

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: P251907

Luminaire Tested: **LD4B15D010 EU4B10208027 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251907
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 EU4B10208027 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1235.0 lumens
Efficiency: N/A
Efficacy: 85.8 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

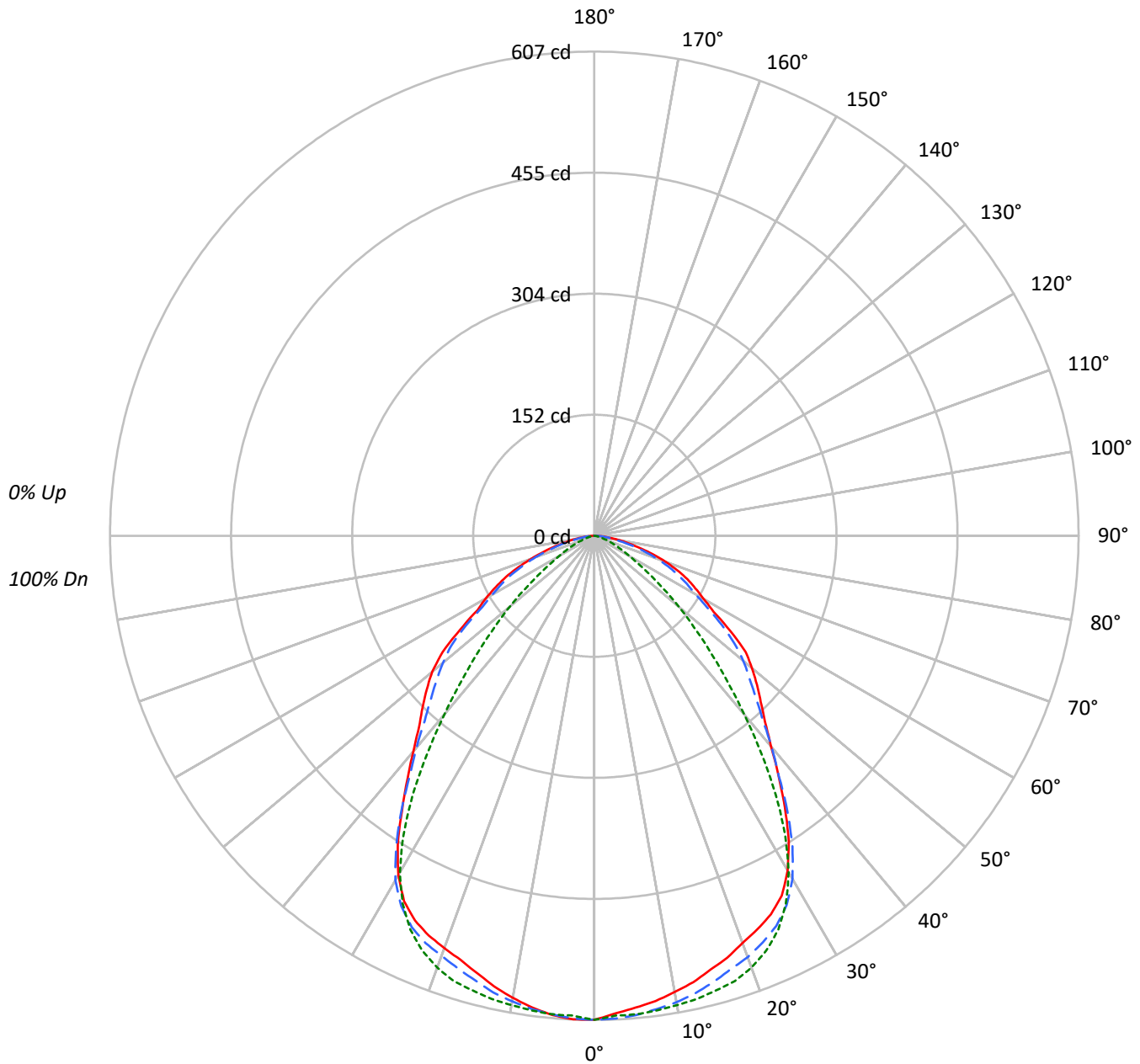
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	111	107	103	100	108	104	101	98		100	98	95		96	94	92		93	91	89
2	102	95	89	84	100	93	88	83		90	85	81		87	83	80		84	81	78
3	94	85	78	72	92	84	77	72		81	75	70		78	73	69		76	72	68
4	87	77	69	63	85	75	68	62		73	67	62		71	65	61		69	64	60
5	81	69	61	55	79	68	61	55		66	60	54		64	58	54		63	57	53
6	75	63	55	49	73	62	55	49		60	54	49		59	53	48		57	52	48
7	70	58	50	44	68	57	49	44		56	49	44		54	48	43		53	47	43
8	66	53	45	40	64	52	45	40		51	44	40		50	44	39		49	43	39
9	62	49	41	36	60	49	41	36		47	41	36		46	40	36		45	40	36
10	58	46	38	33	57	45	38	33		44	38	33		43	37	33		42	37	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	59138	59138	59138
5°	58092	58913	59001
10°	57467	59130	58209
15°	56804	59529	57269
20°	56347	59739	57032
25°	56315	58627	57218
30°	54523	54838	55266
35°	49541	47209	49981
40°	43828	37174	44897
45°	40659	28310	41941
50°	39072	20954	40194
55°	35376	14443	34900
60°	30758	9824	30563
65°	29702	7103	28203
70°	26871	4787	23936
75°	22141	3163	18978
80°	17791	2077	14143
85°	14648	1006	9393



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.3	4.6
10°-20°	163.8	13.3
20°-30°	247.4	20.0
30°-40°	259.0	21.0
40°-50°	209.7	17.0
50°-60°	152.6	12.4
60°-70°	94.1	7.6
70°-80°	42.5	3.4
80°-90°	8.6	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°	468.5	37.9
0°-40°	727.5	58.9
0°-60°	1089.8	88.2
0°-90°	1235.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1235.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	607	607	607	607	607	
5°	594	603	602	602	603	56
15°	563	579	590	577	568	159
25°	524	540	545	542	532	240
35°	416	422	397	422	420	260
45°	295	286	205	289	304	229
55°	208	195	85	197	205	186
65°	129	116	31	114	122	126
75°	59	50	8	44	50	64
85°	13	10	1	8	8	15
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°	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8
2.5°	599.4	599.4	605.0	611.5	605.9	600.3	604.0	602.2	608.7	608.7	605.9
5°	593.8	595.6	600.3	605.9	601.2	595.6	600.3	598.4	605.0	605.0	603.1
7.5°	588.2	589.1	594.7	601.2	596.6	591.0	594.7	593.8	599.4	600.3	598.4
10°	580.7	581.6	587.2	593.8	589.1	584.4	588.2	587.2	594.7	594.7	593.8
12.5°	573.2	574.2	579.8	585.4	580.7	576.0	579.8	579.8	587.2	588.2	587.2
15°	563.0	564.8	569.5	575.1	572.3	566.7	570.4	570.4	577.0	578.8	578.8
17.5°	554.5	555.5	560.2	565.8	562.0	557.4	561.1	561.1	567.6	569.5	569.5
20°	543.3	545.2	549.9	555.5	552.7	548.9	551.7	551.7	559.2	561.1	562.0
22.5°	534.0	535.9	539.6	547.1	542.4	539.6	543.3	542.4	550.8	551.7	551.7
25°	523.7	525.6	530.3	534.9	532.1	529.3	532.1	532.1	538.7	539.6	539.6
27.5°	508.8	509.7	514.4	519.1	516.3	512.5	516.3	515.3	521.9	522.8	521.9
30°	484.5	486.4	488.3	494.8	492.0	489.2	492.9	491.1	497.6	497.6	496.7
32.5°	453.7	453.7	457.5	462.1	458.4	456.5	459.3	460.3	464.9	464.9	462.1
35°	416.4	418.2	421.0	423.8	421.0	419.2	422.0	421.0	426.6	424.8	422.0
37.5°	379.0	380.0	382.8	386.5	382.8	380.0	380.9	380.0	384.6	384.6	380.0
40°	344.5	346.4	348.2	352.0	348.2	346.4	347.3	344.5	350.1	348.2	345.4
42.5°	316.5	317.4	320.2	322.1	318.4	317.4	318.4	316.5	319.3	317.4	311.8
45°	295.0	295.0	295.9	298.7	295.0	294.1	294.1	292.2	295.0	291.3	285.7
47.5°	276.3	277.3	278.2	280.1	277.3	274.5	275.4	271.7	273.5	270.7	263.3
50°	257.7	259.5	260.5	262.3	259.5	257.7	258.6	254.9	254.9	250.2	243.7
52.5°	239.0	239.9	239.0	240.9	239.0	236.2	237.1	233.4	233.4	227.8	221.3
55°	208.2	209.1	210.1	211.9	210.1	207.3	209.1	206.3	206.3	202.6	195.1
57.5°	177.4	178.3	179.2	180.2	180.2	178.3	179.2	177.4	176.4	173.6	168.0
60°	157.8	157.8	157.8	158.7	157.8	156.8	156.8	155.0	155.0	151.2	145.6
62.5°	142.8	143.8	143.8	144.7	143.8	142.8	141.9	140.0	139.1	135.4	130.7
65°	128.8	128.8	127.9	129.8	128.8	127.9	127.9	126.0	124.2	120.4	115.8
67.5°	112.0	113.0	112.0	113.0	113.0	112.0	111.1	109.2	108.3	105.5	99.9
70°	94.3	94.3	94.3	95.2	94.3	94.3	95.2	92.4	91.5	87.8	83.1
72.5°	76.6	77.5	77.5	76.6	77.5	75.6	75.6	75.6	74.7	71.0	66.3
75°	58.8	59.7	59.7	60.7	59.7	58.8	58.8	57.9	56.9	54.1	50.4
77.5°	43.9	43.9	44.8	44.8	44.8	43.9	43.9	42.0	42.0	40.1	36.4
80°	31.7	31.7	30.8	31.7	31.7	30.8	30.8	29.9	29.9	28.0	25.2
82.5°	20.5	21.5	21.5	21.5	21.5	20.5	20.5	20.5	19.6	18.7	16.8
85°	13.1	13.1	13.1	13.1	14.0	13.1	14.0	13.1	13.1	11.2	10.3
87.5°	5.6	5.6	5.6	6.5	6.5	5.6	5.6	5.6	5.6	5.6	4.7
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°	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8
2.5°	605.9	606.8	604.0	607.8	605.0	605.9	606.8	605.9	602.2	602.2	612.4
5°	602.2	604.0	601.2	605.9	604.0	604.0	605.9	605.0	601.2	602.2	611.5
7.5°	598.4	601.2	599.4	604.0	601.2	601.2	603.1	603.1	599.4	600.3	608.7
10°	592.8	596.6	595.6	600.3	597.5	597.5	600.3	600.3	596.6	597.5	605.9
12.5°	588.2	591.9	591.0	595.6	593.8	594.7	595.6	597.5	592.8	594.7	602.2
15°	580.7	584.4	584.4	589.1	587.2	589.1	591.0	593.8	590.0	590.0	597.5
17.5°	572.3	577.0	577.0	580.7	580.7	581.6	585.4	588.2	584.4	585.4	591.9
20°	563.0	568.6	568.6	573.2	572.3	574.2	577.0	579.8	576.0	576.0	583.5
22.5°	553.6	558.3	559.2	562.0	562.0	563.0	565.8	567.6	563.0	563.0	570.4
25°	540.5	545.2	546.1	548.0	546.1	546.1	548.0	549.9	545.2	545.2	551.7
27.5°	522.8	527.5	527.5	526.5	524.7	525.6	524.7	525.6	520.9	520.0	526.5
30°	496.7	499.5	499.5	498.5	495.7	495.7	492.9	493.9	487.3	487.3	492.9
32.5°	461.2	464.0	462.1	460.3	456.5	454.7	452.8	451.9	445.3	445.3	451.9
35°	419.2	421.0	418.2	414.5	409.8	407.0	404.2	400.5	395.8	396.8	400.5
37.5°	376.2	376.2	372.5	365.0	361.3	356.6	352.0	352.0	344.5	343.6	346.4
40°	339.8	336.1	329.6	319.3	312.8	308.1	301.5	297.8	292.2	292.2	296.9
42.5°	307.1	299.7	291.3	277.3	270.7	265.1	256.7	253.0	246.5	245.5	248.3
45°	278.2	270.7	258.6	243.7	235.3	228.7	216.6	211.9	206.3	205.4	207.3
47.5°	254.9	246.5	231.5	211.9	203.5	195.1	183.0	176.4	171.8	169.0	171.8
50°	234.3	223.1	207.3	186.7	175.5	168.0	153.1	146.6	140.0	138.2	139.1
52.5°	211.9	200.7	183.9	162.4	152.2	141.0	127.0	117.6	112.0	109.2	112.0
55°	187.7	176.4	159.6	138.2	127.0	116.7	101.8	94.3	87.8	85.0	87.8
57.5°	161.5	151.2	136.3	114.8	104.6	95.2	81.2	73.8	67.2	65.4	67.2
60°	139.1	130.7	115.8	95.2	86.8	76.6	64.4	56.9	51.3	50.4	51.3
62.5°	124.2	114.8	100.8	81.2	72.8	64.4	53.2	45.7	41.1	40.1	41.1
65°	109.2	99.0	85.9	69.1	60.7	54.1	42.9	36.4	31.7	30.8	31.7
67.5°	92.4	83.1	71.9	56.9	50.4	43.9	34.5	28.0	24.3	23.3	24.3
70°	76.6	68.2	56.9	45.7	39.2	34.5	26.1	21.5	17.7	16.8	17.7
72.5°	60.7	53.2	43.9	34.5	30.8	26.1	20.5	15.9	13.1	12.1	13.1
75°	46.7	41.1	33.6	25.2	22.4	19.6	14.0	11.2	9.3	8.4	9.3
77.5°	32.7	28.9	23.3	18.7	15.9	14.0	10.3	7.5	6.5	5.6	6.5
80°	22.4	19.6	15.9	12.1	10.3	8.4	6.5	4.7	3.7	3.7	3.7
82.5°	14.9	12.1	9.3	7.5	6.5	5.6	3.7	2.8	2.8	1.9	1.9
85°	8.4	7.5	5.6	4.7	3.7	2.8	1.9	1.9	0.9	0.9	0.9
87.5°	3.7	2.8	1.9	1.9	0.9	0.9	0.9	0.9	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°	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8
2.5°	609.6	606.8	610.6	606.8	605.0	606.8	605.0	610.6	605.9	602.2	605.9
5°	608.7	605.0	608.7	605.9	603.1	604.0	602.2	607.8	602.2	599.4	601.2
7.5°	606.8	604.0	605.9	603.1	600.3	601.2	599.4	604.0	598.4	595.6	597.5
10°	604.0	601.2	602.2	600.3	597.5	597.5	595.6	599.4	592.8	589.1	591.0
12.5°	600.3	596.6	598.4	595.6	591.9	591.9	590.0	592.8	586.3	582.6	583.5
15°	595.6	591.9	591.9	589.1	585.4	585.4	581.6	584.4	577.0	573.2	573.2
17.5°	590.0	585.4	585.4	582.6	577.9	577.0	574.2	577.0	568.6	564.8	564.8
20°	581.6	577.9	577.0	575.1	570.4	569.5	565.8	566.7	560.2	557.4	556.4
22.5°	570.4	566.7	567.6	564.8	561.1	560.2	556.4	559.2	552.7	549.9	550.8
25°	550.8	548.9	550.8	549.9	547.1	547.1	545.2	547.1	541.5	539.6	540.5
27.5°	528.4	527.5	528.4	528.4	526.5	526.5	526.5	529.3	523.7	522.8	522.8
30°	495.7	495.7	496.7	497.6	497.6	499.5	498.5	502.3	498.5	496.7	498.5
32.5°	452.8	456.5	459.3	459.3	459.3	461.2	463.1	465.9	462.1	463.1	463.1
35°	404.2	407.0	408.9	413.6	410.8	417.3	419.2	422.9	422.0	423.8	422.9
37.5°	350.1	353.8	357.6	364.1	363.2	370.6	374.4	381.8	380.0	383.7	385.6
40°	299.7	305.3	310.9	315.6	319.3	326.8	334.2	343.6	346.4	349.2	350.1
42.5°	251.1	256.7	266.1	272.6	278.2	290.3	300.6	311.8	314.6	320.2	322.1
45°	211.9	216.6	227.8	236.2	240.9	258.6	270.7	284.7	289.4	295.9	298.7
47.5°	175.5	183.9	195.1	205.4	211.9	230.6	246.5	261.4	267.9	275.4	279.1
50°	143.8	153.1	168.0	177.4	186.7	207.3	225.0	240.9	247.4	255.8	259.5
52.5°	117.6	127.9	141.9	152.2	162.4	183.9	202.6	217.5	225.9	231.5	237.1
55°	92.4	103.6	117.6	128.8	137.2	160.6	176.4	191.4	197.0	201.7	204.5
57.5°	71.9	80.3	94.3	103.6	113.9	134.4	150.3	161.5	166.2	171.8	173.6
60°	56.0	64.4	77.5	86.8	96.2	115.8	131.6	142.8	147.5	152.2	155.0
62.5°	44.8	53.2	65.4	73.8	82.2	99.9	113.9	125.1	130.7	135.4	138.2
65°	35.5	42.9	53.2	61.6	68.2	84.0	98.0	108.3	113.9	118.6	121.4
67.5°	28.0	34.5	43.9	49.5	56.0	69.1	81.2	90.6	95.2	100.8	103.6
70°	21.5	26.1	34.5	39.2	43.9	55.1	64.4	73.8	78.4	82.2	84.0
72.5°	15.9	19.6	26.1	29.9	32.7	42.0	49.5	56.0	59.7	63.5	65.4
75°	11.2	14.0	18.7	21.5	23.3	29.9	36.4	41.1	43.9	46.7	49.5
77.5°	7.5	9.3	12.1	14.0	15.9	20.5	24.3	28.0	30.8	33.6	34.5
80°	4.7	6.5	8.4	9.3	10.3	13.1	16.8	18.7	20.5	22.4	23.3
82.5°	2.8	3.7	4.7	5.6	6.5	8.4	10.3	12.1	13.1	14.9	15.9
85°	0.9	1.9	1.9	2.8	2.8	4.7	5.6	6.5	7.5	8.4	9.3
87.5°	0.0	0.0	0.9	0.9	0.9	0.9	1.9	1.9	1.9	1.9	1.9
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°	606.8	606.8	606.8	606.8	606.8	606.8	606.8	606.8
2.5°	609.6	606.8	605.0	604.0	610.6	602.2	605.9	606.8
5°	605.9	603.1	601.2	600.3	605.9	598.4	601.2	603.1
7.5°	600.3	598.4	595.6	594.7	600.3	591.9	595.6	596.6
10°	593.8	591.0	589.1	588.2	592.8	584.4	588.2	588.2
12.5°	585.4	583.5	579.8	579.8	583.5	576.0	578.8	578.8
15°	574.2	572.3	568.6	568.6	572.3	564.8	567.6	567.6
17.5°	564.8	563.0	560.2	559.2	563.0	555.5	558.3	557.4
20°	557.4	555.5	551.7	551.7	554.5	547.1	549.9	549.9
22.5°	550.8	549.9	546.1	546.1	549.9	542.4	544.3	542.4
25°	540.5	539.6	535.9	536.8	538.7	531.2	534.0	532.1
27.5°	523.7	523.7	520.0	519.1	521.9	515.3	517.2	516.3
30°	497.6	498.5	493.9	493.9	494.8	489.2	492.0	491.1
32.5°	462.1	463.1	459.3	458.4	461.2	456.5	458.4	458.4
35°	422.9	423.8	421.0	421.0	423.8	421.0	421.0	420.1
37.5°	383.7	385.6	383.7	384.6	386.5	383.7	385.6	384.6
40°	352.0	353.8	351.0	352.9	354.8	352.0	354.8	352.9
42.5°	323.0	325.8	324.0	325.8	327.7	325.8	327.7	324.9
45°	301.5	303.4	302.5	303.4	305.3	304.3	305.3	304.3
47.5°	281.0	284.7	282.9	284.7	287.5	285.7	287.5	284.7
50°	262.3	265.1	264.2	266.1	267.0	266.1	267.9	265.1
52.5°	238.1	240.9	239.9	239.9	241.8	239.9	241.8	239.9
55°	206.3	207.3	207.3	208.2	207.3	206.3	207.3	205.4
57.5°	175.5	177.4	174.6	177.4	176.4	175.5	175.5	173.6
60°	155.9	158.7	156.8	158.7	157.8	157.8	157.8	156.8
62.5°	140.0	141.9	140.0	141.0	141.0	141.0	140.0	139.1
65°	122.3	125.1	123.2	124.2	123.2	122.3	123.2	122.3
67.5°	104.6	105.5	105.5	104.6	104.6	104.6	104.6	102.7
70°	85.0	85.9	85.0	86.8	85.9	85.0	85.9	84.0
72.5°	66.3	67.2	66.3	67.2	66.3	66.3	66.3	66.3
75°	49.5	50.4	50.4	50.4	50.4	50.4	48.5	50.4
77.5°	35.5	35.5	35.5	36.4	35.5	35.5	35.5	35.5
80°	24.3	24.3	24.3	25.2	24.3	25.2	24.3	25.2
82.5°	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
85°	8.4	9.3	9.3	8.4	8.4	8.4	8.4	8.4
87.5°	1.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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)