026.1	.035%	99.221%
75.0	4.720	0.498	1026.598	.035%	99.269%

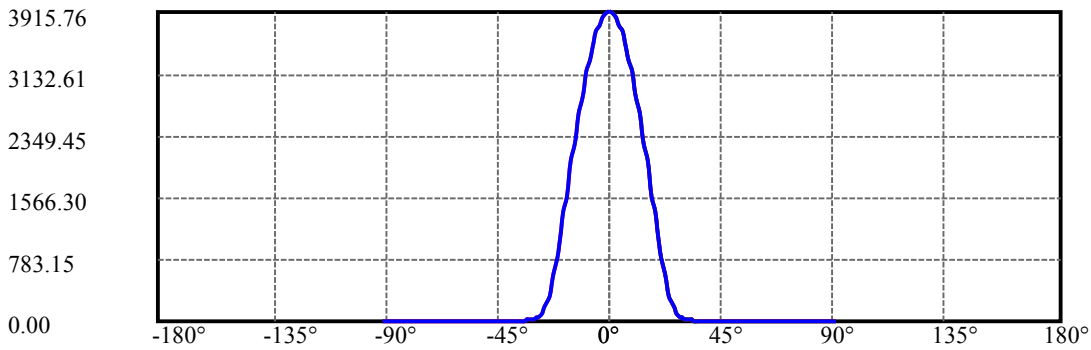
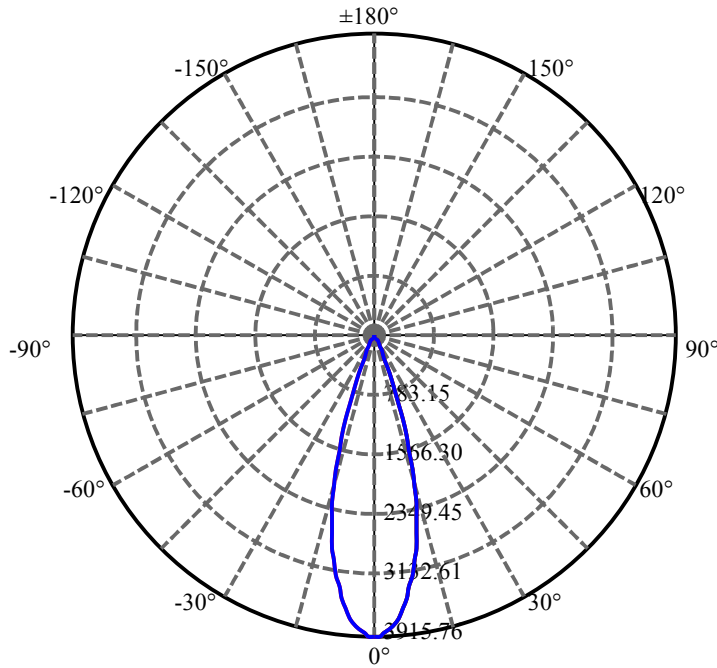
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.713	0.501	1027.099	.036%	99.317%
77.0	4.713	0.503	1027.601	.036%	99.366%
78.0	4.683	0.503	1028.104	.036%	99.415%
79.0	4.698	0.504	1028.608	.036%	99.463%
80.0	4.698	0.507	1029.115	.036%	99.512%
81.0	4.735	0.510	1029.625	.036%	99.562%
82.0	4.788	0.516	1030.142	.037%	99.612%
83.0	4.818	0.522	1030.664	.037%	99.662%
84.0	4.855	0.527	1031.191	.038%	99.713%
85.0	4.743	0.524	1031.715	.037%	99.764%
86.0	4.519	0.506	1032.221	.036%	99.813%
87.0	4.407	0.488	1032.709	.035%	99.860%
88.0	4.407	0.483	1033.192	.034%	99.907%
89.0	4.399	0.483	1033.675	.034%	99.953%
90.0	4.414	0.483	1034.158	.034%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1002.87	71.40%	96.97%
0-40	1009.98	71.90%	97.66%
0-60	1019.40	72.57%	98.57%
0-90	1033.67	73.59%	99.95%
0-120	1033.67	73.59%	99.95%
0-180	1034.16	73.62%	100.00%
60-90	14.73	1.05%	1.42%
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%
0-19.02	827.33	58.90%	80.00%

ZONAL LUMEN SUMMARY

0-10	328.16
10-20	537.61
20-30	137.10
30-40	7.10
40-50	4.82
50-60	4.61
60-70	4.73
70-80	4.98
80-90	4.56
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: —————

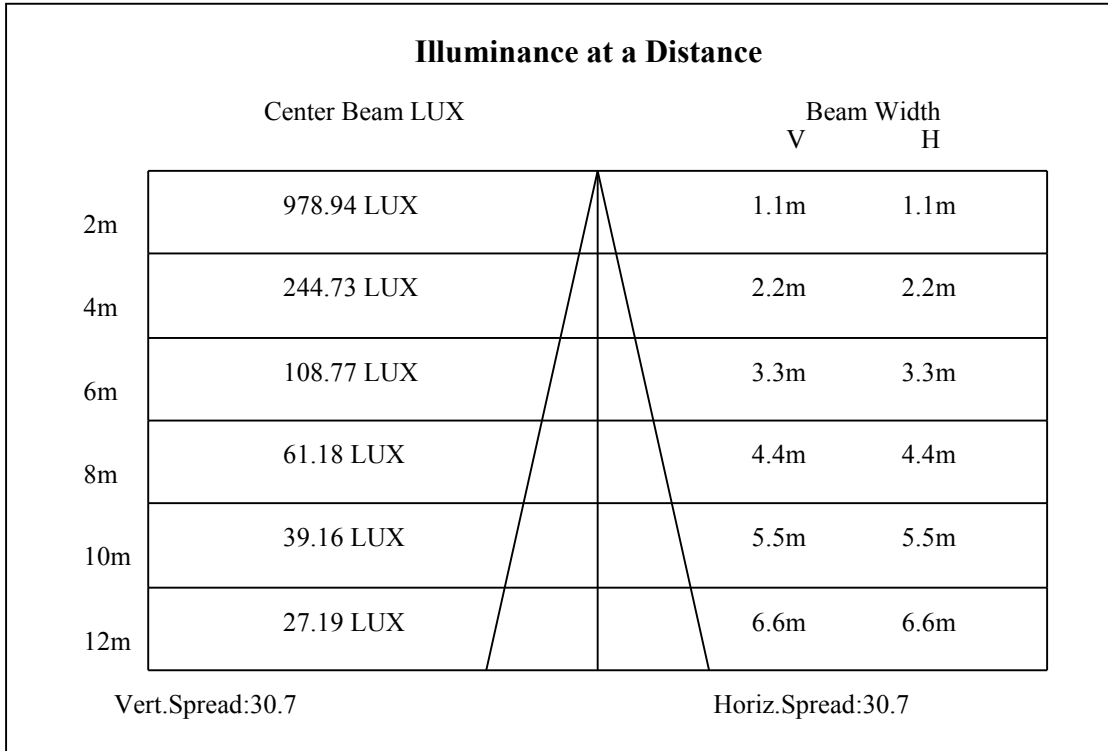
C90/C270: —————

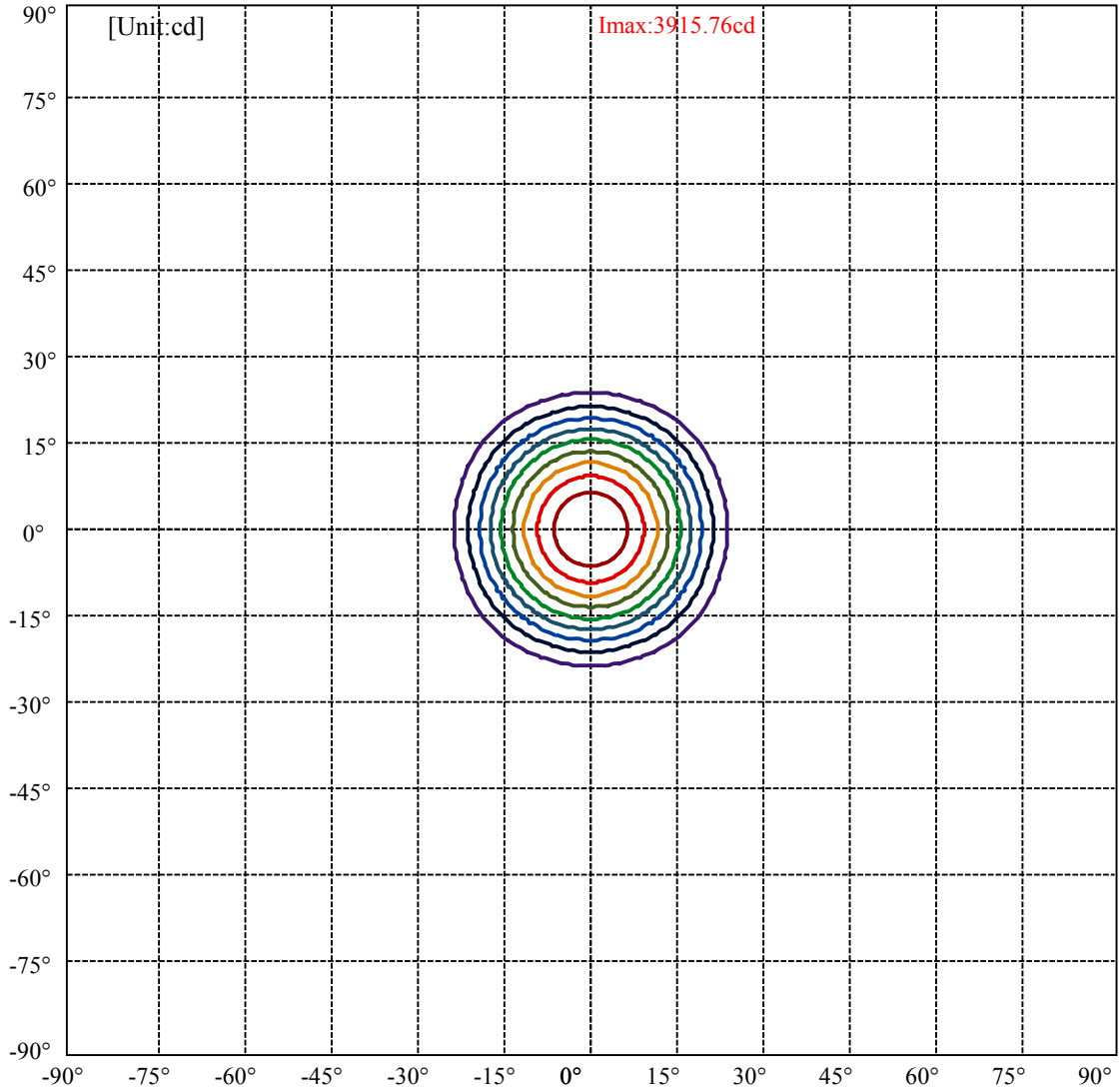
Field angle(10%Imax):C0/180Left:23.5 Right:23.5

:C90/270Left:23.5 Right:23.5

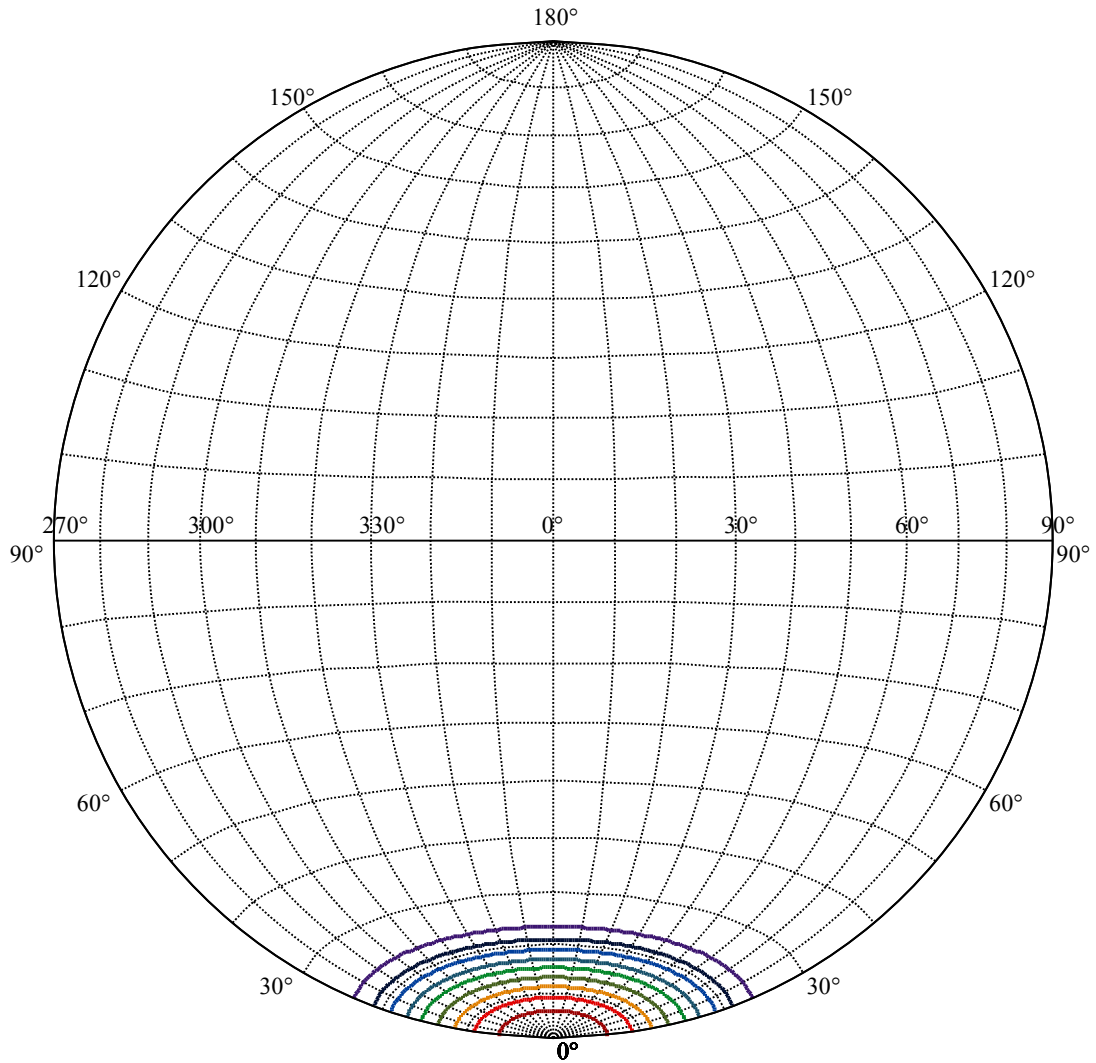
Beam Angle(50%Imax):C0/180Left:15.3 Right:15.3

:C90/270Left:15.3 Right:15.3





(10%Imax) 391.576	—
(20%Imax) 783.151	—
(30%Imax) 1174.73	—
(40%Imax) 1566.3	—
(50%Imax) 1957.88	—
(60%Imax) 2349.45	—
(70%Imax) 2741.03	—
(80%Imax) 3132.61	—
(90%Imax) 3524.18	—



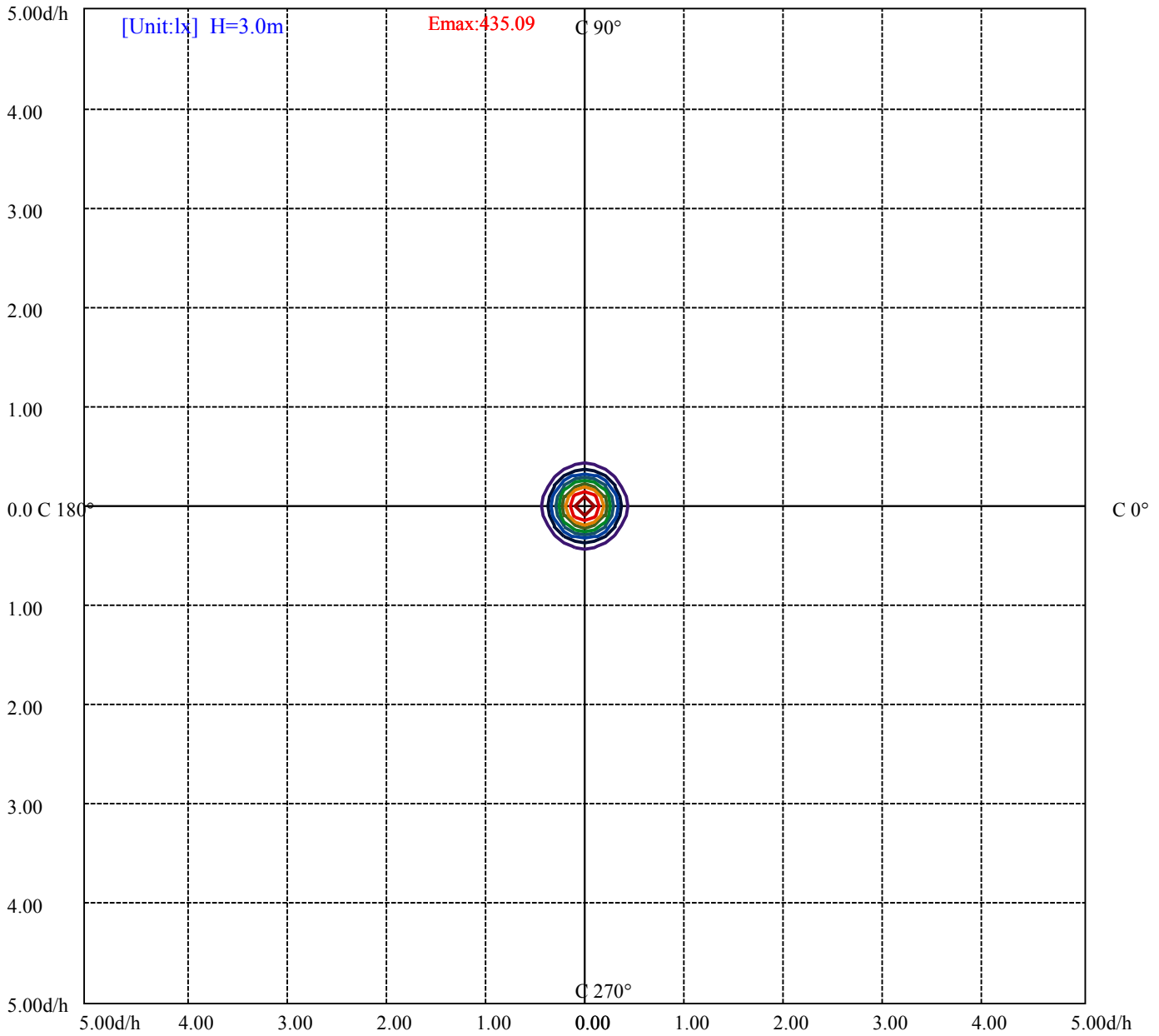
House

[Unit:cd]

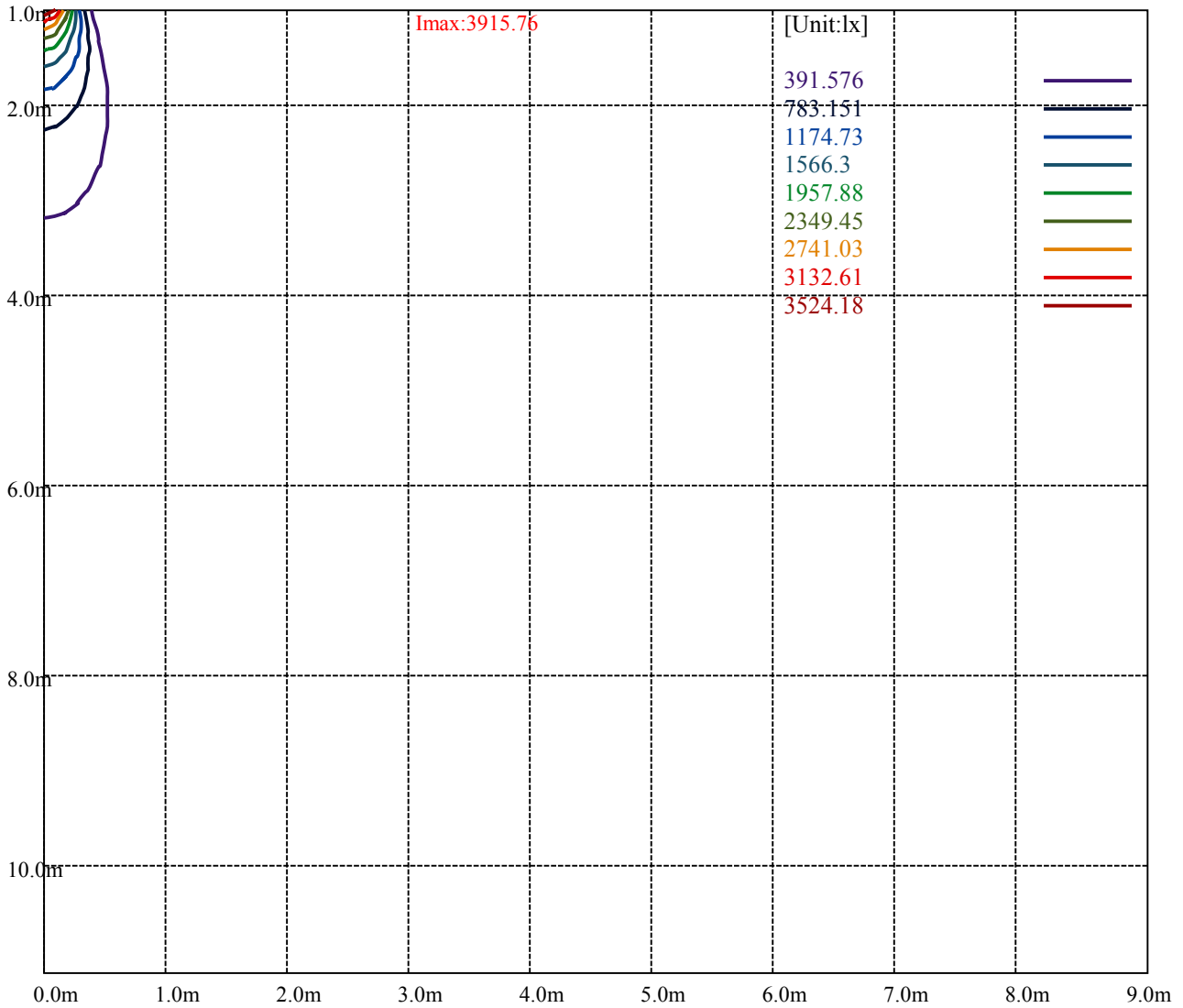
Road

Imax:3915.76

(10%Imax) 391.576	—
(20%Imax) 783.151	—
(30%Imax) 1174.73	—
(40%Imax) 1566.3	—
(50%Imax) 1957.88	—
(60%Imax) 2349.45	—
(70%Imax) 2741.03	—
(80%Imax) 3132.61	—
(90%Imax) 3524.18	—



(10%Emax) 43.50844	—
(20%Emax) 87.01678	—
(30%Emax) 130.5256	—
(40%Emax) 174.0333	—
(50%Emax) 217.5422	—
(60%Emax) 261.05	—
(70%Emax) 304.5589	—
(80%Emax) 348.0667	—
(90%Emax) 391.5756	—



Luminance Table

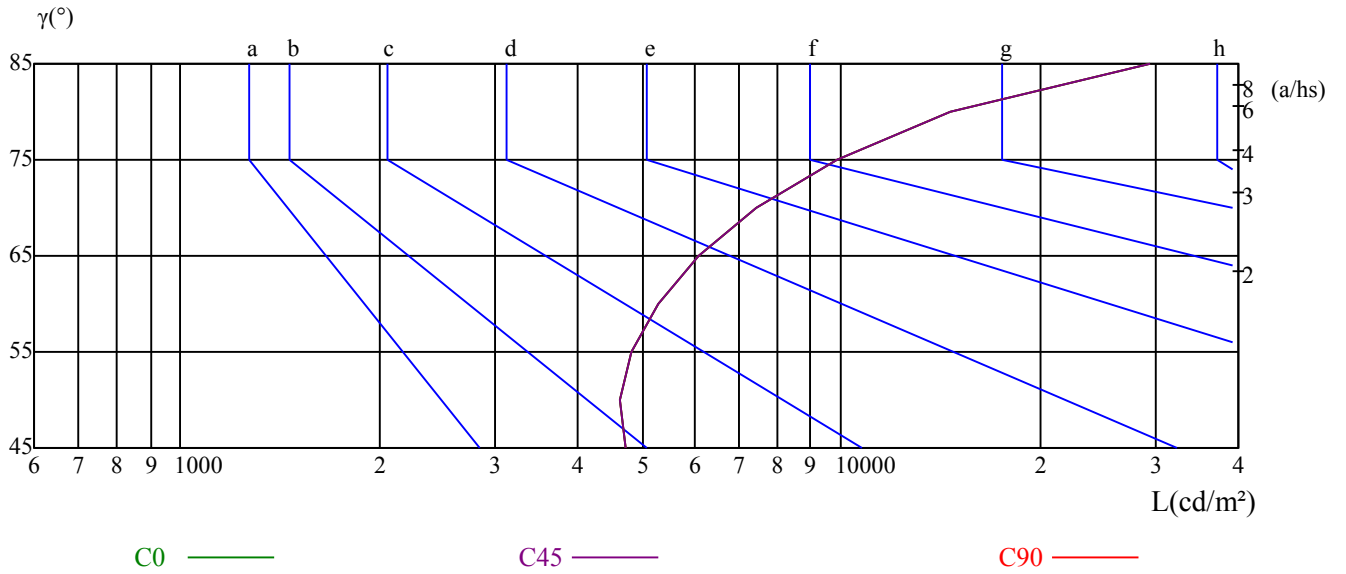
γ	45	50	55	60	65	70	75	80	85
C0	4719	4625	4810	5284	6079	7441	9864	14632	29431
C45	4719	4625	4810	5284	6079	7441	9864	14632	29431
C90	4719	4625	4810	5284	6079	7441	9864	14632	29431

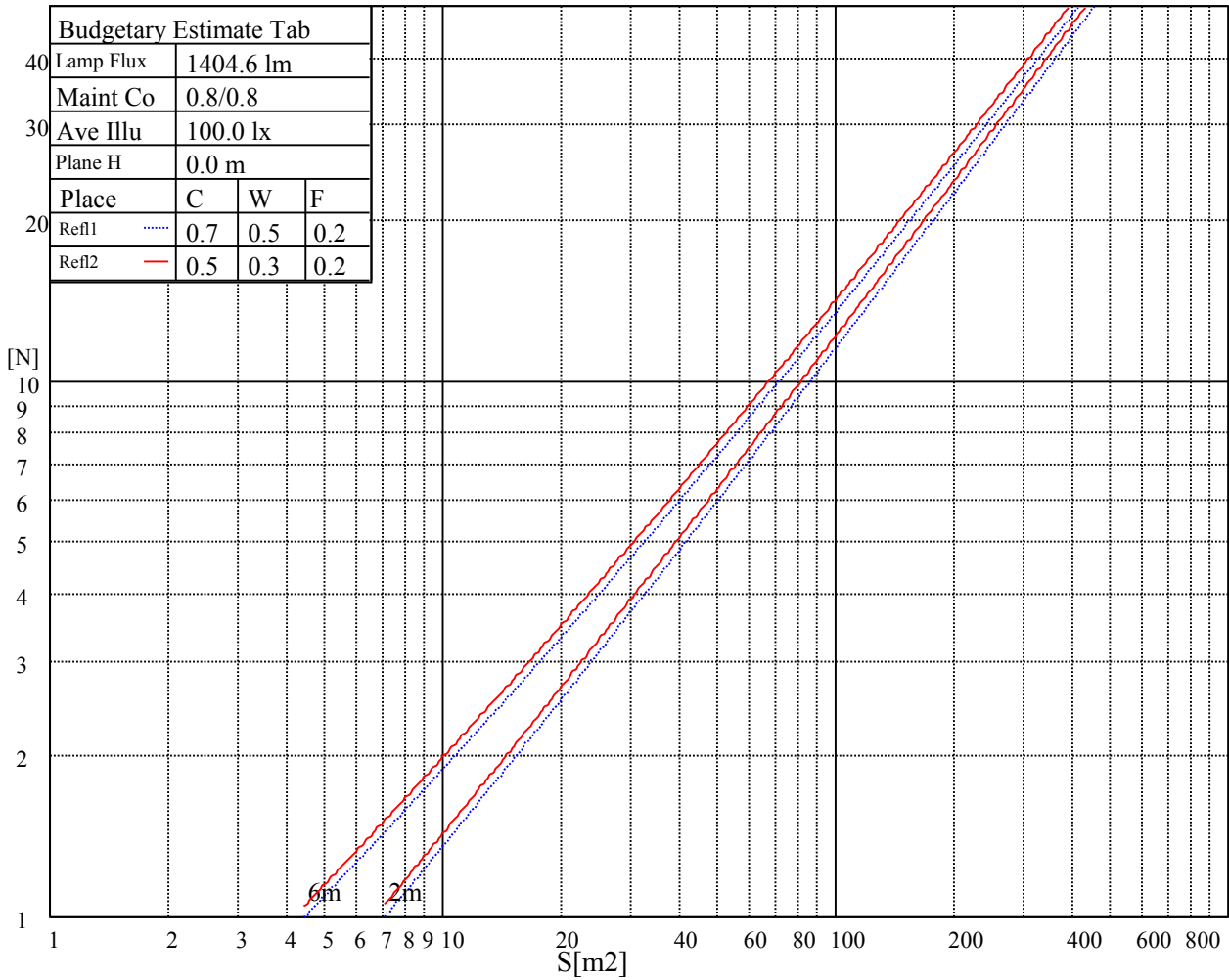
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6079	6079	6079	9864	9864	9864	29431	29431	29431

Glare Table

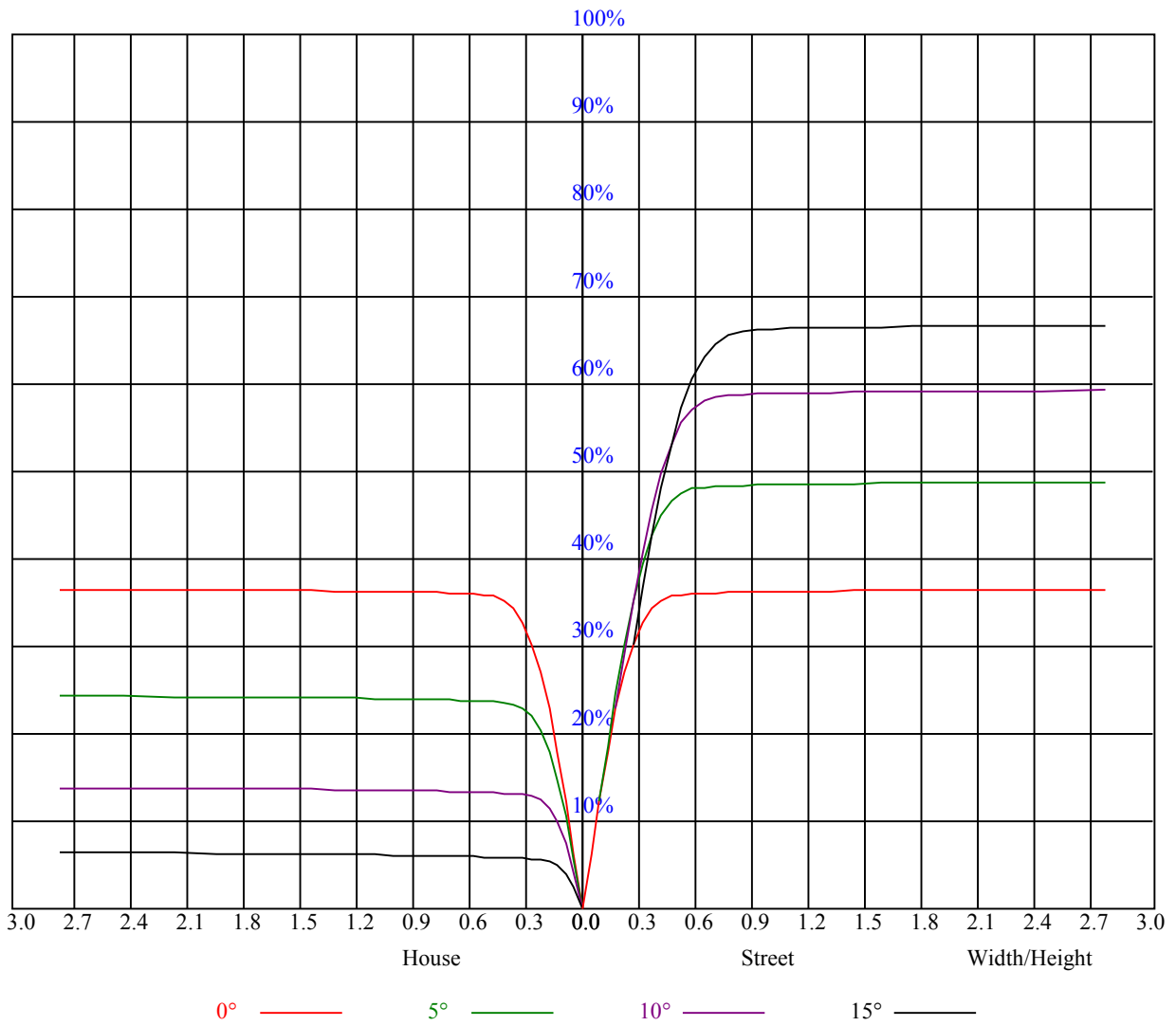
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.88	0.88	0.88	0.86	0.86	0.86	0.82	0.82	0.82	0.78	0.78	0.78	0.75	0.75	0.75	0.74
1	0.83	0.81	0.80	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74	0.73	0.73	0.72	0.71
2	0.79	0.77	0.75	0.78	0.76	0.74	0.75	0.74	0.72	0.73	0.72	0.71	0.71	0.70	0.69	0.68
3	0.76	0.73	0.71	0.75	0.72	0.70	0.73	0.71	0.69	0.71	0.69	0.68	0.69	0.68	0.67	0.66
4	0.73	0.70	0.67	0.72	0.69	0.67	0.70	0.68	0.66	0.69	0.67	0.65	0.68	0.66	0.65	0.64
5	0.70	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.63	0.66	0.64	0.63	0.62
6	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.61	0.64	0.62	0.61	0.60
7	0.65	0.62	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.63	0.61	0.59	0.63	0.61	0.59	0.58
8	0.63	0.60	0.58	0.63	0.60	0.58	0.62	0.60	0.58	0.62	0.59	0.58	0.61	0.59	0.58	0.57
9	0.62	0.59	0.57	0.61	0.58	0.56	0.61	0.58	0.56	0.60	0.58	0.56	0.60	0.58	0.56	0.55
10	0.60	0.57	0.55	0.60	0.57	0.55	0.59	0.57	0.55	0.59	0.56	0.55	0.58	0.56	0.55	0.54



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	3914.41	3929.35	3929.35	3909.63	3870.79	3808.65	3711.25	3622.22	3519.45
45.0	3924.57	3904.85	3858.84	3798.49	3713.05	3624.61	3499.73	3359.91	3224.86
90.0	3903.06	3865.42	3803.87	3725.00	3621.62	3512.28	3376.64	3222.47	3069.51
135.0	3920.99	3890.51	3830.76	3759.05	3672.41	3560.68	3427.43	3294.18	3150.17
180.0	3914.41	3866.01	3812.83	3738.14	3634.17	3528.41	3388.59	3232.63	3079.66
225.0	3924.57	3928.75	3912.02	3869.00	3815.22	3744.71	3634.17	3526.02	3407.11
270.0	3903.06	3926.36	3929.95	3911.42	3874.38	3820.00	3727.39	3634.17	3531.99
315.0	3920.99	3934.73	3928.75	3906.05	3855.26	3791.92	3711.25	3588.76	3480.61
360.0	3914.41	3929.35	3929.35	3909.63	3870.79	3808.65	3711.25	3622.22	3519.45
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3362.89	3227.85	3077.87	2902.20	2710.39	2531.73	2320.80	2124.22	1893.57
45.0	3055.76	2874.71	2706.81	2550.85	2295.11	2099.72	1927.63	1679.65	1468.73
90.0	2912.95	2703.82	2526.95	2347.09	2105.69	1910.30	1715.51	1502.19	1187.83
135.0	2955.38	2787.47	2616.58	2415.21	2201.30	2004.11	1784.82	1573.89	1383.88
180.0	2919.53	2709.20	2535.91	2356.65	2119.44	1920.46	1723.87	1534.45	1192.37
225.0	3270.28	3083.85	2924.31	2755.80	2532.33	2347.69	2155.88	1931.81	1703.56
270.0	3379.03	3240.40	3089.22	2913.55	2721.74	2544.88	2360.84	2142.74	1912.69
315.0	3352.14	3174.67	3018.12	2854.99	2659.60	2458.23	2275.39	2053.11	1852.34
360.0	3362.89	3227.85	3077.87	2902.20	2710.39	2531.73	2320.80	2124.22	1893.57
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1668.30	1481.87	1263.18	1048.66	862.23	686.56	484.00	345.97	315.50
45.0	1302.02	1048.07	853.87	687.76	495.35	351.35	304.14	143.94	99.25
90.0	1089.59	881.42	702.63	521.05	362.82	250.30	158.88	106.00	74.51
135.0	1164.58	959.03	766.03	574.23	426.04	306.53	179.92	120.10	85.98
180.0	1092.88	903.11	701.44	519.49	378.59	250.13	160.08	109.89	73.38
225.0	1515.33	1177.85	1104.53	893.25	693.61	529.53	368.08	239.43	158.70
270.0	1711.32	1497.41	1281.10	1086.31	871.79	691.34	508.50	350.15	304.14
315.0	1632.45	1417.34	1166.32	997.16	762.69	609.42	453.11	274.80	192.11
360.0	1668.30	1481.87	1263.18	1048.66	862.23	686.56	484.00	345.97	315.50
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	144.30	97.70	68.66	35.37	23.06	18.28	15.00	12.97	11.35
45.0	70.09	34.30	22.53	17.63	13.98	12.19	10.82	9.80	9.02
90.0	43.08	23.42	18.22	15.00	12.37	10.93	9.98	9.08	8.60
135.0	49.42	27.25	20.38	16.37	13.27	11.53	10.34	9.32	8.72
180.0	45.77	26.17	19.42	15.89	13.38	11.23	10.10	9.32	8.60
225.0	109.23	71.05	43.26	27.96	20.55	16.37	13.92	11.89	10.52
270.0	153.51	94.83	65.73	41.05	24.80	19.18	15.95	13.44	11.65
315.0	129.42	86.58	57.72	32.27	22.23	17.15	14.40	12.31	10.99
360.0	144.30	97.70	68.66	35.37	23.06	18.28	15.00	12.97	11.35
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	10.22	9.50	8.90	8.31	7.89	7.59	7.17	6.93	6.69
45.0	8.48	8.01	7.65	7.35	7.05	6.75	6.57	6.33	6.15
90.0	8.19	7.71	7.47	7.17	6.87	6.69	6.51	6.27	6.15
135.0	8.31	7.89	7.53	7.23	6.93	6.75	6.51	6.33	6.15
180.0	8.19	7.77	7.41	7.11	6.81	6.57	6.39	6.21	6.04
225.0	9.62	8.84	8.31	7.83	7.47	7.11	6.87	6.57	6.33
270.0	10.52	9.56	8.90	8.37	7.89	7.53	7.17	6.87	6.63
315.0	9.92	9.20	8.66	8.19	7.71	7.41	7.11	6.81	6.57
360.0	10.22	9.50	8.90	8.31	7.89	7.59	7.17	6.93	6.69

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	6.51	6.27	6.15	5.92	5.80	5.68	5.56	5.50	5.38
45.0	5.98	5.80	5.68	5.62	5.50	5.38	5.32	5.20	5.14
90.0	6.04	5.86	5.80	5.68	5.62	5.50	5.44	5.38	5.32
135.0	6.04	5.86	5.80	5.68	5.56	5.44	5.44	5.32	5.26
180.0	5.86	5.74	5.62	5.50	5.44	5.32	5.26	5.20	5.08
225.0	6.15	5.98	5.80	5.68	5.56	5.44	5.32	5.26	5.14
270.0	6.45	6.21	6.04	5.92	5.74	5.62	5.50	5.38	5.26
315.0	6.33	6.21	5.98	5.86	5.74	5.62	5.50	5.44	5.32
360.0	6.51	6.27	6.15	5.92	5.80	5.68	5.56	5.50	5.38
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.26	5.20	5.14	5.08	5.02	4.96	4.96	4.90	4.84
45.0	5.08	5.02	4.96	4.90	4.90	4.84	4.78	4.72	4.72
90.0	5.26	5.20	5.14	5.14	5.14	5.14	5.08	5.02	5.02
135.0	5.26	5.14	5.08	5.08	5.02	5.02	4.96	4.96	4.96
180.0	5.08	4.96	4.96	4.90	4.90	4.84	4.78	4.72	4.72
225.0	5.08	5.02	4.96	4.90	4.84	4.78	4.78	4.78	4.72
270.0	5.20	5.14	5.08	5.02	4.96	4.90	4.84	4.84	4.78
315.0	5.20	5.14	5.08	5.02	5.02	4.96	4.90	4.84	4.84
360.0	5.26	5.20	5.14	5.08	5.02	4.96	4.96	4.90	4.84
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.84	4.78	4.78	4.72	4.72	4.72	4.72	4.72	4.66
45.0	4.72	4.66	4.66	4.66	4.60	4.60	4.60	4.54	4.54
90.0	5.08	5.08	5.02	5.02	5.02	5.02	5.02	5.08	5.20
135.0	4.96	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90
180.0	4.72	4.72	4.66	4.66	4.66	4.60	4.60	4.60	4.60
225.0	4.66	4.60	4.60	4.60	4.60	4.54	4.54	4.54	4.54
270.0	4.78	4.66	4.66	4.66	4.66	4.60	4.60	4.60	4.60
315.0	4.78	4.78	4.72	4.72	4.66	4.72	4.66	4.66	4.60
360.0	4.84	4.78	4.78	4.72	4.72	4.72	4.72	4.72	4.66
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.60
45.0	4.54	4.54	4.54	4.54	4.48	4.54	4.48	4.48	4.48
90.0	5.26	5.26	5.32	5.44	5.38	5.32	5.20	5.26	5.38
135.0	4.90	4.90	4.90	4.90	4.96	4.96	4.90	4.90	4.90
180.0	4.60	4.60	4.54	4.54	4.54	4.54	4.54	4.60	4.54
225.0	4.54	4.48	4.54	4.54	4.54	4.54	4.54	4.54	4.54
270.0	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.60	4.54
315.0	4.60	4.66	4.60	4.60	4.60	4.60	4.60	4.54	4.60
360.0	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.60
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.60	4.60	4.66	4.66	4.66	4.66	4.48	4.48	4.48
45.0	4.48	4.54	4.48	4.48	4.48	4.36	4.36	4.36	4.36
90.0	5.56	5.68	5.74	5.74	4.66	4.36	4.36	4.36	4.36
135.0	4.96	5.08	5.20	5.50	5.62	4.42	4.42	4.42	4.42
180.0	4.54	4.60	4.60	4.60	4.60	4.42	4.42	4.42	4.42
225.0	4.54	4.60	4.60	4.66	4.66	4.66	4.36	4.36	4.36
270.0	4.60	4.60	4.60	4.60	4.60	4.60	4.42	4.42	4.36
315.0	4.60	4.60	4.66	4.60	4.66	4.66	4.42	4.42	4.42
360.0	4.60	4.60	4.66	4.66	4.66	4.66	4.48	4.48	4.48

Intensity data(cd)

C/ γ (°)	90.0
0.0	4.48
45.0	4.36
90.0	4.36
135.0	4.42
180.0	4.48
225.0	4.36
270.0	4.42
315.0	4.42
360.0	4.48