

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: P397244

Luminaire Tested: **4VRVT2-LD5-11-DR100-W-UNV-LA59-CD1-WL-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P397244
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1710-355-15)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: 4VRVT2-LD5-11-DR100-W-UNV-LA59-CD1-WL-U
Description:
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2788.2 lumens
Efficiency: N/A
Efficacy: 22.1 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.58 / 1.57
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 4.17' x H: 0.17')
CIE Type: Semi-Direct

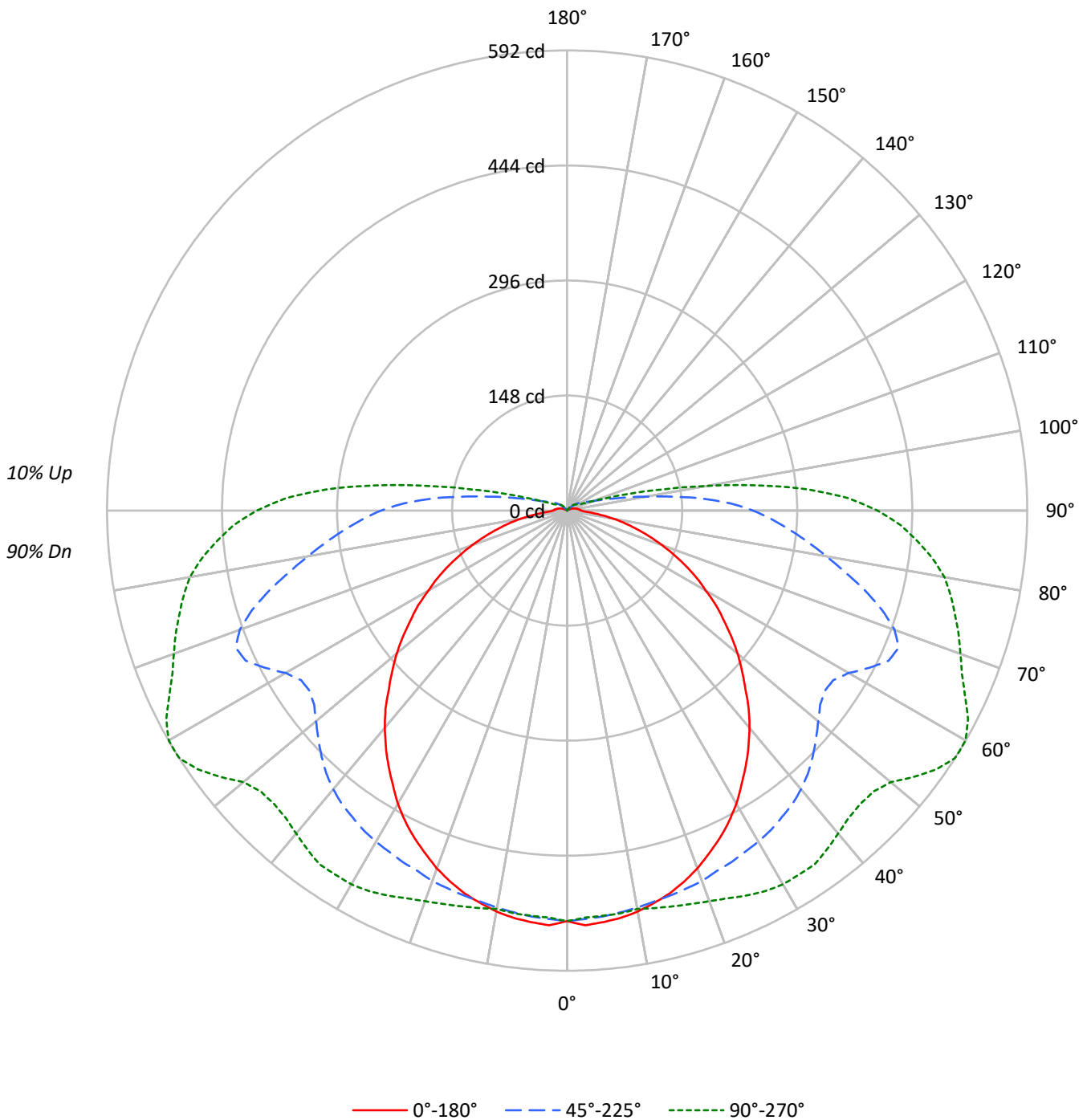
Input Watts (W): 126.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	101	94	88	83	97	91	85	80	85	80	76	79	75	72	74	71	68	65
2	90	79	71	63	86	77	69	62	71	64	59	66	61	56	62	57	53	50
3	81	68	58	50	77	66	57	49	61	53	47	57	50	45	53	47	43	40
4	73	59	49	41	70	57	48	40	53	45	39	50	43	37	46	40	35	33
5	67	52	42	35	64	51	41	34	47	39	33	44	37	31	41	35	30	27
6	62	47	37	30	59	45	36	29	42	34	28	40	32	27	37	31	26	23
7	57	42	33	26	55	41	32	25	38	30	24	36	29	24	34	27	23	20
8	53	38	29	23	51	37	28	22	35	27	22	33	26	21	31	25	20	18
9	49	35	26	20	47	34	26	20	32	24	19	30	23	19	28	22	18	16
10	46	32	24	18	44	31	23	18	30	22	17	28	21	17	26	20	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2729	2729	2729
5°	2746	2658	2637
10°	2728	2600	2579
15°	2698	2561	2588
20°	2655	2544	2622
25°	2601	2534	2696
30°	2540	2547	2778
35°	2458	2564	2841
40°	2381	2585	2859
45°	2278	2583	2924
50°	2196	2578	3127
55°	2095	2645	3540
60°	1992	2963	3877
65°	1895	3563	4026
70°	1768	3925	4245
75°	1621	3985	4596
80°	1475	4033	5075
85°	1265	4250	5574



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.1	1.8
10°-20°	146.2	5.2
20°-30°	232.3	8.3
30°-40°	300.3	10.8
40°-50°	338.9	12.2
50°-60°	371.5	13.3
60°-70°	396.5	14.2
70°-80°	371.7	13.3
80°-90°	299.3	10.7
90°-100°	186.4	6.7
100°-110°	60.4	2.2
110°-120°	19.7	0.7
120°-130°	10.1	0.4
130°-140°	4.2	0.1
140°-150°	0.6	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	428.6	15.4
0°-40°	728.9	26.1
0°-60°	1439.4	51.6
0°-90°	2506.8	89.9
90°-120°	266.5	9.6
90°-150°	281.4	10.1
90°-180°	281.0	10.1
0°-180°	2788.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	528	528	528	528	528	
5°	531	530	524	525	523	50
15°	510	510	513	526	527	144
25°	465	471	499	534	546	214
35°	401	423	482	537	556	251
45°	324	364	447	508	534	251
55°	246	298	404	537	580	220
65°	168	236	456	553	565	167
75°	93	228	396	479	517	99
85°	31	156	288	408	452	32
90°	18	117	239	355	399	10
95°	16	81	176	276	312	12
105°	11	29	58	75	84	11
115°	5	13	26	23	20	5
125°	2	4	16	16	14	2
135°	1	0	6	10	9	1
145°	0	0	0	2	2	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: P397244

CATALOG NUMBER: 4VRVT2-LD5-11-DR100-W-UNV-LA59-CD1-WL-U

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1
2.5°	534.0	532.5	531.4	531.4	531.4	531.0	531.0	530.7	529.9	527.7	525.9
5°	531.4	530.7	529.6	529.6	529.6	529.6	529.6	528.8	527.4	525.9	524.4
7.5°	528.5	527.7	526.3	526.6	525.5	525.9	525.5	524.8	524.4	523.3	521.5
10°	523.7	523.0	521.5	521.9	521.1	521.5	521.5	521.9	521.1	520.0	518.6
12.5°	517.1	516.7	516.0	515.6	516.4	517.1	517.5	516.7	516.0	515.6	515.3
15°	509.8	509.1	508.3	508.7	509.8	509.8	510.9	510.9	510.9	511.3	512.7
17.5°	500.3	499.9	499.2	499.9	500.6	501.0	502.5	503.2	503.6	506.5	509.8
20°	490.0	489.3	488.6	489.3	490.4	491.9	493.3	495.5	498.8	503.6	507.2
22.5°	477.2	476.9	476.5	477.2	479.1	481.3	483.8	488.6	493.7	498.8	502.1
25°	464.8	464.0	463.7	465.1	468.8	471.0	474.3	480.5	486.4	493.0	499.2
27.5°	450.9	448.7	450.5	452.0	456.7	459.6	463.7	471.7	478.3	485.6	495.2
30°	435.5	434.4	434.4	437.7	443.9	448.3	453.1	462.2	469.9	480.1	491.9
32.5°	417.6	417.9	418.7	423.1	431.5	436.6	440.6	451.2	461.1	473.9	487.5
35°	400.7	400.0	401.8	408.0	417.6	423.4	428.9	440.3	452.7	467.0	481.6
37.5°	383.2	382.5	385.0	392.3	402.6	408.8	415.0	429.3	443.5	459.6	476.1
40°	364.9	364.9	367.8	375.8	387.2	393.8	401.1	417.2	432.9	450.5	468.1
42.5°	345.9	345.1	348.8	359.7	372.6	379.1	387.9	404.8	422.7	440.3	458.6
45°	324.2	327.2	330.8	341.8	355.0	364.1	374.4	392.3	410.6	429.3	446.9
47.5°	305.2	307.4	312.5	324.2	339.6	348.0	359.0	378.1	397.8	415.7	434.4
50°	286.2	287.3	294.3	306.0	322.1	332.7	343.3	362.7	382.1	402.6	421.6
52.5°	266.4	266.8	275.2	286.6	305.6	316.2	326.1	346.6	367.4	388.7	410.3
55°	245.9	247.0	255.8	268.3	288.4	298.3	309.2	330.5	353.2	377.3	404.4
57.5°	227.3	228.4	236.8	250.3	271.2	281.8	292.4	315.5	340.3	370.4	405.9
60°	206.1	209.0	216.7	232.0	253.3	263.9	276.3	301.9	333.0	372.9	417.9
62.5°	188.1	188.8	197.6	214.5	236.8	248.5	262.0	293.1	334.1	384.3	438.1
65°	168.3	170.2	179.3	198.4	222.2	236.0	252.1	292.0	344.4	404.0	456.4
67.5°	148.6	151.5	162.5	183.3	210.8	227.6	248.1	299.7	360.8	419.0	461.5
70°	129.9	133.6	146.0	170.2	203.1	224.3	250.7	311.1	372.2	420.1	448.3
72.5°	111.2	116.4	132.5	160.3	200.2	226.5	256.5	318.0	369.6	402.6	424.9
75°	93.3	99.2	120.0	152.6	199.8	228.4	258.7	311.4	348.0	375.5	396.3
77.5°	77.2	84.2	108.3	146.4	197.3	224.0	248.5	289.1	319.5	345.1	366.3
80°	60.8	69.9	98.1	138.3	184.8	206.1	226.2	260.2	287.6	313.6	338.5
82.5°	45.0	57.1	87.1	126.3	163.6	182.6	198.4	229.5	257.3	284.4	312.9
85°	31.1	45.0	73.9	107.6	139.8	156.3	171.6	201.3	228.7	257.3	288.0
87.5°	21.6	35.5	61.5	91.1	120.8	134.7	148.6	177.1	204.6	232.8	264.2
90°	17.9	28.2	51.2	77.2	103.6	116.7	129.9	155.9	183.0	210.1	239.3
92.5°	16.8	23.4	42.1	64.8	88.6	99.5	111.2	135.4	159.6	185.6	210.4
95°	15.7	18.7	33.3	51.6	71.7	81.3	91.1	110.2	132.1	153.3	176.0
97.5°	14.3	15.4	25.6	40.3	56.4	64.4	71.7	87.1	104.3	120.4	136.5
100°	13.2	13.2	19.4	30.7	43.5	49.4	55.6	68.4	79.8	91.9	103.2
102.5°	11.7	11.7	15.0	23.0	33.3	38.1	43.5	52.3	60.8	69.2	77.2
105°	10.6	10.2	12.1	17.9	25.3	29.3	33.3	40.6	47.2	52.7	58.2
107.5°	9.2	9.2	9.9	14.3	20.1	23.4	26.3	32.6	37.7	41.7	44.7
110°	7.7	7.7	8.1	11.3	16.5	19.0	22.0	26.7	30.7	34.0	35.9



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CATALOG NUMBER: 4VRVT2-LD5-11-DR100-W-UNV-LA59-CD1-WL-U

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	6.6	6.6	6.2	9.2	13.6	16.1	18.3	22.7	26.3	28.5	30.0
115°	5.1	5.1	5.1	6.9	11.0	13.2	15.4	19.4	23.0	25.3	26.3
117.5°	4.4	4.4	4.0	5.1	8.8	11.0	12.8	16.8	19.8	22.3	23.4
120°	3.3	3.3	3.3	3.3	6.6	8.8	10.6	14.3	17.2	19.4	20.5
122.5°	2.5	2.5	2.5	2.2	4.8	6.6	8.4	11.7	14.6	16.8	18.3
125°	2.2	1.8	1.8	1.8	2.9	4.4	6.2	9.2	11.7	14.3	15.7
127.5°	1.8	1.5	1.5	1.5	1.5	2.5	4.0	6.9	9.5	11.7	13.2
130°	1.5	1.1	1.1	1.1	0.7	1.5	2.5	4.8	7.3	9.2	10.6
132.5°	1.1	1.1	0.7	0.7	0.4	0.4	1.1	2.9	5.1	6.9	8.4
135°	0.7	0.7	0.7	0.4	0.4	0.0	0.0	1.5	3.3	4.8	6.2
137.5°	0.7	0.7	0.4	0.4	0.0	0.0	0.0	0.4	1.5	2.9	4.4
140°	0.7	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.4	1.5	2.5
142.5°	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
145°	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.4	0.4	0.4	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



TEST NUMBER: P397244

CATALOG NUMBER: 4VRVT2-LD5-11-DR100-W-UNV-LA59-CD1-WL-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1
2.5°	525.9	526.3	526.6	526.6	526.3	526.3	525.9	525.2	524.4	524.1
5°	523.3	524.4	525.2	525.2	525.2	524.8	524.8	524.4	523.7	523.3
7.5°	521.1	523.0	523.7	523.3	523.3	523.3	523.3	523.7	523.0	522.6
10°	519.0	520.4	521.9	522.2	522.6	522.2	522.2	521.5	521.1	520.4
12.5°	516.7	519.3	521.5	523.3	523.3	523.3	524.1	525.2	524.8	523.7
15°	514.9	519.3	521.9	524.8	525.9	527.0	527.4	528.1	527.0	527.0
17.5°	513.8	519.7	523.3	526.3	526.6	528.1	530.3	531.4	531.0	530.7
20°	512.0	519.0	524.1	526.6	528.5	530.3	533.2	534.0	534.7	534.7
22.5°	509.8	517.5	522.6	528.5	531.4	533.2	537.2	539.4	540.2	539.8
25°	508.0	516.7	524.4	531.4	534.3	536.5	541.6	545.7	546.4	546.4
27.5°	506.1	516.4	525.5	534.7	538.4	540.9	546.0	550.1	551.5	551.9
30°	504.3	515.6	526.6	535.8	540.2	542.7	548.6	552.2	555.2	555.2
32.5°	501.0	514.9	525.9	535.8	539.4	543.8	549.3	553.3	555.5	555.2
35°	497.7	510.5	523.0	532.8	536.9	541.3	547.8	552.6	554.1	555.5
37.5°	492.2	505.8	518.2	528.1	534.0	537.6	543.5	547.1	550.1	549.3
40°	484.9	498.5	511.3	520.8	525.9	530.3	536.9	540.2	542.7	542.4
42.5°	474.3	489.7	501.8	512.0	517.5	521.9	529.9	532.8	535.8	536.1
45°	463.7	478.7	492.2	503.2	508.3	513.5	523.3	528.8	532.5	533.6
47.5°	450.9	467.7	483.1	498.1	505.4	512.0	522.2	529.9	534.0	534.7
50°	440.3	461.1	480.1	497.7	506.9	514.2	528.1	537.2	541.6	543.5
52.5°	434.0	459.3	484.2	506.9	517.9	527.0	544.2	554.5	561.8	562.5
55°	435.1	467.0	498.1	526.3	537.2	548.6	564.3	573.8	580.1	580.1
57.5°	446.1	484.2	520.0	546.0	557.0	565.8	580.4	586.7	591.1	592.1
60°	465.9	506.1	537.2	559.9	567.3	574.2	582.3	589.2	591.1	591.8
62.5°	485.3	519.7	544.2	559.9	564.3	570.2	576.0	580.1	581.5	581.5
65°	495.5	521.1	536.1	547.8	552.6	554.5	560.7	562.1	565.4	564.7
67.5°	489.3	505.8	517.9	527.7	531.4	535.1	542.4	546.0	549.0	549.7
70°	468.1	481.3	494.1	506.5	511.3	517.5	526.3	533.2	536.5	538.4
72.5°	442.1	457.8	474.3	489.3	497.0	502.9	513.8	523.0	526.3	528.1
75°	415.4	434.0	453.1	471.4	479.4	487.1	500.3	509.1	514.9	516.7
77.5°	388.7	411.3	434.4	455.3	465.1	473.2	488.2	497.7	504.7	505.4
80°	363.8	390.9	416.5	438.8	448.7	458.2	473.2	484.2	487.8	493.0
82.5°	341.8	370.0	396.0	419.4	430.4	438.8	454.5	465.9	471.4	474.3
85°	318.0	347.3	373.7	396.7	408.0	418.3	432.9	443.5	451.2	452.3
87.5°	293.9	323.1	350.2	374.0	385.4	394.9	410.3	420.5	427.4	429.7
90°	268.3	296.1	322.1	345.9	355.3	365.2	379.9	391.6	398.9	399.3
92.5°	237.5	264.2	288.0	310.4	321.7	329.0	342.9	355.0	360.1	362.3
95°	198.4	222.9	245.6	264.2	275.6	282.2	295.7	304.5	310.4	311.8
97.5°	155.5	174.6	192.9	209.3	217.8	223.2	234.2	241.9	250.7	248.5
100°	117.1	127.7	140.9	151.5	157.7	161.4	169.5	174.6	179.7	182.6
102.5°	84.9	93.0	98.8	104.3	108.7	112.4	118.6	120.4	121.9	125.5
105°	62.2	66.2	69.5	73.6	75.4	76.5	79.0	80.9	80.9	84.2
107.5°	46.8	48.7	50.1	52.3	52.3	53.4	53.4	53.8	54.9	54.2
110°	37.0	37.3	37.7	37.3	37.7	37.3	37.0	36.6	36.6	36.2



TEST NUMBER: P397244

CATALOG NUMBER: 4VRVT2-LD5-11-DR100-W-UNV-LA59-CD1-WL-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	30.7	30.4	30.0	28.9	28.5	27.8	27.4	26.7	26.0	26.0
115°	26.3	26.0	25.3	24.2	23.4	22.7	22.3	21.2	20.5	20.1
117.5°	23.4	23.0	22.3	21.2	20.9	20.1	19.4	18.3	17.6	17.2
120°	21.2	21.2	20.5	19.4	19.0	18.7	17.6	16.8	16.1	15.7
122.5°	19.0	19.0	18.7	17.9	17.6	17.2	16.5	15.7	15.0	15.0
125°	16.5	16.8	16.8	16.5	16.1	15.7	15.4	14.6	14.3	13.9
127.5°	14.3	14.6	15.0	15.0	14.6	14.6	13.9	13.6	13.2	13.2
130°	11.7	12.8	13.2	13.2	13.2	13.2	12.8	12.4	12.1	12.1
132.5°	9.5	10.2	11.0	11.3	11.3	11.3	11.0	11.0	10.6	10.6
135°	7.3	8.1	8.8	9.2	9.5	9.5	9.5	9.5	9.2	9.2
137.5°	5.5	6.2	6.9	7.3	7.3	7.7	7.7	7.7	7.3	7.3
140°	3.3	4.4	4.8	5.1	5.5	5.5	5.9	5.9	5.5	5.5
142.5°	1.8	2.5	2.9	3.3	3.7	3.7	4.0	3.7	3.7	3.7
145°	0.4	0.7	1.5	1.8	1.8	1.8	1.8	2.2	1.8	1.8
147.5°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0
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)