

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: P219485

Luminaire Tested: **LDSQ4B10D010 EU4B10209035 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219485
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 EU4B10209035 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 726.3 lumens
Efficiency: N/A
Efficacy: 72.3 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

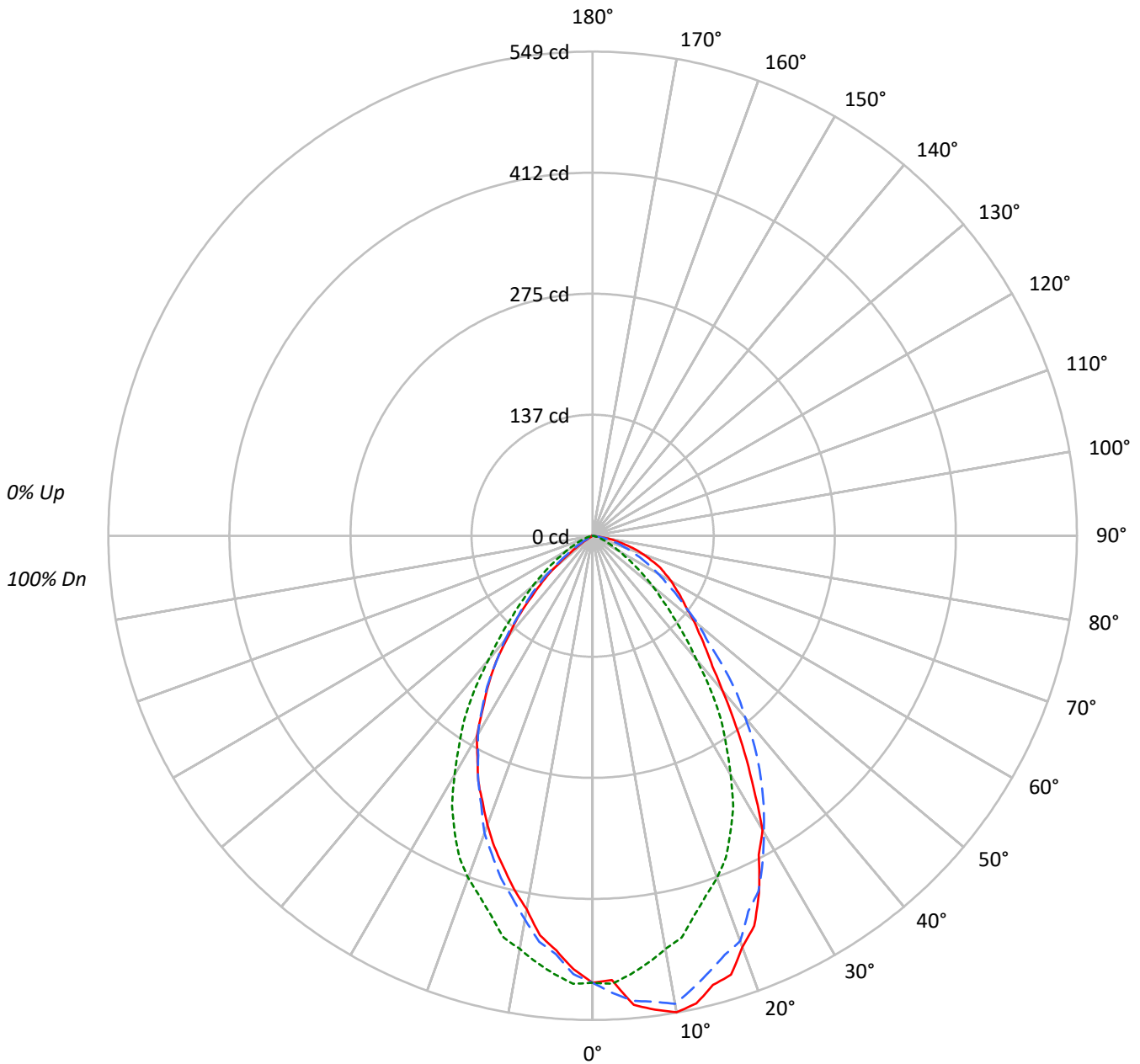
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	49087	49087	49087
5°	51929	48506	45910
10°	53966	46795	42309
15°	52884	44660	39054
20°	51175	42526	35948
25°	47726	39549	32794
30°	43089	35002	29364
35°	35491	29956	24362
40°	28960	23130	18742
45°	24893	17564	13481
50°	22531	13368	8515
55°	20724	9644	3074
60°	19898	6588	465
65°	19209	4447	138
70°	17221	3087	170
75°	14111	1609	0
80°	8815	669	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.5	6.5
10°-20°	127.9	17.6
20°-30°	170.8	23.5
30°-40°	162.1	22.3
40°-50°	112.1	15.4
50°-60°	61.9	8.5
60°-70°	30.7	4.2
70°-80°	12.1	1.7
80°-90°	1.2	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°	346.2	47.7
0°-40°	508.3	70.0
0°-60°	682.3	93.9
0°-90°	726.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	726.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	507	507	507	507	507	
5°	534	529	499	476	472	51
15°	527	512	445	402	389	149
25°	446	445	370	307	307	204
35°	300	332	253	208	206	188
45°	182	208	128	105	98	142
55°	123	115	57	29	18	110
65°	84	61	19	1	1	81
75°	38	23	4	0	0	40
85°	0	1	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°	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7
2.5°	504.3	518.2	519.4	518.2	520.1	519.4	522.5	519.4	523.1	517.6	518.8
5°	534.0	528.6	540.1	534.0	534.0	533.4	531.6	531.0	533.4	525.5	529.2
7.5°	541.9	549.8	560.2	547.4	548.0	548.0	544.4	543.1	543.1	528.6	532.8
10°	548.6	543.8	549.2	544.4	548.6	548.0	550.4	542.5	548.0	539.5	538.9
12.5°	543.1	541.3	548.6	540.7	538.3	538.9	535.9	534.0	535.9	526.1	525.5
15°	527.3	529.2	540.1	531.6	530.4	529.2	525.5	519.4	524.3	510.9	511.6
17.5°	521.9	518.8	520.7	513.4	515.2	514.0	513.4	507.9	506.7	498.2	498.2
20°	496.4	503.0	503.0	498.2	498.2	497.6	489.7	494.5	489.1	486.6	489.1
22.5°	478.7	479.4	479.4	475.1	475.7	473.3	469.0	466.0	469.0	466.0	461.1
25°	446.5	447.8	455.0	447.2	445.9	448.4	444.7	442.9	442.3	435.0	444.7
27.5°	407.7	419.8	419.2	416.2	419.8	415.0	413.1	413.7	415.6	415.0	417.4
30°	385.2	387.0	388.8	386.4	387.0	385.2	385.2	385.8	390.7	388.8	388.2
32.5°	339.6	345.7	350.6	350.6	351.2	353.0	352.4	365.1	368.2	362.1	360.9
35°	300.1	304.4	308.6	309.2	317.1	317.7	318.4	322.0	330.5	332.3	331.7
37.5°	262.5	266.7	267.9	273.4	277.6	281.9	286.8	291.6	298.9	305.0	301.9
40°	229.0	230.9	233.9	236.3	244.8	244.8	247.3	257.0	264.9	269.7	269.1
42.5°	201.1	201.7	204.1	208.4	216.3	214.5	216.3	223.0	234.5	235.1	241.8
45°	181.7	181.0	182.9	183.5	188.3	190.8	192.0	196.8	206.6	207.8	208.4
47.5°	164.0	163.4	166.5	167.7	169.5	171.9	171.9	172.5	176.2	179.2	176.8
50°	149.5	149.5	149.5	150.7	153.7	153.1	153.7	156.1	158.0	156.7	156.1
52.5°	133.7	136.1	137.9	138.5	139.1	139.1	139.7	138.5	137.9	136.1	132.4
55°	122.7	125.2	125.2	125.2	125.2	127.6	124.5	125.2	125.2	120.3	115.4
57.5°	111.8	114.2	116.0	113.6	116.0	113.6	112.4	111.8	110.6	105.7	98.4
60°	102.7	103.9	103.3	102.7	103.9	102.1	100.9	98.4	97.2	90.5	85.7
62.5°	92.3	93.0	93.6	92.3	91.1	90.5	88.1	84.4	82.0	76.6	72.3
65°	83.8	82.0	81.4	80.8	79.6	77.8	75.9	71.7	69.9	65.0	60.8
67.5°	71.1	70.5	71.7	69.9	66.8	66.8	65.0	61.4	57.1	54.1	49.8
70°	60.8	60.1	58.9	57.1	56.5	54.1	54.1	49.8	48.6	43.1	39.5
72.5°	49.8	49.8	48.0	46.2	44.4	43.1	42.5	39.5	37.7	34.6	31.6
75°	37.7	37.7	37.1	35.2	34.0	32.8	32.2	29.8	27.9	24.9	23.1
77.5°	26.7	26.7	24.3	23.1	23.7	22.5	21.3	20.7	20.0	18.2	15.8
80°	15.8	15.2	13.4	14.0	13.4	13.4	12.8	12.2	10.9	9.7	8.5
82.5°	4.3	4.9	4.9	4.9	5.5	4.3	4.3	4.3	4.9	4.9	3.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
87.5°	0.6	1.2	2.4	2.4	2.4	2.4	2.4	1.8	1.8	1.8	1.2
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°	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7
2.5°	512.8	512.2	512.8	508.5	518.2	510.9	509.7	508.5	512.8	508.5	502.4
5°	523.7	517.6	515.8	514.0	519.4	510.9	509.1	509.7	506.7	498.8	499.4
7.5°	527.3	521.9	516.4	504.9	509.7	507.9	503.0	499.4	494.5	487.9	486.6
10°	528.6	522.5	514.6	510.9	503.7	501.2	499.4	493.3	487.2	475.7	472.7
12.5°	524.9	517.6	507.9	504.9	499.4	491.5	487.2	481.2	475.7	466.6	459.9
15°	509.1	503.0	500.0	489.7	487.2	482.4	473.9	465.4	457.5	445.3	441.7
17.5°	490.9	488.5	485.4	477.5	476.9	472.1	464.2	456.9	446.5	427.7	421.6
20°	472.1	472.1	462.3	459.3	465.4	455.7	449.6	442.9	421.6	412.5	401.6
22.5°	458.1	451.4	445.9	441.1	441.7	435.6	427.1	413.7	405.8	394.9	382.1
25°	430.7	433.2	421.0	419.2	421.0	407.1	402.8	391.9	380.3	370.0	360.3
27.5°	413.7	407.1	399.2	392.5	392.5	387.0	374.9	372.4	354.8	345.1	332.9
30°	388.2	383.4	376.7	367.0	365.7	361.5	351.8	345.7	327.5	312.9	306.2
32.5°	356.0	354.2	348.7	337.8	334.1	329.3	317.1	306.8	298.3	281.9	274.0
35°	332.9	326.3	314.7	305.6	302.6	294.1	284.3	277.0	267.9	253.3	243.0
37.5°	298.3	291.6	280.7	269.7	269.7	261.2	247.9	240.6	227.8	219.3	210.8
40°	267.9	259.4	248.5	235.7	233.9	221.8	216.3	204.1	196.2	182.9	181.7
42.5°	233.9	226.0	216.3	206.6	199.3	193.2	179.2	170.1	161.6	154.9	153.1
45°	202.9	192.6	184.1	171.9	164.6	157.4	148.2	142.2	135.5	128.2	123.9
47.5°	176.2	167.7	155.5	144.6	137.3	133.7	123.3	116.6	111.2	106.3	103.3
50°	148.8	138.5	131.8	119.7	118.5	110.0	101.5	96.0	93.0	88.7	84.4
52.5°	128.2	118.5	109.4	100.2	95.4	92.3	84.4	79.0	74.7	71.7	69.3
55°	108.1	99.6	92.3	83.2	80.2	75.9	66.8	65.6	61.4	57.1	54.1
57.5°	93.0	85.1	76.6	70.5	65.0	62.0	54.7	49.8	47.4	43.7	40.7
60°	79.0	70.5	63.8	56.5	54.1	49.8	44.4	40.1	37.1	34.0	31.0
62.5°	66.2	58.9	51.6	45.6	41.9	39.5	35.2	31.6	28.6	26.1	23.7
65°	54.7	48.0	41.9	35.8	34.0	31.0	27.9	24.9	22.5	19.4	17.0
67.5°	45.0	38.9	32.8	28.6	26.7	25.5	21.9	18.8	17.0	15.2	12.8
70°	35.2	31.0	26.1	22.5	20.7	18.8	16.4	14.6	12.2	10.9	9.1
72.5°	27.3	23.7	19.4	16.4	15.2	14.0	11.5	9.7	8.5	7.3	6.1
75°	19.4	16.4	14.0	10.9	10.3	9.7	7.9	6.7	5.5	4.3	3.6
77.5°	13.4	10.9	8.5	7.3	6.7	5.5	4.9	3.6	3.0	2.4	1.8
80°	7.3	5.5	4.3	3.6	3.0	2.4	2.4	1.8	1.2	1.2	0.6
82.5°	2.4	1.8	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.6
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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	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°	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7
2.5°	506.1	499.4	501.2	501.2	500.0	500.0	498.8	497.0	497.6	493.9	486.0
5°	500.6	492.1	490.9	492.1	487.2	486.0	483.6	487.2	476.3	480.6	475.7
7.5°	484.8	476.9	475.1	479.4	473.3	469.6	469.0	473.9	464.2	459.3	453.8
10°	467.2	464.2	458.7	455.7	453.8	454.4	449.6	443.5	441.7	440.5	435.6
12.5°	451.4	444.7	439.9	436.2	435.0	435.0	427.1	425.9	420.4	419.2	411.9
15°	432.6	424.7	421.6	416.8	412.5	415.0	405.8	403.4	401.6	393.7	394.9
17.5°	416.2	407.7	400.4	397.3	393.7	390.0	381.5	383.4	379.1	379.1	368.2
20°	394.9	385.8	380.3	374.2	374.2	369.4	363.3	363.9	358.5	353.0	343.3
22.5°	372.4	362.7	356.0	353.6	347.5	346.3	339.0	337.2	329.9	330.5	322.0
25°	348.7	339.0	329.9	330.5	325.0	322.6	318.4	309.8	306.8	303.2	300.7
27.5°	320.8	314.1	306.2	305.6	295.3	295.9	290.4	288.0	280.7	282.5	277.0
30°	295.3	285.5	278.3	276.4	272.2	271.0	262.5	258.8	260.0	255.2	252.1
32.5°	269.1	254.6	251.5	247.9	245.4	242.4	236.3	238.8	233.3	234.5	229.7
35°	234.5	228.4	220.5	220.5	218.1	215.7	211.4	213.9	208.4	206.0	201.1
37.5°	205.3	199.9	192.0	194.4	190.2	186.5	182.9	183.5	178.6	178.0	173.1
40°	173.8	170.7	165.3	165.3	162.2	162.2	160.4	158.6	155.5	151.9	146.4
42.5°	144.0	141.6	139.1	139.7	135.5	139.1	134.3	137.3	127.6	127.0	123.3
45°	122.1	116.6	117.3	114.8	112.4	113.6	109.4	110.6	105.1	103.9	100.2
47.5°	99.0	97.2	93.6	92.3	92.3	90.5	88.7	88.1	85.7	82.6	77.8
50°	81.4	74.7	73.5	71.7	70.5	70.5	68.0	64.4	65.0	62.0	57.1
52.5°	63.8	58.3	55.9	55.3	52.9	51.6	48.6	46.2	44.4	43.1	40.1
55°	49.2	44.4	41.3	41.3	37.7	37.7	33.4	31.6	29.2	26.7	24.9
57.5°	37.1	34.6	31.6	29.2	27.9	24.9	22.5	19.4	17.6	14.0	11.5
60°	27.9	25.5	22.5	20.7	19.4	16.4	13.4	10.9	6.7	5.5	4.9
62.5°	20.7	18.2	15.2	14.0	12.8	10.3	7.3	3.6	1.8	1.8	1.8
65°	15.2	12.2	9.7	8.5	7.3	5.5	2.4	1.2	0.6	0.6	0.6
67.5°	10.3	7.9	5.5	4.9	3.6	1.8	0.6	0.6	0.6	0.6	0.6
70°	6.7	4.9	2.4	1.8	1.2	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	4.3	2.4	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.6	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	0.6	0.6	0.6
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°	506.7	506.7	506.7	506.7	506.7	506.7	506.7	506.7
2.5°	494.5	490.3	492.7	487.2	489.7	493.9	490.9	492.1
5°	477.5	475.1	472.1	464.2	470.2	475.1	472.7	472.1
7.5°	459.3	450.8	455.0	452.6	451.4	456.3	450.8	456.9
10°	440.5	434.4	433.8	429.5	429.5	433.2	433.8	430.1
12.5°	412.5	409.5	409.5	408.9	408.3	411.9	412.5	410.7
15°	392.5	391.3	388.2	387.6	384.0	389.4	390.0	389.4
17.5°	368.2	368.8	365.7	365.7	368.2	370.0	365.1	370.0
20°	351.8	348.7	347.5	342.0	345.1	348.1	348.1	348.7
22.5°	328.1	323.2	325.0	322.0	320.2	324.4	324.4	326.3
25°	301.3	301.3	302.6	300.7	301.9	304.4	302.6	306.8
27.5°	275.8	278.3	278.3	275.8	277.0	284.3	287.4	282.5
30°	252.1	252.7	254.6	253.3	257.0	259.4	258.8	262.5
32.5°	225.4	228.4	229.7	227.8	229.0	234.5	231.5	230.9
35°	204.7	199.3	198.7	199.3	201.7	202.9	201.7	206.0
37.5°	175.0	173.1	170.7	171.3	173.1	175.6	176.8	179.8
40°	146.4	144.0	144.0	143.4	141.6	148.2	148.2	148.2
42.5°	121.5	120.9	117.9	117.9	120.3	122.1	120.9	125.2
45°	99.6	97.2	95.4	95.4	97.2	97.2	99.0	98.4
47.5°	78.4	75.9	76.6	74.7	76.6	79.0	75.9	76.6
50°	58.9	58.9	57.7	58.9	58.3	58.9	57.7	56.5
52.5°	40.1	45.6	46.2	43.7	38.3	33.4	30.4	32.8
55°	23.1	20.7	20.7	20.0	18.8	18.2	16.4	18.2
57.5°	11.5	10.3	10.3	10.3	9.7	9.1	7.9	7.9
60°	4.9	4.3	4.3	3.6	3.0	2.4	1.8	2.4
62.5°	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2
65°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
67.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
70°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)