

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: P251910

Luminaire Tested: **LD4B15D010 EU4B10208040 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251910  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B15D010 EU4B10208040 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1337.0 lumens  
Efficiency: N/A  
Efficacy: 92.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

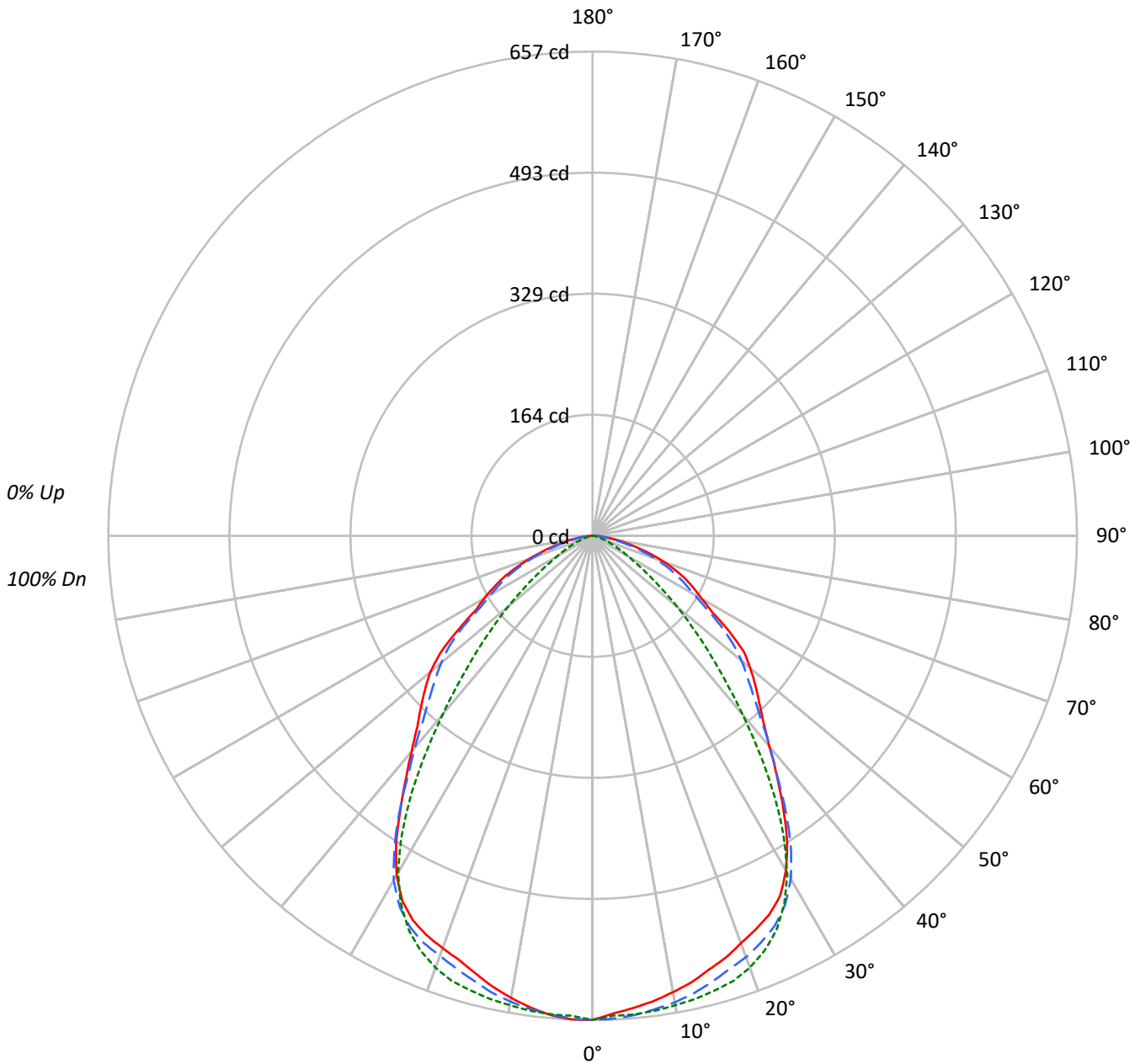
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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					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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66				
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58				
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51				
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46				
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41				
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37				
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34				
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	64020	64020	64020
5°	62885	63776	63873
10°	62217	64008	63009
15°	61486	64452	62001
20°	61004	64675	61740
25°	60971	63466	61950
30°	59025	59373	59824
35°	53634	51099	54110
40°	47441	40240	48599
45°	44022	30653	45414
50°	42301	22682	43514
55°	38298	15632	37789
60°	33292	10642	33097
65°	32169	7702	30532
70°	29093	5186	25930
75°	23986	3427	20560
80°	19307	2245	15322
85°	15767	1118	10176



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.0	4.6
10°-20°	177.3	13.3
20°-30°	267.9	20.0
30°-40°	280.3	21.0
40°-50°	227.1	17.0
50°-60°	165.2	12.4
60°-70°	101.9	7.6
70°-80°	46.0	3.4
80°-90°	9.3	0.7
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°	507.2	37.9
0°-40°	787.6	58.9
0°-60°	1179.8	88.2
0°-90°	1337.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1337.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	657	657	657	657	657	
5°	643	653	652	652	653	61
15°	609	627	639	625	614	172
25°	567	584	590	586	576	260
35°	451	457	430	457	455	281
45°	319	309	222	313	330	248
55°	225	211	92	213	222	201
65°	140	125	33	123	132	137
75°	64	55	9	48	55	69
85°	14	11	1	8	9	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°	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9
2.5°	648.9	648.9	654.9	662.0	655.9	649.9	653.9	651.9	659.0	659.0	655.9
5°	642.8	644.8	649.9	655.9	650.9	644.8	649.9	647.9	654.9	654.9	652.9
7.5°	636.7	637.7	643.8	650.9	645.8	639.8	643.8	642.8	648.9	649.9	647.9
10°	628.7	629.7	635.7	642.8	637.7	632.7	636.7	635.7	643.8	643.8	642.8
12.5°	620.6	621.6	627.6	633.7	628.7	623.6	627.6	627.6	635.7	636.7	635.7
15°	609.4	611.5	616.5	622.6	619.6	613.5	617.5	617.5	624.6	626.6	626.6
17.5°	600.4	601.4	606.4	612.5	608.4	603.4	607.4	607.4	614.5	616.5	616.5
20°	588.2	590.2	595.3	601.4	598.3	594.3	597.3	597.3	605.4	607.4	608.4
22.5°	578.1	580.1	584.2	592.3	587.2	584.2	588.2	587.2	596.3	597.3	597.3
25°	567.0	569.0	574.1	579.1	576.1	573.1	576.1	576.1	583.2	584.2	584.2
27.5°	550.8	551.8	556.9	561.9	558.9	554.9	558.9	557.9	565.0	566.0	565.0
30°	524.5	526.6	528.6	535.7	532.6	529.6	533.6	531.6	538.7	538.7	537.7
32.5°	491.2	491.2	495.2	500.3	496.2	494.2	497.3	498.3	503.3	503.3	500.3
35°	450.8	452.8	455.8	458.9	455.8	453.8	456.8	455.8	461.9	459.9	456.8
37.5°	410.3	411.4	414.4	418.4	414.4	411.4	412.4	411.4	416.4	416.4	411.4
40°	372.9	375.0	377.0	381.0	377.0	375.0	376.0	372.9	379.0	377.0	374.0
42.5°	342.6	343.6	346.7	348.7	344.6	343.6	344.6	342.6	345.7	343.6	337.6
45°	319.4	319.4	320.4	323.4	319.4	318.4	318.4	316.3	319.4	315.3	309.3
47.5°	299.2	300.2	301.2	303.2	300.2	297.1	298.2	294.1	296.1	293.1	285.0
50°	279.0	281.0	282.0	284.0	281.0	279.0	280.0	275.9	275.9	270.9	263.8
52.5°	258.7	259.7	258.7	260.8	258.7	255.7	256.7	252.7	252.7	246.6	239.5
55°	225.4	226.4	227.4	229.4	227.4	224.4	226.4	223.4	223.4	219.3	211.2
57.5°	192.0	193.0	194.1	195.1	195.1	193.0	194.1	192.0	191.0	188.0	181.9
60°	170.8	170.8	170.8	171.8	170.8	169.8	169.8	167.8	167.8	163.7	157.7
62.5°	154.6	155.6	155.6	156.7	155.6	154.6	153.6	151.6	150.6	146.6	141.5
65°	139.5	139.5	138.5	140.5	139.5	138.5	138.5	136.4	134.4	130.4	125.3
67.5°	121.3	122.3	121.3	122.3	122.3	121.3	120.3	118.3	117.2	114.2	108.1
70°	102.1	102.1	102.1	103.1	102.1	102.1	103.1	100.1	99.0	95.0	90.0
72.5°	82.9	83.9	83.9	82.9	83.9	81.9	81.9	81.9	80.9	76.8	71.8
75°	63.7	64.7	64.7	65.7	64.7	63.7	63.7	62.7	61.7	58.6	54.6
77.5°	47.5	47.5	48.5	48.5	48.5	47.5	47.5	45.5	45.5	43.5	39.4
80°	34.4	34.4	33.4	34.4	34.4	33.4	33.4	32.3	32.3	30.3	27.3
82.5°	22.2	23.2	23.2	23.2	23.2	22.2	22.2	22.2	21.2	20.2	18.2
85°	14.1	14.1	14.1	14.1	15.2	14.1	15.2	14.1	14.1	12.1	11.1
87.5°	6.1	6.1	6.1	7.1	7.1	6.1	6.1	6.1	6.1	6.1	5.1
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°	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9
2.5°	655.9	656.9	653.9	658.0	654.9	655.9	656.9	655.9	651.9	651.9	663.0
5°	651.9	653.9	650.9	655.9	653.9	653.9	655.9	654.9	650.9	651.9	662.0
7.5°	647.9	650.9	648.9	653.9	650.9	650.9	652.9	652.9	648.9	649.9	659.0
10°	641.8	645.8	644.8	649.9	646.8	646.8	649.9	649.9	645.8	646.8	655.9
12.5°	636.7	640.8	639.8	644.8	642.8	643.8	644.8	646.8	641.8	643.8	651.9
15°	628.7	632.7	632.7	637.7	635.7	637.7	639.8	642.8	638.8	638.8	646.8
17.5°	619.6	624.6	624.6	628.7	628.7	629.7	633.7	636.7	632.7	633.7	640.8
20°	609.4	615.5	615.5	620.6	619.6	621.6	624.6	627.6	623.6	623.6	631.7
22.5°	599.3	604.4	605.4	608.4	608.4	609.4	612.5	614.5	609.4	609.4	617.5
25°	585.2	590.2	591.3	593.3	591.3	591.3	593.3	595.3	590.2	590.2	597.3
27.5°	566.0	571.0	571.0	570.0	568.0	569.0	568.0	569.0	564.0	563.0	570.0
30°	537.7	540.7	540.7	539.7	536.7	536.7	533.6	534.7	527.6	527.6	533.6
32.5°	499.3	502.3	500.3	498.3	494.2	492.2	490.2	489.2	482.1	482.1	489.2
35°	453.8	455.8	452.8	448.7	443.7	440.7	437.6	433.6	428.5	429.5	433.6
37.5°	407.3	407.3	403.3	395.2	391.1	386.1	381.0	381.0	372.9	371.9	375.0
40°	367.9	363.8	356.8	345.7	338.6	333.5	326.5	322.4	316.3	316.3	321.4
42.5°	332.5	324.4	315.3	300.2	293.1	287.0	277.9	273.9	266.8	265.8	268.8
45°	301.2	293.1	280.0	263.8	254.7	247.6	234.5	229.4	223.4	222.4	224.4
47.5°	275.9	266.8	250.7	229.4	220.3	211.2	198.1	191.0	186.0	182.9	186.0
50°	253.7	241.6	224.4	202.1	190.0	181.9	165.8	158.7	151.6	149.6	150.6
52.5°	229.4	217.3	199.1	175.9	164.7	152.6	137.5	127.3	121.3	118.3	121.3
55°	203.1	191.0	172.8	149.6	137.5	126.3	110.2	102.1	95.0	92.0	95.0
57.5°	174.8	163.7	147.6	124.3	113.2	103.1	87.9	79.8	72.8	70.7	72.8
60°	150.6	141.5	125.3	103.1	94.0	82.9	69.7	61.7	55.6	54.6	55.6
62.5°	134.4	124.3	109.2	87.9	78.8	69.7	57.6	49.5	44.5	43.5	44.5
65°	118.3	107.1	93.0	74.8	65.7	58.6	46.5	39.4	34.4	33.4	34.4
67.5°	100.1	90.0	77.8	61.7	54.6	47.5	37.4	30.3	26.3	25.3	26.3
70°	82.9	73.8	61.7	49.5	42.4	37.4	28.3	23.2	19.2	18.2	19.2
72.5°	65.7	57.6	47.5	37.4	33.4	28.3	22.2	17.2	14.1	13.1	14.1
75°	50.5	44.5	36.4	27.3	24.3	21.2	15.2	12.1	10.1	9.1	10.1
77.5°	35.4	31.3	25.3	20.2	17.2	15.2	11.1	8.1	7.1	6.1	7.1
80°	24.3	21.2	17.2	13.1	11.1	9.1	7.1	5.1	4.0	4.0	4.0
82.5°	16.2	13.1	10.1	8.1	7.1	6.1	4.0	3.0	3.0	2.0	2.0
85°	9.1	8.1	6.1	5.1	4.0	3.0	2.0	2.0	1.0	1.0	1.0
87.5°	4.0	3.0	2.0	2.0	1.0	1.0	1.0	1.0	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9
2.5°	660.0	656.9	661.0	656.9	654.9	656.9	654.9	661.0	655.9	651.9	655.9
5°	659.0	654.9	659.0	655.9	652.9	653.9	651.9	658.0	651.9	648.9	650.9
7.5°	656.9	653.9	655.9	652.9	649.9	650.9	648.9	653.9	647.9	644.8	646.8
10°	653.9	650.9	651.9	649.9	646.8	646.8	644.8	648.9	641.8	637.7	639.8
12.5°	649.9	645.8	647.9	644.8	640.8	640.8	638.8	641.8	634.7	630.7	631.7
15°	644.8	640.8	640.8	637.7	633.7	633.7	629.7	632.7	624.6	620.6	620.6
17.5°	638.8	633.7	633.7	630.7	625.6	624.6	621.6	624.6	615.5	611.5	611.5
20°	629.7	625.6	624.6	622.6	617.5	616.5	612.5	613.5	606.4	603.4	602.4
22.5°	617.5	613.5	614.5	611.5	607.4	606.4	602.4	605.4	598.3	595.3	596.3
25°	596.3	594.3	596.3	595.3	592.3	592.3	590.2	592.3	586.2	584.2	585.2
27.5°	572.1	571.0	572.1	572.1	570.0	570.0	570.0	573.1	567.0	566.0	566.0
30°	536.7	536.7	537.7	538.7	538.7	540.7	539.7	543.8	539.7	537.7	539.7
32.5°	490.2	494.2	497.3	497.3	497.3	499.3	501.3	504.3	500.3	501.3	501.3
35°	437.6	440.7	442.7	447.7	444.7	451.8	453.8	457.8	456.8	458.9	457.8
37.5°	379.0	383.1	387.1	394.2	393.2	401.2	405.3	413.4	411.4	415.4	417.4
40°	324.4	330.5	336.6	341.6	345.7	353.7	361.8	371.9	375.0	378.0	379.0
42.5°	271.9	277.9	288.0	295.1	301.2	314.3	325.4	337.6	340.6	346.7	348.7
45°	229.4	234.5	246.6	255.7	260.8	280.0	293.1	308.3	313.3	320.4	323.4
47.5°	190.0	199.1	211.2	222.4	229.4	249.6	266.8	283.0	290.1	298.2	302.2
50°	155.6	165.8	181.9	192.0	202.1	224.4	243.6	260.8	267.8	276.9	281.0
52.5°	127.3	138.5	153.6	164.7	175.9	199.1	219.3	235.5	244.6	250.7	256.7
55°	100.1	112.2	127.3	139.5	148.6	173.8	191.0	207.2	213.3	218.3	221.3
57.5°	77.8	86.9	102.1	112.2	123.3	145.5	162.7	174.8	179.9	186.0	188.0
60°	60.6	69.7	83.9	94.0	104.1	125.3	142.5	154.6	159.7	164.7	167.8
62.5°	48.5	57.6	70.7	79.8	88.9	108.1	123.3	135.4	141.5	146.6	149.6
65°	38.4	46.5	57.6	66.7	73.8	91.0	106.1	117.2	123.3	128.4	131.4
67.5°	30.3	37.4	47.5	53.6	60.6	74.8	87.9	98.0	103.1	109.2	112.2
70°	23.2	28.3	37.4	42.4	47.5	59.6	69.7	79.8	84.9	88.9	91.0
72.5°	17.2	21.2	28.3	32.3	35.4	45.5	53.6	60.6	64.7	68.7	70.7
75°	12.1	15.2	20.2	23.2	25.3	32.3	39.4	44.5	47.5	50.5	53.6
77.5°	8.1	10.1	13.1	15.2	17.2	22.2	26.3	30.3	33.4	36.4	37.4
80°	5.1	7.1	9.1	10.1	11.1	14.1	18.2	20.2	22.2	24.3	25.3
82.5°	3.0	4.0	5.1	6.1	7.1	9.1	11.1	13.1	14.1	16.2	17.2
85°	1.0	2.0	2.0	3.0	3.0	5.1	6.1	7.1	8.1	9.1	10.1
87.5°	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0
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°	656.9	656.9	656.9	656.9	656.9	656.9	656.9	656.9
2.5°	660.0	656.9	654.9	653.9	661.0	651.9	655.9	656.9
5°	655.9	652.9	650.9	649.9	655.9	647.9	650.9	652.9
7.5°	649.9	647.9	644.8	643.8	649.9	640.8	644.8	645.8
10°	642.8	639.8	637.7	636.7	641.8	632.7	636.7	636.7
12.5°	633.7	631.7	627.6	627.6	631.7	623.6	626.6	626.6
15°	621.6	619.6	615.5	615.5	619.6	611.5	614.5	614.5
17.5°	611.5	609.4	606.4	605.4	609.4	601.4	604.4	603.4
20°	603.4	601.4	597.3	597.3	600.4	592.3	595.3	595.3
22.5°	596.3	595.3	591.3	591.3	595.3	587.2	589.2	587.2
25°	585.2	584.2	580.1	581.1	583.2	575.1	578.1	576.1
27.5°	567.0	567.0	563.0	561.9	565.0	557.9	559.9	558.9
30°	538.7	539.7	534.7	534.7	535.7	529.6	532.6	531.6
32.5°	500.3	501.3	497.3	496.2	499.3	494.2	496.2	496.2
35°	457.8	458.9	455.8	455.8	458.9	455.8	455.8	454.8
37.5°	415.4	417.4	415.4	416.4	418.4	415.4	417.4	416.4
40°	381.0	383.1	380.0	382.0	384.1	381.0	384.1	382.0
42.5°	349.7	352.7	350.7	352.7	354.8	352.7	354.8	351.7
45°	326.5	328.5	327.5	328.5	330.5	329.5	330.5	329.5
47.5°	304.2	308.3	306.2	308.3	311.3	309.3	311.3	308.3
50°	284.0	287.0	286.0	288.0	289.1	288.0	290.1	287.0
52.5°	257.7	260.8	259.7	259.7	261.8	259.7	261.8	259.7
55°	223.4	224.4	224.4	225.4	224.4	223.4	224.4	222.4
57.5°	190.0	192.0	189.0	192.0	191.0	190.0	190.0	188.0
60°	168.8	171.8	169.8	171.8	170.8	170.8	170.8	169.8
62.5°	151.6	153.6	151.6	152.6	152.6	152.6	151.6	150.6
65°	132.4	135.4	133.4	134.4	133.4	132.4	133.4	132.4
67.5°	113.2	114.2	114.2	113.2	113.2	113.2	113.2	111.2
70°	92.0	93.0	92.0	94.0	93.0	92.0	93.0	91.0
72.5°	71.8	72.8	71.8	72.8	71.8	71.8	71.8	71.8
75°	53.6	54.6	54.6	54.6	54.6	54.6	52.6	54.6
77.5°	38.4	38.4	38.4	39.4	38.4	38.4	38.4	38.4
80°	26.3	26.3	26.3	27.3	26.3	27.3	26.3	27.3
82.5°	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
85°	9.1	10.1	10.1	9.1	9.1	9.1	9.1	9.1
87.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)