
ZhongShan Halcon Lighting & Electrical Co., Ltd

Client:

LumCAT: HG-L203-404F-40W

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.000

LampCAT:

Current(A): 0.319

Lamp flux(lm): 5243.1

Power (W): 37.400

Number of Lamps: 1

PF: 0.977

Length(mm): 1160

Width(mm): 170

Phm Type: C

Height(mm): 70

Photometric Results

Lumens(lm): 5243.10, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 140.19

Central intensity(cd): 8063.141, Maximum intensity(cd): 8063.141

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=45.2

[C90/270]Total=34.2

Field angle(10%Imax): [C0/180]Total=87.4

[C90/270]Total=66.8

Maximum s/h(1/2): C0_180=0.71 C90_270=0.56

Maximum s/h(1/4): C0_180=0.75 C90_270=0.58

Up flux rate of lamp(%): 2.82%

Down flux rate of lamp(%): 97.18%

Up flux rate of LUM(%): 2.82%

Down flux rate of LUM(%): 97.18%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 90.035%

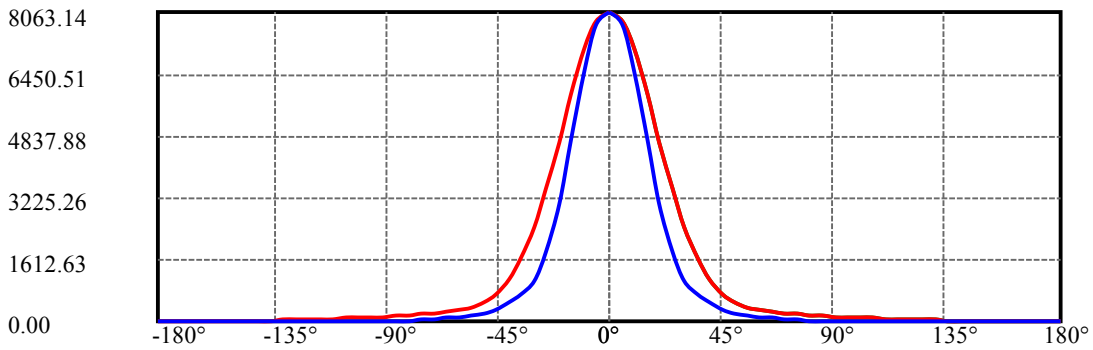
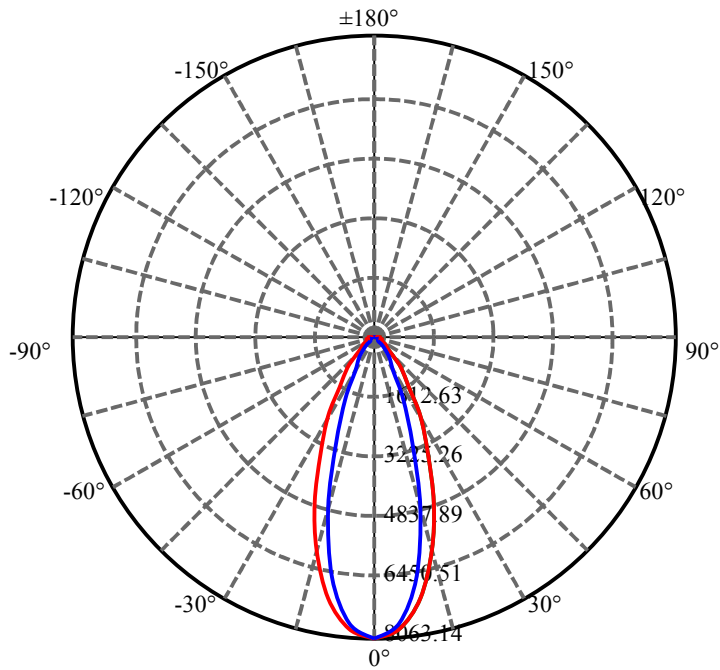
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8063.141	0.000	0	0.00%	0.00%
5.0	7727.881	188.777	188.777	3.60%	3.60%
10.0	6762.044	518.350	707.127	9.89%	13.49%
15.0	5335.232	717.602	1424.73	13.69%	27.17%
20.0	3838.461	756.041	2180.771	14.42%	41.59%
25.0	2552.170	670.259	2851.03	12.78%	54.38%
30.0	1668.693	534.154	3385.184	10.19%	64.56%
35.0	1068.041	403.003	3788.187	7.69%	72.25%
40.0	710.678	296.766	4084.953	5.66%	77.91%
45.0	490.790	222.462	4307.414	4.24%	82.15%
50.0	350.469	169.989	4477.403	3.24%	85.40%
55.0	264.154	133.640	4611.043	2.55%	87.95%
60.0	209.900	109.576	4720.619	2.09%	90.03%
65.0	172.826	93.041	4813.66	1.77%	91.81%
70.0	142.015	79.720	4893.38	1.52%	93.33%
75.0	113.721	66.845	4960.225	1.27%	94.60%
80.0	89.825	54.463	5014.689	1.04%	95.64%
85.0	73.192	44.295	5058.984	0.84%	96.49%
90.0	60.068	36.488	5095.471	0.70%	97.18%
95.0	51.374	30.514	5125.985	0.58%	97.77%
100.0	42.408	25.483	5151.468	0.49%	98.25%
105.0	31.431	19.757	5171.225	0.38%	98.63%
110.0	23.384	14.328	5185.553	0.27%	98.90%
115.0	19.523	10.864	5196.417	0.21%	99.11%
120.0	17.296	8.951	5205.368	0.17%	99.28%
125.0	14.427	7.333	5212.701	0.14%	99.42%
130.0	11.456	5.628	5218.328	0.11%	99.53%
135.0	9.102	4.154	5222.483	0.08%	99.61%
140.0	8.695	3.295	5225.778	0.06%	99.67%
145.0	9.801	3.086	5228.864	0.06%	99.73%
150.0	11.200	3.093	5231.956	0.06%	99.79%
155.0	12.864	3.045	5235.002	0.06%	99.85%
160.0	13.898	2.807	5237.809	0.05%	99.90%
165.0	14.122	2.309	5240.118	0.04%	99.94%
170.0	14.235	1.682	5241.8	0.03%	99.98%
175.0	14.605	1.032	5242.832	0.02%	99.99%
180.0	7.487	0.264	5243.096	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	3385.18	64.56%	64.56%
0-40	4084.95	77.91%	77.91%
0-60	4720.62	90.03%	90.03%
0-90	5095.47	97.18%	97.18%
0-120	5205.37	99.28%	99.28%
0-180	5243.10	100.00%	100.00%
60-90	374.85	7.15%	7.15%
90-120	109.90	2.10%	2.10%
90-130	122.86	2.34%	2.34%
90-150	136.49	2.60%	2.60%
90-180	147.36	2.81%	2.81%
0-42.46	4194.48	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	707.13
10-20	1473.64
20-30	1204.41
30-40	699.77
40-50	392.45
50-60	243.22
60-70	172.76
70-80	121.31
80-90	80.78
90-100	56.00
100-110	34.08
110-120	19.82
120-130	12.96
130-140	7.45
140-150	6.18
150-160	5.85
160-170	3.99
170-180	1.03



C0(Max): ———

C0/C180: ———

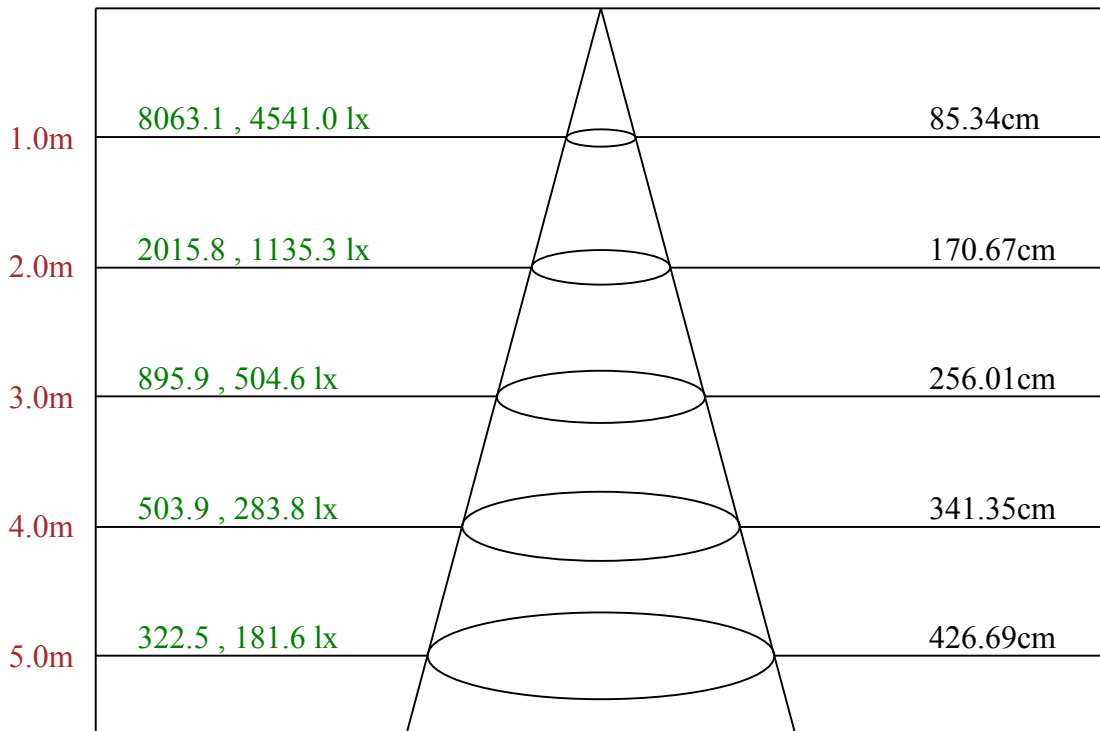
C90/C270: ———

Field angle(10%Imax):C0/180Left:43.7 Right:43.7

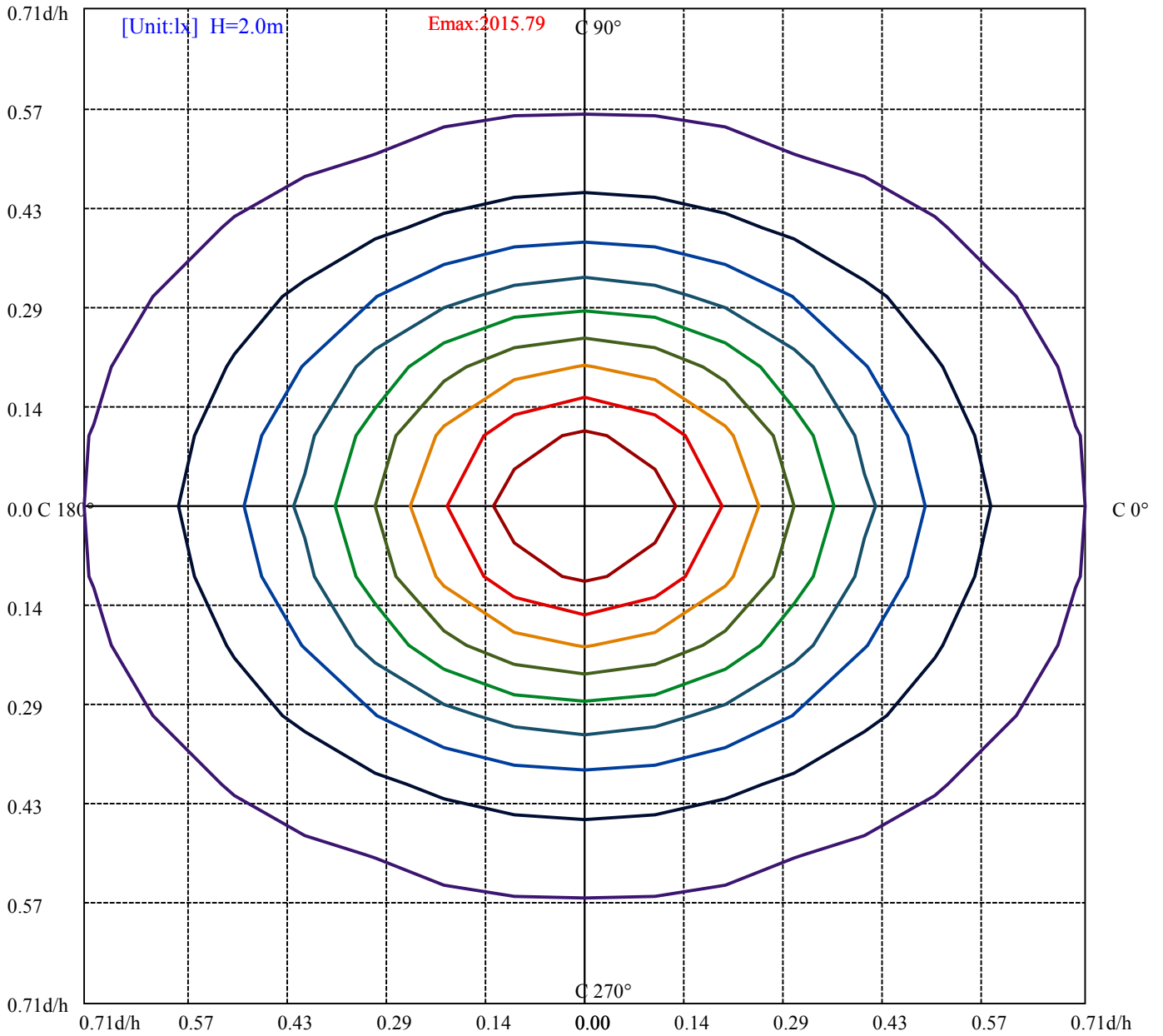
:C90/270Left:33.4 Right:33.4










Beam Angle(50%Imax):C0/180Left:22.6 Right:22.6

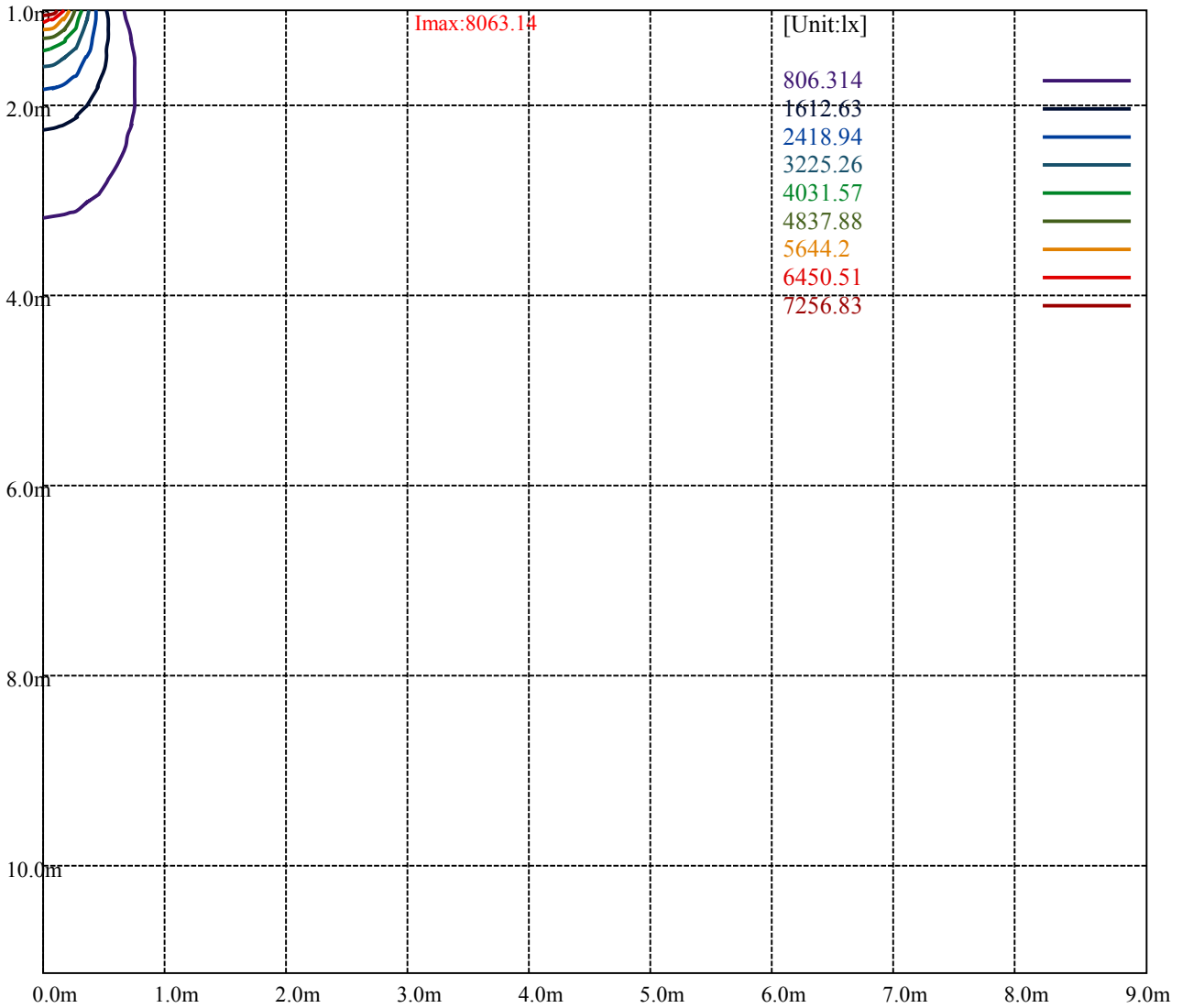
:C90/270Left:17.1 Right:17.1



Max , Ave Beam angle of C0 plane 46.21



(10%Emax) 201.5782	
(20%Emax) 403.1575	
(30%Emax) 604.735	
(40%Emax) 806.3125	
(50%Emax) 1007.893	
(60%Emax) 1209.47	
(70%Emax) 1411.047	
(80%Emax) 1612.625	
(90%Emax) 1814.205	



Luminance Table

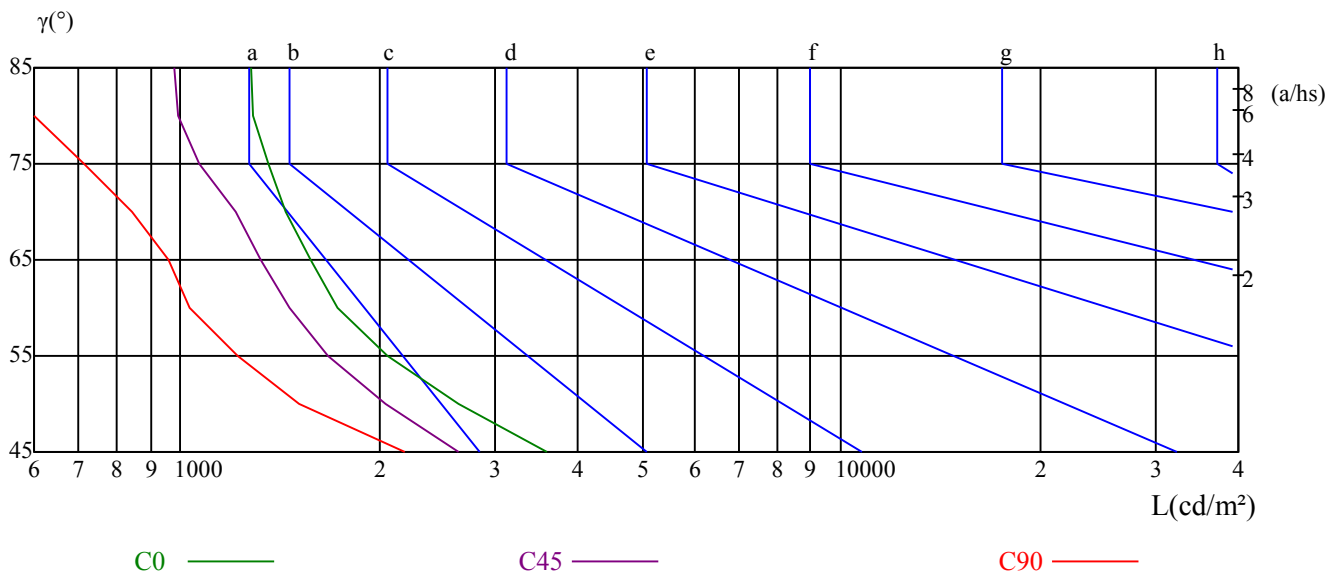
γ	45	50	55	60	65	70	75	80	85
C0	3592	2630	2051	1730	1575	1440	1361	1289	1283
C45	2628	2040	1673	1465	1322	1213	1069	990	976
C90	2184	1516	1223	1032	962	845	713	495	338

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2965	1086	2269	3452	874	2401	7319	571	4702

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	1.04	1.04	1.04	0.99	0.99	0.99	0.97
1	1.08	1.05	1.02	1.06	1.03	1.00	1.01	0.99	0.97	0.97	0.95	0.93	0.93	0.91	0.90	0.88
2	0.99	0.95	0.91	0.97	0.93	0.89	0.94	0.90	0.87	0.90	0.87	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	0.84	0.81	0.78	0.82	0.79	0.76	0.74
4	0.85	0.79	0.75	0.84	0.78	0.74	0.82	0.77	0.73	0.79	0.75	0.72	0.77	0.73	0.71	0.69
5	0.80	0.73	0.69	0.79	0.73	0.68	0.77	0.71	0.67	0.75	0.70	0.67	0.73	0.69	0.66	0.64
6	0.75	0.68	0.64	0.74	0.68	0.64	0.72	0.67	0.63	0.70	0.66	0.62	0.69	0.65	0.62	0.60
7	0.71	0.64	0.60	0.70	0.64	0.59	0.68	0.63	0.59	0.67	0.62	0.58	0.65	0.61	0.58	0.56
8	0.67	0.60	0.56	0.66	0.60	0.56	0.65	0.59	0.55	0.63	0.59	0.55	0.62	0.58	0.55	0.53
9	0.63	0.57	0.53	0.62	0.57	0.53	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.50
10	0.60	0.54	0.50	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.49	0.57	0.52	0.49	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	8063.14	8626.97	8472.63	7641.16	6443.02	5001.32	3569.44	2404.31	1541.61
15.0	8063.14	8572.01	8345.35	7410.03	6223.85	4750.98	3432.21	2253.20	1414.63
30.0	8063.14	8485.35	8104.38	7034.97	5816.76	4102.83	2829.05	1820.59	1133.05
45.0	8063.14	8351.14	7752.78	6613.30	4972.94	3482.85	2128.70	1297.79	818.39
60.0	8063.14	8191.16	7453.29	6016.69	4324.05	2730.98	1608.18	971.67	656.96
75.0	8063.14	8038.96	7193.60	5618.41	3784.41	2286.23	1316.39	829.24	578.50
90.0	8063.14	7918.66	6944.77	5254.73	3535.26	2085.13	1197.74	777.69	546.70
105.0	8063.14	7782.20	6724.01	5075.58	3412.97	2095.11	1201.76	798.52	554.80
120.0	8063.14	7654.24	6568.80	5099.90	3464.28	2229.67	1327.62	841.50	578.26
135.0	8063.14	7559.58	6469.54	5082.77	3604.37	2345.02	1499.35	945.17	652.80
150.0	8063.14	7506.49	6440.96	5178.30	3729.80	2535.74	1630.00	1090.72	709.49
165.0	8063.14	7444.76	6383.93	5171.31	3753.43	2571.86	1709.40	1158.28	789.15
180.0	8063.14	7035.40	5747.15	4166.28	2912.83	1901.15	1352.48	891.25	635.20
195.0	8063.14	7031.06	5757.08	4217.02	2934.09	1822.27	1375.21	903.97	624.45
210.0	8063.14	7103.99	5785.38	4312.59	2989.50	1834.04	1249.59	823.79	595.21
225.0	8063.14	7123.11	5835.16	4339.70	2796.83	1787.04	1101.02	749.52	514.29
240.0	8063.14	7183.93	5867.34	4077.80	2685.64	1617.07	977.00	655.19	468.50
255.0	8063.14	7368.23	5945.27	4024.41	2549.51	1493.71	895.51	626.85	447.75
270.0	8063.14	7462.93	6051.15	4171.14	2610.42	1503.65	890.95	611.80	428.08
285.0	8063.14	7615.58	6329.63	4472.04	2891.85	1673.25	971.33	633.67	451.10
300.0	8063.14	7710.39	6703.05	5011.27	3312.48	2073.48	1210.92	743.22	521.22
315.0	8063.14	7773.40	7032.45	5561.03	3998.84	2576.30	1618.91	997.53	642.33
330.0	8063.14	7932.88	7155.66	6147.44	4557.39	3181.84	2542.69	1290.45	817.17
345.0	8063.14	7996.73	7225.69	6347.71	4818.57	3570.59	2413.16	1517.07	936.63
360.0	8063.14	8626.97	8472.63	7641.16	6443.02	5001.32	3569.44	2404.31	1541.61
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	939.42	615.58	430.01	324.74	271.21	225.71	193.59	157.02	129.36
15.0	877.99	569.80	405.84	316.25	263.40	221.29	201.58	159.47	133.49
30.0	728.78	484.95	372.90	284.16	234.86	199.00	165.83	129.98	108.46
45.0	567.06	417.69	322.88	254.91	213.76	175.31	136.85	106.44	88.55
60.0	466.72	334.26	247.14	184.02	149.35	115.57	86.23	68.45	53.34
75.0	399.40	257.91	179.10	133.43	106.57	83.28	59.10	40.30	25.97
90.0	367.44	232.77	164.99	120.40	98.99	74.02	50.83	27.65	12.49
105.0	392.61	267.65	190.54	142.69	110.78	85.08	59.38	40.77	25.70
120.0	444.00	321.16	249.20	193.05	155.31	121.97	92.14	71.08	56.16
135.0	480.87	370.91	286.26	233.02	192.00	160.58	129.16	102.98	84.65
150.0	503.67	387.31	310.02	254.44	208.42	174.55	145.02	114.63	95.52
165.0	556.29	458.83	343.26	270.81	232.00	199.23	170.77	143.17	125.92
180.0	474.62	378.27	306.90	259.61	223.03	188.24	158.80	137.39	122.22
195.0	475.73	371.80	297.44	245.48	215.91	184.56	153.20	134.39	113.78
210.0	440.13	340.63	268.02	224.10	181.97	152.39	122.81	100.40	84.26
225.0	388.18	313.04	243.28	204.82	168.15	137.74	106.44	85.86	70.66
240.0	354.71	259.59	202.69	157.35	123.57	93.34	70.23	54.23	42.67
255.0	301.79	205.07	150.45	113.73	91.34	63.58	42.98	26.87	15.22
270.0	278.25	179.26	135.56	104.35	82.05	58.86	38.35	17.84	7.13
285.0	312.85	211.81	151.55	118.76	95.72	71.79	58.49	35.45	23.93
300.0	386.09	290.45	214.98	190.41	136.01	104.42	81.61	64.93	52.65
315.0	519.27	343.86	265.31	219.05	182.40	153.60	117.82	96.87	79.42
330.0	529.73	383.84	286.57	233.60	196.26	168.47	130.26	108.55	92.05
345.0	593.37	414.84	314.80	254.43	214.75	195.78	157.83	131.09	112.98
360.0	939.42	615.58	430.01	324.74	271.21	225.71	193.59	157.02	129.36

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	109.73	107.06	99.03	77.62	57.10	50.85	49.07	49.07	40.15
15.0	113.78	104.82	94.97	72.57	45.69	37.63	33.15	34.04	28.67
30.0	90.54	73.51	67.23	45.72	24.20	18.82	15.24	15.24	13.45
45.0	72.45	61.71	51.88	40.25	19.68	13.42	9.84	8.94	8.05
60.0	40.89	32.89	27.56	21.34	13.33	7.11	5.33	5.33	5.33
75.0	14.33	8.96	5.37	5.37	5.37	2.69	2.69	3.58	3.58
90.0	3.57	0.89	0.89	0.89	0.89	0.89	0.89	1.78	2.68
105.0	15.95	10.64	7.09	5.32	5.32	3.55	3.55	4.43	4.43
120.0	43.00	33.34	27.20	21.06	12.28	7.90	7.02	7.02	7.02
135.0	68.95	54.98	43.64	29.67	18.33	13.09	11.35	10.47	9.60
150.0	76.42	61.66	49.50	33.00	26.05	22.58	21.71	18.24	13.89
165.0	107.81	94.87	81.07	62.96	55.20	51.75	48.30	35.36	23.29
180.0	114.19	102.60	88.32	81.18	78.51	74.94	57.99	33.01	21.41
195.0	98.55	86.01	66.30	56.44	51.96	48.38	38.52	24.19	17.02
210.0	65.44	52.89	35.86	26.00	21.51	19.72	17.03	13.45	10.76
225.0	56.35	45.62	33.99	19.68	13.42	10.73	9.84	8.05	7.16
240.0	31.11	24.89	19.56	14.22	8.00	7.11	6.22	5.33	5.33
255.0	8.06	5.37	4.48	4.48	3.58	3.58	3.58	3.58	3.58
270.0	3.57	0.89	0.89	1.78	1.78	1.78	1.78	1.78	1.78
285.0	15.95	10.64	8.86	8.86	5.32	3.55	3.55	2.66	2.66
300.0	43.87	35.98	30.71	21.94	10.53	6.14	6.14	5.26	5.26
315.0	68.95	56.73	48.00	27.05	17.45	10.47	9.60	8.73	6.98
330.0	75.55	67.74	49.50	27.79	22.58	17.37	17.37	15.63	12.16
345.0	102.63	98.32	75.90	49.16	43.12	34.50	35.36	31.05	20.70
360.0	109.73	107.06	99.03	77.62	57.10	50.85	49.07	49.07	40.15
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	24.09	15.17	13.38	14.27	16.06	16.95	16.95	16.06	14.27
15.0	18.81	12.54	12.54	13.44	15.23	17.02	17.02	15.23	14.33
30.0	10.76	8.96	9.86	11.65	14.34	16.14	16.14	15.24	15.24
45.0	7.16	7.16	8.05	10.73	12.52	14.31	15.21	15.21	15.21
60.0	4.44	5.33	7.11	8.89	11.56	13.33	14.22	14.22	15.11
75.0	3.58	4.48	6.27	8.06	10.75	12.54	13.43	14.33	15.22
90.0	2.68	3.57	5.35	8.03	10.70	12.49	13.38	14.27	15.16
105.0	4.43	5.32	7.09	8.86	11.52	13.29	14.18	15.07	15.07
120.0	6.14	7.02	8.77	10.53	12.28	14.04	14.92	14.92	14.92
135.0	8.73	9.60	10.47	13.09	14.84	15.71	15.71	14.84	14.84
150.0	12.16	12.16	13.89	15.63	16.50	17.37	16.50	15.63	14.76
165.0	16.39	15.52	16.39	18.11	18.11	18.11	17.25	16.39	15.52
180.0	16.95	16.95	16.95	16.95	16.95	16.06	15.17	14.27	15.17
195.0	15.23	15.23	16.13	16.13	16.13	16.13	15.23	14.33	14.33
210.0	10.76	11.65	12.55	12.55	14.34	14.34	13.45	13.45	14.34
225.0	7.16	8.05	9.84	10.73	12.52	12.52	12.52	13.42	14.31
240.0	5.33	6.22	7.11	8.89	10.67	11.56	12.45	13.33	14.22
255.0	3.58	4.48	6.27	7.16	8.96	10.75	11.64	13.43	14.33
270.0	2.68	3.57	5.35	7.13	8.92	9.81	11.59	13.38	14.27
285.0	3.55	4.43	6.20	7.09	8.86	10.64	11.52	12.41	14.18
300.0	5.26	5.26	7.02	7.90	10.53	11.41	12.28	13.16	14.04
315.0	6.11	6.98	7.85	9.60	11.35	12.22	12.22	13.09	13.96
330.0	9.55	8.68	9.55	11.29	12.16	13.03	13.03	13.03	13.89
345.0	12.94	10.35	11.21	12.07	12.94	13.80	12.94	12.94	13.80
360.0	24.09	15.17	13.38	14.27	16.06	16.95	16.95	16.06	14.27

Intensity data(cd)

C/γ(°)	180.0
0.0	15.17
15.0	14.33
30.0	15.24
45.0	15.21
60.0	15.11
75.0	15.22
90.0	15.16
105.0	15.07
120.0	14.92
135.0	14.84
150.0	14.76
165.0	14.66
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	15.17