

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: P251769

Luminaire Tested: **LD4B20D010 EU4B10209024 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251769
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: LD4B20D010 EU4B10209024 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1119.0 lumens
Efficiency: N/A
Efficacy: 53.8 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

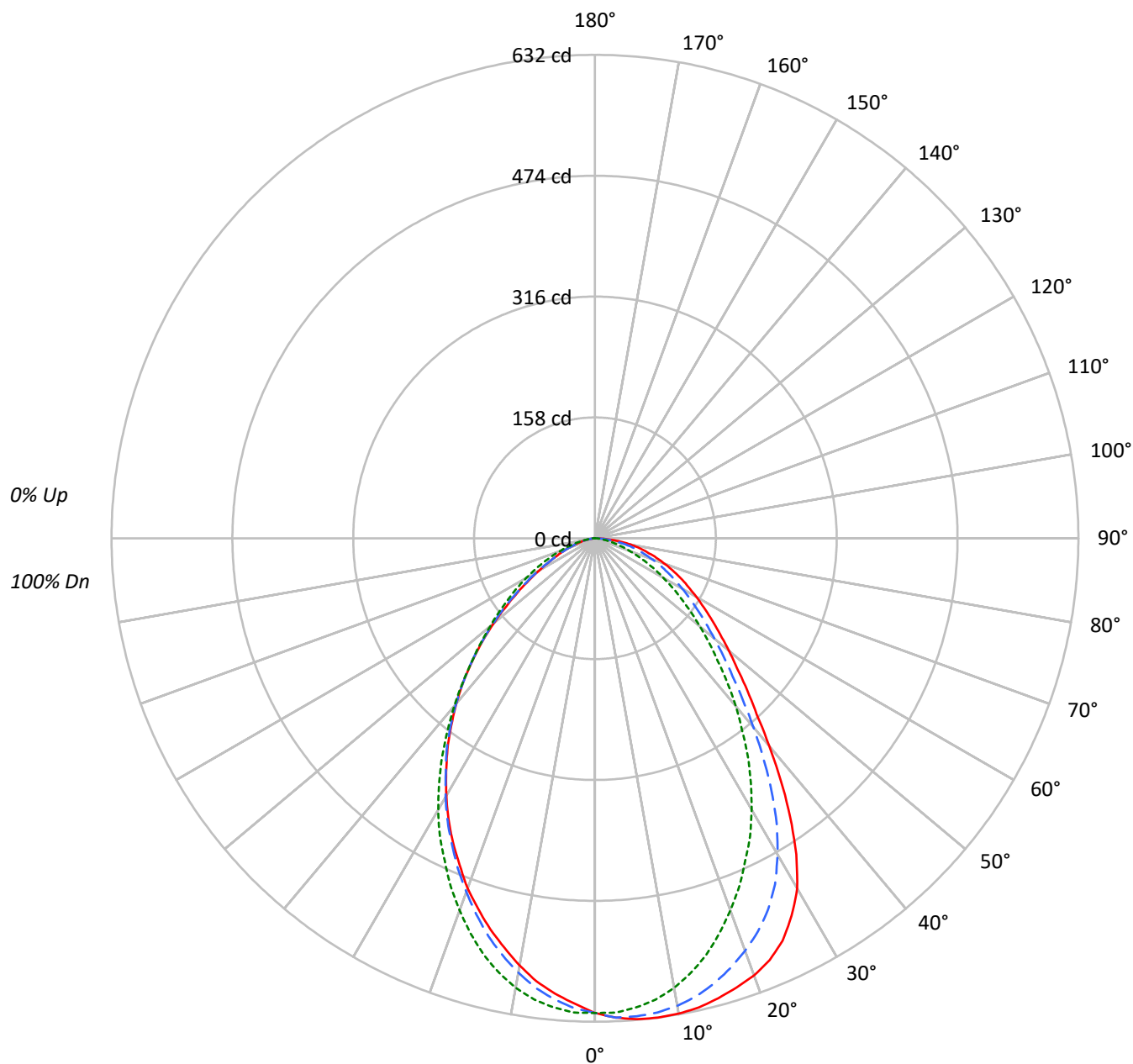
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	60482	60482	60482
5°	61741	60244	58473
10°	62455	59050	56121
15°	62808	56835	53364
20°	63078	53671	50498
25°	62423	50003	47229
30°	59520	46094	43731
35°	52932	41463	39987
40°	45062	36437	35839
45°	38826	31314	31190
50°	34599	27064	26200
55°	31791	23363	20933
60°	29783	20096	16373
65°	28618	16950	12776
70°	27469	13592	10344
75°	26622	10769	7908
80°	26771	7521	4827
85°	22364	5367	2125



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.1	5.2
10°-20°	159.7	14.3
20°-30°	223.4	20.0
30°-40°	229.6	20.5
40°-50°	186.3	16.7
50°-60°	131.2	11.7
60°-70°	80.8	7.2
70°-80°	40.3	3.6
80°-90°	9.6	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°	441.2	39.4
0°-40°	670.7	59.9
0°-60°	988.3	88.3
0°-90°	1119.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1119.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	621	621	621	621	621	
5°	631	627	616	605	598	60
15°	622	602	563	538	529	176
25°	580	536	465	442	439	265
35°	445	402	348	338	336	277
45°	282	254	227	227	226	219
55°	187	164	138	126	123	168
65°	124	104	74	56	55	123
75°	71	55	29	21	21	75
85°	20	13	5	3	2	23
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°	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6
2.5°	627.3	628.2	625.4	628.2	624.4	626.3	627.3	625.4	623.5	627.3	627.3
5°	631.1	631.1	628.2	632.0	627.3	628.2	630.1	627.3	624.4	628.2	627.3
7.5°	632.0	632.0	628.2	632.0	627.3	628.2	629.2	626.3	623.5	626.3	625.4
10°	631.1	630.1	627.3	631.1	626.3	626.3	627.3	624.4	619.6	622.5	620.6
12.5°	628.2	628.2	624.4	628.2	621.5	621.5	622.5	618.7	614.9	614.9	613.0
15°	622.5	622.5	618.7	621.5	615.8	615.8	614.9	611.0	606.3	606.3	602.4
17.5°	615.8	615.8	612.0	614.9	608.2	608.2	607.2	601.5	594.8	593.9	589.1
20°	608.2	608.2	603.4	605.3	597.7	597.7	596.7	590.0	582.4	580.5	573.8
22.5°	596.7	596.7	591.9	592.9	585.3	584.3	583.4	575.7	568.1	565.2	556.6
25°	580.5	579.5	575.7	575.7	568.1	566.2	564.3	556.6	549.0	543.3	535.6
27.5°	556.6	557.6	552.8	553.8	544.2	542.3	541.3	531.8	523.2	517.5	509.8
30°	528.9	526.1	521.3	521.3	513.7	512.7	510.8	502.2	492.7	486.0	477.4
32.5°	489.8	488.8	484.1	484.1	475.5	475.5	471.6	463.1	454.5	450.6	442.1
35°	444.9	444.0	440.1	440.1	432.5	433.5	429.6	423.0	414.4	408.6	402.0
37.5°	399.1	398.1	394.3	395.3	388.6	388.6	385.7	379.0	372.4	369.5	360.9
40°	354.2	353.3	348.5	351.3	345.6	343.7	342.8	338.0	330.3	326.5	321.8
42.5°	313.2	314.1	309.3	311.2	306.5	304.6	303.6	299.8	294.1	290.2	285.5
45°	281.7	279.7	277.8	277.8	273.1	272.1	271.1	266.4	262.6	258.7	254.0
47.5°	252.1	250.1	248.2	249.2	245.4	244.4	242.5	238.7	233.9	232.0	227.2
50°	228.2	227.2	224.4	224.4	220.5	219.6	217.7	214.8	210.0	207.2	203.4
52.5°	206.2	206.2	203.4	202.4	199.5	198.6	197.6	193.8	190.0	186.2	182.4
55°	187.1	186.2	184.3	184.3	180.4	179.5	178.5	174.7	170.9	168.0	164.2
57.5°	169.0	169.0	167.1	167.1	164.2	162.3	162.3	158.5	153.7	151.8	147.0
60°	152.8	152.8	150.9	150.9	148.0	148.0	146.1	142.3	139.4	135.6	131.8
62.5°	137.5	138.4	136.5	135.6	132.7	131.8	131.8	128.9	124.1	121.3	117.4
65°	124.1	123.2	122.2	121.3	118.4	117.4	117.4	113.6	110.8	106.9	104.1
67.5°	109.8	109.8	107.9	107.9	106.0	105.0	103.1	100.2	97.4	94.5	91.7
70°	96.4	96.4	95.5	95.5	92.6	91.7	90.7	87.8	85.0	82.1	78.3
72.5°	84.0	83.1	82.1	82.1	80.2	79.2	78.3	75.4	72.6	69.7	66.8
75°	70.7	70.7	69.7	69.7	67.8	66.8	66.8	64.9	61.1	59.2	55.4
77.5°	59.2	59.2	58.2	58.2	56.3	56.3	55.4	52.5	50.6	47.7	45.8
80°	47.7	46.8	46.8	45.8	43.9	43.9	43.0	42.0	39.1	37.2	34.4
82.5°	33.4	33.4	33.4	32.5	31.5	31.5	30.6	28.6	26.7	25.8	22.9
85°	20.0	20.0	19.1	18.1	19.1	18.1	17.2	16.2	15.3	14.3	13.4
87.5°	8.6	8.6	7.6	7.6	7.6	7.6	7.6	6.7	5.7	5.7	4.8
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6
2.5°	621.5	624.4	623.5	622.5	620.6	620.6	620.6	619.6	620.6	620.6	618.7
5°	621.5	623.5	622.5	620.6	618.7	618.7	617.7	615.8	615.8	615.8	612.0
7.5°	618.7	620.6	617.7	615.8	613.9	612.0	612.0	609.1	609.1	608.2	604.4
10°	613.0	613.9	610.1	608.2	605.3	604.4	602.4	598.6	597.7	596.7	592.9
12.5°	604.4	605.3	600.5	596.7	592.9	591.9	590.0	585.3	583.4	581.4	576.7
15°	591.9	591.9	586.2	581.4	577.6	576.7	571.9	567.1	565.2	563.3	556.6
17.5°	577.6	576.7	569.0	564.3	559.5	557.6	552.8	547.1	543.3	541.3	535.6
20°	562.3	559.5	550.9	546.1	540.4	537.5	532.8	525.1	521.3	517.5	511.7
22.5°	544.2	540.4	530.8	524.2	518.4	515.6	508.9	502.2	496.5	492.7	486.0
25°	522.3	517.5	507.0	498.4	493.6	490.7	484.1	476.4	470.7	465.0	459.2
27.5°	496.5	490.7	480.2	471.6	466.9	462.1	457.3	448.7	444.0	439.2	432.5
30°	465.0	458.3	448.7	441.1	435.4	431.5	425.8	418.2	412.5	409.6	402.9
32.5°	430.6	423.0	414.4	406.7	403.9	399.1	394.3	386.7	381.9	379.0	374.3
35°	392.4	386.7	377.1	371.4	366.6	364.7	360.9	353.3	351.3	348.5	342.8
37.5°	352.3	347.5	340.8	336.1	332.3	330.3	326.5	321.8	318.9	316.0	313.2
40°	315.1	311.2	305.5	301.7	296.9	294.1	294.1	288.3	286.4	286.4	283.6
42.5°	278.8	276.9	272.1	266.4	265.4	262.6	261.6	258.7	256.8	255.9	254.9
45°	248.2	245.4	240.6	237.7	234.9	234.9	232.0	229.1	228.2	227.2	226.3
47.5°	221.5	217.7	213.9	211.0	209.1	208.1	205.3	203.4	202.4	202.4	201.5
50°	197.6	194.8	191.0	188.1	186.2	184.3	182.4	180.4	179.5	178.5	178.5
52.5°	177.6	173.8	169.9	167.1	164.2	163.3	161.4	159.4	158.5	157.5	156.6
55°	159.4	156.6	151.8	148.9	146.1	146.1	143.2	140.3	138.4	137.5	136.5
57.5°	142.3	139.4	134.6	131.8	129.8	127.9	126.0	124.1	122.2	120.3	118.4
60°	127.0	124.1	119.3	115.5	114.6	112.7	110.8	106.9	105.0	103.1	101.2
62.5°	112.7	108.8	105.0	101.2	100.2	98.3	95.5	92.6	89.7	87.8	85.0
65°	99.3	96.4	91.7	88.8	85.9	85.0	82.1	78.3	75.4	73.5	70.7
67.5°	86.9	83.1	78.3	75.4	73.5	71.6	68.7	65.9	63.0	60.1	57.3
70°	74.5	71.6	66.8	64.0	62.1	60.1	57.3	53.5	50.6	47.7	45.8
72.5°	63.0	59.2	55.4	52.5	50.6	48.7	45.8	43.0	40.1	38.2	35.3
75°	52.5	48.7	45.8	42.0	41.1	39.1	36.3	33.4	30.6	28.6	26.7
77.5°	42.0	39.1	35.3	33.4	31.5	29.6	27.7	24.8	22.9	20.0	18.1
80°	31.5	28.6	25.8	23.9	22.0	21.0	19.1	17.2	15.3	13.4	12.4
82.5°	21.0	19.1	16.2	15.3	14.3	13.4	11.5	10.5	9.5	8.6	7.6
85°	11.5	10.5	9.5	7.6	7.6	6.7	5.7	5.7	4.8	4.8	3.8
87.5°	4.8	3.8	3.8	2.9	2.9	2.9	1.9	1.9	1.9	1.0	1.0
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°	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6
2.5°	619.6	615.8	615.8	615.8	613.0	613.9	614.9	615.8	614.9	612.0	614.9
5°	613.0	609.1	609.1	607.2	605.3	605.3	605.3	606.3	605.3	602.4	603.4
7.5°	604.4	599.6	598.6	596.7	594.8	593.9	593.9	593.9	592.9	589.1	591.0
10°	591.0	586.2	584.3	583.4	580.5	579.5	578.6	577.6	576.7	572.9	574.8
12.5°	574.8	570.9	567.1	566.2	563.3	561.4	560.4	560.4	558.5	554.7	556.6
15°	555.7	549.9	547.1	545.2	542.3	540.4	538.5	539.4	538.5	534.7	535.6
17.5°	532.8	527.0	524.2	523.2	519.4	517.5	516.5	516.5	515.6	511.7	512.7
20°	507.9	502.2	500.3	498.4	496.5	494.6	493.6	492.7	491.7	487.9	490.7
22.5°	483.1	476.4	473.6	473.6	469.7	468.8	467.8	468.8	467.8	464.0	465.9
25°	457.3	450.6	448.7	445.9	444.0	443.0	443.0	443.0	442.1	440.1	442.1
27.5°	428.7	423.9	421.0	420.1	418.2	417.2	416.3	417.2	417.2	414.4	416.3
30°	400.0	396.2	394.3	393.4	390.5	389.5	390.5	390.5	390.5	387.6	390.5
32.5°	371.4	368.5	367.6	364.7	362.8	362.8	362.8	363.8	362.8	360.9	363.8
35°	342.8	338.9	338.0	337.0	337.0	335.1	337.0	336.1	338.0	335.1	337.0
37.5°	312.2	310.3	309.3	309.3	307.4	308.4	308.4	308.4	310.3	307.4	309.3
40°	283.6	281.7	281.7	281.7	280.7	280.7	280.7	281.7	282.6	280.7	282.6
42.5°	254.9	254.0	254.0	253.0	252.1	253.0	254.0	254.0	254.9	253.0	254.0
45°	227.2	226.3	227.2	226.3	226.3	225.3	226.3	227.2	227.2	226.3	226.3
47.5°	201.5	201.5	200.5	200.5	200.5	200.5	200.5	200.5	200.5	198.6	200.5
50°	178.5	176.6	177.6	176.6	176.6	175.7	175.7	174.7	173.8	172.8	172.8
52.5°	156.6	154.7	154.7	153.7	152.8	152.8	151.8	150.9	149.9	148.0	148.0
55°	135.6	133.7	132.7	131.8	130.8	129.8	128.9	127.9	126.0	125.1	125.1
57.5°	116.5	114.6	112.7	112.7	110.8	109.8	107.9	106.0	105.0	103.1	103.1
60°	99.3	97.4	94.5	93.6	92.6	90.7	87.8	86.9	85.9	84.0	85.0
62.5°	83.1	80.2	77.3	76.4	75.4	73.5	71.6	69.7	68.7	69.7	69.7
65°	67.8	64.9	63.0	61.1	60.1	58.2	57.3	56.3	56.3	56.3	57.3
67.5°	54.4	51.6	49.6	48.7	46.8	45.8	45.8	45.8	45.8	45.8	45.8
70°	43.0	41.1	39.1	37.2	37.2	36.3	36.3	36.3	36.3	36.3	36.3
72.5°	32.5	30.6	29.6	29.6	28.6	28.6	28.6	28.6	27.7	27.7	28.6
75°	23.9	22.9	22.0	22.0	22.0	21.0	21.0	21.0	21.0	21.0	21.0
77.5°	17.2	16.2	16.2	15.3	15.3	15.3	15.3	15.3	15.3	14.3	14.3
80°	11.5	10.5	10.5	10.5	10.5	9.5	9.5	9.5	9.5	9.5	9.5
82.5°	6.7	6.7	6.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
85°	3.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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°	620.6	620.6	620.6	620.6	620.6	620.6	620.6	620.6
2.5°	609.1	613.0	613.9	611.0	612.0	610.1	611.0	609.1
5°	598.6	601.5	602.4	600.5	600.5	598.6	599.6	597.7
7.5°	585.3	588.1	589.1	587.2	587.2	585.3	585.3	584.3
10°	570.0	570.9	572.9	570.0	570.9	569.0	569.0	567.1
12.5°	550.9	552.8	554.7	551.8	551.8	550.9	550.9	548.0
15°	530.8	532.8	533.7	531.8	531.8	530.8	529.9	528.9
17.5°	509.8	510.8	512.7	509.8	511.7	509.8	509.8	507.9
20°	486.0	488.8	489.8	486.9	487.9	486.9	486.9	486.9
22.5°	463.1	465.0	465.9	464.0	465.0	463.1	464.0	462.1
25°	439.2	440.1	441.1	439.2	441.1	440.1	439.2	439.2
27.5°	414.4	415.3	416.3	414.4	416.3	415.3	416.3	414.4
30°	387.6	389.5	391.4	389.5	390.5	389.5	389.5	388.6
32.5°	360.9	362.8	364.7	362.8	364.7	362.8	363.8	361.9
35°	336.1	337.0	338.0	336.1	337.0	337.0	337.0	336.1
37.5°	308.4	310.3	310.3	309.3	311.2	310.3	310.3	308.4
40°	281.7	282.6	283.6	281.7	282.6	281.7	282.6	281.7
42.5°	254.0	255.9	256.8	254.9	254.9	254.9	254.0	254.9
45°	225.3	227.2	229.1	226.3	227.2	227.2	227.2	226.3
47.5°	199.5	199.5	200.5	199.5	200.5	198.6	200.5	199.5
50°	172.8	172.8	174.7	172.8	172.8	172.8	172.8	172.8
52.5°	147.0	148.0	148.0	146.1	147.0	146.1	147.0	146.1
55°	123.2	123.2	124.1	123.2	123.2	123.2	123.2	123.2
57.5°	102.2	103.1	103.1	102.2	103.1	102.2	102.2	102.2
60°	85.0	85.0	85.0	84.0	85.0	84.0	85.0	84.0
62.5°	68.7	69.7	69.7	68.7	69.7	68.7	68.7	68.7
65°	56.3	56.3	56.3	56.3	56.3	56.3	56.3	55.4
67.5°	44.9	44.9	45.8	44.9	45.8	45.8	45.8	45.8
70°	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3
72.5°	27.7	27.7	28.6	27.7	27.7	27.7	27.7	27.7
75°	21.0	21.0	21.0	21.0	21.0	20.0	20.0	21.0
77.5°	14.3	14.3	14.3	14.3	14.3	14.3	14.3	15.3
80°	9.5	9.5	9.5	9.5	8.6	8.6	9.5	8.6
82.5°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
85°	2.9	2.9	1.9	1.9	1.9	1.9	1.9	1.9
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)