

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: P219501

Luminaire Tested: **LDSQ4B15D010 EU4B10209727 4LBSQLWWLI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P219501  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35471)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQ4B15D010 EU4B10209727 4LBSQLWWLI  
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 833.2 lumens  
Efficiency: N/A  
Efficacy: 57.9 lumens/watt  
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

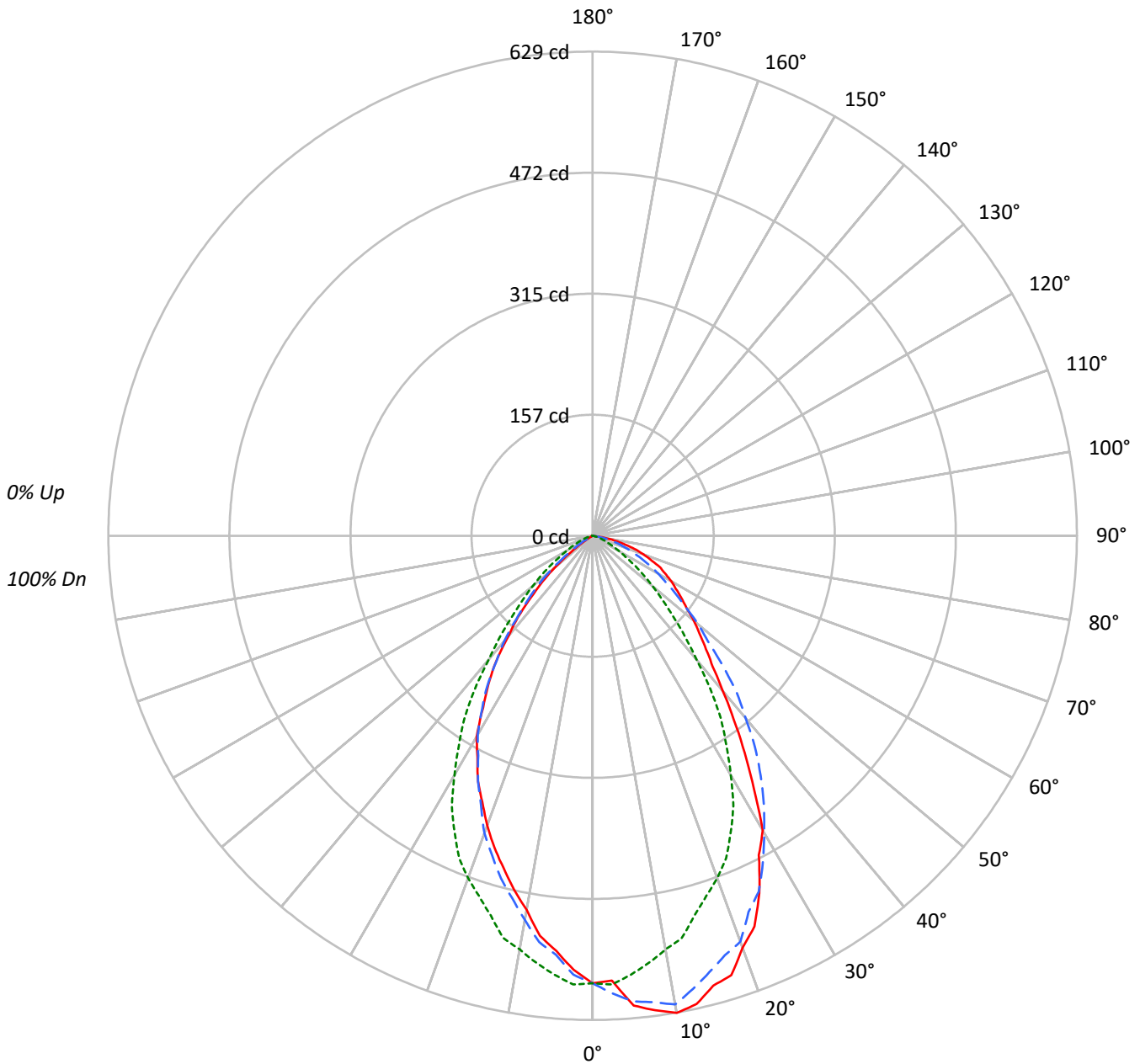
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90				90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80				80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72				72
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64				64
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58				58
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53				53
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48				48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44				44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41				41
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38				38

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

	0°	90°	180°
0°	56314	56314	56314
5°	59573	55644	52658
10°	61914	53680	48546
15°	60677	51240	44811
20°	58701	48783	41247
25°	54760	45375	37625
30°	49432	40147	33682
35°	40718	34367	27946
40°	33234	26532	21511
45°	28551	20153	15468
50°	25847	15342	9766
55°	23781	11063	3530
60°	22824	7556	543
65°	22052	5112	160
70°	19742	3541	198
75°	16170	1834	0
80°	10098	781	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.5	6.5
10°-20°	146.7	17.6
20°-30°	195.9	23.5
30°-40°	186.0	22.3
40°-50°	128.6	15.4
50°-60°	71.0	8.5
60°-70°	35.3	4.2
70°-80°	13.9	1.7
80°-90°	1.3	0.2
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°	397.1	47.7
0°-40°	583.1	70.0
0°-60°	782.7	93.9
0°-90°	833.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	833.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	581	581	581	581	581	
5°	613	607	572	546	542	59
15°	605	587	511	461	447	171
25°	512	510	424	352	352	234
35°	344	380	291	239	236	216
45°	208	239	147	121	113	163
55°	141	132	66	34	21	127
65°	96	70	22	1	1	93
75°	43	26	5	0	0	46
85°	0	1	0	0	0	4
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°	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3
2.5°	578.5	594.5	595.9	594.5	596.6	595.9	599.4	595.9	600.1	593.8	595.2
5°	612.6	606.4	619.6	612.6	612.6	611.9	609.8	609.1	611.9	602.9	607.1
7.5°	621.7	630.8	642.6	628.0	628.7	628.7	624.5	623.1	623.1	606.4	611.2
10°	629.4	623.8	630.1	624.5	629.4	628.7	631.5	622.4	628.7	618.9	618.2
12.5°	623.1	621.0	629.4	620.3	617.5	618.2	614.7	612.6	614.7	603.6	602.9
15°	605.0	607.1	619.6	609.8	608.5	607.1	602.9	595.9	601.5	586.1	586.8
17.5°	598.7	595.2	597.3	588.9	591.0	589.6	588.9	582.7	581.3	571.5	571.5
20°	569.4	577.1	577.1	571.5	571.5	570.8	561.8	567.3	561.1	558.3	561.1
22.5°	549.2	549.9	549.9	545.0	545.7	542.9	538.1	534.6	538.1	534.6	529.0
25°	512.3	513.7	522.0	513.0	511.6	514.4	510.2	508.1	507.4	499.0	510.2
27.5°	467.7	481.6	480.9	477.4	481.6	476.0	473.9	474.6	476.7	476.0	478.8
30°	441.9	444.0	446.1	443.3	444.0	441.9	441.9	442.6	448.1	446.1	445.4
32.5°	389.6	396.6	402.1	402.1	402.8	404.9	404.2	418.9	422.4	415.4	414.0
35°	344.3	349.2	354.1	354.8	363.8	364.5	365.2	369.4	379.1	381.2	380.5
37.5°	301.1	306.0	307.4	313.6	318.5	323.4	329.0	334.5	342.9	349.9	346.4
40°	262.8	264.8	268.3	271.1	280.9	280.9	283.7	294.8	303.9	309.5	308.8
42.5°	230.7	231.4	234.2	239.1	248.1	246.0	248.1	255.8	269.0	269.7	277.4
45°	208.4	207.7	209.8	210.5	216.1	218.8	220.2	225.8	237.0	238.4	239.1
47.5°	188.2	187.5	191.0	192.4	194.5	197.2	197.2	197.9	202.1	205.6	202.8
50°	171.5	171.5	171.5	172.8	176.3	175.6	176.3	179.1	181.2	179.8	179.1
52.5°	153.3	156.1	158.2	158.9	159.6	159.6	160.3	158.9	158.2	156.1	151.9
55°	140.8	143.6	143.6	143.6	143.6	146.4	142.9	143.6	143.6	138.0	132.4
57.5°	128.2	131.0	133.1	130.3	133.1	130.3	128.9	128.2	126.8	121.3	112.9
60°	117.8	119.2	118.5	117.8	119.2	117.1	115.7	112.9	111.5	103.8	98.3
62.5°	105.9	106.6	107.3	105.9	104.5	103.8	101.1	96.9	94.1	87.8	82.9
65°	96.2	94.1	93.4	92.7	91.3	89.2	87.1	82.2	80.2	74.6	69.7
67.5°	81.5	80.8	82.2	80.2	76.7	76.7	74.6	70.4	65.5	62.0	57.2
70°	69.7	69.0	67.6	65.5	64.8	62.0	62.0	57.2	55.8	49.5	45.3
72.5°	57.2	57.2	55.1	53.0	50.9	49.5	48.8	45.3	43.2	39.7	36.2
75°	43.2	43.2	42.5	40.4	39.0	37.6	36.9	34.2	32.1	28.6	26.5
77.5°	30.7	30.7	27.9	26.5	27.2	25.8	24.4	23.7	23.0	20.9	18.1
80°	18.1	17.4	15.3	16.0	15.3	15.3	14.6	13.9	12.5	11.2	9.8
82.5°	4.9	5.6	5.6	5.6	6.3	4.9	4.9	4.9	5.6	5.6	3.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7
87.5°	0.7	1.4	2.8	2.8	2.8	2.8	2.8	2.1	2.1	2.1	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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3
2.5°	588.2	587.5	588.2	583.4	594.5	586.1	584.8	583.4	588.2	583.4	576.4
5°	600.8	593.8	591.7	589.6	595.9	586.1	584.1	584.8	581.3	572.2	572.9
7.5°	605.0	598.7	592.4	579.2	584.8	582.7	577.1	572.9	567.3	559.7	558.3
10°	606.4	599.4	590.3	586.1	577.8	575.0	572.9	565.9	559.0	545.7	542.2
12.5°	602.2	593.8	582.7	579.2	572.9	563.8	559.0	552.0	545.7	535.3	527.6
15°	584.1	577.1	573.6	561.8	559.0	553.4	543.6	533.9	524.8	510.9	506.7
17.5°	563.1	560.4	556.9	547.8	547.1	541.5	532.5	524.1	512.3	490.7	483.7
20°	541.5	541.5	530.4	526.9	533.9	522.7	515.8	508.1	483.7	473.2	460.7
22.5°	525.5	517.8	511.6	506.0	506.7	499.7	490.0	474.6	465.6	453.0	438.4
25°	494.1	496.9	483.0	480.9	483.0	467.0	462.1	449.5	436.3	424.5	413.3
27.5°	474.6	467.0	457.9	450.2	450.2	444.0	430.0	427.2	407.0	395.9	381.9
30°	445.4	439.8	432.1	421.0	419.6	414.7	403.5	396.6	375.7	358.9	351.3
32.5°	408.4	406.3	400.1	387.5	383.3	377.8	363.8	352.0	342.2	323.4	314.3
35°	381.9	374.3	361.0	350.6	347.1	337.3	326.2	317.8	307.4	290.6	278.8
37.5°	342.2	334.5	322.0	309.5	309.5	299.7	284.4	276.0	261.4	251.6	241.8
40°	307.4	297.6	285.1	270.4	268.3	254.4	248.1	234.2	225.1	209.8	208.4
42.5°	268.3	259.3	248.1	237.0	228.6	221.6	205.6	195.2	185.4	177.7	175.6
45°	232.8	220.9	211.2	197.2	188.9	180.5	170.1	163.1	155.4	147.1	142.2
47.5°	202.1	192.4	178.4	165.9	157.5	153.3	141.5	133.8	127.5	122.0	118.5
50°	170.8	158.9	151.2	137.3	135.9	126.2	116.4	110.1	106.6	101.8	96.9
52.5°	147.1	135.9	125.5	115.0	109.4	105.9	96.9	90.6	85.7	82.2	79.5
55°	124.1	114.3	105.9	95.5	92.0	87.1	76.7	75.3	70.4	65.5	62.0
57.5°	106.6	97.6	87.8	80.8	74.6	71.1	62.7	57.2	54.4	50.2	46.7
60°	90.6	80.8	73.2	64.8	62.0	57.2	50.9	46.0	42.5	39.0	35.5
62.5°	76.0	67.6	59.2	52.3	48.1	45.3	40.4	36.2	32.8	30.0	27.2
65°	62.7	55.1	48.1	41.1	39.0	35.5	32.1	28.6	25.8	22.3	19.5
67.5°	51.6	44.6	37.6	32.8	30.7	29.3	25.1	21.6	19.5	17.4	14.6
70°	40.4	35.5	30.0	25.8	23.7	21.6	18.8	16.7	13.9	12.5	10.5
72.5°	31.4	27.2	22.3	18.8	17.4	16.0	13.2	11.2	9.8	8.4	7.0
75°	22.3	18.8	16.0	12.5	11.8	11.2	9.1	7.7	6.3	4.9	4.2
77.5°	15.3	12.5	9.8	8.4	7.7	6.3	5.6	4.2	3.5	2.8	2.1
80°	8.4	6.3	4.9	4.2	3.5	2.8	2.8	2.1	1.4	1.4	0.7
82.5°	2.8	2.1	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.7
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°	0.7	0.7	0.7	0.7	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°	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3
2.5°	580.6	572.9	575.0	575.0	573.6	573.6	572.2	570.1	570.8	566.6	557.6
5°	574.3	564.5	563.1	564.5	559.0	557.6	554.8	559.0	546.4	551.3	545.7
7.5°	556.2	547.1	545.0	549.9	542.9	538.8	538.1	543.6	532.5	526.9	520.6
10°	536.0	532.5	526.2	522.7	520.6	521.3	515.8	508.8	506.7	505.3	499.7
12.5°	517.8	510.2	504.6	500.4	499.0	499.0	490.0	488.6	482.3	480.9	472.5
15°	496.2	487.2	483.7	478.1	473.2	476.0	465.6	462.8	460.7	451.6	453.0
17.5°	477.4	467.7	459.3	455.8	451.6	447.5	437.7	439.8	434.9	434.9	422.4
20°	453.0	442.6	436.3	429.3	429.3	423.8	416.8	417.5	411.2	404.9	393.8
22.5°	427.2	416.1	408.4	405.6	398.7	397.3	388.9	386.8	378.5	379.1	369.4
25°	400.1	388.9	378.5	379.1	372.9	370.1	365.2	355.5	352.0	347.8	345.0
27.5°	368.0	360.3	351.3	350.6	338.7	339.4	333.1	330.4	322.0	324.1	317.8
30°	338.7	327.6	319.2	317.1	312.2	310.8	301.1	296.9	298.3	292.7	289.2
32.5°	308.8	292.0	288.5	284.4	281.6	278.1	271.1	273.9	267.6	269.0	263.5
35°	269.0	262.1	253.0	253.0	250.2	247.4	242.5	245.3	239.1	236.3	230.7
37.5°	235.6	229.3	220.2	223.0	218.2	214.0	209.8	210.5	204.9	204.2	198.6
40°	199.3	195.8	189.6	189.6	186.1	186.1	184.0	181.9	178.4	174.2	168.0
42.5°	165.2	162.4	159.6	160.3	155.4	159.6	154.0	157.5	146.4	145.7	141.5
45°	140.1	133.8	134.5	131.7	128.9	130.3	125.5	126.8	120.6	119.2	115.0
47.5°	113.6	111.5	107.3	105.9	105.9	103.8	101.8	101.1	98.3	94.8	89.2
50°	93.4	85.7	84.3	82.2	80.8	80.8	78.1	73.9	74.6	71.1	65.5
52.5°	73.2	66.9	64.1	63.4	60.6	59.2	55.8	53.0	50.9	49.5	46.0
55°	56.5	50.9	47.4	47.4	43.2	43.2	38.3	36.2	33.5	30.7	28.6
57.5°	42.5	39.7	36.2	33.5	32.1	28.6	25.8	22.3	20.2	16.0	13.2
60°	32.1	29.3	25.8	23.7	22.3	18.8	15.3	12.5	7.7	6.3	5.6
62.5°	23.7	20.9	17.4	16.0	14.6	11.8	8.4	4.2	2.1	2.1	2.1
65°	17.4	13.9	11.2	9.8	8.4	6.3	2.8	1.4	0.7	0.7	0.7
67.5°	11.8	9.1	6.3	5.6	4.2	2.1	0.7	0.7	0.7	0.7	0.7
70°	7.7	5.6	2.8	2.1	1.4	0.7	0.7	0.7	0.7	0.7	0.7
72.5°	4.9	2.8	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	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	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7
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°	581.3	581.3	581.3	581.3	581.3	581.3	581.3	581.3
2.5°	567.3	562.5	565.2	559.0	561.8	566.6	563.1	564.5
5°	547.8	545.0	541.5	532.5	539.5	545.0	542.2	541.5
7.5°	526.9	517.1	522.0	519.2	517.8	523.4	517.1	524.1
10°	505.3	498.3	497.6	492.8	492.8	496.9	497.6	493.5
12.5°	473.2	469.8	469.8	469.1	468.4	472.5	473.2	471.1
15°	450.2	448.8	445.4	444.7	440.5	446.8	447.5	446.8
17.5°	422.4	423.1	419.6	419.6	422.4	424.5	418.9	424.5
20°	403.5	400.1	398.7	392.4	395.9	399.4	399.4	400.1
22.5°	376.4	370.8	372.9	369.4	367.3	372.2	372.2	374.3
25°	345.7	345.7	347.1	345.0	346.4	349.2	347.1	352.0
27.5°	316.4	319.2	319.2	316.4	317.8	326.2	329.7	324.1
30°	289.2	289.9	292.0	290.6	294.8	297.6	296.9	301.1
32.5°	258.6	262.1	263.5	261.4	262.8	269.0	265.5	264.8
35°	234.9	228.6	227.9	228.6	231.4	232.8	231.4	236.3
37.5°	200.7	198.6	195.8	196.5	198.6	201.4	202.8	206.3
40°	168.0	165.2	165.2	164.5	162.4	170.1	170.1	170.1
42.5°	139.4	138.7	135.2	135.2	138.0	140.1	138.7	143.6
45°	114.3	111.5	109.4	109.4	111.5	111.5	113.6	112.9
47.5°	89.9	87.1	87.8	85.7	87.8	90.6	87.1	87.8
50°	67.6	67.6	66.2	67.6	66.9	67.6	66.2	64.8
52.5°	46.0	52.3	53.0	50.2	43.9	38.3	34.8	37.6
55°	26.5	23.7	23.7	23.0	21.6	20.9	18.8	20.9
57.5°	13.2	11.8	11.8	11.8	11.2	10.5	9.1	9.1
60°	5.6	4.9	4.9	4.2	3.5	2.8	2.1	2.8
62.5°	2.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4
65°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
67.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
70°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)