

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: P274353

Luminaire Tested: **LD4B15DE010W2N2050 EU4B1020W2N902050 4LBLWW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274353  
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: LD4B15DE010W2N2050 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: 947.1 lumens  
Efficiency: N/A  
Efficacy: 43.0 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

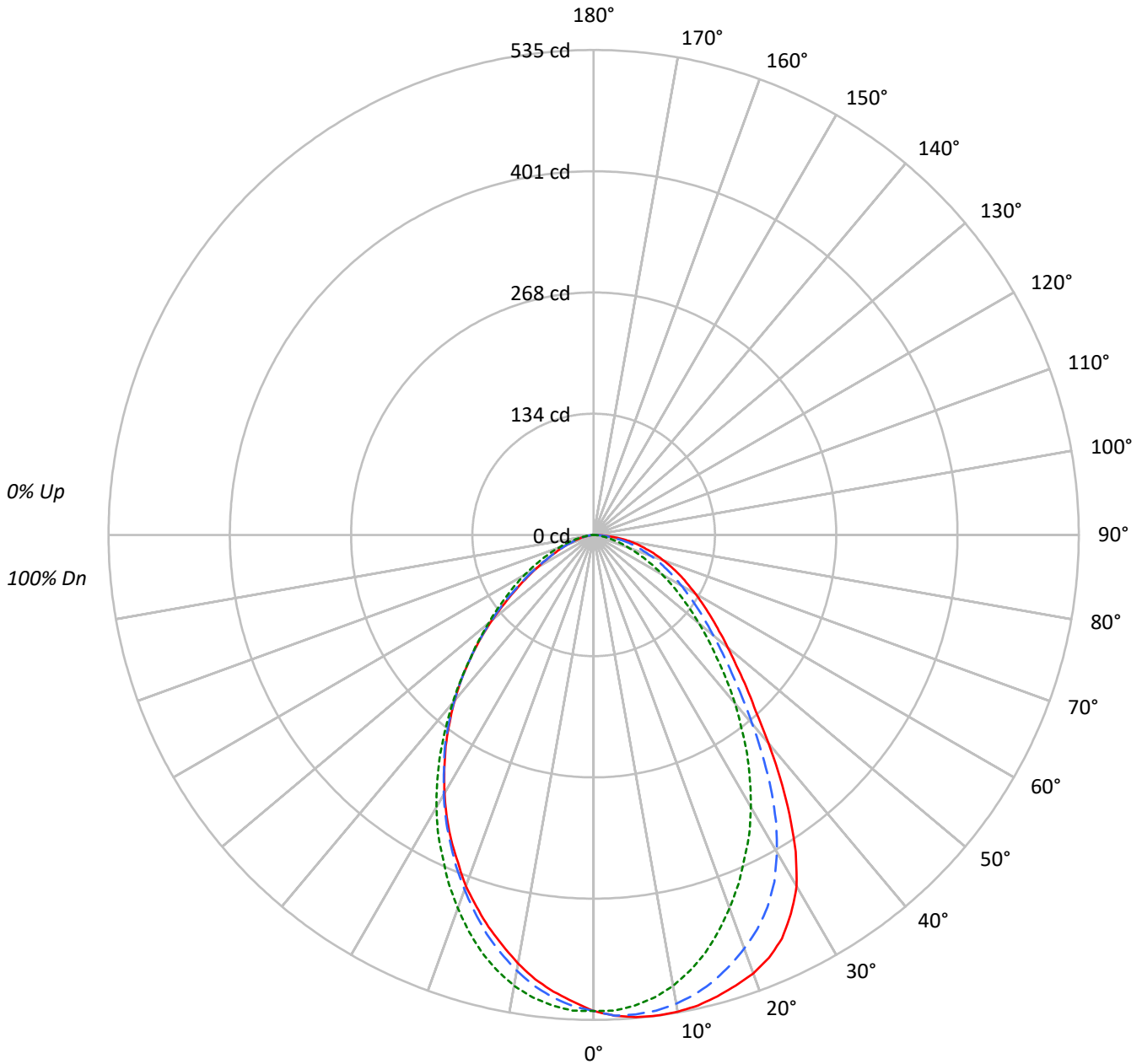
Input Watts (W): 22  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P274353

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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																			
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88																			
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76																			
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67																			
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47																			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

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

	0°	90°	180°
0°	51185	51185	51185
5°	52251	50989	49483
10°	52855	49976	47502
15°	53162	48107	45171
20°	53381	45426	42740
25°	52831	42314	39970
30°	50382	39016	37013
35°	44806	35086	33836
40°	38141	30839	30330
45°	32858	26504	26394
50°	29277	22909	22182
55°	26914	19778	17705
60°	25203	17016	13859
65°	24214	14344	10815
70°	23252	11512	8748
75°	22518	9112	6703
80°	22674	6342	4097
85°	19010	4473	1789



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	49.2	5.2
10°-20°	135.2	14.3
20°-30°	189.0	20.0
30°-40°	194.3	20.5
40°-50°	157.7	16.7
50°-60°	111.0	11.7
60°-70°	68.4	7.2
70°-80°	34.1	3.6
80°-90°	8.1	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°	373.4	39.4
0°-40°	567.7	59.9
0°-60°	836.5	88.3
0°-90°	947.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	947.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	525	525	525	525	525	
5°	534	531	521	512	506	51
15°	527	510	477	456	448	149
25°	491	453	394	374	372	225
35°	377	340	295	286	284	234
45°	238	215	192	192	192	185
55°	158	139	116	107	104	142
65°	105	88	62	48	47	104
75°	60	47	24	18	18	64
85°	17	11	4	2	2	20
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°	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2
2.5°	530.9	531.7	529.3	531.7	528.5	530.1	530.9	529.3	527.7	530.9	530.9
5°	534.1	534.1	531.7	534.9	530.9	531.7	533.3	530.9	528.5	531.7	530.9
7.5°	534.9	534.9	531.7	534.9	530.9	531.7	532.5	530.1	527.7	530.1	529.3
10°	534.1	533.3	530.9	534.1	530.1	530.1	530.9	528.5	524.4	526.9	525.2
12.5°	531.7	531.7	528.5	531.7	526.1	526.1	526.9	523.6	520.4	520.4	518.8
15°	526.9	526.9	523.6	526.1	521.2	521.2	520.4	517.2	513.1	513.1	509.9
17.5°	521.2	521.2	518.0	520.4	514.7	514.7	513.9	509.1	503.4	502.6	498.6
20°	514.7	514.7	510.7	512.3	505.8	505.8	505.0	499.4	492.9	491.3	485.6
22.5°	505.0	505.0	501.0	501.8	495.3	494.5	493.7	487.3	480.8	478.4	471.1
25°	491.3	490.5	487.3	487.3	480.8	479.2	477.6	471.1	464.6	459.8	453.3
27.5°	471.1	471.9	467.9	468.7	460.6	459.0	458.2	450.1	442.8	438.0	431.5
30°	447.7	445.2	441.2	441.2	434.7	433.9	432.3	425.0	417.0	411.3	404.0
32.5°	414.5	413.7	409.7	409.7	402.4	402.4	399.2	391.9	384.6	381.4	374.1
35°	376.6	375.8	372.5	372.5	366.1	366.9	363.6	358.0	350.7	345.9	340.2
37.5°	337.8	337.0	333.7	334.5	328.9	328.9	326.5	320.8	315.1	312.7	305.4
40°	299.8	299.0	294.9	297.4	292.5	290.9	290.1	286.1	279.6	276.4	272.3
42.5°	265.0	265.9	261.8	263.4	259.4	257.8	257.0	253.7	248.9	245.7	241.6
45°	238.4	236.8	235.1	235.1	231.1	230.3	229.5	225.5	222.2	219.0	214.9
47.5°	213.3	211.7	210.1	210.9	207.7	206.9	205.2	202.0	198.0	196.4	192.3
50°	193.1	192.3	189.9	189.9	186.7	185.9	184.2	181.8	177.8	175.4	172.1
52.5°	174.5	174.5	172.1	171.3	168.9	168.1	167.3	164.0	160.8	157.6	154.3
55°	158.4	157.6	156.0	156.0	152.7	151.9	151.1	147.9	144.6	142.2	139.0
57.5°	143.0	143.0	141.4	141.4	139.0	137.4	137.4	134.1	130.1	128.5	124.4
60°	129.3	129.3	127.7	127.7	125.3	125.3	123.6	120.4	118.0	114.7	111.5
62.5°	116.4	117.2	115.6	114.7	112.3	111.5	111.5	109.1	105.0	102.6	99.4
65°	105.0	104.2	103.4	102.6	100.2	99.4	99.4	96.2	93.7	90.5	88.1
67.5°	92.9	92.9	91.3	91.3	89.7	88.9	87.3	84.8	82.4	80.0	77.6
70°	81.6	81.6	80.8	80.8	78.4	77.6	76.8	74.3	71.9	69.5	66.3
72.5°	71.1	70.3	69.5	69.5	67.9	67.1	66.3	63.8	61.4	59.0	56.6
75°	59.8	59.8	59.0	59.0	57.4	56.6	56.6	54.9	51.7	50.1	46.9
77.5°	50.1	50.1	49.3	49.3	47.7	47.7	46.9	44.4	42.8	40.4	38.8
80°	40.4	39.6	39.6	38.8	37.2	37.2	36.4	35.6	33.1	31.5	29.1
82.5°	28.3	28.3	28.3	27.5	26.7	26.7	25.9	24.2	22.6	21.8	19.4
85°	17.0	17.0	16.2	15.4	16.2	15.4	14.5	13.7	12.9	12.1	11.3
87.5°	7.3	7.3	6.5	6.5	6.5	6.5	6.5	5.7	4.8	4.8	4.0
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°	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2
2.5°	526.1	528.5	527.7	526.9	525.2	525.2	525.2	524.4	525.2	525.2	523.6
5°	526.1	527.7	526.9	525.2	523.6	523.6	522.8	521.2	521.2	521.2	518.0
7.5°	523.6	525.2	522.8	521.2	519.6	518.0	518.0	515.5	515.5	514.7	511.5
10°	518.8	519.6	516.4	514.7	512.3	511.5	509.9	506.7	505.8	505.0	501.8
12.5°	511.5	512.3	508.3	505.0	501.8	501.0	499.4	495.3	493.7	492.1	488.1
15°	501.0	501.0	496.2	492.1	488.9	488.1	484.0	480.0	478.4	476.8	471.1
17.5°	488.9	488.1	481.6	477.6	473.5	471.9	467.9	463.0	459.8	458.2	453.3
20°	476.0	473.5	466.3	462.2	457.4	454.9	450.9	444.4	441.2	438.0	433.1
22.5°	460.6	457.4	449.3	443.6	438.8	436.4	430.7	425.0	420.2	417.0	411.3
25°	442.0	438.0	429.1	421.8	417.8	415.3	409.7	403.2	398.4	393.5	388.7
27.5°	420.2	415.3	406.5	399.2	395.1	391.1	387.1	379.8	375.8	371.7	366.1
30°	393.5	387.9	379.8	373.3	368.5	365.2	360.4	353.9	349.1	346.7	341.0
32.5°	364.4	358.0	350.7	344.2	341.8	337.8	333.7	327.3	323.2	320.8	316.8
35°	332.1	327.3	319.2	314.3	310.3	308.7	305.4	299.0	297.4	294.9	290.1
37.5°	298.2	294.1	288.5	284.4	281.2	279.6	276.4	272.3	269.9	267.5	265.0
40°	266.7	263.4	258.6	255.3	251.3	248.9	248.9	244.0	242.4	242.4	240.0
42.5°	236.0	234.3	230.3	225.5	224.6	222.2	221.4	219.0	217.4	216.6	215.8
45°	210.1	207.7	203.6	201.2	198.8	198.8	196.4	193.9	193.1	192.3	191.5
47.5°	187.5	184.2	181.0	178.6	177.0	176.2	173.7	172.1	171.3	171.3	170.5
50°	167.3	164.8	161.6	159.2	157.6	156.0	154.3	152.7	151.9	151.1	151.1
52.5°	150.3	147.1	143.8	141.4	139.0	138.2	136.6	134.9	134.1	133.3	132.5
55°	134.9	132.5	128.5	126.1	123.6	123.6	121.2	118.8	117.2	116.4	115.6
57.5°	120.4	118.0	113.9	111.5	109.9	108.3	106.7	105.0	103.4	101.8	100.2
60°	107.5	105.0	101.0	97.8	97.0	95.4	93.7	90.5	88.9	87.3	85.7
62.5°	95.4	92.1	88.9	85.7	84.8	83.2	80.8	78.4	76.0	74.3	71.9
65°	84.0	81.6	77.6	75.2	72.7	71.9	69.5	66.3	63.8	62.2	59.8
67.5°	73.5	70.3	66.3	63.8	62.2	60.6	58.2	55.8	53.3	50.9	48.5
70°	63.0	60.6	56.6	54.1	52.5	50.9	48.5	45.3	42.8	40.4	38.8
72.5°	53.3	50.1	46.9	44.4	42.8	41.2	38.8	36.4	33.9	32.3	29.9
75°	44.4	41.2	38.8	35.6	34.7	33.1	30.7	28.3	25.9	24.2	22.6
77.5°	35.6	33.1	29.9	28.3	26.7	25.1	23.4	21.0	19.4	17.0	15.4
80°	26.7	24.2	21.8	20.2	18.6	17.8	16.2	14.5	12.9	11.3	10.5
82.5°	17.8	16.2	13.7	12.9	12.1	11.3	9.7	8.9	8.1	7.3	6.5
85°	9.7	8.9	8.1	6.5	6.5	5.7	4.8	4.8	4.0	4.0	3.2
87.5°	4.0	3.2	3.2	2.4	2.4	2.4	1.6	1.6	1.6	0.8	0.8
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2
2.5°	524.4	521.2	521.2	521.2	518.8	519.6	520.4	521.2	520.4	518.0	520.4
5°	518.8	515.5	515.5	513.9	512.3	512.3	512.3	513.1	512.3	509.9	510.7
7.5°	511.5	507.5	506.7	505.0	503.4	502.6	502.6	502.6	501.8	498.6	500.2
10°	500.2	496.2	494.5	493.7	491.3	490.5	489.7	488.9	488.1	484.8	486.5
12.5°	486.5	483.2	480.0	479.2	476.8	475.1	474.3	474.3	472.7	469.5	471.1
15°	470.3	465.4	463.0	461.4	459.0	457.4	455.7	456.6	455.7	452.5	453.3
17.5°	450.9	446.1	443.6	442.8	439.6	438.0	437.2	437.2	436.4	433.1	433.9
20°	429.9	425.0	423.4	421.8	420.2	418.6	417.8	417.0	416.2	412.9	415.3
22.5°	408.9	403.2	400.8	400.8	397.6	396.8	396.0	396.8	396.0	392.7	394.3
25°	387.1	381.4	379.8	377.4	375.8	374.9	374.9	374.9	374.1	372.5	374.1
27.5°	362.8	358.8	356.4	355.5	353.9	353.1	352.3	353.1	353.1	350.7	352.3
30°	338.6	335.3	333.7	332.9	330.5	329.7	330.5	330.5	330.5	328.1	330.5
32.5°	314.3	311.9	311.1	308.7	307.1	307.1	307.1	307.9	307.1	305.4	307.9
35°	290.1	286.9	286.1	285.2	285.2	283.6	285.2	284.4	286.1	283.6	285.2
37.5°	264.2	262.6	261.8	261.8	260.2	261.0	261.0	261.0	262.6	260.2	261.8
40°	240.0	238.4	238.4	238.4	237.6	237.6	237.6	238.4	239.2	237.6	239.2
42.5°	215.8	214.9	214.9	214.1	213.3	214.1	214.9	214.9	215.8	214.1	214.9
45°	192.3	191.5	192.3	191.5	191.5	190.7	191.5	192.3	192.3	191.5	191.5
47.5°	170.5	170.5	169.7	169.7	169.7	169.7	169.7	169.7	169.7	168.1	169.7
50°	151.1	149.5	150.3	149.5	149.5	148.7	148.7	147.9	147.1	146.3	146.3
52.5°	132.5	130.9	130.9	130.1	129.3	129.3	128.5	127.7	126.9	125.3	125.3
55°	114.7	113.1	112.3	111.5	110.7	109.9	109.1	108.3	106.7	105.9	105.9
57.5°	98.6	97.0	95.4	95.4	93.7	92.9	91.3	89.7	88.9	87.3	87.3
60°	84.0	82.4	80.0	79.2	78.4	76.8	74.3	73.5	72.7	71.1	71.9
62.5°	70.3	67.9	65.5	64.6	63.8	62.2	60.6	59.0	58.2	59.0	59.0
65°	57.4	54.9	53.3	51.7	50.9	49.3	48.5	47.7	47.7	47.7	48.5
67.5°	46.1	43.6	42.0	41.2	39.6	38.8	38.8	38.8	38.8	38.8	38.8
70°	36.4	34.7	33.1	31.5	31.5	30.7	30.7	30.7	30.7	30.7	30.7
72.5°	27.5	25.9	25.1	25.1	24.2	24.2	24.2	24.2	23.4	23.4	24.2
75°	20.2	19.4	18.6	18.6	18.6	17.8	17.8	17.8	17.8	17.8	17.8
77.5°	14.5	13.7	13.7	12.9	12.9	12.9	12.9	12.9	12.9	12.1	12.1
80°	9.7	8.9	8.9	8.9	8.9	8.1	8.1	8.1	8.1	8.1	8.1
82.5°	5.7	5.7	5.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
85°	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	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°	525.2	525.2	525.2	525.2	525.2	525.2	525.2	525.2
2.5°	515.5	518.8	519.6	517.2	518.0	516.4	517.2	515.5
5°	506.7	509.1	509.9	508.3	508.3	506.7	507.5	505.8
7.5°	495.3	497.8	498.6	497.0	497.0	495.3	495.3	494.5
10°	482.4	483.2	484.8	482.4	483.2	481.6	481.6	480.0
12.5°	466.3	467.9	469.5	467.1	467.1	466.3	466.3	463.8
15°	449.3	450.9	451.7	450.1	450.1	449.3	448.5	447.7
17.5°	431.5	432.3	433.9	431.5	433.1	431.5	431.5	429.9
20°	411.3	413.7	414.5	412.1	412.9	412.1	412.1	412.1
22.5°	391.9	393.5	394.3	392.7	393.5	391.9	392.7	391.1
25°	371.7	372.5	373.3	371.7	373.3	372.5	371.7	371.7
27.5°	350.7	351.5	352.3	350.7	352.3	351.5	352.3	350.7
30°	328.1	329.7	331.3	329.7	330.5	329.7	329.7	328.9
32.5°	305.4	307.1	308.7	307.1	308.7	307.1	307.9	306.3
35°	284.4	285.2	286.1	284.4	285.2	285.2	285.2	284.4
37.5°	261.0	262.6	262.6	261.8	263.4	262.6	262.6	261.0
40°	238.4	239.2	240.0	238.4	239.2	238.4	239.2	238.4
42.5°	214.9	216.6	217.4	215.8	215.8	215.8	214.9	215.8
45°	190.7	192.3	193.9	191.5	192.3	192.3	192.3	191.5
47.5°	168.9	168.9	169.7	168.9	169.7	168.1	169.7	168.9
50°	146.3	146.3	147.9	146.3	146.3	146.3	146.3	146.3
52.5°	124.4	125.3	125.3	123.6	124.4	123.6	124.4	123.6
55°	104.2	104.2	105.0	104.2	104.2	104.2	104.2	104.2
57.5°	86.5	87.3	87.3	86.5	87.3	86.5	86.5	86.5
60°	71.9	71.9	71.9	71.1	71.9	71.1	71.9	71.1
62.5°	58.2	59.0	59.0	58.2	59.0	58.2	58.2	58.2
65°	47.7	47.7	47.7	47.7	47.7	47.7	47.7	46.9
67.5°	38.0	38.0	38.8	38.0	38.8	38.8	38.8	38.8
70°	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7
72.5°	23.4	23.4	24.2	23.4	23.4	23.4	23.4	23.4
75°	17.8	17.8	17.8	17.8	17.8	17.0	17.0	17.8
77.5°	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.9
80°	8.1	8.1	8.1	8.1	7.3	7.3	8.1	7.3
82.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
85°	2.4	2.4	1.6	1.6	1.6	1.6	1.6	1.6
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)