

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: P251510

Luminaire Tested: **LD4B10D010 EU4B10209027 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251510
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10209027 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 813.0 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

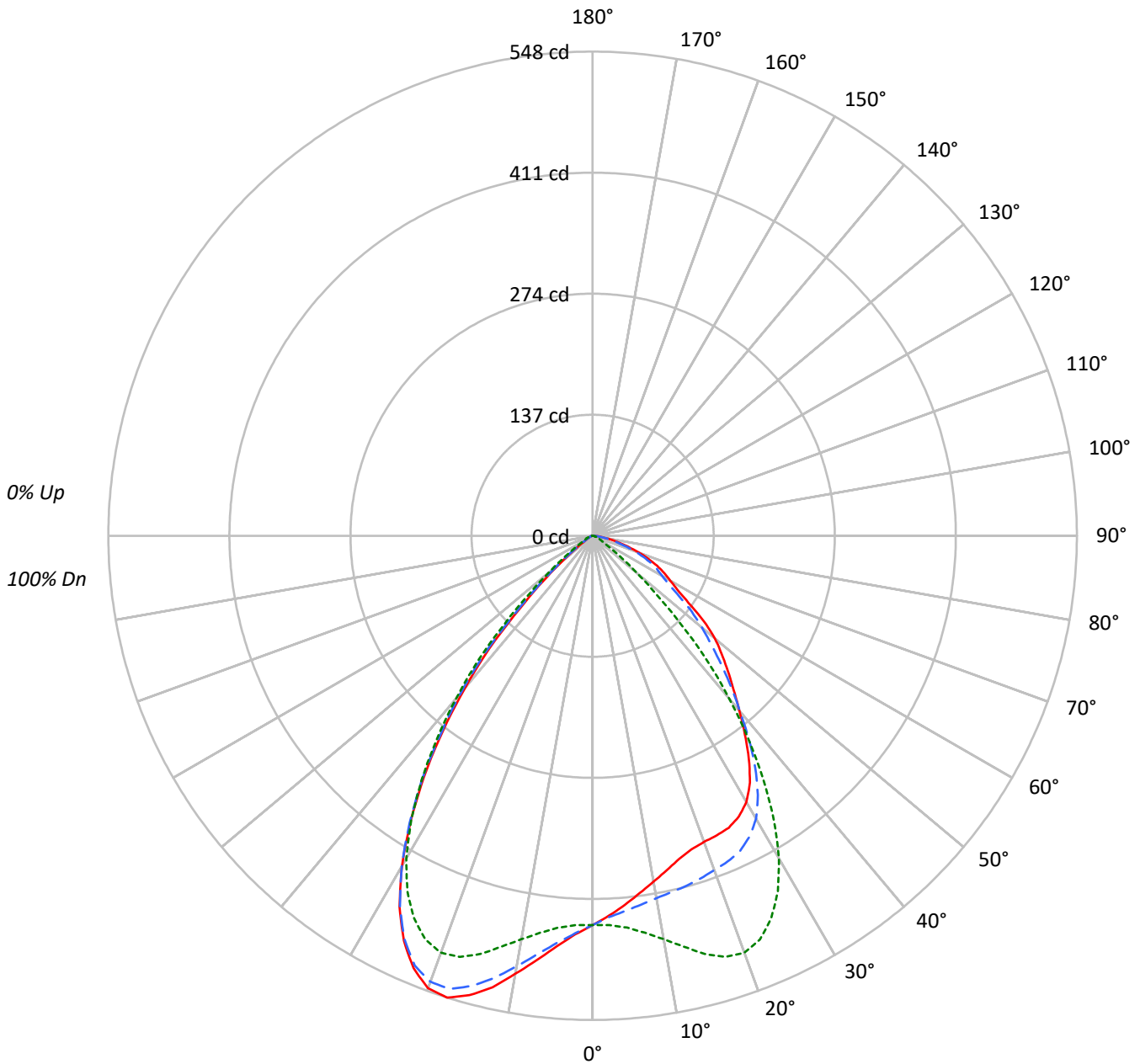
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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								
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90								
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72								
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64								
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58								
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48								
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44								
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40								
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	42940	42940	42940
5°	41020	43554	45628
10°	39327	45879	49807
15°	38179	49439	54312
20°	38239	52074	56492
25°	39207	51390	54369
30°	39162	47445	48548
35°	36680	40094	39547
40°	32849	30584	28536
45°	29812	19420	15933
50°	27382	9855	6808
55°	22479	4401	2243
60°	19726	2475	1228
65°	18564	1868	922
70°	15900	1482	826
75°	12125	1092	640
80°	8699	673	337
85°	6486	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.8	5.3
10°-20°	133.4	16.4
20°-30°	206.3	25.4
30°-40°	203.3	25.0
40°-50°	124.8	15.4
50°-60°	55.5	6.8
60°-70°	31.0	3.8
70°-80°	13.4	1.7
80°-90°	2.4	0.3
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°	382.5	47.0
0°-40°	585.8	72.1
0°-60°	766.2	94.2
0°-90°	813.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	813.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	441	441	441	441	441	
5°	419	426	445	462	466	39
15°	378	410	490	527	538	107
25°	365	394	478	504	506	167
35°	308	321	337	336	332	191
45°	216	205	141	123	116	168
55°	132	120	26	15	13	122
65°	80	72	8	5	4	79
75°	32	28	3	2	2	35
85°	6	5	0	0	0	7
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°	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6
2.5°	430.2	430.2	430.2	430.2	431.4	429.6	431.4	431.4	433.1	433.7	431.9
5°	419.3	418.7	419.3	419.3	420.4	419.9	421.6	422.7	425.0	426.2	426.2
7.5°	407.8	407.8	407.8	408.9	410.7	410.1	411.8	413.5	417.0	419.3	421.0
10°	397.4	396.9	398.6	399.2	400.9	400.9	403.8	405.5	409.5	414.1	416.4
12.5°	387.6	387.1	388.2	389.9	392.8	392.8	395.1	398.0	403.8	408.9	413.0
15°	378.4	379.0	380.7	381.9	385.3	385.3	388.2	391.7	398.0	404.3	410.1
17.5°	372.1	372.7	373.8	375.6	379.0	379.0	381.9	385.9	392.8	399.7	406.6
20°	368.7	369.2	370.4	372.1	375.0	375.6	377.9	382.5	388.8	396.3	402.6
22.5°	366.9	368.1	369.2	370.4	373.3	373.3	376.1	379.6	385.9	393.4	399.2
25°	364.6	365.8	366.4	368.1	370.4	370.4	372.1	376.1	381.9	388.2	394.0
27.5°	358.3	359.5	360.0	361.8	364.1	363.5	365.8	368.7	373.8	379.6	384.2
30°	348.0	348.5	349.7	350.3	352.0	352.0	353.7	356.6	360.0	365.2	369.8
32.5°	331.3	332.4	333.0	333.6	335.3	334.7	335.3	337.0	340.5	345.1	348.0
35°	308.3	310.6	310.6	311.7	312.3	311.7	311.7	314.0	315.8	319.2	320.9
37.5°	283.0	284.7	284.1	285.3	285.8	284.1	285.3	285.8	288.1	289.9	290.4
40°	258.2	258.8	258.8	258.8	258.8	258.2	258.8	259.4	261.1	261.1	259.4
42.5°	235.8	236.4	236.4	235.2	236.4	235.8	235.8	235.8	235.8	233.5	231.8
45°	216.3	216.8	216.8	216.3	216.3	215.1	214.5	214.0	212.2	209.4	205.3
47.5°	197.9	199.0	199.6	198.4	197.9	196.7	196.7	193.2	190.9	187.5	181.7
50°	180.6	181.7	181.7	180.6	180.6	178.9	177.1	176.0	172.5	168.5	161.6
52.5°	158.7	160.5	160.5	159.9	159.9	157.6	157.0	154.7	151.8	147.2	141.5
55°	132.3	134.6	134.0	133.4	132.3	132.3	132.3	130.6	128.8	125.4	119.6
57.5°	113.3	113.9	113.9	113.3	113.3	112.2	112.2	110.4	109.9	106.4	101.8
60°	101.2	101.2	101.8	101.2	100.7	100.1	99.5	98.4	96.6	94.3	90.9
62.5°	91.4	92.0	92.0	91.4	90.9	90.3	89.7	88.6	87.4	85.7	82.2
65°	80.5	81.7	81.1	80.5	79.9	79.4	79.4	78.2	77.1	75.9	72.5
67.5°	68.4	69.0	69.6	68.4	68.4	67.9	67.9	66.7	66.1	63.8	61.5
70°	55.8	56.4	56.4	55.8	55.8	55.2	55.2	54.6	54.1	52.3	50.0
72.5°	43.7	44.3	43.7	43.1	43.1	43.1	42.6	42.0	41.4	40.3	38.5
75°	32.2	32.2	32.8	32.2	31.6	31.6	31.1	31.1	29.9	29.3	27.6
77.5°	23.0	23.6	23.0	23.0	22.4	21.9	21.9	21.3	21.3	20.7	19.6
80°	15.5	15.5	16.1	15.5	15.0	15.5	15.0	14.4	14.4	13.8	12.7
82.5°	9.8	10.4	9.8	9.8	9.8	9.8	9.8	9.2	9.2	8.6	8.1
85°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.2	5.2	5.2	4.6
87.5°	2.9	2.9	2.3	2.3	2.9	2.9	2.9	2.3	2.3	2.3	2.3
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°	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6
2.5°	434.2	434.8	436.0	437.7	437.7	436.5	439.4	439.4	440.6	441.1	443.4
5°	429.6	430.8	433.1	436.0	436.5	436.0	440.0	441.7	443.4	445.2	448.6
7.5°	425.6	427.9	431.9	436.0	437.7	437.7	444.0	446.3	449.8	453.2	457.2
10°	423.3	426.8	432.5	438.8	440.6	442.3	449.8	454.4	459.0	463.6	469.3
12.5°	420.4	426.8	434.2	442.3	445.7	448.0	458.4	464.1	470.5	476.2	483.7
15°	419.9	427.3	437.1	447.5	452.1	455.5	467.0	475.1	482.5	490.0	497.5
17.5°	417.6	426.8	438.8	450.3	456.1	460.7	473.9	483.7	492.3	499.8	508.4
20°	414.7	425.0	438.3	450.9	457.2	461.8	476.2	485.4	495.2	502.1	510.2
22.5°	410.7	421.0	434.2	446.9	452.6	456.7	471.0	479.1	487.7	494.6	502.1
25°	403.8	413.5	425.0	435.4	441.1	444.6	457.2	464.7	471.0	477.9	484.8
27.5°	394.0	401.5	411.2	418.7	422.2	425.6	436.0	442.3	448.0	453.8	458.4
30°	376.7	382.5	389.4	395.7	399.2	399.7	409.5	413.0	417.6	421.6	425.0
32.5°	353.7	358.3	362.3	365.8	368.1	368.7	376.1	377.3	381.9	381.9	387.1
35°	324.4	326.7	329.6	329.6	331.3	329.6	334.7	335.9	336.5	337.0	341.1
37.5°	291.0	292.2	293.9	290.4	290.4	288.7	290.4	291.6	289.3	289.3	292.2
40°	259.4	257.1	254.8	251.3	249.6	246.2	246.2	243.3	241.6	240.4	241.0
42.5°	228.9	223.7	218.6	211.1	207.6	204.2	200.7	196.7	195.6	192.7	190.9
45°	199.6	192.1	185.2	173.1	166.2	162.8	155.3	147.2	142.1	140.9	136.3
47.5°	174.8	163.9	152.4	138.0	131.1	124.8	113.9	107.0	100.1	96.6	93.7
50°	153.0	143.2	128.3	112.7	104.1	97.8	85.7	77.6	70.2	65.0	61.5
52.5°	134.0	123.1	109.3	91.4	82.8	75.9	62.7	53.5	47.2	42.0	38.0
55°	112.7	104.1	90.3	73.6	65.0	56.9	45.4	35.7	29.3	25.9	23.0
57.5°	97.2	89.7	76.5	60.4	52.3	44.9	33.4	25.3	20.1	16.7	15.0
60°	86.8	79.9	68.4	52.9	45.4	38.5	27.6	20.1	15.5	12.7	11.5
62.5°	78.2	71.3	61.0	46.6	40.3	33.4	23.6	16.7	12.7	10.4	8.6
65°	68.4	62.1	52.9	40.3	34.5	28.8	20.1	13.8	10.4	8.1	6.9
67.5°	58.1	52.3	44.3	33.4	28.8	24.2	16.1	11.5	8.6	6.9	5.8
70°	47.2	42.6	35.1	27.0	23.0	19.0	13.2	9.2	6.3	5.2	4.6
72.5°	36.2	32.2	27.0	20.7	17.3	14.4	9.8	6.9	5.2	4.0	3.5
75°	25.9	23.0	19.0	15.0	12.7	10.4	7.5	5.2	3.5	2.9	2.3
77.5°	17.8	16.1	13.2	10.4	8.6	7.5	5.2	3.5	2.9	2.3	1.7
80°	11.5	10.4	8.6	6.3	5.2	4.6	2.9	2.3	1.7	1.2	1.2
82.5°	6.9	6.3	5.2	3.5	2.9	2.3	1.7	1.2	1.2	0.6	0.6
85°	4.0	3.5	2.3	1.7	1.7	1.2	1.2	0.6	0.6	0.0	0.0
87.5°	1.7	1.2	1.2	0.6	0.6	0.6	0.6	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	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°	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6
2.5°	442.3	445.2	444.6	446.3	445.7	445.7	448.6	447.5	450.3	450.3	450.9
5°	448.6	452.6	452.6	455.5	454.9	456.1	459.0	459.0	462.4	463.6	463.6
7.5°	457.8	463.0	464.1	467.0	467.6	469.9	472.2	472.8	477.4	478.5	479.1
10°	470.5	476.8	478.5	481.4	482.5	484.8	487.7	488.9	494.6	495.2	497.5
12.5°	486.0	492.9	494.6	498.1	498.7	501.5	505.6	506.7	512.5	514.2	515.9
15°	501.0	507.3	510.2	513.6	514.2	517.6	521.1	522.2	527.4	529.7	531.4
17.5°	511.3	518.8	520.5	525.1	525.1	528.0	531.4	532.6	537.8	539.5	540.6
20°	513.6	520.5	522.8	526.3	526.8	528.6	531.4	532.6	537.2	537.8	539.5
22.5°	505.0	511.9	513.0	516.5	517.1	518.8	521.1	520.5	526.3	525.7	526.3
25°	486.6	492.9	492.9	496.9	496.4	498.1	499.2	498.7	503.8	503.8	503.8
27.5°	460.1	465.9	466.4	469.3	467.6	468.2	469.3	468.7	472.2	472.2	472.2
30°	427.3	431.9	430.2	432.5	431.4	432.5	431.4	430.8	431.9	433.1	432.5
32.5°	386.5	389.9	389.9	390.5	390.5	387.1	385.9	385.9	385.3	384.8	384.8
35°	339.3	342.2	341.1	341.1	340.5	337.0	335.3	334.2	335.9	332.4	334.7
37.5°	291.0	291.6	289.9	289.3	286.4	286.4	283.5	281.2	282.4	281.8	279.5
40°	238.1	240.4	237.0	235.8	237.5	235.2	232.4	229.5	231.8	228.9	230.1
42.5°	186.3	185.8	184.6	184.6	184.6	181.2	180.6	180.0	180.6	178.3	176.6
45°	134.6	132.9	131.1	131.1	128.8	127.7	127.7	126.0	123.1	123.1	119.6
47.5°	90.9	86.8	85.7	85.1	84.0	84.0	82.8	81.7	81.1	78.2	78.2
50°	59.2	55.2	54.1	53.5	54.1	52.9	51.8	50.6	49.5	48.9	47.7
52.5°	35.7	33.9	32.8	32.2	31.1	30.5	29.9	28.8	28.2	28.2	27.6
55°	21.3	19.6	17.3	17.3	17.3	16.7	16.1	15.5	15.0	15.0	14.4
57.5°	13.2	12.1	10.9	10.4	10.4	10.4	9.8	9.8	9.8	9.8	9.2
60°	9.8	8.6	8.1	8.1	8.1	7.5	7.5	7.5	7.5	6.9	6.9
62.5°	7.5	6.9	6.3	6.3	5.8	5.8	5.8	5.8	5.8	5.8	5.2
65°	6.3	5.2	5.2	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
67.5°	4.6	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
70°	3.5	3.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
72.5°	2.9	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
75°	2.3	2.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	1.7	1.7	1.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	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	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	440.6	440.6	440.6	440.6	440.6	440.6	440.6	440.6
2.5°	450.9	453.8	450.9	450.9	452.6	452.1	453.2	451.5
5°	464.1	468.2	465.3	464.7	467.6	467.0	467.6	466.4
7.5°	480.2	484.3	481.4	481.4	484.3	483.7	485.4	484.3
10°	498.7	503.3	499.2	499.8	503.8	503.3	503.3	503.3
12.5°	517.6	522.2	519.9	519.9	522.8	523.4	524.0	523.4
15°	533.2	537.8	534.9	534.9	538.9	538.3	538.9	538.3
17.5°	542.4	547.0	543.5	543.5	547.0	547.0	547.5	548.1
20°	540.1	545.2	542.4	541.2	545.2	545.2	544.7	544.7
22.5°	526.8	531.4	529.1	528.0	530.9	529.7	529.1	529.7
25°	503.8	508.4	503.8	503.8	506.1	505.6	506.1	505.6
27.5°	472.8	476.2	471.6	471.0	473.3	472.2	471.6	473.3
30°	431.4	434.8	432.5	430.8	433.7	431.9	430.8	431.4
32.5°	384.2	386.5	385.3	382.5	384.2	383.0	382.5	383.0
35°	332.4	335.3	330.7	330.1	333.0	330.7	329.6	332.4
37.5°	278.9	282.4	278.4	278.9	277.2	277.8	276.6	278.4
40°	228.3	227.8	226.6	226.0	226.6	224.9	226.0	224.3
42.5°	173.7	174.8	174.3	173.7	174.3	172.0	170.8	173.1
45°	120.8	120.2	119.1	117.9	117.9	117.3	117.3	115.6
47.5°	77.6	77.1	74.8	75.3	76.5	75.3	73.6	75.9
50°	47.2	46.6	46.6	46.0	47.2	46.0	44.9	44.9
52.5°	26.5	26.5	25.9	25.9	25.9	25.9	25.3	24.7
55°	14.4	13.8	13.8	13.8	13.2	13.2	13.2	13.2
57.5°	9.2	9.2	9.2	9.2	9.2	9.2	8.6	8.6
60°	6.9	6.9	6.9	6.9	6.3	6.9	6.3	6.3
62.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
65°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
67.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
70°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
72.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)