

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: P219502

Luminaire Tested: **LDSQ4B15D010 EU4B10209730 4LBSQLWWLI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P219502  
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 EU4B10209730 4LBSQLWWLI  
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 870.7 lumens  
Efficiency: N/A  
Efficacy: 60.5 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

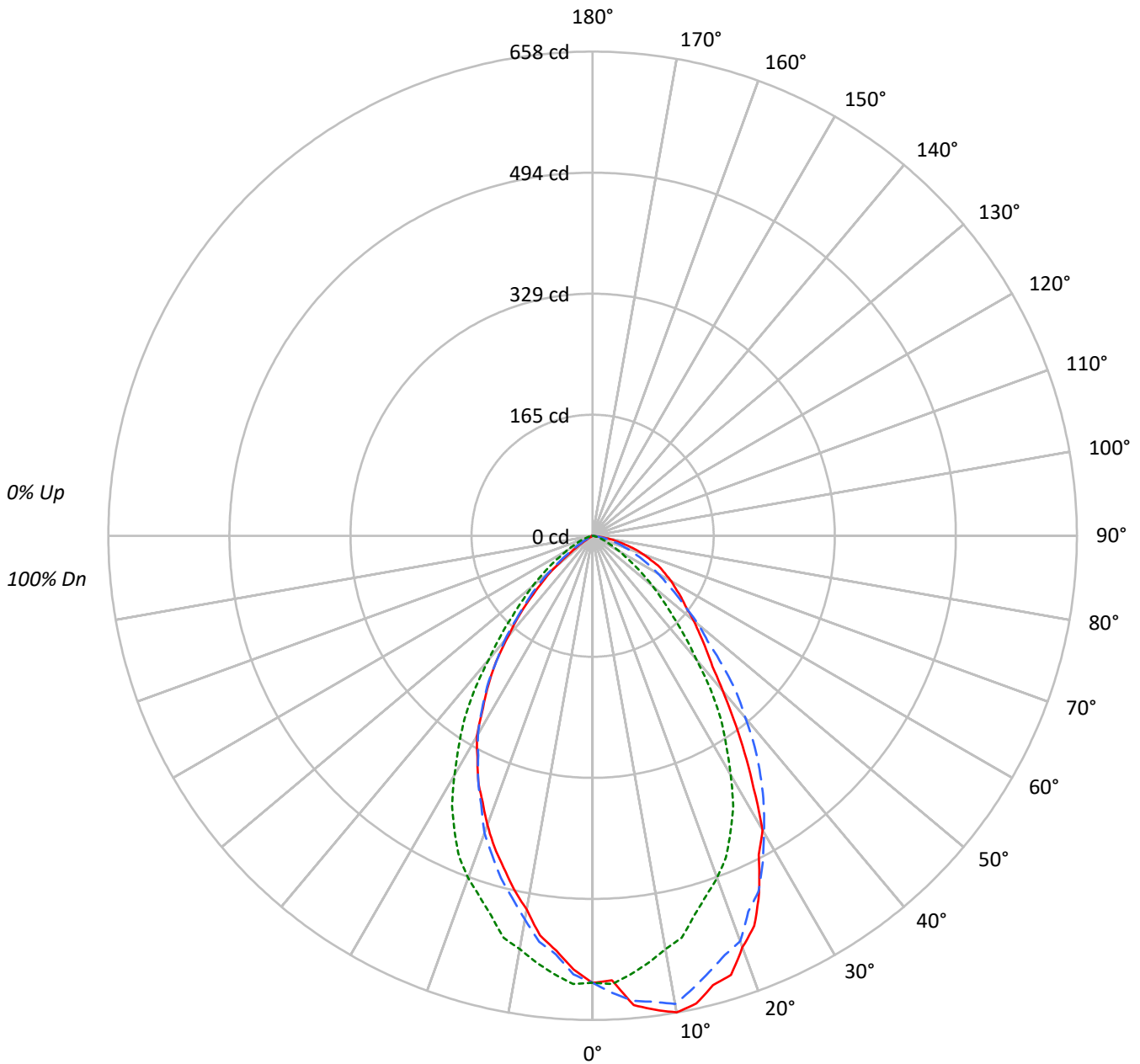
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
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	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°	58852	58852	58852
5°	62257	58153	55041
10°	64698	56100	50729
15°	63405	53546	46827
20°	61350	50990	43103
25°	57229	47416	39314
30°	51658	41959	35203
35°	42551	35916	29199
40°	34726	27720	22472
45°	29839	21057	16166
50°	27007	16021	10203
55°	24845	11569	3699
60°	23851	7905	562
65°	23037	5341	160
70°	20620	3711	198
75°	16918	1909	0
80°	10544	837	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	56.9	6.5
10°-20°	153.3	17.6
20°-30°	204.8	23.5
30°-40°	194.4	22.3
40°-50°	134.4	15.4
50°-60°	74.2	8.5
60°-70°	36.9	4.2
70°-80°	14.5	1.7
80°-90°	1.4	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°	415.0	47.7
0°-40°	609.4	70.0
0°-60°	818.0	93.9
0°-90°	870.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	870.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	608	608	608	608	608	
5°	640	634	598	571	566	61
15°	632	613	534	482	467	179
25°	535	533	444	368	368	244
35°	360	398	304	250	247	225
45°	218	250	154	126	118	170
55°	147	138	68	35	22	132
65°	100	73	23	1	1	98
75°	45	28	5	0	0	48
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°	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5
2.5°	604.6	621.3	622.8	621.3	623.5	622.8	626.4	622.8	627.1	620.6	622.0
5°	640.2	633.7	647.5	640.2	640.2	639.5	637.3	636.6	639.5	630.0	634.4
7.5°	649.7	659.2	671.6	656.3	657.0	657.0	652.6	651.2	651.2	633.7	638.8
10°	657.7	651.9	658.5	652.6	657.7	657.0	659.9	650.4	657.0	646.8	646.1
12.5°	651.2	649.0	657.7	648.3	645.3	646.1	642.4	640.2	642.4	630.8	630.0
15°	632.2	634.4	647.5	637.3	635.9	634.4	630.0	622.8	628.6	612.6	613.3
17.5°	625.7	622.0	624.2	615.5	617.7	616.2	615.5	608.9	607.5	597.3	597.3
20°	595.1	603.1	603.1	597.3	597.3	596.5	587.1	592.9	586.3	583.4	586.3
22.5°	574.0	574.7	574.7	569.6	570.3	567.4	562.3	558.7	562.3	558.7	552.8
25°	535.4	536.8	545.6	536.1	534.6	537.5	533.2	531.0	530.3	521.5	533.2
27.5°	488.7	503.3	502.6	498.9	503.3	497.5	495.3	496.0	498.2	497.5	500.4
30°	461.8	464.0	466.2	463.2	464.0	461.8	461.8	462.5	468.3	466.2	465.4
32.5°	407.2	414.4	420.3	420.3	421.0	423.2	422.5	437.8	441.4	434.1	432.7
35°	359.8	364.9	370.0	370.7	380.2	380.9	381.7	386.0	396.2	398.4	397.7
37.5°	314.7	319.8	321.2	327.8	332.9	338.0	343.8	349.6	358.4	365.6	362.0
40°	274.6	276.8	280.4	283.3	293.5	293.5	296.5	308.1	317.6	323.4	322.7
42.5°	241.1	241.8	244.7	249.8	259.3	257.1	259.3	267.3	281.2	281.9	289.9
45°	217.8	217.1	219.2	220.0	225.8	228.7	230.2	236.0	247.6	249.1	249.8
47.5°	196.7	195.9	199.6	201.0	203.2	206.1	206.1	206.9	211.2	214.9	212.0
50°	179.2	179.2	179.2	180.6	184.3	183.6	184.3	187.2	189.4	187.9	187.2
52.5°	160.2	163.2	165.3	166.1	166.8	166.8	167.5	166.1	165.3	163.2	158.8
55°	147.1	150.0	150.0	150.0	150.0	153.0	149.3	150.0	150.0	144.2	138.4
57.5°	134.0	136.9	139.1	136.2	139.1	136.2	134.8	134.0	132.6	126.7	118.0
60°	123.1	124.6	123.8	123.1	124.6	122.4	120.9	118.0	116.5	108.5	102.7
62.5°	110.7	111.4	112.2	110.7	109.3	108.5	105.6	101.2	98.3	91.8	86.7
65°	100.5	98.3	97.6	96.9	95.4	93.2	91.0	85.9	83.8	77.9	72.8
67.5°	85.2	84.5	85.9	83.8	80.1	80.1	77.9	73.6	68.5	64.8	59.7
70°	72.8	72.1	70.7	68.5	67.7	64.8	64.8	59.7	58.3	51.7	47.3
72.5°	59.7	59.7	57.5	55.4	53.2	51.7	51.0	47.3	45.2	41.5	37.9
75°	45.2	45.2	44.4	42.2	40.8	39.3	38.6	35.7	33.5	29.9	27.7
77.5°	32.0	32.0	29.1	27.7	28.4	27.0	25.5	24.8	24.0	21.9	18.9
80°	18.9	18.2	16.0	16.8	16.0	16.0	15.3	14.6	13.1	11.7	10.2
82.5°	5.1	5.8	5.8	5.8	6.6	5.1	5.1	5.1	5.8	5.8	3.6
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	1.5	2.9	2.9	2.9	2.9	2.9	2.2	2.2	2.2	1.5
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5
2.5°	614.8	614.0	614.8	609.7	621.3	612.6	611.1	609.7	614.8	609.7	602.4
5°	627.9	620.6	618.4	616.2	622.8	612.6	610.4	611.1	607.5	598.0	598.7
7.5°	632.2	625.7	619.1	605.3	611.1	608.9	603.1	598.7	592.9	584.9	583.4
10°	633.7	626.4	616.9	612.6	603.8	600.9	598.7	591.4	584.2	570.3	566.7
12.5°	629.3	620.6	608.9	605.3	598.7	589.3	584.2	576.9	570.3	559.4	551.4
15°	610.4	603.1	599.5	587.1	584.2	578.3	568.1	557.9	548.5	533.9	529.5
17.5°	588.5	585.6	582.0	572.5	571.8	566.0	556.5	547.7	535.4	512.8	505.5
20°	566.0	566.0	554.3	550.7	557.9	546.3	539.0	531.0	505.5	494.6	481.5
22.5°	549.2	541.2	534.6	528.8	529.5	522.2	512.1	496.0	486.6	473.4	458.2
25°	516.4	519.3	504.8	502.6	504.8	488.0	482.9	469.8	456.0	443.6	431.9
27.5°	496.0	488.0	478.5	470.5	470.5	464.0	449.4	446.5	425.4	413.7	399.2
30°	465.4	459.6	451.6	439.9	438.5	433.4	421.7	414.4	392.6	375.1	367.1
32.5°	426.8	424.6	418.1	405.0	400.6	394.8	380.2	367.8	357.6	338.0	328.5
35°	399.2	391.1	377.3	366.4	362.7	352.5	340.9	332.1	321.2	303.7	291.4
37.5°	357.6	349.6	336.5	323.4	323.4	313.2	297.2	288.4	273.1	262.9	252.7
40°	321.2	311.0	297.9	282.6	280.4	265.9	259.3	244.7	235.3	219.2	217.8
42.5°	280.4	271.0	259.3	247.6	238.9	231.6	214.9	203.9	193.7	185.7	183.6
45°	243.3	230.9	220.7	206.1	197.4	188.7	177.7	170.4	162.4	153.7	148.6
47.5°	211.2	201.0	186.5	173.4	164.6	160.2	147.9	139.8	133.3	127.5	123.8
50°	178.5	166.1	158.1	143.5	142.0	131.8	121.6	115.1	111.4	106.3	101.2
52.5°	153.7	142.0	131.1	120.2	114.4	110.7	101.2	94.7	89.6	85.9	83.0
55°	129.7	119.5	110.7	99.8	96.1	91.0	80.1	78.7	73.6	68.5	64.8
57.5°	111.4	102.0	91.8	84.5	77.9	74.3	65.6	59.7	56.8	52.4	48.8
60°	94.7	84.5	76.5	67.7	64.8	59.7	53.2	48.1	44.4	40.8	37.1
62.5°	79.4	70.7	61.9	54.6	50.3	47.3	42.2	37.9	34.2	31.3	28.4
65°	65.6	57.5	50.3	43.0	40.8	37.1	33.5	29.9	27.0	23.3	20.4
67.5°	53.9	46.6	39.3	34.2	32.0	30.6	26.2	22.6	20.4	18.2	15.3
70°	42.2	37.1	31.3	27.0	24.8	22.6	19.7	17.5	14.6	13.1	10.9
72.5°	32.8	28.4	23.3	19.7	18.2	16.8	13.8	11.7	10.2	8.7	7.3
75°	23.3	19.7	16.8	13.1	12.4	11.7	9.5	8.0	6.6	5.1	4.4
77.5°	16.0	13.1	10.2	8.7	8.0	6.6	5.8	4.4	3.6	2.9	2.2
80°	8.7	6.6	5.1	4.4	3.6	2.9	2.9	2.2	1.5	1.5	0.7
82.5°	2.9	2.2	1.5	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°	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5
2.5°	606.7	598.7	600.9	600.9	599.5	599.5	598.0	595.8	596.5	592.2	582.7
5°	600.2	590.0	588.5	590.0	584.2	582.7	579.8	584.2	571.0	576.1	570.3
7.5°	581.2	571.8	569.6	574.7	567.4	563.0	562.3	568.1	556.5	550.7	544.1
10°	560.1	556.5	549.9	546.3	544.1	544.8	539.0	531.7	529.5	528.1	522.2
12.5°	541.2	533.2	527.3	523.0	521.5	521.5	512.1	510.6	504.0	502.6	493.8
15°	518.6	509.1	505.5	499.7	494.6	497.5	486.6	483.6	481.5	472.0	473.4
17.5°	498.9	488.7	480.0	476.4	472.0	467.6	457.4	459.6	454.5	454.5	441.4
20°	473.4	462.5	456.0	448.7	448.7	442.9	435.6	436.3	429.7	423.2	411.5
22.5°	446.5	434.8	426.8	423.9	416.6	415.2	406.4	404.3	395.5	396.2	386.0
25°	418.1	406.4	395.5	396.2	389.7	386.8	381.7	371.5	367.8	363.5	360.5
27.5°	384.6	376.6	367.1	366.4	354.0	354.7	348.2	345.3	336.5	338.7	332.1
30°	354.0	342.3	333.6	331.4	326.3	324.9	314.7	310.3	311.7	305.9	302.3
32.5°	322.7	305.2	301.5	297.2	294.3	290.6	283.3	286.3	279.7	281.2	275.3
35°	281.2	273.9	264.4	264.4	261.5	258.6	253.5	256.4	249.8	246.9	241.1
37.5°	246.2	239.6	230.2	233.1	228.0	223.6	219.2	220.0	214.1	213.4	207.6
40°	208.3	204.7	198.1	198.1	194.5	194.5	192.3	190.1	186.5	182.1	175.5
42.5°	172.6	169.7	166.8	167.5	162.4	166.8	161.0	164.6	153.0	152.2	147.9
45°	146.4	139.8	140.6	137.7	134.8	136.2	131.1	132.6	126.0	124.6	120.2
47.5°	118.7	116.5	112.2	110.7	110.7	108.5	106.3	105.6	102.7	99.1	93.2
50°	97.6	89.6	88.1	85.9	84.5	84.5	81.6	77.2	77.9	74.3	68.5
52.5°	76.5	69.9	67.0	66.3	63.4	61.9	58.3	55.4	53.2	51.7	48.1
55°	59.0	53.2	49.5	49.5	45.2	45.2	40.1	37.9	35.0	32.0	29.9
57.5°	44.4	41.5	37.9	35.0	33.5	29.9	27.0	23.3	21.1	16.8	13.8
60°	33.5	30.6	27.0	24.8	23.3	19.7	16.0	13.1	8.0	6.6	5.8
62.5°	24.8	21.9	18.2	16.8	15.3	12.4	8.7	4.4	2.2	2.2	2.2
65°	18.2	14.6	11.7	10.2	8.7	6.6	2.9	1.5	0.7	0.7	0.7
67.5°	12.4	9.5	6.6	5.8	4.4	2.2	0.7	0.7	0.7	0.7	0.7
70°	8.0	5.8	2.9	2.2	1.5	0.7	0.7	0.7	0.7	0.7	0.7
72.5°	5.1	2.9	1.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.5	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°	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5
2.5°	592.9	587.8	590.7	584.2	587.1	592.2	588.5	590.0
5°	572.5	569.6	566.0	556.5	563.8	569.6	566.7	566.0
7.5°	550.7	540.5	545.6	542.6	541.2	547.0	540.5	547.7
10°	528.1	520.8	520.1	515.0	515.0	519.3	520.1	515.7
12.5°	494.6	490.9	490.9	490.2	489.5	493.8	494.6	492.4
15°	470.5	469.1	465.4	464.7	460.3	466.9	467.6	466.9
17.5°	441.4	442.1	438.5	438.5	441.4	443.6	437.8	443.6
20°	421.7	418.1	416.6	410.1	413.7	417.4	417.4	418.1
22.5°	393.3	387.5	389.7	386.0	383.9	389.0	389.0	391.1
25°	361.3	361.3	362.7	360.5	362.0	364.9	362.7	367.8
27.5°	330.7	333.6	333.6	330.7	332.1	340.9	344.5	338.7
30°	302.3	303.0	305.2	303.7	308.1	311.0	310.3	314.7
32.5°	270.2	273.9	275.3	273.1	274.6	281.2	277.5	276.8
35°	245.5	238.9	238.2	238.9	241.8	243.3	241.8	246.9
37.5°	209.8	207.6	204.7	205.4	207.6	210.5	212.0	215.6
40°	175.5	172.6	172.6	171.9	169.7	177.7	177.7	177.7
42.5°	145.7	144.9	141.3	141.3	144.2	146.4	144.9	150.0
45°	119.5	116.5	114.4	114.4	116.5	116.5	118.7	118.0
47.5°	94.0	91.0	91.8	89.6	91.8	94.7	91.0	91.8
50°	70.7	70.7	69.2	70.7	69.9	70.7	69.2	67.7
52.5°	48.1	54.6	55.4	52.4	45.9	40.1	36.4	39.3
55°	27.7	24.8	24.8	24.0	22.6	21.9	19.7	21.9
57.5°	13.8	12.4	12.4	12.4	11.7	10.9	9.5	9.5
60°	5.8	5.1	5.1	4.4	3.6	2.9	2.2	2.9
62.5°	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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)