

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: P219477

Luminaire Tested: **LDSQ4B10D010 EU4B10208027 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219477
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 EU4B10208027 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 801.6 lumens
Efficiency: N/A
Efficacy: 79.8 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

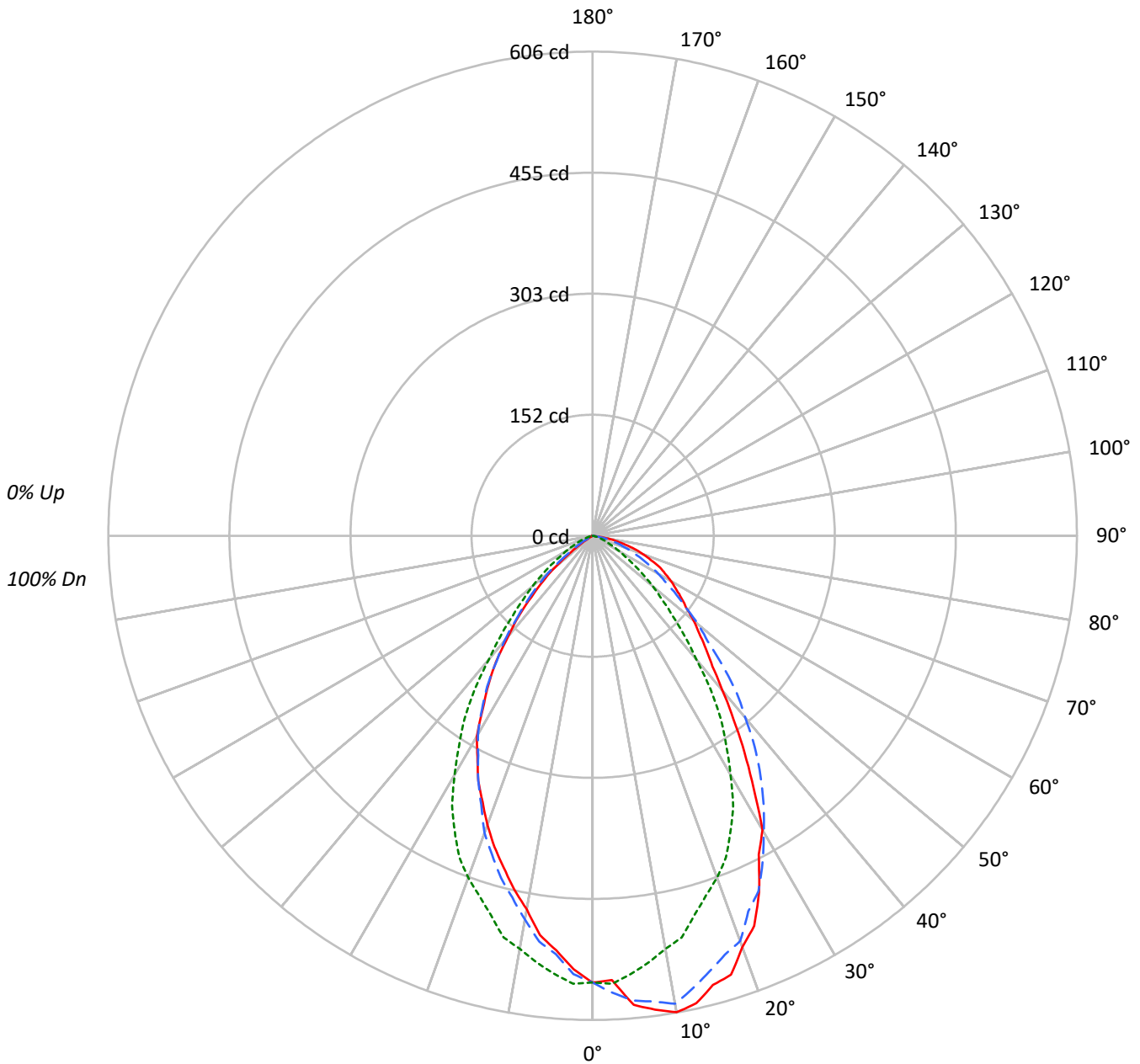
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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°	54173	54173	54173
5°	57316	53534	50665
10°	59563	51644	46696
15°	58370	49294	43106
20°	56474	46938	39680
25°	52675	43643	36193
30°	47553	38626	32406
35°	39169	33066	26881
40°	31970	25520	20689
45°	27469	19386	14878
50°	24852	14755	9404
55°	22869	10641	3395
60°	21952	7266	523
65°	21203	4928	160
70°	19006	3427	198
75°	15571	1759	0
80°	9707	725	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.4	6.5
10°-20°	141.2	17.6
20°-30°	188.5	23.5
30°-40°	178.9	22.3
40°-50°	123.7	15.4
50°-60°	68.3	8.5
60°-70°	33.9	4.2
70°-80°	13.4	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°	382.0	47.7
0°-40°	561.0	70.0
0°-60°	753.0	93.9
0°-90°	801.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	801.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	559	559	559	559	559	
5°	589	584	550	526	521	56
15°	582	565	492	443	430	165
25°	493	491	408	339	339	225
35°	331	366	280	230	227	208
45°	200	230	142	116	109	156
55°	135	127	63	32	20	122
65°	92	67	22	1	1	90
75°	42	26	5	0	0	44
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°	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2
2.5°	556.5	571.9	573.3	571.9	573.9	573.3	576.6	573.3	577.3	571.3	572.6
5°	589.4	583.3	596.1	589.4	589.4	588.7	586.7	586.0	588.7	580.0	584.0
7.5°	598.1	606.8	618.2	604.1	604.8	604.8	600.8	599.4	599.4	583.3	588.0
10°	605.5	600.1	606.1	600.8	605.5	604.8	607.5	598.8	604.8	595.4	594.7
12.5°	599.4	597.4	605.5	596.7	594.1	594.7	591.4	589.4	591.4	580.7	580.0
15°	582.0	584.0	596.1	586.7	585.3	584.0	580.0	573.3	578.6	563.9	564.6
17.5°	576.0	572.6	574.6	566.6	568.6	567.2	566.6	560.5	559.2	549.8	549.8
20°	547.8	555.2	555.2	549.8	549.8	549.1	540.4	545.8	539.8	537.1	539.8
22.5°	528.4	529.0	529.0	524.3	525.0	522.3	517.6	514.3	517.6	514.3	508.9
25°	492.8	494.2	502.2	493.5	492.1	494.8	490.8	488.8	488.1	480.1	490.8
27.5°	449.9	463.3	462.6	459.3	463.3	458.0	455.9	456.6	458.6	458.0	460.6
30°	425.1	427.1	429.1	426.4	427.1	425.1	425.1	425.8	431.1	429.1	428.4
32.5°	374.8	381.5	386.9	386.9	387.5	389.6	388.9	403.0	406.3	399.6	398.3
35°	331.2	335.9	340.6	341.3	350.0	350.7	351.3	355.4	364.8	366.8	366.1
37.5°	289.7	294.3	295.7	301.7	306.4	311.1	316.5	321.8	329.9	336.6	333.2
40°	252.8	254.8	258.1	260.8	270.2	270.2	272.9	283.6	292.3	297.7	297.0
42.5°	221.9	222.6	225.3	230.0	238.7	236.7	238.7	246.1	258.8	259.5	266.9
45°	200.5	199.8	201.8	202.5	207.9	210.5	211.9	217.2	228.0	229.3	230.0
47.5°	181.0	180.4	183.7	185.1	187.1	189.8	189.8	190.4	194.4	197.8	195.1
50°	164.9	164.9	164.9	166.3	169.6	169.0	169.6	172.3	174.3	173.0	172.3
52.5°	147.5	150.2	152.2	152.9	153.5	153.5	154.2	152.9	152.2	150.2	146.2
55°	135.4	138.1	138.1	138.1	138.1	140.8	137.5	138.1	138.1	132.8	127.4
57.5°	123.4	126.1	128.1	125.4	128.1	125.4	124.0	123.4	122.0	116.7	108.6
60°	113.3	114.7	114.0	113.3	114.7	112.6	111.3	108.6	107.3	99.9	94.5
62.5°	101.9	102.6	103.3	101.9	100.6	99.9	97.2	93.2	90.5	84.5	79.8
65°	92.5	90.5	89.8	89.2	87.8	85.8	83.8	79.1	77.1	71.7	67.1
67.5°	78.4	77.8	79.1	77.1	73.8	73.8	71.7	67.7	63.0	59.7	55.0
70°	67.1	66.4	65.0	63.0	62.4	59.7	59.7	55.0	53.6	47.6	43.6
72.5°	55.0	55.0	53.0	51.0	48.9	47.6	46.9	43.6	41.6	38.2	34.9
75°	41.6	41.6	40.9	38.9	37.5	36.2	35.5	32.9	30.8	27.5	25.5
77.5°	29.5	29.5	26.8	25.5	26.1	24.8	23.5	22.8	22.1	20.1	17.4
80°	17.4	16.8	14.8	15.4	14.8	14.8	14.1	13.4	12.1	10.7	9.4
82.5°	4.7	5.4	5.4	5.4	6.0	4.7	4.7	4.7	5.4	5.4	3.4
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	1.3	2.7	2.7	2.7	2.7	2.7	2.0	2.0	2.0	1.3
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°	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2
2.5°	565.9	565.2	565.9	561.2	571.9	563.9	562.6	561.2	565.9	561.2	554.5
5°	578.0	571.3	569.3	567.2	573.3	563.9	561.9	562.6	559.2	550.5	551.2
7.5°	582.0	576.0	569.9	557.2	562.6	560.5	555.2	551.2	545.8	538.4	537.1
10°	583.3	576.6	567.9	563.9	555.8	553.2	551.2	544.4	537.7	525.0	521.6
12.5°	579.3	571.3	560.5	557.2	551.2	542.4	537.7	531.0	525.0	514.9	507.6
15°	561.9	555.2	551.8	540.4	537.7	532.4	523.0	513.6	504.9	491.5	487.5
17.5°	541.8	539.1	535.7	527.0	526.3	521.0	512.3	504.2	492.8	472.0	465.3
20°	521.0	521.0	510.3	506.9	513.6	502.9	496.2	488.8	465.3	455.3	443.2
22.5°	505.6	498.2	492.1	486.8	487.5	480.7	471.4	456.6	447.9	435.8	421.7
25°	475.4	478.1	464.7	462.6	464.7	449.2	444.5	432.5	419.7	408.3	397.6
27.5°	456.6	449.2	440.5	433.1	433.1	427.1	413.7	411.0	391.6	380.8	367.4
30°	428.4	423.1	415.7	405.0	403.6	398.9	388.2	381.5	361.4	345.3	337.9
32.5°	392.9	390.9	384.9	372.8	368.8	363.4	350.0	338.6	329.2	311.1	302.4
35°	367.4	360.1	347.3	337.3	333.9	324.5	313.8	305.7	295.7	279.6	268.2
37.5°	329.2	321.8	309.8	297.7	297.7	288.3	273.6	265.5	251.4	242.1	232.7
40°	295.7	286.3	274.2	260.2	258.1	244.7	238.7	225.3	216.6	201.8	200.5
42.5°	258.1	249.4	238.7	228.0	219.9	213.2	197.8	187.7	178.4	171.0	169.0
45°	223.9	212.5	203.2	189.8	181.7	173.7	163.6	156.9	149.5	141.5	136.8
47.5°	194.4	185.1	171.6	159.6	151.5	147.5	136.1	128.7	122.7	117.3	114.0
50°	164.3	152.9	145.5	132.1	130.7	121.4	112.0	105.9	102.6	97.9	93.2
52.5°	141.5	130.7	120.7	110.6	105.3	101.9	93.2	87.2	82.5	79.1	76.4
55°	119.3	110.0	101.9	91.9	88.5	83.8	73.8	72.4	67.7	63.0	59.7
57.5°	102.6	93.9	84.5	77.8	71.7	68.4	60.3	55.0	52.3	48.3	44.9
60°	87.2	77.8	70.4	62.4	59.7	55.0	48.9	44.3	40.9	37.5	34.2
62.5°	73.1	65.0	57.0	50.3	46.3	43.6	38.9	34.9	31.5	28.8	26.1
65°	60.3	53.0	46.3	39.6	37.5	34.2	30.8	27.5	24.8	21.5	18.8
67.5°	49.6	42.9	36.2	31.5	29.5	28.2	24.1	20.8	18.8	16.8	14.1
70°	38.9	34.2	28.8	24.8	22.8	20.8	18.1	16.1	13.4	12.1	10.1
72.5°	30.2	26.1	21.5	18.1	16.8	15.4	12.7	10.7	9.4	8.0	6.7
75°	21.5	18.1	15.4	12.1	11.4	10.7	8.7	7.4	6.0	4.7	4.0
77.5°	14.8	12.1	9.4	8.0	7.4	6.0	5.4	4.0	3.4	2.7	2.0
80°	8.0	6.0	4.7	4.0	3.4	2.7	2.7	2.0	1.3	1.3	0.7
82.5°	2.7	2.0	1.3	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°	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2
2.5°	558.5	551.2	553.2	553.2	551.8	551.8	550.5	548.5	549.1	545.1	536.4
5°	552.5	543.1	541.8	543.1	537.7	536.4	533.7	537.7	525.7	530.4	525.0
7.5°	535.1	526.3	524.3	529.0	522.3	518.3	517.6	523.0	512.3	506.9	500.9
10°	515.6	512.3	506.2	502.9	500.9	501.5	496.2	489.5	487.5	486.1	480.7
12.5°	498.2	490.8	485.4	481.4	480.1	480.1	471.4	470.0	464.0	462.6	454.6
15°	477.4	468.7	465.3	460.0	455.3	458.0	447.9	445.2	443.2	434.5	435.8
17.5°	459.3	449.9	441.9	438.5	434.5	430.5	421.1	423.1	418.4	418.4	406.3
20°	435.8	425.8	419.7	413.0	413.0	407.7	401.0	401.6	395.6	389.6	378.8
22.5°	411.0	400.3	392.9	390.2	383.5	382.2	374.1	372.1	364.1	364.8	355.4
25°	384.9	374.1	364.1	364.8	358.7	356.0	351.3	342.0	338.6	334.6	331.9
27.5°	354.0	346.6	337.9	337.3	325.9	326.5	320.5	317.8	309.8	311.8	305.7
30°	325.9	315.1	307.1	305.1	300.4	299.0	289.7	285.6	287.0	281.6	278.3
32.5°	297.0	280.9	277.6	273.6	270.9	267.5	260.8	263.5	257.5	258.8	253.4
35°	258.8	252.1	243.4	243.4	240.7	238.0	233.3	236.0	230.0	227.3	221.9
37.5°	226.6	220.6	211.9	214.6	209.9	205.8	201.8	202.5	197.1	196.5	191.1
40°	191.8	188.4	182.4	182.4	179.0	179.0	177.0	175.0	171.6	167.6	161.6
42.5°	158.9	156.2	153.5	154.2	149.5	153.5	148.2	151.5	140.8	140.1	136.1
45°	134.8	128.7	129.4	126.7	124.0	125.4	120.7	122.0	116.0	114.7	110.6
47.5°	109.3	107.3	103.3	101.9	101.9	99.9	97.9	97.2	94.5	91.2	85.8
50°	89.8	82.5	81.1	79.1	77.8	77.8	75.1	71.1	71.7	68.4	63.0
52.5°	70.4	64.4	61.7	61.0	58.3	57.0	53.6	51.0	48.9	47.6	44.3
55°	54.3	48.9	45.6	45.6	41.6	41.6	36.9	34.9	32.2	29.5	27.5
57.5°	40.9	38.2	34.9	32.2	30.8	27.5	24.8	21.5	19.4	15.4	12.7
60°	30.8	28.2	24.8	22.8	21.5	18.1	14.8	12.1	7.4	6.0	5.4
62.5°	22.8	20.1	16.8	15.4	14.1	11.4	8.0	4.0	2.0	2.0	2.0
65°	16.8	13.4	10.7	9.4	8.0	6.0	2.7	1.3	0.7	0.7	0.7
67.5°	11.4	8.7	6.0	5.4	4.0	2.0	0.7	0.7	0.7	0.7	0.7
70°	7.4	5.4	2.7	2.0	1.3	0.7	0.7	0.7	0.7	0.7	0.7
72.5°	4.7	2.7	1.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.3	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°	559.2	559.2	559.2	559.2	559.2	559.2	559.2	559.2
2.5°	545.8	541.1	543.8	537.7	540.4	545.1	541.8	543.1
5°	527.0	524.3	521.0	512.3	519.0	524.3	521.6	521.0
7.5°	506.9	497.5	502.2	499.5	498.2	503.5	497.5	504.2
10°	486.1	479.4	478.7	474.0	474.0	478.1	478.7	474.7
12.5°	455.3	451.9	451.9	451.2	450.6	454.6	455.3	453.3
15°	433.1	431.8	428.4	427.8	423.8	429.8	430.5	429.8
17.5°	406.3	407.0	403.6	403.6	406.3	408.3	403.0	408.3
20°	388.2	384.9	383.5	377.5	380.8	384.2	384.2	384.9
22.5°	362.1	356.7	358.7	355.4	353.4	358.0	358.0	360.1
25°	332.6	332.6	333.9	331.9	333.2	335.9	333.9	338.6
27.5°	304.4	307.1	307.1	304.4	305.7	313.8	317.1	311.8
30°	278.3	278.9	280.9	279.6	283.6	286.3	285.6	289.7
32.5°	248.8	252.1	253.4	251.4	252.8	258.8	255.5	254.8
35°	226.0	219.9	219.3	219.9	222.6	223.9	222.6	227.3
37.5°	193.1	191.1	188.4	189.1	191.1	193.8	195.1	198.5
40°	161.6	158.9	158.9	158.2	156.2	163.6	163.6	163.6
42.5°	134.1	133.4	130.1	130.1	132.8	134.8	133.4	138.1
45°	110.0	107.3	105.3	105.3	107.3	107.3	109.3	108.6
47.5°	86.5	83.8	84.5	82.5	84.5	87.2	83.8	84.5
50°	65.0	65.0	63.7	65.0	64.4	65.0	63.7	62.4
52.5°	44.3	50.3	51.0	48.3	42.2	36.9	33.5	36.2
55°	25.5	22.8	22.8	22.1	20.8	20.1	18.1	20.1
57.5°	12.7	11.4	11.4	11.4	10.7	10.1	8.7	8.7
60°	5.4	4.7	4.7	4.0	3.4	2.7	2.0	2.7
62.5°	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)