

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: P251913

Luminaire Tested: **LD4B15D010 EU4B10209027 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251913
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 EU4B10209027 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1060.0 lumens
Efficiency: N/A
Efficacy: 73.7 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

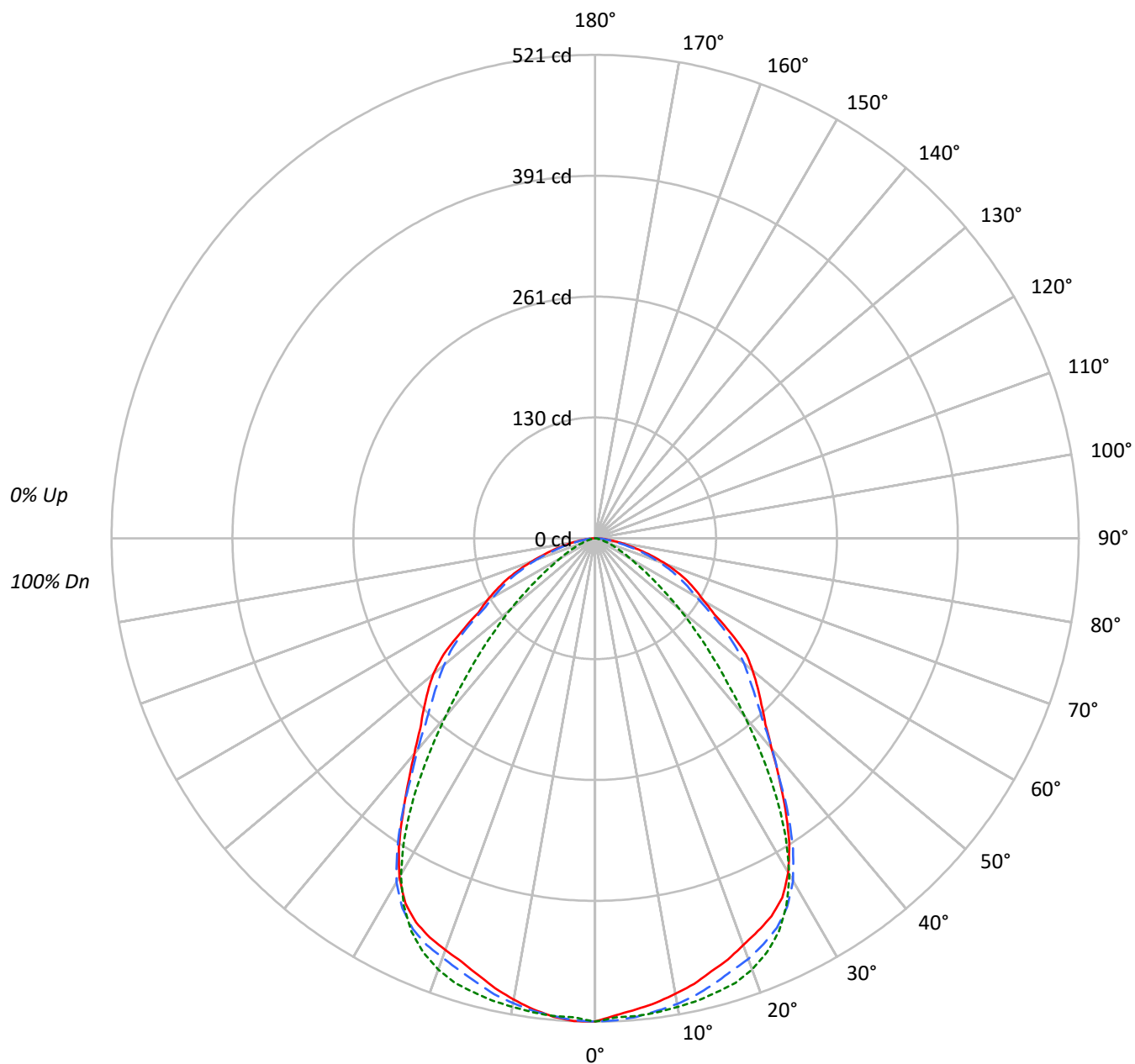
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
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	89	88		
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76		
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66		
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58		
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51		
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46		
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41		
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37		
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34		
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	50756	50756	50756
5°	49854	50559	50637
10°	49322	50747	49956
15°	48753	51094	49157
20°	48372	51276	48952
25°	48336	50325	49110
30°	46803	47073	47433
35°	42521	40523	42902
40°	37620	31907	38536
45°	34898	24299	36000
50°	33538	17982	34508
55°	30363	12387	29956
60°	26392	8440	26236
65°	25505	6088	24214
70°	23052	4103	20545
75°	19016	2711	16305
80°	15266	1796	12123
85°	12524	895	8051



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.2	4.6
10°-20°	140.6	13.3
20°-30°	212.4	20.0
30°-40°	222.3	21.0
40°-50°	180.0	17.0
50°-60°	130.9	12.4
60°-70°	80.8	7.6
70°-80°	36.5	3.4
80°-90°	7.4	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°	402.1	37.9
0°-40°	624.4	58.9
0°-60°	935.3	88.2
0°-90°	1060.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1060.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	521	521	521	521	521	
5°	510	518	517	517	518	48
15°	483	497	506	495	487	137
25°	450	463	468	465	457	206
35°	357	362	341	362	361	223
45°	253	245	176	248	261	197
55°	179	168	73	169	176	159
65°	111	99	26	98	105	108
75°	50	43	7	38	43	55
85°	11	9	1	6	7	13
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°	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8
2.5°	514.4	514.4	519.2	524.8	520.0	515.2	518.4	516.8	522.4	522.4	520.0
5°	509.6	511.2	515.2	520.0	516.0	511.2	515.2	513.6	519.2	519.2	517.6
7.5°	504.8	505.6	510.4	516.0	512.0	507.2	510.4	509.6	514.4	515.2	513.6
10°	498.4	499.2	504.0	509.6	505.6	501.6	504.8	504.0	510.4	510.4	509.6
12.5°	492.0	492.8	497.6	502.4	498.4	494.4	497.6	497.6	504.0	504.8	504.0
15°	483.2	484.8	488.8	493.6	491.2	486.4	489.6	489.6	495.2	496.8	496.8
17.5°	476.0	476.8	480.8	485.6	482.4	478.4	481.6	481.6	487.2	488.8	488.8
20°	466.4	468.0	472.0	476.8	474.4	471.2	473.6	473.6	480.0	481.6	482.4
22.5°	458.3	459.9	463.1	469.6	465.6	463.1	466.4	465.6	472.8	473.6	473.6
25°	449.5	451.1	455.1	459.1	456.7	454.3	456.7	456.7	462.3	463.1	463.1
27.5°	436.7	437.5	441.5	445.5	443.1	439.9	443.1	442.3	447.9	448.7	447.9
30°	415.9	417.5	419.1	424.7	422.3	419.9	423.1	421.5	427.1	427.1	426.3
32.5°	389.4	389.4	392.6	396.6	393.4	391.8	394.2	395.0	399.0	399.0	396.6
35°	357.4	359.0	361.4	363.8	361.4	359.8	362.2	361.4	366.2	364.6	362.2
37.5°	325.3	326.1	328.5	331.7	328.5	326.1	326.9	326.1	330.1	330.1	326.1
40°	295.7	297.3	298.9	302.1	298.9	297.3	298.1	295.7	300.5	298.9	296.5
42.5°	271.6	272.4	274.8	276.4	273.2	272.4	273.2	271.6	274.0	272.4	267.6
45°	253.2	253.2	254.0	256.4	253.2	252.4	252.4	250.8	253.2	250.0	245.2
47.5°	237.2	238.0	238.8	240.4	238.0	235.6	236.4	233.2	234.8	232.4	226.0
50°	221.2	222.8	223.6	225.2	222.8	221.2	222.0	218.8	218.8	214.7	209.1
52.5°	205.1	205.9	205.1	206.7	205.1	202.7	203.5	200.3	200.3	195.5	189.9
55°	178.7	179.5	180.3	181.9	180.3	177.9	179.5	177.1	177.1	173.9	167.5
57.5°	152.2	153.0	153.8	154.7	154.7	153.0	153.8	152.2	151.4	149.0	144.2
60°	135.4	135.4	135.4	136.2	135.4	134.6	134.6	133.0	133.0	129.8	125.0
62.5°	122.6	123.4	123.4	124.2	123.4	122.6	121.8	120.2	119.4	116.2	112.2
65°	110.6	110.6	109.8	111.4	110.6	109.8	109.8	108.2	106.6	103.4	99.4
67.5°	96.2	97.0	96.2	97.0	97.0	96.2	95.4	93.8	93.0	90.5	85.7
70°	80.9	80.9	80.9	81.7	80.9	80.9	81.7	79.3	78.5	75.3	71.3
72.5°	65.7	66.5	66.5	65.7	66.5	64.9	64.9	64.9	64.1	60.9	56.9
75°	50.5	51.3	51.3	52.1	51.3	50.5	50.5	49.7	48.9	46.5	43.3
77.5°	37.7	37.7	38.5	38.5	38.5	37.7	37.7	36.1	36.1	34.5	31.3
80°	27.2	27.2	26.4	27.2	27.2	26.4	26.4	25.6	25.6	24.0	21.6
82.5°	17.6	18.4	18.4	18.4	18.4	17.6	17.6	17.6	16.8	16.0	14.4
85°	11.2	11.2	11.2	11.2	12.0	11.2	12.0	11.2	11.2	9.6	8.8
87.5°	4.8	4.8	4.8	5.6	5.6	4.8	4.8	4.8	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°	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8
2.5°	520.0	520.8	518.4	521.6	519.2	520.0	520.8	520.0	516.8	516.8	525.7
5°	516.8	518.4	516.0	520.0	518.4	518.4	520.0	519.2	516.0	516.8	524.8
7.5°	513.6	516.0	514.4	518.4	516.0	516.0	517.6	517.6	514.4	515.2	522.4
10°	508.8	512.0	511.2	515.2	512.8	512.8	515.2	515.2	512.0	512.8	520.0
12.5°	504.8	508.0	507.2	511.2	509.6	510.4	511.2	512.8	508.8	510.4	516.8
15°	498.4	501.6	501.6	505.6	504.0	505.6	507.2	509.6	506.4	506.4	512.8
17.5°	491.2	495.2	495.2	498.4	498.4	499.2	502.4	504.8	501.6	502.4	508.0
20°	483.2	488.0	488.0	492.0	491.2	492.8	495.2	497.6	494.4	494.4	500.8
22.5°	475.2	479.2	480.0	482.4	482.4	483.2	485.6	487.2	483.2	483.2	489.6
25°	464.0	468.0	468.8	470.4	468.8	468.8	470.4	472.0	468.0	468.0	473.6
27.5°	448.7	452.7	452.7	451.9	450.3	451.1	450.3	451.1	447.1	446.3	451.9
30°	426.3	428.7	428.7	427.9	425.5	425.5	423.1	423.9	418.3	418.3	423.1
32.5°	395.8	398.2	396.6	395.0	391.8	390.2	388.6	387.8	382.2	382.2	387.8
35°	359.8	361.4	359.0	355.8	351.8	349.4	347.0	343.8	339.7	340.6	343.8
37.5°	322.9	322.9	319.7	313.3	310.1	306.1	302.1	302.1	295.7	294.9	297.3
40°	291.7	288.5	282.9	274.0	268.4	264.4	258.8	255.6	250.8	250.8	254.8
42.5°	263.6	257.2	250.0	238.0	232.4	227.6	220.4	217.2	211.5	210.7	213.1
45°	238.8	232.4	222.0	209.1	201.9	196.3	185.9	181.9	177.1	176.3	177.9
47.5°	218.8	211.5	198.7	181.9	174.7	167.5	157.1	151.4	147.4	145.0	147.4
50°	201.1	191.5	177.9	160.3	150.6	144.2	131.4	125.8	120.2	118.6	119.4
52.5°	181.9	172.3	157.9	139.4	130.6	121.0	109.0	101.0	96.2	93.8	96.2
55°	161.1	151.4	137.0	118.6	109.0	100.2	87.3	80.9	75.3	72.9	75.3
57.5°	138.6	129.8	117.0	98.6	89.7	81.7	69.7	63.3	57.7	56.1	57.7
60°	119.4	112.2	99.4	81.7	74.5	65.7	55.3	48.9	44.1	43.3	44.1
62.5°	106.6	98.6	86.5	69.7	62.5	55.3	45.7	39.3	35.3	34.5	35.3
65°	93.8	84.9	73.7	59.3	52.1	46.5	36.9	31.3	27.2	26.4	27.2
67.5°	79.3	71.3	61.7	48.9	43.3	37.7	29.6	24.0	20.8	20.0	20.8
70°	65.7	58.5	48.9	39.3	33.7	29.6	22.4	18.4	15.2	14.4	15.2
72.5°	52.1	45.7	37.7	29.6	26.4	22.4	17.6	13.6	11.2	10.4	11.2
75°	40.1	35.3	28.8	21.6	19.2	16.8	12.0	9.6	8.0	7.2	8.0
77.5°	28.0	24.8	20.0	16.0	13.6	12.0	8.8	6.4	5.6	4.8	5.6
80°	19.2	16.8	13.6	10.4	8.8	7.2	5.6	4.0	3.2	3.2	3.2
82.5°	12.8	10.4	8.0	6.4	5.6	4.8	3.2	2.4	2.4	1.6	1.6
85°	7.2	6.4	4.8	4.0	3.2	2.4	1.6	1.6	0.8	0.8	0.8
87.5°	3.2	2.4	1.6	1.6	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°	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8
2.5°	523.2	520.8	524.0	520.8	519.2	520.8	519.2	524.0	520.0	516.8	520.0
5°	522.4	519.2	522.4	520.0	517.6	518.4	516.8	521.6	516.8	514.4	516.0
7.5°	520.8	518.4	520.0	517.6	515.2	516.0	514.4	518.4	513.6	511.2	512.8
10°	518.4	516.0	516.8	515.2	512.8	512.8	511.2	514.4	508.8	505.6	507.2
12.5°	515.2	512.0	513.6	511.2	508.0	508.0	506.4	508.8	503.2	500.0	500.8
15°	511.2	508.0	508.0	505.6	502.4	502.4	499.2	501.6	495.2	492.0	492.0
17.5°	506.4	502.4	502.4	500.0	496.0	495.2	492.8	495.2	488.0	484.8	484.8
20°	499.2	496.0	495.2	493.6	489.6	488.8	485.6	486.4	480.8	478.4	477.6
22.5°	489.6	486.4	487.2	484.8	481.6	480.8	477.6	480.0	474.4	472.0	472.8
25°	472.8	471.2	472.8	472.0	469.6	469.6	468.0	469.6	464.8	463.1	464.0
27.5°	453.5	452.7	453.5	453.5	451.9	451.9	451.9	454.3	449.5	448.7	448.7
30°	425.5	425.5	426.3	427.1	427.1	428.7	427.9	431.1	427.9	426.3	427.9
32.5°	388.6	391.8	394.2	394.2	394.2	395.8	397.4	399.8	396.6	397.4	397.4
35°	347.0	349.4	351.0	355.0	352.6	358.2	359.8	363.0	362.2	363.8	363.0
37.5°	300.5	303.7	306.9	312.5	311.7	318.1	321.3	327.7	326.1	329.3	330.9
40°	257.2	262.0	266.8	270.8	274.0	280.5	286.9	294.9	297.3	299.7	300.5
42.5°	215.5	220.4	228.4	234.0	238.8	249.2	258.0	267.6	270.0	274.8	276.4
45°	181.9	185.9	195.5	202.7	206.7	222.0	232.4	244.4	248.4	254.0	256.4
47.5°	150.6	157.9	167.5	176.3	181.9	197.9	211.5	224.4	230.0	236.4	239.6
50°	123.4	131.4	144.2	152.2	160.3	177.9	193.1	206.7	212.3	219.6	222.8
52.5°	101.0	109.8	121.8	130.6	139.4	157.9	173.9	186.7	193.9	198.7	203.5
55°	79.3	88.9	101.0	110.6	117.8	137.8	151.4	164.3	169.1	173.1	175.5
57.5°	61.7	68.9	80.9	88.9	97.8	115.4	129.0	138.6	142.6	147.4	149.0
60°	48.1	55.3	66.5	74.5	82.5	99.4	113.0	122.6	126.6	130.6	133.0
62.5°	38.5	45.7	56.1	63.3	70.5	85.7	97.8	107.4	112.2	116.2	118.6
65°	30.4	36.9	45.7	52.9	58.5	72.1	84.1	93.0	97.8	101.8	104.2
67.5°	24.0	29.6	37.7	42.5	48.1	59.3	69.7	77.7	81.7	86.5	88.9
70°	18.4	22.4	29.6	33.7	37.7	47.3	55.3	63.3	67.3	70.5	72.1
72.5°	13.6	16.8	22.4	25.6	28.0	36.1	42.5	48.1	51.3	54.5	56.1
75°	9.6	12.0	16.0	18.4	20.0	25.6	31.3	35.3	37.7	40.1	42.5
77.5°	6.4	8.0	10.4	12.0	13.6	17.6	20.8	24.0	26.4	28.8	29.6
80°	4.0	5.6	7.2	8.0	8.8	11.2	14.4	16.0	17.6	19.2	20.0
82.5°	2.4	3.2	4.0	4.8	5.6	7.2	8.8	10.4	11.2	12.8	13.6
85°	0.8	1.6	1.6	2.4	2.4	4.0	4.8	5.6	6.4	7.2	8.0
87.5°	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6	1.6
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°	520.8	520.8	520.8	520.8	520.8	520.8	520.8	520.8
2.5°	523.2	520.8	519.2	518.4	524.0	516.8	520.0	520.8
5°	520.0	517.6	516.0	515.2	520.0	513.6	516.0	517.6
7.5°	515.2	513.6	511.2	510.4	515.2	508.0	511.2	512.0
10°	509.6	507.2	505.6	504.8	508.8	501.6	504.8	504.8
12.5°	502.4	500.8	497.6	497.6	500.8	494.4	496.8	496.8
15°	492.8	491.2	488.0	488.0	491.2	484.8	487.2	487.2
17.5°	484.8	483.2	480.8	480.0	483.2	476.8	479.2	478.4
20°	478.4	476.8	473.6	473.6	476.0	469.6	472.0	472.0
22.5°	472.8	472.0	468.8	468.8	472.0	465.6	467.2	465.6
25°	464.0	463.1	459.9	460.7	462.3	455.9	458.3	456.7
27.5°	449.5	449.5	446.3	445.5	447.9	442.3	443.9	443.1
30°	427.1	427.9	423.9	423.9	424.7	419.9	422.3	421.5
32.5°	396.6	397.4	394.2	393.4	395.8	391.8	393.4	393.4
35°	363.0	363.8	361.4	361.4	363.8	361.4	361.4	360.6
37.5°	329.3	330.9	329.3	330.1	331.7	329.3	330.9	330.1
40°	302.1	303.7	301.3	302.9	304.5	302.1	304.5	302.9
42.5°	277.2	279.7	278.0	279.7	281.3	279.7	281.3	278.9
45°	258.8	260.4	259.6	260.4	262.0	261.2	262.0	261.2
47.5°	241.2	244.4	242.8	244.4	246.8	245.2	246.8	244.4
50°	225.2	227.6	226.8	228.4	229.2	228.4	230.0	227.6
52.5°	204.3	206.7	205.9	205.9	207.5	205.9	207.5	205.9
55°	177.1	177.9	177.9	178.7	177.9	177.1	177.9	176.3
57.5°	150.6	152.2	149.8	152.2	151.4	150.6	150.6	149.0
60°	133.8	136.2	134.6	136.2	135.4	135.4	135.4	134.6
62.5°	120.2	121.8	120.2	121.0	121.0	121.0	120.2	119.4
65°	105.0	107.4	105.8	106.6	105.8	105.0	105.8	105.0
67.5°	89.7	90.5	90.5	89.7	89.7	89.7	89.7	88.1
70°	72.9	73.7	72.9	74.5	73.7	72.9	73.7	72.1
72.5°	56.9	57.7	56.9	57.7	56.9	56.9	56.9	56.9
75°	42.5	43.3	43.3	43.3	43.3	43.3	41.7	43.3
77.5°	30.4	30.4	30.4	31.3	30.4	30.4	30.4	30.4
80°	20.8	20.8	20.8	21.6	20.8	21.6	20.8	21.6
82.5°	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
85°	7.2	8.0	8.0	7.2	7.2	7.2	7.2	7.2
87.5°	1.6	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)