
AFX

Client:

LumCAT: ELZV3602LAJD4SN

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.990

LampCAT:

Current(A): 0.164

Lamp flux(lm): 1992.3

Power (W): 19.380

Number of Lamps: 1

PF: 0.984

Length(mm): 890

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1992.32, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 102.80

Central intensity(cd): 500.030, Maximum intensity(cd): 567.184

Angle of maximum intensity: C=90.0 γ =25.0

Beam Angle(50%Imax): [C0/180]Total=109.4

[C90/270]Total=126.3

Field angle(10%Imax): [C0/180]Total=159.0

[C90/270]Total=236.5

Maximum s/h(1/2): C0_180=1.24 C90_270=1.67

Maximum s/h(1/4): C0_180=1.35 C90_270=1.78

Up flux rate of lamp(%): 14.24%

Down flux rate of lamp(%): 85.76%

Up flux rate of LUM(%): 14.24%

Down flux rate of LUM(%): 85.76%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 58.233%

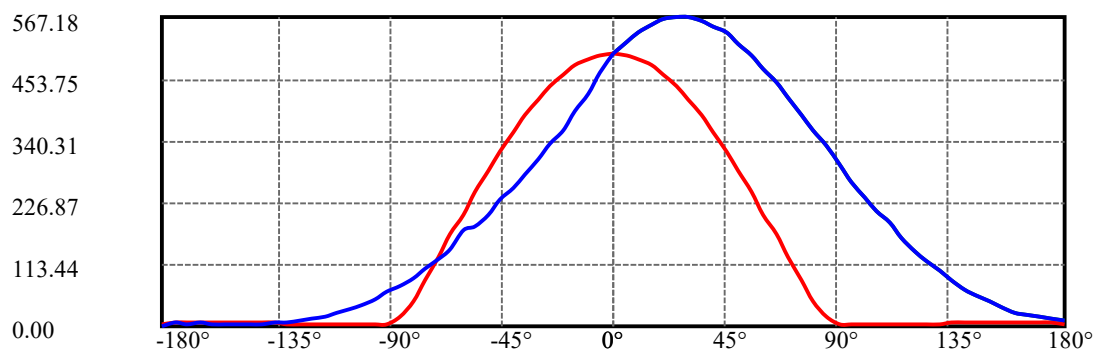
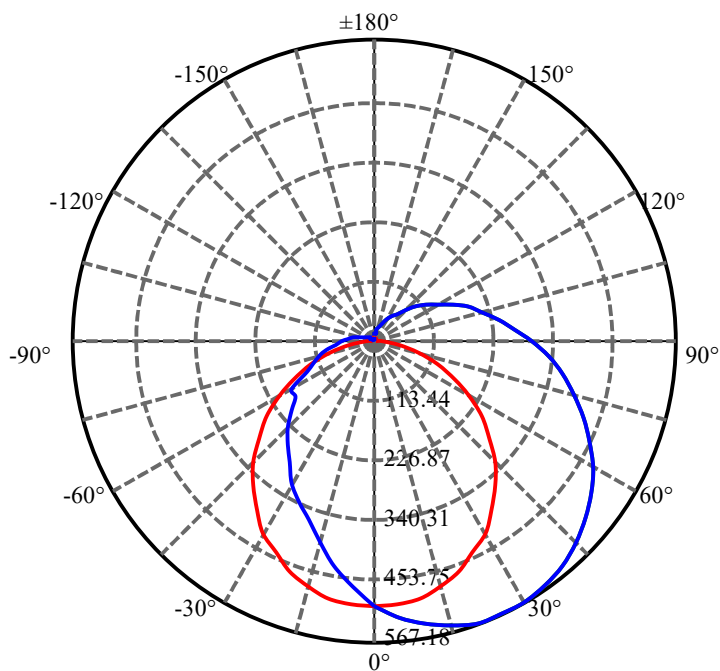
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	500.030	0.000	0	0.00%	0.00%
5.0	493.994	11.883	11.883	0.60%	0.60%
10.0	484.236	34.994	46.878	1.76%	2.35%
15.0	471.267	56.680	103.557	2.84%	5.20%
20.0	457.557	76.548	180.106	3.84%	9.04%
25.0	439.213	94.055	274.16	4.72%	13.76%
30.0	419.749	108.702	382.863	5.46%	19.22%
35.0	397.513	120.348	503.21	6.04%	25.26%
40.0	374.387	128.786	631.996	6.46%	31.72%
45.0	347.038	133.578	765.574	6.70%	38.43%
50.0	319.234	134.630	900.203	6.76%	45.18%
55.0	290.392	132.553	1032.756	6.65%	51.84%
60.0	260.956	127.442	1160.199	6.40%	58.23%
65.0	230.975	119.589	1279.788	6.00%	64.24%
70.0	201.074	109.398	1389.186	5.49%	69.73%
75.0	173.082	97.798	1486.984	4.91%	74.64%
80.0	147.186	85.695	1572.679	4.30%	78.94%
85.0	123.483	73.547	1646.226	3.69%	82.63%
90.0	104.075	62.307	1708.533	3.13%	85.76%
95.0	88.286	52.670	1761.203	2.64%	88.40%
100.0	75.788	44.583	1805.786	2.24%	90.64%
105.0	64.784	37.613	1843.399	1.89%	92.53%
110.0	55.501	31.440	1874.839	1.58%	94.10%
115.0	47.188	26.001	1900.841	1.31%	95.41%
120.0	40.259	21.259	1922.099	1.07%	96.48%
125.0	33.893	17.140	1939.239	0.86%	97.34%
130.0	28.649	13.599	1952.838	0.68%	98.02%
135.0	23.965	10.631	1963.469	0.53%	98.55%
140.0	20.257	8.188	1971.657	0.41%	98.96%
145.0	17.184	6.247	1977.904	0.31%	99.28%
150.0	14.560	4.675	1982.579	0.23%	99.51%
155.0	12.646	3.443	1986.022	0.17%	99.68%
160.0	11.187	2.500	1988.521	0.13%	99.81%
165.0	10.323	1.773	1990.294	0.09%	99.90%
170.0	9.610	1.182	1991.476	0.06%	99.96%
175.0	9.309	0.677	1992.153	0.03%	99.99%
180.0	4.748	0.168	1992.321	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	382.86	19.22%	19.22%
0-40	632.00	31.72%	31.72%
0-60	1160.20	58.23%	58.23%
0-90	1708.53	85.76%	85.76%
0-120	1922.10	96.48%	96.48%
0-180	1992.32	100.00%	100.00%
60-90	548.33	27.52%	27.52%
90-120	213.57	10.72%	10.72%
90-130	244.30	12.26%	12.26%
90-150	274.05	13.76%	13.76%
90-180	283.62	14.24%	14.24%
0-81.44	1593.86	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	46.88
10-20	133.23
20-30	202.76
30-40	249.13
40-50	268.21
50-60	260.00
60-70	228.99
70-80	183.49
80-90	135.85
90-100	97.25
100-110	69.05
110-120	47.26
120-130	30.74
130-140	18.82
140-150	10.92
150-160	5.94
160-170	2.96
170-180	0.68



C90(Max): —————

C0/C180: —————

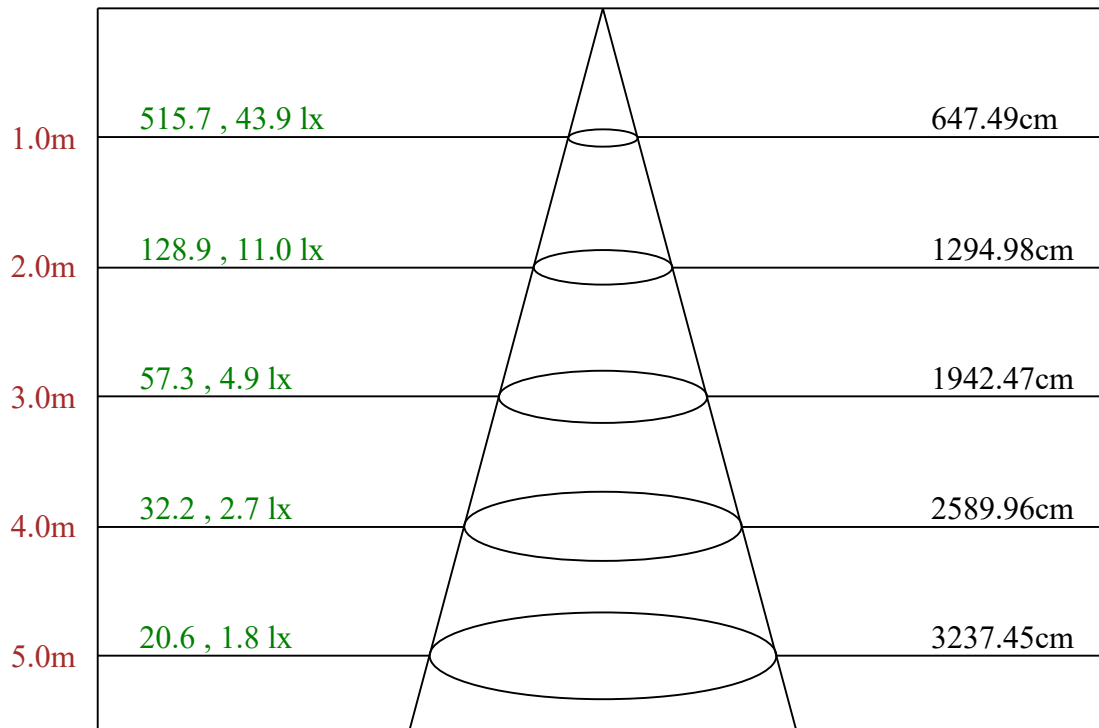
C90/C270: —————

Field angle(10%Imax):C0/180Left:79.5 Right:79.5

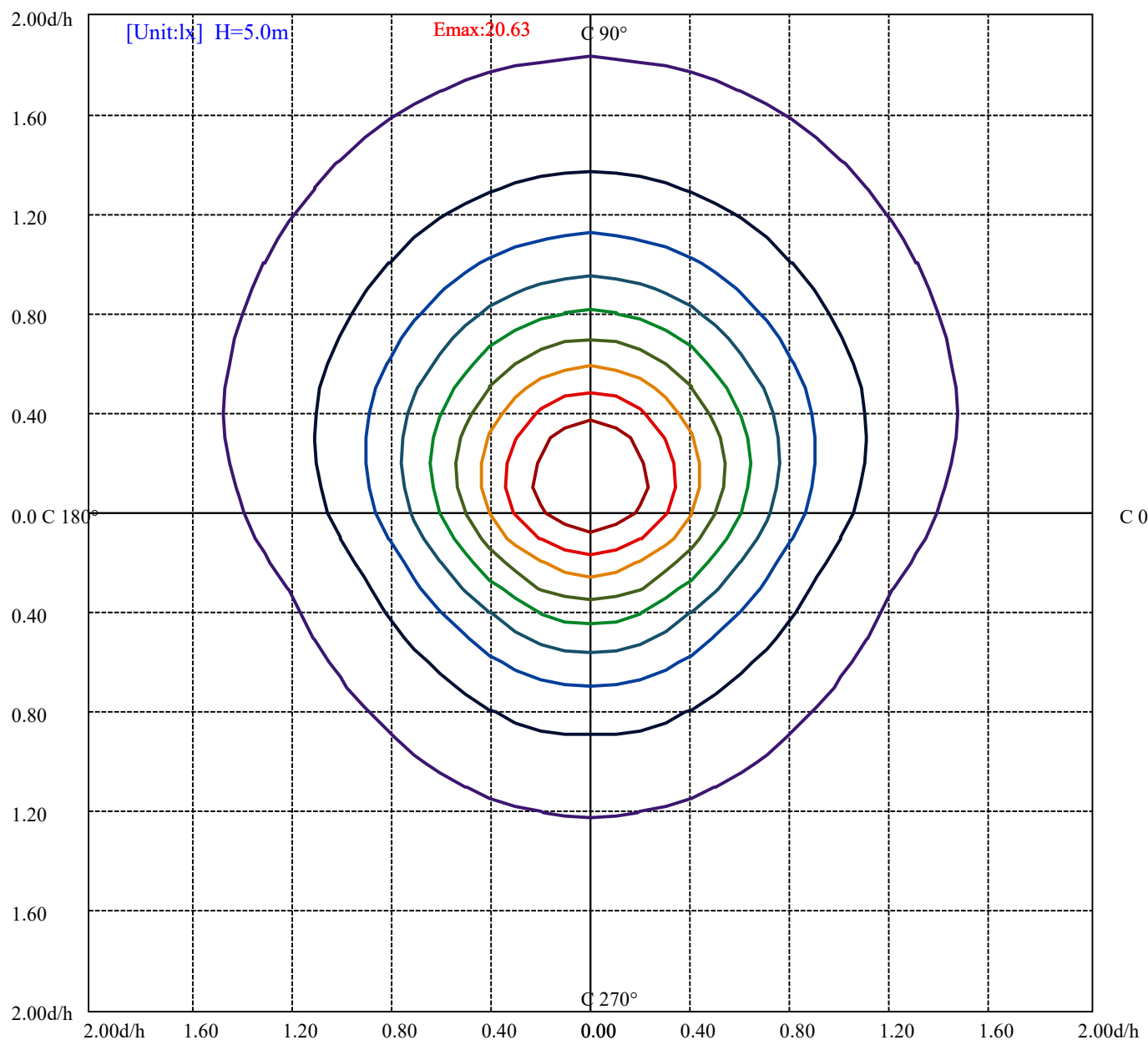
:C90/270Left:117.0 Right:119.5

Beam Angle(50%Imax):C0/180Left:54.7 Right:54.7

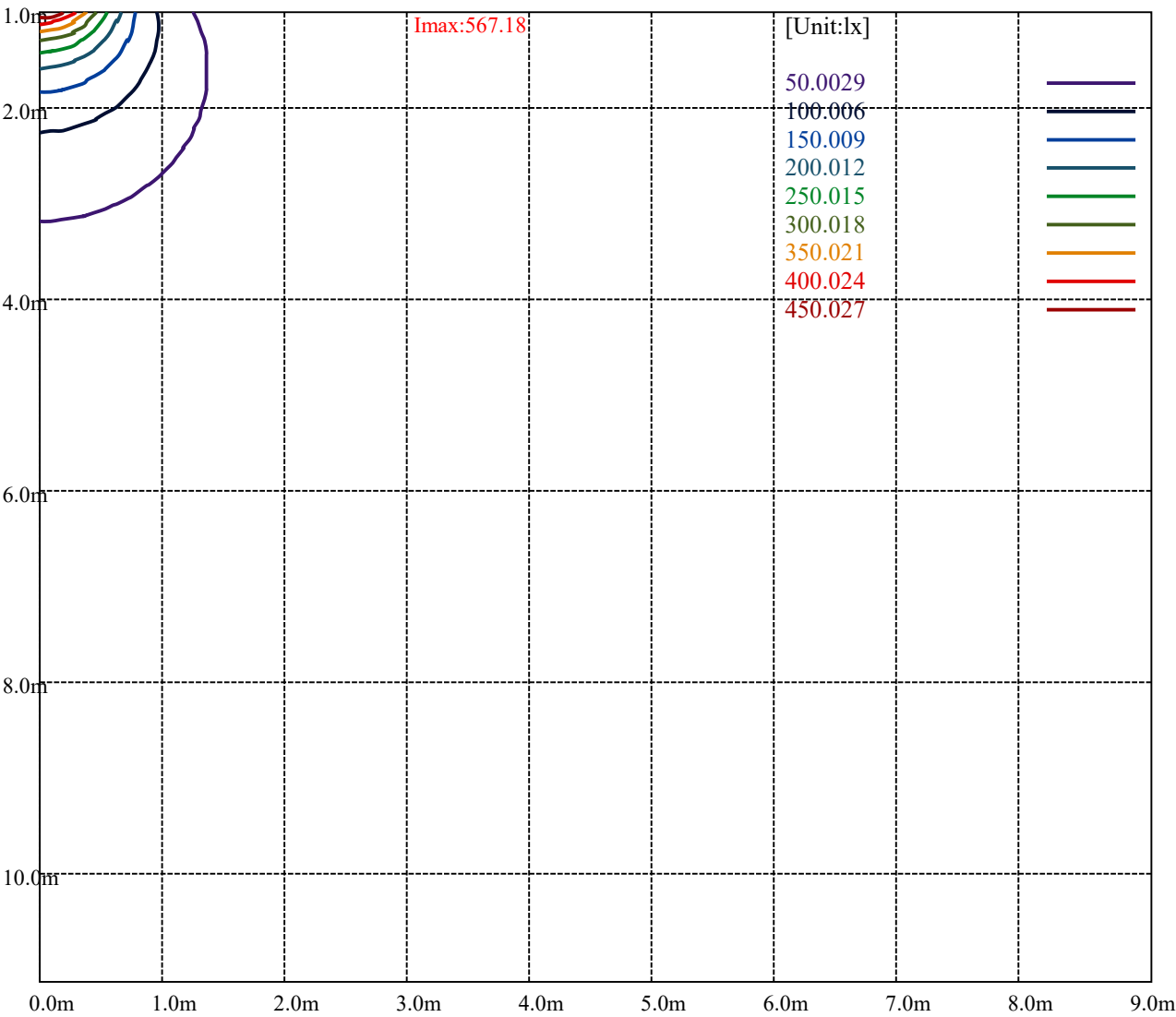
:C90/270Left:59.3 Right:67.0



Max , Ave Beam angle of C90 plane 145.67



(10%Emax) 2.063412	—
(20%Emax) 4.12684	—
(30%Emax) 6.19024	—
(40%Emax) 8.25364	—
(50%Emax) 10.31704	—
(60%Emax) 12.38048	—
(70%Emax) 14.44388	—
(80%Emax) 16.50728	—
(90%Emax) 18.57072	—



Luminance Table

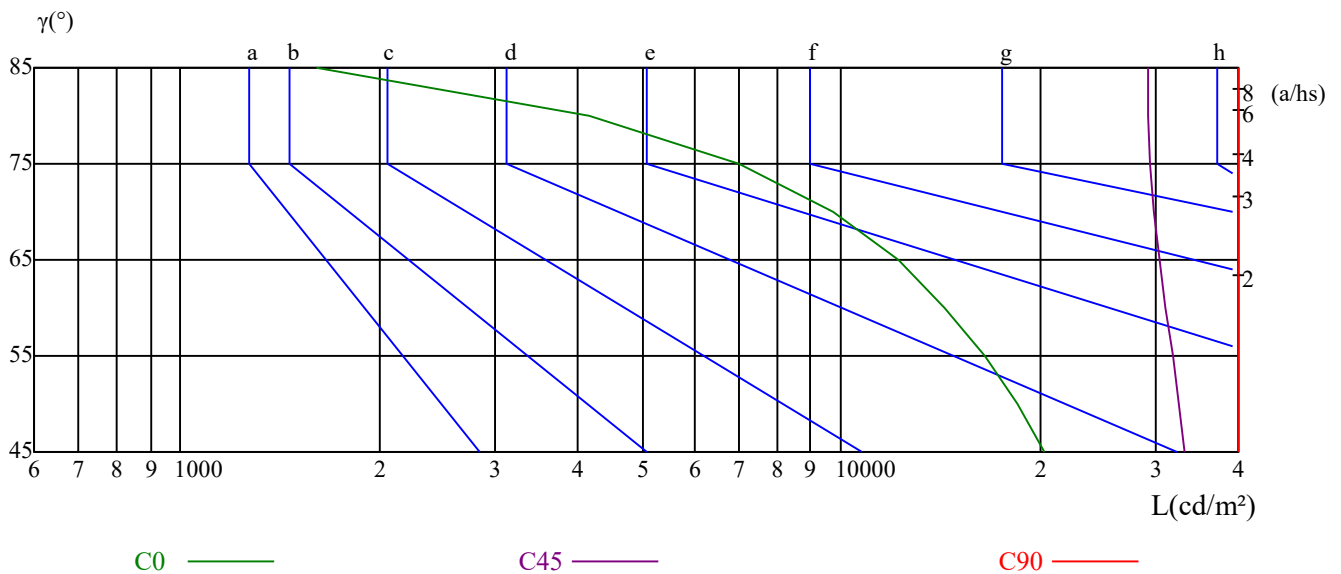
γ	45	50	55	60	65	70	75	80	85
C0	20403	18497	16577	14310	12213	9703	7001	4149	1602
C45	33182	32493	31804	31112	30356	29731	29377	29191	29147
C90	56374	59692	64037	69613	77589	88881	107635	145734	250899

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
29674	52195	40869	24421	71176	51798	13813	173149	114027

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



RHOC	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	1.16	1.16	1.16	1.11	1.11	1.11	1.03	1.03	1.03	0.96	0.96	0.96	0.89	0.89	0.89	0.86
1	0.97	0.92	0.87	0.93	0.89	0.84	0.86	0.83	0.79	0.80	0.77	0.74	0.74	0.72	0.69	0.66
2	0.83	0.76	0.69	0.80	0.73	0.67	0.74	0.68	0.63	0.69	0.64	0.60	0.64	0.60	0.56	0.53
3	0.72	0.63	0.56	0.70	0.61	0.55	0.65	0.58	0.52	0.60	0.54	0.49	0.55	0.51	0.47	0.44
4	0.64	0.54	0.47	0.61	0.53	0.46	0.57	0.50	0.44	0.53	0.47	0.42	0.49	0.44	0.40	0.37
5	0.57	0.47	0.40	0.55	0.46	0.39	0.51	0.43	0.38	0.47	0.41	0.36	0.44	0.39	0.34	0.32
6	0.51	0.41	0.35	0.49	0.40	0.34	0.46	0.38	0.33	0.43	0.36	0.31	0.40	0.34	0.30	0.27
7	0.46	0.37	0.30	0.44	0.36	0.30	0.41	0.34	0.29	0.39	0.32	0.27	0.36	0.31	0.26	0.24
8	0.42	0.33	0.27	0.40	0.32	0.26	0.38	0.31	0.25	0.35	0.29	0.24	0.33	0.28	0.23	0.21
9	0.38	0.30	0.24	0.37	0.29	0.24	0.35	0.28	0.23	0.33	0.26	0.22	0.31	0.25	0.21	0.19
10	0.35	0.27	0.22	0.34	0.26	0.21	0.32	0.25	0.21	0.30	0.24	0.20	0.28	0.23	0.19	0.17

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	500.03	499.14	493.78	484.85	469.67	450.92	429.49	402.70	372.34
15.0	500.03	505.40	505.40	500.92	491.08	478.56	459.78	439.20	415.05
30.0	500.03	508.97	514.34	517.03	514.34	507.19	495.56	476.77	457.99
45.0	500.03	514.39	523.37	531.45	534.14	532.35	523.37	509.01	492.85
60.0	500.03	517.15	531.56	544.18	550.48	550.48	545.98	536.97	524.36
75.0	500.03	519.02	537.10	549.76	559.71	562.42	559.71	553.38	542.53
90.0	500.03	520.90	539.96	554.48	565.37	567.18	566.28	559.92	550.85
105.0	500.03	518.92	536.90	550.39	559.39	561.18	558.49	553.09	541.40
120.0	500.03	517.95	531.39	542.15	549.32	548.42	542.15	532.29	517.95
135.0	500.03	504.40	511.39	518.39	521.88	517.51	507.02	495.66	478.18
150.0	500.03	510.90	515.43	516.33	509.09	505.46	494.59	474.67	453.83
165.0	500.03	503.63	502.73	495.53	486.54	473.05	454.16	434.38	406.50
180.0	500.03	494.67	485.74	470.56	450.92	426.81	401.81	371.45	339.31
195.0	500.03	489.30	472.30	450.83	424.89	394.48	360.49	324.71	287.14
210.0	500.03	481.24	457.09	427.57	394.48	360.49	326.50	293.40	261.20
225.0	500.03	474.89	442.58	408.46	373.45	341.13	311.51	281.88	253.16
240.0	500.03	469.40	433.36	393.72	363.08	333.35	305.42	276.59	249.56
255.0	500.03	467.48	427.69	390.62	359.88	331.85	304.72	278.50	252.28
270.0	500.03	464.64	427.43	392.95	359.37	333.05	307.64	279.51	255.01
285.0	500.03	467.65	428.08	389.41	361.53	333.65	307.57	281.49	273.40
300.0	500.03	469.56	435.51	396.98	389.81	336.04	309.16	280.48	254.50
315.0	500.03	464.19	436.21	402.12	366.28	335.68	306.84	277.99	249.14
330.0	500.03	483.72	459.27	428.47	398.57	363.25	330.64	298.02	264.51
345.0	500.03	488.34	473.05	453.26	428.08	396.61	365.13	328.26	292.28
360.0	500.03	499.14	493.78	484.85	469.67	450.92	429.49	402.70	372.34
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	339.31	303.59	266.09	225.91	186.62	144.65	102.68	61.61	25.89
15.0	386.43	355.12	320.23	282.66	242.41	203.05	159.22	119.86	83.19
30.0	432.94	403.42	371.22	335.44	299.66	262.09	225.42	188.74	157.43
45.0	472.20	445.27	420.13	386.92	354.60	320.49	289.07	256.75	223.53
60.0	505.44	484.71	459.49	433.36	402.73	372.99	341.46	309.03	277.49
75.0	527.16	509.07	487.37	461.15	434.02	405.99	374.34	346.31	315.57
90.0	538.14	519.09	498.21	473.71	448.30	418.35	387.50	359.37	329.42
105.0	526.11	505.43	484.74	460.46	434.38	404.70	374.12	340.85	312.07
120.0	500.93	478.52	453.43	427.44	398.77	368.30	336.94	304.68	274.21
135.0	454.57	430.97	400.37	373.27	340.06	308.58	277.11	246.52	215.92
150.0	427.56	398.57	368.68	332.45	298.02	258.17	221.93	189.32	154.90
165.0	379.52	348.94	315.67	277.89	238.32	196.05	154.69	115.11	81.84
180.0	302.70	266.09	229.48	185.73	148.22	106.26	66.08	30.36	6.25
195.0	247.78	212.00	175.32	138.65	102.87	70.67	43.83	21.47	10.73
210.0	227.20	195.00	162.80	134.18	104.66	73.35	58.14	40.25	27.73
225.0	222.63	192.11	165.18	135.56	114.91	95.16	75.41	60.15	45.78
240.0	222.54	196.41	171.18	148.66	128.84	108.11	91.00	74.78	60.36
255.0	226.96	201.64	179.03	157.33	136.54	116.64	100.37	95.85	70.53
270.0	231.41	205.09	182.41	177.87	140.66	122.51	104.36	88.03	73.51
285.0	227.53	203.25	178.97	156.48	136.70	117.81	100.73	83.64	70.15
300.0	225.82	200.73	169.36	146.07	126.35	107.53	90.51	74.38	60.94
315.0	219.42	191.44	163.47	132.87	112.77	92.66	74.31	58.57	45.46
330.0	233.71	201.10	168.49	137.69	106.89	77.90	59.79	40.76	28.99
345.0	250.91	214.04	178.07	141.20	106.12	73.75	44.97	26.08	11.69
360.0	339.31	303.59	266.09	225.91	186.62	144.65	102.68	61.61	25.89

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	5.36	1.79	1.79	1.79	1.79	2.68	3.57	3.57	4.46
15.0	54.56	35.78	25.05	19.68	16.10	14.31	12.52	11.63	11.63
30.0	126.13	101.97	84.08	68.88	56.35	46.51	39.36	33.99	28.62
45.0	193.91	166.08	143.64	122.99	105.93	88.87	75.41	62.84	53.86
60.0	249.56	218.93	193.71	169.38	147.76	127.03	109.02	91.90	77.48
75.0	283.02	253.18	225.15	199.83	175.42	153.72	132.92	112.12	94.04
90.0	294.94	265.90	236.86	210.54	188.76	162.44	138.85	120.70	100.73
105.0	279.69	251.81	223.93	198.75	175.37	152.89	130.40	111.52	93.53
120.0	245.53	215.07	191.77	169.36	146.96	126.35	108.43	90.51	77.07
135.0	187.07	160.85	138.99	119.76	102.28	87.42	74.31	62.07	52.45
150.0	125.91	103.27	84.24	69.75	57.97	48.01	40.76	34.42	29.89
165.0	53.96	35.97	26.08	20.68	17.09	14.39	13.49	12.59	11.69
180.0	1.79	2.68	2.68	2.68	3.57	3.57	4.46	4.46	5.36
195.0	5.37	3.58	2.68	2.68	1.79	1.79	1.79	1.79	1.79
210.0	18.78	12.52	8.95	6.26	5.37	4.47	3.58	2.68	1.79
225.0	35.01	26.03	18.85	14.36	10.77	8.08	7.18	4.49	3.59
240.0	48.65	37.84	36.04	22.52	17.12	12.61	9.91	7.21	5.41
255.0	57.87	47.02	37.07	28.93	21.70	16.28	12.66	9.04	7.23
270.0	61.71	49.00	39.02	30.85	23.59	18.15	13.61	9.98	7.26
285.0	58.46	46.77	36.87	28.78	21.58	16.19	12.59	8.99	7.19
300.0	49.29	38.53	29.57	22.40	17.03	12.55	9.86	7.17	5.38
315.0	34.09	27.10	19.23	13.99	10.49	7.87	6.12	5.25	3.50
330.0	20.83	13.59	9.06	7.25	5.44	4.53	3.62	2.72	1.81
345.0	6.30	3.60	3.60	2.70	1.80	1.80	1.80	1.80	1.80
360.0	5.36	1.79	1.79	1.79	1.79	2.68	3.57	3.57	4.46
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	5.36	6.25	7.14	8.04	8.04	8.04	8.04	8.04	8.04
15.0	10.73	10.73	10.73	11.63	10.73	9.84	9.84	8.95	8.95
30.0	25.05	21.47	19.68	17.89	16.10	13.42	11.63	9.84	9.84
45.0	43.99	37.70	31.42	26.03	21.55	18.85	14.36	11.67	9.87
60.0	63.97	53.16	43.25	35.14	27.93	22.52	18.02	14.42	10.81
75.0	78.67	63.29	52.44	41.59	33.46	25.32	19.89	15.37	12.66
90.0	83.49	68.06	55.36	44.47	34.48	26.32	20.87	16.33	12.70
105.0	77.34	63.85	52.16	41.37	32.38	26.08	19.79	16.19	12.59
120.0	63.62	52.87	43.01	34.95	28.68	22.40	17.92	14.34	12.55
135.0	44.58	36.72	30.60	25.35	21.85	17.48	15.74	13.11	11.36
150.0	25.36	22.65	19.93	18.12	16.31	14.49	13.59	11.78	10.87
165.0	11.69	11.69	10.79	10.79	10.79	10.79	10.79	10.79	9.89
180.0	5.36	6.25	6.25	7.14	6.25	7.14	7.14	8.04	8.04
195.0	1.79	2.68	3.58	4.47	5.37	5.37	6.26	7.16	8.05
210.0	0.89	0.89	1.79	2.68	4.47	4.47	6.26	7.16	8.05
225.0	2.69	1.80	1.80	1.80	3.59	4.49	5.39	6.28	8.08
240.0	4.50	3.60	1.80	1.80	1.80	3.60	5.41	6.31	7.21
255.0	5.43	4.52	3.62	1.81	1.81	3.62	5.43	6.33	6.33
270.0	5.44	4.54	3.63	1.81	1.81	3.63	5.44	4.54	5.44
285.0	5.40	4.50	3.60	1.80	1.80	3.60	4.50	5.40	8.09
300.0	4.48	3.58	2.69	1.79	1.79	3.58	4.48	6.27	8.06
315.0	2.62	1.75	1.75	1.75	3.50	3.50	5.25	6.99	7.87
330.0	0.91	0.91	1.81	2.72	3.62	4.53	5.44	7.25	9.06
345.0	1.80	2.70	3.60	4.50	5.40	5.40	6.30	8.09	8.99
360.0	5.36	6.25	7.14	8.04	8.04	8.04	8.04	8.04	8.04

Intensity data(cd)

C/ γ (°)	180.0
0.0	8.04
15.0	8.95
30.0	8.95
45.0	8.98
60.0	8.11
75.0	9.04
90.0	10.89
105.0	10.79
120.0	10.75
135.0	9.62
150.0	9.96
165.0	9.89
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	8.04