

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: P397289

Luminaire Tested: **4VRVT2-LD5-8-DR100-W-UNV-LA59-CD1-WL-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P397289
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-LD5-8-DR100-W-UNV-LA59-CD1-WL-U
Description:
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2133.3 lumens
Efficiency: N/A
Efficacy: 23.8 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

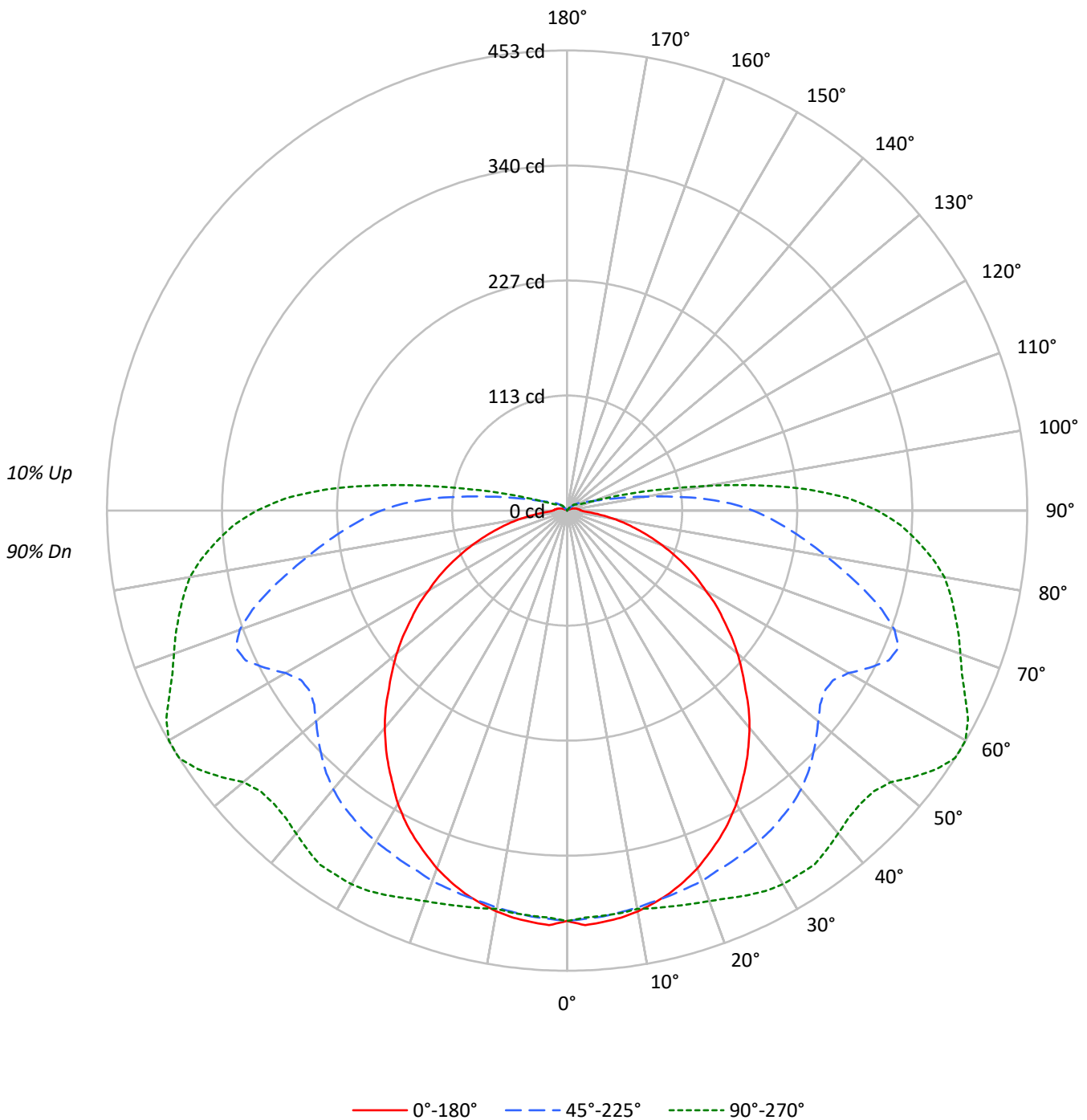
Input Watts (W): 89.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2087	2087	2087
5°	2101	2034	2018
10°	2088	1989	1973
15°	2064	1960	1980
20°	2032	1947	2006
25°	1990	1939	2062
30°	1943	1948	2125
35°	1881	1962	2174
40°	1822	1977	2187
45°	1743	1976	2237
50°	1680	1972	2392
55°	1604	2024	2708
60°	1523	2268	2966
65°	1450	2726	3081
70°	1353	3003	3248
75°	1240	3049	3517
80°	1128	3086	3883
85°	968	3252	4265



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	1.8
10°-20°	111.8	5.2
20°-30°	177.8	8.3
30°-40°	229.8	10.8
40°-50°	259.3	12.2
50°-60°	284.2	13.3
60°-70°	303.3	14.2
70°-80°	284.3	13.3
80°-90°	229.0	10.7
90°-100°	142.6	6.7
100°-110°	46.2	2.2
110°-120°	15.1	0.7
120°-130°	7.7	0.4
130°-140°	3.2	0.1
140°-150°	0.5	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	327.9	15.4
0°-40°	557.7	26.1
0°-60°	1101.2	51.6
0°-90°	1917.9	89.9
90°-120°	203.9	9.6
90°-150°	215.3	10.1
90°-180°	215.0	10.1
0°-180°	2133.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	404	404	404	404	404	
5°	407	405	401	402	400	39
15°	390	390	392	402	403	110
25°	356	360	382	409	418	164
35°	307	324	368	411	425	192
45°	248	279	342	389	408	192
55°	188	228	309	411	444	169
65°	129	181	349	423	432	127
75°	71	175	303	367	395	76
85°	24	120	220	312	346	24
90°	14	89	183	272	306	8
95°	12	62	135	211	239	9
105°	8	22	44	58	64	9
115°	4	10	20	18	15	4
125°	2	3	12	12	11	2
135°	1	0	5	7	7	1
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: P397289

CATALOG NUMBER: 4VRVT2-LD5-8-DR100-W-UNV-LA59-CD1-WL-U

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0
2.5°	408.5	407.4	406.6	406.6	406.6	406.3	406.3	406.0	405.4	403.8	402.4
5°	406.6	406.0	405.2	405.2	405.2	405.2	405.2	404.6	403.5	402.4	401.2
7.5°	404.3	403.8	402.6	402.9	402.1	402.4	402.1	401.5	401.2	400.4	399.0
10°	400.7	400.1	399.0	399.3	398.7	399.0	399.0	399.3	398.7	397.9	396.8
12.5°	395.6	395.4	394.8	394.5	395.1	395.6	395.9	395.4	394.8	394.5	394.2
15°	390.0	389.5	388.9	389.2	390.0	390.0	390.9	390.9	390.9	391.2	392.3
17.5°	382.8	382.5	381.9	382.5	383.0	383.3	384.4	385.0	385.3	387.5	390.0
20°	374.9	374.4	373.8	374.4	375.2	376.3	377.4	379.1	381.6	385.3	388.1
22.5°	365.1	364.8	364.6	365.1	366.5	368.2	370.2	373.8	377.7	381.6	384.2
25°	355.6	355.0	354.8	355.9	358.7	360.4	362.9	367.6	372.1	377.2	381.9
27.5°	345.0	343.3	344.7	345.8	349.4	351.7	354.8	360.9	366.0	371.6	378.8
30°	333.2	332.4	332.4	334.9	339.6	343.0	346.6	353.6	359.5	367.4	376.3
32.5°	319.5	319.8	320.3	323.7	330.1	334.0	337.1	345.2	352.8	362.6	373.0
35°	306.6	306.0	307.4	312.2	319.5	324.0	328.2	336.8	346.4	357.3	368.5
37.5°	293.2	292.6	294.6	300.2	308.0	312.8	317.5	328.4	339.4	351.7	364.3
40°	279.2	279.2	281.4	287.6	296.2	301.3	306.9	319.2	331.2	344.7	358.1
42.5°	264.6	264.0	266.8	275.2	285.0	290.1	296.8	309.7	323.4	336.8	350.8
45°	248.1	250.3	253.1	261.5	271.6	278.6	286.4	300.2	314.2	328.4	341.9
47.5°	233.5	235.2	239.1	248.1	259.8	266.3	274.7	289.2	304.4	318.1	332.4
50°	219.0	219.8	225.1	234.1	246.4	254.5	262.6	277.5	292.3	308.0	322.6
52.5°	203.8	204.1	210.6	219.2	233.8	241.9	249.5	265.2	281.1	297.4	313.9
55°	188.2	189.0	195.7	205.2	220.6	228.2	236.6	252.8	270.2	288.7	309.4
57.5°	173.9	174.7	181.2	191.5	207.5	215.6	223.7	241.4	260.4	283.4	310.5
60°	157.6	159.9	165.8	177.5	193.8	201.9	211.4	231.0	254.8	285.3	319.8
62.5°	143.9	144.5	151.2	164.1	181.2	190.1	200.5	224.3	255.6	294.0	335.2
65°	128.8	130.2	137.2	151.8	170.0	180.6	192.9	223.4	263.5	309.1	349.2
67.5°	113.7	115.9	124.3	140.3	161.3	174.2	189.8	229.3	276.1	320.6	353.1
70°	99.4	102.2	111.7	130.2	155.4	171.6	191.8	238.0	284.8	321.4	343.0
72.5°	85.1	89.0	101.4	122.6	153.2	173.3	196.3	243.3	282.8	308.0	325.1
75°	71.4	75.9	91.8	116.8	152.9	174.7	198.0	238.3	266.3	287.3	303.2
77.5°	59.1	64.4	82.9	112.0	150.9	171.4	190.1	221.2	244.4	264.0	280.3
80°	46.5	53.5	75.0	105.8	141.4	157.6	173.0	199.1	220.1	240.0	259.0
82.5°	34.4	43.7	66.6	96.6	125.2	139.7	151.8	175.6	196.8	217.6	239.4
85°	23.8	34.4	56.6	82.3	107.0	119.6	131.3	154.0	175.0	196.8	220.4
87.5°	16.5	27.2	47.0	69.7	92.4	103.0	113.7	135.5	156.5	178.1	202.2
90°	13.7	21.6	39.2	59.1	79.2	89.3	99.4	119.3	140.0	160.7	183.1
92.5°	12.9	17.9	32.2	49.6	67.8	76.2	85.1	103.6	122.1	142.0	161.0
95°	12.0	14.3	25.5	39.5	54.9	62.2	69.7	84.3	101.1	117.3	134.7
97.5°	10.9	11.8	19.6	30.8	43.1	49.3	54.9	66.6	79.8	92.1	104.4
100°	10.1	10.1	14.8	23.5	33.3	37.8	42.6	52.4	61.0	70.3	79.0
102.5°	9.0	9.0	11.5	17.6	25.5	29.1	33.3	40.0	46.5	52.9	59.1
105°	8.1	7.8	9.2	13.7	19.3	22.4	25.5	31.1	36.1	40.3	44.5
107.5°	7.0	7.0	7.6	10.9	15.4	17.9	20.2	24.9	28.8	31.9	34.2
110°	5.9	5.9	6.2	8.7	12.6	14.6	16.8	20.4	23.5	26.0	27.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	5.0	5.0	4.8	7.0	10.4	12.3	14.0	17.4	20.2	21.8	23.0
115°	3.9	3.9	3.9	5.3	8.4	10.1	11.8	14.8	17.6	19.3	20.2
117.5°	3.4	3.4	3.1	3.9	6.7	8.4	9.8	12.9	15.1	17.1	17.9
120°	2.5	2.5	2.5	2.5	5.0	6.7	8.1	10.9	13.2	14.8	15.7
122.5°	2.0	2.0	2.0	1.7	3.6	5.0	6.4	9.0	11.2	12.9	14.0
125°	1.7	1.4	1.4	1.4	2.2	3.4	4.8	7.0	9.0	10.9	12.0
127.5°	1.4	1.1	1.1	1.1	1.1	2.0	3.1	5.3	7.3	9.0	10.1
130°	1.1	0.8	0.8	0.8	0.6	1.1	2.0	3.6	5.6	7.0	8.1
132.5°	0.8	0.8	0.6	0.6	0.3	0.3	0.8	2.2	3.9	5.3	6.4
135°	0.6	0.6	0.6	0.3	0.3	0.0	0.0	1.1	2.5	3.6	4.8
137.5°	0.6	0.6	0.3	0.3	0.0	0.0	0.0	0.3	1.1	2.2	3.4
140°	0.6	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.3	1.1	2.0
142.5°	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
145°	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.3	0.3	0.3	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°	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0	404.0
2.5°	402.4	402.6	402.9	402.9	402.6	402.6	402.4	401.8	401.2	401.0
5°	400.4	401.2	401.8	401.8	401.8	401.5	401.5	401.2	400.7	400.4
7.5°	398.7	400.1	400.7	400.4	400.4	400.4	400.4	400.7	400.1	399.8
10°	397.0	398.2	399.3	399.6	399.8	399.6	399.6	399.0	398.7	398.2
12.5°	395.4	397.3	399.0	400.4	400.4	400.4	401.0	401.8	401.5	400.7
15°	394.0	397.3	399.3	401.5	402.4	403.2	403.5	404.0	403.2	403.2
17.5°	393.1	397.6	400.4	402.6	402.9	404.0	405.7	406.6	406.3	406.0
20°	391.7	397.0	401.0	402.9	404.3	405.7	408.0	408.5	409.1	409.1
22.5°	390.0	395.9	399.8	404.3	406.6	408.0	411.0	412.7	413.3	413.0
25°	388.6	395.4	401.2	406.6	408.8	410.5	414.4	417.5	418.0	418.0
27.5°	387.2	395.1	402.1	409.1	411.9	413.8	417.8	420.8	422.0	422.2
30°	385.8	394.5	402.9	409.9	413.3	415.2	419.7	422.5	424.8	424.8
32.5°	383.3	394.0	402.4	409.9	412.7	416.1	420.3	423.4	425.1	424.8
35°	380.8	390.6	400.1	407.7	410.8	414.1	419.2	422.8	423.9	425.1
37.5°	376.6	387.0	396.5	404.0	408.5	411.3	415.8	418.6	420.8	420.3
40°	371.0	381.4	391.2	398.4	402.4	405.7	410.8	413.3	415.2	415.0
42.5°	362.9	374.6	383.9	391.7	395.9	399.3	405.4	407.7	409.9	410.2
45°	354.8	366.2	376.6	385.0	388.9	392.8	400.4	404.6	407.4	408.2
47.5°	345.0	357.8	369.6	381.1	386.7	391.7	399.6	405.4	408.5	409.1
50°	336.8	352.8	367.4	380.8	387.8	393.4	404.0	411.0	414.4	415.8
52.5°	332.1	351.4	370.4	387.8	396.2	403.2	416.4	424.2	429.8	430.4
55°	332.9	357.3	381.1	402.6	411.0	419.7	431.8	439.1	443.8	443.8
57.5°	341.3	370.4	397.9	417.8	426.2	432.9	444.1	448.9	452.2	453.1
60°	356.4	387.2	411.0	428.4	434.0	439.3	445.5	450.8	452.2	452.8
62.5°	371.3	397.6	416.4	428.4	431.8	436.3	440.7	443.8	444.9	444.9
65°	379.1	398.7	410.2	419.2	422.8	424.2	429.0	430.1	432.6	432.1
67.5°	374.4	387.0	396.2	403.8	406.6	409.4	415.0	417.8	420.0	420.6
70°	358.1	368.2	378.0	387.5	391.2	395.9	402.6	408.0	410.5	411.9
72.5°	338.2	350.3	362.9	374.4	380.2	384.7	393.1	400.1	402.6	404.0
75°	317.8	332.1	346.6	360.6	366.8	372.7	382.8	389.5	394.0	395.4
77.5°	297.4	314.7	332.4	348.3	355.9	362.0	373.5	380.8	386.1	386.7
80°	278.3	299.0	318.6	335.7	343.3	350.6	362.0	370.4	373.2	377.2
82.5°	261.5	283.1	303.0	320.9	329.3	335.7	347.8	356.4	360.6	362.9
85°	243.3	265.7	285.9	303.5	312.2	320.0	331.2	339.4	345.2	346.1
87.5°	224.8	247.2	268.0	286.2	294.8	302.1	313.9	321.7	327.0	328.7
90°	205.2	226.5	246.4	264.6	271.9	279.4	290.6	299.6	305.2	305.5
92.5°	181.7	202.2	220.4	237.4	246.1	251.7	262.4	271.6	275.5	277.2
95°	151.8	170.5	187.9	202.2	210.8	215.9	226.2	233.0	237.4	238.6
97.5°	119.0	133.6	147.6	160.2	166.6	170.8	179.2	185.1	191.8	190.1
100°	89.6	97.7	107.8	115.9	120.7	123.5	129.6	133.6	137.5	139.7
102.5°	65.0	71.1	75.6	79.8	83.2	86.0	90.7	92.1	93.2	96.0
105°	47.6	50.7	53.2	56.3	57.7	58.5	60.5	61.9	61.9	64.4
107.5°	35.8	37.2	38.4	40.0	40.0	40.9	40.9	41.2	42.0	41.4
110°	28.3	28.6	28.8	28.6	28.8	28.6	28.3	28.0	28.0	27.7



TEST NUMBER: P397289

CATALOG NUMBER: 4VRVT2-LD5-8-DR100-W-UNV-LA59-CD1-WL-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	23.5	23.2	23.0	22.1	21.8	21.3	21.0	20.4	19.9	19.9
115°	20.2	19.9	19.3	18.5	17.9	17.4	17.1	16.2	15.7	15.4
117.5°	17.9	17.6	17.1	16.2	16.0	15.4	14.8	14.0	13.4	13.2
120°	16.2	16.2	15.7	14.8	14.6	14.3	13.4	12.9	12.3	12.0
122.5°	14.6	14.6	14.3	13.7	13.4	13.2	12.6	12.0	11.5	11.5
125°	12.6	12.9	12.9	12.6	12.3	12.0	11.8	11.2	10.9	10.6
127.5°	10.9	11.2	11.5	11.5	11.2	11.2	10.6	10.4	10.1	10.1
130°	9.0	9.8	10.1	10.1	10.1	10.1	9.8	9.5	9.2	9.2
132.5°	7.3	7.8	8.4	8.7	8.7	8.7	8.4	8.4	8.1	8.1
135°	5.6	6.2	6.7	7.0	7.3	7.3	7.3	7.3	7.0	7.0
137.5°	4.2	4.8	5.3	5.6	5.6	5.9	5.9	5.9	5.6	5.6
140°	2.5	3.4	3.6	3.9	4.2	4.2	4.5	4.5	4.2	4.2
142.5°	1.4	2.0	2.2	2.5	2.8	2.8	3.1	2.8	2.8	2.8
145°	0.3	0.6	1.1	1.4	1.4	1.4	1.4	1.7	1.4	1.4
147.5°	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	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)