

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: P219482

Luminaire Tested: **LDSQ4B10D010 EU4B10209024 4LBSQLWWLI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P219482  
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: LDSQ4B10D010 EU4B10209024 4LBSQLWWLI  
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 605.2 lumens  
Efficiency: N/A  
Efficacy: 60.2 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

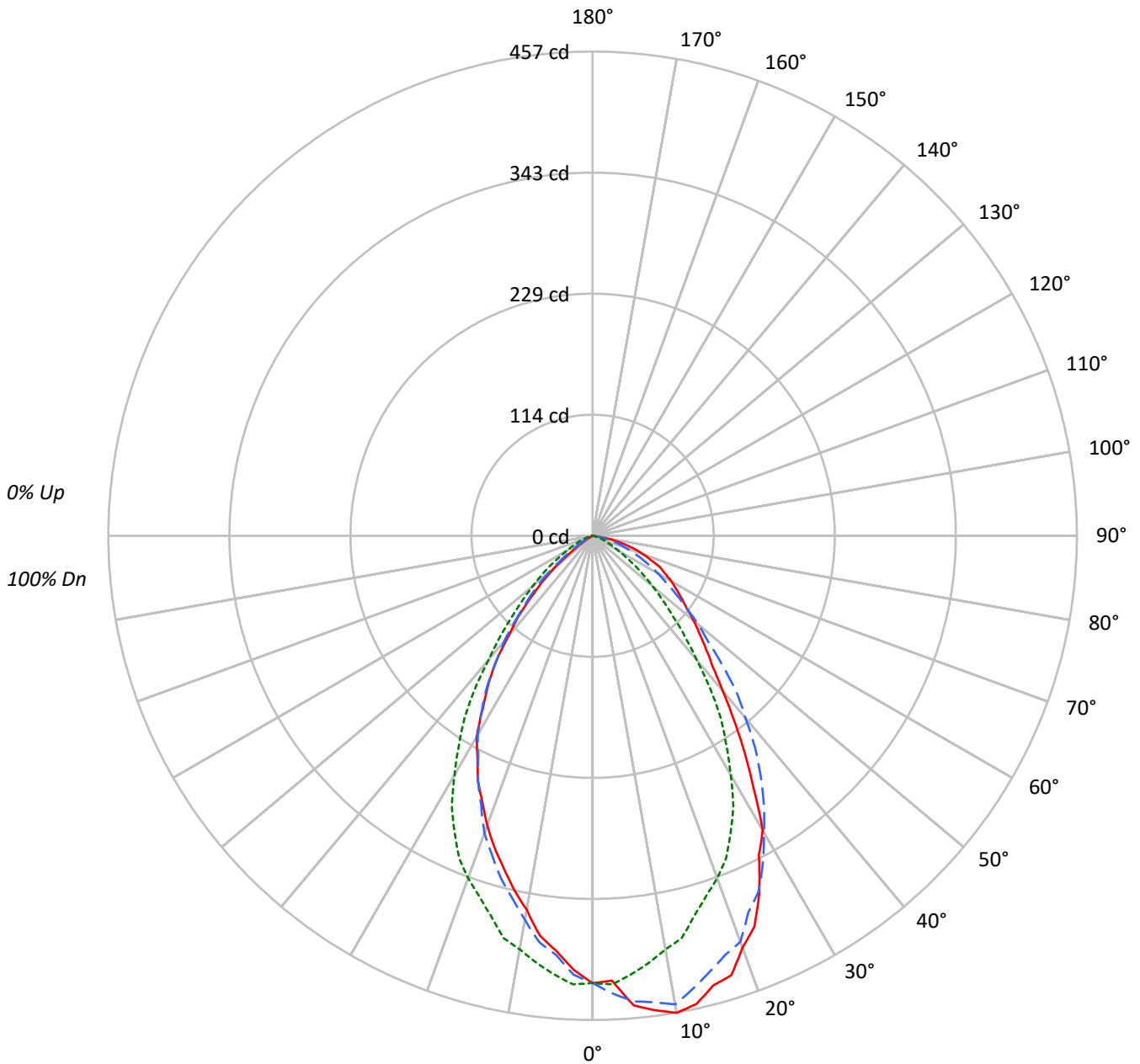
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20					20					20					20					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	84	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72								
4	91	81	74	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	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41								
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38								

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

	0°	90°	180°
0°	40901	40901	40901
5°	43274	40425	38256
10°	44975	38994	35266
15°	44079	37219	32545
20°	42639	35443	29959
25°	39774	32954	27332
30°	35908	29162	24464
35°	29578	24965	20294
40°	24142	19273	15618
45°	20742	14632	11234
50°	18764	11138	7099
55°	17278	8040	2567
60°	16585	5503	388
65°	16023	3713	115
70°	14332	2578	142
75°	11753	1310	0
80°	7364	558	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.6	6.5
10°-20°	106.6	17.6
20°-30°	142.3	23.5
30°-40°	135.1	22.3
40°-50°	93.4	15.4
50°-60°	51.6	8.5
60°-70°	25.6	4.2
70°-80°	10.1	1.7
80°-90°	1.0	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°	288.5	47.7
0°-40°	423.6	70.0
0°-60°	568.6	93.9
0°-90°	605.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	605.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	422	422	422	422	422	
5°	445	441	416	397	393	43
15°	440	426	371	335	324	124
25°	372	371	308	256	256	170
35°	250	276	211	174	172	157
45°	151	174	107	88	82	118
55°	102	96	48	24	15	92
65°	70	51	16	0	0	68
75°	31	19	4	0	0	33
85°	0	0	0	0	0	3
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°	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2
2.5°	420.2	431.9	432.9	431.9	433.4	432.9	435.4	432.9	435.9	431.4	432.4
5°	445.0	440.5	450.1	445.0	445.0	444.5	443.0	442.5	444.5	437.9	441.0
7.5°	451.6	458.2	466.8	456.2	456.7	456.7	453.6	452.6	452.6	440.5	444.0
10°	457.2	453.1	457.7	453.6	457.2	456.7	458.7	452.1	456.7	449.6	449.1
12.5°	452.6	451.1	457.2	450.6	448.6	449.1	446.5	445.0	446.5	438.4	437.9
15°	439.5	441.0	450.1	443.0	442.0	441.0	437.9	432.9	436.9	425.8	426.3
17.5°	434.9	432.4	433.9	427.8	429.3	428.3	427.8	423.3	422.2	415.2	415.2
20°	413.6	419.2	419.2	415.2	415.2	414.6	408.1	412.1	407.6	405.5	407.6
22.5°	399.0	399.5	399.5	395.9	396.4	394.4	390.9	388.3	390.9	388.3	384.3
25°	372.1	373.1	379.2	372.6	371.6	373.6	370.6	369.1	368.6	362.5	370.6
27.5°	339.7	349.8	349.3	346.8	349.8	345.8	344.3	344.8	346.3	345.8	347.8
30°	321.0	322.5	324.0	322.0	322.5	321.0	321.0	321.5	325.5	324.0	323.5
32.5°	283.0	288.1	292.1	292.1	292.6	294.2	293.6	304.3	306.8	301.7	300.7
35°	250.1	253.6	257.2	257.7	264.3	264.8	265.3	268.3	275.4	276.9	276.4
37.5°	218.7	222.3	223.3	227.8	231.4	234.9	239.0	243.0	249.1	254.2	251.6
40°	190.9	192.4	194.9	196.9	204.0	204.0	206.1	214.2	220.7	224.8	224.3
42.5°	167.6	168.1	170.1	173.7	180.2	178.7	180.2	185.8	195.4	195.9	201.5
45°	151.4	150.9	152.4	152.9	156.9	159.0	160.0	164.0	172.1	173.1	173.7
47.5°	136.7	136.2	138.7	139.7	141.3	143.3	143.3	143.8	146.8	149.4	147.3
50°	124.5	124.5	124.5	125.6	128.1	127.6	128.1	130.1	131.6	130.6	130.1
52.5°	111.4	113.4	114.9	115.4	115.9	115.9	116.4	115.4	114.9	113.4	110.4
55°	102.3	104.3	104.3	104.3	104.3	106.3	103.8	104.3	104.3	100.2	96.2
57.5°	93.2	95.2	96.7	94.7	96.7	94.7	93.7	93.2	92.1	88.1	82.0
60°	85.6	86.6	86.1	85.6	86.6	85.1	84.0	82.0	81.0	75.4	71.4
62.5°	77.0	77.5	78.0	77.0	75.9	75.4	73.4	70.4	68.3	63.8	60.2
65°	69.9	68.3	67.8	67.3	66.3	64.8	63.3	59.7	58.2	54.2	50.6
67.5°	59.2	58.7	59.7	58.2	55.7	55.7	54.2	51.1	47.6	45.1	41.5
70°	50.6	50.1	49.1	47.6	47.1	45.1	45.1	41.5	40.5	35.9	32.9
72.5°	41.5	41.5	40.0	38.5	37.0	35.9	35.4	32.9	31.4	28.9	26.3
75°	31.4	31.4	30.9	29.4	28.4	27.3	26.8	24.8	23.3	20.8	19.2
77.5°	22.3	22.3	20.3	19.2	19.7	18.7	17.7	17.2	16.7	15.2	13.2
80°	13.2	12.7	11.1	11.6	11.1	11.1	10.6	10.1	9.1	8.1	7.1
82.5°	3.5	4.1	4.1	4.1	4.6	3.5	3.5	3.5	4.1	4.1	2.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
87.5°	0.5	1.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2
2.5°	427.3	426.8	427.3	423.8	431.9	425.8	424.8	423.8	427.3	423.8	418.7
5°	436.4	431.4	429.8	428.3	432.9	425.8	424.3	424.8	422.2	415.7	416.2
7.5°	439.5	434.9	430.3	420.7	424.8	423.3	419.2	416.2	412.1	406.5	405.5
10°	440.5	435.4	428.8	425.8	419.7	417.7	416.2	411.1	406.0	396.4	393.9
12.5°	437.4	431.4	423.3	420.7	416.2	409.6	406.0	401.0	396.4	388.8	383.3
15°	424.3	419.2	416.7	408.1	406.0	402.0	394.9	387.8	381.2	371.1	368.1
17.5°	409.1	407.1	404.5	397.9	397.4	393.4	386.8	380.7	372.1	356.4	351.4
20°	393.4	393.4	385.3	382.8	387.8	379.7	374.7	369.1	351.4	343.8	334.7
22.5°	381.7	376.2	371.6	367.6	368.1	363.0	355.9	344.8	338.2	329.1	318.5
25°	359.0	361.0	350.9	349.3	350.9	339.2	335.7	326.6	316.9	308.3	300.2
27.5°	344.8	339.2	332.6	327.1	327.1	322.5	312.4	310.4	295.7	287.6	277.4
30°	323.5	319.5	313.9	305.8	304.8	301.2	293.1	288.1	272.9	260.7	255.2
32.5°	296.7	295.2	290.6	281.5	278.5	274.4	264.3	255.7	248.6	234.9	228.3
35°	277.4	271.9	262.3	254.7	252.1	245.0	236.9	230.9	223.3	211.1	202.5
37.5°	248.6	243.0	233.9	224.8	224.8	217.7	206.6	200.5	189.9	182.8	175.7
40°	223.3	216.2	207.1	196.4	194.9	184.8	180.2	170.1	163.5	152.4	151.4
42.5°	194.9	188.3	180.2	172.1	166.1	161.0	149.4	141.8	134.7	129.1	127.6
45°	169.1	160.5	153.4	143.3	137.2	131.1	123.5	118.5	112.9	106.8	103.3
47.5°	146.8	139.7	129.6	120.5	114.4	111.4	102.8	97.2	92.7	88.6	86.1
50°	124.0	115.4	109.9	99.7	98.7	91.6	84.5	80.0	77.5	73.9	70.4
52.5°	106.8	98.7	91.1	83.5	79.5	77.0	70.4	65.8	62.3	59.7	57.7
55°	90.1	83.0	77.0	69.4	66.8	63.3	55.7	54.7	51.1	47.6	45.1
57.5°	77.5	70.9	63.8	58.7	54.2	51.6	45.6	41.5	39.5	36.5	33.9
60°	65.8	58.7	53.2	47.1	45.1	41.5	37.0	33.4	30.9	28.4	25.8
62.5°	55.2	49.1	43.0	38.0	34.9	32.9	29.4	26.3	23.8	21.8	19.7
65°	45.6	40.0	34.9	29.9	28.4	25.8	23.3	20.8	18.7	16.2	14.2
67.5°	37.5	32.4	27.3	23.8	22.3	21.3	18.2	15.7	14.2	12.7	10.6
70°	29.4	25.8	21.8	18.7	17.2	15.7	13.7	12.2	10.1	9.1	7.6
72.5°	22.8	19.7	16.2	13.7	12.7	11.6	9.6	8.1	7.1	6.1	5.1
75°	16.2	13.7	11.6	9.1	8.6	8.1	6.6	5.6	4.6	3.5	3.0
77.5°	11.1	9.1	7.1	6.1	5.6	4.6	4.1	3.0	2.5	2.0	1.5
80°	6.1	4.6	3.5	3.0	2.5	2.0	2.0	1.5	1.0	1.0	0.5
82.5°	2.0	1.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5
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°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	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°	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2
2.5°	421.7	416.2	417.7	417.7	416.7	416.7	415.7	414.1	414.6	411.6	405.0
5°	417.2	410.1	409.1	410.1	406.0	405.0	403.0	406.0	396.9	400.5	396.4
7.5°	404.0	397.4	395.9	399.5	394.4	391.4	390.9	394.9	386.8	382.8	378.2
10°	389.3	386.8	382.2	379.7	378.2	378.7	374.7	369.6	368.1	367.1	363.0
12.5°	376.2	370.6	366.6	363.5	362.5	362.5	355.9	354.9	350.3	349.3	343.3
15°	360.5	353.9	351.4	347.3	343.8	345.8	338.2	336.2	334.7	328.1	329.1
17.5°	346.8	339.7	333.6	331.1	328.1	325.0	317.9	319.5	315.9	315.9	306.8
20°	329.1	321.5	316.9	311.9	311.9	307.8	302.8	303.3	298.7	294.2	286.1
22.5°	310.4	302.3	296.7	294.7	289.6	288.6	282.5	281.0	274.9	275.4	268.3
25°	290.6	282.5	274.9	275.4	270.9	268.8	265.3	258.2	255.7	252.6	250.6
27.5°	267.3	261.7	255.2	254.7	246.1	246.6	242.0	240.0	233.9	235.4	230.9
30°	246.1	238.0	231.9	230.4	226.8	225.8	218.7	215.7	216.7	212.6	210.1
32.5°	224.3	212.1	209.6	206.6	204.5	202.0	196.9	199.0	194.4	195.4	191.4
35°	195.4	190.4	183.8	183.8	181.8	179.7	176.2	178.2	173.7	171.6	167.6
37.5°	171.1	166.6	160.0	162.0	158.5	155.4	152.4	152.9	148.8	148.3	144.3
40°	144.8	142.3	137.7	137.7	135.2	135.2	133.7	132.1	129.6	126.6	122.0
42.5°	120.0	118.0	115.9	116.4	112.9	115.9	111.9	114.4	106.3	105.8	102.8
45°	101.8	97.2	97.7	95.7	93.7	94.7	91.1	92.1	87.6	86.6	83.5
47.5°	82.5	81.0	78.0	77.0	77.0	75.4	73.9	73.4	71.4	68.9	64.8
50°	67.8	62.3	61.3	59.7	58.7	58.7	56.7	53.7	54.2	51.6	47.6
52.5°	53.2	48.6	46.6	46.1	44.0	43.0	40.5	38.5	37.0	35.9	33.4
55°	41.0	37.0	34.4	34.4	31.4	31.4	27.8	26.3	24.3	22.3	20.8
57.5°	30.9	28.9	26.3	24.3	23.3	20.8	18.7	16.2	14.7	11.6	9.6
60°	23.3	21.3	18.7	17.2	16.2	13.7	11.1	9.1	5.6	4.6	4.1
62.5°	17.2	15.2	12.7	11.6	10.6	8.6	6.1	3.0	1.5	1.5	1.5
65°	12.7	10.1	8.1	7.1	6.1	4.6	2.0	1.0	0.5	0.5	0.5
67.5°	8.6	6.6	4.6	4.1	3.0	1.5	0.5	0.5	0.5	0.5	0.5
70°	5.6	4.1	2.0	1.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	3.5	2.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.5	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	0.5	0.5	0.5
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):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	422.2	422.2	422.2	422.2	422.2	422.2	422.2	422.2
2.5°	412.1	408.6	410.6	406.0	408.1	411.6	409.1	410.1
5°	397.9	395.9	393.4	386.8	391.9	395.9	393.9	393.4
7.5°	382.8	375.7	379.2	377.2	376.2	380.2	375.7	380.7
10°	367.1	362.0	361.5	357.9	357.9	361.0	361.5	358.5
12.5°	343.8	341.2	341.2	340.7	340.2	343.3	343.8	342.2
15°	327.1	326.0	323.5	323.0	320.0	324.5	325.0	324.5
17.5°	306.8	307.3	304.8	304.8	306.8	308.3	304.3	308.3
20°	293.1	290.6	289.6	285.0	287.6	290.1	290.1	290.6
22.5°	273.4	269.3	270.9	268.3	266.8	270.4	270.4	271.9
25°	251.1	251.1	252.1	250.6	251.6	253.6	252.1	255.7
27.5°	229.9	231.9	231.9	229.9	230.9	236.9	239.5	235.4
30°	210.1	210.6	212.1	211.1	214.2	216.2	215.7	218.7
32.5°	187.8	190.4	191.4	189.9	190.9	195.4	192.9	192.4
35°	170.6	166.1	165.6	166.1	168.1	169.1	168.1	171.6
37.5°	145.8	144.3	142.3	142.8	144.3	146.3	147.3	149.9
40°	122.0	120.0	120.0	119.5	118.0	123.5	123.5	123.5
42.5°	101.3	100.8	98.2	98.2	100.2	101.8	100.8	104.3
45°	83.0	81.0	79.5	79.5	81.0	81.0	82.5	82.0
47.5°	65.3	63.3	63.8	62.3	63.8	65.8	63.3	63.8
50°	49.1	49.1	48.1	49.1	48.6	49.1	48.1	47.1
52.5°	33.4	38.0	38.5	36.5	31.9	27.8	25.3	27.3
55°	19.2	17.2	17.2	16.7	15.7	15.2	13.7	15.2
57.5°	9.6	8.6	8.6	8.6	8.1	7.6	6.6	6.6
60°	4.1	3.5	3.5	3.0	2.5	2.0	1.5	2.0
62.5°	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0
65°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
67.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)