

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: P251592

Luminaire Tested: **LD4B10D010 EU4B10209050 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251592
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10209050 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE 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: 830.0 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

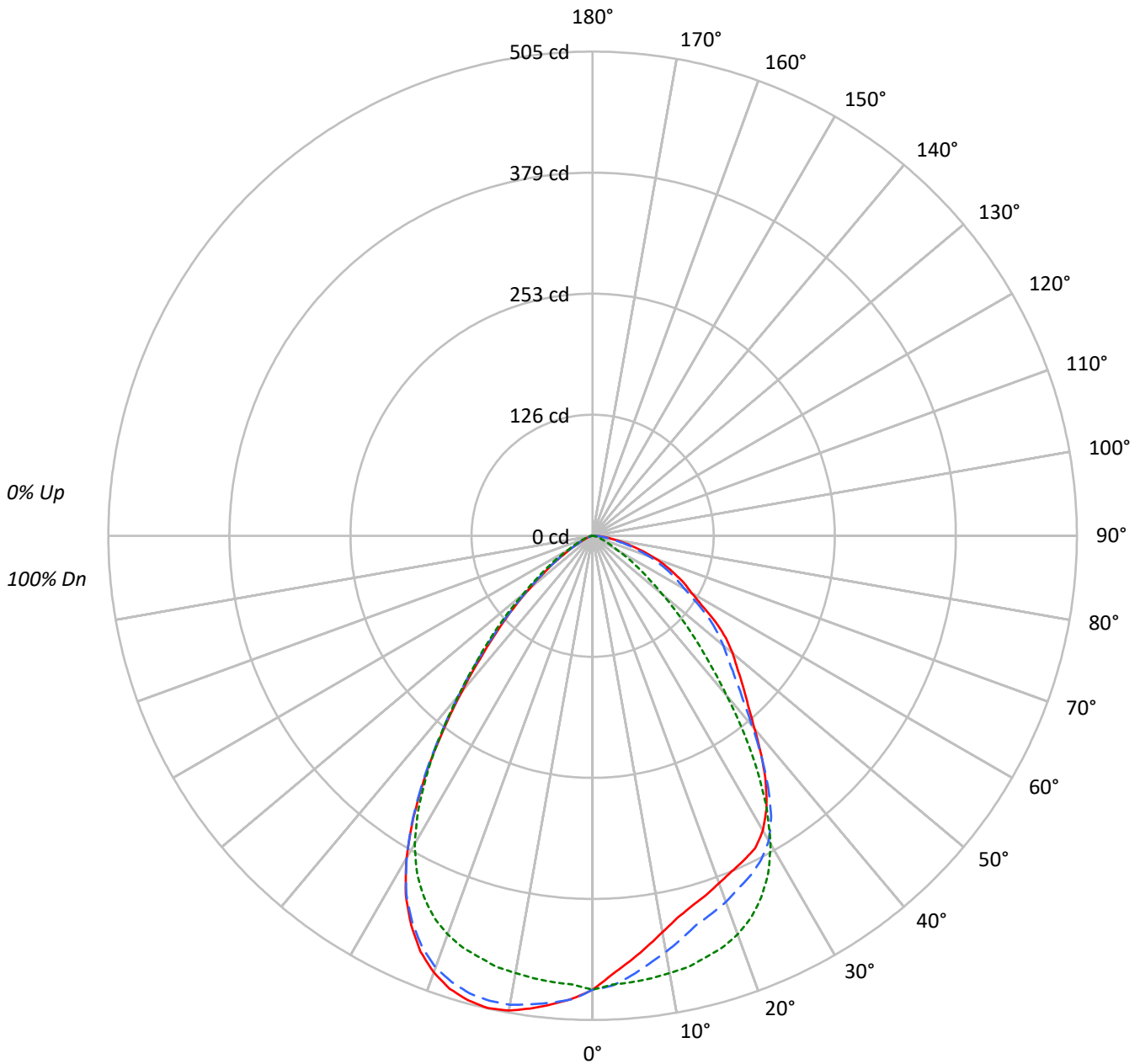
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	46146	46146	46146
5°	43574	45726	47996
10°	41544	45829	49758
15°	40328	45928	50609
20°	39992	45883	50249
25°	40153	44745	48164
30°	39961	41750	43675
35°	37465	35645	36014
40°	33383	27633	27009
45°	30529	20605	19337
50°	28868	14434	13039
55°	26540	9753	8190
60°	23195	5711	4522
65°	21954	3667	2537
70°	20003	2622	1567
75°	16531	1845	1167
80°	13021	1010	673
85°	11629	671	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.7	5.4
10°-20°	128.3	15.5
20°-30°	190.3	22.9
30°-40°	190.5	23.0
40°-50°	133.2	16.0
50°-60°	79.2	9.5
60°-70°	41.4	5.0
70°-80°	18.4	2.2
80°-90°	4.0	0.5
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°	363.3	43.8
0°-40°	553.9	66.7
0°-60°	766.3	92.3
0°-90°	830.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	830.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	474	474	474	474	474	
5°	445	461	467	489	491	42
15°	400	420	455	494	502	113
25°	373	390	416	445	448	172
35°	315	318	300	305	303	195
45°	222	210	150	145	140	172
55°	156	146	57	50	48	139
65°	95	87	16	12	11	94
75°	44	38	5	3	3	48
85°	10	8	1	1	0	12
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°	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5
2.5°	458.2	463.7	458.2	460.1	467.4	460.7	464.4	464.4	462.5	466.8	469.8
5°	445.4	450.9	445.4	447.9	455.8	449.1	453.4	452.1	452.8	456.4	460.7
7.5°	432.6	436.9	432.0	435.1	442.4	436.9	440.6	440.6	441.2	446.7	450.3
10°	419.8	423.5	419.8	422.2	430.2	425.3	427.7	428.4	430.2	435.1	440.6
12.5°	408.2	411.3	407.6	411.3	418.0	413.1	416.1	416.8	418.6	424.1	430.2
15°	399.7	402.7	399.1	402.1	408.2	404.6	407.0	408.2	409.4	414.3	419.8
17.5°	393.0	395.4	392.3	396.0	400.9	396.6	400.3	400.3	402.1	407.0	413.1
20°	385.6	388.1	385.6	388.7	394.2	390.5	393.6	393.6	395.4	400.9	406.4
22.5°	378.9	380.1	378.9	381.4	386.9	383.8	385.6	386.2	388.1	393.0	397.8
25°	373.4	375.9	374.7	377.1	380.8	377.7	379.5	380.1	382.0	386.2	390.5
27.5°	367.3	368.6	367.3	370.4	373.4	371.0	372.8	372.2	373.4	377.1	380.8
30°	355.1	356.3	356.3	358.2	360.6	359.4	361.2	359.4	360.6	363.7	367.3
32.5°	337.4	338.0	338.7	340.5	342.3	340.5	341.7	341.7	341.7	344.1	346.6
35°	314.9	316.1	315.5	316.7	318.5	317.9	317.9	317.3	316.1	317.3	318.5
37.5°	289.2	287.4	287.4	289.2	290.4	288.0	289.2	288.0	288.0	288.6	288.6
40°	262.4	260.5	262.4	263.0	263.6	262.4	261.8	260.5	258.7	259.3	258.1
42.5°	239.8	238.6	239.2	239.2	239.8	238.6	239.2	236.8	234.9	233.7	231.9
45°	221.5	219.7	221.5	220.3	220.3	219.7	219.1	217.8	215.4	213.6	210.5
47.5°	204.4	204.4	205.0	205.0	205.0	203.8	203.8	201.4	198.9	196.5	192.2
50°	190.4	189.2	191.6	191.6	189.8	189.2	189.8	186.7	184.9	181.8	177.6
52.5°	175.1	175.1	175.7	175.7	175.1	173.9	174.5	172.1	170.2	167.2	162.9
55°	156.2	155.0	156.8	156.8	156.2	155.6	156.2	154.4	152.5	150.1	146.4
57.5°	134.9	134.2	135.5	136.1	134.9	134.9	135.5	133.6	133.0	130.6	126.9
60°	119.0	118.4	119.6	120.2	119.0	119.0	119.0	116.5	115.3	112.9	110.4
62.5°	108.0	107.4	108.6	108.0	107.4	106.8	107.4	105.0	103.7	101.3	98.9
65°	95.2	95.8	96.4	96.4	95.8	95.2	95.2	94.0	92.7	90.3	87.3
67.5°	83.0	83.0	83.6	84.2	83.6	83.6	83.6	81.8	80.5	78.7	75.1
70°	70.2	69.6	71.4	71.4	70.2	70.8	70.2	69.6	68.3	65.9	62.8
72.5°	56.7	56.7	57.4	57.4	56.7	56.7	56.7	56.1	54.3	53.1	50.0
75°	43.9	43.9	44.5	45.2	43.9	43.9	44.5	43.3	42.1	40.3	38.4
77.5°	33.0	32.3	33.0	33.0	32.3	32.3	32.3	31.7	31.1	29.3	27.5
80°	23.2	22.6	23.2	23.2	23.2	22.6	22.6	22.0	22.0	20.7	18.9
82.5°	15.9	15.3	15.9	15.9	15.9	15.3	15.3	15.3	14.6	14.0	12.8
85°	10.4	9.8	9.8	10.4	9.8	9.8	9.8	9.8	9.2	8.5	7.9
87.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.3	4.3	4.3	3.7
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5
2.5°	467.4	466.2	469.8	468.6	469.2	466.2	471.1	468.6	471.7	468.6	474.7
5°	459.5	458.2	463.7	463.1	463.7	461.3	466.8	466.2	469.8	467.4	474.1
7.5°	450.9	449.7	455.8	456.4	457.6	455.2	462.5	462.5	466.2	465.6	472.9
10°	441.2	441.8	447.9	449.1	451.5	450.3	457.0	458.9	463.7	463.1	472.3
12.5°	432.0	432.0	439.9	442.4	444.2	443.6	451.5	454.0	459.5	460.7	469.2
15°	422.9	423.5	430.8	434.5	436.9	436.3	444.8	447.9	454.6	455.2	465.6
17.5°	415.5	414.9	422.9	425.9	429.6	429.0	438.1	441.8	448.5	450.3	460.1
20°	409.4	408.8	416.1	419.8	422.2	421.6	430.8	435.1	441.2	442.4	452.1
22.5°	402.1	400.9	408.2	411.3	413.7	413.1	421.0	424.1	430.2	431.4	440.6
25°	393.6	392.3	399.1	400.9	402.7	401.5	408.2	410.0	414.9	416.1	425.3
27.5°	383.8	380.8	386.2	386.2	387.5	385.6	390.5	392.3	396.6	396.6	405.2
30°	368.6	364.3	367.3	366.7	367.3	364.9	367.9	368.6	371.6	371.0	377.1
32.5°	347.2	341.1	342.9	341.1	339.3	335.6	339.3	338.0	340.5	338.0	343.5
35°	317.9	311.8	311.2	308.8	306.9	303.9	303.9	300.8	301.4	299.6	303.3
37.5°	286.2	278.2	277.0	272.1	269.1	265.4	265.4	263.0	259.9	258.7	261.8
40°	255.1	246.5	243.5	235.5	232.5	228.8	226.4	223.3	222.1	217.2	219.7
42.5°	228.2	219.1	212.3	203.8	200.8	195.3	191.6	187.9	186.1	180.6	183.1
45°	205.6	194.6	187.3	176.3	172.1	166.0	160.5	156.2	151.9	149.5	148.3
47.5°	186.7	175.1	165.4	153.2	146.4	141.0	133.6	129.4	123.9	120.8	119.0
50°	170.9	158.0	147.1	133.0	126.3	120.2	111.7	105.0	100.1	95.2	94.0
52.5°	156.8	143.4	131.2	115.3	107.4	100.1	90.9	83.6	79.3	73.8	73.2
55°	140.3	128.7	115.3	98.9	90.9	83.6	73.8	66.5	61.0	57.4	56.1
57.5°	122.6	111.7	98.9	82.4	74.4	66.5	57.4	50.6	45.8	42.7	42.1
60°	106.2	95.8	83.6	67.1	59.2	52.5	42.7	36.0	31.7	29.3	28.1
62.5°	94.0	84.2	72.6	57.4	50.0	43.3	34.2	28.1	24.4	22.0	20.7
65°	82.4	72.6	62.2	48.2	42.1	36.0	27.5	22.0	18.3	15.9	14.6
67.5°	70.2	61.6	51.9	40.3	34.2	29.3	22.0	17.1	14.0	12.2	11.0
70°	58.0	50.0	42.1	32.3	28.1	23.2	17.1	13.4	10.4	9.2	7.9
72.5°	45.8	39.7	33.0	25.0	21.4	18.3	13.4	9.8	7.9	6.7	5.5
75°	34.2	29.9	24.4	18.9	15.9	13.4	9.8	7.3	6.1	4.9	4.3
77.5°	24.4	20.7	17.1	12.8	11.6	9.8	6.7	5.5	4.3	3.1	2.4
80°	16.5	14.6	11.6	9.2	7.3	6.7	4.9	3.7	2.4	1.8	1.8
82.5°	11.0	9.2	7.3	5.5	4.9	4.3	3.1	2.4	1.8	1.2	1.2
85°	6.7	5.5	4.3	3.1	3.1	2.4	1.8	1.2	0.6	0.6	0.6
87.5°	3.1	2.4	1.8	1.2	1.2	0.6	0.6	0.6	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°	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5
2.5°	479.6	475.9	473.5	476.6	477.8	475.9	477.8	480.8	483.9	484.5	475.9
5°	480.2	476.6	475.3	479.0	479.6	479.0	480.8	485.1	488.8	490.0	481.4
7.5°	480.2	477.8	477.2	481.4	482.0	481.4	484.5	489.4	493.0	495.5	486.9
10°	479.0	477.8	478.4	482.0	483.3	483.3	487.5	493.0	496.7	499.1	490.6
12.5°	477.2	477.2	477.2	481.4	482.7	483.3	486.9	494.3	496.7	500.4	491.8
15°	474.1	474.1	474.1	478.4	480.2	480.2	484.5	491.2	494.3	497.9	489.4
17.5°	468.6	468.6	469.2	472.9	474.7	474.7	479.0	486.3	488.1	492.4	483.9
20°	460.7	460.7	461.3	465.0	466.8	465.6	471.1	477.2	479.0	482.7	474.1
22.5°	449.1	449.1	449.1	452.8	454.0	453.4	458.9	464.4	464.4	469.2	460.1
25°	432.0	433.2	432.0	435.7	436.9	436.3	441.2	446.0	444.8	450.3	441.2
27.5°	411.3	410.7	410.7	413.7	413.7	413.1	416.8	422.2	421.0	424.7	416.1
30°	382.6	384.4	381.4	385.6	383.8	382.6	385.0	389.9	388.1	391.1	384.4
32.5°	349.6	347.2	347.2	347.2	348.4	345.4	347.8	350.2	348.4	351.5	344.1
35°	306.3	306.9	305.1	305.7	306.3	302.7	305.1	307.5	305.1	306.9	300.2
37.5°	263.0	263.6	259.3	261.8	259.3	258.1	260.5	261.8	259.3	261.2	253.8
40°	219.7	218.4	217.8	217.8	218.4	215.4	217.2	219.1	217.2	218.4	211.7
42.5°	181.8	181.2	180.0	180.6	178.8	178.2	178.8	180.6	178.8	180.0	175.1
45°	148.9	147.7	145.8	146.4	146.4	143.4	145.2	146.4	144.6	145.2	141.0
47.5°	118.4	116.5	116.5	115.9	115.9	114.7	116.5	115.9	114.1	115.3	111.1
50°	92.1	90.9	90.9	90.9	90.9	89.1	89.7	90.9	89.1	89.1	86.6
52.5°	72.0	70.2	69.0	69.0	69.0	68.3	68.3	69.0	67.1	67.1	66.5
55°	54.3	53.7	51.9	51.9	51.9	50.0	50.6	50.6	50.0	50.0	48.2
57.5°	40.3	38.4	37.2	37.2	36.0	36.0	35.4	36.0	34.8	34.8	33.6
60°	26.8	25.6	25.0	24.4	24.4	23.8	24.4	23.8	23.8	23.2	22.6
62.5°	19.5	18.3	17.1	17.1	17.1	16.5	16.5	16.5	16.5	16.5	15.9
65°	14.0	12.8	12.8	12.2	12.2	11.6	11.6	11.6	11.6	11.6	11.0
67.5°	9.8	9.2	8.5	8.5	8.5	8.5	8.5	8.5	7.9	7.9	7.9
70°	7.3	6.7	6.1	6.1	6.1	6.1	6.1	5.5	6.1	6.1	5.5
72.5°	4.9	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
75°	3.7	3.7	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
77.5°	2.4	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
80°	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	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°	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5
2.5°	485.1	484.5	483.3	485.1	480.2	478.4	477.8	483.3
5°	491.8	490.6	490.6	492.4	486.9	485.7	484.5	490.6
7.5°	497.9	496.7	496.7	498.5	493.6	492.4	491.2	497.3
10°	501.6	501.6	501.6	502.8	498.5	497.3	496.7	502.8
12.5°	503.4	503.4	502.8	505.2	499.7	499.7	498.5	504.6
15°	501.0	501.0	501.0	502.8	497.9	496.7	496.7	501.6
17.5°	494.9	494.9	494.3	496.1	490.6	490.6	490.0	495.5
20°	485.7	485.7	484.5	486.9	481.4	479.6	479.0	484.5
22.5°	471.1	470.5	469.8	471.1	466.2	465.0	464.4	469.2
25°	452.1	451.5	450.3	451.5	446.0	444.2	444.2	447.9
27.5°	425.3	425.3	423.5	425.3	419.2	418.6	418.0	422.2
30°	392.3	389.9	388.7	391.1	385.0	385.0	383.8	388.1
32.5°	351.5	349.0	348.4	349.6	344.1	342.3	344.8	347.2
35°	304.5	305.1	302.7	302.7	297.8	298.4	299.0	302.7
37.5°	259.3	258.1	257.5	258.1	254.4	253.2	252.0	255.7
40°	217.2	214.2	213.6	213.6	210.5	209.9	210.5	212.3
42.5°	177.6	177.0	174.5	175.7	172.7	173.9	173.3	173.3
45°	143.4	144.0	141.6	143.4	141.0	139.1	139.1	140.3
47.5°	113.5	113.5	112.9	112.9	111.1	111.7	110.4	112.3
50°	87.9	87.9	86.6	87.3	86.0	86.0	85.4	86.0
52.5°	67.1	66.5	66.5	65.9	64.7	65.3	65.9	64.7
55°	48.8	49.4	48.2	48.8	47.6	48.2	47.6	48.2
57.5°	33.6	34.2	33.0	34.2	33.0	33.6	33.0	33.0
60°	23.2	23.2	22.6	23.2	22.6	22.6	22.0	23.2
62.5°	15.9	15.9	15.9	15.9	15.9	15.3	15.9	15.9
65°	11.6	11.0	11.0	11.0	11.0	11.0	11.0	11.0
67.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
70°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
72.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
75°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
77.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.6	0.6	0.6	0.0	0.6	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)