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Nata

LumCAT: 1-0928-M
Luminaire: 99.02.73.179+92.76.853.00
Report No: 220606-B010
Test No: 220606-C010
LampCAT: CREE CXA1512
Lamp flux(lm): 1404.6
Number of Lamps: 1
Length(mm): 43
Phm Type: C

Voltage(V): 38.0100
Current(A): 0.3610
Power (W): 13.7210
PF: 0.0000
Ballast type: DC
Width(mm): 43
Height(mm): 0

Photometric Results

Lumens(lm): 1004.34
Efficiency(%): 71.50%
Lumens(lm)/Power(W): 73.20
Central intensity(cd): 3827.323
Maximum intensity(cd): 3827.323
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=31.5
 [C90/270]Total=31.5
Field angle(10%Imax): [C0/180]Total=45.4
 [C90/270]Total=45.4
Maximum s/h(1/2): C0_180=0.53 C90_270=0.53
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(%): 71.50%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.570%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/06
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	3827.323	0.000	0	.000%	.000%
1.0	3819.405	3.659	3.659	.260%	.364%
2.0	3796.475	10.931	14.59	.778%	1.453%
3.0	3755.246	18.061	32.651	1.286%	3.251%
4.0	3700.348	24.956	57.607	1.777%	5.736%
5.0	3620.727	31.495	89.102	2.242%	8.872%
6.0	3530.948	37.584	126.686	2.676%	12.614%
7.0	3420.779	43.149	169.835	3.072%	16.910%
8.0	3296.418	48.074	217.909	3.422%	21.697%
9.0	3153.534	52.273	270.182	3.721%	26.901%
10.0	2995.637	55.648	325.83	3.962%	32.442%
11.0	2833.856	58.249	384.079	4.147%	38.242%
12.0	2664.606	60.106	444.185	4.279%	44.227%
13.0	2480.268	61.057	505.242	4.347%	50.306%
14.0	2276.511	60.886	566.128	4.335%	56.368%
15.0	2080.521	59.815	625.943	4.258%	62.324%
16.0	1861.751	57.765	683.709	4.112%	68.075%
17.0	1634.839	54.451	738.16	3.877%	73.497%
18.0	1370.717	49.555	787.715	3.528%	78.431%
19.0	1171.822	44.235	831.95	3.149%	82.835%
20.0	928.104	38.434	870.384	2.736%	86.662%
21.0	696.711	31.200	901.584	2.221%	89.769%
22.0	506.540	24.180	925.764	1.721%	92.176%
23.0	331.718	17.589	943.353	1.252%	93.928%
24.0	206.088	11.758	955.111	.837%	95.098%
25.0	122.747	7.477	962.588	.532%	95.843%
26.0	75.050	4.669	967.257	.332%	96.308%
27.0	50.267	3.066	970.323	.218%	96.613%
28.0	35.277	2.166	972.489	.154%	96.829%
29.0	24.738	1.570	974.059	.112%	96.985%
30.0	18.762	1.174	975.234	.084%	97.102%
31.0	14.864	0.936	976.169	.067%	97.195%
32.0	12.234	0.776	976.946	.055%	97.272%
33.0	10.599	0.673	977.618	.048%	97.339%
34.0	9.493	0.608	978.226	.043%	97.400%
35.0	8.672	0.564	978.791	.040%	97.456%
36.0	8.029	0.532	979.322	.038%	97.509%
37.0	7.581	0.509	979.831	.036%	97.560%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	7.148	0.492	980.323	.035%	97.609%
39.0	6.804	0.476	980.799	.034%	97.656%
40.0	6.550	0.466	981.265	.033%	97.702%
41.0	6.296	0.457	981.723	.033%	97.748%
42.0	6.080	0.450	982.172	.032%	97.793%
43.0	5.908	0.444	982.616	.032%	97.837%
44.0	5.736	0.439	983.056	.031%	97.881%
45.0	5.594	0.435	983.491	.031%	97.924%
46.0	5.475	0.433	983.924	.031%	97.967%
47.0	5.348	0.430	984.355	.031%	98.010%
48.0	5.266	0.429	984.784	.031%	98.053%
49.0	5.184	0.429	985.213	.031%	98.095%
50.0	5.094	0.429	985.641	.031%	98.138%
51.0	5.034	0.429	986.07	.031%	98.181%
52.0	4.967	0.429	986.499	.031%	98.224%
53.0	4.915	0.430	986.929	.031%	98.266%
54.0	4.862	0.431	987.36	.031%	98.309%
55.0	4.810	0.432	987.791	.031%	98.352%
56.0	4.780	0.433	988.225	.031%	98.395%
57.0	4.743	0.435	988.66	.031%	98.439%
58.0	4.713	0.437	989.097	.031%	98.482%
59.0	4.676	0.439	989.536	.031%	98.526%
60.0	4.653	0.441	989.977	.031%	98.570%
61.0	4.638	0.443	990.421	.032%	98.614%
62.0	4.631	0.447	990.867	.032%	98.658%
63.0	4.601	0.449	991.316	.032%	98.703%
64.0	4.586	0.451	991.767	.032%	98.748%
65.0	4.579	0.454	992.221	.032%	98.793%
66.0	4.564	0.456	992.677	.032%	98.839%
67.0	4.541	0.458	993.135	.033%	98.884%
68.0	4.549	0.460	993.595	.033%	98.930%
69.0	4.534	0.463	994.058	.033%	98.976%
70.0	4.541	0.466	994.524	.033%	99.023%
71.0	4.534	0.469	994.993	.033%	99.069%
72.0	4.526	0.471	995.465	.034%	99.116%
73.0	4.549	0.475	995.939	.034%	99.163%
74.0	4.564	0.479	996.418	.034%	99.211%
75.0	4.579	0.483	996.901	.034%	99.259%

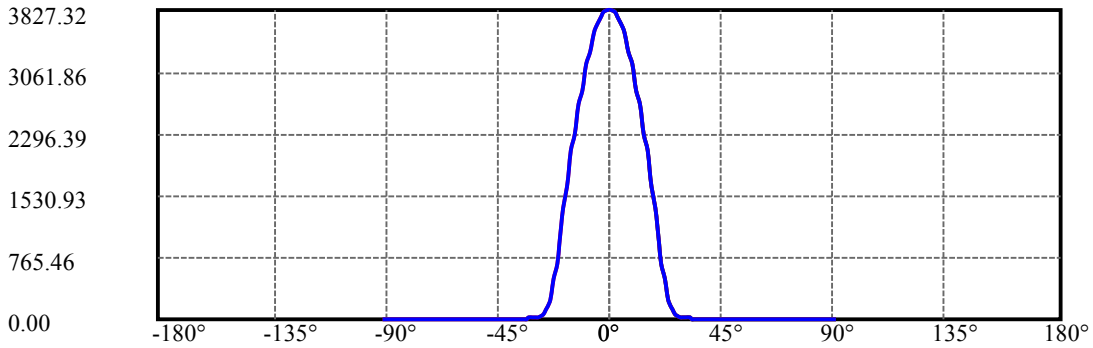
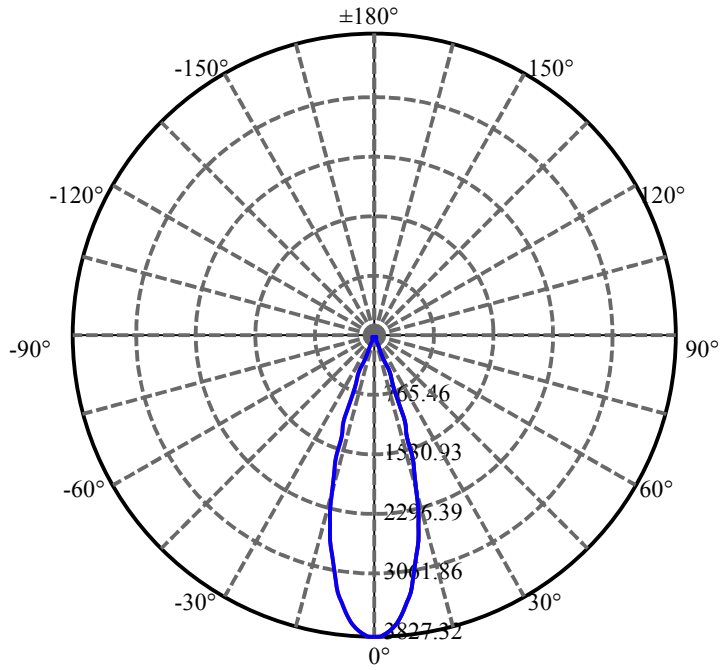
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.601	0.487	997.388	.035%	99.308%
77.0	4.661	0.494	997.882	.035%	99.357%
78.0	4.698	0.501	998.383	.036%	99.407%
79.0	4.713	0.506	998.889	.036%	99.457%
80.0	4.623	0.503	999.392	.036%	99.507%
81.0	4.586	0.498	999.89	.035%	99.557%
82.0	4.608	0.499	1000.389	.035%	99.607%
83.0	4.631	0.502	1000.891	.036%	99.657%
84.0	4.691	0.508	1001.399	.036%	99.707%
85.0	4.676	0.511	1001.91	.036%	99.758%
86.0	4.676	0.511	1002.421	.036%	99.809%
87.0	4.392	0.496	1002.918	.035%	99.858%
88.0	4.317	0.477	1003.395	.034%	99.906%
89.0	4.310	0.473	1003.867	.034%	99.953%
90.0	4.317	0.473	1004.34	.034%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	975.23	69.43%	97.10%
0-40	981.27	69.86%	97.70%
0-60	989.98	70.48%	98.57%
0-90	1003.87	71.47%	99.95%
0-120	1003.87	71.47%	99.95%
0-180	1004.34	71.50%	100.00%
60-90	14.33	1.02%	1.43%
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%
0-18.36	803.47	57.20%	80.00%

ZONAL LUMEN SUMMARY

0-10	325.83
10-20	544.55
20-30	104.85
30-40	6.03
40-50	4.38
50-60	4.34
60-70	4.55
70-80	4.87
80-90	4.48
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: ———

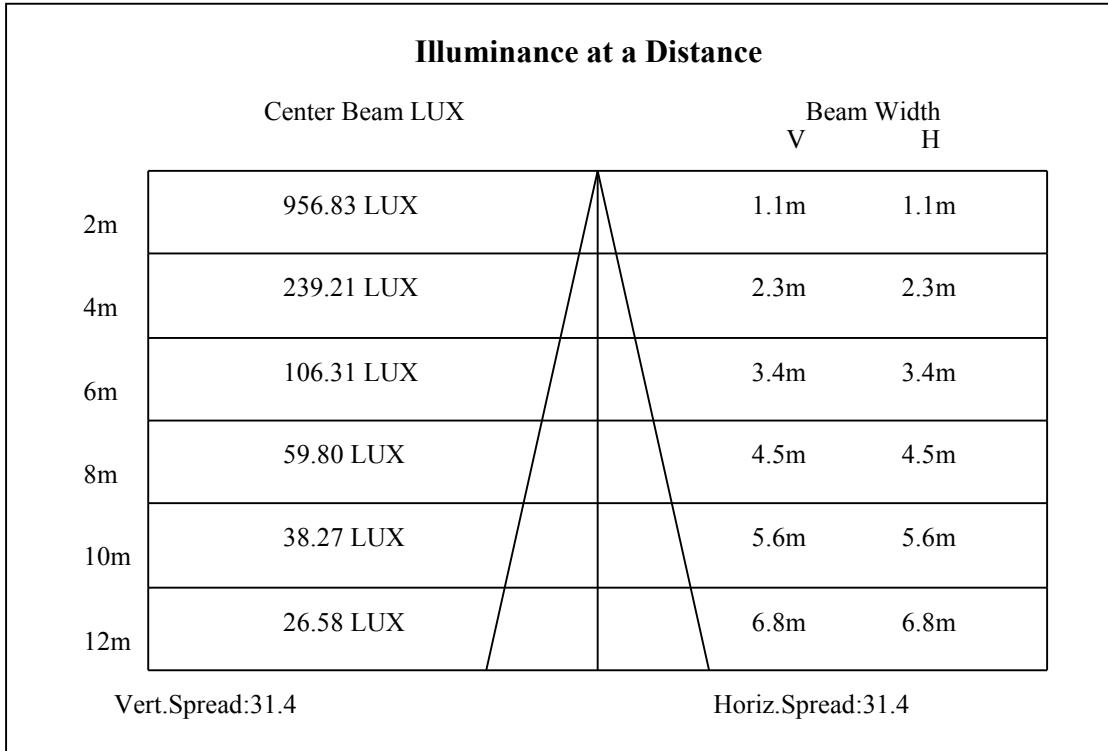
C90/C270: ———

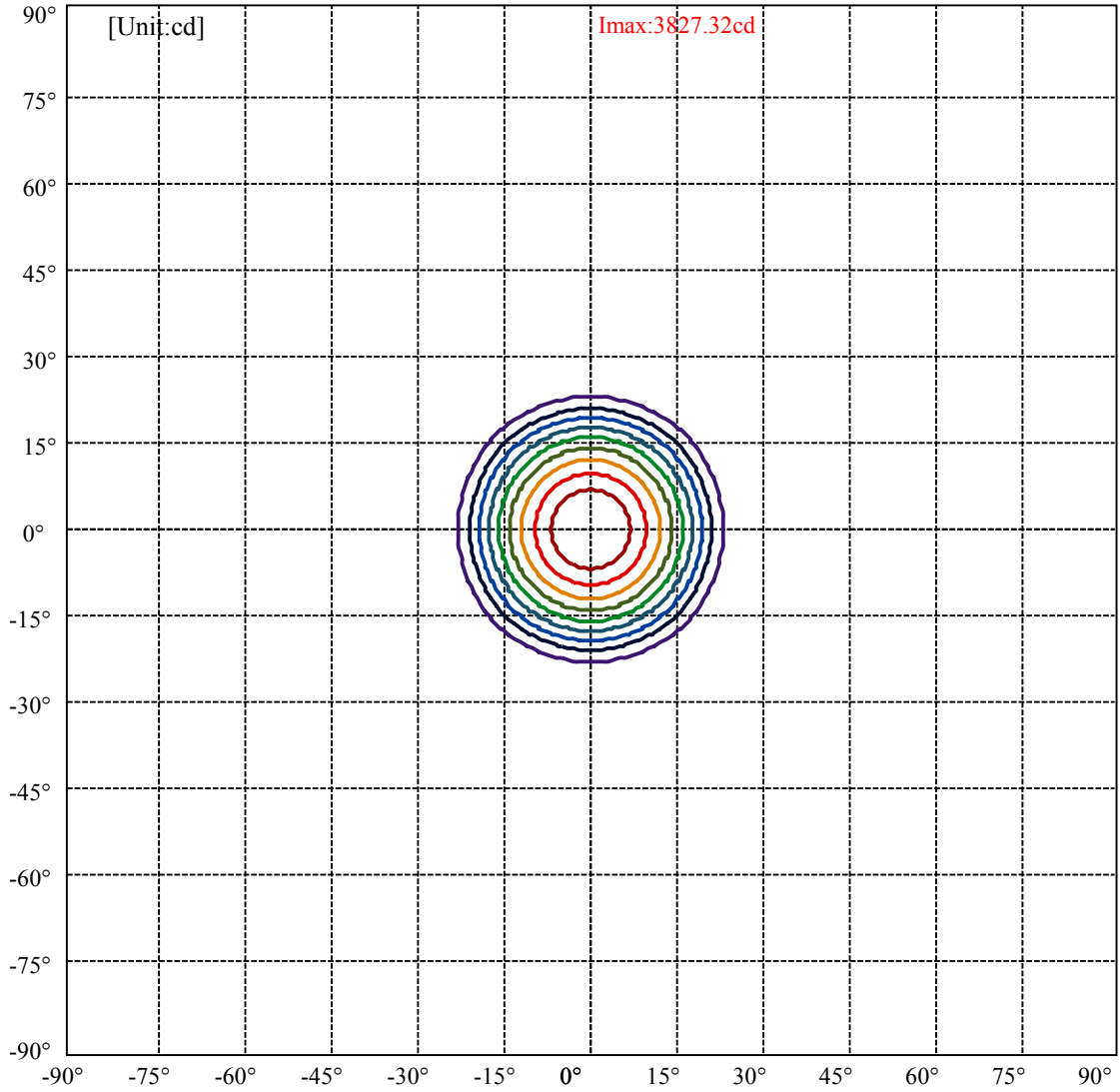
Field angle(10%Imax):C0/180Left:22.7 Right:22.7

:C90/270Left:22.7 Right:22.7

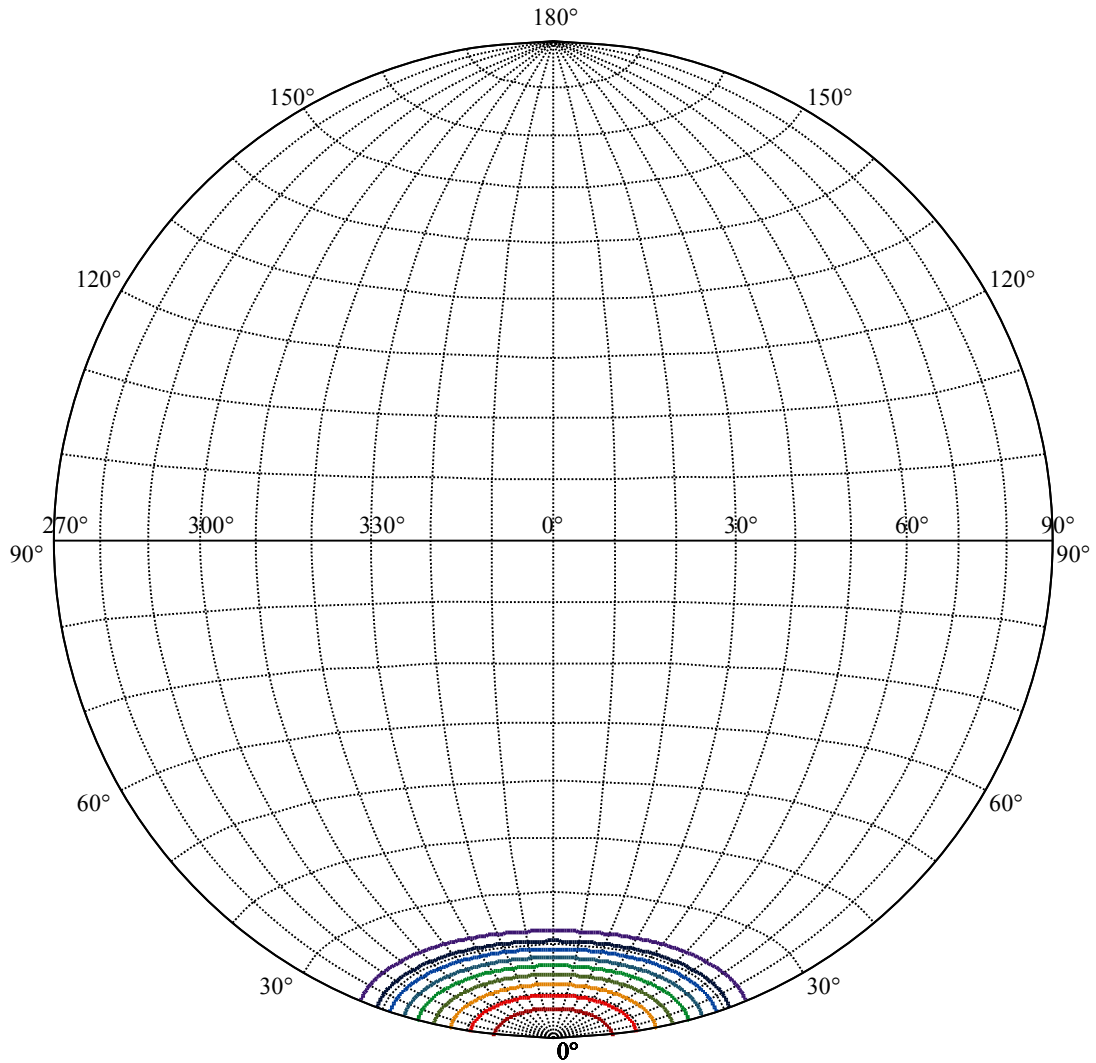
Beam Angle(50%Imax):C0/180Left:15.8 Right:15.8

:C90/270Left:15.8 Right:15.8





(10%Imax) 382.732	—
(20%Imax) 765.464	—
(30%Imax) 1148.2	—
(40%Imax) 1530.93	—
(50%Imax) 1913.66	—
(60%Imax) 2296.39	—
(70%Imax) 2679.13	—
(80%Imax) 3061.86	—
(90%Imax) 3444.59	—



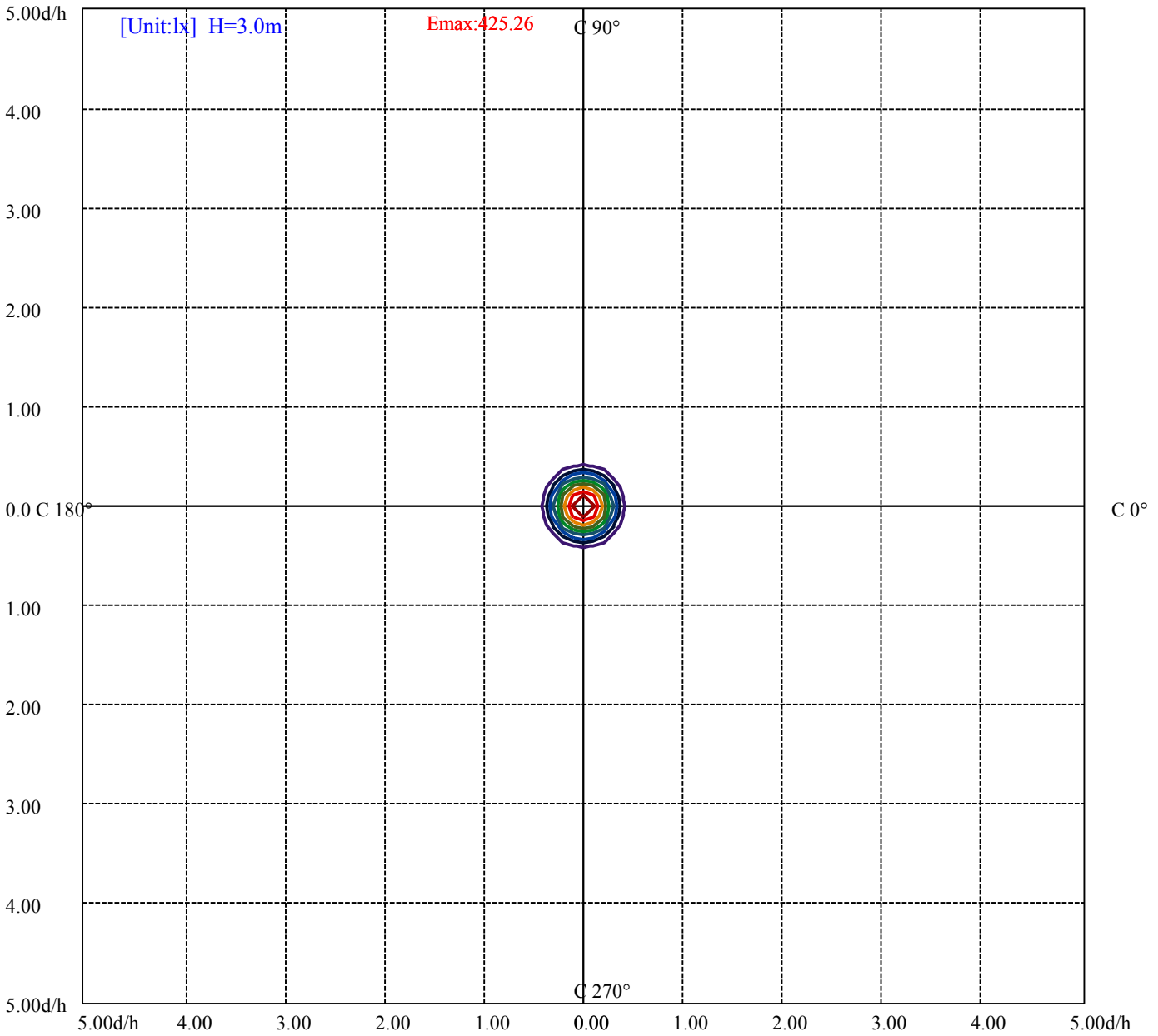
House

[Unit:cd]

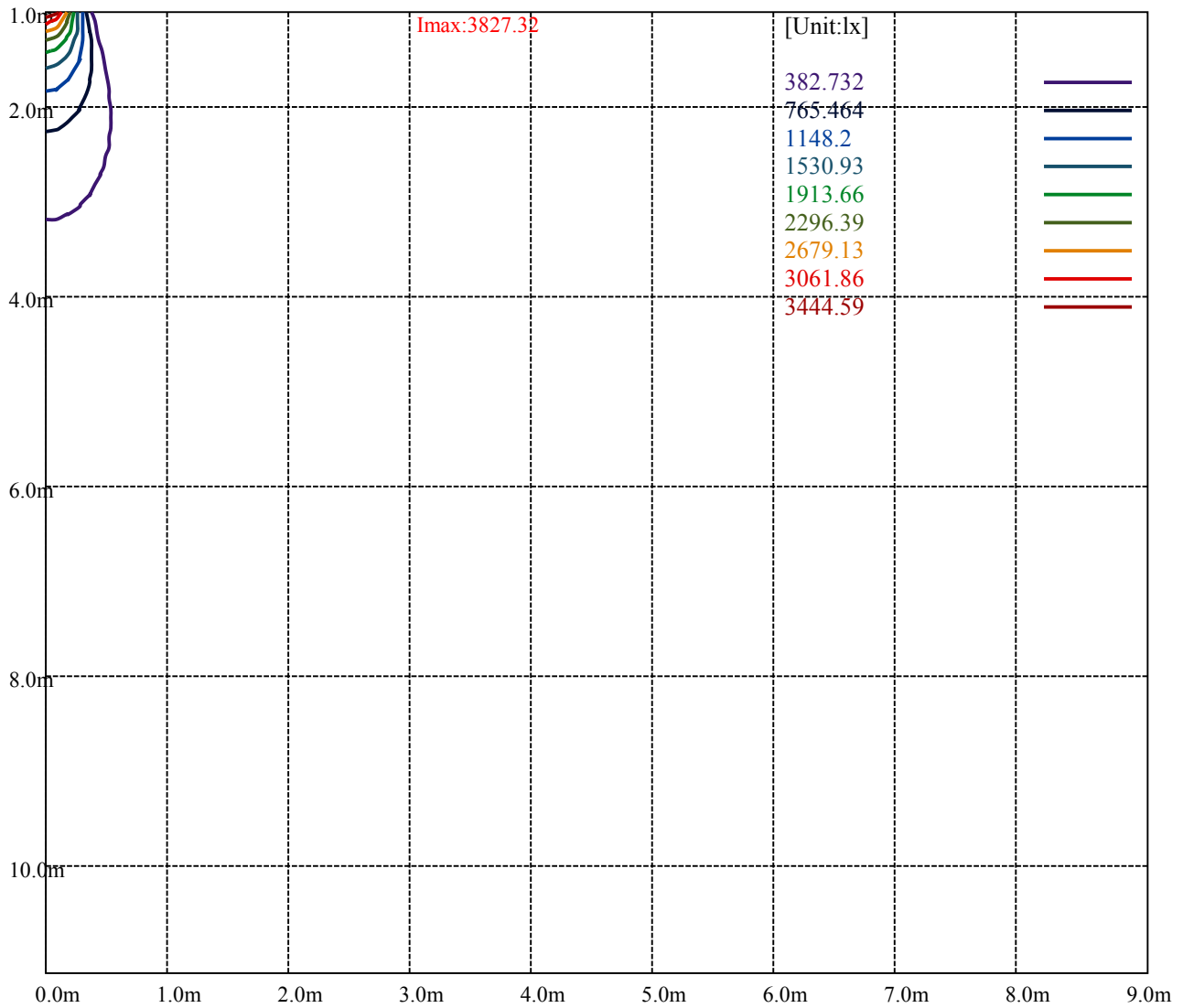
Road

Imax:3827.32

(10%Imax) 382.732	—
(20%Imax) 765.464	—
(30%Imax) 1148.2	—
(40%Imax) 1530.93	—
(50%Imax) 1913.66	—
(60%Imax) 2296.39	—
(70%Imax) 2679.13	—
(80%Imax) 3061.86	—
(90%Imax) 3444.59	—



(10%Emax) 42.52578	—
(20%Emax) 85.05155	—
(30%Emax) 127.5778	—
(40%Emax) 170.1033	—
(50%Emax) 212.6289	—
(60%Emax) 255.1544	—
(70%Emax) 297.6811	—
(80%Emax) 340.2067	—
(90%Emax) 382.7322	—



Luminance Table

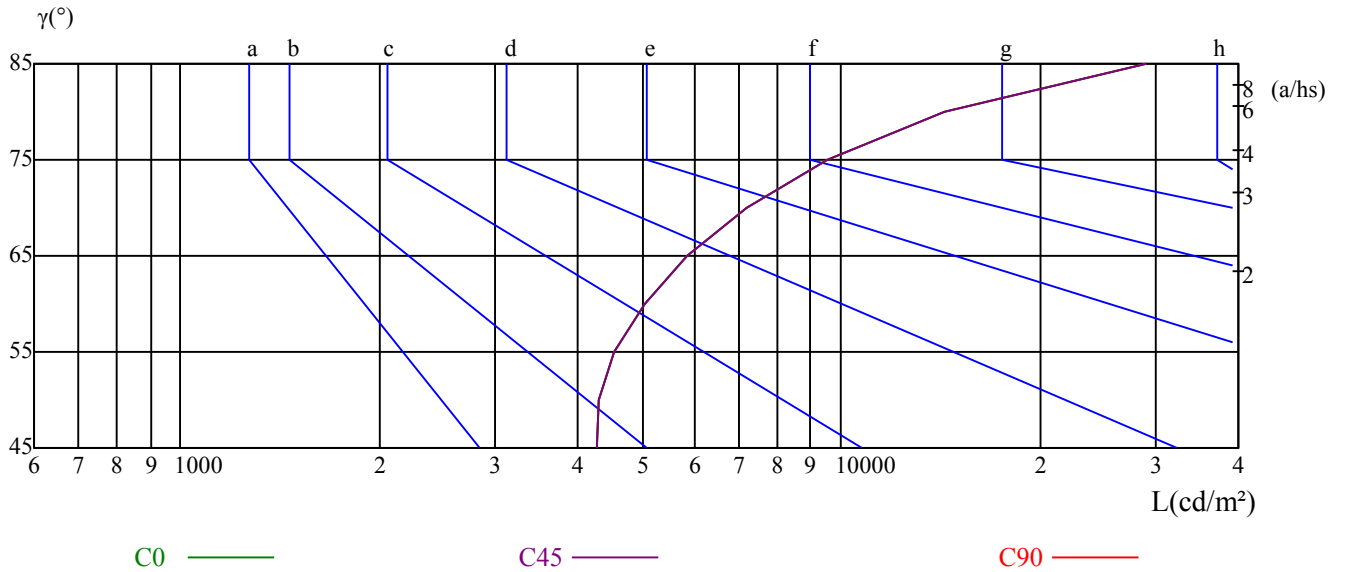
γ	45	50	55	60	65	70	75	80	85
C0	4279	4286	4536	5033	5859	7181	9567	14400	29014
C45	4279	4286	4536	5033	5859	7181	9567	14400	29014
C90	4279	4286	4536	5033	5859	7181	9567	14400	29014

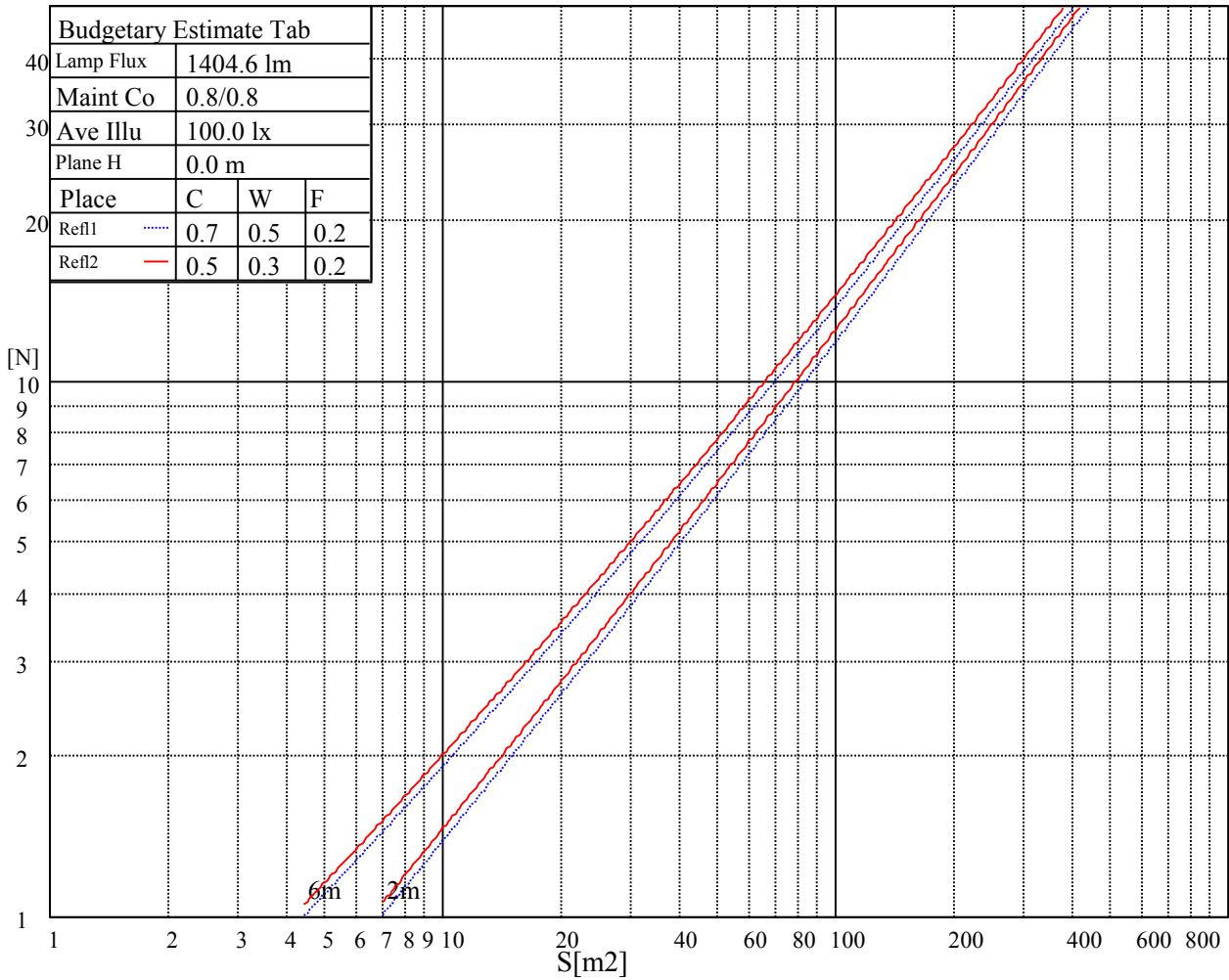
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5859	5859	5859	9567	9567	9567	29014	29014	29014

Glare Table

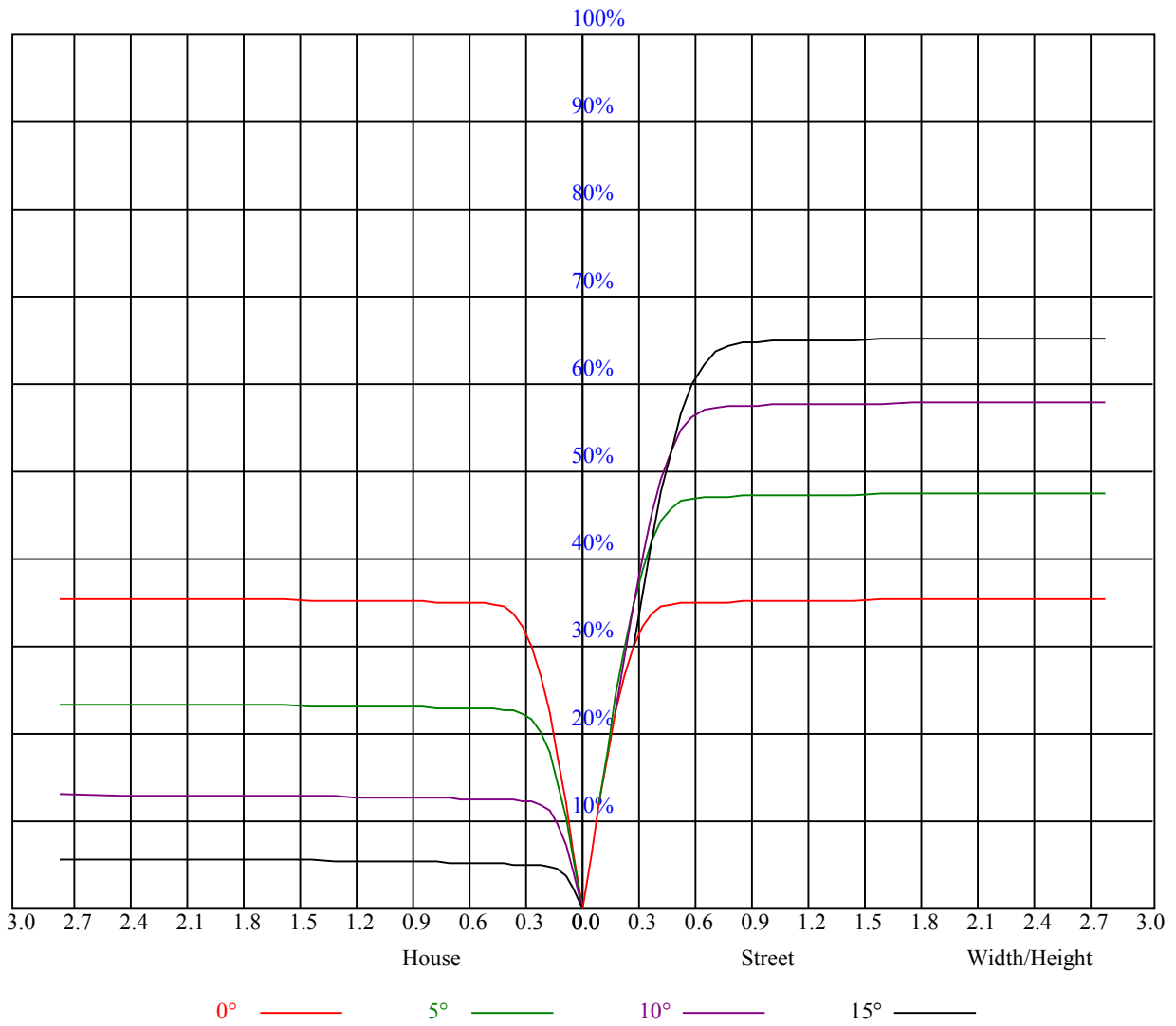
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.85	0.85	0.85	0.83	0.83	0.83	0.79	0.79	0.79	0.76	0.76	0.76	0.73	0.73	0.73	0.72
1	0.80	0.79	0.78	0.79	0.78	0.77	0.76	0.75	0.74	0.73	0.73	0.72	0.71	0.71	0.70	0.69
2	0.77	0.75	0.73	0.76	0.74	0.72	0.73	0.72	0.70	0.71	0.70	0.69	0.69	0.68	0.67	0.66
3	0.74	0.71	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.69	0.68	0.66	0.68	0.66	0.65	0.64
4	0.71	0.68	0.66	0.70	0.67	0.65	0.69	0.66	0.65	0.67	0.65	0.64	0.66	0.65	0.63	0.62
5	0.68	0.65	0.63	0.68	0.65	0.63	0.66	0.64	0.62	0.65	0.63	0.62	0.64	0.63	0.61	0.61
6	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.64	0.62	0.60	0.63	0.61	0.60	0.59
7	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.60	0.59	0.62	0.60	0.58	0.61	0.59	0.58	0.57
8	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.60	0.58	0.57	0.60	0.58	0.56	0.56
9	0.60	0.57	0.56	0.60	0.57	0.55	0.59	0.57	0.55	0.59	0.57	0.55	0.58	0.56	0.55	0.54
10	0.59	0.56	0.54	0.58	0.56	0.54	0.58	0.56	0.54	0.58	0.55	0.54	0.57	0.55	0.54	0.53



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	3829.56	3830.76	3813.43	3784.75	3736.95	3659.27	3566.05	3471.05	3362.89
45.0	3825.38	3803.87	3758.46	3702.89	3631.18	3523.63	3421.45	3301.35	3155.55
90.0	3819.41	3798.49	3761.45	3693.92	3623.42	3539.16	3429.82	3295.37	3159.73
135.0	3834.94	3820.60	3797.89	3759.65	3705.87	3628.79	3542.15	3429.82	3311.51
180.0	3829.56	3817.61	3790.13	3742.92	3680.18	3598.92	3508.09	3387.39	3247.57
225.0	3825.38	3830.16	3825.98	3800.88	3764.43	3693.92	3629.39	3532.59	3410.70
270.0	3819.41	3828.97	3821.80	3800.88	3757.26	3693.92	3620.43	3530.80	3419.06
315.0	3834.94	3824.78	3802.67	3756.07	3703.48	3628.20	3530.20	3417.87	3304.34
360.0	3829.56	3830.76	3813.43	3784.75	3736.95	3659.27	3566.05	3471.05	3362.89
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3209.33	3070.10	2918.33	2735.49	2544.28	2366.81	2155.88	1930.02	1717.90
45.0	2993.02	2834.08	2647.05	2477.36	2275.99	2064.46	1863.69	1626.47	1386.86
90.0	2993.02	2818.54	2659.00	2468.99	2295.11	2087.17	1858.32	1643.20	1419.73
135.0	3164.51	3005.57	2850.21	2684.10	2471.38	2295.11	2111.67	1857.72	1638.42
180.0	3111.93	2925.50	2768.35	2602.84	2432.54	2210.26	2017.86	1810.51	1561.34
225.0	3310.31	3166.31	2986.45	2847.82	2680.52	2444.49	2289.13	2099.12	1869.07
270.0	3289.40	3146.59	3003.18	2851.41	2669.16	2472.58	2292.72	2076.41	1843.38
315.0	3156.75	2998.40	2838.26	2648.85	2473.17	2271.21	2054.90	1850.55	1642.01
360.0	3209.33	3070.10	2918.33	2735.49	2544.28	2366.81	2155.88	1930.02	1717.90
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1481.27	1272.14	1031.93	792.32	588.57	385.41	306.53	125.48	82.04
45.0	1164.58	926.77	677.00	489.38	311.91	168.50	98.89	68.00	46.07
90.0	1139.49	919.24	703.53	463.08	302.41	181.59	104.87	72.12	50.31
135.0	1412.56	1140.68	898.09	692.54	465.48	313.70	167.13	107.20	72.90
180.0	1191.95	1078.18	828.77	596.99	416.60	251.56	150.28	93.51	64.35
225.0	1631.85	1416.74	1169.48	922.88	711.60	513.58	321.35	180.27	109.71
270.0	1633.05	1451.40	1159.80	943.50	755.28	510.89	319.08	233.87	104.39
315.0	1310.98	1169.42	956.23	673.00	500.49	328.52	180.57	101.52	70.63
360.0	1481.27	1272.14	1031.93	792.32	588.57	385.41	306.53	125.48	82.04
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	52.58	36.39	26.65	19.96	15.48	12.85	10.99	9.74	8.90
45.0	31.01	22.65	16.97	13.62	11.35	9.92	9.02	8.31	7.77
90.0	33.34	24.20	17.81	13.80	11.59	10.10	9.02	8.37	7.89
135.0	49.71	34.54	23.66	18.16	13.92	11.47	10.10	9.02	8.31
180.0	44.75	31.07	21.33	16.73	13.56	11.05	9.86	8.96	8.25
225.0	73.79	51.39	34.36	24.56	19.18	15.18	12.49	10.88	9.74
270.0	69.55	48.40	32.68	24.62	18.76	14.88	12.61	11.05	9.68
315.0	47.38	33.58	24.44	18.64	15.06	12.43	10.70	9.62	8.84
360.0	52.58	36.39	26.65	19.96	15.48	12.85	10.99	9.74	8.90
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	8.19	7.71	7.23	6.87	6.57	6.33	6.09	5.92	5.74
45.0	7.41	7.05	6.69	6.45	6.21	6.04	5.86	5.74	5.56
90.0	7.35	7.05	6.75	6.45	6.27	6.04	5.86	5.68	5.56
135.0	7.83	7.47	6.99	6.69	6.51	6.21	6.04	5.86	5.68
180.0	7.71	7.29	6.93	6.57	6.33	6.09	5.92	5.74	5.62
225.0	8.72	8.13	7.65	7.17	6.87	6.63	6.33	6.09	5.92
270.0	8.90	8.31	7.71	7.35	6.99	6.69	6.45	6.27	6.04
315.0	8.13	7.65	7.23	6.87	6.63	6.33	6.09	5.98	5.80
360.0	8.19	7.71	7.23	6.87	6.57	6.33	6.09	5.92	5.74

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	5.56	5.44	5.32	5.20	5.14	5.08	4.96	4.90	4.84
45.0	5.38	5.32	5.26	5.14	5.08	4.96	4.96	4.90	4.84
90.0	5.44	5.32	5.20	5.14	5.02	4.96	4.90	4.84	4.78
135.0	5.56	5.44	5.32	5.26	5.20	5.08	5.02	4.96	4.90
180.0	5.50	5.32	5.20	5.14	5.08	4.96	4.90	4.84	4.78
225.0	5.74	5.62	5.50	5.38	5.26	5.20	5.14	5.02	5.02
270.0	5.92	5.80	5.62	5.56	5.50	5.38	5.32	5.26	5.20
315.0	5.68	5.56	5.38	5.32	5.20	5.14	5.08	5.02	4.96
360.0	5.56	5.44	5.32	5.20	5.14	5.08	4.96	4.90	4.84
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	4.78	4.72	4.72	4.66	4.66	4.60	4.54	4.54	4.54
45.0	4.78	4.72	4.72	4.66	4.66	4.60	4.60	4.60	4.54
90.0	4.78	4.72	4.66	4.66	4.60	4.60	4.60	4.54	4.54
135.0	4.84	4.78	4.72	4.72	4.66	4.66	4.60	4.60	4.60
180.0	4.72	4.66	4.66	4.60	4.60	4.54	4.54	4.54	4.48
225.0	4.96	4.90	4.84	4.78	4.72	4.72	4.66	4.66	4.66
270.0	5.14	5.08	5.08	5.02	5.02	4.96	4.96	4.90	4.96
315.0	4.90	4.90	4.84	4.84	4.78	4.72	4.72	4.72	4.72
360.0	4.78	4.72	4.72	4.66	4.66	4.60	4.54	4.54	4.54
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.48	4.48	4.48	4.42	4.42	4.42	4.42	4.42	4.42
45.0	4.54	4.48	4.54	4.48	4.48	4.48	4.48	4.48	4.42
90.0	4.54	4.48	4.48	4.48	4.48	4.48	4.42	4.48	4.42
135.0	4.54	4.54	4.54	4.54	4.48	4.48	4.48	4.48	4.48
180.0	4.48	4.48	4.42	4.48	4.42	4.42	4.42	4.42	4.42
225.0	4.60	4.60	4.60	4.54	4.54	4.48	4.48	4.48	4.48
270.0	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.96
315.0	4.72	4.72	4.66	4.66	4.60	4.66	4.66	4.66	4.66
360.0	4.48	4.48	4.48	4.42	4.42	4.42	4.42	4.42	4.42
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36
45.0	4.42	4.48	4.48	4.48	4.48	4.48	4.48	4.48	4.48
90.0	4.42	4.42	4.42	4.48	4.48	4.42	4.42	4.42	4.42
135.0	4.48	4.48	4.48	4.48	4.42	4.48	4.48	4.48	4.48
180.0	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42
225.0	4.48	4.48	4.48	4.42	4.48	4.42	4.48	4.48	4.48
270.0	4.96	5.08	5.20	5.32	5.50	6.04	6.27	6.39	5.68
315.0	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66
360.0	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.36	4.36	4.36	4.36	4.42	4.42	4.42	4.30	4.30
45.0	4.54	4.54	4.60	4.60	4.66	4.30	4.30	4.36	4.30
90.0	4.48	4.48	4.48	4.48	4.36	4.36	4.30	4.30	4.30
135.0	4.48	4.54	4.48	4.54	4.36	4.30	4.30	4.30	4.30
180.0	4.42	4.42	4.42	4.48	4.24	4.30	4.24	4.30	4.24
225.0	4.48	4.48	4.48	4.48	4.48	4.48	4.30	4.30	4.36
270.0	5.26	5.32	5.50	5.74	5.80	5.92	4.96	4.36	4.36
315.0	4.66	4.72	4.72	4.84	5.08	5.32	4.30	4.30	4.30
360.0	4.36	4.36	4.36	4.36	4.42	4.42	4.42	4.30	4.30

Intensity data(cd)

C/ γ (°)	90.0
0.0	4.30
45.0	4.36
90.0	4.30
135.0	4.30
180.0	4.30
225.0	4.30
270.0	4.36
315.0	4.30
360.0	4.30