

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P274329

Luminaire Tested: **LD4B15DE010W2N2050 EU4B1020W2N902050 4LBSW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274329  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B15DE010W2N2050 EU4B1020W2N902050 4LBSW0H  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, SINGLE WALLWASH WITH HAZE FINISH  
Light Source: W2N 2000K-5000K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1099.0 lumens  
Efficiency: N/A  
Efficacy: 50.0 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

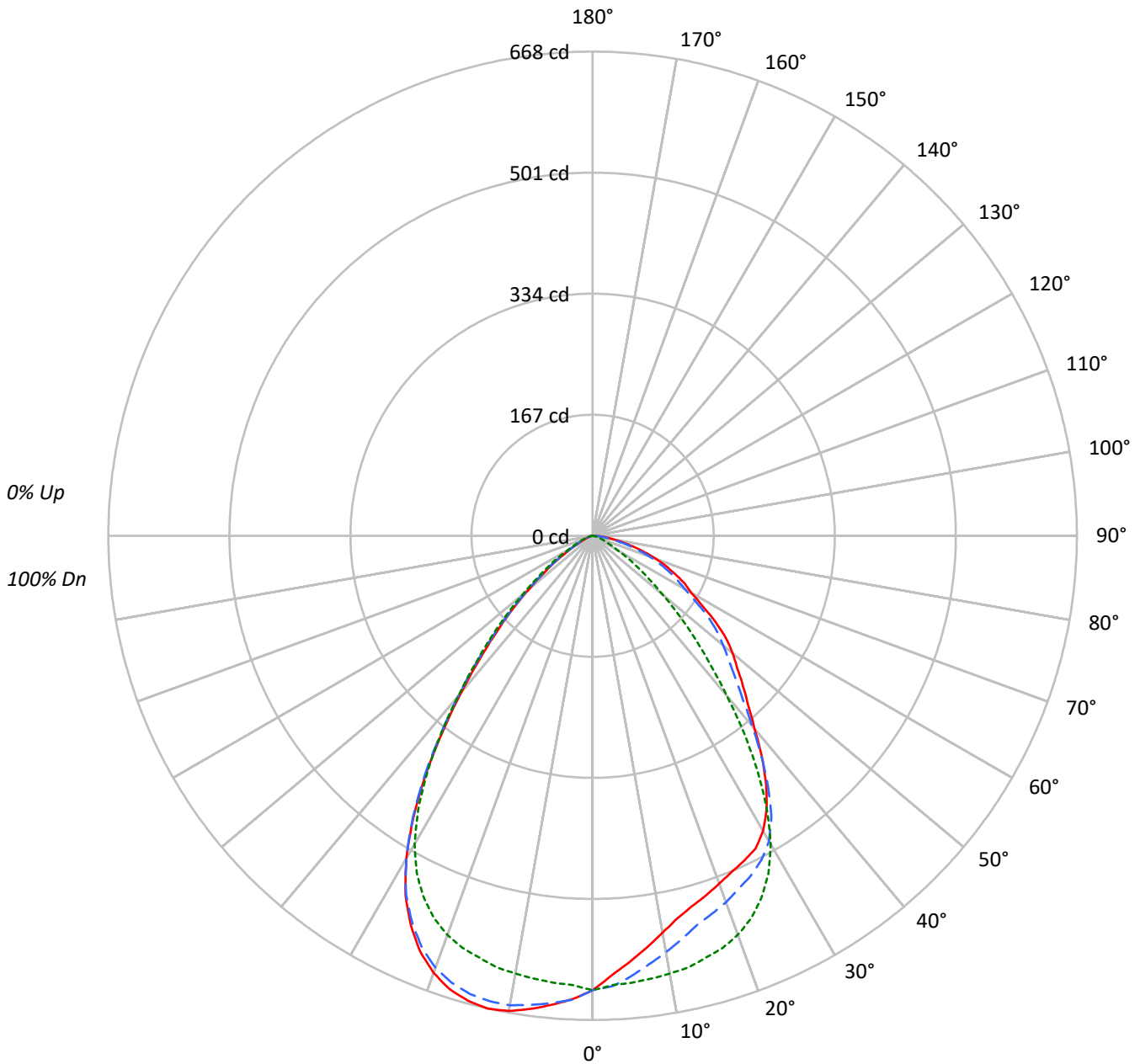
Input Watts (W): 22  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89	89	89	89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79	79	79	79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70	70	70	70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62	62	62	62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56	56	56	56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50	50	50	50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46	46	46	46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42	42	42	42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38	38	38	38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35	35	35	35

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

	0°	90°	180°
0°	61106	61106	61106
5°	57700	60547	63551
10°	55013	60683	65879
15°	53394	60810	67005
20°	52956	60755	66532
25°	53175	59251	63767
30°	52914	55277	57832
35°	49600	47197	47673
40°	44197	36589	35775
45°	40425	27276	25608
50°	38223	19104	17269
55°	35138	12896	10840
60°	30699	7563	5984
65°	29056	4843	3344
70°	26472	3448	2080
75°	21915	2448	1506
80°	17230	1347	898
85°	15319	895	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	59.2	5.4
10°-20°	169.9	15.5
20°-30°	251.9	22.9
30°-40°	252.3	23.0
40°-50°	176.3	16.0
50°-60°	104.9	9.5
60°-70°	54.8	5.0
70°-80°	24.3	2.2
80°-90°	5.3	0.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	481.1	43.8
0°-40°	733.4	66.7
0°-60°	1014.6	92.3
0°-90°	1099.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1099.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	627	627	627	627	627	
5°	590	610	619	647	650	55
15°	529	556	603	654	664	150
25°	494	517	551	589	593	228
35°	417	422	397	404	401	258
45°	293	279	198	192	186	228
55°	207	194	76	66	64	184
65°	126	116	21	15	14	125
75°	58	51	6	4	4	63
85°	14	10	1	1	0	15
90°	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°	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0
2.5°	606.8	614.0	606.8	609.2	618.9	610.0	614.8	614.8	612.4	618.1	622.1
5°	589.8	597.1	589.8	593.0	603.5	594.6	600.3	598.7	599.5	604.3	610.0
7.5°	572.8	578.5	572.0	576.1	585.8	578.5	583.3	583.3	584.1	591.4	596.3
10°	555.9	560.7	555.9	559.1	569.6	563.1	566.4	567.2	569.6	576.1	583.3
12.5°	540.5	544.6	539.7	544.6	553.4	547.0	551.0	551.8	554.2	561.5	569.6
15°	529.2	533.2	528.4	532.4	540.5	535.7	538.9	540.5	542.1	548.6	555.9
17.5°	520.3	523.5	519.5	524.4	530.8	525.2	530.0	530.0	532.4	538.9	547.0
20°	510.6	513.9	510.6	514.7	521.9	517.1	521.1	521.1	523.5	530.8	538.1
22.5°	501.7	503.3	501.7	505.0	512.2	508.2	510.6	511.4	513.9	520.3	526.8
25°	494.5	497.7	496.1	499.3	504.2	500.1	502.5	503.3	505.8	511.4	517.1
27.5°	486.4	488.0	486.4	490.4	494.5	491.2	493.7	492.8	494.5	499.3	504.2
30°	470.2	471.8	471.8	474.3	477.5	475.9	478.3	475.9	477.5	481.5	486.4
32.5°	446.8	447.6	448.4	450.8	453.3	450.8	452.4	452.4	452.4	455.7	458.9
35°	416.9	418.5	417.7	419.3	421.7	420.9	420.9	420.1	418.5	420.1	421.7
37.5°	383.0	380.5	380.5	383.0	384.6	381.3	383.0	381.3	381.3	382.2	382.2
40°	347.4	345.0	347.4	348.2	349.0	347.4	346.6	345.0	342.6	343.4	341.8
42.5°	317.5	315.9	316.7	316.7	317.5	315.9	316.7	313.5	311.1	309.4	307.0
45°	293.3	290.9	293.3	291.7	291.7	290.9	290.1	288.4	285.2	282.8	278.7
47.5°	270.7	270.7	271.5	271.5	271.5	269.9	269.9	266.6	263.4	260.2	254.5
50°	252.1	250.5	253.7	253.7	251.3	250.5	251.3	247.2	244.8	240.8	235.1
52.5°	231.9	231.9	232.7	232.7	231.9	230.3	231.1	227.8	225.4	221.4	215.7
55°	206.8	205.2	207.6	207.6	206.8	206.0	206.8	204.4	202.0	198.8	193.9
57.5°	178.6	177.7	179.4	180.2	178.6	178.6	179.4	176.9	176.1	172.9	168.1
60°	157.5	156.7	158.4	159.2	157.5	157.5	157.5	154.3	152.7	149.5	146.2
62.5°	143.0	142.2	143.8	143.0	142.2	141.4	142.2	139.0	137.4	134.1	130.9
65°	126.0	126.8	127.7	127.7	126.8	126.0	126.0	124.4	122.8	119.6	115.5
67.5°	109.9	109.9	110.7	111.5	110.7	110.7	110.7	108.3	106.6	104.2	99.4
70°	92.9	92.1	94.5	94.5	92.9	93.7	92.9	92.1	90.5	87.3	83.2
72.5°	75.1	75.1	75.9	75.9	75.1	75.1	75.1	74.3	71.9	70.3	66.3
75°	58.2	58.2	59.0	59.8	58.2	58.2	59.0	57.4	55.7	53.3	50.9
77.5°	43.6	42.8	43.6	43.6	42.8	42.8	42.8	42.0	41.2	38.8	36.4
80°	30.7	29.9	30.7	30.7	30.7	29.9	29.9	29.1	29.1	27.5	25.0
82.5°	21.0	20.2	21.0	21.0	21.0	20.2	20.2	20.2	19.4	18.6	17.0
85°	13.7	12.9	12.9	13.7	12.9	12.9	12.9	12.9	12.1	11.3	10.5
87.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	4.8
90°	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°	95°
0°	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0
2.5°	618.9	617.3	622.1	620.5	621.3	617.3	623.7	620.5	624.5	620.5	628.6
5°	608.4	606.8	614.0	613.2	614.0	610.8	618.1	617.3	622.1	618.9	627.8
7.5°	597.1	595.5	603.5	604.3	606.0	602.7	612.4	612.4	617.3	616.5	626.2
10°	584.1	585.0	593.0	594.6	597.9	596.3	605.1	607.6	614.0	613.2	625.3
12.5°	572.0	572.0	582.5	585.8	588.2	587.4	597.9	601.1	608.4	610.0	621.3
15°	559.9	560.7	570.4	575.3	578.5	577.7	589.0	593.0	601.9	602.7	616.5
17.5°	550.2	549.4	559.9	563.9	568.8	568.0	580.1	585.0	593.8	596.3	609.2
20°	542.1	541.3	551.0	555.9	559.1	558.3	570.4	576.1	584.1	585.8	598.7
22.5°	532.4	530.8	540.5	544.6	547.8	547.0	557.5	561.5	569.6	571.2	583.3
25°	521.1	519.5	528.4	530.8	533.2	531.6	540.5	542.9	549.4	551.0	563.1
27.5°	508.2	504.2	511.4	511.4	513.0	510.6	517.1	519.5	525.2	525.2	536.5
30°	488.0	482.3	486.4	485.6	486.4	483.2	487.2	488.0	492.0	491.2	499.3
32.5°	459.7	451.6	454.1	451.6	449.2	444.4	449.2	447.6	450.8	447.6	454.9
35°	420.9	412.9	412.1	408.8	406.4	402.4	402.4	398.3	399.1	396.7	401.5
37.5°	378.9	368.4	366.8	360.3	356.3	351.5	351.5	348.2	344.2	342.6	346.6
40°	337.7	326.4	322.4	311.9	307.8	303.0	299.7	295.7	294.1	287.6	290.9
42.5°	302.2	290.1	281.2	269.9	265.8	258.5	253.7	248.8	246.4	239.2	242.4
45°	272.3	257.7	248.0	233.5	227.8	219.8	212.5	206.8	201.2	197.9	196.3
47.5°	247.2	231.9	219.0	202.8	193.9	186.6	176.9	171.3	164.0	160.0	157.5
50°	226.2	209.3	194.7	176.1	167.2	159.2	147.9	139.0	132.5	126.0	124.4
52.5°	207.6	189.9	173.7	152.7	142.2	132.5	120.4	110.7	105.0	97.8	97.0
55°	185.8	170.5	152.7	130.9	120.4	110.7	97.8	88.1	80.8	75.9	74.3
57.5°	162.4	147.9	130.9	109.1	98.6	88.1	75.9	67.1	60.6	56.6	55.7
60°	140.6	126.8	110.7	88.9	78.4	69.5	56.6	47.7	42.0	38.8	37.2
62.5°	124.4	111.5	96.1	75.9	66.3	57.4	45.2	37.2	32.3	29.1	27.5
65°	109.1	96.1	82.4	63.8	55.7	47.7	36.4	29.1	24.2	21.0	19.4
67.5°	92.9	81.6	68.7	53.3	45.2	38.8	29.1	22.6	18.6	16.2	14.5
70°	76.8	66.3	55.7	42.8	37.2	30.7	22.6	17.8	13.7	12.1	10.5
72.5°	60.6	52.5	43.6	33.1	28.3	24.2	17.8	12.9	10.5	8.9	7.3
75°	45.2	39.6	32.3	25.0	21.0	17.8	12.9	9.7	8.1	6.5	5.7
77.5°	32.3	27.5	22.6	17.0	15.4	12.9	8.9	7.3	5.7	4.0	3.2
80°	21.8	19.4	15.4	12.1	9.7	8.9	6.5	4.8	3.2	2.4	2.4
82.5°	14.5	12.1	9.7	7.3	6.5	5.7	4.0	3.2	2.4	1.6	1.6
85°	8.9	7.3	5.7	4.0	4.0	3.2	2.4	1.6	0.8	0.8	0.8
87.5°	4.0	3.2	2.4	1.6	1.6	0.8	0.8	0.8	0.0	0.0	0.0
90°	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0
2.5°	635.0	630.2	627.0	631.0	632.6	630.2	632.6	636.7	640.7	641.5	630.2
5°	635.9	631.0	629.4	634.2	635.0	634.2	636.7	642.3	647.2	648.8	637.5
7.5°	635.9	632.6	631.8	637.5	638.3	637.5	641.5	648.0	652.8	656.0	644.7
10°	634.2	632.6	633.4	638.3	639.9	639.9	645.5	652.8	657.7	660.9	649.6
12.5°	631.8	631.8	631.8	637.5	639.1	639.9	644.7	654.4	657.7	662.5	651.2
15°	627.8	627.8	627.8	633.4	635.9	635.9	641.5	650.4	654.4	659.3	648.0
17.5°	620.5	620.5	621.3	626.2	628.6	628.6	634.2	643.9	646.4	652.0	640.7
20°	610.0	610.0	610.8	615.7	618.1	616.5	623.7	631.8	634.2	639.1	627.8
22.5°	594.6	594.6	594.6	599.5	601.1	600.3	607.6	614.8	614.8	621.3	609.2
25°	572.0	573.6	572.0	576.9	578.5	577.7	584.1	590.6	589.0	596.3	584.1
27.5°	544.6	543.7	543.7	547.8	547.8	547.0	551.8	559.1	557.5	562.3	551.0
30°	506.6	509.0	505.0	510.6	508.2	506.6	509.8	516.3	513.9	517.9	509.0
32.5°	463.0	459.7	459.7	459.7	461.3	457.3	460.5	463.8	461.3	465.4	455.7
35°	405.6	406.4	404.0	404.8	405.6	400.7	404.0	407.2	404.0	406.4	397.5
37.5°	348.2	349.0	343.4	346.6	343.4	341.8	345.0	346.6	343.4	345.8	336.1
40°	290.9	289.2	288.4	288.4	289.2	285.2	287.6	290.1	287.6	289.2	280.4
42.5°	240.8	240.0	238.3	239.2	236.7	235.9	236.7	239.2	236.7	238.3	231.9
45°	197.1	195.5	193.1	193.9	193.9	189.9	192.3	193.9	191.5	192.3	186.6
47.5°	156.7	154.3	154.3	153.5	153.5	151.9	154.3	153.5	151.1	152.7	147.0
50°	122.0	120.4	120.4	120.4	120.4	118.0	118.8	120.4	118.0	118.0	114.7
52.5°	95.3	92.9	91.3	91.3	91.3	90.5	90.5	91.3	88.9	88.9	88.1
55°	71.9	71.1	68.7	68.7	68.7	66.3	67.1	67.1	66.3	66.3	63.8
57.5°	53.3	50.9	49.3	49.3	47.7	47.7	46.9	47.7	46.1	46.1	44.4
60°	35.5	33.9	33.1	32.3	32.3	31.5	32.3	31.5	31.5	30.7	29.9
62.5°	25.9	24.2	22.6	22.6	22.6	21.8	21.8	21.8	21.8	21.8	21.0
65°	18.6	17.0	17.0	16.2	16.2	15.4	15.4	15.4	15.4	15.4	14.5
67.5°	12.9	12.1	11.3	11.3	11.3	11.3	11.3	11.3	10.5	10.5	10.5
70°	9.7	8.9	8.1	8.1	8.1	8.1	8.1	7.3	8.1	8.1	7.3
72.5°	6.5	6.5	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
75°	4.8	4.8	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	3.2	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
80°	2.4	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	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):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	627.0	627.0	627.0	627.0	627.0	627.0	627.0	627.0
2.5°	642.3	641.5	639.9	642.3	635.9	633.4	632.6	639.9
5°	651.2	649.6	649.6	652.0	644.7	643.1	641.5	649.6
7.5°	659.3	657.7	657.7	660.1	653.6	652.0	650.4	658.5
10°	664.1	664.1	664.1	665.7	660.1	658.5	657.7	665.7
12.5°	666.6	666.6	665.7	669.0	661.7	661.7	660.1	668.2
15°	663.3	663.3	663.3	665.7	659.3	657.7	657.7	664.1
17.5°	655.2	655.2	654.4	656.9	649.6	649.6	648.8	656.0
20°	643.1	643.1	641.5	644.7	637.5	635.0	634.2	641.5
22.5°	623.7	622.9	622.1	623.7	617.3	615.7	614.8	621.3
25°	598.7	597.9	596.3	597.9	590.6	588.2	588.2	593.0
27.5°	563.1	563.1	560.7	563.1	555.1	554.2	553.4	559.1
30°	519.5	516.3	514.7	517.9	509.8	509.8	508.2	513.9
32.5°	465.4	462.1	461.3	463.0	455.7	453.3	456.5	459.7
35°	403.2	404.0	400.7	400.7	394.3	395.1	395.9	400.7
37.5°	343.4	341.8	341.0	341.8	336.9	335.3	333.7	338.5
40°	287.6	283.6	282.8	282.8	278.7	277.9	278.7	281.2
42.5°	235.1	234.3	231.1	232.7	228.6	230.3	229.5	229.5
45°	189.9	190.7	187.4	189.9	186.6	184.2	184.2	185.8
47.5°	150.3	150.3	149.5	149.5	147.0	147.9	146.2	148.7
50°	116.3	116.3	114.7	115.5	113.9	113.9	113.1	113.9
52.5°	88.9	88.1	88.1	87.3	85.6	86.4	87.3	85.6
55°	64.6	65.4	63.8	64.6	63.0	63.8	63.0	63.8
57.5°	44.4	45.2	43.6	45.2	43.6	44.4	43.6	43.6
60°	30.7	30.7	29.9	30.7	29.9	29.9	29.1	30.7
62.5°	21.0	21.0	21.0	21.0	21.0	20.2	21.0	21.0
65°	15.4	14.5	14.5	14.5	14.5	14.5	14.5	14.5
67.5°	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
70°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
72.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
75°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.0	0.8	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)