

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: P219495

Luminaire Tested: **LDSQ4B15D010 EU4B10209024 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219495
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 EU4B10209024 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 843.3 lumens
Efficiency: N/A
Efficacy: 58.6 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

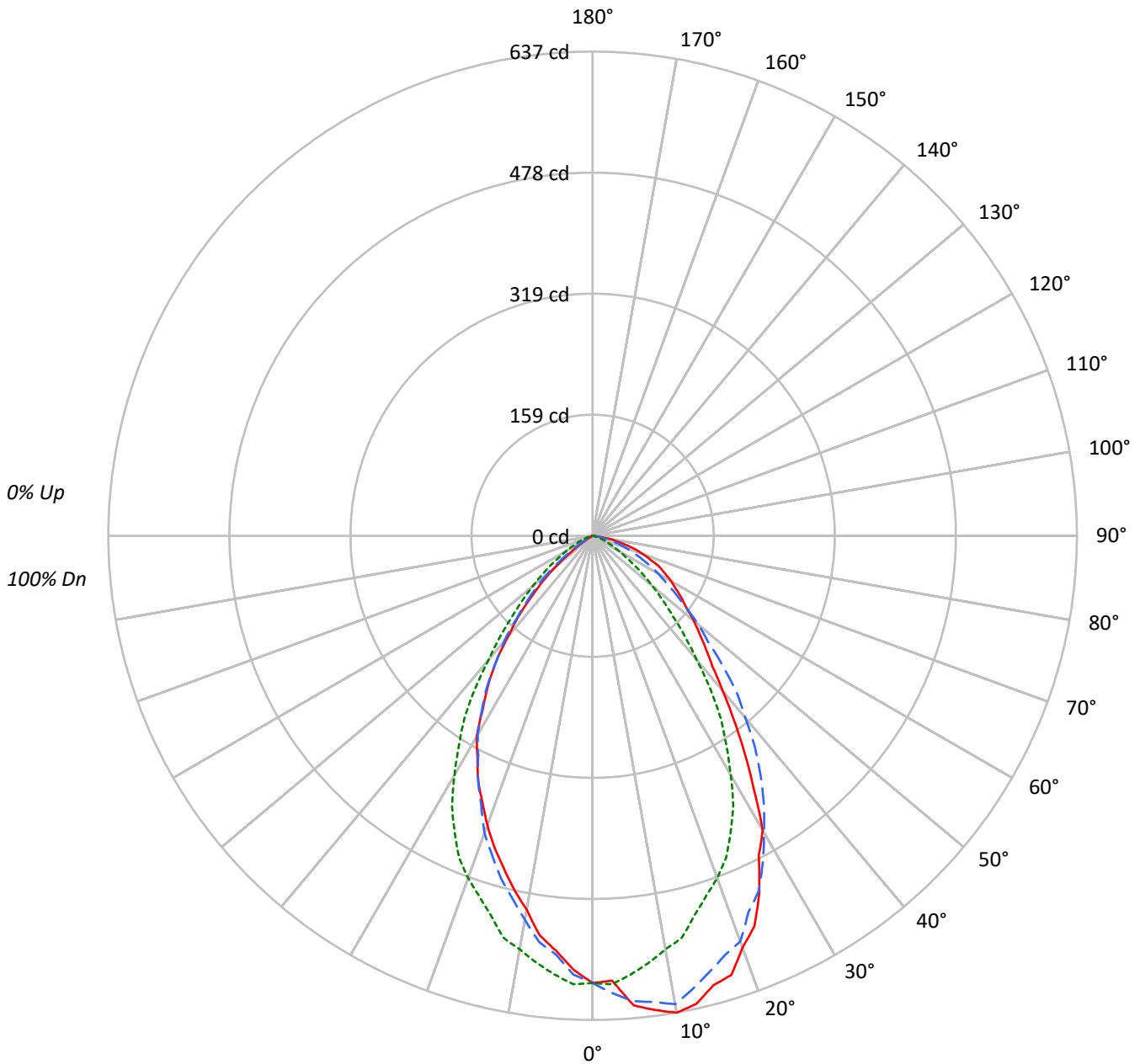
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	57002	57002	57002
5°	60302	56325	53310
10°	62671	54340	49136
15°	61419	51861	45352
20°	59423	49381	41742
25°	55423	45920	38085
30°	50036	40640	34096
35°	41215	34793	28289
40°	33639	26861	21764
45°	28894	20400	15659
50°	26148	15523	9887
55°	24068	11198	3581
60°	23095	7653	543
65°	22327	5181	160
70°	19969	3597	198
75°	16357	1834	0
80°	10209	781	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.1	6.5
10°-20°	148.5	17.6
20°-30°	198.3	23.5
30°-40°	188.3	22.3
40°-50°	130.1	15.4
50°-60°	71.9	8.5
60°-70°	35.7	4.2
70°-80°	14.1	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°	402.0	47.7
0°-40°	590.2	70.0
0°-60°	792.3	93.9
0°-90°	843.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	843.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	588	588	588	588	588	
5°	620	614	579	553	548	59
15°	612	594	517	466	452	173
25°	518	516	430	356	356	236
35°	348	385	294	242	239	218
45°	211	242	149	122	114	165
55°	142	134	66	34	21	128
65°	97	70	23	1	1	94
75°	44	27	5	0	0	47
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°	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4
2.5°	585.6	601.8	603.2	601.8	603.9	603.2	606.7	603.2	607.4	601.1	602.5
5°	620.1	613.8	627.2	620.1	620.1	619.4	617.3	616.6	619.4	610.2	614.5
7.5°	629.3	638.5	650.5	635.6	636.3	636.3	632.1	630.7	630.7	613.8	618.7
10°	637.1	631.4	637.8	632.1	637.1	636.3	639.2	630.0	636.3	626.5	625.8
12.5°	630.7	628.6	637.1	627.9	625.1	625.8	622.2	620.1	622.2	610.9	610.2
15°	612.4	614.5	627.2	617.3	615.9	614.5	610.2	603.2	608.8	593.3	594.0
17.5°	606.0	602.5	604.6	596.1	598.3	596.8	596.1	589.8	588.4	578.5	578.5
20°	576.4	584.1	584.1	578.5	578.5	577.8	568.6	574.3	567.9	565.1	567.9
22.5°	555.9	556.6	556.6	551.7	552.4	549.6	544.6	541.1	544.6	541.1	535.5
25°	518.5	519.9	528.4	519.2	517.8	520.6	516.4	514.3	513.6	505.1	516.4
27.5°	473.4	487.5	486.8	483.3	487.5	481.8	479.7	480.4	482.6	481.8	484.7
30°	447.3	449.4	451.5	448.7	449.4	447.3	447.3	448.0	453.6	451.5	450.8
32.5°	394.4	401.4	407.1	407.1	407.8	409.9	409.2	424.0	427.5	420.5	419.1
35°	348.5	353.4	358.4	359.1	368.3	369.0	369.7	373.9	383.8	385.9	385.2
37.5°	304.8	309.7	311.1	317.5	322.4	327.3	333.0	338.6	347.1	354.2	350.6
40°	266.0	268.1	271.6	274.4	284.3	284.3	287.1	298.4	307.6	313.2	312.5
42.5°	233.5	234.2	237.0	242.0	251.2	249.0	251.2	258.9	272.3	273.0	280.8
45°	210.9	210.2	212.4	213.1	218.7	221.5	222.9	228.6	239.9	241.3	242.0
47.5°	190.5	189.8	193.3	194.7	196.8	199.7	199.7	200.4	204.6	208.1	205.3
50°	173.5	173.5	173.5	175.0	178.5	177.8	178.5	181.3	183.4	182.0	181.3
52.5°	155.2	158.0	160.1	160.9	161.6	161.6	162.3	160.9	160.1	158.0	153.8
55°	142.5	145.3	145.3	145.3	145.3	148.2	144.6	145.3	145.3	139.7	134.0
57.5°	129.8	132.6	134.7	131.9	134.7	131.9	130.5	129.8	128.4	122.8	114.3
60°	119.2	120.6	119.9	119.2	120.6	118.5	117.1	114.3	112.9	105.1	99.5
62.5°	107.2	107.9	108.6	107.2	105.8	105.1	102.3	98.1	95.2	88.9	84.0
65°	97.4	95.2	94.5	93.8	92.4	90.3	88.2	83.2	81.1	75.5	70.5
67.5°	82.5	81.8	83.2	81.1	77.6	77.6	75.5	71.3	66.3	62.8	57.8
70°	70.5	69.8	68.4	66.3	65.6	62.8	62.8	57.8	56.4	50.1	45.9
72.5°	57.8	57.8	55.7	53.6	51.5	50.1	49.4	45.9	43.7	40.2	36.7
75°	43.7	43.7	43.0	40.9	39.5	38.1	37.4	34.6	32.5	28.9	26.8
77.5°	31.0	31.0	28.2	26.8	27.5	26.1	24.7	24.0	23.3	21.2	18.3
80°	18.3	17.6	15.5	16.2	15.5	15.5	14.8	14.1	12.7	11.3	9.9
82.5°	4.9	5.6	5.6	5.6	6.3	4.9	4.9	4.9	5.6	5.6	3.5
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	1.4	2.8	2.8	2.8	2.8	2.8	2.1	2.1	2.1	1.4
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°	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4
2.5°	595.4	594.7	595.4	590.5	601.8	593.3	591.9	590.5	595.4	590.5	583.4
5°	608.1	601.1	599.0	596.8	603.2	593.3	591.2	591.9	588.4	579.2	579.9
7.5°	612.4	606.0	599.7	586.3	591.9	589.8	584.1	579.9	574.3	566.5	565.1
10°	613.8	606.7	597.5	593.3	584.8	582.0	579.9	572.9	565.8	552.4	548.9
12.5°	609.5	601.1	589.8	586.3	579.9	570.7	565.8	558.7	552.4	541.8	534.1
15°	591.2	584.1	580.6	568.6	565.8	560.2	550.3	540.4	531.2	517.1	512.9
17.5°	570.0	567.2	563.7	554.5	553.8	548.2	539.0	530.5	518.5	496.7	489.6
20°	548.2	548.2	536.9	533.3	540.4	529.1	522.1	514.3	489.6	479.0	466.3
22.5°	531.9	524.2	517.8	512.2	512.9	505.8	496.0	480.4	471.3	458.6	443.7
25°	500.2	503.0	488.9	486.8	488.9	472.7	467.7	455.0	441.6	429.6	418.4
27.5°	480.4	472.7	463.5	455.7	455.7	449.4	435.3	432.5	412.0	400.7	386.6
30°	450.8	445.2	437.4	426.1	424.7	419.8	408.5	401.4	380.3	363.3	355.6
32.5°	413.4	411.3	404.9	392.2	388.0	382.4	368.3	356.3	346.4	327.3	318.2
35°	386.6	378.8	365.4	354.9	351.3	341.5	330.2	321.7	311.1	294.2	282.2
37.5°	346.4	338.6	325.9	313.2	313.2	303.4	287.8	279.4	264.6	254.7	244.8
40°	311.1	301.2	288.5	273.7	271.6	257.5	251.2	237.0	227.9	212.4	210.9
42.5°	271.6	262.4	251.2	239.9	231.4	224.3	208.1	197.5	187.7	179.9	177.8
45°	235.6	223.6	213.8	199.7	191.2	182.7	172.1	165.1	157.3	148.9	143.9
47.5°	204.6	194.7	180.6	167.9	159.4	155.2	143.2	135.5	129.1	123.5	119.9
50°	172.8	160.9	153.1	139.0	137.6	127.7	117.8	111.5	107.9	103.0	98.1
52.5°	148.9	137.6	127.0	116.4	110.8	107.2	98.1	91.7	86.8	83.2	80.4
55°	125.6	115.7	107.2	96.7	93.1	88.2	77.6	76.2	71.3	66.3	62.8
57.5°	107.9	98.8	88.9	81.8	75.5	72.0	63.5	57.8	55.0	50.8	47.3
60°	91.7	81.8	74.1	65.6	62.8	57.8	51.5	46.6	43.0	39.5	36.0
62.5°	76.9	68.4	60.0	52.9	48.7	45.9	40.9	36.7	33.2	30.3	27.5
65°	63.5	55.7	48.7	41.6	39.5	36.0	32.5	28.9	26.1	22.6	19.8
67.5°	52.2	45.2	38.1	33.2	31.0	29.6	25.4	21.9	19.8	17.6	14.8
70°	40.9	36.0	30.3	26.1	24.0	21.9	19.0	16.9	14.1	12.7	10.6
72.5°	31.7	27.5	22.6	19.0	17.6	16.2	13.4	11.3	9.9	8.5	7.1
75°	22.6	19.0	16.2	12.7	12.0	11.3	9.2	7.8	6.3	4.9	4.2
77.5°	15.5	12.7	9.9	8.5	7.8	6.3	5.6	4.2	3.5	2.8	2.1
80°	8.5	6.3	4.9	4.2	3.5	2.8	2.8	2.1	1.4	1.4	0.7
82.5°	2.8	2.1	1.4	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°	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4
2.5°	587.7	579.9	582.0	582.0	580.6	580.6	579.2	577.1	577.8	573.6	564.4
5°	581.3	571.4	570.0	571.4	565.8	564.4	561.6	565.8	553.1	558.0	552.4
7.5°	563.0	553.8	551.7	556.6	549.6	545.3	544.6	550.3	539.0	533.3	527.0
10°	542.5	539.0	532.6	529.1	527.0	527.7	522.1	515.0	512.9	511.5	505.8
12.5°	524.2	516.4	510.8	506.5	505.1	505.1	496.0	494.5	488.2	486.8	478.3
15°	502.3	493.1	489.6	484.0	479.0	481.8	471.3	468.4	466.3	457.2	458.6
17.5°	483.3	473.4	464.9	461.4	457.2	452.9	443.0	445.2	440.2	440.2	427.5
20°	458.6	448.0	441.6	434.6	434.6	428.9	421.9	422.6	416.2	409.9	398.6
22.5°	432.5	421.2	413.4	410.6	403.5	402.1	393.7	391.5	383.1	383.8	373.9
25°	404.9	393.7	383.1	383.8	377.4	374.6	369.7	359.8	356.3	352.0	349.2
27.5°	372.5	364.7	355.6	354.9	342.9	343.6	337.2	334.4	325.9	328.1	321.7
30°	342.9	331.6	323.1	321.0	316.1	314.6	304.8	300.5	301.9	296.3	292.8
32.5°	312.5	295.6	292.1	287.8	285.0	281.5	274.4	277.3	270.9	272.3	266.7
35°	272.3	265.3	256.1	256.1	253.3	250.4	245.5	248.3	242.0	239.2	233.5
37.5°	238.5	232.1	222.9	225.8	220.8	216.6	212.4	213.1	207.4	206.7	201.1
40°	201.8	198.2	191.9	191.9	188.4	188.4	186.2	184.1	180.6	176.4	170.0
42.5°	167.2	164.4	161.6	162.3	157.3	161.6	155.9	159.4	148.2	147.4	143.2
45°	141.8	135.5	136.2	133.3	130.5	131.9	127.0	128.4	122.0	120.6	116.4
47.5°	115.0	112.9	108.6	107.2	107.2	105.1	103.0	102.3	99.5	95.9	90.3
50°	94.5	86.8	85.4	83.2	81.8	81.8	79.0	74.8	75.5	72.0	66.3
52.5°	74.1	67.7	64.9	64.2	61.4	60.0	56.4	53.6	51.5	50.1	46.6
55°	57.1	51.5	48.0	48.0	43.7	43.7	38.8	36.7	33.9	31.0	28.9
57.5°	43.0	40.2	36.7	33.9	32.5	28.9	26.1	22.6	20.5	16.2	13.4
60°	32.5	29.6	26.1	24.0	22.6	19.0	15.5	12.7	7.8	6.3	5.6
62.5°	24.0	21.2	17.6	16.2	14.8	12.0	8.5	4.2	2.1	2.1	2.1
65°	17.6	14.1	11.3	9.9	8.5	6.3	2.8	1.4	0.7	0.7	0.7
67.5°	12.0	9.2	6.3	5.6	4.2	2.1	0.7	0.7	0.7	0.7	0.7
70°	7.8	5.6	2.8	2.1	1.4	0.7	0.7	0.7	0.7	0.7	0.7
72.5°	4.9	2.8	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.4	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°	588.4	588.4	588.4	588.4	588.4	588.4	588.4	588.4
2.5°	574.3	569.3	572.1	565.8	568.6	573.6	570.0	571.4
5°	554.5	551.7	548.2	539.0	546.0	551.7	548.9	548.2
7.5°	533.3	523.5	528.4	525.6	524.2	529.8	523.5	530.5
10°	511.5	504.4	503.7	498.8	498.8	503.0	503.7	499.5
12.5°	479.0	475.5	475.5	474.8	474.1	478.3	479.0	476.9
15°	455.7	454.3	450.8	450.1	445.9	452.2	452.9	452.2
17.5°	427.5	428.2	424.7	424.7	427.5	429.6	424.0	429.6
20°	408.5	404.9	403.5	397.2	400.7	404.2	404.2	404.9
22.5°	381.0	375.3	377.4	373.9	371.8	376.7	376.7	378.8
25°	349.9	349.9	351.3	349.2	350.6	353.4	351.3	356.3
27.5°	320.3	323.1	323.1	320.3	321.7	330.2	333.7	328.1
30°	292.8	293.5	295.6	294.2	298.4	301.2	300.5	304.8
32.5°	261.7	265.3	266.7	264.6	266.0	272.3	268.8	268.1
35°	237.7	231.4	230.7	231.4	234.2	235.6	234.2	239.2
37.5°	203.2	201.1	198.2	198.9	201.1	203.9	205.3	208.8
40°	170.0	167.2	167.2	166.5	164.4	172.1	172.1	172.1
42.5°	141.1	140.4	136.9	136.9	139.7	141.8	140.4	145.3
45°	115.7	112.9	110.8	110.8	112.9	112.9	115.0	114.3
47.5°	91.0	88.2	88.9	86.8	88.9	91.7	88.2	88.9
50°	68.4	68.4	67.0	68.4	67.7	68.4	67.0	65.6
52.5°	46.6	52.9	53.6	50.8	44.4	38.8	35.3	38.1
55°	26.8	24.0	24.0	23.3	21.9	21.2	19.0	21.2
57.5°	13.4	12.0	12.0	12.0	11.3	10.6	9.2	9.2
60°	5.6	4.9	4.9	4.2	3.5	2.8	2.1	2.8
62.5°	2.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)