

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: P397255

Luminaire Tested: **4VRVT2-LD5-4-DR-W-UNV-LR63-CD1-WL-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P397255
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1710-355-19)
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-DR-W-UNV-LR63-CD1-WL-U
Description:
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 634.1 lumens
Efficiency: N/A
Efficacy: 8.2 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.6 / 1.58
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 4.17' x H: 0.17')
CIE Type: Semi-Direct

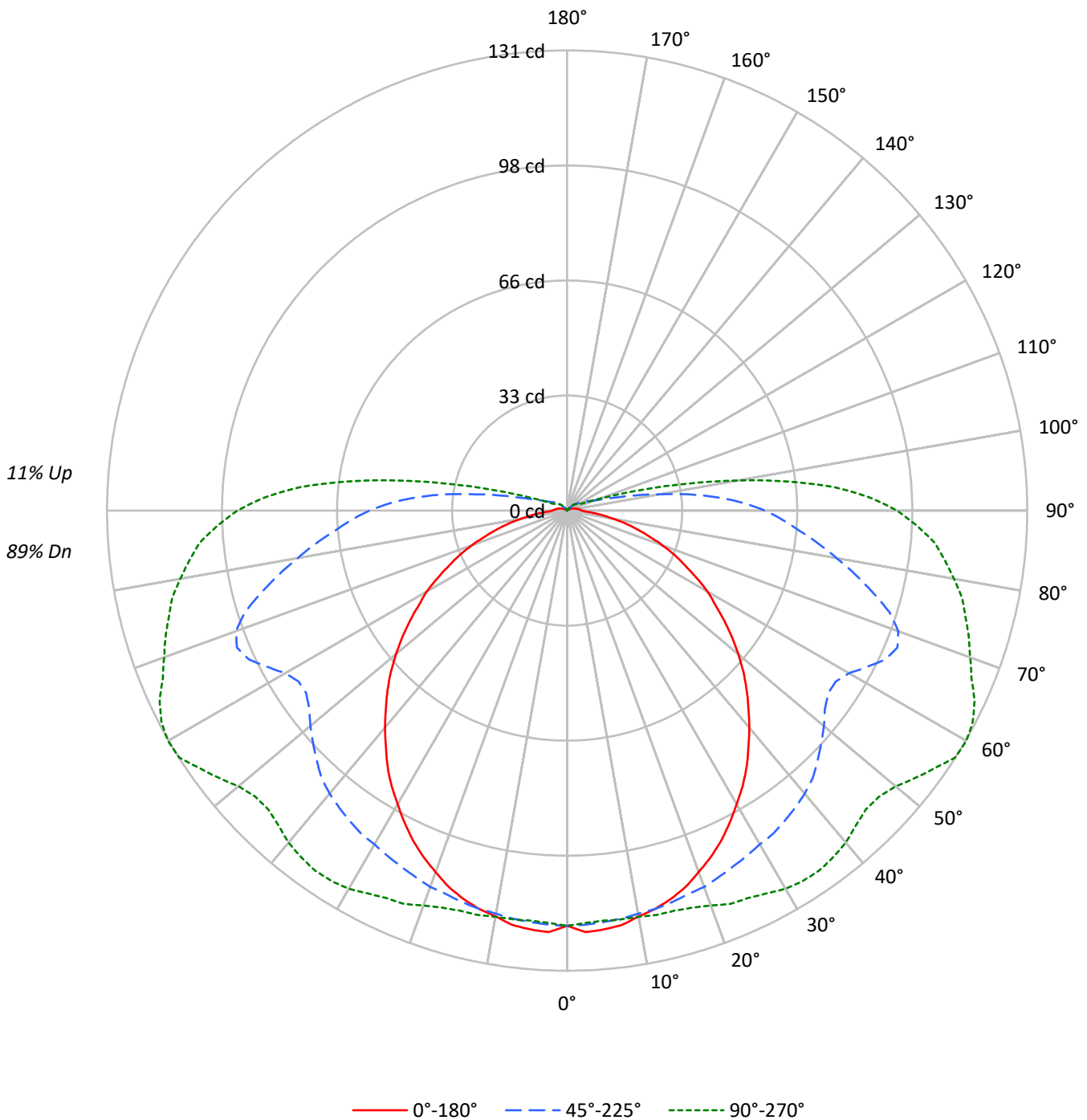
Input Watts (W): 77.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: 4VRVT2-LD5-4-DR-W-UNV-LR63-CD1-WL-U

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	75	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	51	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	33	26	21	31	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°	611	611	611
5°	619	596	591
10°	611	584	582
15°	605	576	579
20°	593	572	586
25°	580	567	600
30°	563	568	622
35°	547	574	640
40°	527	581	650
45°	508	583	659
50°	488	583	702
55°	465	593	780
60°	446	657	860
65°	418	781	913
70°	392	878	963
75°	361	906	1044
80°	323	928	1151
85°	297	980	1294



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	11.3	1.8
10°-20°	32.8	5.2
20°-30°	52.0	8.2
30°-40°	67.4	10.6
40°-50°	76.3	12.0
50°-60°	82.8	13.1
60°-70°	88.5	14.0
70°-80°	84.3	13.3
80°-90°	69.2	10.9
90°-100°	45.6	7.2
100°-110°	15.8	2.5
110°-120°	4.7	0.7
120°-130°	2.3	0.4
130°-140°	1.0	0.2
140°-150°	0.2	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	96.1	15.2
0°-40°	163.4	25.8
0°-60°	322.5	50.9
0°-90°	564.5	89.0
90°-120°	66.1	10.4
90°-150°	69.5	11.0
90°-180°	70.0	11.0
0°-180°	634.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	118	118	118	118	118	
5°	120	119	118	118	117	11
15°	114	114	115	118	118	32
25°	104	106	112	119	122	48
35°	89	95	108	121	125	56
45°	72	82	101	115	120	56
55°	55	67	91	119	128	49
65°	37	53	100	124	128	37
75°	21	50	90	110	117	22
85°	7	36	66	95	105	7
90°	4	27	56	85	94	2
95°	4	19	43	67	76	3
105°	2	7	14	20	24	2
115°	1	3	6	6	5	1
125°	0	1	4	4	3	0
135°	0	0	2	2	2	0
145°	0	0	0	0	0	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



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	118.2	118.2	118.2	118.2	118.2	118.2	118.2	118.2	118.2	118.2	118.2
2.5°	120.1	119.7	119.4	119.3	119.3	119.3	119.3	119.1	118.8	118.5	118.0
5°	119.7	119.5	119.2	119.0	119.0	119.0	119.0	118.8	118.5	118.0	117.6
7.5°	119.0	118.7	118.2	118.1	118.0	118.0	118.1	118.0	117.7	117.5	117.2
10°	117.3	117.2	116.8	116.8	117.0	117.1	117.1	117.1	117.0	116.8	116.5
12.5°	116.1	115.7	115.5	115.6	115.7	115.7	115.9	116.0	116.0	116.1	116.1
15°	114.4	114.0	113.9	114.2	114.3	114.5	114.5	114.7	114.8	115.2	115.4
17.5°	112.3	112.1	111.7	112.0	112.6	112.9	112.9	113.3	113.6	114.0	114.5
20°	109.5	109.4	109.2	109.6	110.2	110.5	111.1	111.7	112.1	113.3	114.0
22.5°	106.8	106.7	106.4	107.0	107.7	108.4	109.1	109.9	110.9	111.9	112.9
25°	103.7	103.6	103.5	104.6	105.3	105.8	106.6	107.9	109.1	110.5	111.8
27.5°	100.2	100.3	100.5	101.5	102.6	103.4	104.1	106.0	107.2	108.8	110.8
30°	96.5	96.5	97.2	98.1	99.9	100.6	101.6	103.7	105.0	107.4	109.7
32.5°	93.0	93.0	93.3	94.5	96.8	97.7	98.9	100.9	103.1	106.1	109.1
35°	89.1	89.1	89.7	91.3	93.6	94.6	95.9	98.5	101.1	104.6	107.9
37.5°	84.8	85.0	86.1	87.8	90.4	91.8	92.9	95.8	99.1	102.8	106.6
40°	80.7	80.9	82.2	84.1	87.0	88.3	89.7	93.3	96.8	100.8	105.2
42.5°	76.4	77.1	78.3	80.5	83.3	84.7	86.6	90.3	94.2	98.6	103.4
45°	72.3	72.8	74.1	76.7	79.8	81.5	83.5	87.5	91.7	96.1	100.8
47.5°	68.1	68.5	70.1	72.6	75.9	78.2	80.3	84.5	89.1	94.0	98.1
50°	63.6	64.1	65.7	68.4	72.2	74.4	76.5	81.2	85.9	90.8	95.4
52.5°	59.1	59.7	61.8	64.8	68.6	70.7	73.1	78.0	82.8	87.8	92.5
55°	54.6	55.3	57.5	60.2	64.5	66.9	69.2	74.4	79.5	84.9	90.7
57.5°	50.0	51.0	53.0	56.3	60.4	63.0	65.4	71.0	76.4	83.0	90.6
60°	46.2	46.5	48.5	52.1	56.6	59.1	62.0	67.7	74.5	82.9	92.6
62.5°	41.6	42.7	44.4	48.0	52.6	55.8	58.7	65.6	74.1	85.2	96.3
65°	37.1	38.2	40.3	44.3	49.6	52.8	56.2	64.9	75.8	88.7	100.1
67.5°	33.1	34.0	36.4	40.9	46.9	50.6	55.2	66.0	79.0	92.0	101.8
70°	28.8	29.8	32.6	37.8	45.2	49.7	55.4	68.3	81.7	93.0	100.3
72.5°	24.5	25.9	29.4	35.6	44.3	49.8	56.4	69.9	82.0	90.4	96.2
75°	20.8	22.0	26.4	33.7	44.0	50.3	57.1	69.3	78.7	84.8	90.1
77.5°	17.0	18.6	24.2	32.4	43.6	49.8	55.6	65.3	73.0	78.9	84.0
80°	13.3	15.6	21.7	30.7	41.6	46.3	51.0	59.2	66.4	72.4	77.9
82.5°	10.2	12.7	19.3	28.3	37.2	41.5	45.6	53.0	59.4	66.2	72.2
85°	7.3	10.2	16.9	24.7	32.3	36.4	39.7	46.6	52.8	59.8	66.4
87.5°	5.0	8.0	13.9	20.8	27.8	31.0	34.3	40.9	47.5	54.5	61.5
90°	4.1	6.5	11.6	17.9	24.0	27.1	30.4	36.7	42.8	49.5	56.3
92.5°	3.9	5.3	9.7	15.0	20.6	23.5	26.2	31.9	37.8	44.4	50.1
95°	3.5	4.3	7.8	12.2	16.9	19.3	21.7	26.7	32.0	37.8	43.1
97.5°	3.2	3.5	6.0	9.4	13.4	15.4	17.3	21.2	25.9	30.0	35.3
100°	2.9	3.0	4.5	7.3	10.2	11.9	13.4	16.8	19.9	23.2	26.6
102.5°	2.6	2.6	3.4	5.5	7.9	9.0	10.3	12.7	15.1	17.2	20.0
105°	2.4	2.4	2.8	4.1	5.9	6.8	7.8	9.7	11.6	13.0	14.5
107.5°	2.0	2.0	2.2	3.2	4.6	5.5	6.1	7.6	9.0	10.0	10.9
110°	1.7	1.7	1.7	2.6	3.7	4.4	5.1	6.3	7.3	8.0	8.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	1.4	1.4	1.4	2.1	3.1	3.6	4.3	5.2	6.1	6.6	7.1
115°	1.2	1.2	1.1	1.6	2.6	3.1	3.6	4.5	5.2	5.8	6.1
117.5°	1.0	1.0	0.8	1.2	2.0	2.6	3.0	3.9	4.6	5.1	5.3
120°	0.8	0.8	0.6	0.8	1.6	2.0	2.6	3.3	4.0	4.5	4.8
122.5°	0.5	0.5	0.5	0.5	1.1	1.5	1.9	2.7	3.4	4.0	4.3
125°	0.4	0.4	0.4	0.3	0.8	1.1	1.5	2.2	2.8	3.3	3.6
127.5°	0.3	0.3	0.3	0.3	0.3	0.6	1.0	1.7	2.2	2.8	3.1
130°	0.3	0.3	0.2	0.2	0.2	0.3	0.6	1.2	1.7	2.1	2.6
132.5°	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.8	1.3	1.7	2.0
135°	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.4	0.8	1.2	1.5
137.5°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.4	0.8	1.1
140°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.4	0.6
142.5°	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
145°	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.1	0.1	0.1	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°	118.2	118.2	118.2	118.2	118.2	118.2	118.2	118.2	118.2	118.2
2.5°	117.9	118.0	118.1	118.1	118.0	118.0	117.8	117.8	117.6	117.5
5°	117.5	117.7	117.8	117.8	117.7	117.7	117.6	117.5	117.3	117.2
7.5°	117.2	117.5	117.7	117.7	117.7	117.7	117.6	117.6	117.5	117.4
10°	116.8	117.1	117.4	117.8	117.9	117.9	117.8	117.7	117.5	117.4
12.5°	116.3	116.8	117.2	117.6	117.7	117.8	118.0	118.0	117.9	117.9
15°	115.9	116.6	117.3	117.8	117.9	118.2	118.4	118.5	118.2	117.9
17.5°	115.5	116.4	117.0	117.8	118.0	118.2	118.5	118.6	118.6	118.5
20°	115.0	116.2	117.2	118.0	118.2	118.6	119.0	119.3	119.6	119.6
22.5°	114.4	115.9	117.0	118.2	119.0	119.3	120.2	120.6	120.8	121.2
25°	113.5	115.2	117.3	118.8	119.3	120.0	121.2	121.9	121.9	121.7
27.5°	113.1	115.6	117.7	119.2	120.0	120.7	121.9	122.8	123.2	122.9
30°	112.6	115.2	117.7	119.6	120.5	121.5	122.6	124.1	124.3	124.3
32.5°	111.9	114.8	117.7	119.9	120.9	121.8	123.2	124.6	125.1	125.0
35°	111.3	114.5	117.3	119.6	120.8	121.9	123.5	124.6	125.0	125.1
37.5°	110.3	113.8	116.5	119.1	120.4	121.3	123.1	123.8	124.4	124.4
40°	108.9	112.5	115.6	118.0	119.0	120.0	121.6	122.4	122.9	123.4
42.5°	107.3	110.8	113.8	115.9	117.2	117.9	119.7	120.6	121.5	121.6
45°	104.9	108.6	111.5	114.2	115.4	116.1	118.1	119.5	120.3	120.3
47.5°	102.3	105.8	109.3	112.6	114.0	115.2	117.6	119.3	120.2	120.5
50°	99.4	103.8	107.9	112.1	114.0	115.6	118.4	120.3	121.3	122.1
52.5°	97.6	103.3	108.3	113.3	115.4	117.5	121.0	123.1	124.6	125.0
55°	97.4	104.2	110.4	116.4	118.8	120.8	124.6	126.8	128.0	127.8
57.5°	99.0	107.3	114.6	120.1	122.6	124.6	128.0	130.0	130.9	130.9
60°	102.5	111.4	118.5	123.3	125.3	127.1	129.6	131.0	131.4	131.2
62.5°	106.2	114.3	120.2	124.1	125.6	126.5	128.5	129.6	130.0	130.2
65°	109.1	115.7	119.7	122.6	123.8	124.7	126.3	127.6	127.8	128.0
67.5°	108.7	113.3	117.0	119.6	120.6	121.5	123.1	124.0	124.8	124.6
70°	105.7	109.4	112.8	115.6	116.6	117.8	119.7	121.2	121.6	122.1
72.5°	100.5	104.2	108.4	111.2	113.1	114.3	116.6	118.6	119.3	119.9
75°	95.0	99.4	103.6	107.8	109.8	111.7	114.5	115.9	117.7	117.4
77.5°	89.3	94.9	99.9	104.6	106.7	108.7	111.6	113.5	114.7	115.2
80°	84.4	90.3	95.8	100.8	102.8	105.2	108.2	110.2	111.5	111.8
82.5°	78.8	85.3	91.5	96.8	98.9	100.9	104.4	106.5	108.1	108.5
85°	73.3	80.3	86.7	92.4	94.6	96.9	100.5	102.8	104.4	105.0
87.5°	68.8	75.3	81.8	87.1	89.8	92.0	95.6	98.4	99.7	99.7
90°	63.1	69.7	76.2	81.6	84.6	86.1	89.7	92.3	94.0	93.9
92.5°	57.1	63.4	68.8	74.2	76.7	78.6	82.4	84.4	85.9	86.2
95°	49.0	54.6	60.3	64.8	66.7	69.7	72.6	75.1	76.0	76.4
97.5°	39.5	45.1	49.1	54.5	55.8	57.8	60.8	62.9	63.8	63.5
100°	30.3	34.0	37.1	40.5	42.5	43.8	46.4	48.4	49.5	49.4
102.5°	21.5	24.5	26.7	29.4	29.6	30.8	32.4	34.4	34.8	35.4
105°	15.9	17.1	18.8	19.8	20.2	21.6	21.9	22.8	22.9	24.0
107.5°	11.9	12.5	13.2	13.7	14.0	14.1	15.0	14.9	15.1	15.3
110°	9.0	9.3	9.7	9.5	9.9	9.6	9.8	9.7	9.8	9.8



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CATALOG NUMBER: 4VRVT2-LD5-4-DR-W-UNV-LR63-CD1-WL-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	7.3	7.3	7.2	7.1	7.1	6.9	6.9	6.6	6.7	6.6
115°	6.2	6.1	5.9	5.7	5.7	5.5	5.3	5.0	4.9	4.8
117.5°	5.5	5.3	5.1	4.9	4.8	4.7	4.5	4.2	4.1	4.1
120°	4.9	4.8	4.7	4.5	4.4	4.3	4.0	3.9	3.6	3.6
122.5°	4.4	4.4	4.3	4.1	4.1	4.0	3.7	3.5	3.4	3.4
125°	3.9	4.0	3.9	3.7	3.7	3.6	3.5	3.3	3.2	3.2
127.5°	3.3	3.4	3.4	3.4	3.4	3.3	3.2	3.1	3.0	3.0
130°	2.8	3.0	3.0	3.0	3.1	3.0	3.0	2.9	2.8	2.8
132.5°	2.2	2.5	2.6	2.7	2.7	2.7	2.6	2.6	2.5	2.5
135°	1.7	1.9	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1
137.5°	1.3	1.5	1.6	1.7	1.7	1.8	1.8	1.8	1.7	1.7
140°	0.8	1.1	1.2	1.3	1.3	1.4	1.4	1.4	1.3	1.3
142.5°	0.4	0.6	0.8	0.8	0.8	0.8	1.0	1.0	1.0	0.8
145°	0.1	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.4
147.5°	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
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)