

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: P251761

Luminaire Tested: **LD4B15D010 EU4B10209050 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251761  
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: LD4B15D010 EU4B10209050 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS 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: 996.0 lumens  
Efficiency: N/A  
Efficacy: 69.2 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

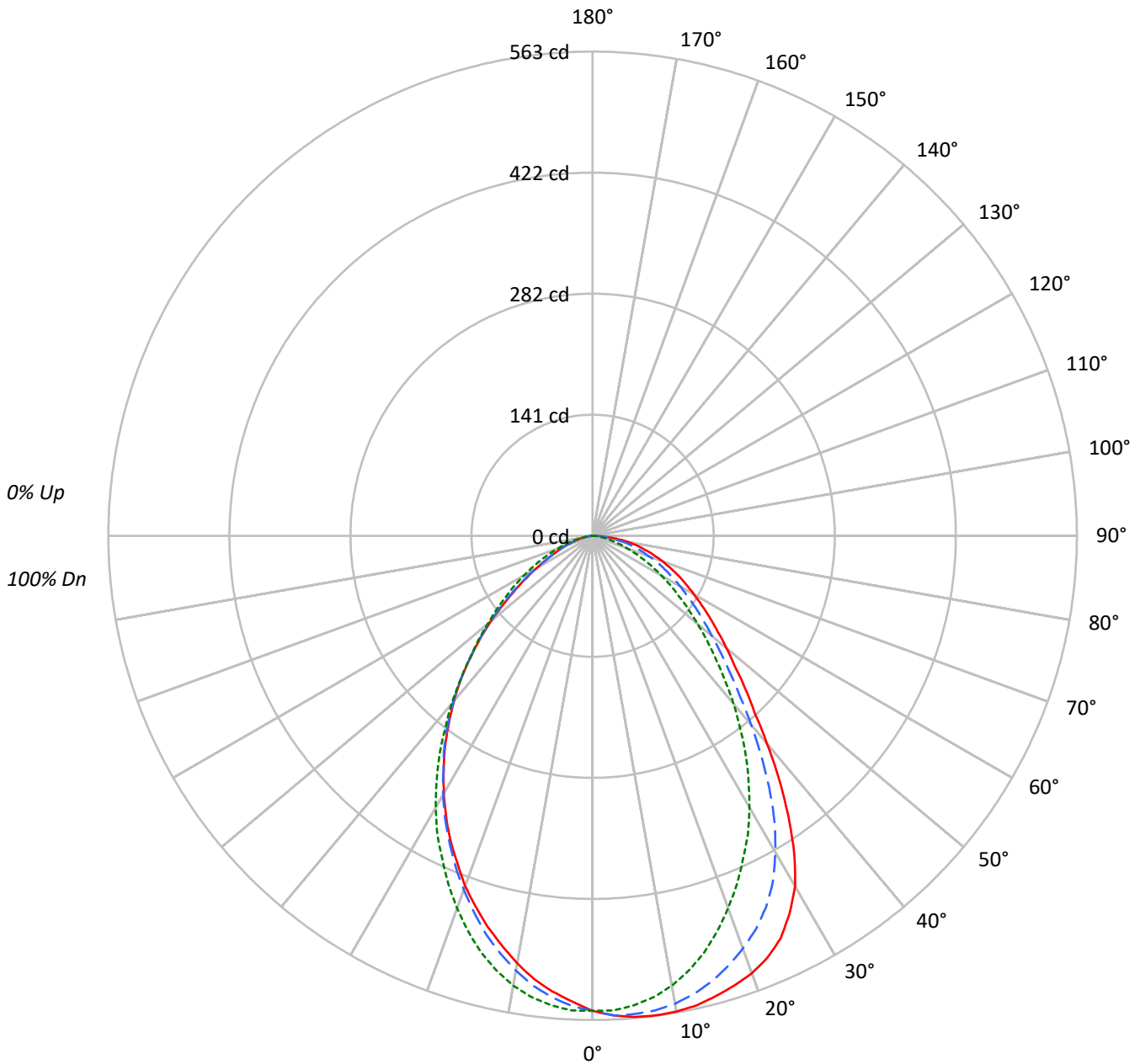
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	90°	180°
0°	53836	53836	53836
5°	54951	53621	52046
10°	55587	52558	49956
15°	55906	50589	47502
20°	56140	47770	44949
25°	55562	44508	42035
30°	52981	41030	38926
35°	47114	36906	35585
40°	40113	32429	31895
45°	34553	27882	27758
50°	30794	24092	23319
55°	28308	20797	18622
60°	26509	17893	14580
65°	25482	15082	11369
70°	24449	12110	9204
75°	23685	9602	7041
80°	23853	6679	4265
85°	19904	4696	1901



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.7	5.2
10°-20°	142.2	14.3
20°-30°	198.8	20.0
30°-40°	204.3	20.5
40°-50°	165.9	16.7
50°-60°	116.8	11.7
60°-70°	71.9	7.2
70°-80°	35.9	3.6
80°-90°	8.5	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°	392.7	39.4
0°-40°	597.0	59.9
0°-60°	879.7	88.3
0°-90°	996.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	996.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	552	552	552	552	552	
5°	562	558	548	539	532	54
15°	554	536	501	479	471	157
25°	517	477	414	394	391	236
35°	396	358	310	301	299	246
45°	251	226	202	202	201	195
55°	167	146	122	112	110	150
65°	110	93	65	50	49	109
75°	63	49	26	19	19	67
85°	18	12	4	2	2	21
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°	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4
2.5°	558.3	559.2	556.6	559.2	555.8	557.5	558.3	556.6	554.9	558.3	558.3
5°	561.7	561.7	559.2	562.6	558.3	559.2	560.9	558.3	555.8	559.2	558.3
7.5°	562.6	562.6	559.2	562.6	558.3	559.2	560.0	557.5	554.9	557.5	556.6
10°	561.7	560.9	558.3	561.7	557.5	557.5	558.3	555.8	551.5	554.1	552.4
12.5°	559.2	559.2	555.8	559.2	553.2	553.2	554.1	550.7	547.3	547.3	545.6
15°	554.1	554.1	550.7	553.2	548.1	548.1	547.3	543.9	539.6	539.6	536.2
17.5°	548.1	548.1	544.7	547.3	541.3	541.3	540.5	535.4	529.4	528.6	524.3
20°	541.3	541.3	537.1	538.8	532.0	532.0	531.1	525.2	518.4	516.7	510.7
22.5°	531.1	531.1	526.9	527.7	520.9	520.1	519.2	512.4	505.6	503.1	495.4
25°	516.7	515.8	512.4	512.4	505.6	503.9	502.2	495.4	488.6	483.5	476.7
27.5°	495.4	496.3	492.0	492.9	484.4	482.7	481.8	473.3	465.7	460.6	453.8
30°	470.8	468.2	464.0	464.0	457.2	456.3	454.6	447.0	438.5	432.6	424.9
32.5°	436.0	435.1	430.9	430.9	423.2	423.2	419.8	412.2	404.5	401.1	393.5
35°	396.0	395.2	391.8	391.8	385.0	385.8	382.4	376.5	368.8	363.7	357.8
37.5°	355.2	354.4	351.0	351.8	345.9	345.9	343.3	337.4	331.4	328.9	321.2
40°	315.3	314.4	310.2	312.7	307.6	305.9	305.1	300.8	294.0	290.6	286.4
42.5°	278.7	279.6	275.3	277.0	272.8	271.1	270.2	266.8	261.7	258.3	254.1
45°	250.7	249.0	247.3	247.3	243.0	242.2	241.3	237.1	233.7	230.3	226.0
47.5°	224.3	222.6	220.9	221.8	218.4	217.6	215.9	212.5	208.2	206.5	202.3
50°	203.1	202.3	199.7	199.7	196.3	195.5	193.8	191.2	187.0	184.4	181.0
52.5°	183.6	183.6	181.0	180.2	177.6	176.8	175.9	172.5	169.1	165.7	162.3
55°	166.6	165.7	164.0	164.0	160.6	159.8	158.9	155.5	152.1	149.6	146.2
57.5°	150.4	150.4	148.7	148.7	146.2	144.5	144.5	141.1	136.8	135.1	130.9
60°	136.0	136.0	134.3	134.3	131.7	131.7	130.0	126.6	124.1	120.7	117.3
62.5°	122.4	123.2	121.5	120.7	118.1	117.3	117.3	114.7	110.5	107.9	104.5
65°	110.5	109.6	108.8	107.9	105.4	104.5	104.5	101.1	98.6	95.2	92.6
67.5°	97.7	97.7	96.0	96.0	94.3	93.5	91.8	89.2	86.7	84.1	81.6
70°	85.8	85.8	85.0	85.0	82.4	81.6	80.7	78.2	75.6	73.1	69.7
72.5°	74.8	73.9	73.1	73.1	71.4	70.5	69.7	67.1	64.6	62.0	59.5
75°	62.9	62.9	62.0	62.0	60.3	59.5	59.5	57.8	54.4	52.7	49.3
77.5°	52.7	52.7	51.8	51.8	50.1	50.1	49.3	46.7	45.0	42.5	40.8
80°	42.5	41.6	41.6	40.8	39.1	39.1	38.2	37.4	34.8	33.1	30.6
82.5°	29.7	29.7	29.7	28.9	28.0	28.0	27.2	25.5	23.8	22.9	20.4
85°	17.8	17.8	17.0	16.1	17.0	16.1	15.3	14.4	13.6	12.7	11.9
87.5°	7.6	7.6	6.8	6.8	6.8	6.8	6.8	5.9	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°	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4
2.5°	553.2	555.8	554.9	554.1	552.4	552.4	552.4	551.5	552.4	552.4	550.7
5°	553.2	554.9	554.1	552.4	550.7	550.7	549.8	548.1	548.1	548.1	544.7
7.5°	550.7	552.4	549.8	548.1	546.4	544.7	544.7	542.2	542.2	541.3	537.9
10°	545.6	546.4	543.0	541.3	538.8	537.9	536.2	532.8	532.0	531.1	527.7
12.5°	537.9	538.8	534.5	531.1	527.7	526.9	525.2	520.9	519.2	517.5	513.3
15°	526.9	526.9	521.8	517.5	514.1	513.3	509.0	504.8	503.1	501.4	495.4
17.5°	514.1	513.3	506.5	502.2	498.0	496.3	492.0	486.9	483.5	481.8	476.7
20°	500.5	498.0	490.3	486.1	481.0	478.4	474.2	467.4	464.0	460.6	455.5
22.5°	484.4	481.0	472.5	466.5	461.4	458.9	452.9	447.0	441.9	438.5	432.6
25°	464.8	460.6	451.2	443.6	439.4	436.8	430.9	424.1	419.0	413.9	408.8
27.5°	441.9	436.8	427.5	419.8	415.6	411.3	407.1	399.4	395.2	390.9	385.0
30°	413.9	407.9	399.4	392.6	387.5	384.1	379.0	372.2	367.1	364.6	358.6
32.5°	383.3	376.5	368.8	362.0	359.5	355.2	351.0	344.2	339.9	337.4	333.1
35°	349.3	344.2	335.7	330.6	326.3	324.6	321.2	314.4	312.7	310.2	305.1
37.5°	313.6	309.3	303.4	299.1	295.7	294.0	290.6	286.4	283.8	281.3	278.7
40°	280.4	277.0	271.9	268.5	264.3	261.7	261.7	256.6	254.9	254.9	252.4
42.5°	248.1	246.4	242.2	237.1	236.2	233.7	232.8	230.3	228.6	227.7	226.9
45°	220.9	218.4	214.2	211.6	209.1	209.1	206.5	204.0	203.1	202.3	201.4
47.5°	197.2	193.8	190.4	187.8	186.1	185.3	182.7	181.0	180.2	180.2	179.3
50°	175.9	173.4	170.0	167.4	165.7	164.0	162.3	160.6	159.8	158.9	158.9
52.5°	158.1	154.7	151.3	148.7	146.2	145.3	143.6	141.9	141.1	140.2	139.4
55°	141.9	139.4	135.1	132.6	130.0	130.0	127.5	124.9	123.2	122.4	121.5
57.5°	126.6	124.1	119.8	117.3	115.6	113.9	112.2	110.5	108.8	107.1	105.4
60°	113.0	110.5	106.2	102.8	102.0	100.3	98.6	95.2	93.5	91.8	90.1
62.5°	100.3	96.9	93.5	90.1	89.2	87.5	85.0	82.4	79.9	78.2	75.6
65°	88.4	85.8	81.6	79.0	76.5	75.6	73.1	69.7	67.1	65.4	62.9
67.5°	77.3	73.9	69.7	67.1	65.4	63.7	61.2	58.6	56.1	53.5	51.0
70°	66.3	63.7	59.5	56.9	55.2	53.5	51.0	47.6	45.0	42.5	40.8
72.5°	56.1	52.7	49.3	46.7	45.0	43.3	40.8	38.2	35.7	34.0	31.4
75°	46.7	43.3	40.8	37.4	36.5	34.8	32.3	29.7	27.2	25.5	23.8
77.5°	37.4	34.8	31.4	29.7	28.0	26.3	24.6	22.1	20.4	17.8	16.1
80°	28.0	25.5	22.9	21.2	19.5	18.7	17.0	15.3	13.6	11.9	11.0
82.5°	18.7	17.0	14.4	13.6	12.7	11.9	10.2	9.3	8.5	7.6	6.8
85°	10.2	9.3	8.5	6.8	6.8	5.9	5.1	5.1	4.2	4.2	3.4
87.5°	4.2	3.4	3.4	2.5	2.5	2.5	1.7	1.7	1.7	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°	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4
2.5°	551.5	548.1	548.1	548.1	545.6	546.4	547.3	548.1	547.3	544.7	547.3
5°	545.6	542.2	542.2	540.5	538.8	538.8	538.8	539.6	538.8	536.2	537.1
7.5°	537.9	533.7	532.8	531.1	529.4	528.6	528.6	528.6	527.7	524.3	526.0
10°	526.0	521.8	520.1	519.2	516.7	515.8	515.0	514.1	513.3	509.9	511.6
12.5°	511.6	508.2	504.8	503.9	501.4	499.7	498.8	498.8	497.1	493.7	495.4
15°	494.6	489.5	486.9	485.2	482.7	481.0	479.3	480.1	479.3	475.9	476.7
17.5°	474.2	469.1	466.5	465.7	462.3	460.6	459.7	459.7	458.9	455.5	456.3
20°	452.1	447.0	445.3	443.6	441.9	440.2	439.4	438.5	437.7	434.3	436.8
22.5°	430.0	424.1	421.5	421.5	418.1	417.3	416.4	417.3	416.4	413.0	414.7
25°	407.1	401.1	399.4	396.9	395.2	394.3	394.3	394.3	393.5	391.8	393.5
27.5°	381.6	377.3	374.8	373.9	372.2	371.4	370.5	371.4	371.4	368.8	370.5
30°	356.1	352.7	351.0	350.1	347.6	346.7	347.6	347.6	347.6	345.0	347.6
32.5°	330.6	328.0	327.2	324.6	322.9	322.9	322.9	323.8	322.9	321.2	323.8
35°	305.1	301.7	300.8	300.0	300.0	298.3	300.0	299.1	300.8	298.3	300.0
37.5°	277.9	276.2	275.3	275.3	273.6	274.5	274.5	274.5	276.2	273.6	275.3
40°	252.4	250.7	250.7	250.7	249.8	249.8	249.8	250.7	251.5	249.8	251.5
42.5°	226.9	226.0	226.0	225.2	224.3	225.2	226.0	226.0	226.9	225.2	226.0
45°	202.3	201.4	202.3	201.4	201.4	200.6	201.4	202.3	202.3	201.4	201.4
47.5°	179.3	179.3	178.5	178.5	178.5	178.5	178.5	178.5	178.5	176.8	178.5
50°	158.9	157.2	158.1	157.2	157.2	156.4	156.4	155.5	154.7	153.8	153.8
52.5°	139.4	137.7	137.7	136.8	136.0	136.0	135.1	134.3	133.4	131.7	131.7
55°	120.7	119.0	118.1	117.3	116.4	115.6	114.7	113.9	112.2	111.3	111.3
57.5°	103.7	102.0	100.3	100.3	98.6	97.7	96.0	94.3	93.5	91.8	91.8
60°	88.4	86.7	84.1	83.3	82.4	80.7	78.2	77.3	76.5	74.8	75.6
62.5°	73.9	71.4	68.8	68.0	67.1	65.4	63.7	62.0	61.2	62.0	62.0
65°	60.3	57.8	56.1	54.4	53.5	51.8	51.0	50.1	50.1	50.1	51.0
67.5°	48.4	45.9	44.2	43.3	41.6	40.8	40.8	40.8	40.8	40.8	40.8
70°	38.2	36.5	34.8	33.1	33.1	32.3	32.3	32.3	32.3	32.3	32.3
72.5°	28.9	27.2	26.3	26.3	25.5	25.5	25.5	25.5	24.6	24.6	25.5
75°	21.2	20.4	19.5	19.5	19.5	18.7	18.7	18.7	18.7	18.7	18.7
77.5°	15.3	14.4	14.4	13.6	13.6	13.6	13.6	13.6	13.6	12.7	12.7
80°	10.2	9.3	9.3	9.3	9.3	8.5	8.5	8.5	8.5	8.5	8.5
82.5°	5.9	5.9	5.9	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
85°	3.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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°	552.4	552.4	552.4	552.4	552.4	552.4	552.4	552.4
2.5°	542.2	545.6	546.4	543.9	544.7	543.0	543.9	542.2
5°	532.8	535.4	536.2	534.5	534.5	532.8	533.7	532.0
7.5°	520.9	523.5	524.3	522.6	522.6	520.9	520.9	520.1
10°	507.3	508.2	509.9	507.3	508.2	506.5	506.5	504.8
12.5°	490.3	492.0	493.7	491.2	491.2	490.3	490.3	487.8
15°	472.5	474.2	475.0	473.3	473.3	472.5	471.6	470.8
17.5°	453.8	454.6	456.3	453.8	455.5	453.8	453.8	452.1
20°	432.6	435.1	436.0	433.4	434.3	433.4	433.4	433.4
22.5°	412.2	413.9	414.7	413.0	413.9	412.2	413.0	411.3
25°	390.9	391.8	392.6	390.9	392.6	391.8	390.9	390.9
27.5°	368.8	369.7	370.5	368.8	370.5	369.7	370.5	368.8
30°	345.0	346.7	348.4	346.7	347.6	346.7	346.7	345.9
32.5°	321.2	322.9	324.6	322.9	324.6	322.9	323.8	322.1
35°	299.1	300.0	300.8	299.1	300.0	300.0	300.0	299.1
37.5°	274.5	276.2	276.2	275.3	277.0	276.2	276.2	274.5
40°	250.7	251.5	252.4	250.7	251.5	250.7	251.5	250.7
42.5°	226.0	227.7	228.6	226.9	226.9	226.9	226.0	226.9
45°	200.6	202.3	204.0	201.4	202.3	202.3	202.3	201.4
47.5°	177.6	177.6	178.5	177.6	178.5	176.8	178.5	177.6
50°	153.8	153.8	155.5	153.8	153.8	153.8	153.8	153.8
52.5°	130.9	131.7	131.7	130.0	130.9	130.0	130.9	130.0
55°	109.6	109.6	110.5	109.6	109.6	109.6	109.6	109.6
57.5°	90.9	91.8	91.8	90.9	91.8	90.9	90.9	90.9
60°	75.6	75.6	75.6	74.8	75.6	74.8	75.6	74.8
62.5°	61.2	62.0	62.0	61.2	62.0	61.2	61.2	61.2
65°	50.1	50.1	50.1	50.1	50.1	50.1	50.1	49.3
67.5°	39.9	39.9	40.8	39.9	40.8	40.8	40.8	40.8
70°	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3
72.5°	24.6	24.6	25.5	24.6	24.6	24.6	24.6	24.6
75°	18.7	18.7	18.7	18.7	18.7	17.8	17.8	18.7
77.5°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	13.6
80°	8.5	8.5	8.5	8.5	7.6	7.6	8.5	7.6
82.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
85°	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7
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)