

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: P251585

Luminaire Tested: **LD4B10D010 EU4B10208040 4LBSW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251585  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B10D010 EU4B10208040 4LBSW1H  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 987.0 lumens  
Efficiency: N/A  
Efficacy: 98.2 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

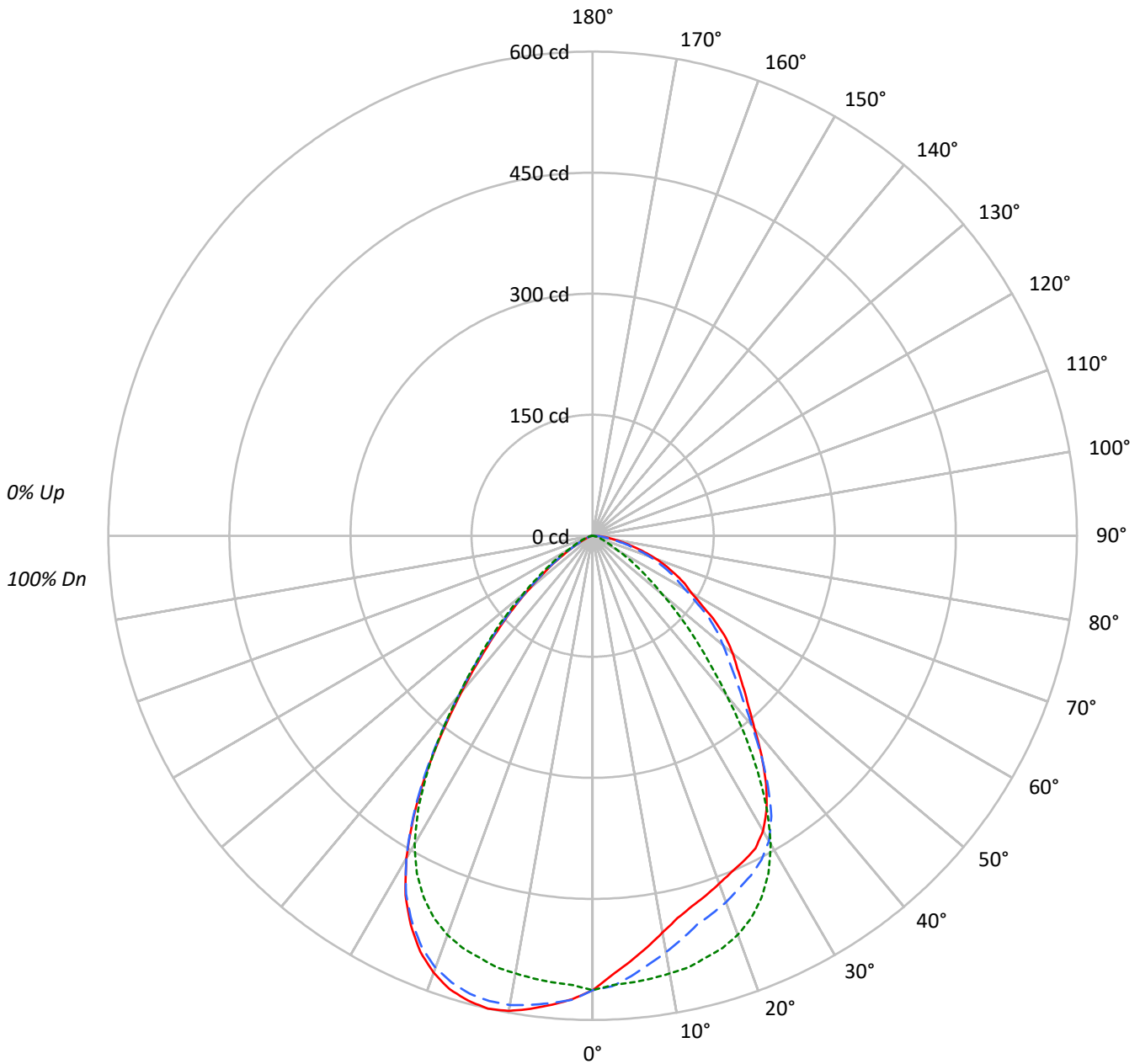
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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				100				
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89				
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79				
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70				
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62				
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56				
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50				
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46				
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42				
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38				
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	54879	54879	54879
5°	51821	54374	57074
10°	49402	54498	59169
15°	47956	54615	60174
20°	47563	54563	59749
25°	47755	53218	57272
30°	47523	49650	51935
35°	44544	42391	42819
40°	39693	32862	32124
45°	36304	24506	23003
50°	34326	17163	15511
55°	31570	11588	9736
60°	27581	6783	5380
65°	26105	4358	3021
70°	23765	3106	1852
75°	19656	2184	1356
80°	15490	1235	842
85°	13754	783	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.2	5.4
10°-20°	152.6	15.5
20°-30°	226.3	22.9
30°-40°	226.6	23.0
40°-50°	158.3	16.0
50°-60°	94.2	9.5
60°-70°	49.2	5.0
70°-80°	21.9	2.2
80°-90°	4.8	0.5
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°	432.1	43.8
0°-40°	658.6	66.7
0°-60°	911.2	92.3
0°-90°	987.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	987.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	563	563	563	563	563	
5°	530	548	556	581	583	50
15°	475	499	541	588	596	135
25°	444	464	495	529	533	205
35°	374	379	356	363	360	232
45°	263	250	178	172	167	205
55°	186	174	68	60	57	165
65°	113	104	19	14	13	112
75°	52	46	6	4	4	56
85°	12	9	1	1	0	14
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°	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1
2.5°	544.9	551.5	544.9	547.1	555.8	547.8	552.2	552.2	550.0	555.1	558.7
5°	529.7	536.2	529.7	532.6	542.0	534.0	539.1	537.7	538.4	542.8	547.8
7.5°	514.5	519.5	513.7	517.4	526.1	519.5	523.9	523.9	524.6	531.1	535.5
10°	499.2	503.6	499.2	502.1	511.6	505.7	508.7	509.4	511.6	517.4	523.9
12.5°	485.4	489.1	484.7	489.1	497.0	491.2	494.9	495.6	497.8	504.3	511.6
15°	475.3	478.9	474.5	478.2	485.4	481.1	484.0	485.4	486.9	492.7	499.2
17.5°	467.3	470.2	466.6	470.9	476.7	471.6	476.0	476.0	478.2	484.0	491.2
20°	458.6	461.5	458.6	462.2	468.7	464.4	468.0	468.0	470.2	476.7	483.3
22.5°	450.6	452.1	450.6	453.5	460.0	456.4	458.6	459.3	461.5	467.3	473.1
25°	444.1	447.0	445.5	448.4	452.8	449.2	451.3	452.1	454.2	459.3	464.4
27.5°	436.8	438.3	436.8	440.4	444.1	441.2	443.3	442.6	444.1	448.4	452.8
30°	422.3	423.8	423.8	425.9	428.8	427.4	429.6	427.4	428.8	432.5	436.8
32.5°	401.3	402.0	402.7	404.9	407.1	404.9	406.3	406.3	406.3	409.2	412.1
35°	374.4	375.9	375.1	376.6	378.8	378.0	378.0	377.3	375.9	377.3	378.8
37.5°	343.9	341.8	341.8	343.9	345.4	342.5	343.9	342.5	342.5	343.2	343.2
40°	312.0	309.8	312.0	312.7	313.5	312.0	311.3	309.8	307.7	308.4	306.9
42.5°	285.2	283.7	284.4	284.4	285.2	283.7	284.4	281.5	279.4	277.9	275.7
45°	263.4	261.2	263.4	261.9	261.9	261.2	260.5	259.0	256.1	254.0	250.3
47.5°	243.1	243.1	243.8	243.8	243.8	242.4	242.4	239.5	236.5	233.6	228.6
50°	226.4	224.9	227.8	227.8	225.7	224.9	225.7	222.0	219.9	216.2	211.2
52.5°	208.2	208.2	209.0	209.0	208.2	206.8	207.5	204.6	202.4	198.8	193.7
55°	185.8	184.3	186.5	186.5	185.8	185.0	185.8	183.6	181.4	178.5	174.1
57.5°	160.4	159.6	161.1	161.8	160.4	160.4	161.1	158.9	158.2	155.3	150.9
60°	141.5	140.8	142.2	142.9	141.5	141.5	141.5	138.6	137.1	134.2	131.3
62.5°	128.4	127.7	129.2	128.4	127.7	127.0	127.7	124.8	123.4	120.5	117.5
65°	113.2	113.9	114.6	114.6	113.9	113.2	113.2	111.7	110.3	107.4	103.8
67.5°	98.7	98.7	99.4	100.1	99.4	99.4	99.4	97.2	95.8	93.6	89.2
70°	83.4	82.7	84.9	84.9	83.4	84.2	83.4	82.7	81.3	78.4	74.7
72.5°	67.5	67.5	68.2	68.2	67.5	67.5	67.5	66.8	64.6	63.1	59.5
75°	52.2	52.2	53.0	53.7	52.2	52.2	53.0	51.5	50.1	47.9	45.7
77.5°	39.2	38.5	39.2	39.2	38.5	38.5	38.5	37.7	37.0	34.8	32.7
80°	27.6	26.8	27.6	27.6	27.6	26.8	26.8	26.1	26.1	24.7	22.5
82.5°	18.9	18.1	18.9	18.9	18.9	18.1	18.1	18.1	17.4	16.7	15.2
85°	12.3	11.6	11.6	12.3	11.6	11.6	11.6	11.6	10.9	10.2	9.4
87.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.1	5.1	5.1	4.4
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1
2.5°	555.8	554.4	558.7	557.3	558.0	554.4	560.2	557.3	560.9	557.3	564.5
5°	546.4	544.9	551.5	550.7	551.5	548.6	555.1	554.4	558.7	555.8	563.8
7.5°	536.2	534.8	542.0	542.8	544.2	541.3	550.0	550.0	554.4	553.6	562.3
10°	524.6	525.3	532.6	534.0	536.9	535.5	543.5	545.7	551.5	550.7	561.6
12.5°	513.7	513.7	523.2	526.1	528.2	527.5	536.9	539.9	546.4	547.8	558.0
15°	502.8	503.6	512.3	516.6	519.5	518.8	529.0	532.6	540.6	541.3	553.6
17.5°	494.1	493.4	502.8	506.5	510.8	510.1	521.0	525.3	533.3	535.5	547.1
20°	486.9	486.2	494.9	499.2	502.1	501.4	512.3	517.4	524.6	526.1	537.7
22.5°	478.2	476.7	485.4	489.1	492.0	491.2	500.7	504.3	511.6	513.0	523.9
25°	468.0	466.6	474.5	476.7	478.9	477.4	485.4	487.6	493.4	494.9	505.7
27.5°	456.4	452.8	459.3	459.3	460.8	458.6	464.4	466.6	471.6	471.6	481.8
30°	438.3	433.2	436.8	436.1	436.8	433.9	437.5	438.3	441.9	441.2	448.4
32.5°	412.9	405.6	407.8	405.6	403.4	399.1	403.4	402.0	404.9	402.0	408.5
35°	378.0	370.8	370.1	367.2	365.0	361.4	361.4	357.7	358.4	356.3	360.6
37.5°	340.3	330.9	329.4	323.6	320.0	315.6	315.6	312.7	309.1	307.7	311.3
40°	303.3	293.1	289.5	280.1	276.5	272.1	269.2	265.6	264.1	258.3	261.2
42.5°	271.4	260.5	252.5	242.4	238.7	232.2	227.8	223.5	221.3	214.8	217.7
45°	244.5	231.5	222.8	209.7	204.6	197.4	190.8	185.8	180.7	177.8	176.3
47.5°	222.0	208.2	196.6	182.1	174.1	167.6	158.9	153.8	147.3	143.7	141.5
50°	203.2	187.9	174.9	158.2	150.2	142.9	132.8	124.8	119.0	113.2	111.7
52.5°	186.5	170.5	156.0	137.1	127.7	119.0	108.1	99.4	94.3	87.8	87.1
55°	166.9	153.1	137.1	117.5	108.1	99.4	87.8	79.1	72.6	68.2	66.8
57.5°	145.8	132.8	117.5	98.0	88.5	79.1	68.2	60.2	54.4	50.8	50.1
60°	126.3	113.9	99.4	79.8	70.4	62.4	50.8	42.8	37.7	34.8	33.4
62.5°	111.7	100.1	86.3	68.2	59.5	51.5	40.6	33.4	29.0	26.1	24.7
65°	98.0	86.3	74.0	57.3	50.1	42.8	32.7	26.1	21.8	18.9	17.4
67.5°	83.4	73.3	61.7	47.9	40.6	34.8	26.1	20.3	16.7	14.5	13.1
70°	68.9	59.5	50.1	38.5	33.4	27.6	20.3	16.0	12.3	10.9	9.4
72.5°	54.4	47.2	39.2	29.7	25.4	21.8	16.0	11.6	9.4	8.0	6.5
75°	40.6	35.6	29.0	22.5	18.9	16.0	11.6	8.7	7.3	5.8	5.1
77.5°	29.0	24.7	20.3	15.2	13.8	11.6	8.0	6.5	5.1	3.6	2.9
80°	19.6	17.4	13.8	10.9	8.7	8.0	5.8	4.4	2.9	2.2	2.2
82.5°	13.1	10.9	8.7	6.5	5.8	5.1	3.6	2.9	2.2	1.5	1.5
85°	8.0	6.5	5.1	3.6	3.6	2.9	2.2	1.5	0.7	0.7	0.7
87.5°	3.6	2.9	2.2	1.5	1.5	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°	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1
2.5°	570.3	566.0	563.1	566.7	568.2	566.0	568.2	571.8	575.4	576.1	566.0
5°	571.1	566.7	565.2	569.6	570.3	569.6	571.8	576.9	581.2	582.7	572.5
7.5°	571.1	568.2	567.4	572.5	573.2	572.5	576.1	581.9	586.3	589.2	579.0
10°	569.6	568.2	568.9	573.2	574.7	574.7	579.8	586.3	590.6	593.5	583.4
12.5°	567.4	567.4	567.4	572.5	574.0	574.7	579.0	587.7	590.6	595.0	584.8
15°	563.8	563.8	563.8	568.9	571.1	571.1	576.1	584.1	587.7	592.1	581.9
17.5°	557.3	557.3	558.0	562.3	564.5	564.5	569.6	578.3	580.5	585.6	575.4
20°	547.8	547.8	548.6	552.9	555.1	553.6	560.2	567.4	569.6	574.0	563.8
22.5°	534.0	534.0	534.0	538.4	539.9	539.1	545.7	552.2	552.2	558.0	547.1
25°	513.7	515.2	513.7	518.1	519.5	518.8	524.6	530.4	529.0	535.5	524.6
27.5°	489.1	488.3	488.3	492.0	492.0	491.2	495.6	502.1	500.7	505.0	494.9
30°	455.0	457.1	453.5	458.6	456.4	455.0	457.9	463.7	461.5	465.1	457.1
32.5°	415.8	412.9	412.9	412.9	414.3	410.7	413.6	416.5	414.3	417.9	409.2
35°	364.3	365.0	362.8	363.5	364.3	359.9	362.8	365.7	362.8	365.0	357.0
37.5°	312.7	313.5	308.4	311.3	308.4	306.9	309.8	311.3	308.4	310.6	301.9
40°	261.2	259.8	259.0	259.0	259.8	256.1	258.3	260.5	258.3	259.8	251.8
42.5°	216.2	215.5	214.1	214.8	212.6	211.9	212.6	214.8	212.6	214.1	208.2
45°	177.0	175.6	173.4	174.1	174.1	170.5	172.7	174.1	172.0	172.7	167.6
47.5°	140.8	138.6	138.6	137.9	137.9	136.4	138.6	137.9	135.7	137.1	132.1
50°	109.6	108.1	108.1	108.1	108.1	105.9	106.7	108.1	105.9	105.9	103.0
52.5°	85.6	83.4	82.0	82.0	82.0	81.3	81.3	82.0	79.8	79.8	79.1
55°	64.6	63.9	61.7	61.7	61.7	59.5	60.2	60.2	59.5	59.5	57.3
57.5°	47.9	45.7	44.3	44.3	42.8	42.8	42.1	42.8	41.4	41.4	39.9
60°	31.9	30.5	29.7	29.0	29.0	28.3	29.0	28.3	28.3	27.6	26.8
62.5°	23.2	21.8	20.3	20.3	20.3	19.6	19.6	19.6	19.6	19.6	18.9
65°	16.7	15.2	15.2	14.5	14.5	13.8	13.8	13.8	13.8	13.8	13.1
67.5°	11.6	10.9	10.2	10.2	10.2	10.2	10.2	10.2	9.4	9.4	9.4
70°	8.7	8.0	7.3	7.3	7.3	7.3	7.3	6.5	7.3	7.3	6.5
72.5°	5.8	5.8	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
75°	4.4	4.4	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
77.5°	2.9	2.9	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	1.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	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°	563.1	563.1	563.1	563.1	563.1	563.1	563.1	563.1
2.5°	576.9	576.1	574.7	576.9	571.1	568.9	568.2	574.7
5°	584.8	583.4	583.4	585.6	579.0	577.6	576.1	583.4
7.5°	592.1	590.6	590.6	592.8	587.0	585.6	584.1	591.4
10°	596.4	596.4	596.4	597.9	592.8	591.4	590.6	597.9
12.5°	598.6	598.6	597.9	600.8	594.3	594.3	592.8	600.1
15°	595.7	595.7	595.7	597.9	592.1	590.6	590.6	596.4
17.5°	588.5	588.5	587.7	589.9	583.4	583.4	582.7	589.2
20°	577.6	577.6	576.1	579.0	572.5	570.3	569.6	576.1
22.5°	560.2	559.4	558.7	560.2	554.4	552.9	552.2	558.0
25°	537.7	536.9	535.5	536.9	530.4	528.2	528.2	532.6
27.5°	505.7	505.7	503.6	505.7	498.5	497.8	497.0	502.1
30°	466.6	463.7	462.2	465.1	457.9	457.9	456.4	461.5
32.5°	417.9	415.0	414.3	415.8	409.2	407.1	410.0	412.9
35°	362.1	362.8	359.9	359.9	354.1	354.8	355.5	359.9
37.5°	308.4	306.9	306.2	306.9	302.6	301.1	299.7	304.0
40°	258.3	254.7	254.0	254.0	250.3	249.6	250.3	252.5
42.5°	211.2	210.4	207.5	209.0	205.3	206.8	206.1	206.1
45°	170.5	171.2	168.3	170.5	167.6	165.4	165.4	166.9
47.5°	135.0	135.0	134.2	134.2	132.1	132.8	131.3	133.5
50°	104.5	104.5	103.0	103.8	102.3	102.3	101.6	102.3
52.5°	79.8	79.1	79.1	78.4	76.9	77.6	78.4	76.9
55°	58.0	58.8	57.3	58.0	56.6	57.3	56.6	57.3
57.5°	39.9	40.6	39.2	40.6	39.2	39.9	39.2	39.2
60°	27.6	27.6	26.8	27.6	26.8	26.8	26.1	27.6
62.5°	18.9	18.9	18.9	18.9	18.9	18.1	18.9	18.9
65°	13.8	13.1	13.1	13.1	13.1	13.1	13.1	13.1
67.5°	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
70°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
72.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
75°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.7	0.7	0.7	0.0	0.7	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)