

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: P274354

Luminaire Tested: **LD4B20DE010W2N2050 EU4B1020W2N902050 4LBLWW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274354  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBLWW0H  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, LENSED WALLWASH WITH HAZE FINISH  
Light Source: W2N 2000K-5000K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1171.5 lumens  
Efficiency: N/A  
Efficacy: 41.8 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

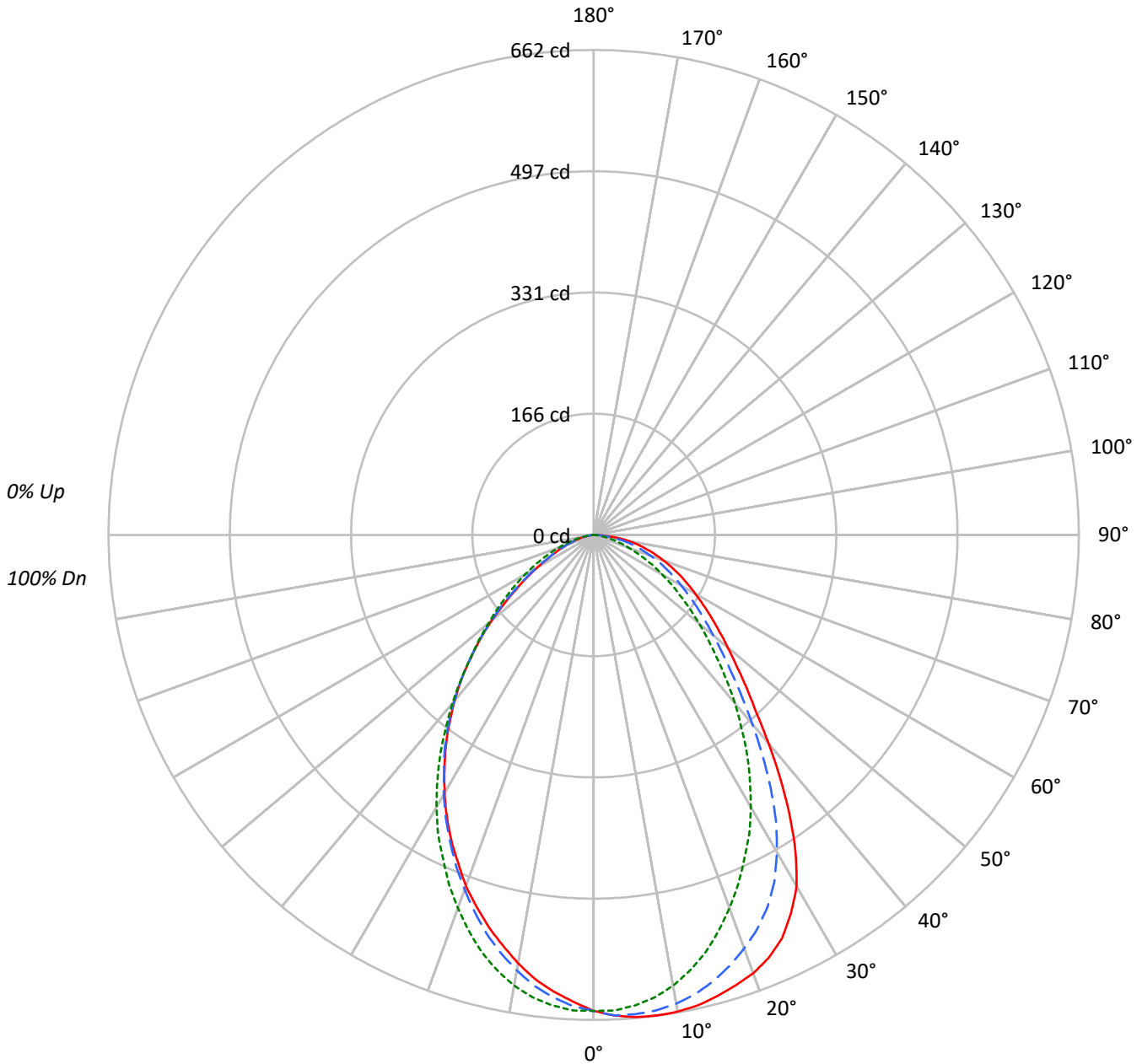
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88	88	88	88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76	76	76	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67	67	67	67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59	59	59	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42	42	42	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38	38	38	38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35	35	35	35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32	32	32	32

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

	0°	90°	180°
0°	63319	63319	63319
5°	64637	63071	61212
10°	65384	61821	58753
15°	65754	59498	55876
20°	66034	56192	52873
25°	65348	52347	49444
30°	62322	48255	45779
35°	55418	43402	41855
40°	47174	38154	37518
45°	40645	32789	32651
50°	36222	28337	27428
55°	33286	24450	21902
60°	31167	21051	17153
65°	29956	17757	13375
70°	28780	14247	10828
75°	27865	11296	8284
80°	28062	7857	5051
85°	23482	5591	2236



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.8	5.2
10°-20°	167.2	14.3
20°-30°	233.8	20.0
30°-40°	240.4	20.5
40°-50°	195.1	16.7
50°-60°	137.3	11.7
60°-70°	84.6	7.2
70°-80°	42.3	3.6
80°-90°	10.0	0.9
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°	461.9	39.4
0°-40°	702.2	59.9
0°-60°	1034.7	88.3
0°-90°	1171.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1171.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	650	650	650	650	650	
5°	661	657	645	634	626	63
15°	652	631	590	564	554	184
25°	608	561	487	463	460	278
35°	466	421	365	354	352	290
45°	295	266	238	238	237	229
55°	196	172	144	132	129	176
65°	130	109	77	59	58	128
75°	74	58	30	22	22	79
85°	21	14	5	3	2	24
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°	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7
2.5°	656.7	657.7	654.7	657.7	653.7	655.7	656.7	654.7	652.7	656.7	656.7
5°	660.7	660.7	657.7	661.7	656.7	657.7	659.7	656.7	653.7	657.7	656.7
7.5°	661.7	661.7	657.7	661.7	656.7	657.7	658.7	655.7	652.7	655.7	654.7
10°	660.7	659.7	656.7	660.7	655.7	655.7	656.7	653.7	648.7	651.7	649.7
12.5°	657.7	657.7	653.7	657.7	650.7	650.7	651.7	647.7	643.7	643.7	641.7
15°	651.7	651.7	647.7	650.7	644.7	644.7	643.7	639.7	634.7	634.7	630.7
17.5°	644.7	644.7	640.7	643.7	636.7	636.7	635.7	629.7	622.7	621.7	616.7
20°	636.7	636.7	631.7	633.7	625.7	625.7	624.7	617.7	609.7	607.7	600.7
22.5°	624.7	624.7	619.7	620.7	612.7	611.7	610.7	602.7	594.7	591.7	582.7
25°	607.7	606.7	602.7	602.7	594.7	592.7	590.7	582.7	574.7	568.7	560.8
27.5°	582.7	583.7	578.7	579.7	569.7	567.8	566.8	556.8	547.8	541.8	533.8
30°	553.8	550.8	545.8	545.8	537.8	536.8	534.8	525.8	515.8	508.8	499.8
32.5°	512.8	511.8	506.8	506.8	497.8	497.8	493.8	484.8	475.8	471.8	462.8
35°	465.8	464.8	460.8	460.8	452.8	453.8	449.8	442.8	433.8	427.8	420.8
37.5°	417.8	416.8	412.8	413.8	406.8	406.8	403.8	396.8	389.8	386.8	377.8
40°	370.8	369.8	364.8	367.8	361.8	359.8	358.8	353.8	345.8	341.8	336.9
42.5°	327.9	328.9	323.9	325.9	320.9	318.9	317.9	313.9	307.9	303.9	298.9
45°	294.9	292.9	290.9	290.9	285.9	284.9	283.9	278.9	274.9	270.9	265.9
47.5°	263.9	261.9	259.9	260.9	256.9	255.9	253.9	249.9	244.9	242.9	237.9
50°	238.9	237.9	234.9	234.9	230.9	229.9	227.9	224.9	219.9	216.9	212.9
52.5°	215.9	215.9	212.9	211.9	208.9	207.9	206.9	202.9	198.9	194.9	190.9
55°	195.9	194.9	192.9	192.9	188.9	187.9	186.9	182.9	178.9	175.9	171.9
57.5°	176.9	176.9	174.9	174.9	171.9	169.9	169.9	165.9	160.9	158.9	153.9
60°	159.9	159.9	157.9	157.9	154.9	154.9	152.9	148.9	145.9	141.9	137.9
62.5°	143.9	144.9	142.9	141.9	138.9	137.9	137.9	134.9	129.9	126.9	122.9
65°	129.9	128.9	127.9	126.9	123.9	122.9	122.9	118.9	115.9	112.0	109.0
67.5°	114.9	114.9	113.0	113.0	111.0	110.0	108.0	105.0	102.0	99.0	96.0
70°	101.0	101.0	100.0	100.0	97.0	96.0	95.0	92.0	89.0	86.0	82.0
72.5°	88.0	87.0	86.0	86.0	84.0	83.0	82.0	79.0	76.0	73.0	70.0
75°	74.0	74.0	73.0	73.0	71.0	70.0	70.0	68.0	64.0	62.0	58.0
77.5°	62.0	62.0	61.0	61.0	59.0	59.0	58.0	55.0	53.0	50.0	48.0
80°	50.0	49.0	49.0	48.0	46.0	46.0	45.0	44.0	41.0	39.0	36.0
82.5°	35.0	35.0	35.0	34.0	33.0	33.0	32.0	30.0	28.0	27.0	24.0
85°	21.0	21.0	20.0	19.0	20.0	19.0	18.0	17.0	16.0	15.0	14.0
87.5°	9.0	9.0	8.0	8.0	8.0	8.0	8.0	7.0	6.0	6.0	5.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7
2.5°	650.7	653.7	652.7	651.7	649.7	649.7	649.7	648.7	649.7	649.7	647.7
5°	650.7	652.7	651.7	649.7	647.7	647.7	646.7	644.7	644.7	644.7	640.7
7.5°	647.7	649.7	646.7	644.7	642.7	640.7	640.7	637.7	637.7	636.7	632.7
10°	641.7	642.7	638.7	636.7	633.7	632.7	630.7	626.7	625.7	624.7	620.7
12.5°	632.7	633.7	628.7	624.7	620.7	619.7	617.7	612.7	610.7	608.7	603.7
15°	619.7	619.7	613.7	608.7	604.7	603.7	598.7	593.7	591.7	589.7	582.7
17.5°	604.7	603.7	595.7	590.7	585.7	583.7	578.7	572.7	568.7	566.8	560.8
20°	588.7	585.7	576.7	571.7	565.8	562.8	557.8	549.8	545.8	541.8	535.8
22.5°	569.7	565.8	555.8	548.8	542.8	539.8	532.8	525.8	519.8	515.8	508.8
25°	546.8	541.8	530.8	521.8	516.8	513.8	506.8	498.8	492.8	486.8	480.8
27.5°	519.8	513.8	502.8	493.8	488.8	483.8	478.8	469.8	464.8	459.8	452.8
30°	486.8	479.8	469.8	461.8	455.8	451.8	445.8	437.8	431.8	428.8	421.8
32.5°	450.8	442.8	433.8	425.8	422.8	417.8	412.8	404.8	399.8	396.8	391.8
35°	410.8	404.8	394.8	388.8	383.8	381.8	377.8	369.8	367.8	364.8	358.8
37.5°	368.8	363.8	356.8	351.8	347.8	345.8	341.8	336.9	333.9	330.9	327.9
40°	329.9	325.9	319.9	315.9	310.9	307.9	307.9	301.9	299.9	299.9	296.9
42.5°	291.9	289.9	284.9	278.9	277.9	274.9	273.9	270.9	268.9	267.9	266.9
45°	259.9	256.9	251.9	248.9	245.9	245.9	242.9	239.9	238.9	237.9	236.9
47.5°	231.9	227.9	223.9	220.9	218.9	217.9	214.9	212.9	211.9	211.9	210.9
50°	206.9	203.9	199.9	196.9	194.9	192.9	190.9	188.9	187.9	186.9	186.9
52.5°	185.9	181.9	177.9	174.9	171.9	170.9	168.9	166.9	165.9	164.9	163.9
55°	166.9	163.9	158.9	155.9	152.9	152.9	149.9	146.9	144.9	143.9	142.9
57.5°	148.9	145.9	140.9	137.9	135.9	133.9	131.9	129.9	127.9	125.9	123.9
60°	132.9	129.9	124.9	120.9	119.9	117.9	115.9	112.0	110.0	108.0	106.0
62.5°	117.9	113.9	110.0	106.0	105.0	103.0	100.0	97.0	94.0	92.0	89.0
65°	104.0	101.0	96.0	93.0	90.0	89.0	86.0	82.0	79.0	77.0	74.0
67.5°	91.0	87.0	82.0	79.0	77.0	75.0	72.0	69.0	66.0	63.0	60.0
70°	78.0	75.0	70.0	67.0	65.0	63.0	60.0	56.0	53.0	50.0	48.0
72.5°	66.0	62.0	58.0	55.0	53.0	51.0	48.0	45.0	42.0	40.0	37.0
75°	55.0	51.0	48.0	44.0	43.0	41.0	38.0	35.0	32.0	30.0	28.0
77.5°	44.0	41.0	37.0	35.0	33.0	31.0	29.0	26.0	24.0	21.0	19.0
80°	33.0	30.0	27.0	25.0	23.0	22.0	20.0	18.0	16.0	14.0	13.0
82.5°	22.0	20.0	17.0	16.0	15.0	14.0	12.0	11.0	10.0	9.0	8.0
85°	12.0	11.0	10.0	8.0	8.0	7.0	6.0	6.0	5.0	5.0	4.0
87.5°	5.0	4.0	4.0	3.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0
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°	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7
2.5°	648.7	644.7	644.7	644.7	641.7	642.7	643.7	644.7	643.7	640.7	643.7
5°	641.7	637.7	637.7	635.7	633.7	633.7	633.7	634.7	633.7	630.7	631.7
7.5°	632.7	627.7	626.7	624.7	622.7	621.7	621.7	621.7	620.7	616.7	618.7
10°	618.7	613.7	611.7	610.7	607.7	606.7	605.7	604.7	603.7	599.7	601.7
12.5°	601.7	597.7	593.7	592.7	589.7	587.7	586.7	586.7	584.7	580.7	582.7
15°	581.7	575.7	572.7	570.7	567.8	565.8	563.8	564.8	563.8	559.8	560.8
17.5°	557.8	551.8	548.8	547.8	543.8	541.8	540.8	540.8	539.8	535.8	536.8
20°	531.8	525.8	523.8	521.8	519.8	517.8	516.8	515.8	514.8	510.8	513.8
22.5°	505.8	498.8	495.8	495.8	491.8	490.8	489.8	490.8	489.8	485.8	487.8
25°	478.8	471.8	469.8	466.8	464.8	463.8	463.8	463.8	462.8	460.8	462.8
27.5°	448.8	443.8	440.8	439.8	437.8	436.8	435.8	436.8	436.8	433.8	435.8
30°	418.8	414.8	412.8	411.8	408.8	407.8	408.8	408.8	408.8	405.8	408.8
32.5°	388.8	385.8	384.8	381.8	379.8	379.8	379.8	380.8	379.8	377.8	380.8
35°	358.8	354.8	353.8	352.8	352.8	350.8	352.8	351.8	353.8	350.8	352.8
37.5°	326.9	324.9	323.9	323.9	321.9	322.9	322.9	322.9	324.9	321.9	323.9
40°	296.9	294.9	294.9	294.9	293.9	293.9	293.9	294.9	295.9	293.9	295.9
42.5°	266.9	265.9	265.9	264.9	263.9	264.9	265.9	265.9	266.9	264.9	265.9
45°	237.9	236.9	237.9	236.9	236.9	235.9	236.9	237.9	237.9	236.9	236.9
47.5°	210.9	210.9	209.9	209.9	209.9	209.9	209.9	209.9	209.9	207.9	209.9
50°	186.9	184.9	185.9	184.9	184.9	183.9	183.9	182.9	181.9	180.9	180.9
52.5°	163.9	161.9	161.9	160.9	159.9	159.9	158.9	157.9	156.9	154.9	154.9
55°	141.9	139.9	138.9	137.9	136.9	135.9	134.9	133.9	131.9	130.9	130.9
57.5°	121.9	119.9	117.9	117.9	115.9	114.9	113.0	111.0	110.0	108.0	108.0
60°	104.0	102.0	99.0	98.0	97.0	95.0	92.0	91.0	90.0	88.0	89.0
62.5°	87.0	84.0	81.0	80.0	79.0	77.0	75.0	73.0	72.0	73.0	73.0
65°	71.0	68.0	66.0	64.0	63.0	61.0	60.0	59.0	59.0	59.0	60.0
67.5°	57.0	54.0	52.0	51.0	49.0	48.0	48.0	48.0	48.0	48.0	48.0
70°	45.0	43.0	41.0	39.0	39.0	38.0	38.0	38.0	38.0	38.0	38.0
72.5°	34.0	32.0	31.0	31.0	30.0	30.0	30.0	30.0	29.0	29.0	30.0
75°	25.0	24.0	23.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0
77.5°	18.0	17.0	17.0	16.0	16.0	16.0	16.0	16.0	16.0	15.0	15.0
80°	12.0	11.0	11.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0	10.0
82.5°	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
85°	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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°	649.7	649.7	649.7	649.7	649.7	649.7	649.7	649.7
2.5°	637.7	641.7	642.7	639.7	640.7	638.7	639.7	637.7
5°	626.7	629.7	630.7	628.7	628.7	626.7	627.7	625.7
7.5°	612.7	615.7	616.7	614.7	614.7	612.7	612.7	611.7
10°	596.7	597.7	599.7	596.7	597.7	595.7	595.7	593.7
12.5°	576.7	578.7	580.7	577.7	577.7	576.7	576.7	573.7
15°	555.8	557.8	558.8	556.8	556.8	555.8	554.8	553.8
17.5°	533.8	534.8	536.8	533.8	535.8	533.8	533.8	531.8
20°	508.8	511.8	512.8	509.8	510.8	509.8	509.8	509.8
22.5°	484.8	486.8	487.8	485.8	486.8	484.8	485.8	483.8
25°	459.8	460.8	461.8	459.8	461.8	460.8	459.8	459.8
27.5°	433.8	434.8	435.8	433.8	435.8	434.8	435.8	433.8
30°	405.8	407.8	409.8	407.8	408.8	407.8	407.8	406.8
32.5°	377.8	379.8	381.8	379.8	381.8	379.8	380.8	378.8
35°	351.8	352.8	353.8	351.8	352.8	352.8	352.8	351.8
37.5°	322.9	324.9	324.9	323.9	325.9	324.9	324.9	322.9
40°	294.9	295.9	296.9	294.9	295.9	294.9	295.9	294.9
42.5°	265.9	267.9	268.9	266.9	266.9	266.9	265.9	266.9
45°	235.9	237.9	239.9	236.9	237.9	237.9	237.9	236.9
47.5°	208.9	208.9	209.9	208.9	209.9	207.9	209.9	208.9
50°	180.9	180.9	182.9	180.9	180.9	180.9	180.9	180.9
52.5°	153.9	154.9	154.9	152.9	153.9	152.9	153.9	152.9
55°	128.9	128.9	129.9	128.9	128.9	128.9	128.9	128.9
57.5°	107.0	108.0	108.0	107.0	108.0	107.0	107.0	107.0
60°	89.0	89.0	89.0	88.0	89.0	88.0	89.0	88.0
62.5°	72.0	73.0	73.0	72.0	73.0	72.0	72.0	72.0
65°	59.0	59.0	59.0	59.0	59.0	59.0	59.0	58.0
67.5°	47.0	47.0	48.0	47.0	48.0	48.0	48.0	48.0
70°	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0
72.5°	29.0	29.0	30.0	29.0	29.0	29.0	29.0	29.0
75°	22.0	22.0	22.0	22.0	22.0	21.0	21.0	22.0
77.5°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	16.0
80°	10.0	10.0	10.0	10.0	9.0	9.0	10.0	9.0
82.5°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
85°	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
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)