

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: P251918

Luminaire Tested: **LD4B15D010 EU4B10209727 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251918
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 EU4B10209727 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 922.0 lumens
Efficiency: N/A
Efficacy: 64.1 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

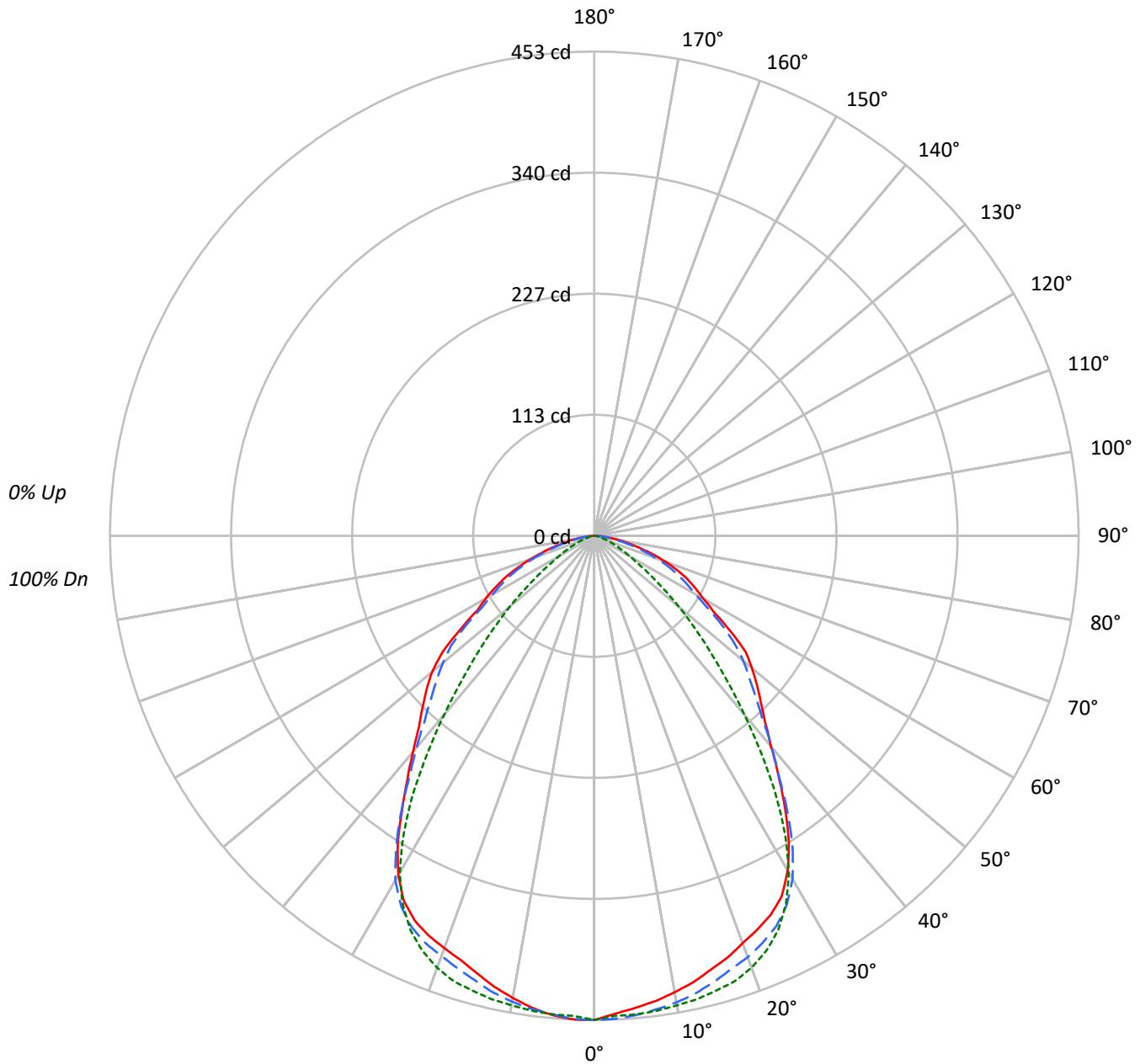
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	44149	44149	44149
5°	43368	43975	44043
10°	42900	44147	43454
15°	42407	44445	42760
20°	42066	44596	42574
25°	42045	43766	42723
30°	40704	40940	41255
35°	36989	35240	37310
40°	32722	27760	33523
45°	30349	21129	31314
50°	29171	15647	30005
55°	26404	10772	26048
60°	22961	7329	22825
65°	22184	5304	21054
70°	20060	3562	17866
75°	16531	2372	14158
80°	13301	1571	10551
85°	10958	783	7045



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.8	4.6
10°-20°	122.3	13.3
20°-30°	184.7	20.0
30°-40°	193.3	21.0
40°-50°	156.6	17.0
50°-60°	113.9	12.4
60°-70°	70.2	7.6
70°-80°	31.7	3.4
80°-90°	6.5	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°	349.8	37.9
0°-40°	543.1	58.9
0°-60°	813.6	88.2
0°-90°	922.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	922.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	453	453	453	453	453	
5°	443	450	450	450	450	42
15°	420	432	440	431	424	119
25°	391	403	407	404	397	179
35°	311	315	296	315	314	194
45°	220	213	153	216	227	171
55°	155	146	63	147	153	139
65°	96	86	23	85	91	94
75°	44	38	6	33	38	48
85°	10	8	1	6	6	11
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°	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0
2.5°	447.5	447.5	451.6	456.5	452.3	448.2	450.9	449.5	454.4	454.4	452.3
5°	443.3	444.7	448.2	452.3	448.9	444.7	448.2	446.8	451.6	451.6	450.2
7.5°	439.1	439.8	444.0	448.9	445.4	441.2	444.0	443.3	447.5	448.2	446.8
10°	433.5	434.2	438.4	443.3	439.8	436.3	439.1	438.4	444.0	444.0	443.3
12.5°	427.9	428.6	432.8	437.0	433.5	430.0	432.8	432.8	438.4	439.1	438.4
15°	420.3	421.7	425.2	429.3	427.2	423.1	425.9	425.9	430.7	432.1	432.1
17.5°	414.0	414.7	418.2	422.4	419.6	416.1	418.9	418.9	423.8	425.2	425.2
20°	405.6	407.0	410.5	414.7	412.6	409.8	411.9	411.9	417.5	418.9	419.6
22.5°	398.7	400.1	402.9	408.4	404.9	402.9	405.6	404.9	411.2	411.9	411.9
25°	391.0	392.4	395.9	399.4	397.3	395.2	397.3	397.3	402.2	402.9	402.9
27.5°	379.9	380.5	384.0	387.5	385.4	382.6	385.4	384.7	389.6	390.3	389.6
30°	361.7	363.1	364.5	369.4	367.3	365.2	368.0	366.6	371.5	371.5	370.8
32.5°	338.7	338.7	341.5	345.0	342.2	340.8	342.9	343.6	347.1	347.1	345.0
35°	310.9	312.2	314.3	316.4	314.3	312.9	315.0	314.3	318.5	317.1	315.0
37.5°	283.0	283.7	285.8	288.5	285.8	283.7	284.4	283.7	287.2	287.2	283.7
40°	257.2	258.6	260.0	262.8	260.0	258.6	259.3	257.2	261.4	260.0	257.9
42.5°	236.3	237.0	239.1	240.5	237.7	237.0	237.7	236.3	238.4	237.0	232.8
45°	220.2	220.2	220.9	223.0	220.2	219.5	219.5	218.2	220.2	217.5	213.3
47.5°	206.3	207.0	207.7	209.1	207.0	204.9	205.6	202.8	204.2	202.1	196.5
50°	192.4	193.8	194.5	195.9	193.8	192.4	193.1	190.3	190.3	186.8	181.9
52.5°	178.4	179.1	178.4	179.8	178.4	176.3	177.0	174.2	174.2	170.1	165.2
55°	155.4	156.1	156.8	158.2	156.8	154.7	156.1	154.0	154.0	151.2	145.7
57.5°	132.4	133.1	133.8	134.5	134.5	133.1	133.8	132.4	131.7	129.6	125.5
60°	117.8	117.8	117.8	118.5	117.8	117.1	117.1	115.7	115.7	112.9	108.7
62.5°	106.6	107.3	107.3	108.0	107.3	106.6	105.9	104.5	103.8	101.1	97.6
65°	96.2	96.2	95.5	96.9	96.2	95.5	95.5	94.1	92.7	89.9	86.4
67.5°	83.6	84.3	83.6	84.3	84.3	83.6	82.9	81.5	80.8	78.8	74.6
70°	70.4	70.4	70.4	71.1	70.4	70.4	71.1	69.0	68.3	65.5	62.0
72.5°	57.2	57.8	57.8	57.2	57.8	56.5	56.5	56.5	55.8	53.0	49.5
75°	43.9	44.6	44.6	45.3	44.6	43.9	43.9	43.2	42.5	40.4	37.6
77.5°	32.8	32.8	33.5	33.5	33.5	32.8	32.8	31.4	31.4	30.0	27.2
80°	23.7	23.7	23.0	23.7	23.7	23.0	23.0	22.3	22.3	20.9	18.8
82.5°	15.3	16.0	16.0	16.0	16.0	15.3	15.3	15.3	14.6	13.9	12.5
85°	9.8	9.8	9.8	9.8	10.5	9.8	10.5	9.8	9.8	8.4	7.7
87.5°	4.2	4.2	4.2	4.9	4.9	4.2	4.2	4.2	4.2	4.2	3.5
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°	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0
2.5°	452.3	453.0	450.9	453.7	451.6	452.3	453.0	452.3	449.5	449.5	457.2
5°	449.5	450.9	448.9	452.3	450.9	450.9	452.3	451.6	448.9	449.5	456.5
7.5°	446.8	448.9	447.5	450.9	448.9	448.9	450.2	450.2	447.5	448.2	454.4
10°	442.6	445.4	444.7	448.2	446.1	446.1	448.2	448.2	445.4	446.1	452.3
12.5°	439.1	441.9	441.2	444.7	443.3	444.0	444.7	446.1	442.6	444.0	449.5
15°	433.5	436.3	436.3	439.8	438.4	439.8	441.2	443.3	440.5	440.5	446.1
17.5°	427.2	430.7	430.7	433.5	433.5	434.2	437.0	439.1	436.3	437.0	441.9
20°	420.3	424.5	424.5	427.9	427.2	428.6	430.7	432.8	430.0	430.0	435.6
22.5°	413.3	416.8	417.5	419.6	419.6	420.3	422.4	423.8	420.3	420.3	425.9
25°	403.5	407.0	407.7	409.1	407.7	407.7	409.1	410.5	407.0	407.0	411.9
27.5°	390.3	393.8	393.8	393.1	391.7	392.4	391.7	392.4	388.9	388.2	393.1
30°	370.8	372.9	372.9	372.2	370.1	370.1	368.0	368.7	363.8	363.8	368.0
32.5°	344.3	346.4	345.0	343.6	340.8	339.4	338.0	337.3	332.5	332.5	337.3
35°	312.9	314.3	312.2	309.5	306.0	303.9	301.8	299.0	295.5	296.2	299.0
37.5°	280.9	280.9	278.1	272.5	269.7	266.2	262.8	262.8	257.2	256.5	258.6
40°	253.7	250.9	246.0	238.4	233.5	230.0	225.1	222.3	218.2	218.2	221.6
42.5°	229.3	223.7	217.5	207.0	202.1	197.9	191.7	188.9	184.0	183.3	185.4
45°	207.7	202.1	193.1	181.9	175.6	170.8	161.7	158.2	154.0	153.3	154.7
47.5°	190.3	184.0	172.9	158.2	151.9	145.7	136.6	131.7	128.2	126.2	128.2
50°	174.9	166.6	154.7	139.4	131.0	125.5	114.3	109.4	104.5	103.2	103.8
52.5°	158.2	149.8	137.3	121.3	113.6	105.2	94.8	87.8	83.6	81.5	83.6
55°	140.1	131.7	119.2	103.2	94.8	87.1	76.0	70.4	65.5	63.4	65.5
57.5°	120.6	112.9	101.8	85.7	78.1	71.1	60.6	55.1	50.2	48.8	50.2
60°	103.8	97.6	86.4	71.1	64.8	57.2	48.1	42.5	38.3	37.6	38.3
62.5°	92.7	85.7	75.3	60.6	54.4	48.1	39.7	34.2	30.7	30.0	30.7
65°	81.5	73.9	64.1	51.6	45.3	40.4	32.1	27.2	23.7	23.0	23.7
67.5°	69.0	62.0	53.7	42.5	37.6	32.8	25.8	20.9	18.1	17.4	18.1
70°	57.2	50.9	42.5	34.2	29.3	25.8	19.5	16.0	13.2	12.5	13.2
72.5°	45.3	39.7	32.8	25.8	23.0	19.5	15.3	11.8	9.8	9.1	9.8
75°	34.8	30.7	25.1	18.8	16.7	14.6	10.5	8.4	7.0	6.3	7.0
77.5°	24.4	21.6	17.4	13.9	11.8	10.5	7.7	5.6	4.9	4.2	4.9
80°	16.7	14.6	11.8	9.1	7.7	6.3	4.9	3.5	2.8	2.8	2.8
82.5°	11.2	9.1	7.0	5.6	4.9	4.2	2.8	2.1	2.1	1.4	1.4
85°	6.3	5.6	4.2	3.5	2.8	2.1	1.4	1.4	0.7	0.7	0.7
87.5°	2.8	2.1	1.4	1.4	0.7	0.7	0.7	0.7	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°	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0
2.5°	455.1	453.0	455.8	453.0	451.6	453.0	451.6	455.8	452.3	449.5	452.3
5°	454.4	451.6	454.4	452.3	450.2	450.9	449.5	453.7	449.5	447.5	448.9
7.5°	453.0	450.9	452.3	450.2	448.2	448.9	447.5	450.9	446.8	444.7	446.1
10°	450.9	448.9	449.5	448.2	446.1	446.1	444.7	447.5	442.6	439.8	441.2
12.5°	448.2	445.4	446.8	444.7	441.9	441.9	440.5	442.6	437.7	434.9	435.6
15°	444.7	441.9	441.9	439.8	437.0	437.0	434.2	436.3	430.7	427.9	427.9
17.5°	440.5	437.0	437.0	434.9	431.4	430.7	428.6	430.7	424.5	421.7	421.7
20°	434.2	431.4	430.7	429.3	425.9	425.2	422.4	423.1	418.2	416.1	415.4
22.5°	425.9	423.1	423.8	421.7	418.9	418.2	415.4	417.5	412.6	410.5	411.2
25°	411.2	409.8	411.2	410.5	408.4	408.4	407.0	408.4	404.2	402.9	403.5
27.5°	394.5	393.8	394.5	394.5	393.1	393.1	393.1	395.2	391.0	390.3	390.3
30°	370.1	370.1	370.8	371.5	371.5	372.9	372.2	375.0	372.2	370.8	372.2
32.5°	338.0	340.8	342.9	342.9	342.9	344.3	345.7	347.8	345.0	345.7	345.7
35°	301.8	303.9	305.3	308.8	306.7	311.5	312.9	315.7	315.0	316.4	315.7
37.5°	261.4	264.2	266.9	271.8	271.1	276.7	279.5	285.1	283.7	286.5	287.9
40°	223.7	227.9	232.1	235.6	238.4	243.9	249.5	256.5	258.6	260.7	261.4
42.5°	187.5	191.7	198.6	203.5	207.7	216.8	224.4	232.8	234.9	239.1	240.5
45°	158.2	161.7	170.1	176.3	179.8	193.1	202.1	212.6	216.1	220.9	223.0
47.5°	131.0	137.3	145.7	153.3	158.2	172.2	184.0	195.2	200.0	205.6	208.4
50°	107.3	114.3	125.5	132.4	139.4	154.7	168.0	179.8	184.7	191.0	193.8
52.5°	87.8	95.5	105.9	113.6	121.3	137.3	151.2	162.4	168.7	172.9	177.0
55°	69.0	77.4	87.8	96.2	102.5	119.9	131.7	142.9	147.1	150.5	152.6
57.5°	53.7	59.9	70.4	77.4	85.0	100.4	112.2	120.6	124.1	128.2	129.6
60°	41.8	48.1	57.8	64.8	71.8	86.4	98.3	106.6	110.1	113.6	115.7
62.5°	33.5	39.7	48.8	55.1	61.3	74.6	85.0	93.4	97.6	101.1	103.2
65°	26.5	32.1	39.7	46.0	50.9	62.7	73.2	80.8	85.0	88.5	90.6
67.5°	20.9	25.8	32.8	36.9	41.8	51.6	60.6	67.6	71.1	75.3	77.4
70°	16.0	19.5	25.8	29.3	32.8	41.1	48.1	55.1	58.5	61.3	62.7
72.5°	11.8	14.6	19.5	22.3	24.4	31.4	36.9	41.8	44.6	47.4	48.8
75°	8.4	10.5	13.9	16.0	17.4	22.3	27.2	30.7	32.8	34.8	36.9
77.5°	5.6	7.0	9.1	10.5	11.8	15.3	18.1	20.9	23.0	25.1	25.8
80°	3.5	4.9	6.3	7.0	7.7	9.8	12.5	13.9	15.3	16.7	17.4
82.5°	2.1	2.8	3.5	4.2	4.9	6.3	7.7	9.1	9.8	11.2	11.8
85°	0.7	1.4	1.4	2.1	2.1	3.5	4.2	4.9	5.6	6.3	7.0
87.5°	0.0	0.0	0.7	0.7	0.7	0.7	1.4	1.4	1.4	1.4	1.4
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°	453.0	453.0	453.0	453.0	453.0	453.0	453.0	453.0
2.5°	455.1	453.0	451.6	450.9	455.8	449.5	452.3	453.0
5°	452.3	450.2	448.9	448.2	452.3	446.8	448.9	450.2
7.5°	448.2	446.8	444.7	444.0	448.2	441.9	444.7	445.4
10°	443.3	441.2	439.8	439.1	442.6	436.3	439.1	439.1
12.5°	437.0	435.6	432.8	432.8	435.6	430.0	432.1	432.1
15°	428.6	427.2	424.5	424.5	427.2	421.7	423.8	423.8
17.5°	421.7	420.3	418.2	417.5	420.3	414.7	416.8	416.1
20°	416.1	414.7	411.9	411.9	414.0	408.4	410.5	410.5
22.5°	411.2	410.5	407.7	407.7	410.5	404.9	406.3	404.9
25°	403.5	402.9	400.1	400.8	402.2	396.6	398.7	397.3
27.5°	391.0	391.0	388.2	387.5	389.6	384.7	386.1	385.4
30°	371.5	372.2	368.7	368.7	369.4	365.2	367.3	366.6
32.5°	345.0	345.7	342.9	342.2	344.3	340.8	342.2	342.2
35°	315.7	316.4	314.3	314.3	316.4	314.3	314.3	313.6
37.5°	286.5	287.9	286.5	287.2	288.5	286.5	287.9	287.2
40°	262.8	264.2	262.1	263.5	264.9	262.8	264.9	263.5
42.5°	241.2	243.2	241.9	243.2	244.6	243.2	244.6	242.5
45°	225.1	226.5	225.8	226.5	227.9	227.2	227.9	227.2
47.5°	209.8	212.6	211.2	212.6	214.7	213.3	214.7	212.6
50°	195.9	197.9	197.2	198.6	199.3	198.6	200.0	197.9
52.5°	177.7	179.8	179.1	179.1	180.5	179.1	180.5	179.1
55°	154.0	154.7	154.7	155.4	154.7	154.0	154.7	153.3
57.5°	131.0	132.4	130.3	132.4	131.7	131.0	131.0	129.6
60°	116.4	118.5	117.1	118.5	117.8	117.8	117.8	117.1
62.5°	104.5	105.9	104.5	105.2	105.2	105.2	104.5	103.8
65°	91.3	93.4	92.0	92.7	92.0	91.3	92.0	91.3
67.5°	78.1	78.8	78.8	78.1	78.1	78.1	78.1	76.7
70°	63.4	64.1	63.4	64.8	64.1	63.4	64.1	62.7
72.5°	49.5	50.2	49.5	50.2	49.5	49.5	49.5	49.5
75°	36.9	37.6	37.6	37.6	37.6	37.6	36.2	37.6
77.5°	26.5	26.5	26.5	27.2	26.5	26.5	26.5	26.5
80°	18.1	18.1	18.1	18.8	18.1	18.8	18.1	18.8
82.5°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
85°	6.3	7.0	7.0	6.3	6.3	6.3	6.3	6.3
87.5°	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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)