

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: P251602

Luminaire Tested: **LD4B15D010 EU4B10209030 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251602
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B15D010 EU4B10209030 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1133.0 lumens
Efficiency: N/A
Efficacy: 78.7 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

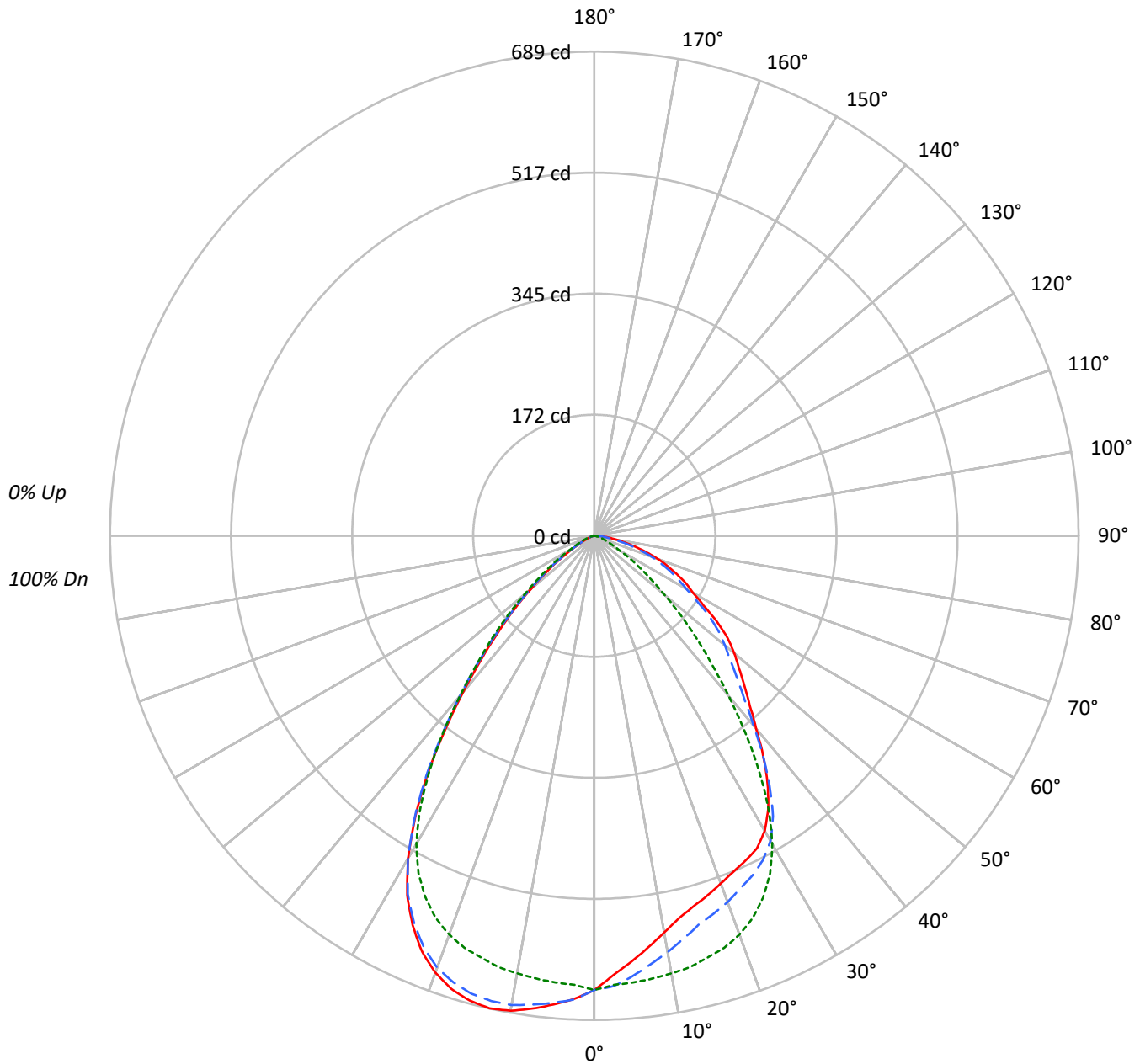
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	111	108	104	101	109	106	103	100		101	99	97		98	96	94		94	93	91
2	104	97	92	87	101	95	90	86		92	88	84		89	85	82		86	83	81
3	96	88	81	76	94	86	80	75		83	78	74		81	76	73		78	75	72
4	90	80	72	67	88	78	72	66		76	70	66		74	69	65		72	68	64
5	83	73	65	60	82	72	65	59		70	63	59		68	62	58		66	61	58
6	78	67	59	53	76	66	59	53		64	58	53		62	57	52		61	56	52
7	73	61	54	48	71	61	53	48		59	53	48		58	52	48		56	51	47
8	68	57	49	44	67	56	49	44		55	48	44		54	48	43		52	47	43
9	64	52	45	40	63	52	45	40		51	44	40		50	44	40		49	44	40
10	61	49	42	37	59	48	42	37		47	41	37		47	41	37		46	40	37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	62997	62997	62997
5°	59481	62416	65517
10°	56715	62563	67917
15°	55049	62697	69084
20°	54594	62632	68596
25°	54820	61090	65746
30°	54557	56988	59621
35°	51135	48661	49148
40°	45571	37721	36882
45°	41679	28130	26408
50°	39405	19695	17800
55°	36225	13304	11180
60°	31654	7797	6179
65°	29956	5004	3459
70°	27298	3562	2137
75°	22593	2523	1582
80°	17791	1403	954
85°	15879	895	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.1	5.4
10°-20°	175.2	15.5
20°-30°	259.7	22.9
30°-40°	260.1	23.0
40°-50°	181.8	16.0
50°-60°	108.2	9.5
60°-70°	56.4	5.0
70°-80°	25.1	2.2
80°-90°	5.5	0.5
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°	496.0	43.8
0°-40°	756.1	66.7
0°-60°	1046.0	92.3
0°-90°	1133.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1133.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	646	646	646	646	646	
5°	608	629	638	667	670	57
15°	546	573	621	675	685	154
25°	510	533	568	607	611	235
35°	430	435	409	416	413	266
45°	302	287	204	197	192	235
55°	213	200	78	68	66	189
65°	130	119	22	16	15	129
75°	60	52	7	4	4	65
85°	14	11	1	1	0	16
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°	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4
2.5°	625.5	633.0	625.5	628.0	638.0	628.9	633.9	633.9	631.4	637.2	641.4
5°	608.0	615.5	608.0	611.4	622.2	613.0	618.9	617.2	618.0	623.0	628.9
7.5°	590.6	596.4	589.7	593.9	603.9	596.4	601.4	601.4	602.2	609.7	614.7
10°	573.1	578.1	573.1	576.4	587.2	580.6	583.9	584.7	587.2	593.9	601.4
12.5°	557.2	561.4	556.4	561.4	570.6	563.9	568.1	568.9	571.4	578.9	587.2
15°	545.6	549.7	544.7	548.9	557.2	552.2	555.6	557.2	558.9	565.6	573.1
17.5°	536.4	539.7	535.6	540.6	547.2	541.4	546.4	546.4	548.9	555.6	563.9
20°	526.4	529.8	526.4	530.6	538.1	533.1	537.2	537.2	539.7	547.2	554.7
22.5°	517.3	518.9	517.3	520.6	528.1	523.9	526.4	527.3	529.8	536.4	543.1
25°	509.8	513.1	511.4	514.8	519.8	515.6	518.1	518.9	521.4	527.3	533.1
27.5°	501.4	503.1	501.4	505.6	509.8	506.4	508.9	508.1	509.8	514.8	519.8
30°	484.8	486.4	486.4	488.9	492.3	490.6	493.1	490.6	492.3	496.4	501.4
32.5°	460.6	461.4	462.3	464.8	467.3	464.8	466.4	466.4	466.4	469.8	473.1
35°	429.8	431.5	430.6	432.3	434.8	434.0	434.0	433.1	431.5	433.1	434.8
37.5°	394.8	392.3	392.3	394.8	396.5	393.1	394.8	393.1	393.1	394.0	394.0
40°	358.2	355.7	358.2	359.0	359.8	358.2	357.3	355.7	353.2	354.0	352.3
42.5°	327.3	325.7	326.5	326.5	327.3	325.7	326.5	323.2	320.7	319.0	316.5
45°	302.4	299.9	302.4	300.7	300.7	299.9	299.0	297.4	294.0	291.5	287.4
47.5°	279.0	279.0	279.9	279.9	279.9	278.2	278.2	274.9	271.5	268.2	262.4
50°	259.9	258.2	261.5	261.5	259.0	258.2	259.0	254.9	252.4	248.2	242.4
52.5°	239.1	239.1	239.9	239.9	239.1	237.4	238.2	234.9	232.4	228.2	222.4
55°	213.2	211.6	214.1	214.1	213.2	212.4	213.2	210.7	208.2	204.9	199.9
57.5°	184.1	183.2	184.9	185.7	184.1	184.1	184.9	182.4	181.6	178.2	173.3
60°	162.4	161.6	163.3	164.1	162.4	162.4	162.4	159.1	157.4	154.1	150.8
62.5°	147.4	146.6	148.3	147.4	146.6	145.8	146.6	143.3	141.6	138.3	134.9
65°	129.9	130.8	131.6	131.6	130.8	129.9	129.9	128.3	126.6	123.3	119.1
67.5°	113.3	113.3	114.1	114.9	114.1	114.1	114.1	111.6	109.9	107.4	102.5
70°	95.8	95.0	97.5	97.5	95.8	96.6	95.8	95.0	93.3	90.0	85.8
72.5°	77.5	77.5	78.3	78.3	77.5	77.5	77.5	76.6	74.1	72.5	68.3
75°	60.0	60.0	60.8	61.6	60.0	60.0	60.8	59.1	57.5	55.0	52.5
77.5°	45.0	44.1	45.0	45.0	44.1	44.1	44.1	43.3	42.5	40.0	37.5
80°	31.7	30.8	31.7	31.7	31.7	30.8	30.8	30.0	30.0	28.3	25.8
82.5°	21.7	20.8	21.7	21.7	21.7	20.8	20.8	20.8	20.0	19.2	17.5
85°	14.2	13.3	13.3	14.2	13.3	13.3	13.3	13.3	12.5	11.7	10.8
87.5°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	5.8	5.8	5.8	5.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4
2.5°	638.0	636.4	641.4	639.7	640.5	636.4	643.0	639.7	643.9	639.7	648.0
5°	627.2	625.5	633.0	632.2	633.0	629.7	637.2	636.4	641.4	638.0	647.2
7.5°	615.5	613.9	622.2	623.0	624.7	621.4	631.4	631.4	636.4	635.5	645.5
10°	602.2	603.0	611.4	613.0	616.4	614.7	623.9	626.4	633.0	632.2	644.7
12.5°	589.7	589.7	600.6	603.9	606.4	605.5	616.4	619.7	627.2	628.9	640.5
15°	577.2	578.1	588.1	593.1	596.4	595.6	607.2	611.4	620.5	621.4	635.5
17.5°	567.2	566.4	577.2	581.4	586.4	585.6	598.1	603.0	612.2	614.7	628.0
20°	558.9	558.1	568.1	573.1	576.4	575.6	588.1	593.9	602.2	603.9	617.2
22.5°	548.9	547.2	557.2	561.4	564.7	563.9	574.7	578.9	587.2	588.9	601.4
25°	537.2	535.6	544.7	547.2	549.7	548.1	557.2	559.7	566.4	568.1	580.6
27.5°	523.9	519.8	527.3	527.3	528.9	526.4	533.1	535.6	541.4	541.4	553.1
30°	503.1	497.3	501.4	500.6	501.4	498.1	502.3	503.1	507.3	506.4	514.8
32.5°	473.9	465.6	468.1	465.6	463.1	458.1	463.1	461.4	464.8	461.4	468.9
35°	434.0	425.6	424.8	421.5	419.0	414.8	414.8	410.6	411.5	409.0	414.0
37.5°	390.6	379.8	378.2	371.5	367.3	362.3	362.3	359.0	354.8	353.2	357.3
40°	348.2	336.5	332.3	321.5	317.4	312.4	309.0	304.9	303.2	296.5	299.9
42.5°	311.5	299.0	289.9	278.2	274.0	266.5	261.5	256.5	254.0	246.6	249.9
45°	280.7	265.7	255.7	240.7	234.9	226.6	219.1	213.2	207.4	204.1	202.4
47.5°	254.9	239.1	225.7	209.1	199.9	192.4	182.4	176.6	169.1	164.9	162.4
50°	233.2	215.7	200.7	181.6	172.4	164.1	152.4	143.3	136.6	129.9	128.3
52.5°	214.1	195.7	179.1	157.4	146.6	136.6	124.1	114.1	108.3	100.8	100.0
55°	191.6	175.8	157.4	134.9	124.1	114.1	100.8	90.8	83.3	78.3	76.6
57.5°	167.4	152.4	134.9	112.4	101.6	90.8	78.3	69.1	62.5	58.3	57.5
60°	144.9	130.8	114.1	91.6	80.8	71.6	58.3	49.1	43.3	40.0	38.3
62.5°	128.3	114.9	99.1	78.3	68.3	59.1	46.6	38.3	33.3	30.0	28.3
65°	112.4	99.1	85.0	65.8	57.5	49.1	37.5	30.0	25.0	21.7	20.0
67.5°	95.8	84.1	70.8	55.0	46.6	40.0	30.0	23.3	19.2	16.7	15.0
70°	79.1	68.3	57.5	44.1	38.3	31.7	23.3	18.3	14.2	12.5	10.8
72.5°	62.5	54.1	45.0	34.2	29.2	25.0	18.3	13.3	10.8	9.2	7.5
75°	46.6	40.8	33.3	25.8	21.7	18.3	13.3	10.0	8.3	6.7	5.8
77.5°	33.3	28.3	23.3	17.5	15.8	13.3	9.2	7.5	5.8	4.2	3.3
80°	22.5	20.0	15.8	12.5	10.0	9.2	6.7	5.0	3.3	2.5	2.5
82.5°	15.0	12.5	10.0	7.5	6.7	5.8	4.2	3.3	2.5	1.7	1.7
85°	9.2	7.5	5.8	4.2	4.2	3.3	2.5	1.7	0.8	0.8	0.8
87.5°	4.2	3.3	2.5	1.7	1.7	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°	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4
2.5°	654.7	649.7	646.4	650.5	652.2	649.7	652.2	656.4	660.5	661.4	649.7
5°	655.5	650.5	648.9	653.9	654.7	653.9	656.4	662.2	667.2	668.9	657.2
7.5°	655.5	652.2	651.4	657.2	658.0	657.2	661.4	668.0	673.0	676.3	664.7
10°	653.9	652.2	653.0	658.0	659.7	659.7	665.5	673.0	678.0	681.3	669.7
12.5°	651.4	651.4	651.4	657.2	658.9	659.7	664.7	674.7	678.0	683.0	671.4
15°	647.2	647.2	647.2	653.0	655.5	655.5	661.4	670.5	674.7	679.7	668.0
17.5°	639.7	639.7	640.5	645.5	648.0	648.0	653.9	663.9	666.4	672.2	660.5
20°	628.9	628.9	629.7	634.7	637.2	635.5	643.0	651.4	653.9	658.9	647.2
22.5°	613.0	613.0	613.0	618.0	619.7	618.9	626.4	633.9	633.9	640.5	628.0
25°	589.7	591.4	589.7	594.7	596.4	595.6	602.2	608.9	607.2	614.7	602.2
27.5°	561.4	560.6	560.6	564.7	564.7	563.9	568.9	576.4	574.7	579.7	568.1
30°	522.3	524.8	520.6	526.4	523.9	522.3	525.6	532.2	529.8	533.9	524.8
32.5°	477.3	473.9	473.9	473.9	475.6	471.4	474.8	478.1	475.6	479.8	469.8
35°	418.1	419.0	416.5	417.3	418.1	413.1	416.5	419.8	416.5	419.0	409.8
37.5°	359.0	359.8	354.0	357.3	354.0	352.3	355.7	357.3	354.0	356.5	346.5
40°	299.9	298.2	297.4	297.4	298.2	294.0	296.5	299.0	296.5	298.2	289.0
42.5°	248.2	247.4	245.7	246.6	244.1	243.2	244.1	246.6	244.1	245.7	239.1
45°	203.2	201.6	199.1	199.9	199.9	195.7	198.2	199.9	197.4	198.2	192.4
47.5°	161.6	159.1	159.1	158.3	158.3	156.6	159.1	158.3	155.8	157.4	151.6
50°	125.8	124.1	124.1	124.1	124.1	121.6	122.4	124.1	121.6	121.6	118.3
52.5°	98.3	95.8	94.1	94.1	94.1	93.3	93.3	94.1	91.6	91.6	90.8
55°	74.1	73.3	70.8	70.8	70.8	68.3	69.1	69.1	68.3	68.3	65.8
57.5°	55.0	52.5	50.8	50.8	49.1	49.1	48.3	49.1	47.5	47.5	45.8
60°	36.6	35.0	34.2	33.3	33.3	32.5	33.3	32.5	32.5	31.7	30.8
62.5°	26.7	25.0	23.3	23.3	23.3	22.5	22.5	22.5	22.5	22.5	21.7
65°	19.2	17.5	17.5	16.7	16.7	15.8	15.8	15.8	15.8	15.8	15.0
67.5°	13.3	12.5	11.7	11.7	11.7	11.7	11.7	11.7	10.8	10.8	10.8
70°	10.0	9.2	8.3	8.3	8.3	8.3	8.3	7.5	8.3	8.3	7.5
72.5°	6.7	6.7	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
75°	5.0	5.0	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	3.3	3.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.0
87.5°	0.0	0.0	0.0	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	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	646.4	646.4	646.4	646.4	646.4	646.4	646.4	646.4
2.5°	662.2	661.4	659.7	662.2	655.5	653.0	652.2	659.7
5°	671.4	669.7	669.7	672.2	664.7	663.0	661.4	669.7
7.5°	679.7	678.0	678.0	680.5	673.8	672.2	670.5	678.8
10°	684.7	684.7	684.7	686.3	680.5	678.8	678.0	686.3
12.5°	687.2	687.2	686.3	689.7	682.2	682.2	680.5	688.8
15°	683.8	683.8	683.8	686.3	679.7	678.0	678.0	684.7
17.5°	675.5	675.5	674.7	677.2	669.7	669.7	668.9	676.3
20°	663.0	663.0	661.4	664.7	657.2	654.7	653.9	661.4
22.5°	643.0	642.2	641.4	643.0	636.4	634.7	633.9	640.5
25°	617.2	616.4	614.7	616.4	608.9	606.4	606.4	611.4
27.5°	580.6	580.6	578.1	580.6	572.2	571.4	570.6	576.4
30°	535.6	532.2	530.6	533.9	525.6	525.6	523.9	529.8
32.5°	479.8	476.4	475.6	477.3	469.8	467.3	470.6	473.9
35°	415.6	416.5	413.1	413.1	406.5	407.3	408.1	413.1
37.5°	354.0	352.3	351.5	352.3	347.3	345.7	344.0	349.0
40°	296.5	292.4	291.5	291.5	287.4	286.5	287.4	289.9
42.5°	242.4	241.6	238.2	239.9	235.7	237.4	236.6	236.6
45°	195.7	196.6	193.2	195.7	192.4	189.9	189.9	191.6
47.5°	154.9	154.9	154.1	154.1	151.6	152.4	150.8	153.3
50°	119.9	119.9	118.3	119.1	117.4	117.4	116.6	117.4
52.5°	91.6	90.8	90.8	90.0	88.3	89.1	90.0	88.3
55°	66.6	67.5	65.8	66.6	65.0	65.8	65.0	65.8
57.5°	45.8	46.6	45.0	46.6	45.0	45.8	45.0	45.0
60°	31.7	31.7	30.8	31.7	30.8	30.8	30.0	31.7
62.5°	21.7	21.7	21.7	21.7	21.7	20.8	21.7	21.7
65°	15.8	15.0	15.0	15.0	15.0	15.0	15.0	15.0
67.5°	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
70°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
72.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
75°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.0	0.8	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)