

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: P274322

Luminaire Tested: **LD4B10DE010W2N2050 EU4B1020W2N902050 4LBSW0LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274322  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1808-906-2)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBSW0LI  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, SINGLE WALLWASH WITH SPECULAR FINISH  
Light Source: W2N 2000K-5000K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 793.0 lumens  
Efficiency: N/A  
Efficacy: 56.6 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.29 / 1.17  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

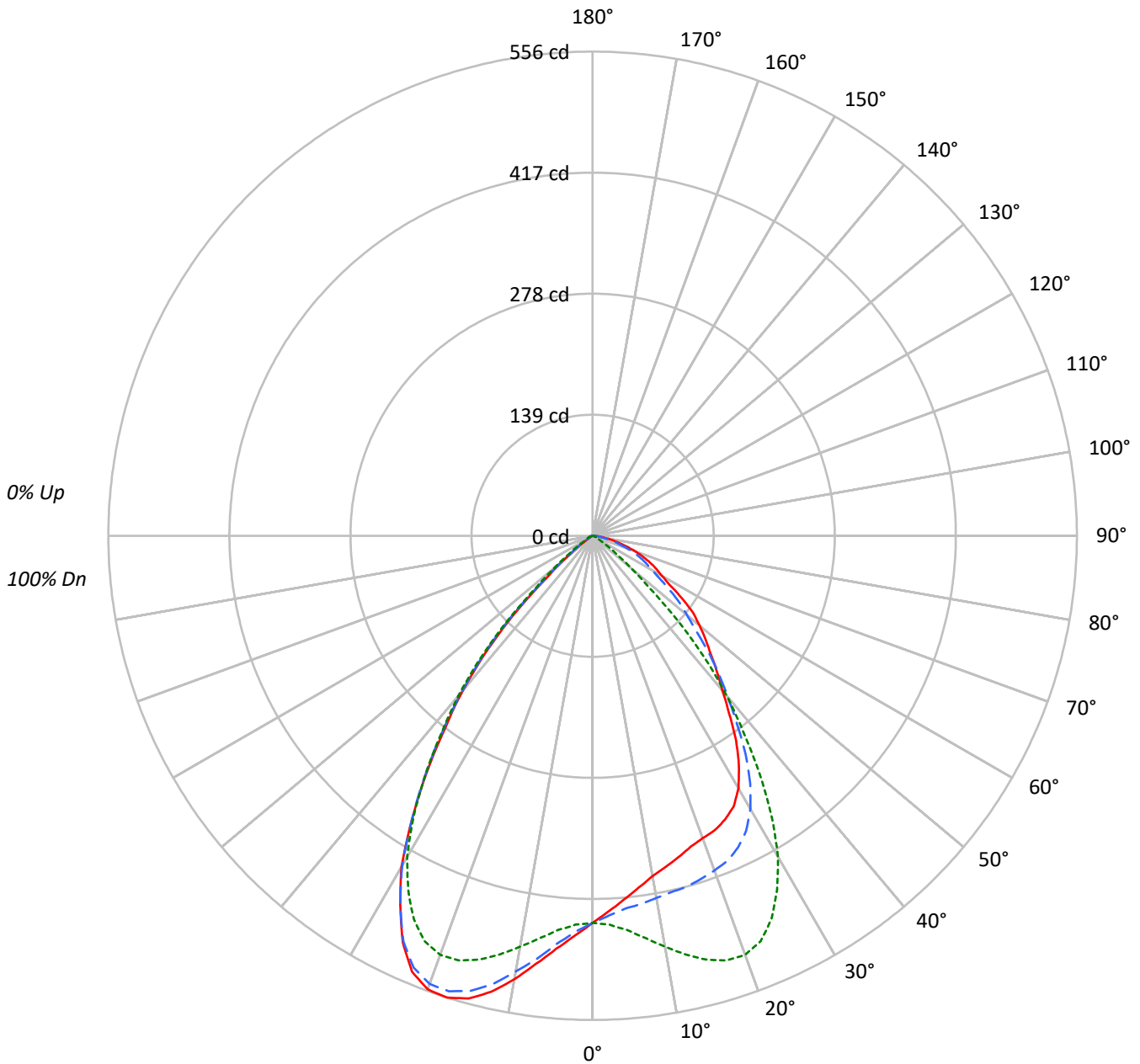
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P274322

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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	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			
1	112	109	106	103	109	106	104	101	102	100	98	98	97	95	95	94	92	90					90			
2	105	99	94	89	102	97	92	88	94	90	86	91	87	85	88	85	83	81					81			
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73					73			
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65					65			
5	86	75	68	63	84	74	68	63	72	67	62	71	66	62	69	65	61	59					59			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54					54			
7	75	64	57	52	74	63	56	52	62	56	51	61	55	51	59	54	51	49					49			
8	71	59	52	47	69	59	52	47	58	51	47	56	51	47	55	50	47	45					45			
9	67	55	48	43	65	55	48	43	54	47	43	53	47	43	52	47	43	41					41			
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38					38			

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

	0°	90°	180°
0°	43320	43320	43320
5°	40991	44454	46557
10°	39258	47422	51173
15°	38522	50842	55503
20°	38322	53111	57478
25°	38669	52240	55423
30°	37677	47895	49369
35°	34146	39833	39547
40°	29477	30432	29477
45°	26366	19213	17738
50°	24259	8506	6247
55°	21307	3636	1818
60°	17835	1598	487
65°	16742	1338	369
70°	14817	940	456
75°	11485	602	301
80°	8811	449	449
85°	7380	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.5	5.5
10°-20°	136.0	17.2
20°-30°	208.1	26.2
30°-40°	199.1	25.1
40°-50°	118.9	15.0
50°-60°	48.1	6.1
60°-70°	25.5	3.2
70°-80°	11.4	1.4
80°-90°	2.4	0.3
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°	387.6	48.9
0°-40°	586.7	74.0
0°-60°	753.7	95.0
0°-90°	793.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	793.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	444	444	444	444	444	
5°	419	430	454	470	476	39
15°	382	417	504	541	550	108
25°	360	395	486	514	515	165
35°	287	306	335	335	332	178
45°	191	187	139	134	129	149
55°	125	107	21	12	11	112
65°	73	61	6	2	2	71
75°	30	24	2	1	1	33
85°	7	5	0	0	0	8
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°	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5
2.5°	431.3	432.2	432.2	433.0	432.2	433.8	433.0	435.4	434.6	435.4	436.3
5°	419.0	419.0	419.0	420.6	420.6	422.3	422.3	423.9	426.4	428.0	429.7
7.5°	407.4	406.6	408.2	408.2	409.9	411.5	413.2	416.5	419.0	422.3	426.4
10°	396.7	396.7	398.3	400.0	400.8	403.3	404.9	408.2	411.5	417.3	422.3
12.5°	389.3	388.4	390.1	391.7	394.2	395.9	397.5	402.5	406.6	413.2	419.0
15°	381.8	381.8	383.5	385.1	387.6	390.1	391.7	397.5	402.5	409.9	417.3
17.5°	374.4	374.4	376.1	378.5	381.0	383.5	385.1	390.9	397.5	405.8	413.2
20°	369.5	368.6	371.1	372.8	376.1	379.4	381.0	386.8	392.6	400.8	409.1
22.5°	366.2	365.3	367.0	368.6	371.9	375.2	376.9	381.8	388.4	395.0	404.1
25°	359.6	359.6	361.2	362.9	366.2	368.6	370.3	375.2	381.0	387.6	395.0
27.5°	350.5	349.7	351.3	352.2	355.5	357.9	359.6	363.7	369.5	373.6	381.8
30°	334.8	334.8	334.8	336.5	338.1	341.4	342.3	346.4	350.5	356.3	362.0
32.5°	312.6	313.4	313.4	315.0	316.7	319.2	320.0	323.3	327.4	330.7	336.5
35°	287.0	285.4	286.2	287.0	289.5	291.1	291.1	295.2	296.1	300.2	306.0
37.5°	257.3	258.1	258.1	259.0	261.4	261.4	263.9	264.7	267.2	269.7	272.2
40°	231.7	232.6	233.4	233.4	235.0	235.0	235.9	237.5	238.3	240.8	240.8
42.5°	211.1	209.5	210.3	209.5	211.1	212.0	212.8	212.8	213.6	213.6	213.6
45°	191.3	191.3	191.3	191.3	191.3	191.3	192.2	193.0	191.3	189.7	187.2
47.5°	175.7	175.7	174.8	174.8	174.0	174.0	173.2	170.7	168.2	164.9	160.0
50°	160.0	160.0	160.0	158.3	158.3	156.7	156.7	154.2	150.9	146.8	141.0
52.5°	145.1	144.3	145.1	143.5	141.9	141.9	141.0	138.6	135.3	130.3	125.4
55°	125.4	125.4	124.5	122.9	122.1	122.1	122.1	119.6	116.3	113.0	107.2
57.5°	104.7	104.7	104.7	103.1	102.3	102.3	101.4	100.6	98.1	94.8	90.7
60°	91.5	91.5	91.5	90.7	89.1	89.1	88.2	86.6	84.9	81.6	78.3
62.5°	82.5	81.6	81.6	81.6	80.0	80.0	80.0	78.3	75.9	73.4	70.1
65°	72.6	72.6	72.6	71.8	70.9	70.9	70.1	69.3	66.8	65.2	61.0
67.5°	61.9	62.7	61.9	61.0	60.2	61.0	60.2	58.6	56.9	55.3	52.0
70°	52.0	51.1	51.1	50.3	50.3	49.5	49.5	47.8	46.2	44.5	42.1
72.5°	40.4	40.4	40.4	39.6	38.8	38.8	37.9	37.9	36.3	33.8	32.2
75°	30.5	30.5	30.5	29.7	29.7	28.9	28.0	28.0	27.2	25.6	23.9
77.5°	22.3	22.3	22.3	21.4	21.4	20.6	20.6	19.8	19.0	18.1	16.5
80°	15.7	15.7	15.7	14.8	14.8	14.8	14.0	14.0	13.2	12.4	10.7
82.5°	10.7	10.7	10.7	10.7	9.9	9.9	9.9	9.1	9.1	8.2	7.4
85°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	5.8	5.8	4.9	4.9
87.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.5	2.5
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°	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5
2.5°	436.3	438.7	438.7	440.4	441.2	442.0	442.0	444.5	445.3	447.0	447.0
5°	432.2	434.6	437.9	441.2	441.2	443.7	445.3	448.6	451.1	454.4	456.9
7.5°	429.7	433.8	438.7	442.9	445.3	447.8	451.9	456.1	460.2	466.0	469.3
10°	428.0	433.8	440.4	447.0	450.3	453.6	460.2	464.3	471.7	479.2	483.3
12.5°	426.4	433.8	442.9	451.1	455.2	460.2	469.3	475.0	484.1	492.4	499.0
15°	425.6	433.8	444.5	455.2	460.2	465.1	476.7	484.9	494.0	503.9	512.1
17.5°	422.3	433.8	445.3	458.5	463.5	469.3	480.8	490.7	500.6	511.3	518.7
20°	419.8	430.5	444.5	457.7	464.3	469.3	482.5	492.4	502.3	512.1	520.4
22.5°	414.8	424.7	438.7	451.9	457.7	462.7	475.0	485.8	494.0	503.9	509.7
25°	405.8	416.5	428.0	440.4	445.3	449.5	459.4	469.3	476.7	485.8	492.4
27.5°	390.9	400.0	411.5	420.6	426.4	428.0	436.3	445.3	451.1	458.5	462.7
30°	369.5	376.9	385.1	394.2	399.2	399.2	406.6	414.0	418.1	425.6	428.0
32.5°	341.4	347.2	354.6	359.6	362.0	363.7	368.6	373.6	377.7	382.7	384.3
35°	309.3	315.0	317.5	322.5	321.6	323.3	326.6	329.1	333.2	334.8	336.5
37.5°	273.8	277.1	279.6	279.6	281.2	278.8	281.2	281.2	283.7	284.5	288.6
40°	240.8	241.6	240.0	240.0	240.0	237.5	237.5	236.7	236.7	239.2	237.5
42.5°	212.0	208.7	204.5	201.2	198.8	195.5	193.0	192.2	189.7	191.3	189.7
45°	183.9	177.3	169.9	161.6	157.5	153.4	147.6	143.5	141.0	139.4	139.4
47.5°	154.2	145.1	134.4	122.1	115.5	109.7	102.3	94.0	90.7	87.4	84.1
50°	132.8	122.9	110.5	96.5	89.9	83.3	72.6	65.2	59.4	56.1	53.6
52.5°	117.1	105.6	93.2	78.3	70.9	64.3	52.8	45.4	38.8	34.6	32.2
55°	100.6	90.7	78.3	64.3	56.9	49.5	38.8	30.5	24.7	21.4	19.0
57.5°	84.9	76.7	65.2	51.1	43.7	37.9	28.0	20.6	15.7	12.4	10.7
60°	72.6	65.2	55.3	42.9	36.3	30.5	21.4	15.7	10.7	8.2	6.6
62.5°	65.2	57.7	47.8	37.1	32.2	27.2	18.1	13.2	9.1	6.6	4.9
65°	56.9	49.5	41.2	31.3	27.2	23.1	15.7	10.7	7.4	5.8	4.1
67.5°	47.0	41.2	33.8	26.4	22.3	19.0	13.2	9.1	5.8	4.9	3.3
70°	37.9	33.0	27.2	20.6	17.3	14.8	9.9	6.6	4.9	3.3	2.5
72.5°	28.9	24.7	20.6	15.7	13.2	11.5	7.4	4.9	4.1	2.5	1.6
75°	21.4	18.1	14.0	10.7	9.9	8.2	5.8	4.1	2.5	1.6	1.6
77.5°	14.8	12.4	9.9	7.4	6.6	5.8	4.1	2.5	1.6	1.6	0.8
80°	9.9	8.2	6.6	4.9	4.1	4.1	2.5	1.6	1.6	0.8	0.8
82.5°	6.6	4.9	4.1	3.3	2.5	2.5	1.6	0.8	0.8	0.8	0.8
85°	4.1	3.3	2.5	1.6	1.6	0.8	0.8	0.8	0.0	0.0	0.0
87.5°	2.5	1.6	0.8	0.8	0.8	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5
2.5°	448.6	449.5	451.1	451.1	451.9	451.9	453.6	455.2	455.2	456.1	456.9
5°	457.7	461.0	461.8	462.7	465.1	465.1	466.8	469.3	470.1	470.9	470.9
7.5°	472.6	475.0	477.5	479.2	480.8	482.5	485.8	488.2	489.9	489.9	490.7
10°	487.4	491.5	496.5	498.1	499.8	501.4	505.5	506.4	508.0	508.8	510.5
12.5°	504.7	508.8	513.8	515.4	517.9	520.4	523.7	524.5	527.0	528.6	529.5
15°	517.9	522.9	527.8	529.5	531.9	534.4	537.7	538.5	541.0	541.8	544.3
17.5°	525.3	530.3	535.2	537.7	539.4	541.8	546.8	546.8	548.4	549.3	550.9
20°	524.5	531.1	536.1	537.7	540.2	542.7	546.0	546.8	547.6	549.3	550.1
22.5°	516.3	522.0	524.5	527.0	529.5	530.3	534.4	535.2	536.9	536.9	538.5
25°	496.5	500.6	504.7	505.5	508.8	509.7	510.5	510.5	513.8	513.0	514.6
27.5°	467.6	470.9	473.4	474.2	475.9	475.9	477.5	476.7	478.3	477.5	480.0
30°	430.5	433.8	435.4	436.3	436.3	436.3	437.1	436.3	437.1	434.6	434.6
32.5°	386.0	389.3	388.4	389.3	390.9	389.3	389.3	385.1	386.0	386.8	386.8
35°	337.3	338.1	342.3	340.6	339.8	337.3	337.3	336.5	334.8	333.2	332.4
37.5°	287.8	289.5	288.6	287.0	287.0	287.8	285.4	285.4	282.9	282.1	282.1
40°	238.3	239.2	235.9	236.7	237.5	236.7	235.9	235.9	232.6	231.7	231.7
42.5°	189.7	187.2	188.0	188.9	187.2	188.0	188.9	187.2	185.6	183.9	184.7
45°	139.4	135.3	135.3	134.4	135.3	135.3	136.1	135.3	134.4	131.1	132.8
47.5°	84.1	81.6	80.0	80.0	80.0	79.2	77.5	79.2	78.3	76.7	77.5
50°	52.0	48.7	48.7	47.0	46.2	47.0	45.4	44.5	43.7	42.1	42.9
52.5°	30.5	28.9	27.2	27.2	26.4	25.6	25.6	23.9	23.9	23.9	23.9
55°	16.5	14.8	13.2	12.4	12.4	11.5	11.5	11.5	11.5	10.7	10.7
57.5°	9.1	8.2	6.6	5.8	4.9	4.9	4.1	4.1	4.1	3.3	4.1
60°	4.9	4.1	3.3	3.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5
62.5°	4.1	3.3	2.5	2.5	2.5	1.6	1.6	1.6	1.6	1.6	1.6
65°	3.3	2.5	2.5	2.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
67.5°	2.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
72.5°	1.6	1.6	0.8	1.6	0.8	0.8	0.8	0.8	1.6	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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°	444.5	444.5	444.5	444.5	444.5	444.5	444.5	444.5
2.5°	456.1	457.7	458.5	457.7	458.5	458.5	458.5	459.4
5°	473.4	474.2	475.0	473.4	475.0	475.0	475.0	475.9
7.5°	491.5	493.2	494.0	494.0	494.0	494.8	494.8	495.7
10°	513.0	513.0	513.8	513.8	514.6	515.4	513.8	517.1
12.5°	531.1	532.8	532.8	532.8	533.6	533.6	533.6	536.1
15°	545.1	546.0	546.8	546.8	546.8	549.3	548.4	550.1
17.5°	552.6	554.2	554.2	553.4	555.0	555.9	555.0	555.9
20°	550.9	552.6	551.7	551.7	552.6	553.4	552.6	554.2
22.5°	539.4	539.4	539.4	537.7	540.2	540.2	538.5	541.8
25°	513.8	515.4	514.6	513.0	513.0	513.8	512.1	515.4
27.5°	480.0	480.0	478.3	478.3	476.7	477.5	478.3	478.3
30°	436.3	435.4	435.4	433.8	435.4	434.6	434.6	438.7
32.5°	384.3	385.1	384.3	383.5	385.1	385.1	385.1	386.0
35°	334.8	334.0	332.4	331.5	333.2	330.7	331.5	332.4
37.5°	281.2	279.6	279.6	277.9	279.6	277.9	277.1	277.9
40°	231.7	230.9	230.9	230.1	230.1	230.9	229.3	231.7
42.5°	183.1	181.4	182.3	182.3	180.6	180.6	180.6	181.4
45°	133.6	132.0	132.8	132.0	130.3	129.5	129.5	128.7
47.5°	75.9	75.9	74.2	75.9	75.9	75.0	73.4	71.8
50°	42.9	42.9	42.1	42.1	42.1	41.2	41.2	41.2
52.5°	23.1	23.1	23.1	23.1	22.3	23.1	23.1	23.1
55°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
57.5°	3.3	4.1	4.1	3.3	4.1	3.3	4.1	3.3
60°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
62.5°	2.5	1.6	2.5	2.5	1.6	2.5	2.5	2.5
65°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
67.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
72.5°	1.6	0.8	1.6	1.6	1.6	1.6	1.6	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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)