
ZhongShan Halcon Lighting & Electrical Co., Ltd

Client:

LumCAT: HG-L203-252F-25W

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.030

LampCAT:

Current(A): 0.212

Lamp flux(lm): 3165.6

Power (W): 24.300

Number of Lamps: 1

PF: 0.957

Length(mm): 560

Width(mm): 170

Phm Type: C

Height(mm): 70

Photometric Results

Lumens(lm): 3165.63, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 130.27

Central intensity(cd): 5069.786, Maximum intensity(cd): 5069.786

Angle of maximum intensity: C=15.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=42.6

[C90/270]Total=33.8

Field angle(10%Imax): [C0/180]Total=85.2

[C90/270]Total=65.2

Maximum s/h(1/2): C0_180=0.67 C90_270=0.55

Maximum s/h(1/4): C0_180=0.72 C90_270=0.57

Up flux rate of lamp(%): 2.43%

Down flux rate of lamp(%): 97.57%

Up flux rate of LUM(%): 2.43%

Down flux rate of LUM(%): 97.57%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 90.274%

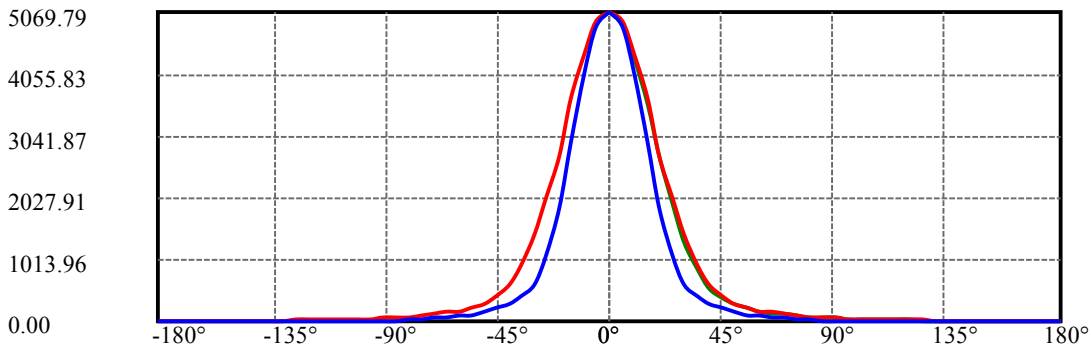
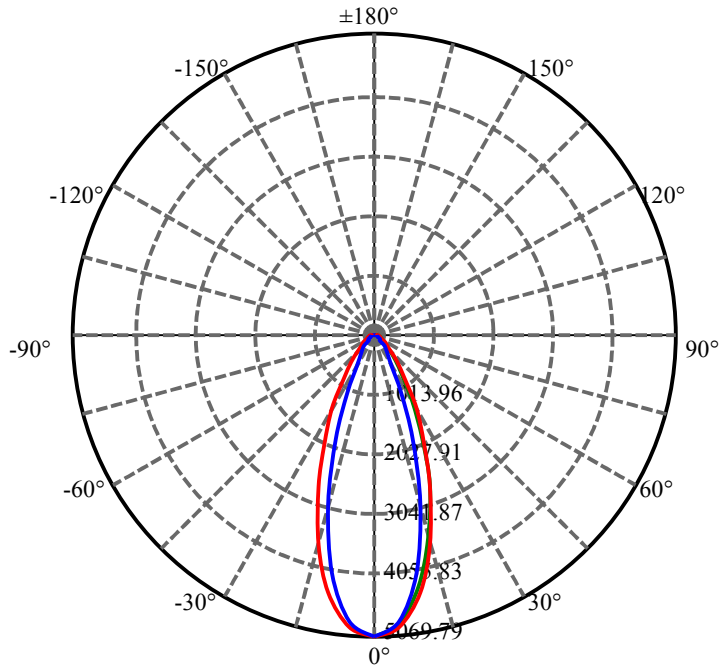
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5069.785	0.000	0	0.00%	0.00%
5.0	4844.407	118.521	118.521	3.74%	3.74%
10.0	4199.416	323.526	442.047	10.22%	13.96%
15.0	3287.351	444.110	886.157	14.03%	27.99%
20.0	2311.176	461.397	1347.555	14.58%	42.57%
25.0	1512.896	401.075	1748.629	12.67%	55.24%
30.0	969.151	314.105	2062.734	9.92%	65.16%
35.0	614.554	233.212	2295.946	7.37%	72.53%
40.0	415.253	171.816	2467.762	5.43%	77.95%
45.0	296.622	131.809	2599.571	4.16%	82.12%
50.0	217.520	103.890	2703.461	3.28%	85.40%
55.0	169.013	84.045	2787.506	2.65%	88.06%
60.0	134.784	70.222	2857.728	2.22%	90.27%
65.0	109.374	59.355	2917.083	1.87%	92.15%
70.0	88.468	50.095	2967.178	1.58%	93.73%
75.0	70.218	41.478	3008.656	1.31%	95.04%
80.0	54.324	33.324	3041.98	1.05%	96.09%
85.0	42.003	26.174	3068.155	0.83%	96.92%
90.0	32.633	20.436	3088.591	0.65%	97.57%
95.0	26.626	16.226	3104.816	0.51%	98.08%
100.0	20.728	12.867	3117.684	0.41%	98.49%
105.0	14.837	9.516	3127.2	0.30%	98.79%
110.0	10.986	6.750	3133.95	0.21%	99.00%
115.0	9.182	5.107	3139.057	0.16%	99.16%
120.0	8.734	4.356	3143.412	0.14%	99.30%
125.0	7.776	3.816	3147.229	0.12%	99.42%
130.0	6.341	3.070	3150.298	0.10%	99.52%
135.0	5.088	2.309	3152.608	0.07%	99.59%
140.0	5.089	1.884	3154.492	0.06%	99.65%
145.0	5.717	1.803	3156.295	0.06%	99.71%
150.0	6.970	1.868	3158.163	0.06%	99.76%
155.0	8.373	1.942	3160.105	0.06%	99.83%
160.0	9.518	1.876	3161.981	0.06%	99.88%
165.0	9.850	1.596	3163.577	0.05%	99.94%
170.0	9.777	1.164	3164.742	0.04%	99.97%
175.0	9.999	0.707	3165.449	0.02%	99.99%
180.0	5.019	0.180	3165.629	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2062.73	65.16%	65.16%
0-40	2467.76	77.95%	77.95%
0-60	2857.73	90.27%	90.27%
0-90	3088.59	97.57%	97.57%
0-120	3143.41	99.30%	99.30%
0-180	3165.63	100.00%	100.00%
60-90	230.86	7.29%	7.29%
90-120	54.82	1.73%	1.73%
90-130	61.71	1.95%	1.95%
90-150	69.57	2.20%	2.20%
90-180	76.86	2.43%	2.43%
0-42.46	2532.50	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	442.05
10-20	905.51
20-30	715.18
30-40	405.03
40-50	235.70
50-60	154.27
60-70	109.45
70-80	74.80
80-90	46.61
90-100	29.09
100-110	16.27
110-120	9.46
120-130	6.89
130-140	4.19
140-150	3.67
150-160	3.82
160-170	2.76
170-180	0.71



C15(Max): ———

C0/C180: ———

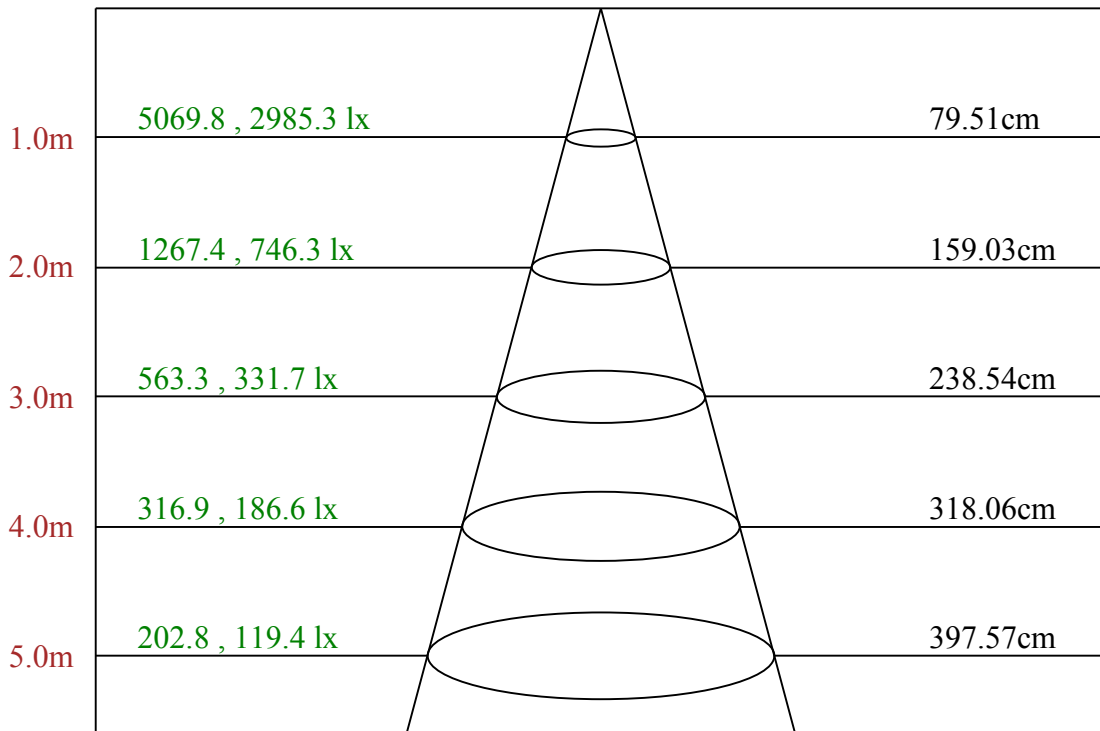
C90/C270: ———

Field angle(10%Imax):C0/180Left:42.6 Right:42.6

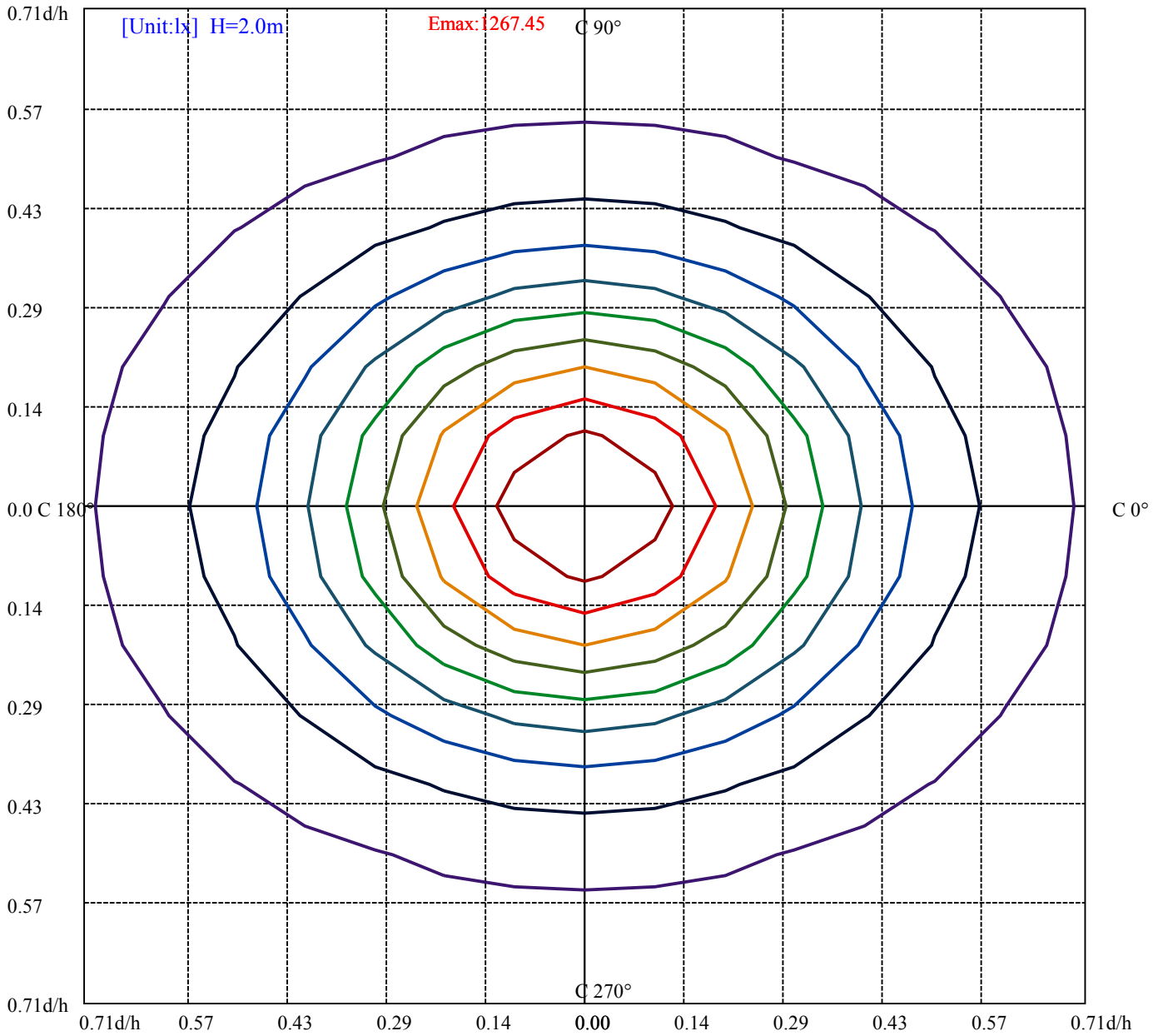
:C90/270Left:32.6 Right:32.6

Beam Angle(50%Imax):C0/180Left:21.3 Right:21.3

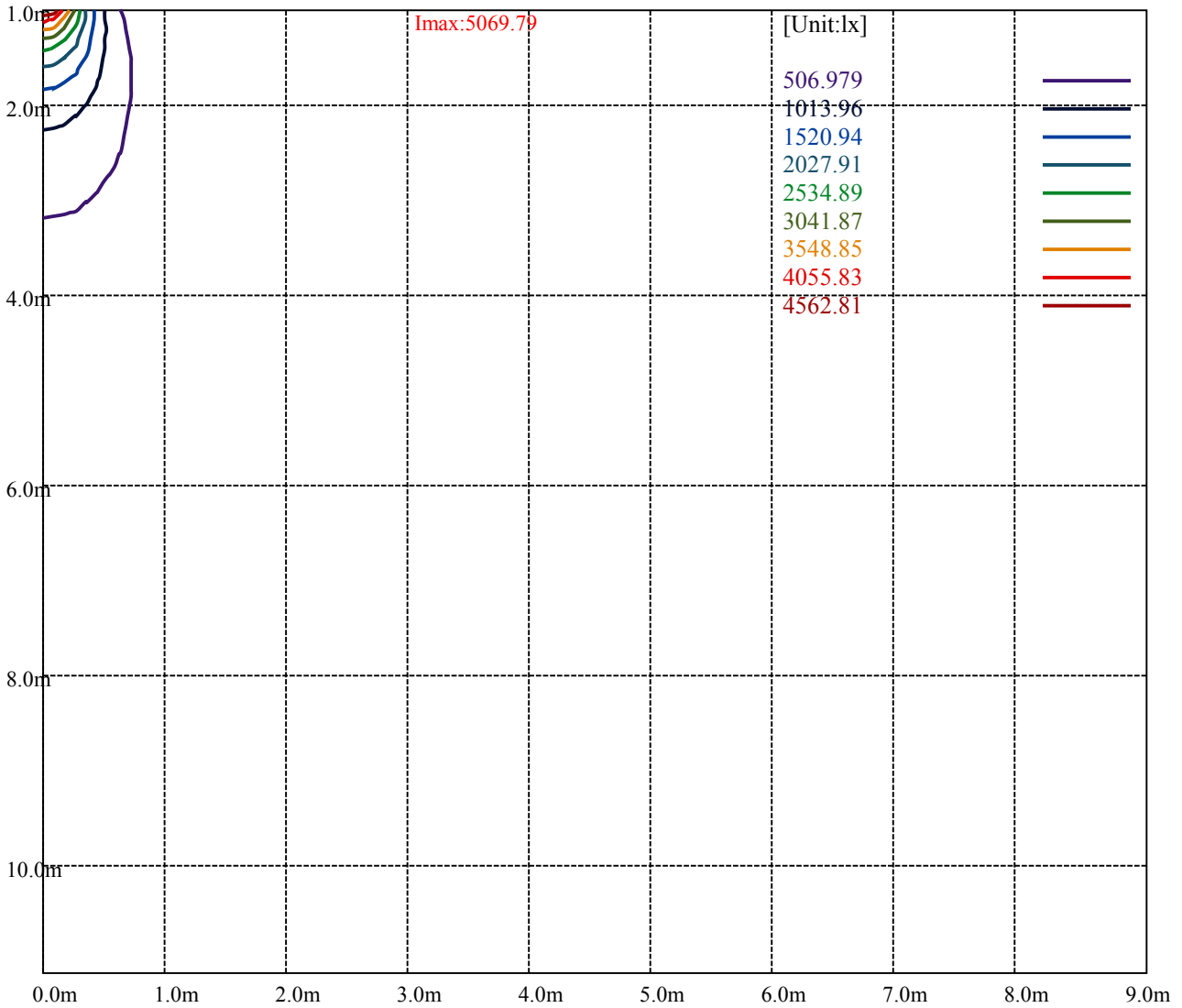
:C90/270Left:16.9 Right:16.9



Max , Ave Beam angle of C15 plane 43.36



(10%Emax) 126.7445	
(20%Emax) 253.49	
(30%Emax) 380.2325	
(40%Emax) 506.9775	
(50%Emax) 633.7225	
(60%Emax) 760.4675	
(70%Emax) 887.2125	
(80%Emax) 1013.955	
(90%Emax) 1140.7	



Luminance Table

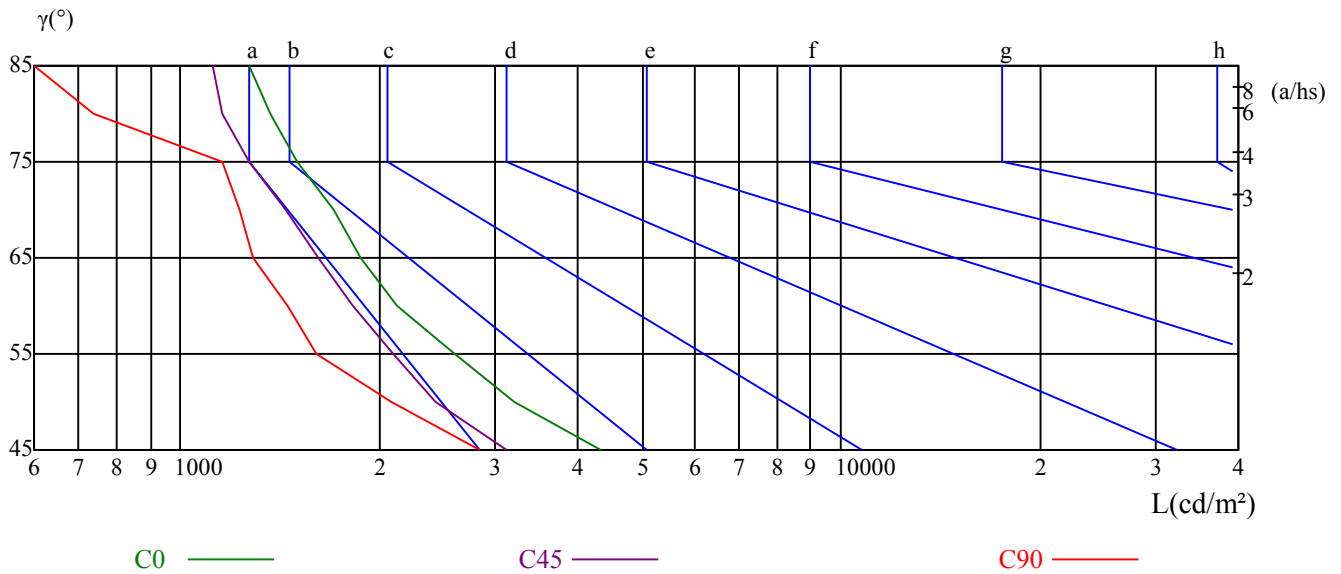
γ	45	50	55	60	65	70	75	80	85
C0	4332	3212	2595	2121	1872	1704	1501	1371	1268
C45	3123	2438	2098	1821	1621	1438	1271	1159	1118
C90	2847	2089	1606	1448	1287	1227	1154	738	396

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3525	1632	2941	3808	1692	3071	7235	962	5966

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	1.18	1.18	1.18	1.15	1.15	1.15	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	0.98
1	1.08	1.05	1.02	1.06	1.03	1.01	1.01	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.89
2	0.99	0.95	0.91	0.98	0.93	0.90	0.94	0.90	0.87	0.90	0.88	0.85	0.87	0.85	0.83	0.81
3	0.92	0.86	0.82	0.90	0.85	0.81	0.87	0.83	0.79	0.85	0.81	0.78	0.82	0.79	0.76	0.75
4	0.86	0.80	0.75	0.84	0.79	0.74	0.82	0.77	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.69
5	0.80	0.74	0.69	0.79	0.73	0.69	0.77	0.72	0.68	0.75	0.70	0.67	0.73	0.69	0.66	0.64
6	0.75	0.69	0.64	0.74	0.68	0.64	0.72	0.67	0.63	0.71	0.66	0.63	0.69	0.65	0.62	0.60
7	0.71	0.64	0.60	0.70	0.64	0.60	0.68	0.63	0.59	0.67	0.62	0.59	0.66	0.62	0.58	0.57
8	0.67	0.61	0.56	0.66	0.60	0.56	0.65	0.60	0.56	0.64	0.59	0.55	0.63	0.58	0.55	0.54
9	0.63	0.57	0.53	0.63	0.57	0.53	0.62	0.56	0.53	0.61	0.56	0.52	0.60	0.55	0.52	0.51
10	0.60	0.54	0.50	0.60	0.54	0.50	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.48

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	5069.79	5373.92	5127.59	4588.68	3686.07	2758.55	1979.54	1264.56	826.14
15.0	5069.79	5344.31	5073.37	4483.95	3637.94	2683.37	1901.95	1249.73	773.34
30.0	5069.79	5309.13	4984.56	4345.40	3497.72	2396.18	1533.08	1006.34	625.56
45.0	5069.79	5246.61	4844.90	4118.58	2991.45	1987.65	1233.22	734.49	462.46
60.0	5069.79	5167.97	4687.84	3752.79	2585.34	1636.78	941.35	545.89	366.63
75.0	5069.79	5048.39	4562.45	3426.52	2287.91	1386.48	744.51	459.19	326.34
90.0	5069.79	4942.91	4386.60	3243.81	2124.98	1265.23	690.29	452.50	317.64
105.0	5069.79	4827.53	4218.38	3116.83	2053.02	1234.97	693.41	449.40	325.64
120.0	5069.79	4734.93	4120.02	3146.76	2075.23	1322.89	791.47	483.58	345.29
135.0	5069.79	4683.75	4079.48	3222.20	2246.67	1437.21	898.15	571.23	399.08
150.0	5069.79	4673.28	4030.89	3222.29	2387.72	1575.65	1001.66	659.70	448.45
165.0	5069.79	4669.92	4052.90	3235.94	2379.34	1670.97	1109.10	754.05	492.93
180.0	5069.79	4478.41	3649.60	2698.08	1752.77	1281.45	874.16	567.36	394.84
195.0	5069.79	4509.07	3670.23	2771.29	1963.86	1314.32	878.31	551.75	386.67
210.0	5069.79	4543.04	3690.83	2817.76	1786.03	1224.84	795.10	516.77	359.93
225.0	5069.79	4562.90	3707.81	2664.11	1798.14	1119.87	704.57	451.57	323.72
240.0	5069.79	4595.96	3648.30	2596.15	1681.82	1009.81	592.74	403.57	293.67
255.0	5069.79	4586.52	3639.62	2545.59	1587.99	876.47	535.87	378.05	286.21
270.0	5069.79	4704.24	3714.94	2628.94	1589.08	869.51	535.02	365.55	273.28
285.0	5069.79	4779.26	3843.59	2727.12	1721.23	949.71	557.36	372.16	278.24
300.0	5069.79	4794.94	4001.73	2959.77	1962.16	1165.47	670.58	421.83	293.11
315.0	5069.79	4854.16	4228.15	3255.24	2307.53	1451.12	872.06	538.19	362.56
330.0	5069.79	4905.29	4372.86	3603.22	2570.39	1702.91	1396.44	709.04	460.57
345.0	5069.79	4929.32	4449.31	3725.43	2793.85	1988.10	1329.71	842.81	543.78
360.0	5069.79	5373.92	5127.59	4588.68	3686.07	2758.55	1979.54	1264.56	826.14
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	527.34	360.16	271.23	204.53	168.07	141.40	112.94	91.60	71.14
15.0	492.53	331.94	248.51	195.58	159.69	134.57	114.83	92.41	73.57
30.0	412.51	285.58	218.49	174.07	140.53	119.67	97.91	77.06	64.37
45.0	318.28	234.86	190.42	151.43	122.41	98.84	77.08	61.66	49.87
60.0	264.84	204.48	155.84	118.91	93.68	72.97	55.85	43.24	32.43
75.0	242.52	171.19	119.48	87.38	72.22	53.50	39.23	30.32	19.62
90.0	235.12	160.59	108.25	86.06	69.21	51.46	45.25	24.84	9.76
105.0	244.01	179.06	131.66	98.31	80.75	59.69	40.38	28.97	19.31
120.0	261.80	206.13	164.38	130.46	106.98	83.50	63.49	50.45	37.40
135.0	287.79	220.84	184.32	147.81	122.59	99.99	79.99	61.73	51.30
150.0	322.92	243.27	194.79	158.43	126.40	101.29	83.11	65.80	53.68
165.0	351.60	262.84	204.24	161.15	130.13	106.86	87.90	68.94	56.01
180.0	296.13	225.88	178.75	141.40	115.61	95.15	74.70	59.58	48.91
195.0	284.40	220.70	183.02	146.24	120.22	99.58	80.74	64.59	52.03
210.0	268.36	211.24	167.72	140.53	116.05	95.19	78.88	63.46	51.68
225.0	254.80	202.21	165.03	139.64	116.07	94.30	74.36	60.75	49.87
240.0	240.52	184.67	152.24	122.51	97.29	77.47	59.45	45.04	34.23
255.0	213.10	153.36	117.69	92.73	73.11	50.82	38.34	27.64	15.16
270.0	196.08	133.09	98.49	81.63	62.11	55.90	38.15	16.86	6.21
285.0	206.27	143.95	103.57	84.26	67.59	49.15	41.25	28.09	16.68
300.0	228.74	178.30	137.42	120.03	86.98	66.97	52.19	40.01	31.31
315.0	299.09	208.67	166.94	135.63	112.16	89.55	71.30	57.38	46.95
330.0	313.40	236.35	187.00	150.64	128.13	105.62	83.11	68.39	54.54
345.0	356.77	261.12	206.82	165.46	137.02	119.79	94.79	74.97	62.05
360.0	527.34	360.16	271.23	204.53	168.07	141.40	112.94	91.60	71.14

Intensity data(cd)

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	59.58	54.25	45.35	33.79	24.90	22.23	23.12	23.12	17.79
15.0	61.90	54.73	46.65	34.99	21.53	18.84	17.94	17.94	14.35
30.0	52.58	44.42	37.17	25.39	14.51	11.79	9.97	9.07	8.16
45.0	40.80	32.64	27.20	19.95	11.79	9.07	6.35	6.35	5.44
60.0	24.32	18.92	16.21	12.61	8.11	5.40	4.50	4.50	4.50
75.0	9.81	5.35	2.67	3.57	3.57	2.67	2.67	2.67	2.67
90.0	3.55	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.89
105.0	10.53	6.14	3.51	3.51	3.51	2.63	2.63	2.63	2.63
120.0	27.83	21.74	17.40	12.18	7.83	5.22	4.35	4.35	4.35
135.0	39.99	31.30	23.48	15.65	10.43	6.96	6.96	6.09	6.09
150.0	41.56	32.90	25.97	15.58	12.12	9.52	9.52	8.66	7.79
165.0	44.81	36.19	28.44	19.82	16.37	15.51	15.51	14.65	10.34
180.0	40.02	33.79	24.90	21.34	19.56	19.56	19.56	13.34	8.89
195.0	42.17	34.09	24.22	19.74	17.94	17.05	16.15	12.56	8.97
210.0	39.89	33.54	22.67	15.41	12.69	10.88	9.97	8.16	7.25
225.0	38.99	32.64	23.58	14.51	9.97	8.16	7.25	6.35	5.44
240.0	25.22	19.82	15.31	10.81	7.21	5.40	5.40	4.50	3.60
255.0	7.13	4.46	3.57	3.57	3.57	2.67	2.67	2.67	2.67
270.0	2.66	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
285.0	8.78	5.27	4.39	4.39	3.51	3.51	2.63	2.63	2.63
300.0	24.35	20.00	16.53	12.18	7.83	5.22	5.22	4.35	3.48
315.0	38.26	31.30	24.34	15.65	11.30	7.83	6.96	6.09	5.22
330.0	45.02	37.23	26.84	17.31	13.85	11.25	10.39	8.66	6.93
345.0	53.43	47.40	36.19	23.27	20.68	18.10	18.10	15.51	11.20
360.0	59.58	54.25	45.35	33.79	24.90	22.23	23.12	23.12	17.79
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	11.56	8.00	7.11	8.89	9.78	11.56	11.56	10.67	10.67
15.0	9.87	7.18	7.18	8.97	9.87	11.66	11.66	10.77	10.77
30.0	6.35	6.35	6.35	8.16	9.97	10.88	11.79	10.88	10.88
45.0	4.53	5.44	5.44	7.25	9.07	10.88	10.88	10.88	10.88
60.0	3.60	3.60	5.40	6.31	8.11	9.91	10.81	10.81	10.81
75.0	2.67	2.67	4.46	6.24	8.02	9.81	10.70	10.70	10.70
90.0	1.77	1.77	3.55	5.32	7.10	8.87	9.76	9.76	9.76
105.0	2.63	3.51	4.39	6.14	7.90	9.66	9.66	9.66	9.66
120.0	3.48	4.35	5.22	6.96	8.70	9.57	10.44	10.44	9.57
135.0	5.22	5.22	6.09	7.83	9.56	10.43	10.43	10.43	9.56
150.0	6.06	6.06	6.93	7.79	9.52	10.39	11.25	10.39	10.39
165.0	7.76	6.89	7.76	8.62	9.48	11.20	11.20	10.34	9.48
180.0	6.22	6.22	7.11	8.00	8.89	9.78	8.89	9.78	9.78
195.0	7.18	7.18	7.18	8.07	8.97	9.87	9.87	9.87	9.87
210.0	6.35	6.35	7.25	7.25	9.07	9.07	9.97	9.97	9.97
225.0	4.53	5.44	6.35	7.25	8.16	9.07	9.07	9.07	9.97
240.0	3.60	4.50	5.40	6.31	7.21	9.01	9.01	9.01	9.91
255.0	2.67	3.57	4.46	5.35	7.13	8.02	8.02	8.92	9.81
270.0	1.77	2.66	3.55	4.44	6.21	7.10	7.99	8.87	9.76
285.0	2.63	2.63	3.51	5.27	7.02	7.90	8.78	8.78	9.66
300.0	3.48	4.35	4.35	6.09	6.96	7.83	8.70	8.70	9.57
315.0	4.35	5.22	5.22	6.09	7.83	8.69	8.69	8.69	9.56
330.0	6.06	6.06	6.06	6.93	7.79	8.66	8.66	8.66	9.52
345.0	7.76	6.89	6.89	7.76	8.62	8.62	8.62	8.62	9.48
360.0	11.56	8.00	7.11	8.89	9.78	11.56	11.56	10.67	10.67

Intensity data(cd)

C/γ(°)	180.0
0.0	10.67
15.0	10.77
30.0	10.88
45.0	10.88
60.0	9.91
75.0	9.81
90.0	9.76
105.0	9.66
120.0	9.57
135.0	9.56
150.0	9.52
165.0	9.48
180.0	0.00
195.0	0.00
210.0	0.00
225.0	0.00
240.0	0.00
255.0	0.00
270.0	0.00
285.0	0.00
300.0	0.00
315.0	0.00
330.0	0.00
345.0	0.00
360.0	10.67