

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: P251506

Luminaire Tested: **LD4B10D010 EU4B10208035 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251506  
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 EU4B10208035 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1015.0 lumens  
Efficiency: N/A  
Efficacy: 101.0 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

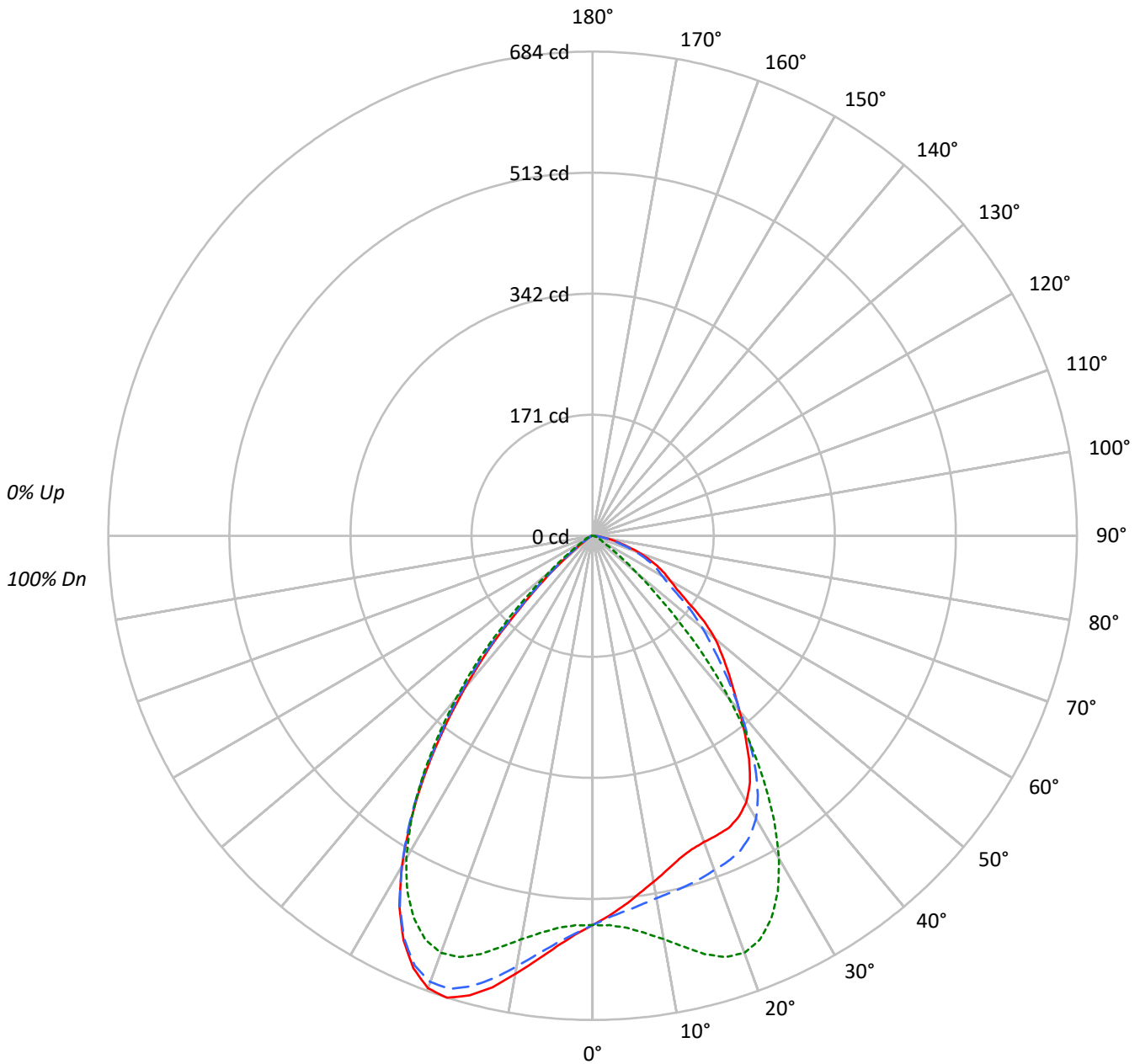
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	53602	53602	53602
5°	51214	54374	56967
10°	49105	57269	62178
15°	47673	61728	67812
20°	47739	65018	70525
25°	48949	64165	67875
30°	48885	59227	60600
35°	45793	50064	49374
40°	41017	38179	35622
45°	37213	24244	19888
50°	34190	12296	8491
55°	28070	5488	2804
60°	24637	3080	1540
65°	23176	2329	1153
70°	19861	1852	1026
75°	15137	1356	828
80°	10888	786	393
85°	8051	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.4	5.3
10°-20°	166.5	16.4
20°-30°	257.6	25.4
30°-40°	253.8	25.0
40°-50°	155.9	15.4
50°-60°	69.3	6.8
60°-70°	38.7	3.8
70°-80°	16.8	1.7
80°-90°	3.0	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°	477.6	47.0
0°-40°	731.4	72.1
0°-60°	956.5	94.2
0°-90°	1015.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1015.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	550	550	550	550	550	
5°	524	532	556	577	582	49
15°	472	512	612	658	672	134
25°	455	492	597	629	631	209
35°	385	401	421	419	415	239
45°	270	256	176	154	144	209
55°	165	149	32	19	16	152
65°	100	90	10	6	5	98
75°	40	34	4	2	2	44
85°	7	6	0	0	0	9
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°	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0
2.5°	537.1	537.1	537.1	537.1	538.5	536.4	538.5	538.5	540.7	541.4	539.3
5°	523.5	522.7	523.5	523.5	524.9	524.2	526.3	527.8	530.6	532.1	532.1
7.5°	509.1	509.1	509.1	510.5	512.7	512.0	514.1	516.3	520.6	523.5	525.6
10°	496.2	495.5	497.6	498.3	500.5	500.5	504.1	506.2	511.3	517.0	519.9
12.5°	484.0	483.2	484.7	486.8	490.4	490.4	493.3	496.9	504.1	510.5	515.6
15°	472.5	473.2	475.3	476.8	481.1	481.1	484.7	489.0	496.9	504.8	512.0
17.5°	464.6	465.3	466.7	468.9	473.2	473.2	476.8	481.8	490.4	499.0	507.7
20°	460.3	461.0	462.4	464.6	468.2	468.9	471.8	477.5	485.4	494.7	502.6
22.5°	458.1	459.6	461.0	462.4	466.0	466.0	469.6	473.9	481.8	491.1	498.3
25°	455.2	456.7	457.4	459.6	462.4	462.4	464.6	469.6	476.8	484.7	491.9
27.5°	447.3	448.8	449.5	451.7	454.5	453.8	456.7	460.3	466.7	473.9	479.7
30°	434.4	435.1	436.6	437.3	439.4	439.4	441.6	445.2	449.5	456.0	461.7
32.5°	413.6	415.0	415.8	416.5	418.6	417.9	418.6	420.8	425.1	430.8	434.4
35°	384.9	387.7	387.7	389.2	389.9	389.2	389.2	392.1	394.2	398.5	400.7
37.5°	353.3	355.4	354.7	356.2	356.9	354.7	356.2	356.9	359.7	361.9	362.6
40°	322.4	323.1	323.1	323.1	323.1	322.4	323.1	323.8	326.0	326.0	323.8
42.5°	294.4	295.1	295.1	293.7	295.1	294.4	294.4	294.4	294.4	291.5	289.4
45°	270.0	270.7	270.7	270.0	270.0	268.6	267.8	267.1	265.0	261.4	256.3
47.5°	247.0	248.4	249.2	247.7	247.0	245.6	245.6	241.3	238.4	234.1	226.9
50°	225.5	226.9	226.9	225.5	225.5	223.3	221.2	219.7	215.4	210.4	201.8
52.5°	198.2	200.3	200.3	199.6	199.6	196.7	196.0	193.2	189.6	183.8	176.6
55°	165.2	168.0	167.3	166.6	165.2	165.2	165.2	163.0	160.8	156.5	149.4
57.5°	141.5	142.2	142.2	141.5	141.5	140.0	140.0	137.9	137.1	132.8	127.1
60°	126.4	126.4	127.1	126.4	125.7	124.9	124.2	122.8	120.6	117.8	113.5
62.5°	114.2	114.9	114.9	114.2	113.5	112.7	112.0	110.6	109.1	107.0	102.7
65°	100.5	102.0	101.2	100.5	99.8	99.1	99.1	97.7	96.2	94.8	90.5
67.5°	85.4	86.2	86.9	85.4	85.4	84.7	84.7	83.3	82.6	79.7	76.8
70°	69.7	70.4	70.4	69.7	69.7	68.9	68.9	68.2	67.5	65.3	62.5
72.5°	54.6	55.3	54.6	53.9	53.9	53.9	53.1	52.4	51.7	50.3	48.1
75°	40.2	40.2	40.9	40.2	39.5	39.5	38.8	38.8	37.3	36.6	34.5
77.5°	28.7	29.4	28.7	28.7	28.0	27.3	27.3	26.6	26.6	25.8	24.4
80°	19.4	19.4	20.1	19.4	18.7	19.4	18.7	18.0	18.0	17.2	15.8
82.5°	12.2	12.9	12.2	12.2	12.2	12.2	12.2	11.5	11.5	10.8	10.1
85°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	6.5	6.5	6.5	5.7
87.5°	3.6	3.6	2.9	2.9	3.6	3.6	3.6	2.9	2.9	2.9	2.9
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°	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0
2.5°	542.1	542.8	544.3	546.4	546.4	545.0	548.6	548.6	550.0	550.7	553.6
5°	536.4	537.8	540.7	544.3	545.0	544.3	549.3	551.5	553.6	555.8	560.1
7.5°	531.4	534.2	539.3	544.3	546.4	546.4	554.3	557.2	561.5	565.8	570.8
10°	528.5	532.8	540.0	547.9	550.0	552.2	561.5	567.3	573.0	578.7	585.9
12.5°	524.9	532.8	542.1	552.2	556.5	559.4	572.3	579.5	587.4	594.5	603.9
15°	524.2	533.5	545.7	558.6	564.4	568.7	583.1	593.1	602.4	611.8	621.1
17.5°	521.3	532.8	547.9	562.2	569.4	575.2	591.7	603.9	614.7	624.0	634.8
20°	517.7	530.6	547.2	563.0	570.8	576.6	594.5	606.0	618.2	626.9	636.9
22.5°	512.7	525.6	542.1	557.9	565.1	570.1	588.1	598.1	608.9	617.5	626.9
25°	504.1	516.3	530.6	543.6	550.7	555.1	570.8	580.2	588.1	596.7	605.3
27.5°	491.9	501.2	513.4	522.7	527.0	531.4	544.3	552.2	559.4	566.5	572.3
30°	470.3	477.5	486.1	494.0	498.3	499.0	511.3	515.6	521.3	526.3	530.6
32.5°	441.6	447.3	452.4	456.7	459.6	460.3	469.6	471.0	476.8	476.8	483.2
35°	405.0	407.9	411.4	411.4	413.6	411.4	417.9	419.3	420.1	420.8	425.8
37.5°	363.3	364.8	366.9	362.6	362.6	360.5	362.6	364.1	361.2	361.2	364.8
40°	323.8	321.0	318.1	313.8	311.6	307.3	307.3	303.7	301.6	300.1	300.9
42.5°	285.8	279.3	272.9	263.5	259.2	254.9	250.6	245.6	244.1	240.5	238.4
45°	249.2	239.8	231.2	216.1	207.5	203.2	193.9	183.8	177.4	175.9	170.2
47.5°	218.3	204.6	190.3	172.3	163.7	155.8	142.2	133.6	124.9	120.6	117.0
50°	191.0	178.8	160.1	140.7	130.0	122.1	107.0	96.9	87.6	81.1	76.8
52.5°	167.3	153.7	136.4	114.2	103.4	94.8	78.3	66.8	58.9	52.4	47.4
55°	140.7	130.0	112.7	91.9	81.1	71.1	56.7	44.5	36.6	32.3	28.7
57.5°	121.4	112.0	95.5	75.4	65.3	56.0	41.6	31.6	25.1	20.8	18.7
60°	108.4	99.8	85.4	66.1	56.7	48.1	34.5	25.1	19.4	15.8	14.4
62.5°	97.7	89.0	76.1	58.2	50.3	41.6	29.4	20.8	15.8	12.9	10.8
65°	85.4	77.5	66.1	50.3	43.1	35.9	25.1	17.2	12.9	10.1	8.6
67.5°	72.5	65.3	55.3	41.6	35.9	30.2	20.1	14.4	10.8	8.6	7.2
70°	58.9	53.1	43.8	33.7	28.7	23.7	16.5	11.5	7.9	6.5	5.7
72.5°	45.2	40.2	33.7	25.8	21.5	18.0	12.2	8.6	6.5	5.0	4.3
75°	32.3	28.7	23.7	18.7	15.8	12.9	9.3	6.5	4.3	3.6	2.9
77.5°	22.3	20.1	16.5	12.9	10.8	9.3	6.5	4.3	3.6	2.9	2.2
80°	14.4	12.9	10.8	7.9	6.5	5.7	3.6	2.9	2.2	1.4	1.4
82.5°	8.6	7.9	6.5	4.3	3.6	2.9	2.2	1.4	1.4	0.7	0.7
85°	5.0	4.3	2.9	2.2	2.2	1.4	1.4	0.7	0.7	0.0	0.0
87.5°	2.2	1.4	1.4	0.7	0.7	0.7	0.7	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°	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0
2.5°	552.2	555.8	555.1	557.2	556.5	556.5	560.1	558.6	562.2	562.2	563.0
5°	560.1	565.1	565.1	568.7	568.0	569.4	573.0	573.0	577.3	578.7	578.7
7.5°	571.6	578.0	579.5	583.1	583.8	586.6	589.5	590.2	596.0	597.4	598.1
10°	587.4	595.3	597.4	601.0	602.4	605.3	608.9	610.3	617.5	618.2	621.1
12.5°	606.8	615.4	617.5	621.8	622.5	626.1	631.2	632.6	639.8	641.9	644.1
15°	625.4	633.3	636.9	641.2	641.9	646.2	650.6	652.0	658.5	661.3	663.5
17.5°	638.3	647.7	649.8	655.6	655.6	659.2	663.5	664.9	671.4	673.5	675.0
20°	641.2	649.8	652.7	657.0	657.7	659.9	663.5	664.9	670.7	671.4	673.5
22.5°	630.4	639.1	640.5	644.8	645.5	647.7	650.6	649.8	657.0	656.3	657.0
25°	607.5	615.4	615.4	620.4	619.7	621.8	623.3	622.5	629.0	629.0	629.0
27.5°	574.4	581.6	582.3	585.9	583.8	584.5	585.9	585.2	589.5	589.5	589.5
30°	533.5	539.3	537.1	540.0	538.5	540.0	538.5	537.8	539.3	540.7	540.0
32.5°	482.5	486.8	486.8	487.6	487.6	483.2	481.8	481.8	481.1	480.4	480.4
35°	423.6	427.2	425.8	425.8	425.1	420.8	418.6	417.2	419.3	415.0	417.9
37.5°	363.3	364.1	361.9	361.2	357.6	357.6	354.0	351.1	352.6	351.8	349.0
40°	297.3	300.1	295.8	294.4	296.6	293.7	290.1	286.5	289.4	285.8	287.2
42.5°	232.6	231.9	230.5	230.5	230.5	226.2	225.5	224.7	225.5	222.6	220.4
45°	168.0	165.9	163.7	163.7	160.8	159.4	159.4	157.3	153.7	153.7	149.4
47.5°	113.5	108.4	107.0	106.3	104.8	104.8	103.4	102.0	101.2	97.7	97.7
50°	74.0	68.9	67.5	66.8	67.5	66.1	64.6	63.2	61.8	61.0	59.6
52.5°	44.5	42.4	40.9	40.2	38.8	38.1	37.3	35.9	35.2	35.2	34.5
55°	26.6	24.4	21.5	21.5	21.5	20.8	20.1	19.4	18.7	18.7	18.0
57.5°	16.5	15.1	13.6	12.9	12.9	12.9	12.2	12.2	12.2	12.2	11.5
60°	12.2	10.8	10.1	10.1	10.1	9.3	9.3	9.3	9.3	8.6	8.6
62.5°	9.3	8.6	7.9	7.9	7.2	7.2	7.2	7.2	7.2	7.2	6.5
65°	7.9	6.5	6.5	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
67.5°	5.7	5.0	5.0	5.0	5.0	4.3	4.3	4.3	4.3	4.3	4.3
70°	4.3	4.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
72.5°	3.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
75°	2.9	2.9	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.7	0.7	0.7	0.7	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°	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0
2.5°	563.0	566.5	563.0	563.0	565.1	564.4	565.8	563.7
5°	579.5	584.5	580.9	580.2	583.8	583.1	583.8	582.3
7.5°	599.6	604.6	601.0	601.0	604.6	603.9	606.0	604.6
10°	622.5	628.3	623.3	624.0	629.0	628.3	628.3	628.3
12.5°	646.2	652.0	649.1	649.1	652.7	653.4	654.1	653.4
15°	665.6	671.4	667.8	667.8	672.8	672.1	672.8	672.1
17.5°	677.1	682.9	678.6	678.6	682.9	682.9	683.6	684.3
20°	674.2	680.7	677.1	675.7	680.7	680.7	680.0	680.0
22.5°	657.7	663.5	660.6	659.2	662.8	661.3	660.6	661.3
25°	629.0	634.8	629.0	629.0	631.9	631.2	631.9	631.2
27.5°	590.2	594.5	588.8	588.1	591.0	589.5	588.8	591.0
30°	538.5	542.8	540.0	537.8	541.4	539.3	537.8	538.5
32.5°	479.7	482.5	481.1	477.5	479.7	478.2	477.5	478.2
35°	415.0	418.6	412.9	412.2	415.8	412.9	411.4	415.0
37.5°	348.3	352.6	347.5	348.3	346.1	346.8	345.4	347.5
40°	285.1	284.3	282.9	282.2	282.9	280.8	282.2	280.0
42.5°	216.9	218.3	217.6	216.9	217.6	214.7	213.3	216.1
45°	150.8	150.1	148.6	147.2	147.2	146.5	146.5	144.3
47.5°	96.9	96.2	93.3	94.1	95.5	94.1	91.9	94.8
50°	58.9	58.2	58.2	57.4	58.9	57.4	56.0	56.0
52.5°	33.0	33.0	32.3	32.3	32.3	32.3	31.6	30.9
55°	18.0	17.2	17.2	17.2	16.5	16.5	16.5	16.5
57.5°	11.5	11.5	11.5	11.5	11.5	11.5	10.8	10.8
60°	8.6	8.6	8.6	8.6	7.9	8.6	7.9	7.9
62.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
65°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
67.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
70°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
72.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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)