

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: io LED

Report Number: P397259

Luminaire Tested: **4VRVT2-LD5-4-DR100-W-UNV-LA59-CD1-WL-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P397259  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1710-355-20)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: 4VRVT2-LD5-4-DR100-W-UNV-LA59-CD1-WL-U  
Description:  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1112.5 lumens  
Efficiency: N/A  
Efficacy: 24.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.58 / 1.57  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 4.17' x H: 0.17')  
CIE Type: Semi-Direct

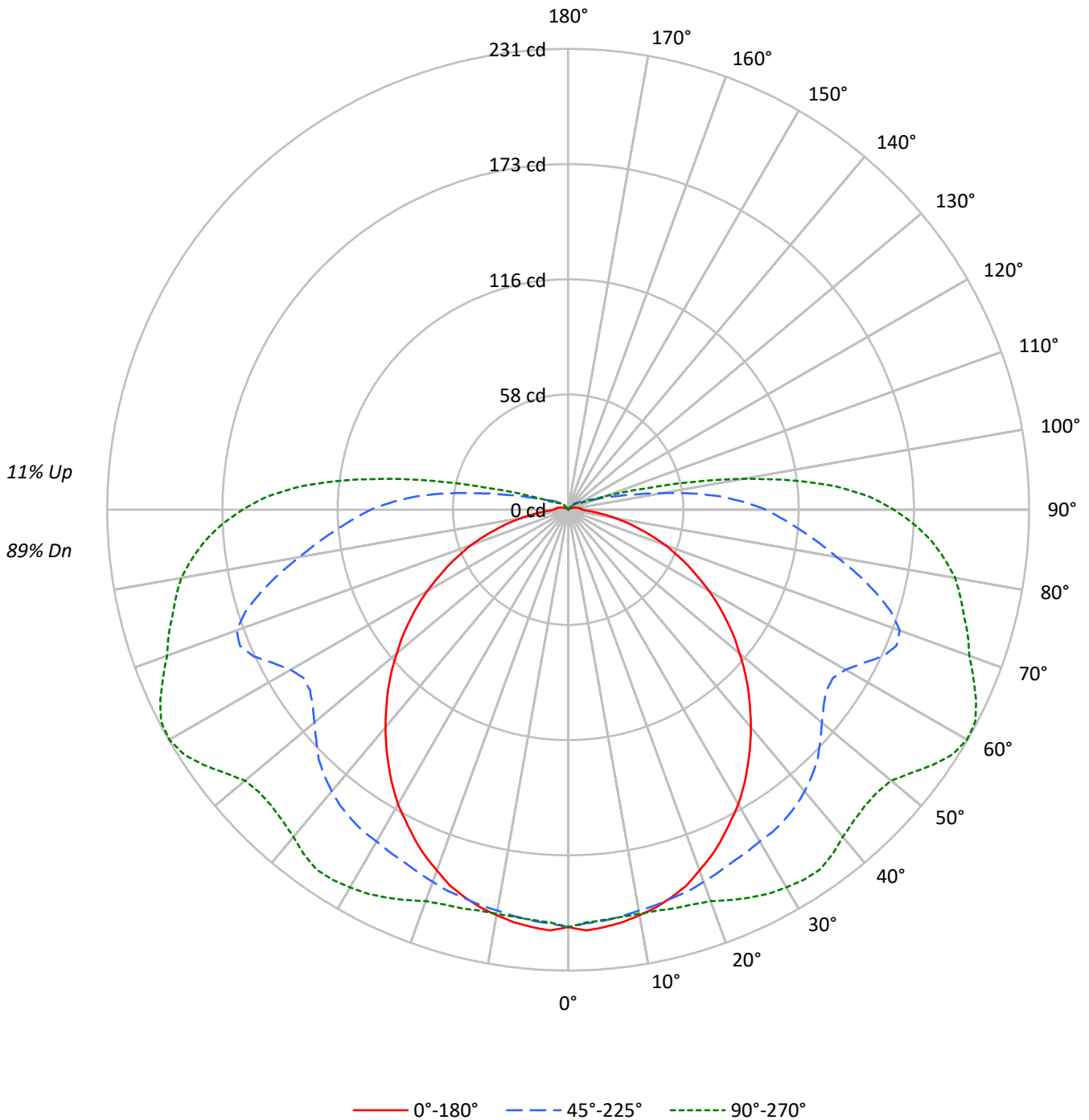
Input Watts (W): 45.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	116	116	116	116	112	112	112	112	105	105	105	98	98	98	92	92	92	89
1	101	94	88	82	97	91	85	80	84	80	75	78	74	71	73	70	67	64
2	90	79	70	63	86	76	68	61	71	64	58	66	60	55	61	56	52	49
3	81	68	58	50	77	65	56	49	61	53	47	56	50	44	52	47	42	39
4	73	59	49	41	70	57	48	40	53	45	38	49	42	37	46	40	35	32
5	67	52	42	35	64	50	41	34	47	39	32	44	37	31	41	35	30	27
6	62	47	37	30	59	45	36	29	42	34	28	39	32	27	37	30	26	23
7	57	42	32	26	54	41	32	25	38	30	24	36	29	23	33	27	22	20
8	53	38	29	23	51	37	28	22	35	27	21	32	26	21	30	24	20	18
9	49	35	26	20	47	34	25	20	32	24	19	30	23	18	28	22	18	16
10	46	32	24	18	44	31	23	18	29	22	17	28	21	17	26	20	16	14

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1081	1081	1081
5°	1085	1048	1040
10°	1075	1023	1019
15°	1064	1007	1015
20°	1043	996	1024
25°	1019	989	1059
30°	994	994	1094
35°	962	1008	1126
40°	929	1018	1128
45°	896	1022	1151
50°	860	1015	1216
55°	826	1033	1361
60°	789	1137	1511
65°	745	1357	1608
70°	704	1548	1687
75°	634	1601	1826
80°	567	1628	2027
85°	517	1724	2255



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	19.8	1.8
10°-20°	57.4	5.2
20°-30°	91.1	8.2
30°-40°	118.1	10.6
40°-50°	133.2	12.0
50°-60°	144.3	13.0
60°-70°	155.3	14.0
70°-80°	147.8	13.3
80°-90°	121.2	10.9
90°-100°	80.2	7.2
100°-110°	28.9	2.6
110°-120°	8.8	0.8
120°-130°	4.3	0.4
130°-140°	1.8	0.2
140°-150°	0.3	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	168.3	15.1
0°-40°	286.4	25.7
0°-60°	564.0	50.7
0°-90°	988.3	88.8
90°-120°	117.8	10.6
90°-150°	124.2	11.2
90°-180°	124.0	11.1
0°-180°	1112.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	209	209	209	209	209	
5°	210	209	207	207	206	20
15°	201	201	202	206	207	57
25°	182	185	195	210	215	84
35°	157	165	189	212	220	98
45°	128	143	177	200	210	98
55°	97	118	158	206	223	87
65°	66	92	174	219	226	66
75°	36	88	159	192	205	39
85°	13	64	117	165	183	13
90°	7	48	99	146	163	4
95°	6	34	76	118	134	5
105°	4	13	27	37	42	4
115°	2	6	11	11	10	2
125°	1	2	7	7	6	1
135°	0	0	3	4	4	0
145°	0	0	0	1	1	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P397259

CATALOG NUMBER: 4VRVT2-LD5-4-DR100-W-UNV-LA59-CD1-WL-U

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	209.2	209.2	209.2	209.2	209.2	209.2	209.2	209.2	209.2	209.2	209.2
2.5°	211.1	210.7	210.1	210.0	210.0	210.0	210.0	209.6	209.0	208.3	207.5
5°	210.0	209.6	209.0	209.0	208.8	209.0	209.0	208.7	208.3	207.5	206.8
7.5°	208.5	208.3	207.5	207.1	207.1	207.1	207.5	207.1	207.0	206.2	205.5
10°	206.4	206.0	205.7	205.7	205.8	205.8	205.8	206.0	205.7	204.7	204.1
12.5°	204.1	203.6	203.2	203.2	203.4	203.4	203.6	203.6	203.6	203.0	203.0
15°	201.0	200.8	200.0	200.2	200.2	200.6	200.8	201.0	200.8	201.3	201.5
17.5°	197.4	197.2	196.5	196.5	196.9	197.0	197.6	198.4	198.7	199.5	200.4
20°	192.4	192.4	192.0	192.4	193.1	193.5	193.9	195.2	195.9	197.4	198.5
22.5°	187.7	187.3	187.3	187.7	188.4	189.4	190.1	192.0	193.3	195.2	196.7
25°	182.1	181.9	181.7	182.6	183.8	184.7	186.0	188.2	190.1	192.4	194.8
27.5°	176.1	175.9	176.3	177.0	179.1	180.4	181.5	184.5	186.8	190.3	193.5
30°	170.5	169.9	170.3	171.4	174.0	175.9	177.0	180.4	183.6	187.7	192.0
32.5°	163.9	163.4	164.1	165.8	168.8	170.7	172.7	176.3	180.0	185.1	191.2
35°	156.8	157.0	157.4	160.0	163.2	165.4	167.5	172.2	176.8	183.0	189.4
37.5°	149.7	149.3	150.8	153.8	157.6	160.4	162.4	167.3	173.9	180.6	187.3
40°	142.4	142.8	143.9	147.3	151.2	154.8	157.0	163.4	170.5	177.4	184.3
42.5°	134.9	135.9	137.0	140.9	145.8	148.6	152.0	158.9	166.3	173.7	180.8
45°	127.6	128.4	130.1	134.4	139.0	142.8	146.5	153.8	162.1	169.7	176.8
47.5°	120.0	120.7	122.9	127.4	132.7	136.8	140.7	148.6	157.0	164.9	171.2
50°	112.1	113.2	115.5	120.0	126.9	130.6	134.5	143.2	151.0	158.7	166.0
52.5°	104.8	105.4	108.9	113.2	120.3	124.6	128.4	137.2	144.6	153.3	161.3
55°	96.9	98.1	101.2	105.5	113.4	117.9	122.2	130.6	139.0	148.0	157.9
57.5°	89.3	90.2	93.6	98.4	106.8	111.2	115.3	124.4	133.1	144.3	157.2
60°	81.6	82.7	86.1	91.7	100.1	104.6	108.9	118.6	129.9	143.7	160.4
62.5°	73.5	75.4	77.8	84.8	93.4	97.9	103.1	114.3	129.1	146.7	166.5
65°	66.2	67.2	70.9	78.0	87.2	92.4	98.4	112.8	131.5	153.1	173.9
67.5°	58.6	59.9	64.0	71.8	82.2	88.3	95.8	114.3	137.2	160.0	178.1
70°	51.7	52.6	57.6	66.2	78.6	86.6	95.8	118.1	142.6	162.6	176.8
72.5°	44.0	45.5	51.7	62.1	77.1	86.8	97.7	122.0	143.7	159.1	169.5
75°	36.5	38.7	46.8	58.8	76.7	87.8	99.4	121.4	138.5	150.1	159.2
77.5°	30.3	33.1	42.1	56.5	76.0	86.8	97.5	114.9	128.5	139.6	148.2
80°	23.4	27.7	38.2	53.7	72.6	82.0	90.6	105.5	116.6	127.3	136.6
82.5°	17.8	22.7	34.0	49.4	65.7	73.5	80.3	93.6	105.2	115.3	126.7
85°	12.7	18.0	29.4	43.0	56.7	63.6	69.8	82.3	93.7	105.2	116.8
87.5°	8.8	14.0	24.9	36.9	49.0	54.6	60.6	72.6	83.8	94.9	107.6
90°	7.1	11.4	20.8	31.6	42.1	48.3	53.5	64.4	75.6	87.2	99.0
92.5°	6.7	9.5	17.4	26.8	36.5	41.6	46.4	56.3	66.8	77.7	88.1
95°	6.2	7.7	13.7	21.7	29.9	34.4	38.4	47.7	56.5	66.1	76.2
97.5°	5.8	6.2	10.5	16.8	23.8	27.5	30.7	38.0	45.8	53.1	62.3
100°	5.2	5.4	8.0	13.1	18.1	21.3	23.9	29.9	35.6	41.4	47.5
102.5°	4.7	4.7	6.2	9.7	14.2	16.3	18.5	23.4	27.5	31.2	35.9
105°	4.1	4.1	4.9	7.5	10.7	12.7	14.2	17.8	21.0	23.8	26.8
107.5°	3.8	3.6	3.9	5.8	8.4	9.9	11.4	14.0	16.5	18.3	20.4
110°	3.0	3.0	3.2	4.7	6.9	8.0	9.4	11.4	13.5	14.8	15.9



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CATALOG NUMBER: 4VRVT2-LD5-4-DR100-W-UNV-LA59-CD1-WL-U

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	2.6	2.4	2.4	3.8	5.6	6.7	7.7	9.7	11.4	12.5	13.1
115°	2.1	2.1	1.9	2.8	4.5	5.6	6.4	8.2	9.7	10.7	11.2
117.5°	1.7	1.7	1.7	2.1	3.8	4.5	5.4	7.1	8.4	9.4	9.9
120°	1.3	1.3	1.3	1.3	2.8	3.6	4.5	6.0	7.3	8.2	8.8
122.5°	1.1	0.9	0.9	0.9	1.9	2.8	3.4	4.9	6.2	7.1	7.9
125°	0.8	0.8	0.8	0.6	1.3	1.9	2.6	3.9	5.0	6.0	6.6
127.5°	0.6	0.6	0.6	0.6	0.6	1.1	1.7	3.0	4.1	5.0	5.6
130°	0.6	0.6	0.4	0.4	0.2	0.6	0.9	2.1	3.0	3.9	4.7
132.5°	0.4	0.4	0.4	0.2	0.2	0.2	0.4	1.3	2.2	3.0	3.6
135°	0.4	0.4	0.2	0.2	0.0	0.0	0.0	0.8	1.5	2.1	2.6
137.5°	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.2	0.8	1.3	1.9
140°	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.1
142.5°	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4
145°	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	209.2	209.2	209.2	209.2	209.2	209.2	209.2	209.2	209.2	209.2
2.5°	207.5	207.9	207.9	207.9	207.9	207.9	207.5	207.3	207.1	207.1
5°	206.6	207.0	207.1	207.1	207.1	207.1	207.0	206.8	206.6	206.4
7.5°	205.5	206.0	206.4	206.6	206.6	206.6	206.4	206.4	206.0	205.8
10°	204.3	204.9	205.5	205.8	206.0	206.0	206.0	206.0	205.8	205.7
12.5°	203.6	204.5	205.3	205.7	205.7	205.8	206.2	206.2	206.0	205.8
15°	202.7	204.1	205.1	205.7	205.7	206.0	206.8	206.8	206.6	206.8
17.5°	201.9	203.4	204.9	205.8	206.2	206.8	207.3	207.5	207.7	207.5
20°	200.4	202.9	204.9	206.0	206.8	207.0	208.3	209.2	209.2	208.8
22.5°	199.9	202.7	205.1	207.5	207.9	208.7	210.3	211.3	211.8	211.8
25°	198.7	202.5	206.0	209.0	210.3	211.3	212.9	214.5	214.1	214.6
27.5°	198.2	202.7	206.2	210.0	211.8	212.8	215.2	216.1	216.7	217.1
30°	197.8	202.9	206.8	210.9	212.4	214.3	216.5	218.0	218.8	218.6
32.5°	197.2	202.3	207.3	210.9	213.1	214.6	216.9	218.6	219.7	219.9
35°	195.9	201.7	206.4	210.7	212.4	214.3	216.9	217.8	219.7	220.1
37.5°	194.2	199.9	204.3	209.0	210.7	212.2	215.4	216.3	217.1	217.6
40°	191.6	196.9	201.7	206.2	207.7	209.4	211.7	213.1	214.3	214.1
42.5°	188.2	193.1	197.8	202.7	203.8	205.7	208.5	210.1	211.3	211.7
45°	182.8	188.4	193.9	198.2	200.4	202.5	205.7	207.5	208.8	210.1
47.5°	177.6	184.5	190.7	195.6	198.2	200.2	204.1	207.0	209.0	209.8
50°	173.5	180.6	187.7	195.0	197.8	200.4	204.9	207.9	210.1	211.3
52.5°	170.1	178.7	187.7	196.7	200.6	203.8	209.0	212.8	215.8	216.7
55°	168.8	179.6	191.1	201.3	205.8	210.0	215.9	219.5	222.5	223.0
57.5°	171.0	185.6	198.2	208.8	213.3	216.7	222.5	225.5	227.9	228.3
60°	177.2	192.6	205.7	214.8	219.5	222.5	226.8	229.0	230.7	230.7
62.5°	184.9	198.7	210.1	217.8	221.2	223.4	226.0	228.7	229.2	230.0
65°	190.7	202.7	210.5	216.1	219.1	220.1	222.9	224.0	225.5	225.5
67.5°	191.1	200.6	206.2	210.7	212.4	213.7	217.1	218.4	219.5	219.7
70°	186.0	192.6	198.9	202.9	204.7	207.3	210.5	212.6	213.7	213.9
72.5°	178.0	184.0	190.3	196.3	198.9	201.2	205.3	208.1	209.2	210.0
75°	168.2	174.8	182.4	189.6	192.2	194.4	200.2	202.9	205.1	205.3
77.5°	157.8	165.6	174.6	182.3	185.6	189.6	194.2	198.2	199.9	201.3
80°	147.3	157.4	166.5	175.5	178.7	183.2	188.8	193.3	195.2	196.9
82.5°	137.3	148.8	160.0	169.2	172.7	176.7	182.4	187.5	189.2	190.3
85°	128.7	140.5	151.6	160.9	165.4	168.8	175.3	179.6	182.1	183.0
87.5°	119.6	131.5	142.4	152.5	156.2	159.6	166.3	171.0	173.3	173.9
90°	110.6	122.9	133.1	141.8	146.3	150.4	156.6	160.9	163.2	163.2
92.5°	99.2	111.0	121.6	129.7	134.0	137.3	144.1	147.3	151.0	151.0
95°	86.1	96.4	106.3	114.5	118.1	121.6	127.3	131.5	133.6	134.5
97.5°	71.3	79.2	88.1	94.9	99.7	100.9	107.0	111.3	113.6	112.8
100°	53.7	59.9	67.0	72.6	76.4	78.4	82.7	85.1	88.5	88.9
102.5°	40.0	44.5	48.7	51.8	54.8	55.8	58.8	61.2	62.7	64.4
105°	29.4	32.0	34.4	36.7	37.2	38.9	41.4	43.0	42.1	42.3
107.5°	21.9	23.2	24.5	25.3	26.2	27.3	27.9	27.9	28.8	29.2
110°	16.7	17.4	18.0	18.1	18.5	18.5	18.5	18.5	18.7	19.1





TEST NUMBER: P397259

CATALOG NUMBER: 4VRVT2-LD5-4-DR100-W-UNV-LA59-CD1-WL-U

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	13.3	13.7	13.7	13.7	13.5	13.5	13.3	13.1	12.7	13.1
115°	11.4	11.4	11.0	10.9	10.7	10.5	10.1	9.7	9.5	9.9
117.5°	10.1	9.9	9.7	9.2	9.0	8.8	8.4	8.2	7.9	7.7
120°	9.0	9.0	8.6	8.4	8.2	7.9	7.5	7.3	6.9	6.7
122.5°	8.0	8.0	7.9	7.7	7.5	7.3	6.9	6.7	6.4	6.4
125°	6.9	7.1	7.1	6.9	6.7	6.7	6.4	6.2	6.0	6.0
127.5°	6.0	6.2	6.4	6.4	6.2	6.2	6.0	5.8	5.6	5.4
130°	5.0	5.4	5.4	5.6	5.6	5.4	5.4	5.2	5.0	5.0
132.5°	4.1	4.5	4.7	4.7	4.9	4.9	4.9	4.7	4.7	4.5
135°	3.2	3.6	3.8	3.9	3.9	4.1	4.1	3.9	3.9	3.9
137.5°	2.4	2.6	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2
140°	1.5	1.9	2.2	2.2	2.4	2.4	2.4	2.4	2.4	2.4
142.5°	0.8	1.1	1.3	1.5	1.5	1.7	1.7	1.7	1.7	1.7
145°	0.2	0.4	0.6	0.8	0.9	0.9	0.9	0.9	0.9	0.9
147.5°	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)