

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: P219496

Luminaire Tested: **LDSQ4B15D010 EU4B10209027 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219496
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 EU4B10209027 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 958.6 lumens
Efficiency: N/A
Efficacy: 66.6 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

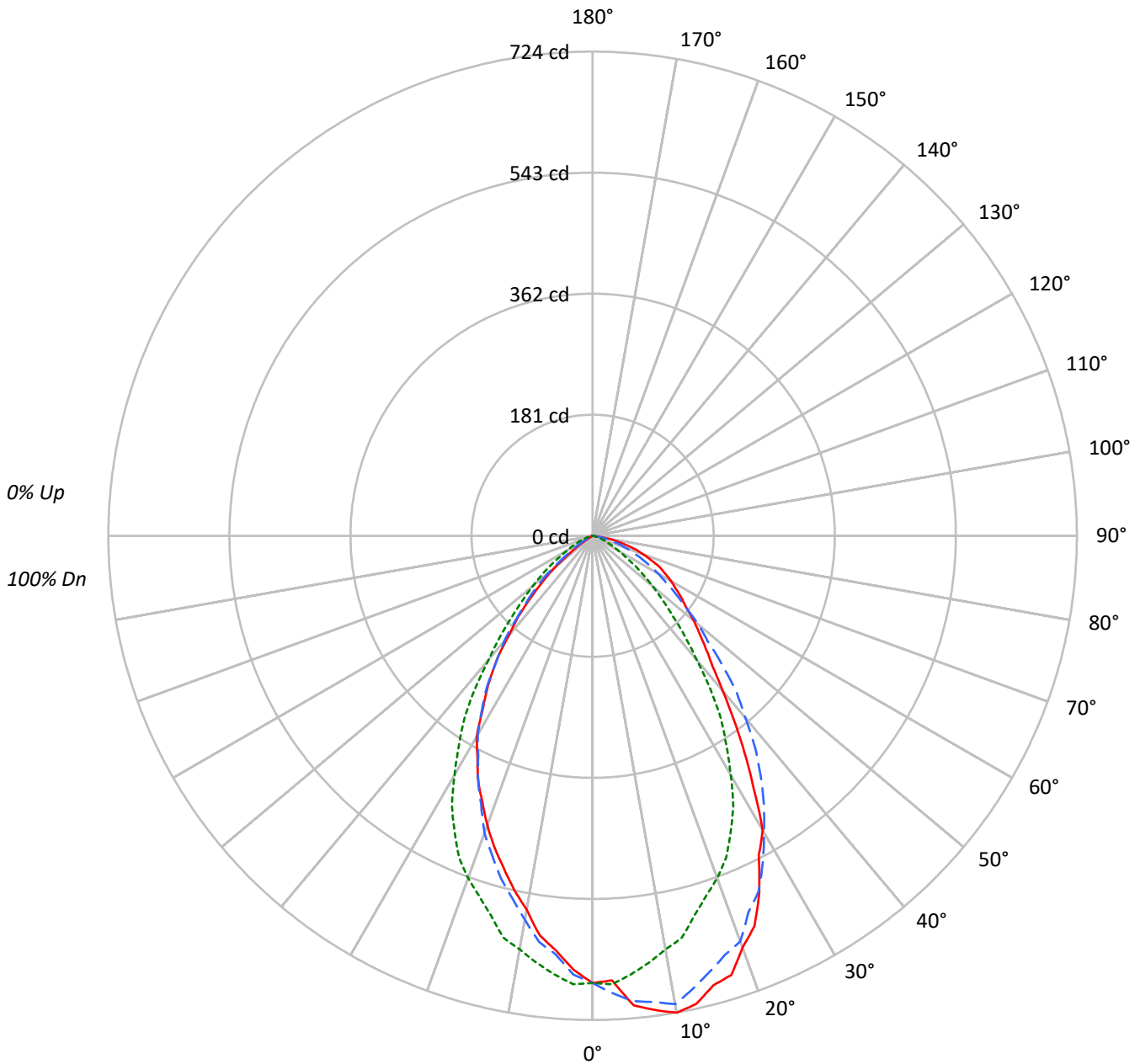
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	64781	64781	64781
5°	68539	64017	60584
10°	71230	61766	55845
15°	69804	58952	51551
20°	67536	56134	47454
25°	63001	52194	43280
30°	56871	46199	38749
35°	46844	39547	32144
40°	38229	30528	24749
45°	32853	23181	17797
50°	29735	17648	11243
55°	27361	12735	4070
60°	26253	8699	620
65°	25375	5891	183
70°	22716	4079	227
75°	18603	2096	0
80°	11604	893	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.7	6.5
10°-20°	168.8	17.6
20°-30°	225.4	23.5
30°-40°	214.0	22.3
40°-50°	147.9	15.4
50°-60°	81.7	8.5
60°-70°	40.6	4.2
70°-80°	16.0	1.7
80°-90°	1.5	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°	456.9	47.7
0°-40°	670.9	70.0
0°-60°	900.5	93.9
0°-90°	958.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	958.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	669	669	669	669	669	
5°	705	698	658	629	623	67
15°	696	675	588	530	514	197
25°	589	587	488	405	405	269
35°	396	438	334	275	272	248
45°	240	275	169	139	130	187
55°	162	152	75	38	24	146
65°	111	80	26	1	1	107
75°	50	30	6	0	0	53
85°	0	1	0	0	0	5
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°	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7
2.5°	665.5	684.0	685.6	684.0	686.4	685.6	689.6	685.6	690.4	683.2	684.8
5°	704.8	697.6	712.9	704.8	704.8	704.0	701.6	700.8	704.0	693.6	698.4
7.5°	715.3	725.7	739.3	722.5	723.3	723.3	718.5	716.9	716.9	697.6	703.2
10°	724.1	717.7	724.9	718.5	724.1	723.3	726.5	716.1	723.3	712.0	711.2
12.5°	716.9	714.5	724.1	713.7	710.4	711.2	707.2	704.8	707.2	694.4	693.6
15°	696.0	698.4	712.9	701.6	700.0	698.4	693.6	685.6	692.0	674.4	675.2
17.5°	688.8	684.8	687.2	677.6	680.0	678.4	677.6	670.4	668.7	657.5	657.5
20°	655.1	663.9	663.9	657.5	657.5	656.7	646.3	652.7	645.5	642.3	645.5
22.5°	631.9	632.7	632.7	627.1	627.9	624.6	619.0	615.0	619.0	615.0	608.6
25°	589.4	591.0	600.6	590.2	588.6	591.8	587.0	584.6	583.8	574.1	587.0
27.5°	538.0	554.1	553.3	549.3	554.1	547.7	545.3	546.1	548.5	547.7	550.9
30°	508.4	510.8	513.2	510.0	510.8	508.4	508.4	509.2	515.6	513.2	512.4
32.5°	448.2	456.3	462.7	462.7	463.5	465.9	465.1	481.9	485.9	477.9	476.3
35°	396.1	401.7	407.3	408.1	418.6	419.4	420.2	425.0	436.2	438.6	437.8
37.5°	346.4	352.0	353.6	360.8	366.4	372.1	378.5	384.9	394.5	402.5	398.5
40°	302.3	304.7	308.7	311.9	323.1	323.1	326.4	339.2	349.6	356.0	355.2
42.5°	265.4	266.2	269.4	275.0	285.5	283.1	285.5	294.3	309.5	310.3	319.1
45°	239.8	239.0	241.4	242.2	248.6	251.8	253.4	259.8	272.6	274.2	275.0
47.5°	216.5	215.7	219.7	221.3	223.7	226.9	226.9	227.7	232.5	236.5	233.3
50°	197.3	197.3	197.3	198.9	202.9	202.1	202.9	206.1	208.5	206.9	206.1
52.5°	176.4	179.6	182.0	182.8	183.6	183.6	184.4	182.8	182.0	179.6	174.8
55°	162.0	165.2	165.2	165.2	165.2	168.4	164.4	165.2	165.2	158.8	152.4
57.5°	147.5	150.7	153.2	149.9	153.2	149.9	148.3	147.5	145.9	139.5	129.9
60°	135.5	137.1	136.3	135.5	137.1	134.7	133.1	129.9	128.3	119.5	113.1
62.5°	121.9	122.7	123.5	121.9	120.3	119.5	116.3	111.5	108.3	101.0	95.4
65°	110.7	108.3	107.4	106.6	105.0	102.6	100.2	94.6	92.2	85.8	80.2
67.5°	93.8	93.0	94.6	92.2	88.2	88.2	85.8	81.0	75.4	71.4	65.8
70°	80.2	79.4	77.8	75.4	74.6	71.4	71.4	65.8	64.1	56.9	52.1
72.5°	65.8	65.8	63.3	60.9	58.5	56.9	56.1	52.1	49.7	45.7	41.7
75°	49.7	49.7	48.9	46.5	44.9	43.3	42.5	39.3	36.9	32.9	30.5
77.5°	35.3	35.3	32.1	30.5	31.3	29.7	28.1	27.3	26.5	24.1	20.8
80°	20.8	20.0	17.6	18.4	17.6	17.6	16.8	16.0	14.4	12.8	11.2
82.5°	5.6	6.4	6.4	6.4	7.2	5.6	5.6	5.6	6.4	6.4	4.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
87.5°	0.8	1.6	3.2	3.2	3.2	3.2	3.2	2.4	2.4	2.4	1.6
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7
2.5°	676.8	676.0	676.8	671.2	684.0	674.4	672.8	671.2	676.8	671.2	663.1
5°	691.2	683.2	680.8	678.4	685.6	674.4	672.0	672.8	668.7	658.3	659.1
7.5°	696.0	688.8	681.6	666.3	672.8	670.4	663.9	659.1	652.7	643.9	642.3
10°	697.6	689.6	679.2	674.4	664.7	661.5	659.1	651.1	643.1	627.9	623.8
12.5°	692.8	683.2	670.4	666.3	659.1	648.7	643.1	635.1	627.9	615.8	607.0
15°	672.0	663.9	659.9	646.3	643.1	636.7	625.4	614.2	603.8	587.8	582.9
17.5°	647.9	644.7	640.7	630.3	629.5	623.0	612.6	603.0	589.4	564.5	556.5
20°	623.0	623.0	610.2	606.2	614.2	601.4	593.4	584.6	556.5	544.5	530.0
22.5°	604.6	595.8	588.6	582.1	582.9	574.9	563.7	546.1	535.6	521.2	504.4
25°	568.5	571.7	555.7	553.3	555.7	537.2	531.6	517.2	502.0	488.3	475.5
27.5°	546.1	537.2	526.8	518.0	518.0	510.8	494.7	491.5	468.3	455.5	439.4
30°	512.4	506.0	497.2	484.3	482.7	477.1	464.3	456.3	432.2	413.0	404.1
32.5°	469.9	467.5	460.3	445.8	441.0	434.6	418.6	404.9	393.7	372.1	361.6
35°	439.4	430.6	415.4	403.3	399.3	388.1	375.3	365.6	353.6	334.4	320.7
37.5°	393.7	384.9	370.5	356.0	356.0	344.8	327.2	317.5	300.7	289.5	278.2
40°	353.6	342.4	328.0	311.1	308.7	292.7	285.5	269.4	259.0	241.4	239.8
42.5°	308.7	298.3	285.5	272.6	263.0	255.0	236.5	224.5	213.3	204.5	202.1
45°	267.8	254.2	243.0	226.9	217.3	207.7	195.7	187.6	178.8	169.2	163.6
47.5°	232.5	221.3	205.3	190.8	181.2	176.4	162.8	154.0	146.7	140.3	136.3
50°	196.5	182.8	174.0	158.0	156.4	145.1	133.9	126.7	122.7	117.1	111.5
52.5°	169.2	156.4	144.3	132.3	125.9	121.9	111.5	104.2	98.6	94.6	91.4
55°	142.7	131.5	121.9	109.9	105.8	100.2	88.2	86.6	81.0	75.4	71.4
57.5°	122.7	112.3	101.0	93.0	85.8	81.8	72.2	65.8	62.5	57.7	53.7
60°	104.2	93.0	84.2	74.6	71.4	65.8	58.5	52.9	48.9	44.9	40.9
62.5°	87.4	77.8	68.2	60.1	55.3	52.1	46.5	41.7	37.7	34.5	31.3
65°	72.2	63.3	55.3	47.3	44.9	40.9	36.9	32.9	29.7	25.7	22.5
67.5°	59.3	51.3	43.3	37.7	35.3	33.7	28.9	24.9	22.5	20.0	16.8
70°	46.5	40.9	34.5	29.7	27.3	24.9	21.7	19.2	16.0	14.4	12.0
72.5°	36.1	31.3	25.7	21.7	20.0	18.4	15.2	12.8	11.2	9.6	8.0
75°	25.7	21.7	18.4	14.4	13.6	12.8	10.4	8.8	7.2	5.6	4.8
77.5°	17.6	14.4	11.2	9.6	8.8	7.2	6.4	4.8	4.0	3.2	2.4
80°	9.6	7.2	5.6	4.8	4.0	3.2	3.2	2.4	1.6	1.6	0.8
82.5°	3.2	2.4	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.8
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°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	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°	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7
2.5°	667.9	659.1	661.5	661.5	659.9	659.9	658.3	655.9	656.7	651.9	641.5
5°	660.7	649.5	647.9	649.5	643.1	641.5	638.3	643.1	628.7	634.3	627.9
7.5°	639.9	629.5	627.1	632.7	624.6	619.8	619.0	625.4	612.6	606.2	599.0
10°	616.6	612.6	605.4	601.4	599.0	599.8	593.4	585.4	582.9	581.3	574.9
12.5°	595.8	587.0	580.5	575.7	574.1	574.1	563.7	562.1	554.9	553.3	543.7
15°	570.9	560.5	556.5	550.1	544.5	547.7	535.6	532.4	530.0	519.6	521.2
17.5°	549.3	538.0	528.4	524.4	519.6	514.8	503.6	506.0	500.4	500.4	485.9
20°	521.2	509.2	502.0	493.9	493.9	487.5	479.5	480.3	473.1	465.9	453.0
22.5°	491.5	478.7	469.9	466.7	458.7	457.1	447.4	445.0	435.4	436.2	425.0
25°	460.3	447.4	435.4	436.2	429.0	425.8	420.2	408.9	404.9	400.1	396.9
27.5°	423.4	414.6	404.1	403.3	389.7	390.5	383.3	380.1	370.5	372.9	365.6
30°	389.7	376.9	367.3	364.8	359.2	357.6	346.4	341.6	343.2	336.8	332.8
32.5°	355.2	336.0	332.0	327.2	324.0	319.9	311.9	315.1	307.9	309.5	303.1
35°	309.5	301.5	291.1	291.1	287.9	284.7	279.0	282.3	275.0	271.8	265.4
37.5°	271.0	263.8	253.4	256.6	251.0	246.2	241.4	242.2	235.7	234.9	228.5
40°	229.3	225.3	218.1	218.1	214.1	214.1	211.7	209.3	205.3	200.5	193.2
42.5°	190.0	186.8	183.6	184.4	178.8	183.6	177.2	181.2	168.4	167.6	162.8
45°	161.2	154.0	154.8	151.6	148.3	149.9	144.3	145.9	138.7	137.1	132.3
47.5°	130.7	128.3	123.5	121.9	121.9	119.5	117.1	116.3	113.1	109.1	102.6
50°	107.4	98.6	97.0	94.6	93.0	93.0	89.8	85.0	85.8	81.8	75.4
52.5°	84.2	77.0	73.8	73.0	69.8	68.2	64.1	60.9	58.5	56.9	52.9
55°	65.0	58.5	54.5	54.5	49.7	49.7	44.1	41.7	38.5	35.3	32.9
57.5°	48.9	45.7	41.7	38.5	36.9	32.9	29.7	25.7	23.3	18.4	15.2
60°	36.9	33.7	29.7	27.3	25.7	21.7	17.6	14.4	8.8	7.2	6.4
62.5°	27.3	24.1	20.0	18.4	16.8	13.6	9.6	4.8	2.4	2.4	2.4
65°	20.0	16.0	12.8	11.2	9.6	7.2	3.2	1.6	0.8	0.8	0.8
67.5°	13.6	10.4	7.2	6.4	4.8	2.4	0.8	0.8	0.8	0.8	0.8
70°	8.8	6.4	3.2	2.4	1.6	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	5.6	3.2	1.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	3.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.8	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	0.8	0.8	0.8
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°	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7
2.5°	652.7	647.1	650.3	643.1	646.3	651.9	647.9	649.5
5°	630.3	627.1	623.0	612.6	620.6	627.1	623.8	623.0
7.5°	606.2	595.0	600.6	597.4	595.8	602.2	595.0	603.0
10°	581.3	573.3	572.5	566.9	566.9	571.7	572.5	567.7
12.5°	544.5	540.5	540.5	539.6	538.8	543.7	544.5	542.1
15°	518.0	516.4	512.4	511.6	506.8	514.0	514.8	514.0
17.5°	485.9	486.7	482.7	482.7	485.9	488.3	481.9	488.3
20°	464.3	460.3	458.7	451.4	455.5	459.5	459.5	460.3
22.5°	433.0	426.6	429.0	425.0	422.6	428.2	428.2	430.6
25°	397.7	397.7	399.3	396.9	398.5	401.7	399.3	404.9
27.5°	364.0	367.3	367.3	364.0	365.6	375.3	379.3	372.9
30°	332.8	333.6	336.0	334.4	339.2	342.4	341.6	346.4
32.5°	297.5	301.5	303.1	300.7	302.3	309.5	305.5	304.7
35°	270.2	263.0	262.2	263.0	266.2	267.8	266.2	271.8
37.5°	230.9	228.5	225.3	226.1	228.5	231.7	233.3	237.3
40°	193.2	190.0	190.0	189.2	186.8	195.7	195.7	195.7
42.5°	160.4	159.6	155.6	155.6	158.8	161.2	159.6	165.2
45°	131.5	128.3	125.9	125.9	128.3	128.3	130.7	129.9
47.5°	103.4	100.2	101.0	98.6	101.0	104.2	100.2	101.0
50°	77.8	77.8	76.2	77.8	77.0	77.8	76.2	74.6
52.5°	52.9	60.1	60.9	57.7	50.5	44.1	40.1	43.3
55°	30.5	27.3	27.3	26.5	24.9	24.1	21.7	24.1
57.5°	15.2	13.6	13.6	13.6	12.8	12.0	10.4	10.4
60°	6.4	5.6	5.6	4.8	4.0	3.2	2.4	3.2
62.5°	2.4	1.6	1.6	1.6	1.6	1.6	1.6	1.6
65°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
70°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)