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Nata

LumCAT: 1-0927-M	
Luminaire: 92.70.132.00	
Report No: NATA0100	Voltage(V): 35.5100
Test No: GC2019091905	Current(A): 0.2970
LampCAT: LUMILEDS LUXEON 1203	Power (W): 10.5000
Lamp flux(lm): 1330.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1015.93
Efficiency(%): 76.39%
Lumens(lm)/Power(W): 96.76
Central intensity(cd): 5291.297
Maximum intensity(cd): 5291.297
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=25.1
 [C90/270]Total=25.1
Field angle(10%Imax): [C0/180]Total=41.5
 [C90/270]Total=41.5
Maximum s/h(1/2): C0_180=0.43 C90_270=0.43
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 76.39%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.553%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5291.297	0.000	0	.000%	.000%
1.0	5273.508	5.055	5.055	.380%	.498%
2.0	5223.938	15.067	20.122	1.133%	1.981%
3.0	5123.883	24.749	44.871	1.861%	4.417%
4.0	4995.422	33.873	78.743	2.547%	7.751%
5.0	4825.266	42.248	120.991	3.177%	11.909%
6.0	4608.844	49.579	170.57	3.728%	16.789%
7.0	4359.094	55.664	226.234	4.185%	22.269%
8.0	4107.094	60.591	286.825	4.556%	28.233%
9.0	3798.563	64.071	350.896	4.817%	34.539%
10.0	3467.742	65.757	416.653	4.944%	41.012%
11.0	3164.695	66.272	482.925	4.983%	47.535%
12.0	2845.055	65.695	548.62	4.939%	54.002%
13.0	2486.602	63.273	611.893	4.757%	60.230%
14.0	2169.844	59.602	671.495	4.481%	66.096%
15.0	1879.031	55.585	727.08	4.179%	71.568%
16.0	1542.579	50.136	777.216	3.770%	76.503%
17.0	1312.313	44.458	821.675	3.343%	80.879%
18.0	1047.368	38.906	860.581	2.925%	84.708%
19.0	851.484	33.036	893.617	2.484%	87.960%
20.0	657.830	27.625	921.241	2.077%	90.679%
21.0	480.445	21.857	943.099	1.643%	92.831%
22.0	331.151	16.309	959.408	1.226%	94.436%
23.0	213.356	11.425	970.833	.859%	95.561%
24.0	127.378	7.450	978.283	.560%	96.294%
25.0	59.660	4.253	982.536	.320%	96.713%
26.0	30.199	2.121	984.657	.159%	96.921%
27.0	16.495	1.142	985.799	.086%	97.034%
28.0	12.607	0.737	986.536	.055%	97.106%
29.0	11.166	0.622	987.158	.047%	97.168%
30.0	10.209	0.577	987.735	.043%	97.224%
31.0	9.316	0.543	988.279	.041%	97.278%
32.0	8.684	0.516	988.794	.039%	97.329%
33.0	8.163	0.496	989.291	.037%	97.378%
34.0	7.657	0.479	989.769	.036%	97.425%
35.0	7.298	0.464	990.234	.035%	97.470%
36.0	6.975	0.454	990.688	.034%	97.515%
37.0	6.694	0.446	991.134	.034%	97.559%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	6.469	0.439	991.573	.033%	97.602%
39.0	6.272	0.435	992.008	.033%	97.645%
40.0	6.096	0.431	992.44	.032%	97.688%
41.0	5.963	0.429	992.869	.032%	97.730%
42.0	5.822	0.428	993.297	.032%	97.772%
43.0	5.702	0.427	993.724	.032%	97.814%
44.0	5.611	0.427	994.151	.032%	97.856%
45.0	5.520	0.428	994.579	.032%	97.898%
46.0	5.442	0.429	995.007	.032%	97.940%
47.0	5.386	0.431	995.438	.032%	97.983%
48.0	5.309	0.432	995.87	.033%	98.025%
49.0	5.259	0.434	996.304	.033%	98.068%
50.0	5.196	0.436	996.74	.033%	98.111%
51.0	5.154	0.438	997.178	.033%	98.154%
52.0	5.105	0.440	997.618	.033%	98.197%
53.0	5.063	0.442	998.061	.033%	98.241%
54.0	5.027	0.445	998.505	.033%	98.285%
55.0	4.999	0.448	998.953	.034%	98.329%
56.0	4.964	0.450	999.403	.034%	98.373%
57.0	4.943	0.453	999.856	.034%	98.418%
58.0	4.901	0.455	1000.311	.034%	98.462%
59.0	4.894	0.458	1000.769	.034%	98.507%
60.0	4.873	0.461	1001.231	.035%	98.553%
61.0	4.838	0.463	1001.694	.035%	98.598%
62.0	4.823	0.466	1002.16	.035%	98.644%
63.0	4.802	0.468	1002.628	.035%	98.690%
64.0	4.795	0.471	1003.099	.035%	98.737%
65.0	4.767	0.473	1003.572	.036%	98.783%
66.0	4.760	0.475	1004.047	.036%	98.830%
67.0	4.746	0.478	1004.525	.036%	98.877%
68.0	4.732	0.480	1005.005	.036%	98.924%
69.0	4.718	0.482	1005.488	.036%	98.972%
70.0	4.697	0.484	1005.971	.036%	99.019%
71.0	4.697	0.486	1006.457	.037%	99.067%
72.0	4.697	0.488	1006.945	.037%	99.115%
73.0	4.676	0.490	1007.435	.037%	99.164%
74.0	4.669	0.491	1007.926	.037%	99.212%
75.0	4.655	0.493	1008.419	.037%	99.260%

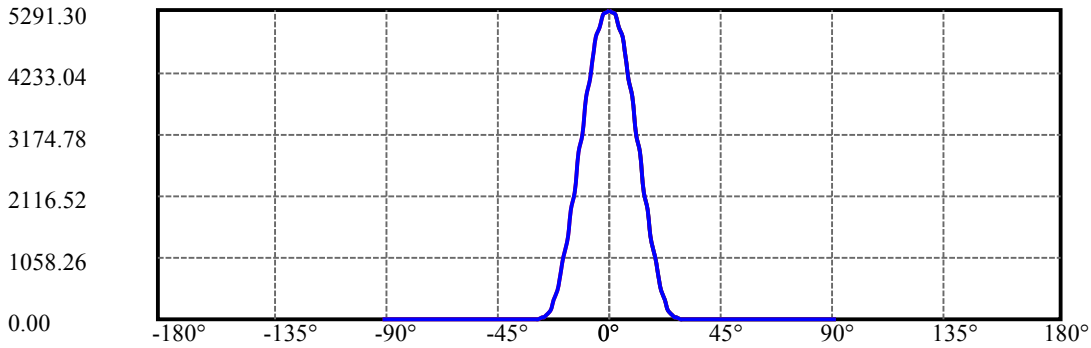
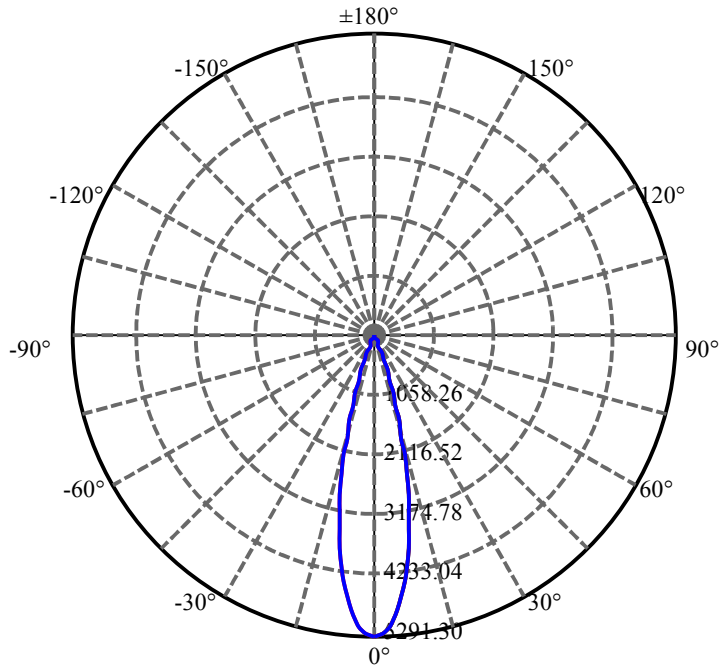
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.641	0.493	1008.913	.037%	99.309%
77.0	4.641	0.495	1009.407	.037%	99.358%
78.0	4.634	0.496	1009.904	.037%	99.407%
79.0	4.641	0.498	1010.402	.037%	99.456%
80.0	4.641	0.500	1010.902	.038%	99.505%
81.0	4.634	0.502	1011.404	.038%	99.554%
82.0	4.620	0.502	1011.906	.038%	99.604%
83.0	4.620	0.502	1012.408	.038%	99.653%
84.0	4.634	0.504	1012.912	.038%	99.703%
85.0	4.620	0.505	1013.417	.038%	99.752%
86.0	4.605	0.504	1013.921	.038%	99.802%
87.0	4.584	0.503	1014.424	.038%	99.852%
88.0	4.591	0.503	1014.927	.038%	99.901%
89.0	4.584	0.503	1015.43	.038%	99.951%
90.0	4.584	0.503	1015.933	.038%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	987.74	74.27%	97.22%
0-40	992.44	74.62%	97.69%
0-60	1001.23	75.28%	98.55%
0-90	1015.43	76.35%	99.95%
0-120	1015.43	76.35%	99.95%
0-180	1015.93	76.39%	100.00%
60-90	14.66	1.10%	1.44%
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%
0-16.80	812.75	61.11%	80.00%

ZONAL LUMEN SUMMARY

0-10	416.65
10-20	504.59
20-30	66.49
30-40	4.70
40-50	4.30
50-60	4.49
60-70	4.74
70-80	4.93
80-90	4.53
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: —————

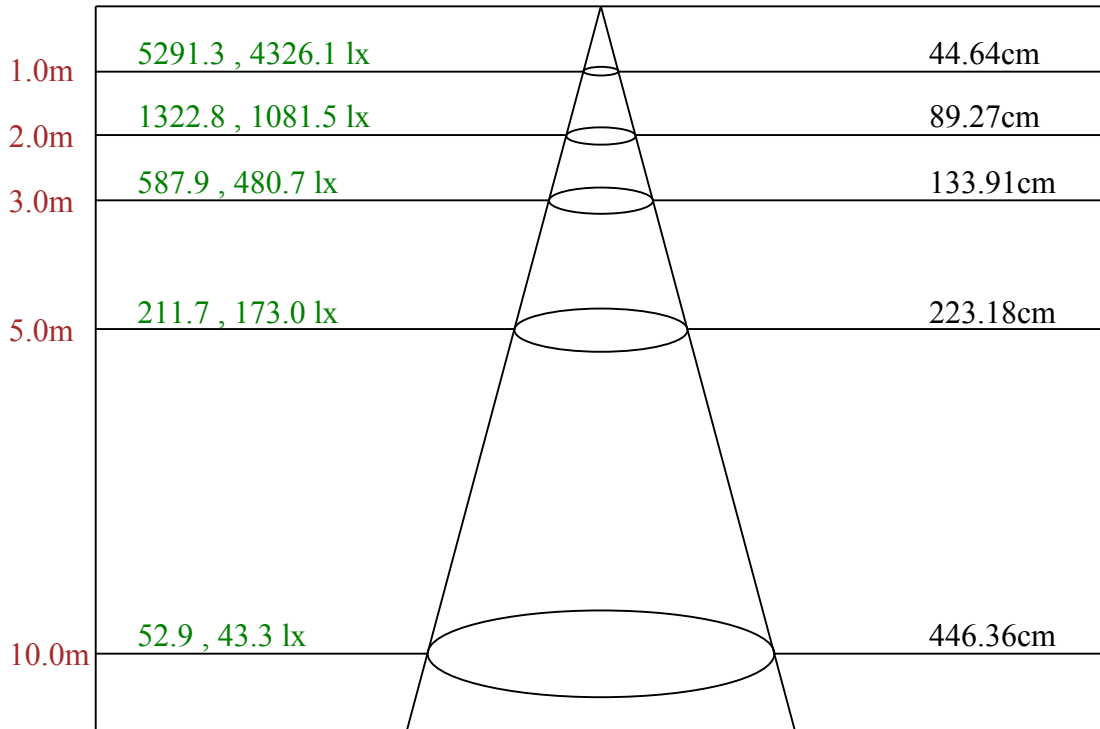
C90/C270: —————

Field angle(10%Imax):C0/180Left:20.7 Right:20.7

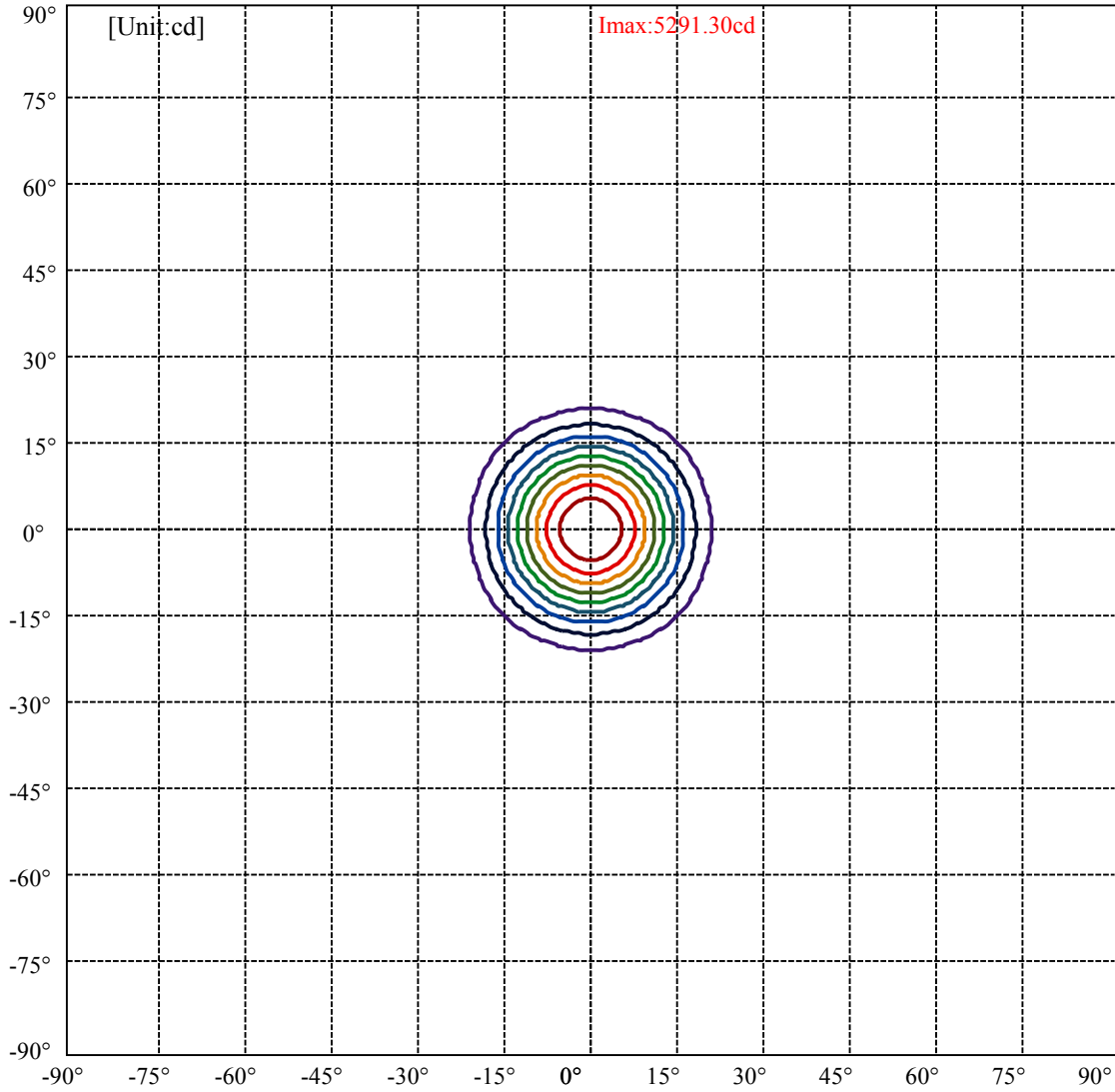
:C90/270Left:20.7 Right:20.7

Beam Angle(50%Imax):C0/180Left:12.6 Right:12.6

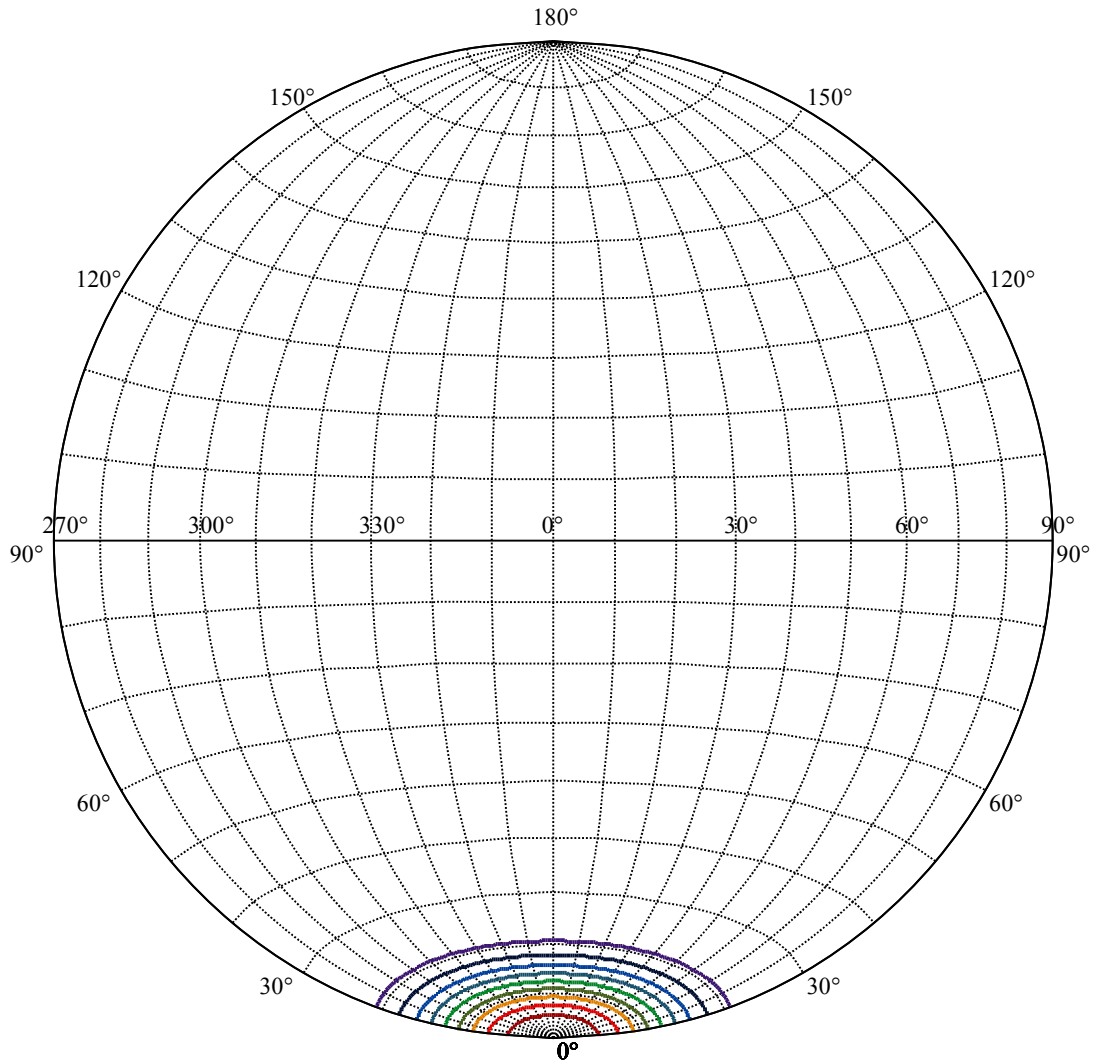
:C90/270Left:12.6 Right:12.6



Max , Ave Beam angle of C0 plane 25.16



(10%Imax) 529.13	—
(20%Imax) 1058.26	—
(30%Imax) 1587.39	—
(40%Imax) 2116.52	—
(50%Imax) 2645.65	—
(60%Imax) 3174.78	—
(70%Imax) 3703.91	—
(80%Imax) 4233.04	—
(90%Imax) 4762.17	—



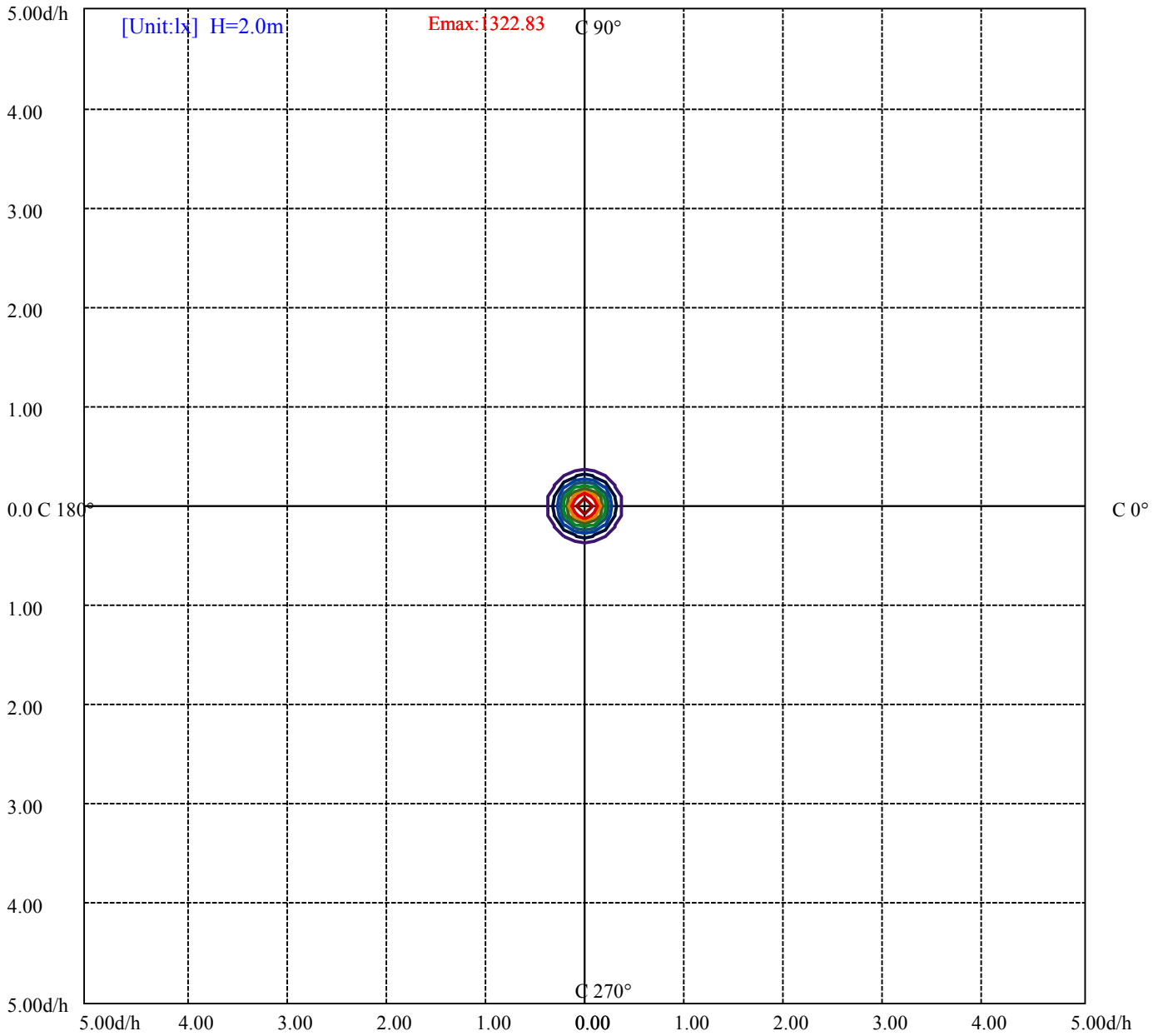
House

[Unit:cd]

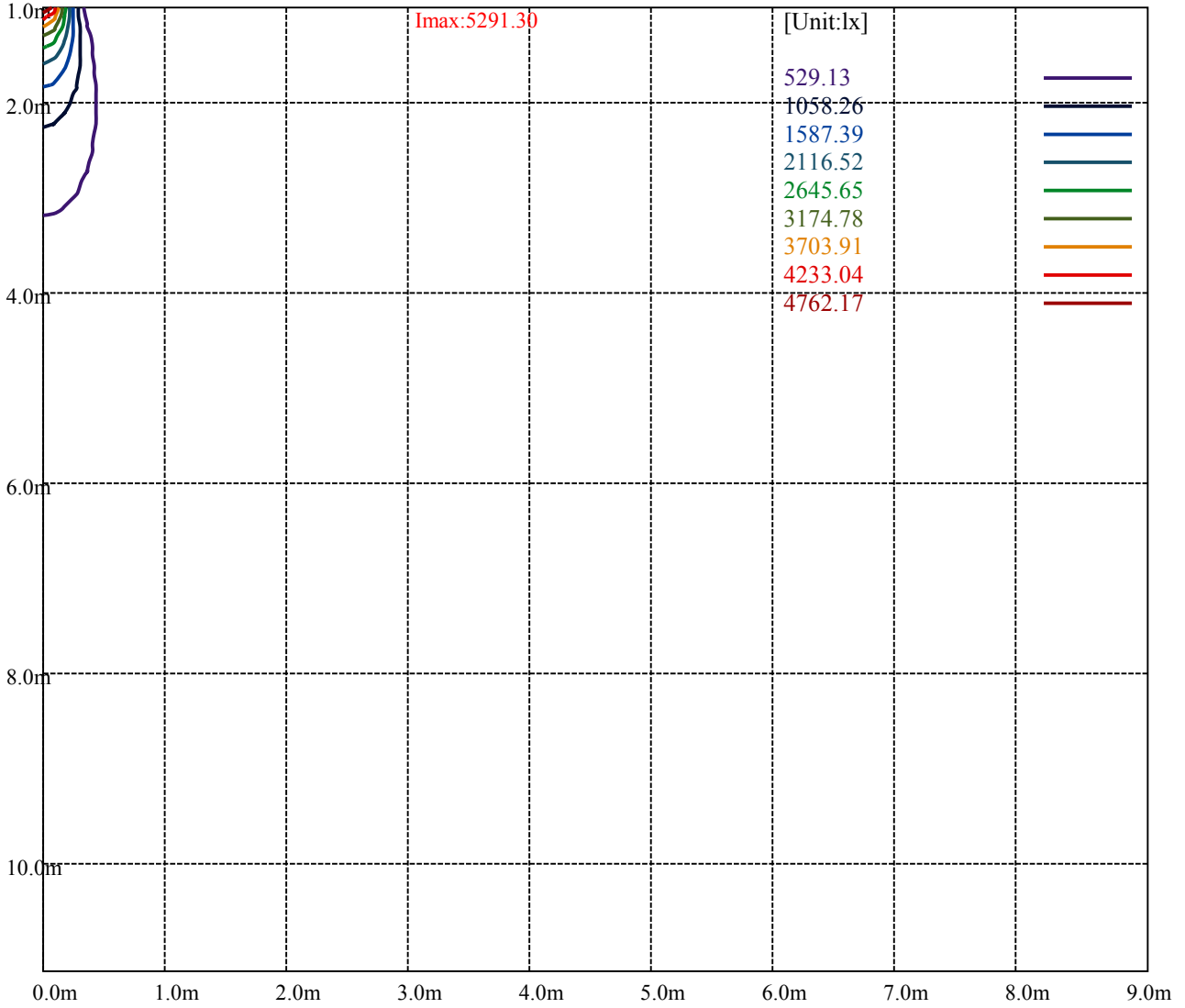
Road

Imax:5291.30

(10%Imax) 529.13	—
(20%Imax) 1058.26	—
(30%Imax) 1587.39	—
(40%Imax) 2116.52	—
(50%Imax) 2645.65	—
(60%Imax) 3174.78	—
(70%Imax) 3703.91	—
(80%Imax) 4233.04	—
(90%Imax) 4762.17	—



- (10%Emax) 132.2823
- (20%Emax) 264.565
- (30%Emax) 396.8475
- (40%Emax) 529.13
- (50%Emax) 661.4125
- (60%Emax) 793.695
- (70%Emax) 925.9775
- (80%Emax) 1058.26
- (90%Emax) 1190.54



Luminance Table

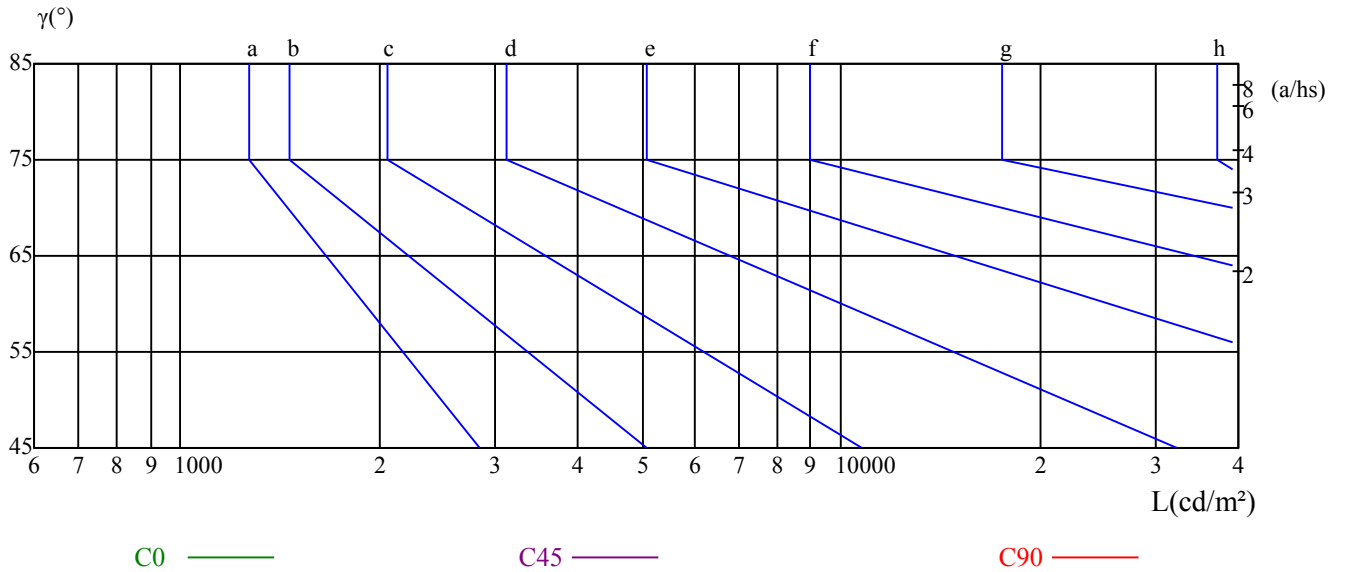
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

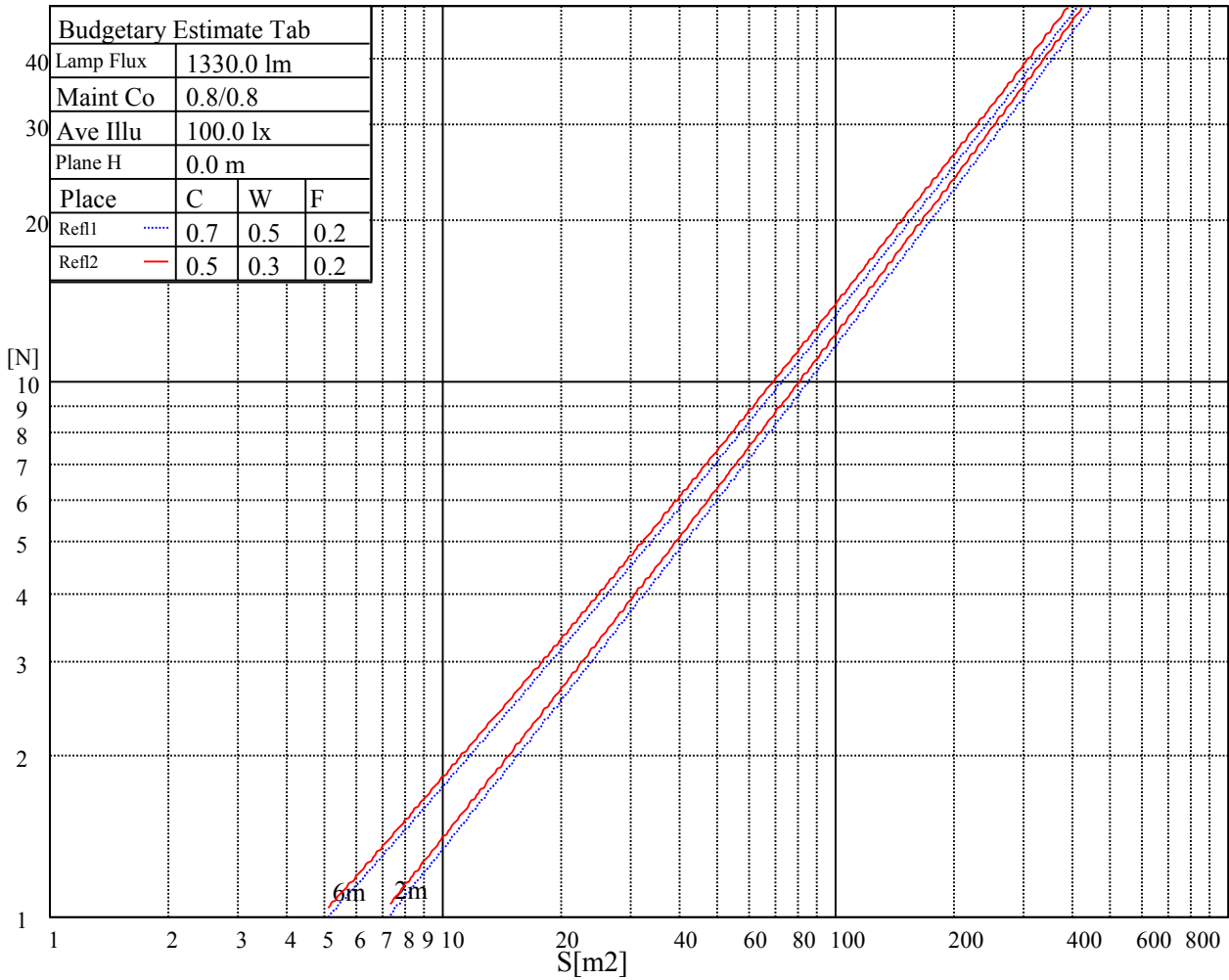
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

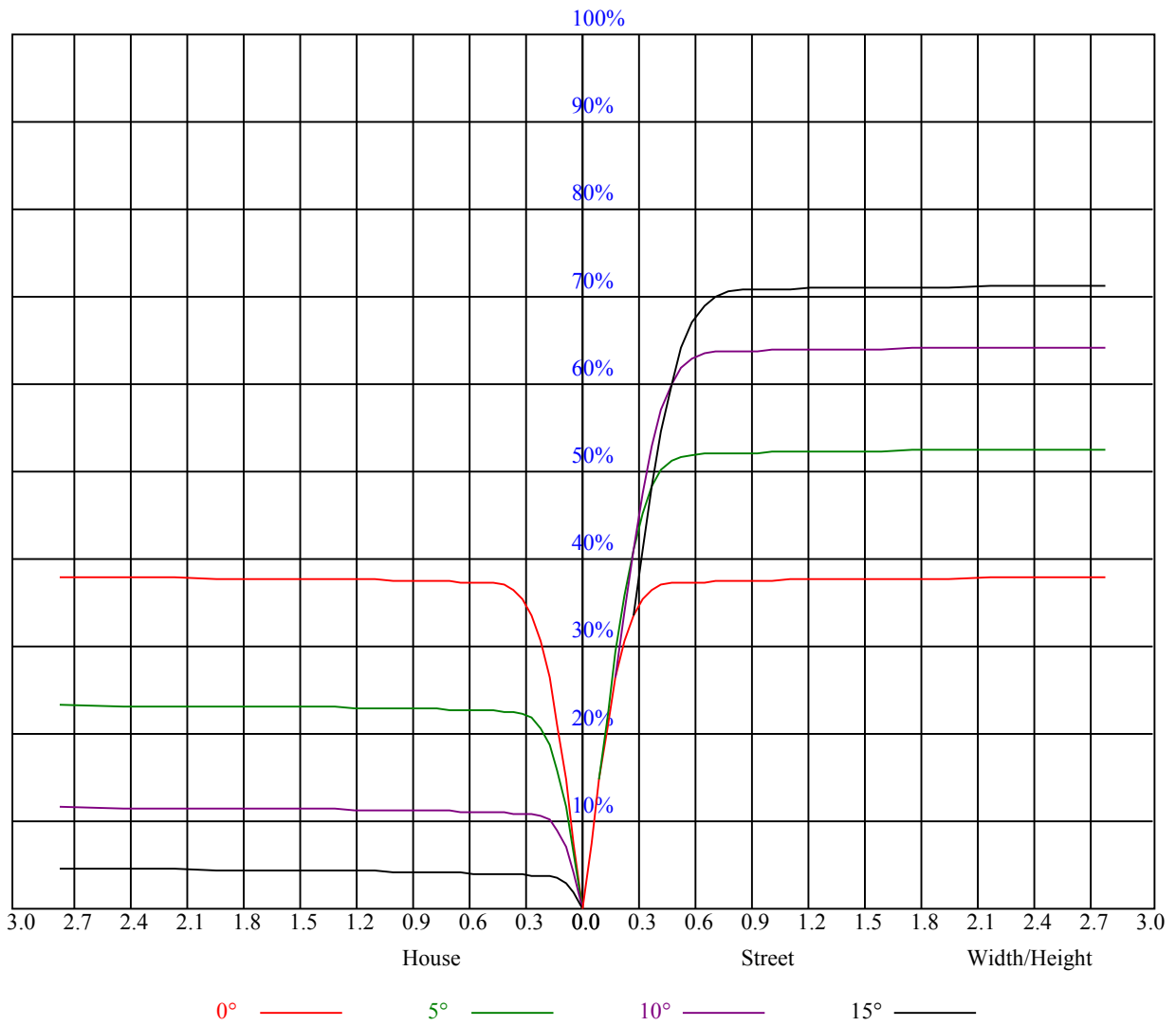
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.78	0.78	0.78	0.76
1	0.86	0.85	0.83	0.85	0.83	0.82	0.82	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74
2	0.82	0.80	0.78	0.81	0.79	0.78	0.79	0.77	0.76	0.77	0.75	0.74	0.75	0.74	0.73	0.72
3	0.79	0.77	0.75	0.78	0.76	0.74	0.76	0.74	0.73	0.75	0.73	0.72	0.73	0.72	0.71	0.70
4	0.77	0.74	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.73	0.71	0.70	0.72	0.70	0.69	0.68
5	0.74	0.71	0.69	0.74	0.71	0.69	0.72	0.70	0.68	0.71	0.69	0.68	0.70	0.68	0.67	0.66
6	0.72	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.68	0.66	0.69	0.67	0.66	0.65
7	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.65	0.68	0.66	0.64	0.67	0.65	0.64	0.63
8	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.67	0.64	0.63	0.66	0.64	0.63	0.62
9	0.67	0.64	0.62	0.66	0.64	0.62	0.66	0.63	0.62	0.65	0.63	0.61	0.65	0.63	0.61	0.61
10	0.65	0.62	0.61	0.65	0.62	0.60	0.64	0.62	0.60	0.64	0.62	0.60	0.63	0.61	0.60	0.59



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	5280.75	5320.69	5331.94	5309.44	5258.25	5155.31	5004.00	4834.13	4631.06
45.0	5292.00	5310.56	5295.94	5239.13	5148.00	5002.88	4847.63	4614.75	4390.88
90.0	5290.31	5251.50	5179.50	5038.88	4891.50	4712.06	4438.13	4188.38	3921.19
135.0	5303.81	5256.56	5158.69	5015.25	4856.06	4631.06	4375.13	4118.06	3834.00
180.0	5280.75	5193.56	5083.88	4916.25	4704.19	4487.63	4224.94	3882.94	3578.06
225.0	5292.00	5238.00	5161.50	5000.06	4838.63	4632.19	4335.19	4082.63	3815.44
270.0	5286.94	5297.63	5266.13	5207.06	5092.31	4928.63	4747.50	4505.63	4271.06
315.0	5303.81	5319.56	5313.94	5265.00	5174.44	5052.38	4898.25	4646.25	4415.06
360.0	5280.75	5320.69	5331.94	5309.44	5258.25	5155.31	5004.00	4834.13	4631.06
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4326.75	4061.25	3777.75	3448.13	3099.94	2781.56	2426.06	2075.63	1791.56
45.0	4112.44	3803.06	3508.31	3205.69	2811.38	2494.69	2186.44	1832.06	1561.50
90.0	3632.06	3254.06	2947.50	2635.88	2287.13	1959.75	1692.00	1406.81	1112.68
135.0	3470.06	3160.13	2840.63	2518.88	2130.19	1846.13	1575.56	1268.44	1048.50
180.0	3264.75	2865.94	2550.38	2240.44	1908.00	1606.50	1355.06	1095.19	890.04
225.0	3441.38	3128.06	2815.31	2417.63	2146.50	1831.50	1539.00	1114.26	1065.15
270.0	3978.56	3659.63	3365.44	3093.75	2660.63	2343.38	2074.50	1692.56	1438.31
315.0	4162.50	3809.81	3512.25	3200.06	2849.06	2495.25	2183.63	1855.69	1590.75
360.0	4326.75	4061.25	3777.75	3448.13	3099.94	2781.56	2426.06	2075.63	1791.56
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1497.38	1252.13	1011.38	789.19	609.19	429.19	288.00	160.71	82.74
45.0	1303.88	1062.56	835.31	633.94	451.69	310.50	224.89	83.36	33.69
90.0	930.88	712.86	540.73	368.21	225.23	129.21	59.34	20.59	15.13
135.0	813.38	628.88	449.44	287.44	213.64	79.76	37.13	17.44	14.01
180.0	675.62	485.72	336.43	201.60	103.89	46.01	20.48	14.12	12.21
225.0	839.87	633.83	469.63	309.26	179.66	95.29	40.28	17.83	13.95
270.0	1200.38	970.31	752.63	595.13	397.69	296.44	146.59	66.09	26.55
315.0	1117.58	1065.60	867.09	658.80	468.23	320.46	202.33	97.14	43.31
360.0	1497.38	1252.13	1011.38	789.19	609.19	429.19	288.00	160.71	82.74
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	30.26	17.21	13.78	12.26	10.97	10.13	9.45	8.66	8.21
45.0	16.93	13.16	11.70	10.63	9.62	9.00	8.44	7.88	7.48
90.0	12.83	11.31	10.35	9.56	8.83	8.21	7.71	7.31	7.03
135.0	12.38	11.03	10.07	9.39	8.55	8.04	7.65	7.26	6.92
180.0	11.08	10.07	9.28	8.66	8.16	7.65	7.26	6.98	6.69
225.0	12.21	10.86	9.90	9.17	8.49	7.93	7.48	7.09	6.81
270.0	15.75	12.94	11.70	10.63	9.68	9.00	8.44	7.88	7.43
315.0	20.53	14.29	12.54	11.36	10.24	9.51	8.89	8.21	7.82
360.0	30.26	17.21	13.78	12.26	10.97	10.13	9.45	8.66	8.21
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	7.76	7.37	7.03	6.75	6.53	6.36	6.19	6.02	5.91
45.0	7.20	6.86	6.64	6.47	6.24	6.08	5.91	5.79	5.68
90.0	6.69	6.47	6.30	6.13	5.96	5.79	5.74	5.57	5.51
135.0	6.69	6.47	6.24	6.08	5.96	5.85	5.68	5.57	5.51
180.0	6.47	6.30	6.13	6.02	5.85	5.79	5.68	5.63	5.51
225.0	6.53	6.30	6.13	5.96	5.85	5.74	5.63	5.51	5.46
270.0	7.09	6.81	6.53	6.30	6.13	5.96	5.79	5.68	5.63
315.0	7.37	6.98	6.75	6.47	6.24	6.13	5.96	5.85	5.68
360.0	7.76	7.37	7.03	6.75	6.53	6.36	6.19	6.02	5.91

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	5.79	5.68	5.63	5.51	5.46	5.34	5.34	5.29	5.23
45.0	5.57	5.51	5.46	5.34	5.34	5.23	5.18	5.12	5.06
90.0	5.40	5.34	5.29	5.23	5.18	5.12	5.06	5.01	5.01
135.0	5.46	5.40	5.34	5.29	5.23	5.18	5.12	5.12	5.06
180.0	5.46	5.40	5.34	5.29	5.23	5.23	5.18	5.12	5.06
225.0	5.34	5.29	5.23	5.18	5.12	5.06	5.06	5.01	5.01
270.0	5.51	5.40	5.34	5.29	5.23	5.18	5.12	5.06	5.01
315.0	5.63	5.51	5.46	5.34	5.29	5.23	5.18	5.12	5.06
360.0	5.79	5.68	5.63	5.51	5.46	5.34	5.34	5.29	5.23
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.18	5.12	5.12	5.12	5.06	5.01	5.01	4.95	4.95
45.0	5.06	5.01	4.95	4.95	4.89	4.89	4.89	4.84	4.84
90.0	4.95	4.95	4.89	4.84	4.84	4.84	4.84	4.78	4.78
135.0	5.01	5.01	4.95	4.95	4.89	4.89	4.84	4.84	4.78
180.0	5.06	5.06	5.01	5.01	4.95	4.95	4.95	4.89	4.89
225.0	4.95	4.89	4.89	4.84	4.84	4.84	4.78	4.78	4.78
270.0	5.01	4.95	4.95	4.89	4.84	4.84	4.84	4.78	4.78
315.0	5.01	5.01	4.95	4.95	4.89	4.89	4.84	4.84	4.78
360.0	5.18	5.12	5.12	5.12	5.06	5.01	5.01	4.95	4.95
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.89	4.89	4.84	4.84	4.84	4.84	4.84	4.78	4.78
45.0	4.78	4.78	4.78	4.78	4.78	4.73	4.73	4.73	4.73
90.0	4.73	4.73	4.73	4.73	4.67	4.67	4.67	4.67	4.67
135.0	4.78	4.78	4.73	4.73	4.73	4.73	4.67	4.67	4.67
180.0	4.89	4.89	4.84	4.84	4.78	4.78	4.78	4.73	4.73
225.0	4.78	4.73	4.73	4.73	4.73	4.67	4.67	4.67	4.67
270.0	4.78	4.78	4.73	4.73	4.73	4.73	4.73	4.67	4.67
315.0	4.78	4.78	4.78	4.73	4.73	4.73	4.67	4.67	4.67
360.0	4.89	4.89	4.84	4.84	4.84	4.84	4.84	4.78	4.78
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.78	4.78	4.78	4.78	4.73	4.73	4.73	4.73	4.73
45.0	4.73	4.67	4.67	4.67	4.61	4.67	4.61	4.67	4.61
90.0	4.67	4.67	4.61	4.61	4.61	4.61	4.61	4.61	4.61
135.0	4.67	4.67	4.67	4.61	4.61	4.61	4.61	4.61	4.61
180.0	4.73	4.73	4.73	4.73	4.73	4.67	4.67	4.67	4.73
225.0	4.67	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61
270.0	4.67	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61
315.0	4.67	4.67	4.67	4.61	4.61	4.61	4.61	4.61	4.61
360.0	4.78	4.78	4.78	4.78	4.73	4.73	4.73	4.73	4.73
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.73	4.67	4.73	4.67	4.73	4.67	4.67	4.67	4.67
45.0	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.56	4.56
90.0	4.61	4.61	4.61	4.67	4.61	4.56	4.50	4.56	4.56
135.0	4.61	4.56	4.56	4.61	4.61	4.61	4.56	4.61	4.56
180.0	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67
225.0	4.61	4.61	4.61	4.61	4.61	4.56	4.56	4.56	4.56
270.0	4.61	4.61	4.61	4.61	4.56	4.56	4.56	4.56	4.56
315.0	4.61	4.61	4.56	4.61	4.56	4.61	4.56	4.56	4.56
360.0	4.73	4.67	4.73	4.67	4.73	4.67	4.67	4.67	4.67

Intensity data(cd)

C/ γ (°)	90.0
0.0	4.67
45.0	4.56
90.0	4.56
135.0	4.56
180.0	4.67
225.0	4.56
270.0	4.56
315.0	4.56
360.0	4.67