

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: P219479

Luminaire Tested: **LDSQ4B10D010 EU4B10208035 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219479
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 EU4B10208035 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 858.6 lumens
Efficiency: N/A
Efficacy: 85.4 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

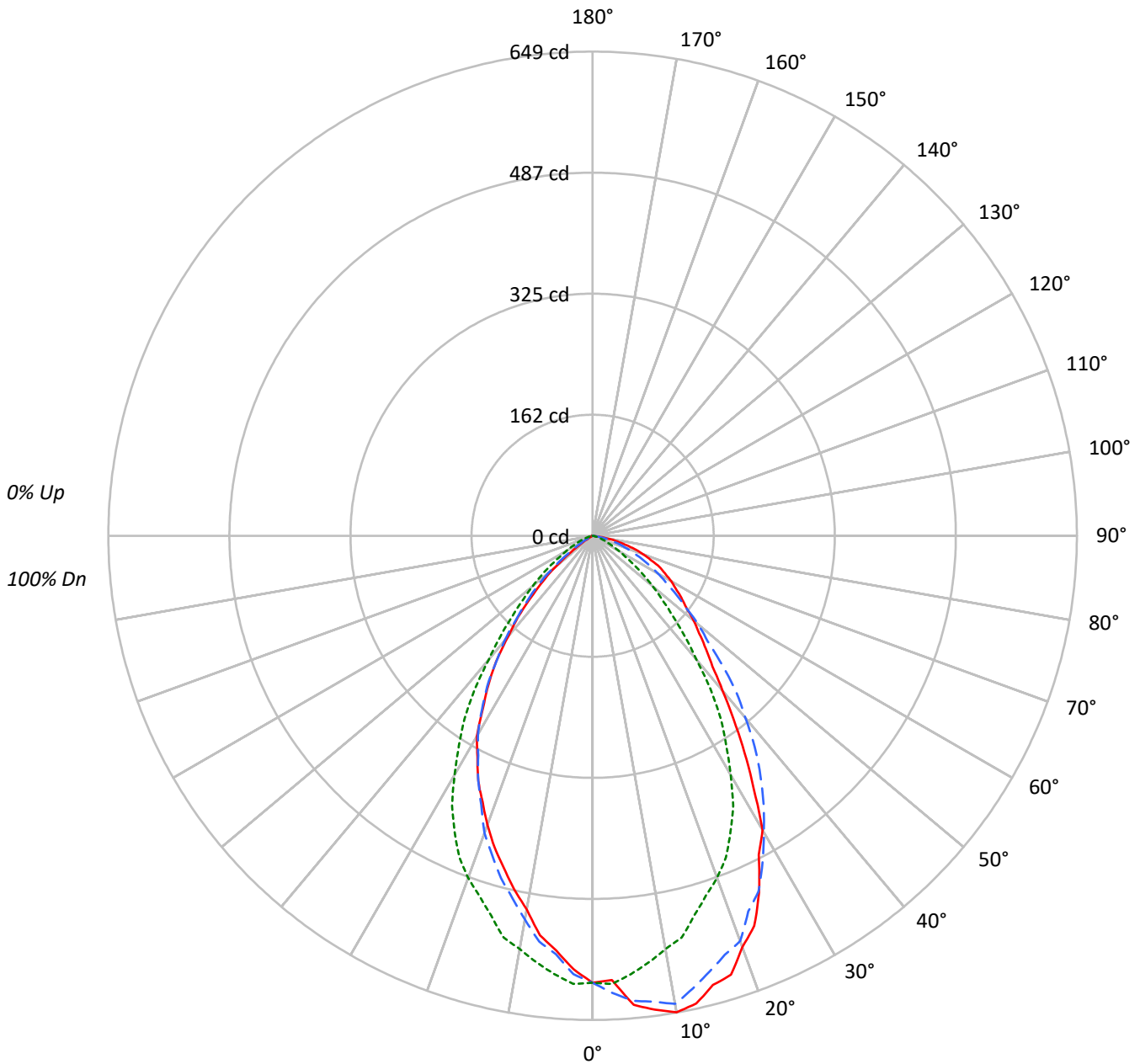
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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				100
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90				90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80				80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72				72
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64				64
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58				58
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53				53
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48				48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44				44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41				41
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38				38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	58028	58028	58028
5°	61391	57346	54273
10°	63803	55323	50021
15°	62523	52804	46175
20°	60495	50278	42505
25°	56427	46754	38769
30°	50942	41378	34711
35°	41960	35420	28797
40°	34246	27341	22169
45°	29428	20756	15947
50°	26631	15810	10068
55°	24507	11401	3631
60°	23521	7789	562
65°	22716	5272	160
70°	20337	3654	198
75°	16656	1871	0
80°	10432	781	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.1	6.5
10°-20°	151.2	17.6
20°-30°	201.9	23.5
30°-40°	191.7	22.3
40°-50°	132.5	15.4
50°-60°	73.2	8.5
60°-70°	36.3	4.2
70°-80°	14.3	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°	409.2	47.7
0°-40°	600.9	70.0
0°-60°	806.6	93.9
0°-90°	858.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	858.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	599	599	599	599	599	
5°	631	626	590	563	558	60
15°	623	605	526	475	460	176
25°	528	526	437	363	363	241
35°	355	392	300	246	244	222
45°	215	246	152	124	116	168
55°	145	136	68	34	22	131
65°	99	72	23	1	1	96
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°	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0
2.5°	596.1	612.7	614.1	612.7	614.8	614.1	617.7	614.1	618.4	611.9	613.4
5°	631.3	624.9	638.5	631.3	631.3	630.6	628.5	627.7	630.6	621.3	625.6
7.5°	640.7	650.0	662.2	647.1	647.9	647.9	643.5	642.1	642.1	624.9	629.9
10°	648.6	642.8	649.3	643.5	648.6	647.9	650.7	641.4	647.9	637.8	637.1
12.5°	642.1	640.0	648.6	639.2	636.4	637.1	633.5	631.3	633.5	622.0	621.3
15°	623.4	625.6	638.5	628.5	627.0	625.6	621.3	614.1	619.8	604.0	604.8
17.5°	617.0	613.4	615.5	606.9	609.1	607.6	606.9	600.5	599.0	589.0	589.0
20°	586.8	594.7	594.7	589.0	589.0	588.2	578.9	584.7	578.2	575.3	578.2
22.5°	566.0	566.7	566.7	561.7	562.4	559.5	554.5	550.9	554.5	550.9	545.1
25°	527.9	529.3	538.0	528.6	527.2	530.1	525.8	523.6	522.9	514.3	525.8
27.5°	481.9	496.3	495.6	492.0	496.3	490.6	488.4	489.1	491.3	490.6	493.4
30°	455.4	457.5	459.7	456.8	457.5	455.4	455.4	456.1	461.8	459.7	459.0
32.5°	401.5	408.7	414.4	414.4	415.1	417.3	416.6	431.7	435.3	428.1	426.6
35°	354.8	359.8	364.9	365.6	374.9	375.6	376.4	380.7	390.7	392.9	392.2
37.5°	310.3	315.3	316.7	323.2	328.2	333.3	339.0	344.8	353.4	360.6	357.0
40°	270.8	272.9	276.5	279.4	289.5	289.5	292.3	303.8	313.2	318.9	318.2
42.5°	237.7	238.5	241.3	246.4	255.7	253.5	255.7	263.6	277.2	278.0	285.9
45°	214.8	214.0	216.2	216.9	222.7	225.5	227.0	232.7	244.2	245.6	246.4
47.5°	193.9	193.2	196.8	198.2	200.4	203.3	203.3	204.0	208.3	211.9	209.0
50°	176.7	176.7	176.7	178.1	181.7	181.0	181.7	184.6	186.7	185.3	184.6
52.5°	158.0	160.9	163.0	163.8	164.5	164.5	165.2	163.8	163.0	160.9	156.6
55°	145.1	148.0	148.0	148.0	148.0	150.8	147.2	148.0	148.0	142.2	136.5
57.5°	132.2	135.0	137.2	134.3	137.2	134.3	132.9	132.2	130.7	125.0	116.4
60°	121.4	122.8	122.1	121.4	122.8	120.7	119.2	116.4	114.9	107.0	101.3
62.5°	109.2	109.9	110.6	109.2	107.7	107.0	104.1	99.8	97.0	90.5	85.5
65°	99.1	97.0	96.2	95.5	94.1	91.9	89.8	84.8	82.6	76.9	71.8
67.5°	84.0	83.3	84.8	82.6	79.0	79.0	76.9	72.5	67.5	63.9	58.9
70°	71.8	71.1	69.7	67.5	66.8	63.9	63.9	58.9	57.5	51.0	46.7
72.5°	58.9	58.9	56.7	54.6	52.4	51.0	50.3	46.7	44.5	40.9	37.3
75°	44.5	44.5	43.8	41.7	40.2	38.8	38.1	35.2	33.0	29.4	27.3
77.5°	31.6	31.6	28.7	27.3	28.0	26.6	25.1	24.4	23.7	21.5	18.7
80°	18.7	18.0	15.8	16.5	15.8	15.8	15.1	14.4	12.9	11.5	10.1
82.5°	5.0	5.7	5.7	5.7	6.5	5.0	5.0	5.0	5.7	5.7	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	1.4	2.9	2.9	2.9	2.9	2.9	2.2	2.2	2.2	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°	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0
2.5°	606.2	605.5	606.2	601.2	612.7	604.0	602.6	601.2	606.2	601.2	594.0
5°	619.1	611.9	609.8	607.6	614.1	604.0	601.9	602.6	599.0	589.7	590.4
7.5°	623.4	617.0	610.5	596.9	602.6	600.5	594.7	590.4	584.7	576.7	575.3
10°	624.9	617.7	608.4	604.0	595.4	592.6	590.4	583.2	576.0	562.4	558.8
12.5°	620.6	611.9	600.5	596.9	590.4	581.1	576.0	568.8	562.4	551.6	543.7
15°	601.9	594.7	591.1	578.9	576.0	570.3	560.2	550.2	540.8	526.5	522.2
17.5°	580.3	577.5	573.9	564.5	563.8	558.1	548.7	540.1	527.9	505.6	498.5
20°	558.1	558.1	546.6	543.0	550.2	538.7	531.5	523.6	498.5	487.7	474.8
22.5°	541.6	533.7	527.2	521.4	522.2	515.0	504.9	489.1	479.8	466.9	451.8
25°	509.2	512.1	497.7	495.6	497.7	481.2	476.2	463.3	449.6	437.4	425.9
27.5°	489.1	481.2	471.9	464.0	464.0	457.5	443.2	440.3	419.5	408.0	393.6
30°	459.0	453.2	445.3	433.8	432.4	427.4	415.9	408.7	387.1	369.9	362.0
32.5°	420.9	418.7	412.3	399.3	395.0	389.3	374.9	362.7	352.7	333.3	323.9
35°	393.6	385.7	372.1	361.3	357.7	347.6	336.1	327.5	316.7	299.5	287.3
37.5°	352.7	344.8	331.8	318.9	318.9	308.8	293.0	284.4	269.3	259.3	249.2
40°	316.7	306.7	293.8	278.7	276.5	262.2	255.7	241.3	232.0	216.2	214.8
42.5°	276.5	267.2	255.7	244.2	235.6	228.4	211.9	201.1	191.1	183.2	181.0
45°	239.9	227.7	217.6	203.3	194.6	186.0	175.3	168.1	160.2	151.5	146.5
47.5°	208.3	198.2	183.9	170.9	162.3	158.0	145.8	137.9	131.4	125.7	122.1
50°	176.0	163.8	155.9	141.5	140.1	130.0	119.9	113.5	109.9	104.9	99.8
52.5°	151.5	140.1	129.3	118.5	112.8	109.2	99.8	93.4	88.3	84.8	81.9
55°	127.8	117.8	109.2	98.4	94.8	89.8	79.0	77.6	72.5	67.5	63.9
57.5°	109.9	100.6	90.5	83.3	76.9	73.3	64.6	58.9	56.0	51.7	48.1
60°	93.4	83.3	75.4	66.8	63.9	58.9	52.4	47.4	43.8	40.2	36.6
62.5°	78.3	69.7	61.1	53.9	49.6	46.7	41.7	37.3	33.8	30.9	28.0
65°	64.6	56.7	49.6	42.4	40.2	36.6	33.0	29.4	26.6	23.0	20.1
67.5°	53.2	46.0	38.8	33.8	31.6	30.2	25.9	22.3	20.1	18.0	15.1
70°	41.7	36.6	30.9	26.6	24.4	22.3	19.4	17.2	14.4	12.9	10.8
72.5°	32.3	28.0	23.0	19.4	18.0	16.5	13.6	11.5	10.1	8.6	7.2
75°	23.0	19.4	16.5	12.9	12.2	11.5	9.3	7.9	6.5	5.0	4.3
77.5°	15.8	12.9	10.1	8.6	7.9	6.5	5.7	4.3	3.6	2.9	2.2
80°	8.6	6.5	5.0	4.3	3.6	2.9	2.9	2.2	1.4	1.4	0.7
82.5°	2.9	2.2	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°	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0
2.5°	598.3	590.4	592.6	592.6	591.1	591.1	589.7	587.5	588.2	583.9	574.6
5°	591.8	581.8	580.3	581.8	576.0	574.6	571.7	576.0	563.1	568.1	562.4
7.5°	573.2	563.8	561.7	566.7	559.5	555.2	554.5	560.2	548.7	543.0	536.5
10°	552.3	548.7	542.3	538.7	536.5	537.2	531.5	524.3	522.2	520.7	515.0
12.5°	533.7	525.8	520.0	515.7	514.3	514.3	504.9	503.5	497.0	495.6	487.0
15°	511.4	502.1	498.5	492.7	487.7	490.6	479.8	476.9	474.8	465.4	466.9
17.5°	492.0	481.9	473.3	469.7	465.4	461.1	451.1	453.2	448.2	448.2	435.3
20°	466.9	456.1	449.6	442.4	442.4	436.7	429.5	430.2	423.8	417.3	405.8
22.5°	440.3	428.8	420.9	418.0	410.8	409.4	400.8	398.6	390.0	390.7	380.7
25°	412.3	400.8	390.0	390.7	384.3	381.4	376.4	366.3	362.7	358.4	355.5
27.5°	379.2	371.3	362.0	361.3	349.1	349.8	343.3	340.4	331.8	334.0	327.5
30°	349.1	337.6	329.0	326.8	321.8	320.3	310.3	306.0	307.4	301.7	298.1
32.5°	318.2	300.9	297.4	293.0	290.2	286.6	279.4	282.3	275.8	277.2	271.5
35°	277.2	270.1	260.7	260.7	257.8	255.0	249.9	252.8	246.4	243.5	237.7
37.5°	242.8	236.3	227.0	229.8	224.8	220.5	216.2	216.9	211.2	210.4	204.7
40°	205.4	201.8	195.4	195.4	191.8	191.8	189.6	187.5	183.9	179.6	173.1
42.5°	170.2	167.4	164.5	165.2	160.2	164.5	158.7	162.3	150.8	150.1	145.8
45°	144.4	137.9	138.6	135.7	132.9	134.3	129.3	130.7	124.3	122.8	118.5
47.5°	117.1	114.9	110.6	109.2	109.2	107.0	104.9	104.1	101.3	97.7	91.9
50°	96.2	88.3	86.9	84.8	83.3	83.3	80.4	76.1	76.9	73.3	67.5
52.5°	75.4	69.0	66.1	65.4	62.5	61.1	57.5	54.6	52.4	51.0	47.4
55°	58.2	52.4	48.8	48.8	44.5	44.5	39.5	37.3	34.5	31.6	29.4
57.5°	43.8	40.9	37.3	34.5	33.0	29.4	26.6	23.0	20.8	16.5	13.6
60°	33.0	30.2	26.6	24.4	23.0	19.4	15.8	12.9	7.9	6.5	5.7
62.5°	24.4	21.5	18.0	16.5	15.1	12.2	8.6	4.3	2.2	2.2	2.2
65°	18.0	14.4	11.5	10.1	8.6	6.5	2.9	1.4	0.7	0.7	0.7
67.5°	12.2	9.3	6.5	5.7	4.3	2.2	0.7	0.7	0.7	0.7	0.7
70°	7.9	5.7	2.9	2.2	1.4	0.7	0.7	0.7	0.7	0.7	0.7
72.5°	5.0	2.9	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.9	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°	599.0	599.0	599.0	599.0	599.0	599.0	599.0	599.0
2.5°	584.7	579.6	582.5	576.0	578.9	583.9	580.3	581.8
5°	564.5	561.7	558.1	548.7	555.9	561.7	558.8	558.1
7.5°	543.0	532.9	538.0	535.1	533.7	539.4	532.9	540.1
10°	520.7	513.5	512.8	507.8	507.8	512.1	512.8	508.5
12.5°	487.7	484.1	484.1	483.4	482.7	487.0	487.7	485.5
15°	464.0	462.5	459.0	458.2	453.9	460.4	461.1	460.4
17.5°	435.3	436.0	432.4	432.4	435.3	437.4	431.7	437.4
20°	415.9	412.3	410.8	404.4	408.0	411.6	411.6	412.3
22.5°	387.9	382.1	384.3	380.7	378.5	383.5	383.5	385.7
25°	356.2	356.2	357.7	355.5	357.0	359.8	357.7	362.7
27.5°	326.1	329.0	329.0	326.1	327.5	336.1	339.7	334.0
30°	298.1	298.8	300.9	299.5	303.8	306.7	306.0	310.3
32.5°	266.5	270.1	271.5	269.3	270.8	277.2	273.7	272.9
35°	242.0	235.6	234.9	235.6	238.5	239.9	238.5	243.5
37.5°	206.9	204.7	201.8	202.5	204.7	207.6	209.0	212.6
40°	173.1	170.2	170.2	169.5	167.4	175.3	175.3	175.3
42.5°	143.6	142.9	139.3	139.3	142.2	144.4	142.9	148.0
45°	117.8	114.9	112.8	112.8	114.9	114.9	117.1	116.4
47.5°	92.7	89.8	90.5	88.3	90.5	93.4	89.8	90.5
50°	69.7	69.7	68.2	69.7	69.0	69.7	68.2	66.8
52.5°	47.4	53.9	54.6	51.7	45.2	39.5	35.9	38.8
55°	27.3	24.4	24.4	23.7	22.3	21.5	19.4	21.5
57.5°	13.6	12.2	12.2	12.2	11.5	10.8	9.3	9.3
60°	5.7	5.0	5.0	4.3	3.6	2.9	2.2	2.9
62.5°	2.2	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)