
AFX

Client:

LumCAT: ELZV3602LAJD4LB

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.960

LampCAT:

Current(A): 0.168

Lamp flux(lm): 1716.2

Power (W): 19.830

Number of Lamps: 1

PF: 0.982

Length(mm): 900

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1716.16, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 86.54

Central intensity(cd): 367.247, Maximum intensity(cd): 481.157

Angle of maximum intensity: C=90.0 γ =40.0

Beam Angle(50%Imax): [C0/180]Total=108.6

[C90/270]Total=128.1

Field angle(10%Imax): [C0/180]Total=158.6

[C90/270]Total=236.4

Maximum s/h(1/2): C0_180=1.24 C90_270=1.90

Maximum s/h(1/4): C0_180=1.35 C90_270=1.98

Up flux rate of lamp(%): 19.64%

Down flux rate of lamp(%): 80.36%

Up flux rate of LUM(%): 19.64%

Down flux rate of LUM(%): 80.36%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 52.073%

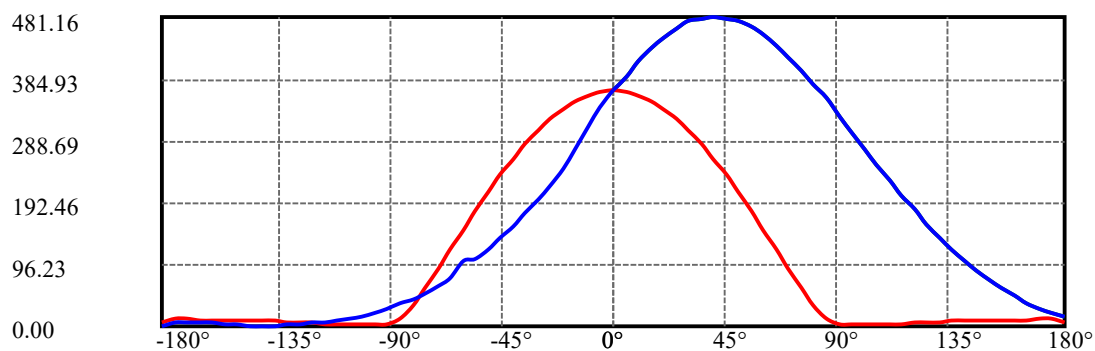
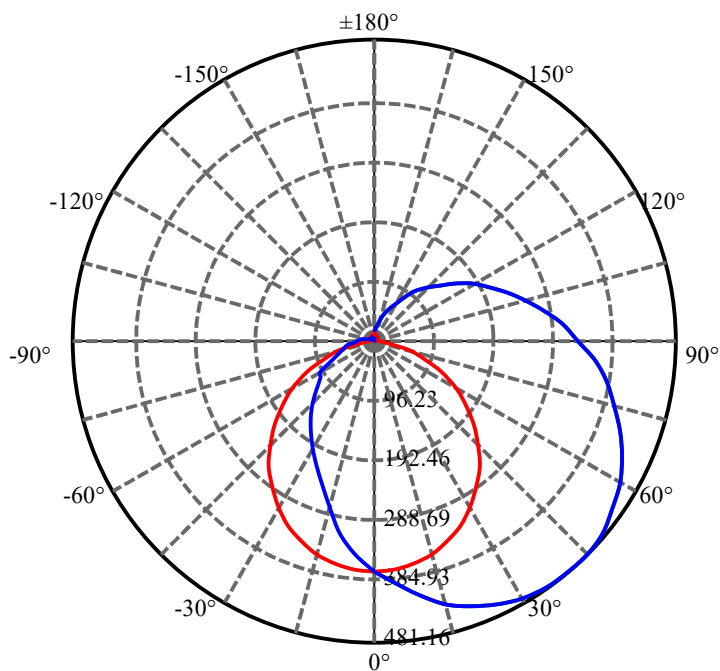
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	367.247	0.000	0	0.00%	0.00%
5.0	364.445	8.747	8.747	0.51%	0.51%
10.0	359.700	25.905	34.652	1.51%	2.02%
15.0	351.631	42.196	76.848	2.46%	4.48%
20.0	342.416	57.199	134.047	3.33%	7.81%
25.0	329.839	70.507	204.554	4.11%	11.92%
30.0	317.046	81.864	286.418	4.77%	16.69%
35.0	302.723	91.265	377.683	5.32%	22.01%
40.0	287.698	98.507	476.19	5.74%	27.75%
45.0	269.972	103.257	579.447	6.02%	33.76%
50.0	252.176	105.508	684.955	6.15%	39.91%
55.0	232.885	105.468	790.423	6.15%	46.06%
60.0	213.749	103.238	893.662	6.02%	52.07%
65.0	193.101	98.906	992.567	5.76%	57.84%
70.0	173.210	92.752	1085.32	5.40%	63.24%
75.0	154.090	85.551	1170.871	4.99%	68.23%
80.0	136.133	77.656	1248.526	4.52%	72.75%
85.0	118.905	69.300	1317.826	4.04%	76.79%
90.0	104.604	61.199	1379.025	3.57%	80.36%
95.0	92.575	53.989	1433.014	3.15%	83.50%
100.0	82.450	47.559	1480.573	2.77%	86.27%
105.0	73.255	41.662	1522.235	2.43%	88.70%
110.0	65.224	36.196	1558.431	2.11%	90.81%
115.0	57.825	31.157	1589.588	1.82%	92.62%
120.0	51.327	26.535	1616.123	1.55%	94.17%
125.0	45.053	22.278	1638.401	1.30%	95.47%
130.0	39.528	18.391	1656.792	1.07%	96.54%
135.0	34.604	14.980	1671.771	0.87%	97.41%
140.0	30.280	12.014	1683.785	0.70%	98.11%
145.0	26.780	9.520	1693.305	0.55%	98.67%
150.0	23.546	7.411	1700.716	0.43%	99.10%
155.0	20.690	5.598	1706.314	0.33%	99.43%
160.0	18.062	4.064	1710.379	0.24%	99.66%
165.0	15.843	2.794	1713.173	0.16%	99.83%
170.0	14.035	1.772	1714.945	0.10%	99.93%
175.0	13.314	0.978	1715.924	0.06%	99.99%
180.0	6.693	0.239	1716.163	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	286.42	16.69%	16.69%
0-40	476.19	27.75%	27.75%
0-60	893.66	52.07%	52.07%
0-90	1379.02	80.36%	80.36%
0-120	1616.12	94.17%	94.17%
0-180	1716.16	100.00%	100.00%
60-90	485.36	28.28%	28.28%
90-120	237.10	13.82%	13.82%
90-130	277.77	16.19%	16.19%
90-150	321.69	18.74%	18.74%
90-180	336.90	19.63%	19.63%
0-89.50	1372.93	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	34.65
10-20	99.39
20-30	152.37
30-40	189.77
40-50	208.76
50-60	208.71
60-70	191.66
70-80	163.21
80-90	130.50
90-100	101.55
100-110	77.86
110-120	57.69
120-130	40.67
130-140	26.99
140-150	16.93
150-160	9.66
160-170	4.57
170-180	0.98



C90(Max): —————

C0/C180: —————

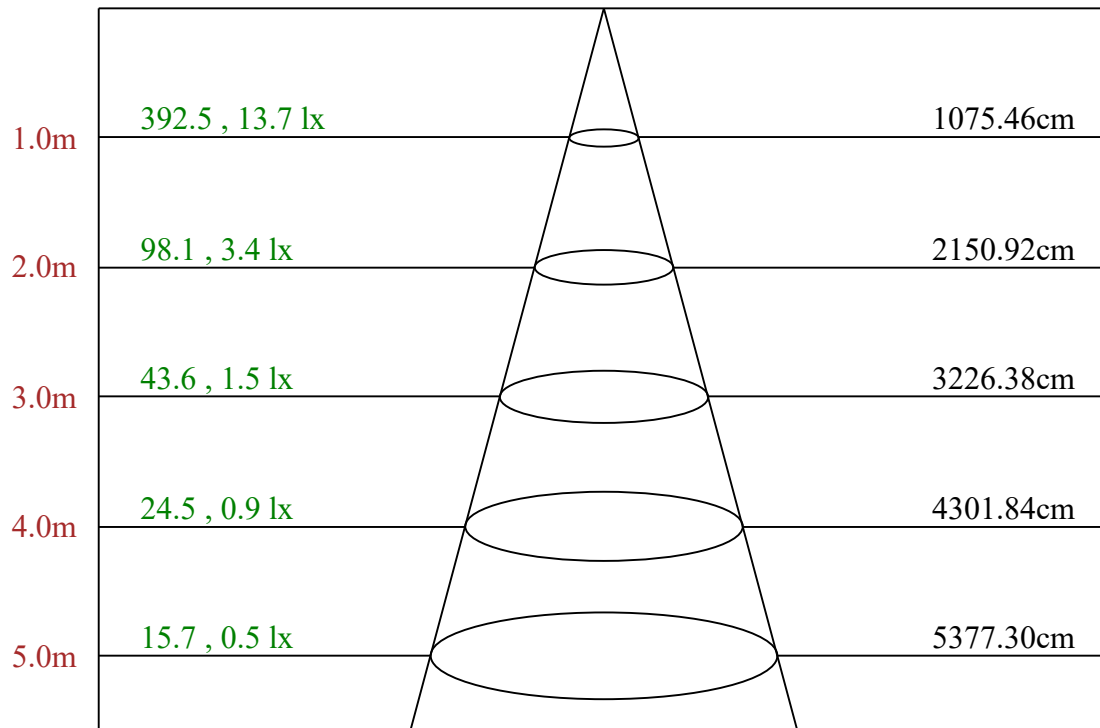
C90/C270: —————

Field angle(10%Imax):C0/180Left:79.3 Right:79.3

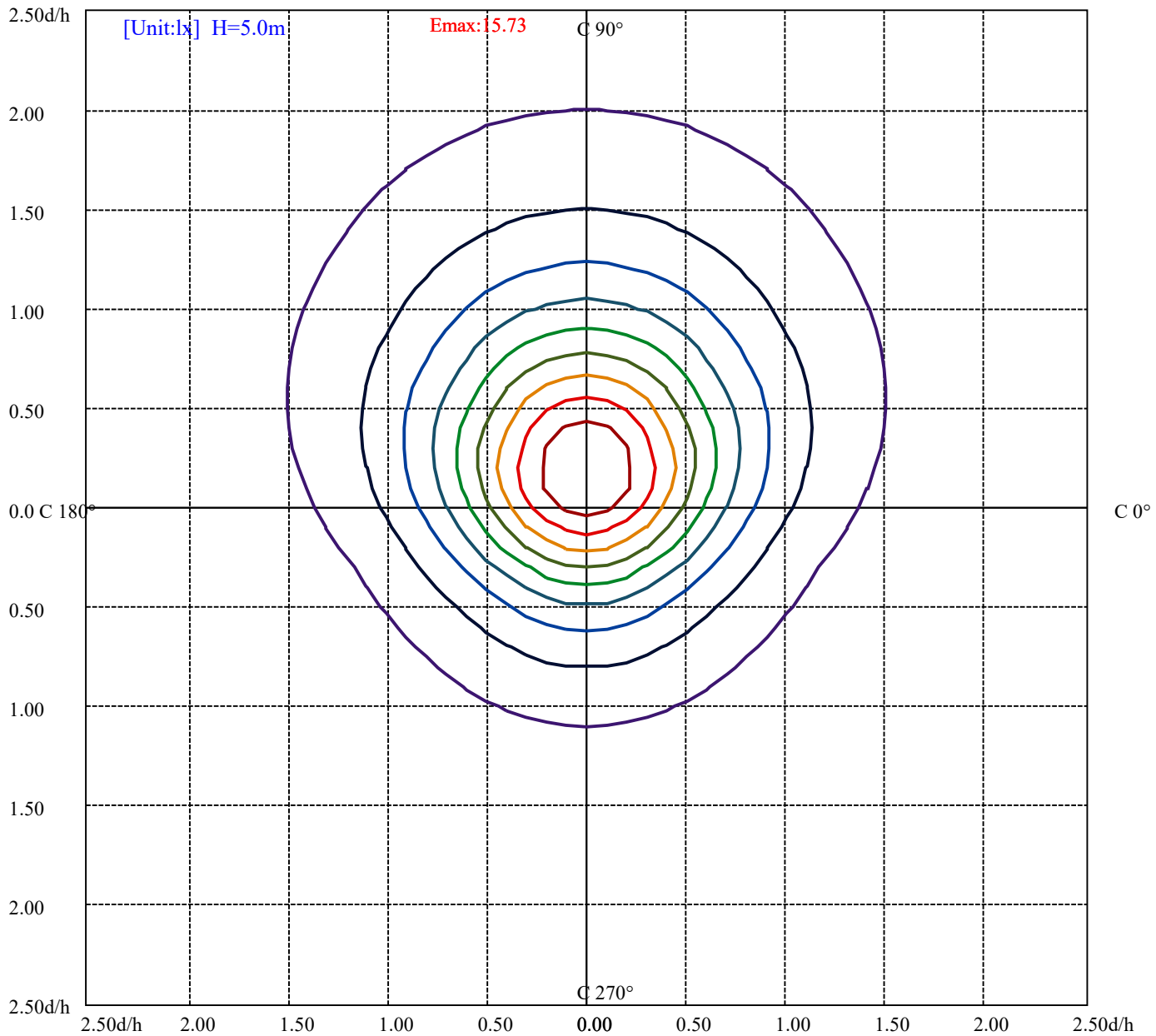
:C90/270Left:117.1 Right:119.3

Beam Angle(50%Imax):C0/180Left:54.3 Right:54.3

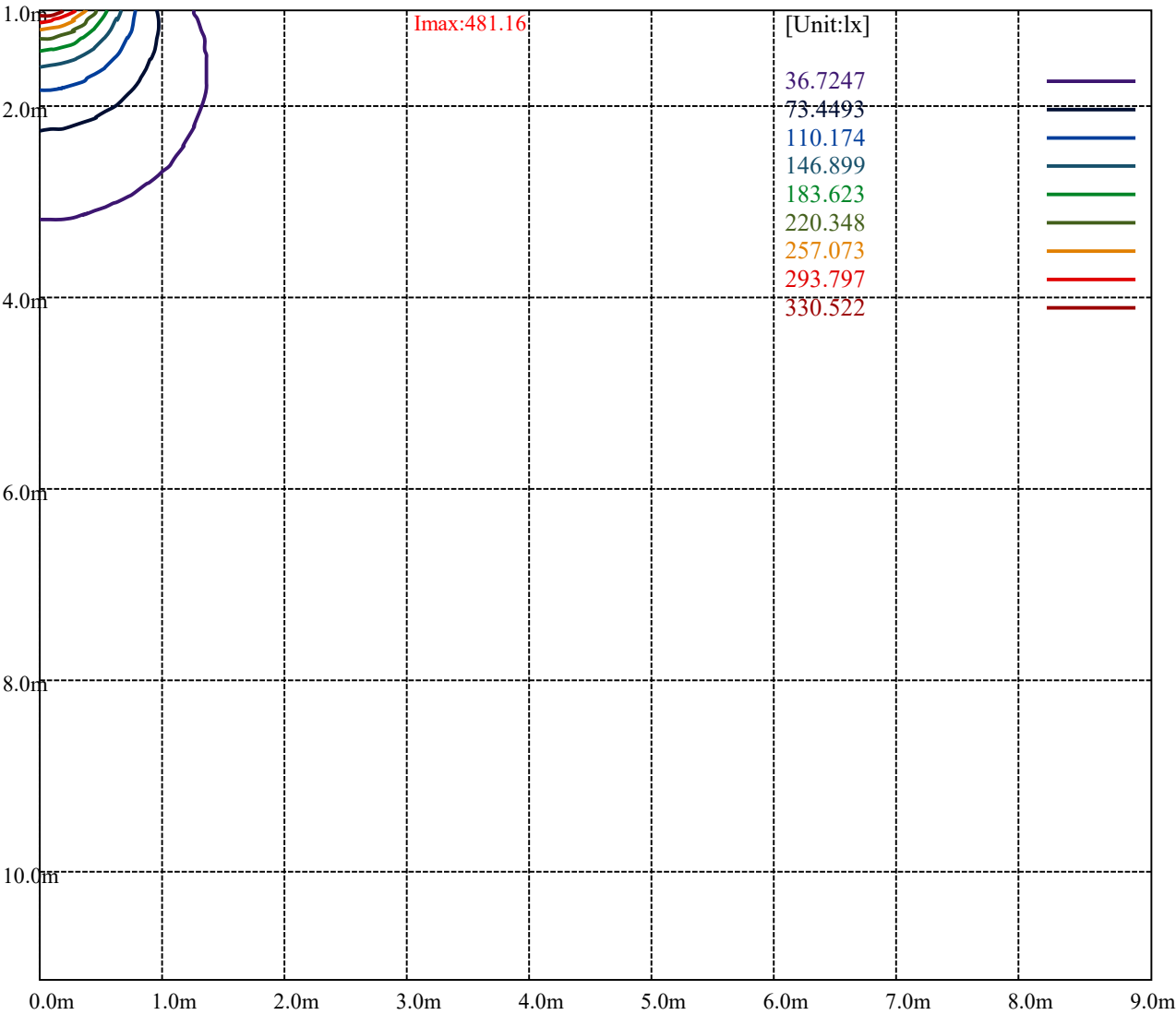
:C90/270Left:61.0 Right:67.1



Max , Ave Beam angle of C90 plane 158.93



(10%Emax) 1.572536	—
(20%Emax) 3.145072	—
(30%Emax) 4.7176	—
(40%Emax) 6.29016	—
(50%Emax) 7.86268	—
(60%Emax) 9.4352	—
(70%Emax) 11.00776	—
(80%Emax) 12.58028	—
(90%Emax) 14.15284	—



Luminance Table

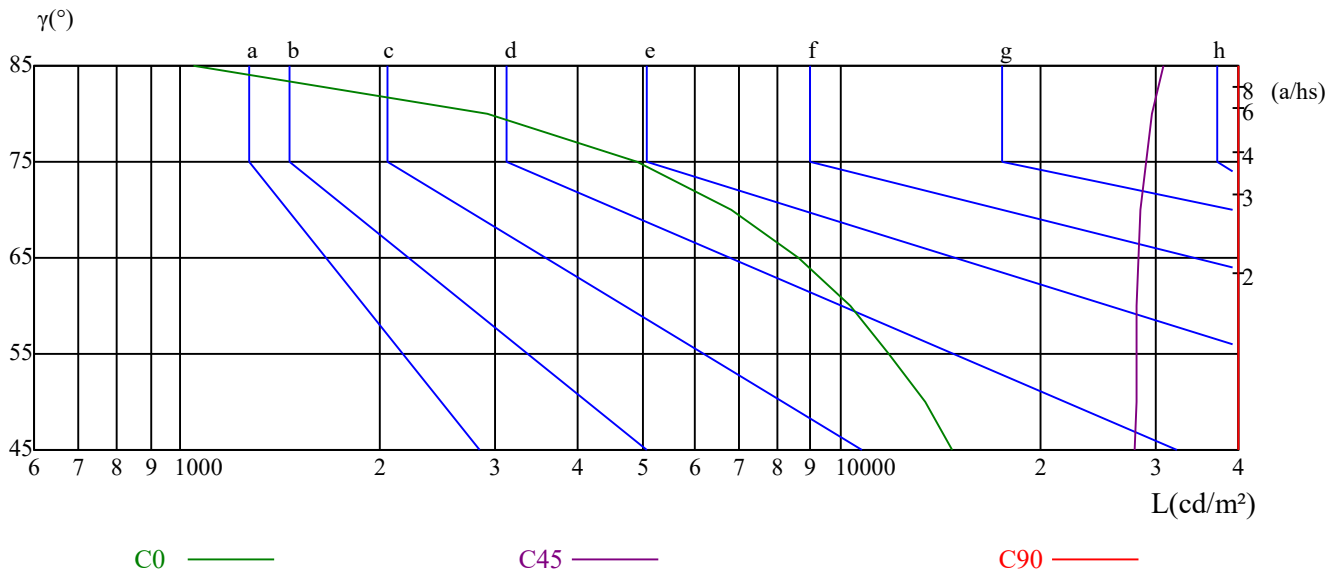
γ	45	50	55	60	65	70	75	80	85
C0	14760	13436	11856	10349	8629	6820	4926	2914	1044
C45	27877	28030	28079	28110	28259	28499	28930	29605	30728
C90	49662	53998	59199	65830	74883	87906	109185	151394	267330

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
20966	44883	34265	17181	64289	45900	9004	165356	108725

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	1.14	1.14	1.14	1.09	1.09	1.09	1.00	1.00	1.00	0.92	0.92	0.92	0.84	0.84	0.84	0.80
1	0.95	0.90	0.85	0.91	0.86	0.82	0.83	0.79	0.75	0.76	0.73	0.70	0.69	0.66	0.64	0.61
2	0.81	0.73	0.67	0.78	0.71	0.64	0.71	0.65	0.60	0.65	0.60	0.56	0.59	0.55	0.52	0.48
3	0.70	0.61	0.54	0.67	0.59	0.53	0.62	0.55	0.49	0.56	0.50	0.46	0.51	0.46	0.43	0.39
4	0.62	0.52	0.45	0.59	0.51	0.44	0.54	0.47	0.41	0.49	0.43	0.38	0.45	0.40	0.36	0.33
5	0.55	0.45	0.38	0.53	0.44	0.37	0.48	0.41	0.35	0.44	0.38	0.33	0.40	0.35	0.31	0.28
6	0.49	0.40	0.33	0.47	0.38	0.32	0.43	0.36	0.30	0.40	0.33	0.29	0.36	0.31	0.27	0.24
7	0.44	0.35	0.29	0.43	0.34	0.28	0.39	0.32	0.27	0.36	0.30	0.25	0.33	0.28	0.24	0.21
8	0.40	0.32	0.26	0.39	0.31	0.25	0.36	0.29	0.24	0.33	0.27	0.22	0.30	0.25	0.21	0.19
9	0.37	0.28	0.23	0.35	0.28	0.22	0.33	0.26	0.21	0.30	0.24	0.20	0.28	0.23	0.19	0.17
10	0.34	0.26	0.20	0.33	0.25	0.20	0.30	0.24	0.19	0.28	0.22	0.18	0.26	0.21	0.17	0.15

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	367.25	365.48	360.18	352.24	339.00	324.87	306.33	286.03	262.19
15.0	367.25	369.91	370.80	367.25	361.02	351.24	338.79	322.79	305.00
30.0	367.25	377.08	382.44	386.01	386.01	383.33	377.97	369.03	355.63
45.0	367.25	380.75	394.25	404.15	411.35	414.95	413.15	409.55	400.55
60.0	367.25	386.29	403.52	418.93	430.72	439.79	443.42	444.32	441.60
75.0	367.25	388.15	409.06	428.15	443.60	455.42	462.69	467.24	468.15
90.0	367.25	389.12	410.99	433.77	449.26	462.93	473.87	478.42	481.16
105.0	367.25	389.92	411.68	432.53	448.86	462.46	470.62	475.15	477.87
120.0	367.25	387.05	406.85	423.95	438.36	447.36	453.66	456.36	455.46
135.0	367.25	370.71	385.44	398.43	407.96	413.15	414.88	412.29	407.96
150.0	367.25	379.91	390.76	397.10	401.62	401.62	398.91	391.67	381.72
165.0	367.25	373.53	378.02	378.02	375.33	368.14	359.17	347.49	329.53
180.0	367.25	365.48	359.30	349.59	336.35	322.22	302.80	282.50	258.66
195.0	367.25	358.35	348.57	332.57	316.56	295.22	270.32	245.42	216.97
210.0	367.25	353.84	337.76	317.21	293.08	266.28	238.58	206.41	181.39
225.0	367.25	348.34	325.84	300.64	271.83	240.33	213.33	189.02	165.62
240.0	367.25	346.39	319.19	287.45	253.90	226.70	204.03	181.36	159.59
255.0	367.25	342.70	313.61	279.07	247.26	221.80	198.17	177.26	156.35
270.0	367.25	341.73	309.84	275.21	246.05	218.71	197.75	177.70	156.74
285.0	367.25	344.58	311.93	278.38	245.74	221.25	197.68	175.01	170.47
300.0	367.25	344.74	315.94	282.64	274.53	222.33	198.93	175.52	154.82
315.0	367.25	336.07	310.95	282.36	251.18	222.60	198.35	174.96	153.31
330.0	367.25	351.87	332.87	309.36	283.12	253.27	220.71	193.57	168.25
345.0	367.25	354.68	343.00	324.15	305.29	280.15	255.01	226.27	195.75
360.0	367.25	365.48	360.18	352.24	339.00	324.87	306.33	286.03	262.19
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	236.59	211.87	180.97	153.61	122.71	92.69	62.68	34.43	11.48
15.0	284.55	262.32	237.42	210.74	182.29	152.06	124.49	94.26	66.69
30.0	339.55	321.68	301.12	277.89	251.98	226.96	200.15	174.24	148.33
45.0	389.75	377.15	360.05	340.24	319.54	297.04	272.73	248.43	225.03
60.0	435.26	426.19	413.49	395.36	377.22	357.27	336.42	311.03	288.36
75.0	464.51	458.15	447.24	434.51	417.24	399.06	378.15	355.43	331.79
90.0	479.33	474.78	465.67	452.91	437.42	418.28	397.32	377.27	354.49
105.0	475.15	469.71	458.83	446.14	429.81	413.49	389.92	367.25	342.76
120.0	450.06	441.96	430.25	415.85	397.85	377.15	356.45	332.14	306.94
135.0	397.56	387.17	372.44	354.25	334.33	312.68	291.03	267.64	243.39
150.0	367.25	350.96	331.97	311.16	286.74	261.41	234.28	209.86	181.81
165.0	312.47	292.72	268.48	243.33	216.40	186.77	158.93	129.30	101.46
180.0	233.06	206.58	177.44	147.43	116.53	85.63	57.38	30.90	9.71
195.0	190.29	157.39	128.05	99.59	72.92	48.02	28.45	14.23	6.22
210.0	155.48	130.46	106.33	83.99	64.34	46.46	33.06	22.34	14.30
225.0	143.12	122.42	100.81	82.81	66.61	52.21	40.51	29.70	22.50
240.0	138.74	119.70	101.56	85.24	70.73	58.03	46.25	37.18	28.11
255.0	137.26	119.99	102.72	88.18	73.63	61.81	50.91	48.18	32.72
270.0	138.51	120.29	103.89	100.24	74.73	62.88	51.94	42.83	34.63
285.0	136.02	117.88	102.47	87.05	73.45	60.75	50.78	40.81	32.64
300.0	135.92	117.01	99.01	82.81	68.41	55.81	45.01	36.00	28.80
315.0	131.65	110.87	92.68	76.22	61.50	47.64	37.24	28.58	20.79
330.0	142.92	120.30	98.60	77.79	57.89	43.42	30.75	21.71	14.47
345.0	164.32	134.69	107.75	82.61	60.16	39.51	23.35	13.47	6.29
360.0	236.59	211.87	180.97	153.61	122.71	92.69	62.68	34.43	11.48

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	1.77	0.88	0.88	0.88	1.77	2.65	3.53	4.41	5.30
15.0	46.24	32.90	25.79	22.23	19.56	18.67	18.67	17.78	16.90
30.0	126.88	107.23	91.14	78.63	68.80	59.87	53.61	48.25	42.89
45.0	201.63	180.02	159.32	142.22	126.02	110.71	97.21	85.51	74.71
60.0	263.87	240.30	218.53	195.86	176.82	156.87	138.74	121.51	106.09
75.0	306.34	281.80	257.25	234.53	209.99	188.17	167.26	147.26	128.17
90.0	326.24	300.72	275.21	249.69	227.82	202.30	181.35	158.56	138.51
105.0	317.37	291.08	268.41	243.92	219.44	195.86	175.01	153.25	133.30
120.0	284.44	258.33	234.03	211.53	189.92	169.22	149.42	131.42	114.31
135.0	220.87	197.48	176.69	158.51	140.32	123.86	109.13	95.28	83.15
150.0	159.20	137.49	119.40	103.12	90.45	78.70	69.65	60.60	53.37
165.0	77.22	59.26	47.59	39.51	34.12	30.53	27.84	26.04	25.14
180.0	2.65	2.65	2.65	3.53	4.41	5.30	6.18	7.06	7.95
195.0	2.67	1.78	1.78	1.78	0.89	1.78	1.78	1.78	2.67
210.0	8.04	5.36	3.57	2.68	1.79	1.79	0.89	0.89	1.79
225.0	15.30	10.80	8.10	5.40	4.50	3.60	2.70	0.90	0.90
240.0	21.76	16.32	14.51	9.07	6.35	5.44	3.63	2.72	0.91
255.0	25.45	20.00	14.54	10.91	8.18	6.36	4.55	3.64	1.82
270.0	27.34	20.96	16.40	11.85	9.11	7.29	5.47	3.65	2.73
285.0	25.39	19.95	15.42	11.79	9.07	6.35	4.53	3.63	1.81
300.0	21.60	16.20	12.60	9.00	7.20	5.40	4.50	2.70	1.80
315.0	15.59	11.26	8.66	6.06	4.33	3.46	2.60	1.73	0.87
330.0	9.05	6.33	4.52	3.62	2.71	1.81	1.81	0.90	0.90
345.0	3.59	2.69	1.80	1.80	1.80	1.80	1.80	1.80	2.69
360.0	1.77	0.88	0.88	0.88	1.77	2.65	3.53	4.41	5.30
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	6.18	7.06	8.83	9.71	9.71	9.71	9.71	10.59	10.59
15.0	16.90	16.90	16.90	16.90	16.01	14.23	13.34	12.45	12.45
30.0	38.42	34.85	32.17	28.59	25.91	21.45	16.98	15.19	13.40
45.0	65.71	56.71	49.51	43.21	36.90	31.50	23.40	17.10	14.40
60.0	91.58	78.89	67.10	57.13	47.15	38.99	30.83	22.67	15.42
75.0	110.90	94.54	79.99	67.27	55.45	44.54	35.45	27.27	20.00
90.0	119.38	102.06	86.57	71.08	58.32	46.48	36.45	28.25	20.96
105.0	115.16	97.93	82.52	68.01	56.22	45.34	35.36	27.20	20.86
120.0	99.01	83.71	71.11	59.41	49.51	40.51	32.40	25.20	19.80
135.0	71.89	62.36	53.70	45.91	38.98	32.91	26.85	21.65	17.32
150.0	47.94	42.51	37.99	33.47	29.85	26.23	22.61	19.90	17.19
165.0	23.35	22.45	21.55	20.65	18.86	17.96	17.06	16.16	15.26
180.0	8.83	9.71	10.59	10.59	9.71	9.71	10.59	10.59	11.48
195.0	2.67	3.56	4.45	5.34	6.22	6.22	8.00	9.78	11.56
210.0	1.79	1.79	3.57	3.57	4.47	5.36	7.15	8.94	10.72
225.0	0.90	1.80	1.80	3.60	4.50	5.40	6.30	8.10	9.90
240.0	0.91	0.91	1.81	2.72	3.63	4.53	6.35	8.16	9.07
255.0	0.91	0.91	0.91	1.82	3.64	4.55	6.36	7.27	7.27
270.0	0.91	0.91	0.91	1.82	2.73	4.56	6.38	4.56	6.38
285.0	0.91	0.91	0.91	1.81	3.63	4.53	4.53	4.53	9.97
300.0	0.90	0.90	1.80	2.70	3.60	4.50	4.50	6.30	10.80
315.0	0.87	0.87	1.73	2.60	3.46	3.46	5.20	6.93	10.39
330.0	1.81	1.81	2.71	3.62	3.62	4.52	6.33	8.14	11.76
345.0	2.69	2.69	3.59	3.59	4.49	6.29	8.08	9.88	12.57
360.0	6.18	7.06	8.83	9.71	9.71	9.71	9.71	10.59	10.59

Intensity data(cd)

C/ γ (°)	180.0
0.0	11.48
15.0	11.56
30.0	11.62
45.0	12.60
60.0	11.79
75.0	11.82
90.0	15.49
105.0	15.42
120.0	15.30
135.0	14.72
150.0	14.47
165.0	14.37
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	11.48