

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: P251911

Luminaire Tested: **LD4B15D010 EU4B10208050 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251911
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 EU4B10208050 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1336.0 lumens
Efficiency: N/A
Efficacy: 92.8 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

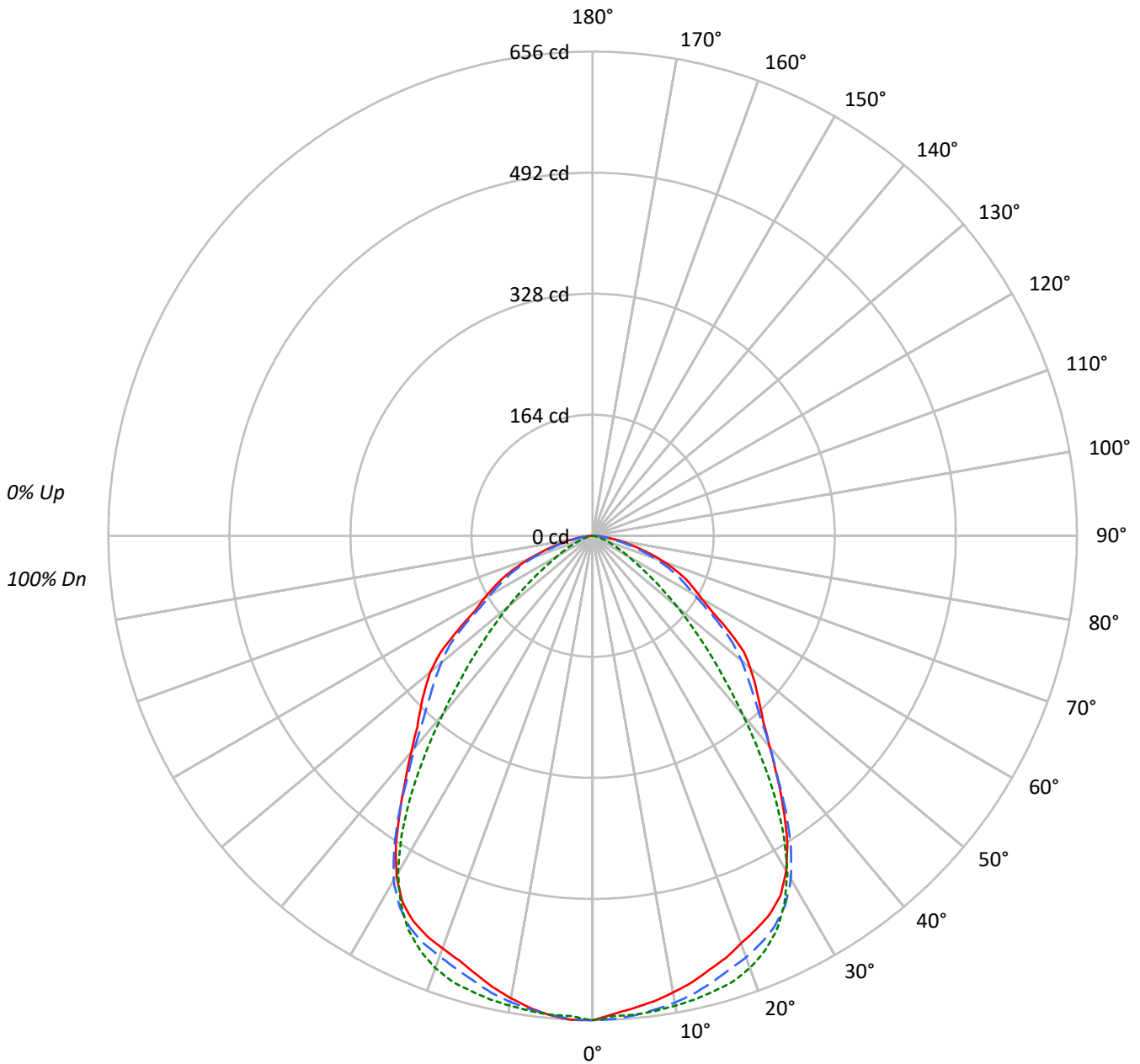
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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																			
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°	63981	63981	63981
5°	62836	63727	63825
10°	62168	63969	62969
15°	61446	64402	61950
20°	60962	64623	61699
25°	60928	63423	61907
30°	58991	59328	59779
35°	53586	51064	54074
40°	47416	40215	48574
45°	43980	30625	45372
50°	42256	22667	43484
55°	38264	15615	37755
60°	33272	10623	33077
65°	32146	7679	30509
70°	29065	5186	25902
75°	23949	3427	20522
80°	19250	2245	15322
85°	15767	1118	10176



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.0	4.6
10°-20°	177.2	13.3
20°-30°	267.7	20.0
30°-40°	280.1	21.0
40°-50°	226.9	17.0
50°-60°	165.0	12.4
60°-70°	101.8	7.6
70°-80°	46.0	3.4
80°-90°	9.3	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°	506.8	37.9
0°-40°	787.0	58.9
0°-60°	1178.9	88.2
0°-90°	1336.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1336.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	656	656	656	656	656	
5°	642	652	651	651	652	61
15°	609	626	638	624	614	172
25°	567	584	590	586	576	260
35°	450	456	429	456	454	281
45°	319	309	222	313	329	248
55°	225	211	92	213	222	201
65°	139	125	33	123	132	136
75°	64	54	9	48	54	69
85°	14	11	1	8	9	16
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°	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5
2.5°	648.4	648.4	654.4	661.5	655.4	649.4	653.4	651.4	658.5	658.5	655.4
5°	642.3	644.3	649.4	655.4	650.4	644.3	649.4	647.4	654.4	654.4	652.4
7.5°	636.3	637.3	643.3	650.4	645.3	639.3	643.3	642.3	648.4	649.4	647.4
10°	628.2	629.2	635.2	642.3	637.3	632.2	636.3	635.2	643.3	643.3	642.3
12.5°	620.1	621.1	627.2	633.2	628.2	623.1	627.2	627.2	635.2	636.3	635.2
15°	609.0	611.0	616.1	622.1	619.1	613.0	617.1	617.1	624.1	626.2	626.2
17.5°	599.9	600.9	606.0	612.0	608.0	602.9	607.0	607.0	614.0	616.1	616.1
20°	587.8	589.8	594.9	600.9	597.9	593.8	596.9	596.9	605.0	607.0	608.0
22.5°	577.7	579.7	583.7	591.8	586.8	583.7	587.8	586.8	595.9	596.9	596.9
25°	566.6	568.6	573.6	578.7	575.7	572.6	575.7	575.7	582.7	583.7	583.7
27.5°	550.4	551.4	556.5	561.5	558.5	554.5	558.5	557.5	564.6	565.6	564.6
30°	524.2	526.2	528.2	535.3	532.2	529.2	533.2	531.2	538.3	538.3	537.3
32.5°	490.8	490.8	494.9	499.9	495.9	493.9	496.9	497.9	502.9	502.9	499.9
35°	450.4	452.5	455.5	458.5	455.5	453.5	456.5	455.5	461.5	459.5	456.5
37.5°	410.0	411.0	414.1	418.1	414.1	411.0	412.1	411.0	416.1	416.1	411.0
40°	372.7	374.7	376.7	380.7	376.7	374.7	375.7	372.7	378.7	376.7	373.7
42.5°	342.4	343.4	346.4	348.4	344.4	343.4	344.4	342.4	345.4	343.4	337.3
45°	319.1	319.1	320.1	323.2	319.1	318.1	318.1	316.1	319.1	315.1	309.0
47.5°	298.9	300.0	301.0	303.0	300.0	296.9	297.9	293.9	295.9	292.9	284.8
50°	278.7	280.8	281.8	283.8	280.8	278.7	279.8	275.7	275.7	270.7	263.6
52.5°	258.5	259.6	258.5	260.6	258.5	255.5	256.5	252.5	252.5	246.4	239.4
55°	225.2	226.2	227.2	229.3	227.2	224.2	226.2	223.2	223.2	219.2	211.1
57.5°	191.9	192.9	193.9	194.9	194.9	192.9	193.9	191.9	190.9	187.8	181.8
60°	170.7	170.7	170.7	171.7	170.7	169.7	169.7	167.6	167.6	163.6	157.5
62.5°	154.5	155.5	155.5	156.5	155.5	154.5	153.5	151.5	150.5	146.4	141.4
65°	139.4	139.4	138.4	140.4	139.4	138.4	138.4	136.3	134.3	130.3	125.2
67.5°	121.2	122.2	121.2	122.2	122.2	121.2	120.2	118.2	117.2	114.1	108.1
70°	102.0	102.0	102.0	103.0	102.0	102.0	103.0	100.0	99.0	94.9	89.9
72.5°	82.8	83.8	83.8	82.8	83.8	81.8	81.8	81.8	80.8	76.8	71.7
75°	63.6	64.6	64.6	65.6	64.6	63.6	63.6	62.6	61.6	58.6	54.5
77.5°	47.5	47.5	48.5	48.5	48.5	47.5	47.5	45.4	45.4	43.4	39.4
80°	34.3	34.3	33.3	34.3	34.3	33.3	33.3	32.3	32.3	30.3	27.3
82.5°	22.2	23.2	23.2	23.2	23.2	22.2	22.2	22.2	21.2	20.2	18.2
85°	14.1	14.1	14.1	14.1	15.1	14.1	15.1	14.1	14.1	12.1	11.1
87.5°	6.1	6.1	6.1	7.1	7.1	6.1	6.1	6.1	6.1	6.1	5.0
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°	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5
2.5°	655.4	656.5	653.4	657.5	654.4	655.4	656.5	655.4	651.4	651.4	662.5
5°	651.4	653.4	650.4	655.4	653.4	653.4	655.4	654.4	650.4	651.4	661.5
7.5°	647.4	650.4	648.4	653.4	650.4	650.4	652.4	652.4	648.4	649.4	658.5
10°	641.3	645.3	644.3	649.4	646.4	646.4	649.4	649.4	645.3	646.4	655.4
12.5°	636.3	640.3	639.3	644.3	642.3	643.3	644.3	646.4	641.3	643.3	651.4
15°	628.2	632.2	632.2	637.3	635.2	637.3	639.3	642.3	638.3	638.3	646.4
17.5°	619.1	624.1	624.1	628.2	628.2	629.2	633.2	636.3	632.2	633.2	640.3
20°	609.0	615.1	615.1	620.1	619.1	621.1	624.1	627.2	623.1	623.1	631.2
22.5°	598.9	603.9	605.0	608.0	608.0	609.0	612.0	614.0	609.0	609.0	617.1
25°	584.8	589.8	590.8	592.8	590.8	590.8	592.8	594.9	589.8	589.8	596.9
27.5°	565.6	570.6	570.6	569.6	567.6	568.6	567.6	568.6	563.5	562.5	569.6
30°	537.3	540.3	540.3	539.3	536.3	536.3	533.2	534.3	527.2	527.2	533.2
32.5°	498.9	501.9	499.9	497.9	493.9	491.8	489.8	488.8	481.7	481.7	488.8
35°	453.5	455.5	452.5	448.4	443.4	440.3	437.3	433.3	428.2	429.2	433.3
37.5°	407.0	407.0	403.0	394.9	390.8	385.8	380.7	380.7	372.7	371.7	374.7
40°	367.6	363.6	356.5	345.4	338.3	333.3	326.2	322.2	316.1	316.1	321.2
42.5°	332.3	324.2	315.1	300.0	292.9	286.8	277.7	273.7	266.6	265.6	268.6
45°	301.0	292.9	279.8	263.6	254.5	247.4	234.3	229.3	223.2	222.2	224.2
47.5°	275.7	266.6	250.5	229.3	220.2	211.1	197.9	190.9	185.8	182.8	185.8
50°	253.5	241.4	224.2	202.0	189.9	181.8	165.6	158.6	151.5	149.5	150.5
52.5°	229.3	217.1	199.0	175.7	164.6	152.5	137.4	127.3	121.2	118.2	121.2
55°	203.0	190.9	172.7	149.5	137.4	126.2	110.1	102.0	94.9	91.9	94.9
57.5°	174.7	163.6	147.5	124.2	113.1	103.0	87.9	79.8	72.7	70.7	72.7
60°	150.5	141.4	125.2	103.0	93.9	82.8	69.7	61.6	55.5	54.5	55.5
62.5°	134.3	124.2	109.1	87.9	78.8	69.7	57.6	49.5	44.4	43.4	44.4
65°	118.2	107.1	92.9	74.7	65.6	58.6	46.5	39.4	34.3	33.3	34.3
67.5°	100.0	89.9	77.8	61.6	54.5	47.5	37.4	30.3	26.3	25.2	26.3
70°	82.8	73.7	61.6	49.5	42.4	37.4	28.3	23.2	19.2	18.2	19.2
72.5°	65.6	57.6	47.5	37.4	33.3	28.3	22.2	17.2	14.1	13.1	14.1
75°	50.5	44.4	36.4	27.3	24.2	21.2	15.1	12.1	10.1	9.1	10.1
77.5°	35.3	31.3	25.2	20.2	17.2	15.1	11.1	8.1	7.1	6.1	7.1
80°	24.2	21.2	17.2	13.1	11.1	9.1	7.1	5.0	4.0	4.0	4.0
82.5°	16.2	13.1	10.1	8.1	7.1	6.1	4.0	3.0	3.0	2.0	2.0
85°	9.1	8.1	6.1	5.0	4.0	3.0	2.0	2.0	1.0	1.0	1.0
87.5°	4.0	3.0	2.0	2.0	1.0	1.0	1.0	1.0	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5
2.5°	659.5	656.5	660.5	656.5	654.4	656.5	654.4	660.5	655.4	651.4	655.4
5°	658.5	654.4	658.5	655.4	652.4	653.4	651.4	657.5	651.4	648.4	650.4
7.5°	656.5	653.4	655.4	652.4	649.4	650.4	648.4	653.4	647.4	644.3	646.4
10°	653.4	650.4	651.4	649.4	646.4	646.4	644.3	648.4	641.3	637.3	639.3
12.5°	649.4	645.3	647.4	644.3	640.3	640.3	638.3	641.3	634.2	630.2	631.2
15°	644.3	640.3	640.3	637.3	633.2	633.2	629.2	632.2	624.1	620.1	620.1
17.5°	638.3	633.2	633.2	630.2	625.2	624.1	621.1	624.1	615.1	611.0	611.0
20°	629.2	625.2	624.1	622.1	617.1	616.1	612.0	613.0	606.0	602.9	601.9
22.5°	617.1	613.0	614.0	611.0	607.0	606.0	601.9	605.0	597.9	594.9	595.9
25°	595.9	593.8	595.9	594.9	591.8	591.8	589.8	591.8	585.8	583.7	584.8
27.5°	571.6	570.6	571.6	571.6	569.6	569.6	569.6	572.6	566.6	565.6	565.6
30°	536.3	536.3	537.3	538.3	538.3	540.3	539.3	543.3	539.3	537.3	539.3
32.5°	489.8	493.9	496.9	496.9	496.9	498.9	500.9	504.0	499.9	500.9	500.9
35°	437.3	440.3	442.4	447.4	444.4	451.4	453.5	457.5	456.5	458.5	457.5
37.5°	378.7	382.8	386.8	393.9	392.9	400.9	405.0	413.1	411.0	415.1	417.1
40°	324.2	330.2	336.3	341.4	345.4	353.5	361.6	371.7	374.7	377.7	378.7
42.5°	271.7	277.7	287.8	294.9	301.0	314.1	325.2	337.3	340.3	346.4	348.4
45°	229.3	234.3	246.4	255.5	260.6	279.8	292.9	308.0	313.1	320.1	323.2
47.5°	189.9	199.0	211.1	222.2	229.3	249.5	266.6	282.8	289.9	297.9	302.0
50°	155.5	165.6	181.8	191.9	202.0	224.2	243.4	260.6	267.6	276.7	280.8
52.5°	127.3	138.4	153.5	164.6	175.7	199.0	219.2	235.3	244.4	250.5	256.5
55°	100.0	112.1	127.3	139.4	148.5	173.7	190.9	207.0	213.1	218.1	221.2
57.5°	77.8	86.9	102.0	112.1	123.2	145.4	162.6	174.7	179.8	185.8	187.8
60°	60.6	69.7	83.8	93.9	104.0	125.2	142.4	154.5	159.6	164.6	167.6
62.5°	48.5	57.6	70.7	79.8	88.9	108.1	123.2	135.3	141.4	146.4	149.5
65°	38.4	46.5	57.6	66.7	73.7	90.9	106.0	117.2	123.2	128.3	131.3
67.5°	30.3	37.4	47.5	53.5	60.6	74.7	87.9	98.0	103.0	109.1	112.1
70°	23.2	28.3	37.4	42.4	47.5	59.6	69.7	79.8	84.8	88.9	90.9
72.5°	17.2	21.2	28.3	32.3	35.3	45.4	53.5	60.6	64.6	68.7	70.7
75°	12.1	15.1	20.2	23.2	25.2	32.3	39.4	44.4	47.5	50.5	53.5
77.5°	8.1	10.1	13.1	15.1	17.2	22.2	26.3	30.3	33.3	36.4	37.4
80°	5.0	7.1	9.1	10.1	11.1	14.1	18.2	20.2	22.2	24.2	25.2
82.5°	3.0	4.0	5.0	6.1	7.1	9.1	11.1	13.1	14.1	16.2	17.2
85°	1.0	2.0	2.0	3.0	3.0	5.0	6.1	7.1	8.1	9.1	10.1
87.5°	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0
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°	656.5	656.5	656.5	656.5	656.5	656.5	656.5	656.5
2.5°	659.5	656.5	654.4	653.4	660.5	651.4	655.4	656.5
5°	655.4	652.4	650.4	649.4	655.4	647.4	650.4	652.4
7.5°	649.4	647.4	644.3	643.3	649.4	640.3	644.3	645.3
10°	642.3	639.3	637.3	636.3	641.3	632.2	636.3	636.3
12.5°	633.2	631.2	627.2	627.2	631.2	623.1	626.2	626.2
15°	621.1	619.1	615.1	615.1	619.1	611.0	614.0	614.0
17.5°	611.0	609.0	606.0	605.0	609.0	600.9	603.9	602.9
20°	602.9	600.9	596.9	596.9	599.9	591.8	594.9	594.9
22.5°	595.9	594.9	590.8	590.8	594.9	586.8	588.8	586.8
25°	584.8	583.7	579.7	580.7	582.7	574.7	577.7	575.7
27.5°	566.6	566.6	562.5	561.5	564.6	557.5	559.5	558.5
30°	538.3	539.3	534.3	534.3	535.3	529.2	532.2	531.2
32.5°	499.9	500.9	496.9	495.9	498.9	493.9	495.9	495.9
35°	457.5	458.5	455.5	455.5	458.5	455.5	455.5	454.5
37.5°	415.1	417.1	415.1	416.1	418.1	415.1	417.1	416.1
40°	380.7	382.8	379.7	381.8	383.8	380.7	383.8	381.8
42.5°	349.4	352.5	350.4	352.5	354.5	352.5	354.5	351.5
45°	326.2	328.2	327.2	328.2	330.2	329.2	330.2	329.2
47.5°	304.0	308.0	306.0	308.0	311.1	309.0	311.1	308.0
50°	283.8	286.8	285.8	287.8	288.8	287.8	289.9	286.8
52.5°	257.5	260.6	259.6	259.6	261.6	259.6	261.6	259.6
55°	223.2	224.2	224.2	225.2	224.2	223.2	224.2	222.2
57.5°	189.9	191.9	188.9	191.9	190.9	189.9	189.9	187.8
60°	168.7	171.7	169.7	171.7	170.7	170.7	170.7	169.7
62.5°	151.5	153.5	151.5	152.5	152.5	152.5	151.5	150.5
65°	132.3	135.3	133.3	134.3	133.3	132.3	133.3	132.3
67.5°	113.1	114.1	114.1	113.1	113.1	113.1	113.1	111.1
70°	91.9	92.9	91.9	93.9	92.9	91.9	92.9	90.9
72.5°	71.7	72.7	71.7	72.7	71.7	71.7	71.7	71.7
75°	53.5	54.5	54.5	54.5	54.5	54.5	52.5	54.5
77.5°	38.4	38.4	38.4	39.4	38.4	38.4	38.4	38.4
80°	26.3	26.3	26.3	27.3	26.3	27.3	26.3	27.3
82.5°	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
85°	9.1	10.1	10.1	9.1	9.1	9.1	9.1	9.1
87.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)