
ZhongShan Halcon Lighting & Electrical Co., Ltd

Client:

LumCAT: HG-L203-252F-25W

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.980

LampCAT:

Current(A): 0.221

Lamp flux(lm): 3299.3

Power (W): 25.240

Number of Lamps: 1

PF: 0.952

Length(mm): 560

Width(mm): 170

Phm Type: C

Height(mm): 70

Photometric Results

Lumens(lm): 3299.25, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 130.72

Central intensity(cd): 5284.635, Maximum intensity(cd): 5284.635

Angle of maximum intensity: C=0.0 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(%): 2.42%

Down flux rate of lamp(%): 97.58%

Up flux rate of LUM(%): 2.42%

Down flux rate of LUM(%): 97.58%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 90.290%

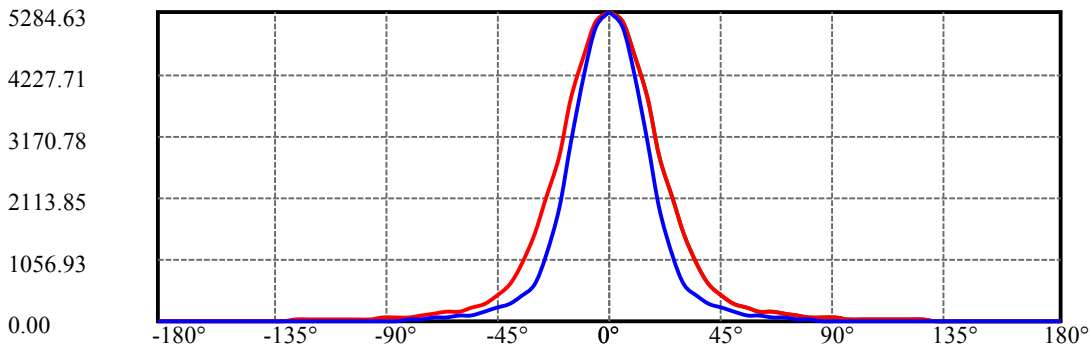
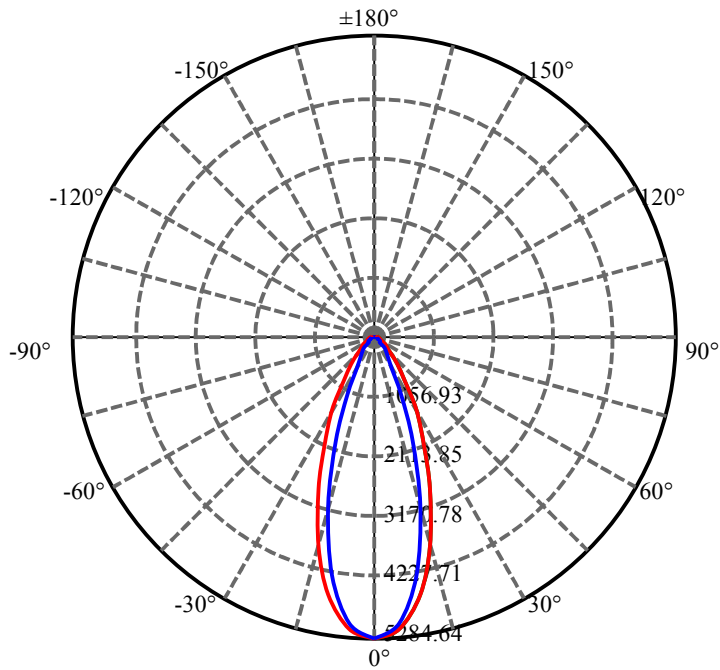
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5284.635	0.000	0	0.00%	0.00%
5.0	5049.665	123.544	123.544	3.74%	3.74%
10.0	4377.422	337.237	460.78	10.22%	13.97%
15.0	3426.716	462.936	923.716	14.03%	28.00%
20.0	2409.123	480.955	1404.672	14.58%	42.58%
25.0	1577.021	418.073	1822.745	12.67%	55.25%
30.0	1010.244	327.421	2150.165	9.92%	65.17%
35.0	640.602	243.099	2393.264	7.37%	72.54%
40.0	432.887	179.104	2572.367	5.43%	77.97%
45.0	309.162	137.396	2709.764	4.16%	82.13%
50.0	226.776	108.294	2818.058	3.28%	85.42%
55.0	176.242	87.630	2905.688	2.66%	88.07%
60.0	140.538	73.223	2978.91	2.22%	90.29%
65.0	113.949	61.866	3040.777	1.88%	92.17%
70.0	92.194	52.197	3092.973	1.58%	93.75%
75.0	73.243	43.243	3136.216	1.31%	95.06%
80.0	56.538	34.726	3170.941	1.05%	96.11%
85.0	43.771	27.256	3198.198	0.83%	96.94%
90.0	33.961	21.284	3219.481	0.65%	97.58%
95.0	27.881	16.933	3236.414	0.51%	98.10%
100.0	21.541	13.429	3249.843	0.41%	98.50%
105.0	15.576	9.931	3259.775	0.30%	98.80%
110.0	11.465	7.068	3266.843	0.21%	99.02%
115.0	9.515	5.312	3272.155	0.16%	99.18%
120.0	8.991	4.499	3276.654	0.14%	99.31%
125.0	7.997	3.927	3280.58	0.12%	99.43%
130.0	6.487	3.149	3283.73	0.10%	99.53%
135.0	5.125	2.347	3286.076	0.07%	99.60%
140.0	5.089	1.891	3287.967	0.06%	99.66%
145.0	5.717	1.803	3289.77	0.05%	99.71%
150.0	6.970	1.868	3291.638	0.06%	99.77%
155.0	8.373	1.942	3293.58	0.06%	99.83%
160.0	9.776	1.903	3295.484	0.06%	99.89%
165.0	10.219	1.648	3297.131	0.05%	99.94%
170.0	10.146	1.208	3298.34	0.04%	99.97%
175.0	10.260	0.730	3299.07	0.02%	99.99%
180.0	5.169	0.184	3299.254	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2150.17	65.17%	65.17%
0-40	2572.37	77.97%	77.97%
0-60	2978.91	90.29%	90.29%
0-90	3219.48	97.58%	97.58%
0-120	3276.65	99.32%	99.31%
0-180	3299.25	100.00%	100.00%
60-90	240.57	7.29%	7.29%
90-120	57.17	1.73%	1.73%
90-130	64.25	1.95%	1.95%
90-150	72.16	2.19%	2.19%
90-180	79.59	2.41%	2.41%
0-42.44	2639.40	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	460.78
10-20	943.89
20-30	745.49
30-40	422.20
40-50	245.69
50-60	160.85
60-70	114.06
70-80	77.97
80-90	48.54
90-100	30.36
100-110	17.00
110-120	9.81
120-130	7.08
130-140	4.24
140-150	3.67
150-160	3.85
160-170	2.86
170-180	0.73



C0(Max): ———

C0/C180: ———

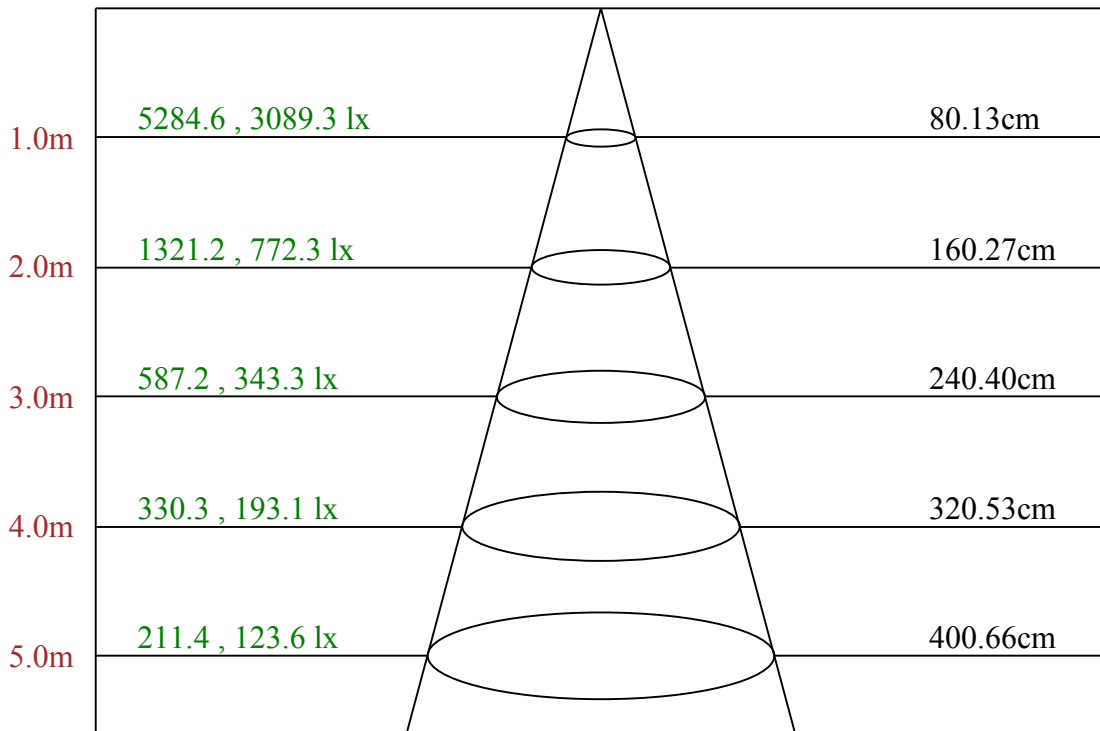
C90/C270: ———

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

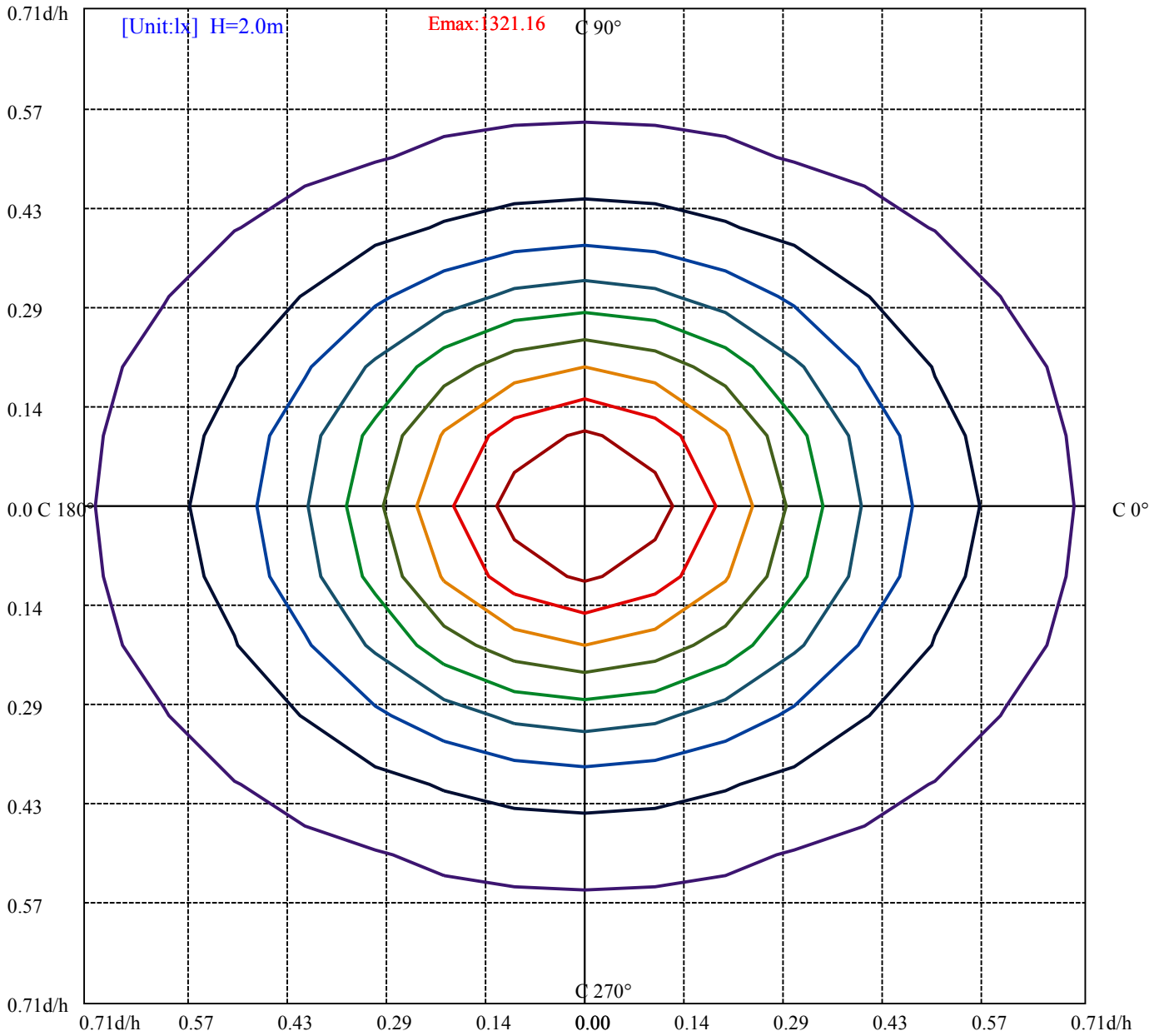
:C90/270Left:32.6 Right:32.6










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

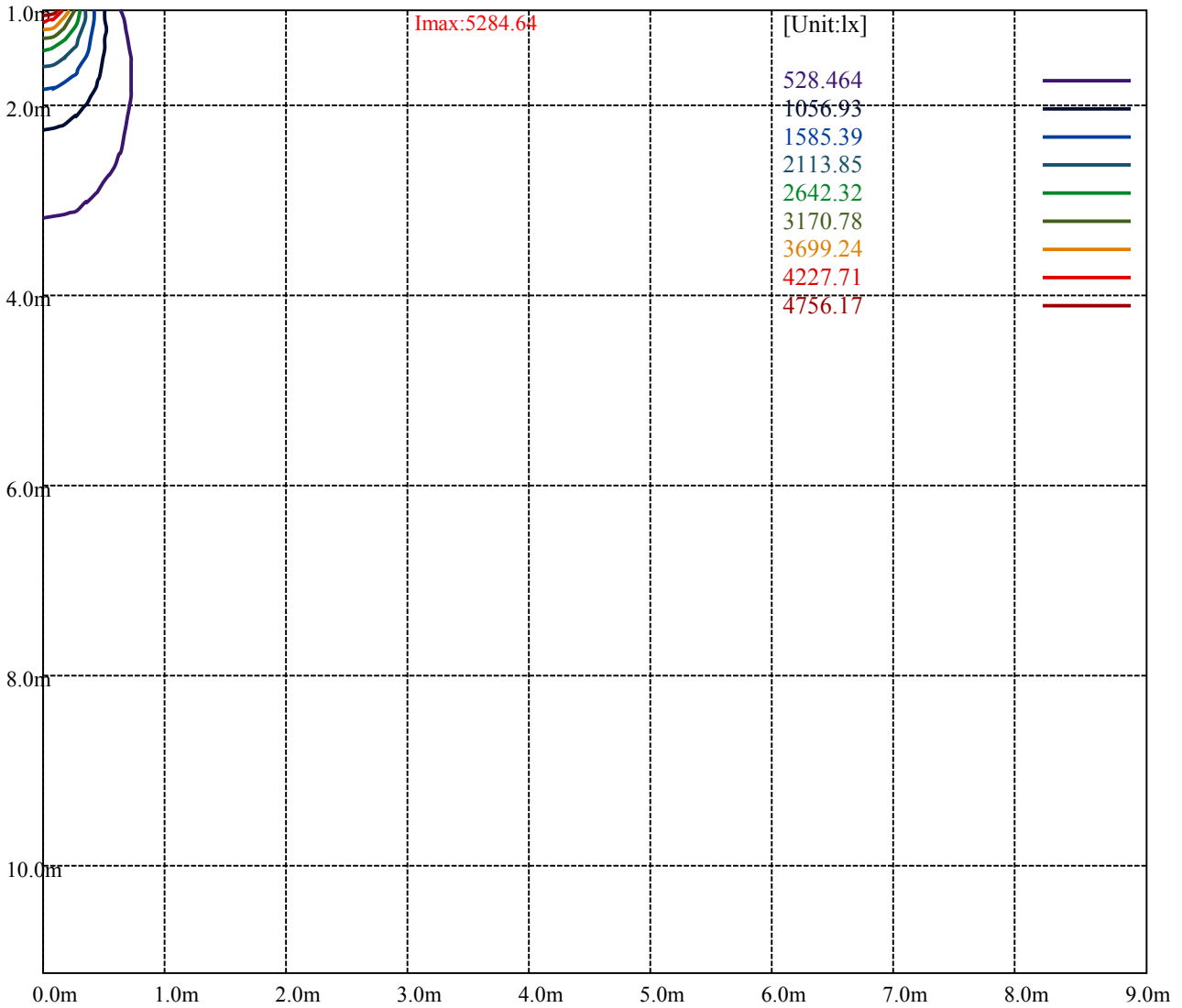
:C90/270Left:16.9 Right:16.9



Max , Ave Beam angle of C0 plane 43.67



(10%Emax) 132.1158	
(20%Emax) 264.2325	
(30%Emax) 396.3475	
(40%Emax) 528.4625	
(50%Emax) 660.5775	
(60%Emax) 792.695	
(70%Emax) 924.81	
(80%Emax) 1056.925	
(90%Emax) 1189.04	



Luminance Table

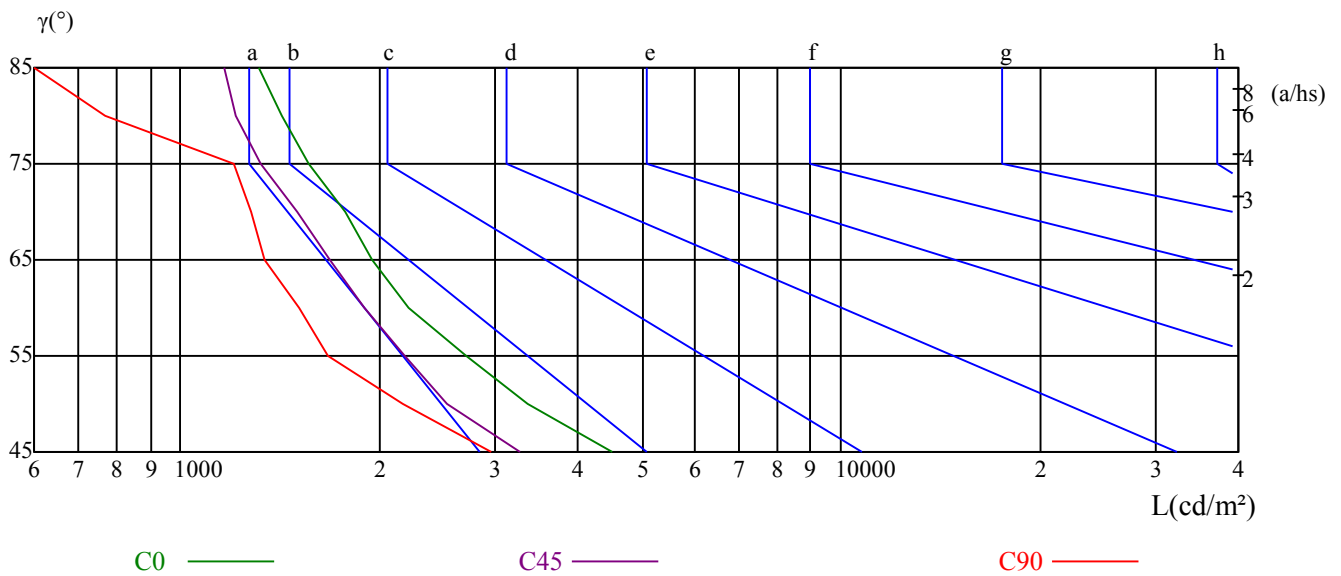
γ	45	50	55	60	65	70	75	80	85
C0	4515	3348	2707	2214	1954	1781	1565	1427	1315
C45	3256	2540	2188	1899	1688	1498	1323	1210	1163
C90	2964	2177	1675	1509	1339	1278	1203	769	396

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3680	1698	3062	3970	1765	3198	7502	962	6206

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
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

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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	5284.64	5601.20	5344.21	4783.12	3842.32	2874.85	2062.99	1317.82	860.77
15.0	5284.63	5570.85	5289.12	4674.52	3792.56	2797.54	1982.86	1302.77	806.60
30.0	5284.63	5533.95	5195.79	4529.43	3645.48	2497.71	1598.35	1048.95	651.85
45.0	5284.64	5468.71	5049.78	4292.63	3118.37	2071.96	1285.79	765.31	482.40
60.0	5284.63	5386.42	4886.51	3911.91	2695.01	1706.00	980.90	569.27	381.91
75.0	5284.63	5262.34	4755.90	3571.83	2385.08	1445.32	775.71	478.80	340.60
90.0	5284.64	5152.43	4573.04	3381.42	2214.65	1318.50	719.58	472.03	330.96
105.0	5284.63	5031.86	4397.28	3248.37	2139.83	1287.59	722.35	468.69	339.67
120.0	5284.63	4935.86	4294.85	3279.85	2163.08	1378.56	825.40	504.46	360.08
135.0	5284.63	4882.07	4252.57	3358.76	2342.35	1498.10	936.42	595.59	415.61
150.0	5284.63	4871.66	4201.56	3359.17	2489.08	1642.36	1044.11	687.42	467.51
165.0	5284.63	4868.38	4224.61	3373.13	2480.30	1741.72	1156.55	785.97	513.64
180.0	5284.64	4667.52	3804.08	2812.60	1827.35	1335.61	911.45	591.33	411.71
195.0	5284.63	4700.63	3825.75	2889.05	2047.46	1370.06	915.17	575.12	402.85
210.0	5284.63	4735.23	3847.66	2937.42	1861.27	1276.51	828.64	538.53	375.34
225.0	5284.64	4755.99	3864.64	2777.43	1874.29	1167.01	734.48	470.61	337.32
240.0	5284.63	4790.13	3802.92	2705.82	1752.84	1052.96	617.91	420.65	306.25
255.0	5284.63	4780.87	3793.85	2653.46	1654.85	913.91	558.15	394.10	298.69
270.0	5284.64	4903.99	3872.09	2740.81	1656.55	906.80	558.10	380.64	284.82
285.0	5284.63	4981.83	4006.70	2842.87	1794.02	990.05	581.04	387.94	289.64
300.0	5284.63	4998.49	4171.35	3085.02	2045.67	1215.05	699.28	440.10	305.28
315.0	5284.63	5060.31	4407.34	3393.54	2404.95	1512.88	909.46	560.81	378.22
330.0	5284.63	5113.21	4558.26	3755.69	2679.55	1774.82	1455.35	739.36	480.50
345.0	5284.63	5138.13	4638.28	3883.33	2912.06	2072.66	1385.79	878.19	567.07
360.0	5284.64	5601.20	5344.21	4783.12	3842.32	2874.85	2062.99	1317.82	860.77
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	549.54	375.25	282.77	213.41	175.18	147.61	117.38	95.15	73.81
15.0	513.21	346.33	259.30	203.67	166.88	139.97	119.33	96.00	76.26
30.0	429.73	297.37	227.56	181.32	146.87	125.11	102.45	80.69	67.09
45.0	331.88	244.83	198.58	157.78	127.85	103.37	80.70	64.38	51.69
60.0	275.63	213.48	162.13	124.30	97.28	75.66	58.55	45.04	34.23
75.0	253.22	178.32	124.83	90.95	74.90	56.17	41.01	31.21	20.51
90.0	244.89	167.70	112.68	89.62	71.87	53.24	47.03	25.73	9.76
105.0	254.53	186.95	136.92	102.69	84.26	62.32	42.13	29.84	20.19
120.0	273.10	214.83	171.34	135.68	111.33	86.98	66.10	52.19	39.14
135.0	299.97	230.41	192.15	153.90	127.81	104.34	83.47	64.34	53.91
150.0	336.78	253.67	203.45	165.36	131.60	105.62	86.58	68.40	56.27
165.0	366.27	274.06	212.87	168.05	135.30	111.17	91.35	71.53	58.60
180.0	308.56	235.64	186.74	147.61	120.93	99.59	78.25	62.25	50.69
195.0	296.08	229.69	191.11	152.53	125.61	104.08	84.34	67.29	53.83
210.0	280.14	220.31	174.98	146.87	120.58	98.82	82.50	66.18	53.49
225.0	265.68	210.37	172.29	145.99	120.60	97.93	77.08	63.47	51.69
240.0	250.41	192.76	158.53	127.90	101.78	81.07	62.15	46.84	36.03
255.0	222.01	159.60	123.04	96.30	75.79	52.61	40.12	28.53	16.05
270.0	204.07	138.42	102.92	85.18	64.77	58.56	39.93	17.75	6.21
285.0	215.04	150.09	107.96	87.77	70.22	50.91	43.01	28.96	17.55
300.0	238.31	186.13	143.51	125.24	90.45	69.58	54.79	41.75	33.05
315.0	312.14	217.37	173.89	141.72	116.51	93.03	73.90	59.99	48.69
330.0	326.39	246.74	194.80	156.70	133.33	109.95	86.58	70.99	57.14
345.0	372.30	272.33	215.45	172.36	143.06	124.96	99.11	78.42	64.64
360.0	549.54	375.25	282.77	213.41	175.18	147.61	117.38	95.15	73.81

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	62.25	56.91	47.13	35.57	25.79	23.12	24.01	24.01	18.67
15.0	64.60	57.42	48.45	36.79	22.43	19.74	18.84	18.84	15.25
30.0	54.40	46.24	38.98	26.29	15.41	12.69	9.97	9.07	8.16
45.0	42.62	34.46	28.11	20.86	12.69	9.07	6.35	6.35	5.44
60.0	25.22	19.82	17.11	13.51	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	11.41	6.14	3.51	3.51	3.51	2.63	2.63	2.63	2.63
120.0	28.70	22.61	18.26	13.05	7.83	5.22	4.35	4.35	4.35
135.0	41.73	33.04	24.35	16.52	11.30	6.96	6.96	6.09	6.09
150.0	43.29	34.63	26.84	16.45	12.99	9.52	9.52	8.66	7.79
165.0	46.54	37.92	29.30	20.68	17.24	16.37	16.37	15.51	11.20
180.0	41.79	35.57	25.79	22.23	20.45	20.45	20.45	14.23	8.89
195.0	43.96	35.89	25.12	20.64	18.84	17.94	17.05	13.46	8.97
210.0	41.70	35.36	23.57	16.32	13.60	11.79	9.97	8.16	7.25
225.0	40.80	34.46	24.48	15.42	9.97	8.16	7.25	6.35	5.44
240.0	26.12	20.72	16.21	11.71	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	25.22	20.87	17.40	13.05	7.83	5.22	5.22	4.35	3.48
315.0	40.00	33.04	25.21	16.52	12.17	7.83	6.96	6.09	5.22
330.0	46.75	38.96	27.70	18.18	14.72	12.12	11.25	8.66	6.93
345.0	56.02	49.12	37.92	24.13	21.55	18.96	18.96	16.37	12.07
360.0	62.25	56.91	47.13	35.57	25.79	23.12	24.01	24.01	18.67
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	12.45	8.00	7.11	8.89	9.78	12.45	12.45	11.56	11.56
15.0	9.87	7.18	7.18	8.97	9.87	12.56	12.56	11.66	11.66
30.0	6.35	6.35	6.35	8.16	9.97	11.79	12.69	11.79	11.79
45.0	4.53	5.44	5.44	7.25	9.07	11.79	11.79	11.79	11.79
60.0	3.60	3.60	5.40	6.31	8.11	9.91	11.71	11.71	11.71
75.0	2.67	2.67	4.46	6.24	8.02	9.81	11.59	11.59	11.59
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	9.65	9.65	9.65	9.65
120.0	3.48	4.35	5.22	6.96	8.70	9.57	11.31	11.31	9.57
135.0	5.22	5.22	6.09	7.83	9.56	11.30	11.30	11.30	9.56
150.0	6.06	6.06	6.93	7.79	9.52	11.25	12.12	11.25	11.25
165.0	7.76	6.89	7.76	8.62	9.48	12.07	12.07	11.20	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	9.65
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	12.45	8.00	7.11	8.89	9.78	12.45	12.45	11.56	11.56

Intensity data(cd)

C/γ(°)	180.0
0.0	11.56
15.0	11.66
30.0	11.79
45.0	11.79
60.0	9.91
75.0	9.81
90.0	9.76
105.0	9.65
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	11.56