

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: P219481

Luminaire Tested: **LDSQ4B10D010 EU4B10208050 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219481
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 EU4B10208050 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 868.0 lumens
Efficiency: N/A
Efficacy: 86.4 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')

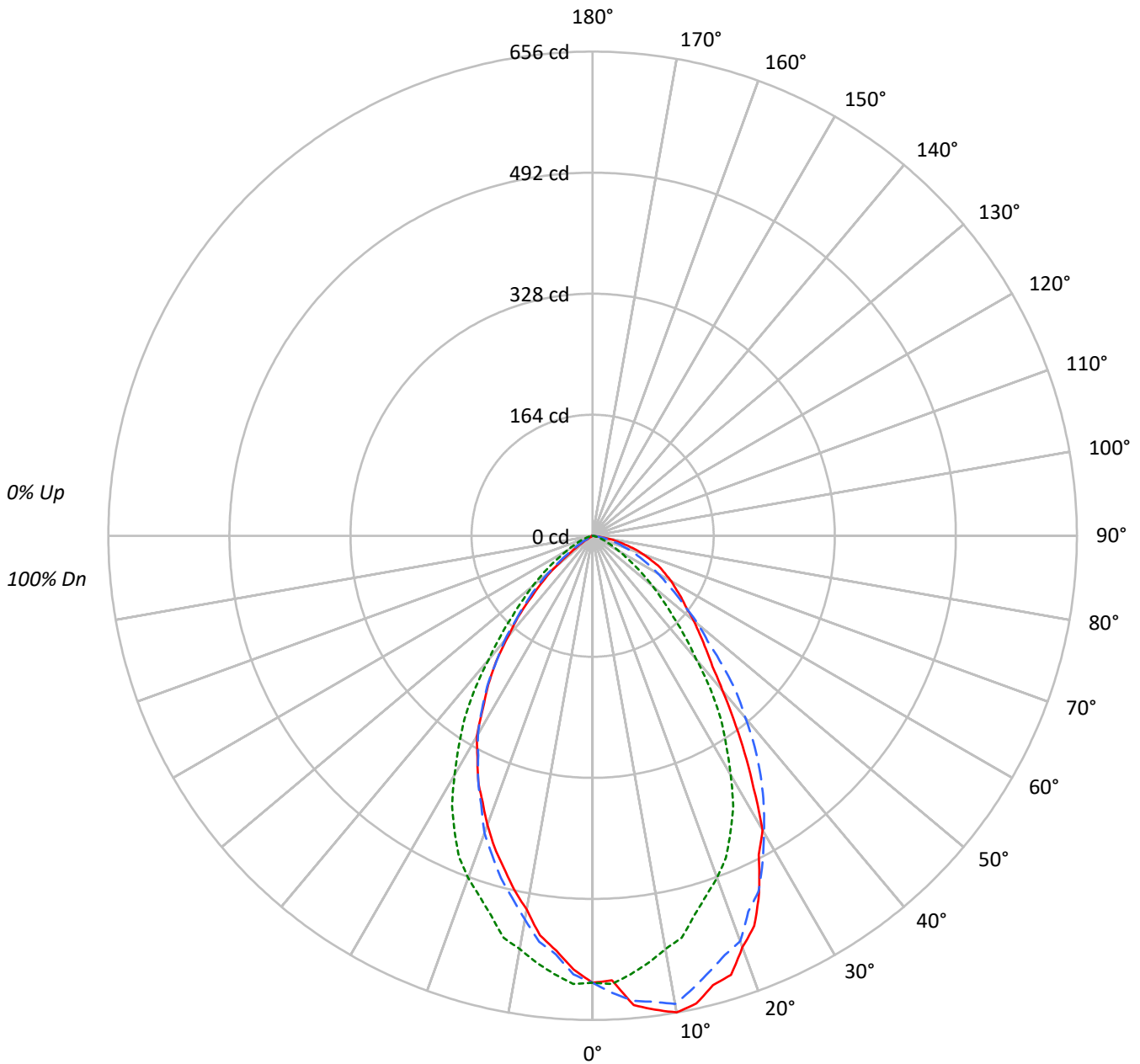
CIE Type: Direct
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	58668	58668	58668
5°	62072	57968	54866
10°	64501	55923	50572
15°	63215	53376	46676
20°	61155	50825	42969
25°	57047	47267	39197
30°	51501	41825	35091
35°	42421	35810	29116
40°	34613	27645	22409
45°	29743	20989	16111
50°	26917	15975	10173
55°	24777	11536	3682
60°	23773	7886	562
65°	22969	5318	160
70°	20564	3711	198
75°	16843	1909	0
80°	10544	837	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.7	6.5
10°-20°	152.9	17.6
20°-30°	204.1	23.5
30°-40°	193.8	22.3
40°-50°	133.9	15.4
50°-60°	74.0	8.5
60°-70°	36.7	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°	413.7	47.7
0°-40°	607.5	70.0
0°-60°	815.4	93.9
0°-90°	868.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	868.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	606	606	606	606	606	
5°	638	632	596	569	564	61
15°	630	611	532	480	465	178
25°	534	532	442	367	367	243
35°	359	396	303	249	246	225
45°	217	249	153	126	118	169
55°	147	138	68	35	22	132
65°	100	73	23	1	1	97
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°	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6
2.5°	602.7	619.4	620.8	619.4	621.6	620.8	624.5	620.8	625.2	618.6	620.1
5°	638.3	631.7	645.5	638.3	638.3	637.5	635.3	634.6	637.5	628.1	632.4
7.5°	647.7	657.1	669.5	654.2	655.0	655.0	650.6	649.1	649.1	631.7	636.8
10°	655.7	649.9	656.4	650.6	655.7	655.0	657.9	648.4	655.0	644.8	644.1
12.5°	649.1	647.0	655.7	646.2	643.3	644.1	640.4	638.3	640.4	628.8	628.1
15°	630.3	632.4	645.5	635.3	633.9	632.4	628.1	620.8	626.6	610.7	611.4
17.5°	623.7	620.1	622.3	613.6	615.7	614.3	613.6	607.0	605.6	595.4	595.4
20°	593.2	601.2	601.2	595.4	595.4	594.7	585.2	591.1	584.5	581.6	584.5
22.5°	572.2	572.9	572.9	567.8	568.5	565.6	560.6	556.9	560.6	556.9	551.1
25°	533.7	535.1	543.9	534.4	533.0	535.9	531.5	529.3	528.6	519.9	531.5
27.5°	487.2	501.7	501.0	497.4	501.7	495.9	493.8	494.5	496.7	495.9	498.8
30°	460.4	462.5	464.7	461.8	462.5	460.4	460.4	461.1	466.9	464.7	464.0
32.5°	405.9	413.2	419.0	419.0	419.7	421.9	421.1	436.4	440.0	432.8	431.3
35°	358.7	363.8	368.9	369.6	379.0	379.8	380.5	384.8	395.0	397.2	396.5
37.5°	313.7	318.8	320.2	326.8	331.8	336.9	342.7	348.5	357.2	364.5	360.9
40°	273.7	275.9	279.6	282.5	292.6	292.6	295.5	307.1	316.6	322.4	321.7
42.5°	240.3	241.1	244.0	249.1	258.5	256.3	258.5	266.5	280.3	281.0	289.0
45°	217.1	216.4	218.6	219.3	225.1	228.0	229.5	235.3	246.9	248.3	249.1
47.5°	196.1	195.3	199.0	200.4	202.6	205.5	205.5	206.2	210.6	214.2	211.3
50°	178.6	178.6	178.6	180.1	183.7	183.0	183.7	186.6	188.8	187.3	186.6
52.5°	159.7	162.6	164.8	165.6	166.3	166.3	167.0	165.6	164.8	162.6	158.3
55°	146.7	149.6	149.6	149.6	149.6	152.5	148.9	149.6	149.6	143.8	138.0
57.5°	133.6	136.5	138.7	135.8	138.7	135.8	134.3	133.6	132.2	126.3	117.6
60°	122.7	124.2	123.4	122.7	124.2	122.0	120.5	117.6	116.2	108.2	102.4
62.5°	110.4	111.1	111.8	110.4	108.9	108.2	105.3	100.9	98.0	91.5	86.4
65°	100.2	98.0	97.3	96.6	95.1	92.9	90.8	85.7	83.5	77.7	72.6
67.5°	85.0	84.2	85.7	83.5	79.9	79.9	77.7	73.3	68.3	64.6	59.5
70°	72.6	71.9	70.4	68.3	67.5	64.6	64.6	59.5	58.1	51.6	47.2
72.5°	59.5	59.5	57.4	55.2	53.0	51.6	50.8	47.2	45.0	41.4	37.8
75°	45.0	45.0	44.3	42.1	40.7	39.2	38.5	35.6	33.4	29.8	27.6
77.5°	31.9	31.9	29.0	27.6	28.3	26.9	25.4	24.7	24.0	21.8	18.9
80°	18.9	18.2	16.0	16.7	16.0	16.0	15.2	14.5	13.1	11.6	10.2
82.5°	5.1	5.8	5.8	5.8	6.5	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°	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6
2.5°	612.8	612.1	612.8	607.8	619.4	610.7	609.2	607.8	612.8	607.8	600.5
5°	625.9	618.6	616.5	614.3	620.8	610.7	608.5	609.2	605.6	596.1	596.9
7.5°	630.3	623.7	617.2	603.4	609.2	607.0	601.2	596.9	591.1	583.1	581.6
10°	631.7	624.5	615.0	610.7	601.9	599.0	596.9	589.6	582.3	568.5	564.9
12.5°	627.4	618.6	607.0	603.4	596.9	587.4	582.3	575.1	568.5	557.7	549.7
15°	608.5	601.2	597.6	585.2	582.3	576.5	566.4	556.2	546.8	532.2	527.9
17.5°	586.7	583.8	580.2	570.7	570.0	564.2	554.8	546.0	533.7	511.2	503.9
20°	564.2	564.2	552.6	548.9	556.2	544.6	537.3	529.3	503.9	493.0	480.0
22.5°	547.5	539.5	533.0	527.2	527.9	520.6	510.5	494.5	485.0	472.0	456.7
25°	514.8	517.7	503.2	501.0	503.2	486.5	481.4	468.3	454.5	442.2	430.6
27.5°	494.5	486.5	477.1	469.1	469.1	462.5	448.0	445.1	424.1	412.4	397.9
30°	464.0	458.2	450.2	438.6	437.1	432.0	420.4	413.2	391.4	373.9	366.0
32.5°	425.5	423.3	416.8	403.7	399.4	393.6	379.0	366.7	356.5	336.9	327.5
35°	397.9	389.9	376.1	365.2	361.6	351.4	339.8	331.1	320.2	302.8	290.4
37.5°	356.5	348.5	335.5	322.4	322.4	312.2	296.3	287.5	272.3	262.1	252.0
40°	320.2	310.1	297.0	281.7	279.6	265.0	258.5	244.0	234.5	218.6	217.1
42.5°	279.6	270.1	258.5	246.9	238.2	230.9	214.2	203.3	193.1	185.2	183.0
45°	242.5	230.2	220.0	205.5	196.8	188.1	177.2	169.9	161.9	153.2	148.1
47.5°	210.6	200.4	185.9	172.8	164.1	159.7	147.4	139.4	132.9	127.1	123.4
50°	177.9	165.6	157.6	143.0	141.6	131.4	121.3	114.7	111.1	106.0	100.9
52.5°	153.2	141.6	130.7	119.8	114.0	110.4	100.9	94.4	89.3	85.7	82.8
55°	129.2	119.1	110.4	99.5	95.8	90.8	79.9	78.4	73.3	68.3	64.6
57.5°	111.1	101.7	91.5	84.2	77.7	74.1	65.4	59.5	56.6	52.3	48.6
60°	94.4	84.2	76.2	67.5	64.6	59.5	53.0	47.9	44.3	40.7	37.0
62.5°	79.1	70.4	61.7	54.5	50.1	47.2	42.1	37.8	34.1	31.2	28.3
65°	65.4	57.4	50.1	42.8	40.7	37.0	33.4	29.8	26.9	23.2	20.3
67.5°	53.7	46.5	39.2	34.1	31.9	30.5	26.1	22.5	20.3	18.2	15.2
70°	42.1	37.0	31.2	26.9	24.7	22.5	19.6	17.4	14.5	13.1	10.9
72.5°	32.7	28.3	23.2	19.6	18.2	16.7	13.8	11.6	10.2	8.7	7.3
75°	23.2	19.6	16.7	13.1	12.3	11.6	9.4	8.0	6.5	5.1	4.4
77.5°	16.0	13.1	10.2	8.7	8.0	6.5	5.8	4.4	3.6	2.9	2.2
80°	8.7	6.5	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°	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6
2.5°	604.9	596.9	599.0	599.0	597.6	597.6	596.1	594.0	594.7	590.3	580.9
5°	598.3	588.2	586.7	588.2	582.3	580.9	578.0	582.3	569.3	574.4	568.5
7.5°	579.4	570.0	567.8	572.9	565.6	561.3	560.6	566.4	554.8	548.9	542.4
10°	558.4	554.8	548.2	544.6	542.4	543.1	537.3	530.1	527.9	526.4	520.6
12.5°	539.5	531.5	525.7	521.3	519.9	519.9	510.5	509.0	502.5	501.0	492.3
15°	517.0	507.6	503.9	498.1	493.0	495.9	485.0	482.1	480.0	470.5	472.0
17.5°	497.4	487.2	478.5	474.9	470.5	466.2	456.0	458.2	453.1	453.1	440.0
20°	472.0	461.1	454.5	447.3	447.3	441.5	434.2	434.9	428.4	421.9	410.3
22.5°	445.1	433.5	425.5	422.6	415.3	413.9	405.2	403.0	394.3	395.0	384.8
25°	416.8	405.2	394.3	395.0	388.5	385.6	380.5	370.3	366.7	362.3	359.4
27.5°	383.4	375.4	366.0	365.2	352.9	353.6	347.1	344.2	335.5	337.6	331.1
30°	352.9	341.3	332.6	330.4	325.3	323.8	313.7	309.3	310.8	305.0	301.3
32.5°	321.7	304.2	300.6	296.3	293.3	289.7	282.5	285.4	278.8	280.3	274.5
35°	280.3	273.0	263.6	263.6	260.7	257.8	252.7	255.6	249.1	246.2	240.3
37.5°	245.4	238.9	229.5	232.4	227.3	222.9	218.6	219.3	213.5	212.8	206.9
40°	207.7	204.0	197.5	197.5	193.9	193.9	191.7	189.5	185.9	181.5	175.0
42.5°	172.1	169.2	166.3	167.0	161.9	166.3	160.5	164.1	152.5	151.8	147.4
45°	145.9	139.4	140.1	137.2	134.3	135.8	130.7	132.2	125.6	124.2	119.8
47.5°	118.4	116.2	111.8	110.4	110.4	108.2	106.0	105.3	102.4	98.8	92.9
50°	97.3	89.3	87.9	85.7	84.2	84.2	81.3	77.0	77.7	74.1	68.3
52.5°	76.2	69.7	66.8	66.1	63.2	61.7	58.1	55.2	53.0	51.6	47.9
55°	58.8	53.0	49.4	49.4	45.0	45.0	39.9	37.8	34.9	31.9	29.8
57.5°	44.3	41.4	37.8	34.9	33.4	29.8	26.9	23.2	21.1	16.7	13.8
60°	33.4	30.5	26.9	24.7	23.2	19.6	16.0	13.1	8.0	6.5	5.8
62.5°	24.7	21.8	18.2	16.7	15.2	12.3	8.7	4.4	2.2	2.2	2.2
65°	18.2	14.5	11.6	10.2	8.7	6.5	2.9	1.5	0.7	0.7	0.7
67.5°	12.3	9.4	6.5	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°	605.6	605.6	605.6	605.6	605.6	605.6	605.6	605.6
2.5°	591.1	586.0	588.9	582.3	585.2	590.3	586.7	588.2
5°	570.7	567.8	564.2	554.8	562.0	567.8	564.9	564.2
7.5°	548.9	538.8	543.9	541.0	539.5	545.3	538.8	546.0
10°	526.4	519.2	518.4	513.4	513.4	517.7	518.4	514.1
12.5°	493.0	489.4	489.4	488.7	487.9	492.3	493.0	490.9
15°	469.1	467.6	464.0	463.3	458.9	465.4	466.2	465.4
17.5°	440.0	440.8	437.1	437.1	440.0	442.2	436.4	442.2
20°	420.4	416.8	415.3	408.8	412.4	416.1	416.1	416.8
22.5°	392.1	386.3	388.5	384.8	382.7	387.7	387.7	389.9
25°	360.2	360.2	361.6	359.4	360.9	363.8	361.6	366.7
27.5°	329.7	332.6	332.6	329.7	331.1	339.8	343.5	337.6
30°	301.3	302.1	304.2	302.8	307.1	310.1	309.3	313.7
32.5°	269.4	273.0	274.5	272.3	273.7	280.3	276.6	275.9
35°	244.7	238.2	237.4	238.2	241.1	242.5	241.1	246.2
37.5°	209.1	206.9	204.0	204.8	206.9	209.8	211.3	214.9
40°	175.0	172.1	172.1	171.4	169.2	177.2	177.2	177.2
42.5°	145.2	144.5	140.9	140.9	143.8	145.9	144.5	149.6
45°	119.1	116.2	114.0	114.0	116.2	116.2	118.4	117.6
47.5°	93.7	90.8	91.5	89.3	91.5	94.4	90.8	91.5
50°	70.4	70.4	69.0	70.4	69.7	70.4	69.0	67.5
52.5°	47.9	54.5	55.2	52.3	45.7	39.9	36.3	39.2
55°	27.6	24.7	24.7	24.0	22.5	21.8	19.6	21.8
57.5°	13.8	12.3	12.3	12.3	11.6	10.9	9.4	9.4
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)