

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: P251599

Luminaire Tested: **LD4B15D010 EU4B10208050 4LBSW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251599  
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 EU4B10208050 4LBSW1H  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1374.0 lumens  
Efficiency: N/A  
Efficacy: 95.5 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

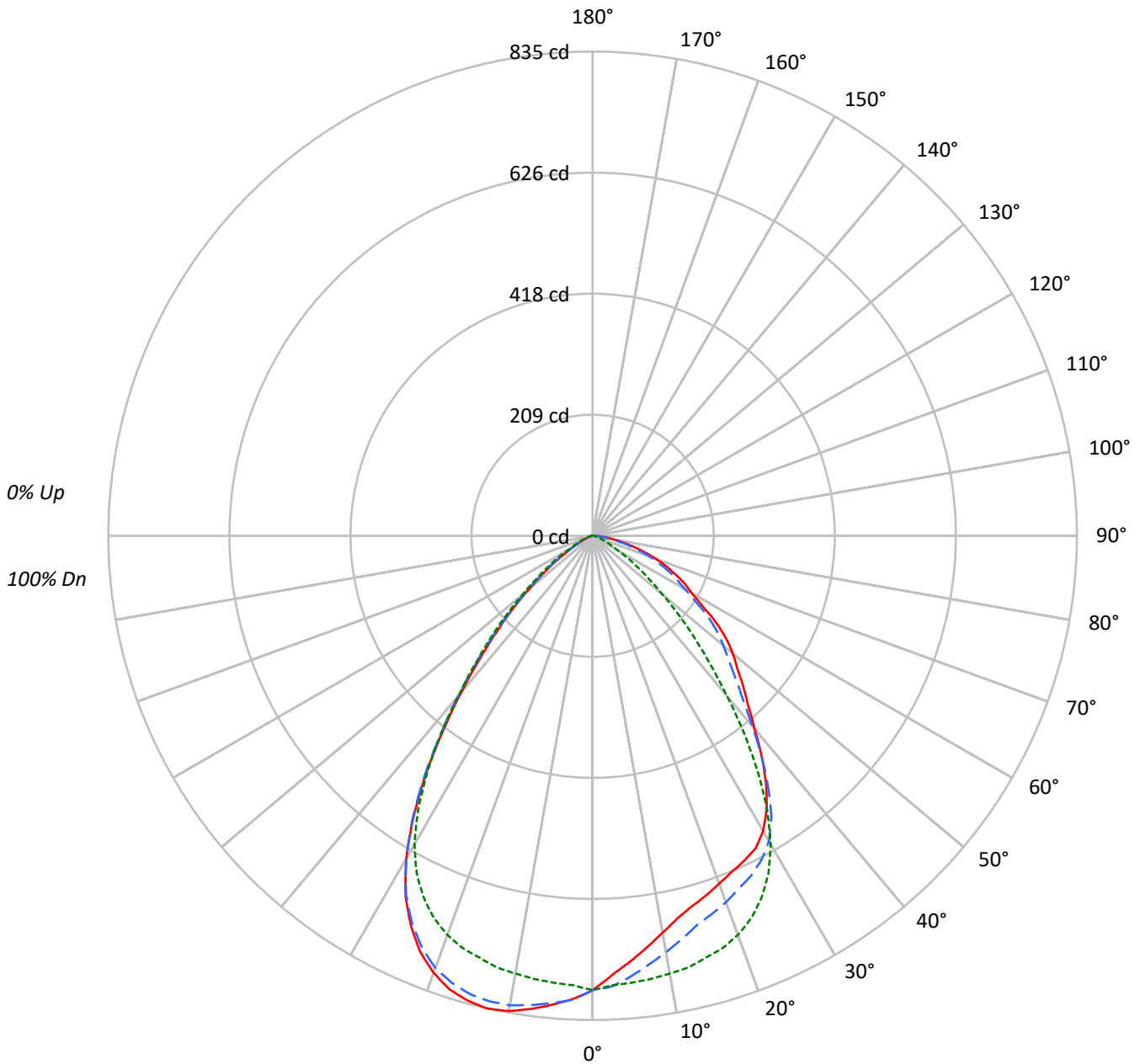
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

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

	0°	90°	180°
0°	76388	76388	76388
5°	72140	75691	79448
10°	68778	75874	82366
15°	66753	76025	83774
20°	66210	75949	83178
25°	66477	74080	79725
30°	66159	69119	72292
35°	62009	59011	59606
40°	55253	45749	44719
45°	50541	34112	32017
50°	47790	23895	21590
55°	43939	16142	13559
60°	38398	9453	7485
65°	36343	6065	4197
70°	33111	4331	2593
75°	27375	3050	1920
80°	21552	1684	1122
85°	19233	1118	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	74.1	5.4
10°-20°	212.5	15.5
20°-30°	315.0	22.9
30°-40°	315.4	23.0
40°-50°	220.4	16.0
50°-60°	131.2	9.5
60°-70°	68.5	5.0
70°-80°	30.4	2.2
80°-90°	6.6	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°	601.5	43.8
0°-40°	916.9	66.7
0°-60°	1268.5	92.3
0°-90°	1374.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1374.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	784	784	784	784	784	
5°	737	763	774	809	812	69
15°	662	695	754	818	830	187
25°	618	646	689	736	741	285
35°	521	527	496	505	501	323
45°	367	348	248	239	232	285
55°	259	242	95	83	80	229
65°	158	144	26	19	18	156
75°	73	64	8	5	5	79
85°	17	13	1	1	0	19
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°	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8
2.5°	758.6	767.7	758.6	761.6	773.7	762.6	768.7	768.7	765.7	772.7	777.8
5°	737.4	746.5	737.4	741.4	754.6	743.4	750.5	748.5	749.5	755.6	762.6
7.5°	716.2	723.2	715.2	720.2	732.3	723.2	729.3	729.3	730.3	739.4	745.5
10°	695.0	701.0	695.0	699.0	712.1	704.1	708.1	709.1	712.1	720.2	729.3
12.5°	675.8	680.8	674.8	680.8	691.9	683.8	688.9	689.9	692.9	702.0	712.1
15°	661.6	666.7	660.6	665.7	675.8	669.7	673.7	675.8	677.8	685.9	695.0
17.5°	650.5	654.6	649.5	655.6	663.6	656.6	662.6	662.6	665.7	673.7	683.8
20°	638.4	642.4	638.4	643.4	652.5	646.5	651.5	651.5	654.6	663.6	672.7
22.5°	627.3	629.3	627.3	631.3	640.4	635.4	638.4	639.4	642.4	650.5	658.6
25°	618.2	622.2	620.2	624.3	630.3	625.3	628.3	629.3	632.3	639.4	646.5
27.5°	608.1	610.1	608.1	613.1	618.2	614.2	617.2	616.2	618.2	624.3	630.3
30°	587.9	589.9	589.9	592.9	597.0	595.0	598.0	595.0	597.0	602.0	608.1
32.5°	558.6	559.6	560.6	563.6	566.7	563.6	565.7	565.7	565.7	569.7	573.7
35°	521.2	523.2	522.2	524.2	527.3	526.3	526.3	525.3	523.2	525.3	527.3
37.5°	478.8	475.8	475.8	478.8	480.8	476.8	478.8	476.8	476.8	477.8	477.8
40°	434.3	431.3	434.3	435.4	436.4	434.3	433.3	431.3	428.3	429.3	427.3
42.5°	397.0	395.0	396.0	396.0	397.0	395.0	396.0	391.9	388.9	386.9	383.8
45°	366.7	363.6	366.7	364.7	364.7	363.6	362.6	360.6	356.6	353.5	348.5
47.5°	338.4	338.4	339.4	339.4	339.4	337.4	337.4	333.3	329.3	325.3	318.2
50°	315.2	313.1	317.2	317.2	314.1	313.1	314.1	309.1	306.1	301.0	293.9
52.5°	289.9	289.9	290.9	290.9	289.9	287.9	288.9	284.9	281.8	276.8	269.7
55°	258.6	256.6	259.6	259.6	258.6	257.6	258.6	255.6	252.5	248.5	242.4
57.5°	223.2	222.2	224.2	225.3	223.2	223.2	224.2	221.2	220.2	216.2	210.1
60°	197.0	196.0	198.0	199.0	197.0	197.0	197.0	192.9	190.9	186.9	182.8
62.5°	178.8	177.8	179.8	178.8	177.8	176.8	177.8	173.7	171.7	167.7	163.6
65°	157.6	158.6	159.6	159.6	158.6	157.6	157.6	155.6	153.5	149.5	144.4
67.5°	137.4	137.4	138.4	139.4	138.4	138.4	138.4	135.4	133.3	130.3	124.2
70°	116.2	115.2	118.2	118.2	116.2	117.2	116.2	115.2	113.1	109.1	104.0
72.5°	93.9	93.9	95.0	95.0	93.9	93.9	93.9	92.9	89.9	87.9	82.8
75°	72.7	72.7	73.7	74.7	72.7	72.7	73.7	71.7	69.7	66.7	63.6
77.5°	54.5	53.5	54.5	54.5	53.5	53.5	53.5	52.5	51.5	48.5	45.5
80°	38.4	37.4	38.4	38.4	38.4	37.4	37.4	36.4	36.4	34.3	31.3
82.5°	26.3	25.3	26.3	26.3	26.3	25.3	25.3	25.3	24.2	23.2	21.2
85°	17.2	16.2	16.2	17.2	16.2	16.2	16.2	16.2	15.2	14.1	13.1
87.5°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	7.1	7.1	7.1	6.1
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°	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8
2.5°	773.7	771.7	777.8	775.8	776.8	771.7	779.8	775.8	780.8	775.8	785.9
5°	760.6	758.6	767.7	766.7	767.7	763.6	772.7	771.7	777.8	773.7	784.9
7.5°	746.5	744.5	754.6	755.6	757.6	753.5	765.7	765.7	771.7	770.7	782.8
10°	730.3	731.3	741.4	743.4	747.5	745.5	756.6	759.6	767.7	766.7	781.8
12.5°	715.2	715.2	728.3	732.3	735.4	734.4	747.5	751.5	760.6	762.6	776.8
15°	700.0	701.0	713.1	719.2	723.2	722.2	736.4	741.4	752.5	753.5	770.7
17.5°	687.9	686.9	700.0	705.1	711.1	710.1	725.3	731.3	742.4	745.5	761.6
20°	677.8	676.8	688.9	695.0	699.0	698.0	713.1	720.2	730.3	732.3	748.5
22.5°	665.7	663.6	675.8	680.8	684.9	683.8	697.0	702.0	712.1	714.2	729.3
25°	651.5	649.5	660.6	663.6	666.7	664.7	675.8	678.8	686.9	688.9	704.1
27.5°	635.4	630.3	639.4	639.4	641.4	638.4	646.5	649.5	656.6	656.6	670.7
30°	610.1	603.0	608.1	607.1	608.1	604.0	609.1	610.1	615.2	614.2	624.3
32.5°	574.8	564.7	567.7	564.7	561.6	555.6	561.6	559.6	563.6	559.6	568.7
35°	526.3	516.2	515.2	511.1	508.1	503.0	503.0	498.0	499.0	496.0	502.0
37.5°	473.7	460.6	458.6	450.5	445.5	439.4	439.4	435.4	430.3	428.3	433.3
40°	422.2	408.1	403.0	389.9	384.9	378.8	374.8	369.7	367.7	359.6	363.6
42.5°	377.8	362.6	351.5	337.4	332.3	323.2	317.2	311.1	308.1	299.0	303.0
45°	340.4	322.2	310.1	291.9	284.9	274.8	265.7	258.6	251.5	247.5	245.5
47.5°	309.1	289.9	273.7	253.5	242.4	233.3	221.2	214.1	205.1	200.0	197.0
50°	282.8	261.6	243.4	220.2	209.1	199.0	184.9	173.7	165.7	157.6	155.6
52.5°	259.6	237.4	217.2	190.9	177.8	165.7	150.5	138.4	131.3	122.2	121.2
55°	232.3	213.1	190.9	163.6	150.5	138.4	122.2	110.1	101.0	95.0	92.9
57.5°	203.0	184.9	163.6	136.4	123.2	110.1	95.0	83.8	75.8	70.7	69.7
60°	175.8	158.6	138.4	111.1	98.0	86.9	70.7	59.6	52.5	48.5	46.5
62.5°	155.6	139.4	120.2	95.0	82.8	71.7	56.6	46.5	40.4	36.4	34.3
65°	136.4	120.2	103.0	79.8	69.7	59.6	45.5	36.4	30.3	26.3	24.2
67.5°	116.2	102.0	85.9	66.7	56.6	48.5	36.4	28.3	23.2	20.2	18.2
70°	96.0	82.8	69.7	53.5	46.5	38.4	28.3	22.2	17.2	15.2	13.1
72.5°	75.8	65.7	54.5	41.4	35.4	30.3	22.2	16.2	13.1	11.1	9.1
75°	56.6	49.5	40.4	31.3	26.3	22.2	16.2	12.1	10.1	8.1	7.1
77.5°	40.4	34.3	28.3	21.2	19.2	16.2	11.1	9.1	7.1	5.1	4.0
80°	27.3	24.2	19.2	15.2	12.1	11.1	8.1	6.1	4.0	3.0	3.0
82.5°	18.2	15.2	12.1	9.1	8.1	7.1	5.1	4.0	3.0	2.0	2.0
85°	11.1	9.1	7.1	5.1	5.1	4.0	3.0	2.0	1.0	1.0	1.0
87.5°	5.1	4.0	3.0	2.0	2.0	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°	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8
2.5°	794.0	787.9	783.8	788.9	790.9	787.9	790.9	796.0	801.0	802.0	787.9
5°	795.0	788.9	786.9	792.9	794.0	792.9	796.0	803.0	809.1	811.1	797.0
7.5°	795.0	790.9	789.9	797.0	798.0	797.0	802.0	810.1	816.2	820.2	806.1
10°	792.9	790.9	791.9	798.0	800.0	800.0	807.1	816.2	822.2	826.3	812.1
12.5°	789.9	789.9	789.9	797.0	799.0	800.0	806.1	818.2	822.2	828.3	814.2
15°	784.9	784.9	784.9	791.9	795.0	795.0	802.0	813.1	818.2	824.3	810.1
17.5°	775.8	775.8	776.8	782.8	785.9	785.9	792.9	805.1	808.1	815.2	801.0
20°	762.6	762.6	763.6	769.7	772.7	770.7	779.8	789.9	792.9	799.0	784.9
22.5°	743.4	743.4	743.4	749.5	751.5	750.5	759.6	768.7	768.7	776.8	761.6
25°	715.2	717.2	715.2	721.2	723.2	722.2	730.3	738.4	736.4	745.5	730.3
27.5°	680.8	679.8	679.8	684.9	684.9	683.8	689.9	699.0	697.0	703.0	688.9
30°	633.3	636.4	631.3	638.4	635.4	633.3	637.4	645.5	642.4	647.5	636.4
32.5°	578.8	574.8	574.8	574.8	576.8	571.7	575.8	579.8	576.8	581.8	569.7
35°	507.1	508.1	505.1	506.1	507.1	501.0	505.1	509.1	505.1	508.1	497.0
37.5°	435.4	436.4	429.3	433.3	429.3	427.3	431.3	433.3	429.3	432.3	420.2
40°	363.6	361.6	360.6	360.6	361.6	356.6	359.6	362.6	359.6	361.6	350.5
42.5°	301.0	300.0	298.0	299.0	296.0	295.0	296.0	299.0	296.0	298.0	289.9
45°	246.5	244.4	241.4	242.4	242.4	237.4	240.4	242.4	239.4	240.4	233.3
47.5°	196.0	192.9	192.9	191.9	191.9	189.9	192.9	191.9	188.9	190.9	183.8
50°	152.5	150.5	150.5	150.5	150.5	147.5	148.5	150.5	147.5	147.5	143.4
52.5°	119.2	116.2	114.1	114.1	114.1	113.1	113.1	114.1	111.1	111.1	110.1
55°	89.9	88.9	85.9	85.9	85.9	82.8	83.8	83.8	82.8	82.8	79.8
57.5°	66.7	63.6	61.6	61.6	59.6	59.6	58.6	59.6	57.6	57.6	55.6
60°	44.4	42.4	41.4	40.4	40.4	39.4	40.4	39.4	39.4	38.4	37.4
62.5°	32.3	30.3	28.3	28.3	28.3	27.3	27.3	27.3	27.3	27.3	26.3
65°	23.2	21.2	21.2	20.2	20.2	19.2	19.2	19.2	19.2	19.2	18.2
67.5°	16.2	15.2	14.1	14.1	14.1	14.1	14.1	14.1	13.1	13.1	13.1
70°	12.1	11.1	10.1	10.1	10.1	10.1	10.1	9.1	10.1	10.1	9.1
72.5°	8.1	8.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
75°	6.1	6.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
77.5°	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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°	783.8	783.8	783.8	783.8	783.8	783.8	783.8	783.8
2.5°	803.0	802.0	800.0	803.0	795.0	791.9	790.9	800.0
5°	814.2	812.1	812.1	815.2	806.1	804.1	802.0	812.1
7.5°	824.3	822.2	822.2	825.3	817.2	815.2	813.1	823.2
10°	830.3	830.3	830.3	832.3	825.3	823.2	822.2	832.3
12.5°	833.3	833.3	832.3	836.4	827.3	827.3	825.3	835.4
15°	829.3	829.3	829.3	832.3	824.3	822.2	822.2	830.3
17.5°	819.2	819.2	818.2	821.2	812.1	812.1	811.1	820.2
20°	804.1	804.1	802.0	806.1	797.0	794.0	792.9	802.0
22.5°	779.8	778.8	777.8	779.8	771.7	769.7	768.7	776.8
25°	748.5	747.5	745.5	747.5	738.4	735.4	735.4	741.4
27.5°	704.1	704.1	701.0	704.1	693.9	692.9	691.9	699.0
30°	649.5	645.5	643.4	647.5	637.4	637.4	635.4	642.4
32.5°	581.8	577.8	576.8	578.8	569.7	566.7	570.7	574.8
35°	504.0	505.1	501.0	501.0	492.9	493.9	495.0	501.0
37.5°	429.3	427.3	426.3	427.3	421.2	419.2	417.2	423.2
40°	359.6	354.6	353.5	353.5	348.5	347.5	348.5	351.5
42.5°	293.9	292.9	288.9	290.9	285.9	287.9	286.9	286.9
45°	237.4	238.4	234.3	237.4	233.3	230.3	230.3	232.3
47.5°	187.9	187.9	186.9	186.9	183.8	184.9	182.8	185.9
50°	145.5	145.5	143.4	144.4	142.4	142.4	141.4	142.4
52.5°	111.1	110.1	110.1	109.1	107.1	108.1	109.1	107.1
55°	80.8	81.8	79.8	80.8	78.8	79.8	78.8	79.8
57.5°	55.6	56.6	54.5	56.6	54.5	55.6	54.5	54.5
60°	38.4	38.4	37.4	38.4	37.4	37.4	36.4	38.4
62.5°	26.3	26.3	26.3	26.3	26.3	25.3	26.3	26.3
65°	19.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
67.5°	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
70°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
72.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
75°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	0.0	1.0	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)