

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: P251915

Luminaire Tested: **LD4B15D010 EU4B10209035 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251915
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B15D010 EU4B10209035 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1118.0 lumens
Efficiency: N/A
Efficacy: 77.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

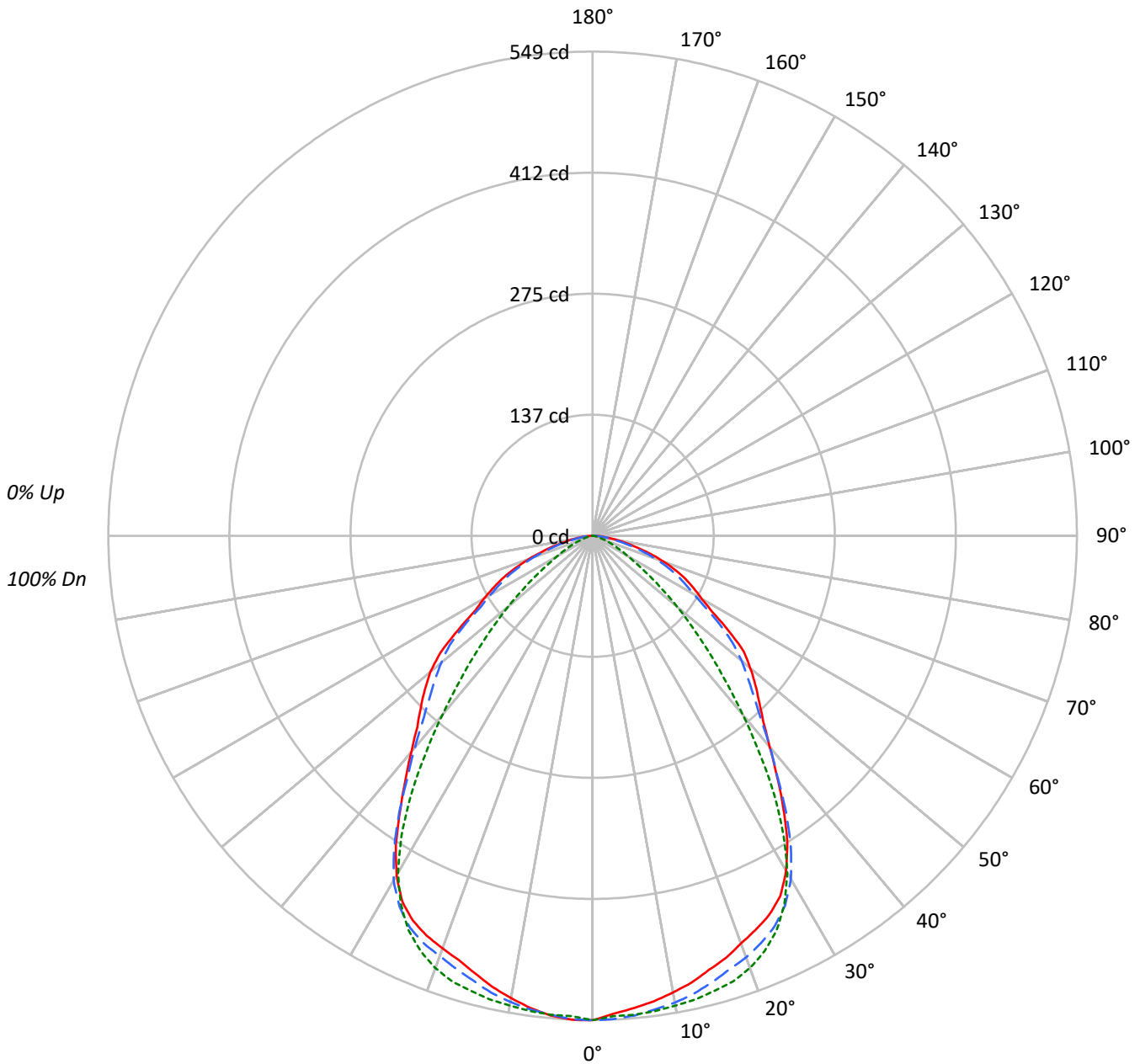
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66				
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58				
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51				
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46				
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41				
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37				
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34				
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	53534	53534	53534
5°	52584	53327	53415
10°	52024	53528	52687
15°	51417	53889	51840
20°	51016	54086	51628
25°	50981	53078	51799
30°	49358	49650	50022
35°	44841	42736	45246
40°	39681	33650	40648
45°	36813	25622	37971
50°	35372	18967	36388
55°	32029	13066	31587
60°	27834	8888	27678
65°	26889	6434	25528
70°	24335	4331	21685
75°	20032	2862	17171
80°	16108	1908	12796
85°	13195	895	8498



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.9	4.6
10°-20°	148.3	13.3
20°-30°	224.0	20.0
30°-40°	234.4	21.0
40°-50°	189.9	17.0
50°-60°	138.1	12.4
60°-70°	85.2	7.6
70°-80°	38.5	3.4
80°-90°	7.8	0.7
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°	424.1	37.9
0°-40°	658.6	58.9
0°-60°	986.5	88.2
0°-90°	1118.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1118.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	549	549	549	549	549	
5°	538	546	545	545	546	51
15°	510	524	534	522	514	144
25°	474	488	494	490	482	217
35°	377	382	359	382	380	235
45°	267	259	186	262	276	208
55°	188	177	77	178	186	168
65°	117	105	28	103	111	114
75°	53	46	8	40	46	58
85°	12	9	1	7	8	14
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°	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3
2.5°	542.6	542.6	547.7	553.6	548.5	543.4	546.8	545.1	551.0	551.0	548.5
5°	537.5	539.2	543.4	548.5	544.3	539.2	543.4	541.7	547.7	547.7	546.0
7.5°	532.4	533.3	538.4	544.3	540.0	535.0	538.4	537.5	542.6	543.4	541.7
10°	525.7	526.5	531.6	537.5	533.3	529.1	532.4	531.6	538.4	538.4	537.5
12.5°	518.9	519.8	524.8	529.9	525.7	521.5	524.8	524.8	531.6	532.4	531.6
15°	509.6	511.3	515.5	520.6	518.1	513.0	516.4	516.4	522.3	524.0	524.0
17.5°	502.0	502.9	507.1	512.2	508.8	504.5	507.9	507.9	513.8	515.5	515.5
20°	491.9	493.6	497.8	502.9	500.3	496.9	499.5	499.5	506.2	507.9	508.8
22.5°	483.4	485.1	488.5	495.3	491.0	488.5	491.9	491.0	498.6	499.5	499.5
25°	474.1	475.8	480.0	484.3	481.7	479.2	481.7	481.7	487.6	488.5	488.5
27.5°	460.6	461.4	465.7	469.9	467.4	464.0	467.4	466.5	472.4	473.3	472.4
30°	438.6	440.3	442.0	447.9	445.4	442.9	446.2	444.5	450.5	450.5	449.6
32.5°	410.7	410.7	414.1	418.3	415.0	413.3	415.8	416.7	420.9	420.9	418.3
35°	376.9	378.6	381.2	383.7	381.2	379.5	382.0	381.2	386.2	384.5	382.0
37.5°	343.1	344.0	346.5	349.9	346.5	344.0	344.8	344.0	348.2	348.2	344.0
40°	311.9	313.5	315.2	318.6	315.2	313.5	314.4	311.9	316.9	315.2	312.7
42.5°	286.5	287.3	289.9	291.6	288.2	287.3	288.2	286.5	289.0	287.3	282.3
45°	267.1	267.1	267.9	270.4	267.1	266.2	266.2	264.5	267.1	263.7	258.6
47.5°	250.2	251.0	251.9	253.5	251.0	248.5	249.3	245.9	247.6	245.1	238.3
50°	233.3	234.9	235.8	237.5	234.9	233.3	234.1	230.7	230.7	226.5	220.6
52.5°	216.4	217.2	216.4	218.0	216.4	213.8	214.7	211.3	211.3	206.2	200.3
55°	188.5	189.3	190.2	191.8	190.2	187.6	189.3	186.8	186.8	183.4	176.6
57.5°	160.6	161.4	162.3	163.1	163.1	161.4	162.3	160.6	159.7	157.2	152.1
60°	142.8	142.8	142.8	143.7	142.8	142.0	142.0	140.3	140.3	136.9	131.8
62.5°	129.3	130.2	130.2	131.0	130.2	129.3	128.5	126.8	125.9	122.5	118.3
65°	116.6	116.6	115.8	117.5	116.6	115.8	115.8	114.1	112.4	109.0	104.8
67.5°	101.4	102.3	101.4	102.3	102.3	101.4	100.6	98.9	98.0	95.5	90.4
70°	85.4	85.4	85.4	86.2	85.4	85.4	86.2	83.7	82.8	79.4	75.2
72.5°	69.3	70.1	70.1	69.3	70.1	68.5	68.5	68.5	67.6	64.2	60.0
75°	53.2	54.1	54.1	54.9	54.1	53.2	53.2	52.4	51.6	49.0	45.6
77.5°	39.7	39.7	40.6	40.6	40.6	39.7	39.7	38.0	38.0	36.3	33.0
80°	28.7	28.7	27.9	28.7	28.7	27.9	27.9	27.0	27.0	25.4	22.8
82.5°	18.6	19.4	19.4	19.4	19.4	18.6	18.6	18.6	17.7	16.9	15.2
85°	11.8	11.8	11.8	11.8	12.7	11.8	12.7	11.8	11.8	10.1	9.3
87.5°	5.1	5.1	5.1	5.9	5.9	5.1	5.1	5.1	5.1	5.1	4.2
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°	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3
2.5°	548.5	549.3	546.8	550.2	547.7	548.5	549.3	548.5	545.1	545.1	554.4
5°	545.1	546.8	544.3	548.5	546.8	546.8	548.5	547.7	544.3	545.1	553.6
7.5°	541.7	544.3	542.6	546.8	544.3	544.3	546.0	546.0	542.6	543.4	551.0
10°	536.7	540.0	539.2	543.4	540.9	540.9	543.4	543.4	540.0	540.9	548.5
12.5°	532.4	535.8	535.0	539.2	537.5	538.4	539.2	540.9	536.7	538.4	545.1
15°	525.7	529.1	529.1	533.3	531.6	533.3	535.0	537.5	534.1	534.1	540.9
17.5°	518.1	522.3	522.3	525.7	525.7	526.5	529.9	532.4	529.1	529.9	535.8
20°	509.6	514.7	514.7	518.9	518.1	519.8	522.3	524.8	521.5	521.5	528.2
22.5°	501.2	505.4	506.2	508.8	508.8	509.6	512.2	513.8	509.6	509.6	516.4
25°	489.3	493.6	494.4	496.1	494.4	494.4	496.1	497.8	493.6	493.6	499.5
27.5°	473.3	477.5	477.5	476.7	475.0	475.8	475.0	475.8	471.6	470.7	476.7
30°	449.6	452.2	452.2	451.3	448.8	448.8	446.2	447.1	441.2	441.2	446.2
32.5°	417.5	420.0	418.3	416.7	413.3	411.6	409.9	409.0	403.1	403.1	409.0
35°	379.5	381.2	378.6	375.2	371.0	368.5	365.9	362.6	358.3	359.2	362.6
37.5°	340.6	340.6	337.2	330.5	327.1	322.8	318.6	318.6	311.9	311.0	313.5
40°	307.6	304.3	298.3	289.0	283.1	278.9	273.0	269.6	264.5	264.5	268.8
42.5°	278.1	271.3	263.7	251.0	245.1	240.0	232.4	229.0	223.1	222.3	224.8
45°	251.9	245.1	234.1	220.6	213.0	207.1	196.1	191.8	186.8	185.9	187.6
47.5°	230.7	223.1	209.6	191.8	184.2	176.6	165.6	159.7	155.5	153.0	155.5
50°	212.1	202.0	187.6	169.0	158.9	152.1	138.6	132.7	126.8	125.1	125.9
52.5°	191.8	181.7	166.5	147.1	137.8	127.6	114.9	106.5	101.4	98.9	101.4
55°	169.9	159.7	144.5	125.1	114.9	105.6	92.1	85.4	79.4	76.9	79.4
57.5°	146.2	136.9	123.4	104.0	94.7	86.2	73.5	66.8	60.9	59.2	60.9
60°	125.9	118.3	104.8	86.2	78.6	69.3	58.3	51.6	46.5	45.6	46.5
62.5°	112.4	104.0	91.3	73.5	65.9	58.3	48.2	41.4	37.2	36.3	37.2
65°	98.9	89.6	77.8	62.5	54.9	49.0	38.9	33.0	28.7	27.9	28.7
67.5°	83.7	75.2	65.1	51.6	45.6	39.7	31.3	25.4	22.0	21.1	22.0
70°	69.3	61.7	51.6	41.4	35.5	31.3	23.7	19.4	16.1	15.2	16.1
72.5°	54.9	48.2	39.7	31.3	27.9	23.7	18.6	14.4	11.8	11.0	11.8
75°	42.3	37.2	30.4	22.8	20.3	17.7	12.7	10.1	8.5	7.6	8.5
77.5°	29.6	26.2	21.1	16.9	14.4	12.7	9.3	6.8	5.9	5.1	5.9
80°	20.3	17.7	14.4	11.0	9.3	7.6	5.9	4.2	3.4	3.4	3.4
82.5°	13.5	11.0	8.5	6.8	5.9	5.1	3.4	2.5	2.5	1.7	1.7
85°	7.6	6.8	5.1	4.2	3.4	2.5	1.7	1.7	0.8	0.8	0.8
87.5°	3.4	2.5	1.7	1.7	0.8	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°	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3
2.5°	551.9	549.3	552.7	549.3	547.7	549.3	547.7	552.7	548.5	545.1	548.5
5°	551.0	547.7	551.0	548.5	546.0	546.8	545.1	550.2	545.1	542.6	544.3
7.5°	549.3	546.8	548.5	546.0	543.4	544.3	542.6	546.8	541.7	539.2	540.9
10°	546.8	544.3	545.1	543.4	540.9	540.9	539.2	542.6	536.7	533.3	535.0
12.5°	543.4	540.0	541.7	539.2	535.8	535.8	534.1	536.7	530.7	527.4	528.2
15°	539.2	535.8	535.8	533.3	529.9	529.9	526.5	529.1	522.3	518.9	518.9
17.5°	534.1	529.9	529.9	527.4	523.1	522.3	519.8	522.3	514.7	511.3	511.3
20°	526.5	523.1	522.3	520.6	516.4	515.5	512.2	513.0	507.1	504.5	503.7
22.5°	516.4	513.0	513.8	511.3	507.9	507.1	503.7	506.2	500.3	497.8	498.6
25°	498.6	496.9	498.6	497.8	495.3	495.3	493.6	495.3	490.2	488.5	489.3
27.5°	478.3	477.5	478.3	478.3	476.7	476.7	476.7	479.2	474.1	473.3	473.3
30°	448.8	448.8	449.6	450.5	450.5	452.2	451.3	454.7	451.3	449.6	451.3
32.5°	409.9	413.3	415.8	415.8	415.8	417.5	419.2	421.7	418.3	419.2	419.2
35°	365.9	368.5	370.2	374.4	371.9	377.8	379.5	382.8	382.0	383.7	382.8
37.5°	316.9	320.3	323.7	329.6	328.8	335.5	338.9	345.7	344.0	347.4	349.0
40°	271.3	276.4	281.4	285.7	289.0	295.8	302.6	311.0	313.5	316.1	316.9
42.5°	227.3	232.4	240.9	246.8	251.9	262.8	272.1	282.3	284.8	289.9	291.6
45°	191.8	196.1	206.2	213.8	218.0	234.1	245.1	257.8	262.0	267.9	270.4
47.5°	158.9	166.5	176.6	185.9	191.8	208.7	223.1	236.6	242.6	249.3	252.7
50°	130.2	138.6	152.1	160.6	169.0	187.6	203.7	218.0	224.0	231.6	234.9
52.5°	106.5	115.8	128.5	137.8	147.1	166.5	183.4	196.9	204.5	209.6	214.7
55°	83.7	93.8	106.5	116.6	124.2	145.4	159.7	173.3	178.3	182.6	185.1
57.5°	65.1	72.7	85.4	93.8	103.1	121.7	136.1	146.2	150.4	155.5	157.2
60°	50.7	58.3	70.1	78.6	87.0	104.8	119.2	129.3	133.5	137.8	140.3
62.5°	40.6	48.2	59.2	66.8	74.4	90.4	103.1	113.2	118.3	122.5	125.1
65°	32.1	38.9	48.2	55.8	61.7	76.1	88.7	98.0	103.1	107.3	109.9
67.5°	25.4	31.3	39.7	44.8	50.7	62.5	73.5	82.0	86.2	91.3	93.8
70°	19.4	23.7	31.3	35.5	39.7	49.9	58.3	66.8	71.0	74.4	76.1
72.5°	14.4	17.7	23.7	27.0	29.6	38.0	44.8	50.7	54.1	57.5	59.2
75°	10.1	12.7	16.9	19.4	21.1	27.0	33.0	37.2	39.7	42.3	44.8
77.5°	6.8	8.5	11.0	12.7	14.4	18.6	22.0	25.4	27.9	30.4	31.3
80°	4.2	5.9	7.6	8.5	9.3	11.8	15.2	16.9	18.6	20.3	21.1
82.5°	2.5	3.4	4.2	5.1	5.9	7.6	9.3	11.0	11.8	13.5	14.4
85°	0.8	1.7	1.7	2.5	2.5	4.2	5.1	5.9	6.8	7.6	8.5
87.5°	0.0	0.0	0.8	0.8	0.8	0.8	1.7	1.7	1.7	1.7	1.7
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°	549.3	549.3	549.3	549.3	549.3	549.3	549.3	549.3
2.5°	551.9	549.3	547.7	546.8	552.7	545.1	548.5	549.3
5°	548.5	546.0	544.3	543.4	548.5	541.7	544.3	546.0
7.5°	543.4	541.7	539.2	538.4	543.4	535.8	539.2	540.0
10°	537.5	535.0	533.3	532.4	536.7	529.1	532.4	532.4
12.5°	529.9	528.2	524.8	524.8	528.2	521.5	524.0	524.0
15°	519.8	518.1	514.7	514.7	518.1	511.3	513.8	513.8
17.5°	511.3	509.6	507.1	506.2	509.6	502.9	505.4	504.5
20°	504.5	502.9	499.5	499.5	502.0	495.3	497.8	497.8
22.5°	498.6	497.8	494.4	494.4	497.8	491.0	492.7	491.0
25°	489.3	488.5	485.1	486.0	487.6	480.9	483.4	481.7
27.5°	474.1	474.1	470.7	469.9	472.4	466.5	468.2	467.4
30°	450.5	451.3	447.1	447.1	447.9	442.9	445.4	444.5
32.5°	418.3	419.2	415.8	415.0	417.5	413.3	415.0	415.0
35°	382.8	383.7	381.2	381.2	383.7	381.2	381.2	380.3
37.5°	347.4	349.0	347.4	348.2	349.9	347.4	349.0	348.2
40°	318.6	320.3	317.8	319.5	321.2	318.6	321.2	319.5
42.5°	292.4	295.0	293.3	295.0	296.6	295.0	296.6	294.1
45°	273.0	274.7	273.8	274.7	276.4	275.5	276.4	275.5
47.5°	254.4	257.8	256.1	257.8	260.3	258.6	260.3	257.8
50°	237.5	240.0	239.2	240.9	241.7	240.9	242.6	240.0
52.5°	215.5	218.0	217.2	217.2	218.9	217.2	218.9	217.2
55°	186.8	187.6	187.6	188.5	187.6	186.8	187.6	185.9
57.5°	158.9	160.6	158.0	160.6	159.7	158.9	158.9	157.2
60°	141.1	143.7	142.0	143.7	142.8	142.8	142.8	142.0
62.5°	126.8	128.5	126.8	127.6	127.6	127.6	126.8	125.9
65°	110.7	113.2	111.6	112.4	111.6	110.7	111.6	110.7
67.5°	94.7	95.5	95.5	94.7	94.7	94.7	94.7	93.0
70°	76.9	77.8	76.9	78.6	77.8	76.9	77.8	76.1
72.5°	60.0	60.9	60.0	60.9	60.0	60.0	60.0	60.0
75°	44.8	45.6	45.6	45.6	45.6	45.6	43.9	45.6
77.5°	32.1	32.1	32.1	33.0	32.1	32.1	32.1	32.1
80°	22.0	22.0	22.0	22.8	22.0	22.8	22.0	22.8
82.5°	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
85°	7.6	8.5	8.5	7.6	7.6	7.6	7.6	7.6
87.5°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)