

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: P251917

Luminaire Tested: **LD4B15D010 EU4B10209050 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251917
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 EU4B10209050 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1124.0 lumens
Efficiency: N/A
Efficacy: 78.1 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

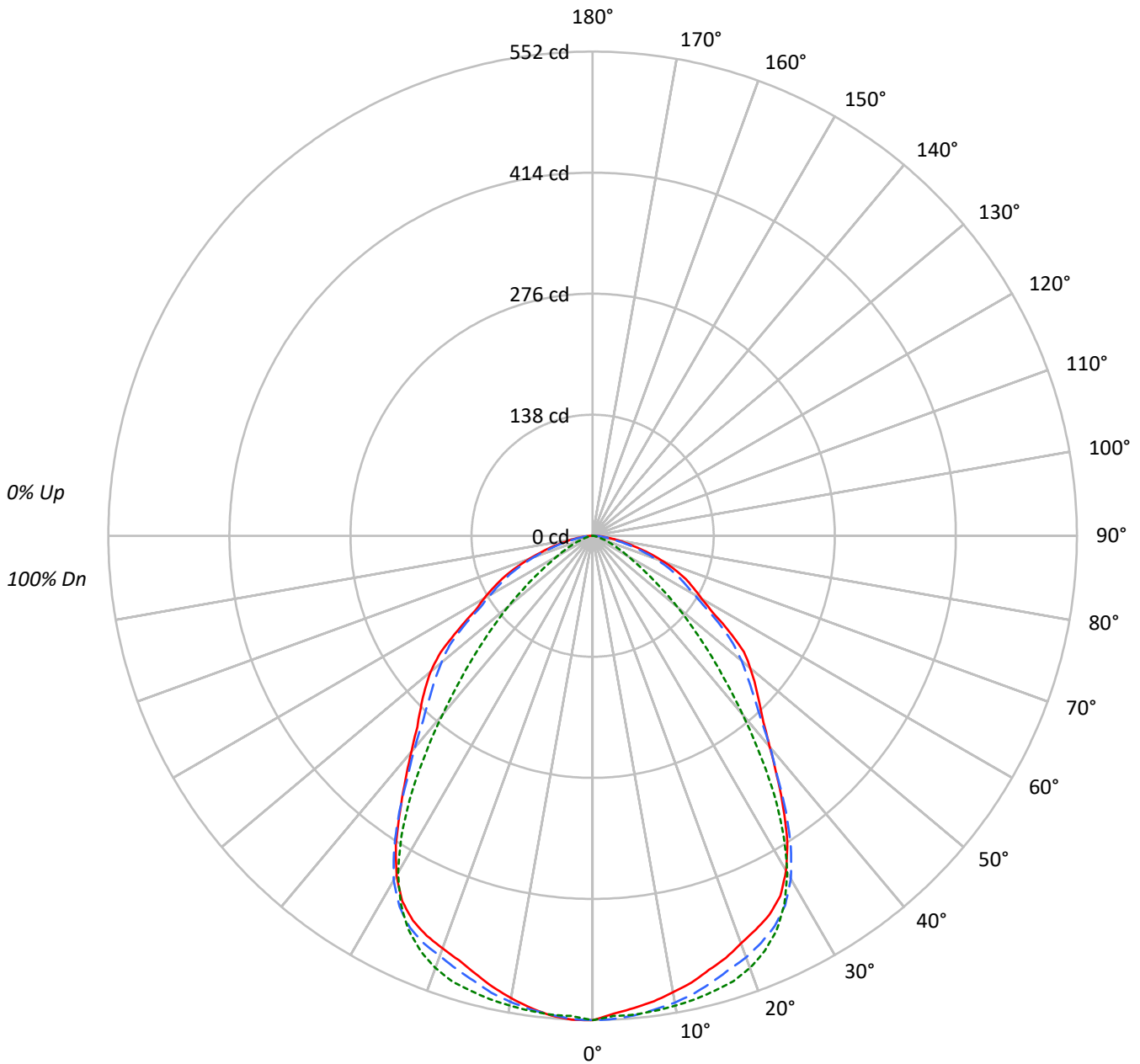
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	53826	53826	53826
5°	52868	53611	53699
10°	52301	53815	52974
15°	51699	54181	52123
20°	51286	54377	51908
25°	51261	53358	52078
30°	49628	49909	50292
35°	45091	42962	45496
40°	39884	33828	40864
45°	37006	25760	38178
50°	35554	19074	36585
55°	32199	13134	31757
60°	27990	8947	27815
65°	27050	6457	25666
70°	24449	4360	21799
75°	20145	2862	17284
80°	16220	1908	12852
85°	13307	895	8498



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.1	4.6
10°-20°	149.1	13.3
20°-30°	225.2	20.0
30°-40°	235.7	21.0
40°-50°	190.9	17.0
50°-60°	138.8	12.4
60°-70°	85.6	7.6
70°-80°	38.7	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°	426.4	37.9
0°-40°	662.1	58.9
0°-60°	991.8	88.2
0°-90°	1124.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1124.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	552	552	552	552	552	
5°	540	549	548	548	549	51
15°	512	527	537	525	517	145
25°	477	491	496	493	484	218
35°	379	384	361	384	382	236
45°	268	260	187	263	277	209
55°	190	178	77	179	187	169
65°	117	105	28	104	111	115
75°	54	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°	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3
2.5°	545.5	545.5	550.6	556.5	551.4	546.3	549.7	548.0	554.0	554.0	551.4
5°	540.4	542.1	546.3	551.4	547.2	542.1	546.3	544.6	550.6	550.6	548.9
7.5°	535.3	536.1	541.2	547.2	542.9	537.8	541.2	540.4	545.5	546.3	544.6
10°	528.5	529.3	534.4	540.4	536.1	531.9	535.3	534.4	541.2	541.2	540.4
12.5°	521.7	522.6	527.6	532.7	528.5	524.3	527.6	527.6	534.4	535.3	534.4
15°	512.4	514.1	518.3	523.4	520.9	515.8	519.2	519.2	525.1	526.8	526.8
17.5°	504.7	505.6	509.8	514.9	511.5	507.3	510.7	510.7	516.6	518.3	518.3
20°	494.5	496.2	500.5	505.6	503.0	499.6	502.2	502.2	509.0	510.7	511.5
22.5°	486.0	487.7	491.1	497.9	493.7	491.1	494.5	493.7	501.3	502.2	502.2
25°	476.7	478.4	482.6	486.9	484.3	481.8	484.3	484.3	490.3	491.1	491.1
27.5°	463.1	463.9	468.2	472.4	469.9	466.5	469.9	469.0	475.0	475.8	475.0
30°	441.0	442.7	444.4	450.3	447.8	445.2	448.6	446.9	452.9	452.9	452.0
32.5°	412.9	412.9	416.3	420.6	417.2	415.5	418.0	418.9	423.1	423.1	420.6
35°	379.0	380.7	383.2	385.8	383.2	381.5	384.1	383.2	388.3	386.6	384.1
37.5°	345.0	345.8	348.4	351.8	348.4	345.8	346.7	345.8	350.1	350.1	345.8
40°	313.5	315.2	316.9	320.3	316.9	315.2	316.1	313.5	318.6	316.9	314.4
42.5°	288.0	288.9	291.4	293.1	289.7	288.9	289.7	288.0	290.6	288.9	283.8
45°	268.5	268.5	269.3	271.9	268.5	267.6	267.6	265.9	268.5	265.1	260.0
47.5°	251.5	252.4	253.2	254.9	252.4	249.8	250.7	247.3	249.0	246.4	239.6
50°	234.5	236.2	237.1	238.8	236.2	234.5	235.4	232.0	232.0	227.7	221.8
52.5°	217.5	218.4	217.5	219.2	217.5	215.0	215.8	212.4	212.4	207.3	201.4
55°	189.5	190.3	191.2	192.9	191.2	188.6	190.3	187.8	187.8	184.4	177.6
57.5°	161.4	162.3	163.1	164.0	164.0	162.3	163.1	161.4	160.6	158.0	152.9
60°	143.6	143.6	143.6	144.4	143.6	142.7	142.7	141.0	141.0	137.6	132.5
62.5°	130.0	130.9	130.9	131.7	130.9	130.0	129.2	127.5	126.6	123.2	119.0
65°	117.3	117.3	116.4	118.1	117.3	116.4	116.4	114.7	113.0	109.6	105.4
67.5°	102.0	102.8	102.0	102.8	102.8	102.0	101.1	99.4	98.6	96.0	90.9
70°	85.8	85.8	85.8	86.7	85.8	85.8	86.7	84.1	83.3	79.9	75.6
72.5°	69.7	70.5	70.5	69.7	70.5	68.8	68.8	68.8	68.0	64.6	60.3
75°	53.5	54.4	54.4	55.2	54.4	53.5	53.5	52.7	51.8	49.3	45.9
77.5°	39.9	39.9	40.8	40.8	40.8	39.9	39.9	38.2	38.2	36.5	33.1
80°	28.9	28.9	28.0	28.9	28.9	28.0	28.0	27.2	27.2	25.5	22.9
82.5°	18.7	19.5	19.5	19.5	19.5	18.7	18.7	18.7	17.8	17.0	15.3
85°	11.9	11.9	11.9	11.9	12.7	11.9	12.7	11.9	11.9	10.2	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°	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3
2.5°	551.4	552.3	549.7	553.1	550.6	551.4	552.3	551.4	548.0	548.0	557.4
5°	548.0	549.7	547.2	551.4	549.7	549.7	551.4	550.6	547.2	548.0	556.5
7.5°	544.6	547.2	545.5	549.7	547.2	547.2	548.9	548.9	545.5	546.3	554.0
10°	539.5	542.9	542.1	546.3	543.8	543.8	546.3	546.3	542.9	543.8	551.4
12.5°	535.3	538.7	537.8	542.1	540.4	541.2	542.1	543.8	539.5	541.2	548.0
15°	528.5	531.9	531.9	536.1	534.4	536.1	537.8	540.4	537.0	537.0	543.8
17.5°	520.9	525.1	525.1	528.5	528.5	529.3	532.7	535.3	531.9	532.7	538.7
20°	512.4	517.5	517.5	521.7	520.9	522.6	525.1	527.6	524.3	524.3	531.0
22.5°	503.9	508.1	509.0	511.5	511.5	512.4	514.9	516.6	512.4	512.4	519.2
25°	492.0	496.2	497.1	498.8	497.1	497.1	498.8	500.5	496.2	496.2	502.2
27.5°	475.8	480.1	480.1	479.2	477.5	478.4	477.5	478.4	474.1	473.3	479.2
30°	452.0	454.6	454.6	453.7	451.2	451.2	448.6	449.5	443.5	443.5	448.6
32.5°	419.7	422.3	420.6	418.9	415.5	413.8	412.1	411.2	405.3	405.3	411.2
35°	381.5	383.2	380.7	377.3	373.0	370.5	367.9	364.5	360.3	361.1	364.5
37.5°	342.4	342.4	339.0	332.2	328.8	324.6	320.3	320.3	313.5	312.7	315.2
40°	309.3	305.9	299.9	290.6	284.6	280.4	274.4	271.0	265.9	265.9	270.2
42.5°	279.5	272.7	265.1	252.4	246.4	241.3	233.7	230.3	224.3	223.5	226.0
45°	253.2	246.4	235.4	221.8	214.1	208.2	197.1	192.9	187.8	186.9	188.6
47.5°	232.0	224.3	210.7	192.9	185.2	177.6	166.5	160.6	156.3	153.8	156.3
50°	213.3	203.1	188.6	169.9	159.7	152.9	139.3	133.4	127.5	125.8	126.6
52.5°	192.9	182.7	167.4	147.8	138.5	128.3	115.6	107.1	102.0	99.4	102.0
55°	170.8	160.6	145.3	125.8	115.6	106.2	92.6	85.8	79.9	77.3	79.9
57.5°	147.0	137.6	124.1	104.5	95.2	86.7	73.9	67.1	61.2	59.5	61.2
60°	126.6	119.0	105.4	86.7	79.0	69.7	58.6	51.8	46.7	45.9	46.7
62.5°	113.0	104.5	91.8	73.9	66.3	58.6	48.4	41.6	37.4	36.5	37.4
65°	99.4	90.1	78.2	62.9	55.2	49.3	39.1	33.1	28.9	28.0	28.9
67.5°	84.1	75.6	65.4	51.8	45.9	39.9	31.4	25.5	22.1	21.2	22.1
70°	69.7	62.0	51.8	41.6	35.7	31.4	23.8	19.5	16.1	15.3	16.1
72.5°	55.2	48.4	39.9	31.4	28.0	23.8	18.7	14.4	11.9	11.0	11.9
75°	42.5	37.4	30.6	22.9	20.4	17.8	12.7	10.2	8.5	7.6	8.5
77.5°	29.7	26.3	21.2	17.0	14.4	12.7	9.3	6.8	5.9	5.1	5.9
80°	20.4	17.8	14.4	11.0	9.3	7.6	5.9	4.2	3.4	3.4	3.4
82.5°	13.6	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°	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3
2.5°	554.8	552.3	555.7	552.3	550.6	552.3	550.6	555.7	551.4	548.0	551.4
5°	554.0	550.6	554.0	551.4	548.9	549.7	548.0	553.1	548.0	545.5	547.2
7.5°	552.3	549.7	551.4	548.9	546.3	547.2	545.5	549.7	544.6	542.1	543.8
10°	549.7	547.2	548.0	546.3	543.8	543.8	542.1	545.5	539.5	536.1	537.8
12.5°	546.3	542.9	544.6	542.1	538.7	538.7	537.0	539.5	533.6	530.2	531.0
15°	542.1	538.7	538.7	536.1	532.7	532.7	529.3	531.9	525.1	521.7	521.7
17.5°	537.0	532.7	532.7	530.2	525.9	525.1	522.6	525.1	517.5	514.1	514.1
20°	529.3	525.9	525.1	523.4	519.2	518.3	514.9	515.8	509.8	507.3	506.4
22.5°	519.2	515.8	516.6	514.1	510.7	509.8	506.4	509.0	503.0	500.5	501.3
25°	501.3	499.6	501.3	500.5	497.9	497.9	496.2	497.9	492.8	491.1	492.0
27.5°	480.9	480.1	480.9	480.9	479.2	479.2	479.2	481.8	476.7	475.8	475.8
30°	451.2	451.2	452.0	452.9	452.9	454.6	453.7	457.1	453.7	452.0	453.7
32.5°	412.1	415.5	418.0	418.0	418.0	419.7	421.4	424.0	420.6	421.4	421.4
35°	367.9	370.5	372.2	376.4	373.9	379.8	381.5	384.9	384.1	385.8	384.9
37.5°	318.6	322.0	325.4	331.4	330.5	337.3	340.7	347.5	345.8	349.2	350.9
40°	272.7	277.8	282.9	287.2	290.6	297.4	304.2	312.7	315.2	317.8	318.6
42.5°	228.6	233.7	242.2	248.1	253.2	264.2	273.6	283.8	286.3	291.4	293.1
45°	192.9	197.1	207.3	215.0	219.2	235.4	246.4	259.2	263.4	269.3	271.9
47.5°	159.7	167.4	177.6	186.9	192.9	209.9	224.3	237.9	243.9	250.7	254.1
50°	130.9	139.3	152.9	161.4	169.9	188.6	204.8	219.2	225.2	232.8	236.2
52.5°	107.1	116.4	129.2	138.5	147.8	167.4	184.4	198.0	205.6	210.7	215.8
55°	84.1	94.3	107.1	117.3	124.9	146.1	160.6	174.2	179.3	183.5	186.1
57.5°	65.4	73.1	85.8	94.3	103.7	122.4	136.8	147.0	151.2	156.3	158.0
60°	51.0	58.6	70.5	79.0	87.5	105.4	119.8	130.0	134.2	138.5	141.0
62.5°	40.8	48.4	59.5	67.1	74.8	90.9	103.7	113.9	119.0	123.2	125.8
65°	32.3	39.1	48.4	56.1	62.0	76.5	89.2	98.6	103.7	107.9	110.5
67.5°	25.5	31.4	39.9	45.0	51.0	62.9	73.9	82.4	86.7	91.8	94.3
70°	19.5	23.8	31.4	35.7	39.9	50.1	58.6	67.1	71.4	74.8	76.5
72.5°	14.4	17.8	23.8	27.2	29.7	38.2	45.0	51.0	54.4	57.8	59.5
75°	10.2	12.7	17.0	19.5	21.2	27.2	33.1	37.4	39.9	42.5	45.0
77.5°	6.8	8.5	11.0	12.7	14.4	18.7	22.1	25.5	28.0	30.6	31.4
80°	4.2	5.9	7.6	8.5	9.3	11.9	15.3	17.0	18.7	20.4	21.2
82.5°	2.5	3.4	4.2	5.1	5.9	7.6	9.3	11.0	11.9	13.6	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°	552.3	552.3	552.3	552.3	552.3	552.3	552.3	552.3
2.5°	554.8	552.3	550.6	549.7	555.7	548.0	551.4	552.3
5°	551.4	548.9	547.2	546.3	551.4	544.6	547.2	548.9
7.5°	546.3	544.6	542.1	541.2	546.3	538.7	542.1	542.9
10°	540.4	537.8	536.1	535.3	539.5	531.9	535.3	535.3
12.5°	532.7	531.0	527.6	527.6	531.0	524.3	526.8	526.8
15°	522.6	520.9	517.5	517.5	520.9	514.1	516.6	516.6
17.5°	514.1	512.4	509.8	509.0	512.4	505.6	508.1	507.3
20°	507.3	505.6	502.2	502.2	504.7	497.9	500.5	500.5
22.5°	501.3	500.5	497.1	497.1	500.5	493.7	495.4	493.7
25°	492.0	491.1	487.7	488.6	490.3	483.5	486.0	484.3
27.5°	476.7	476.7	473.3	472.4	475.0	469.0	470.7	469.9
30°	452.9	453.7	449.5	449.5	450.3	445.2	447.8	446.9
32.5°	420.6	421.4	418.0	417.2	419.7	415.5	417.2	417.2
35°	384.9	385.8	383.2	383.2	385.8	383.2	383.2	382.4
37.5°	349.2	350.9	349.2	350.1	351.8	349.2	350.9	350.1
40°	320.3	322.0	319.5	321.2	322.9	320.3	322.9	321.2
42.5°	294.0	296.5	294.8	296.5	298.2	296.5	298.2	295.7
45°	274.4	276.1	275.3	276.1	277.8	277.0	277.8	277.0
47.5°	255.8	259.2	257.5	259.2	261.7	260.0	261.7	259.2
50°	238.8	241.3	240.5	242.2	243.0	242.2	243.9	241.3
52.5°	216.7	219.2	218.4	218.4	220.1	218.4	220.1	218.4
55°	187.8	188.6	188.6	189.5	188.6	187.8	188.6	186.9
57.5°	159.7	161.4	158.9	161.4	160.6	159.7	159.7	158.0
60°	141.9	144.4	142.7	144.4	143.6	143.6	143.6	142.7
62.5°	127.5	129.2	127.5	128.3	128.3	128.3	127.5	126.6
65°	111.3	113.9	112.2	113.0	112.2	111.3	112.2	111.3
67.5°	95.2	96.0	96.0	95.2	95.2	95.2	95.2	93.5
70°	77.3	78.2	77.3	79.0	78.2	77.3	78.2	76.5
72.5°	60.3	61.2	60.3	61.2	60.3	60.3	60.3	60.3
75°	45.0	45.9	45.9	45.9	45.9	45.9	44.2	45.9
77.5°	32.3	32.3	32.3	33.1	32.3	32.3	32.3	32.3
80°	22.1	22.1	22.1	22.9	22.1	22.9	22.1	22.9
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)