

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: P251542

Luminaire Tested: **LD4B20D010 EU4B10209730 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251542  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B20D010 EU4B10209730 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1395.0 lumens  
Efficiency: N/A  
Efficacy: 67.1 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

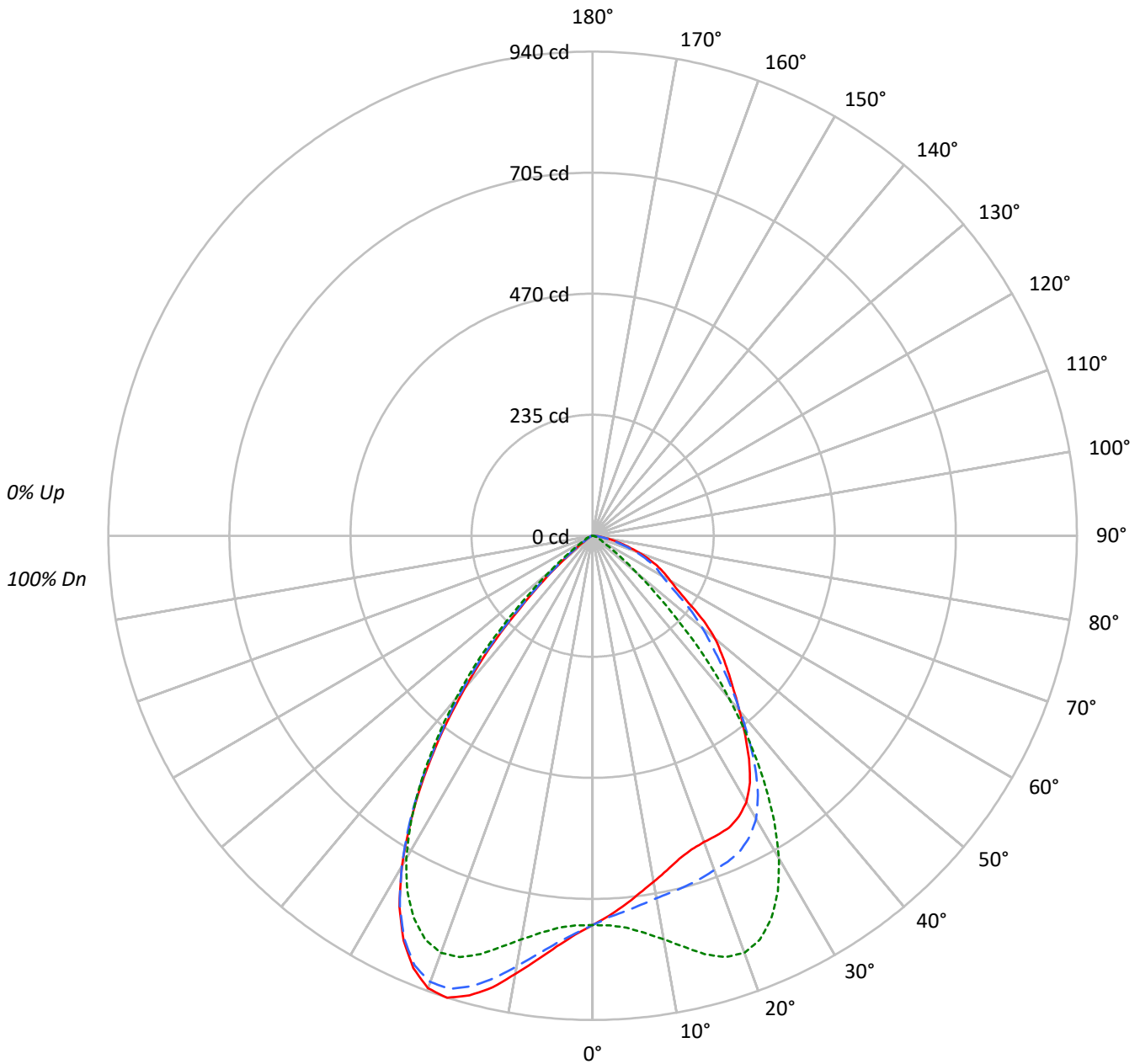
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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								
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	85	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72								
4	91	81	75	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	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48								
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44								
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40								
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37								

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

	0°	90°	180°
0°	73669	73669	73669
5°	70379	74723	78303
10°	67482	78714	85453
15°	65522	84833	93198
20°	65609	89349	96930
25°	67283	88188	93285
30°	67195	81408	83298
35°	62937	68803	67863
40°	56372	52479	48968
45°	51147	33326	27345
50°	46986	16905	11675
55°	38570	7544	3857
60°	33857	4230	2125
65°	31870	3182	1591
70°	27270	2536	1396
75°	20823	1845	1130
80°	14929	1122	561
85°	11070	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.4	5.3
10°-20°	228.8	16.4
20°-30°	354.1	25.4
30°-40°	348.9	25.0
40°-50°	214.2	15.4
50°-60°	95.3	6.8
60°-70°	53.2	3.8
70°-80°	23.0	1.7
80°-90°	4.1	0.3
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°	656.3	47.0
0°-40°	1005.2	72.1
0°-60°	1314.7	94.2
0°-90°	1395.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1395.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	756	756	756	756	756	
5°	719	731	764	793	800	68
15°	649	704	841	905	924	184
25°	626	676	820	864	868	287
35°	529	551	578	576	570	328
45°	371	352	242	211	198	287
55°	227	205	44	26	23	209
65°	138	124	14	8	7	135
75°	55	47	5	3	3	61
85°	10	8	0	0	0	12
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°	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9
2.5°	738.2	738.2	738.2	738.2	740.2	737.2	740.2	740.2	743.1	744.1	741.1
5°	719.4	718.4	719.4	719.4	721.4	720.4	723.4	725.4	729.3	731.3	731.3
7.5°	699.7	699.7	699.7	701.7	704.6	703.6	706.6	709.6	715.5	719.4	722.4
10°	681.9	680.9	683.9	684.9	687.9	687.9	692.8	695.7	702.7	710.6	714.5
12.5°	665.2	664.2	666.1	669.1	674.0	674.0	678.0	682.9	692.8	701.7	708.6
15°	649.4	650.4	653.3	655.3	661.2	661.2	666.1	672.1	682.9	693.8	703.6
17.5°	638.5	639.5	641.5	644.4	650.4	650.4	655.3	662.2	674.0	685.9	697.7
20°	632.6	633.6	635.5	638.5	643.4	644.4	648.4	656.3	667.1	680.0	690.8
22.5°	629.6	631.6	633.6	635.5	640.5	640.5	645.4	651.3	662.2	675.0	684.9
25°	625.7	627.7	628.6	631.6	635.5	635.5	638.5	645.4	655.3	666.1	676.0
27.5°	614.8	616.8	617.8	620.7	624.7	623.7	627.7	632.6	641.5	651.3	659.2
30°	597.1	598.0	600.0	601.0	604.0	604.0	606.9	611.9	617.8	626.7	634.6
32.5°	568.4	570.4	571.4	572.4	575.3	574.4	575.3	578.3	584.2	592.1	597.1
35°	529.0	532.9	532.9	534.9	535.9	534.9	534.9	538.8	541.8	547.7	550.7
37.5°	485.5	488.5	487.5	489.5	490.5	487.5	489.5	490.5	494.4	497.4	498.4
40°	443.1	444.1	444.1	444.1	444.1	443.1	444.1	445.1	448.0	448.0	445.1
42.5°	404.6	405.6	405.6	403.6	405.6	404.6	404.6	404.6	404.6	400.7	397.7
45°	371.1	372.1	372.1	371.1	371.1	369.1	368.1	367.1	364.2	359.2	352.3
47.5°	339.5	341.5	342.4	340.5	339.5	337.5	337.5	331.6	327.6	321.7	311.9
50°	309.9	311.9	311.9	309.9	309.9	306.9	304.0	302.0	296.1	289.2	277.3
52.5°	272.4	275.3	275.3	274.4	274.4	270.4	269.4	265.5	260.5	252.6	242.8
55°	227.0	230.9	229.9	229.0	227.0	227.0	227.0	224.0	221.1	215.1	205.3
57.5°	194.4	195.4	195.4	194.4	194.4	192.4	192.4	189.5	188.5	182.6	174.7
60°	173.7	173.7	174.7	173.7	172.7	171.7	170.7	168.8	165.8	161.8	155.9
62.5°	156.9	157.9	157.9	156.9	155.9	154.9	154.0	152.0	150.0	147.0	141.1
65°	138.2	140.1	139.1	138.2	137.2	136.2	136.2	134.2	132.2	130.3	124.3
67.5°	117.4	118.4	119.4	117.4	117.4	116.5	116.5	114.5	113.5	109.5	105.6
70°	95.7	96.7	96.7	95.7	95.7	94.7	94.7	93.8	92.8	89.8	85.9
72.5°	75.0	76.0	75.0	74.0	74.0	74.0	73.0	72.0	71.1	69.1	66.1
75°	55.3	55.3	56.3	55.3	54.3	54.3	53.3	53.3	51.3	50.3	47.4
77.5°	39.5	40.5	39.5	39.5	38.5	37.5	37.5	36.5	36.5	35.5	33.6
80°	26.6	26.6	27.6	26.6	25.7	26.6	25.7	24.7	24.7	23.7	21.7
82.5°	16.8	17.8	16.8	16.8	16.8	16.8	16.8	15.8	15.8	14.8	13.8
85°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	8.9	8.9	8.9	7.9
87.5°	4.9	4.9	3.9	3.9	4.9	4.9	4.9	3.9	3.9	3.9	3.9
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°	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9
2.5°	745.1	746.1	748.1	751.0	751.0	749.0	754.0	754.0	755.9	756.9	760.9
5°	737.2	739.2	743.1	748.1	749.0	748.1	755.0	757.9	760.9	763.8	769.8
7.5°	730.3	734.2	741.1	748.1	751.0	751.0	761.9	765.8	771.7	777.7	784.6
10°	726.3	732.3	742.1	753.0	755.9	758.9	771.7	779.6	787.5	795.4	805.3
12.5°	721.4	732.3	745.1	758.9	764.8	768.8	786.5	796.4	807.3	817.1	830.0
15°	720.4	733.2	750.0	767.8	775.7	781.6	801.3	815.2	828.0	840.8	853.6
17.5°	716.5	732.3	753.0	772.7	782.6	790.5	813.2	830.0	844.8	857.6	872.4
20°	711.5	729.3	752.0	773.7	784.6	792.5	817.1	832.9	849.7	861.5	875.4
22.5°	704.6	722.4	745.1	766.8	776.7	783.6	808.3	822.1	836.9	848.7	861.5
25°	692.8	709.6	729.3	747.1	756.9	762.9	784.6	797.4	808.3	820.1	831.9
27.5°	676.0	688.8	705.6	718.4	724.4	730.3	748.1	758.9	768.8	778.6	786.5
30°	646.4	656.3	668.1	679.0	684.9	685.9	702.7	708.6	716.5	723.4	729.3
32.5°	606.9	614.8	621.7	627.7	631.6	632.6	645.4	647.4	655.3	655.3	664.2
35°	556.6	560.5	565.5	565.5	568.4	565.5	574.4	576.3	577.3	578.3	585.2
37.5°	499.4	501.3	504.3	498.4	498.4	495.4	498.4	500.3	496.4	496.4	501.3
40°	445.1	441.1	437.2	431.3	428.3	422.4	422.4	417.4	414.5	412.5	413.5
42.5°	392.8	383.9	375.0	362.2	356.3	350.3	344.4	337.5	335.5	330.6	327.6
45°	342.4	329.6	317.8	297.0	285.2	279.3	266.5	252.6	243.8	241.8	233.9
47.5°	300.0	281.3	261.5	236.9	225.0	214.2	195.4	183.6	171.7	165.8	160.9
50°	262.5	245.7	220.1	193.4	178.6	167.8	147.0	133.2	120.4	111.5	105.6
52.5°	229.9	211.2	187.5	156.9	142.1	130.3	107.6	91.8	80.9	72.0	65.1
55°	193.4	178.6	154.9	126.3	111.5	97.7	78.0	61.2	50.3	44.4	39.5
57.5°	166.8	154.0	131.3	103.6	89.8	77.0	57.2	43.4	34.5	28.6	25.7
60°	149.0	137.2	117.4	90.8	78.0	66.1	47.4	34.5	26.6	21.7	19.7
62.5°	134.2	122.4	104.6	79.9	69.1	57.2	40.5	28.6	21.7	17.8	14.8
65°	117.4	106.6	90.8	69.1	59.2	49.3	34.5	23.7	17.8	13.8	11.8
67.5°	99.7	89.8	76.0	57.2	49.3	41.4	27.6	19.7	14.8	11.8	9.9
70°	80.9	73.0	60.2	46.4	39.5	32.6	22.7	15.8	10.9	8.9	7.9
72.5°	62.2	55.3	46.4	35.5	29.6	24.7	16.8	11.8	8.9	6.9	5.9
75°	44.4	39.5	32.6	25.7	21.7	17.8	12.8	8.9	5.9	4.9	3.9
77.5°	30.6	27.6	22.7	17.8	14.8	12.8	8.9	5.9	4.9	3.9	3.0
80°	19.7	17.8	14.8	10.9	8.9	7.9	4.9	3.9	3.0	2.0	2.0
82.5°	11.8	10.9	8.9	5.9	4.9	3.9	3.0	2.0	2.0	1.0	1.0
85°	6.9	5.9	3.9	3.0	3.0	2.0	2.0	1.0	1.0	0.0	0.0
87.5°	3.0	2.0	2.0	1.0	1.0	1.0	1.0	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9
2.5°	758.9	763.8	762.9	765.8	764.8	764.8	769.8	767.8	772.7	772.7	773.7
5°	769.8	776.7	776.7	781.6	780.6	782.6	787.5	787.5	793.4	795.4	795.4
7.5°	785.6	794.4	796.4	801.3	802.3	806.3	810.2	811.2	819.1	821.1	822.1
10°	807.3	818.1	821.1	826.0	828.0	831.9	836.9	838.8	848.7	849.7	853.6
12.5°	833.9	845.8	848.7	854.6	855.6	860.6	867.5	869.4	879.3	882.3	885.2
15°	859.6	870.4	875.4	881.3	882.3	888.2	894.1	896.1	905.0	908.9	911.9
17.5°	877.3	890.2	893.1	901.0	901.0	906.0	911.9	913.8	922.7	925.7	927.7
20°	881.3	893.1	897.1	903.0	904.0	906.9	911.9	913.8	921.7	922.7	925.7
22.5°	866.5	878.3	880.3	886.2	887.2	890.2	894.1	893.1	903.0	902.0	903.0
25°	834.9	845.8	845.8	852.7	851.7	854.6	856.6	855.6	864.5	864.5	864.5
27.5°	789.5	799.4	800.4	805.3	802.3	803.3	805.3	804.3	810.2	810.2	810.2
30°	733.2	741.1	738.2	742.1	740.2	742.1	740.2	739.2	741.1	743.1	742.1
32.5°	663.2	669.1	669.1	670.1	670.1	664.2	662.2	662.2	661.2	660.2	660.2
35°	582.3	587.2	585.2	585.2	584.2	578.3	575.3	573.4	576.3	570.4	574.4
37.5°	499.4	500.3	497.4	496.4	491.5	491.5	486.5	482.6	484.6	483.6	479.6
40°	408.6	412.5	406.6	404.6	407.6	403.6	398.7	393.8	397.7	392.8	394.8
42.5°	319.7	318.8	316.8	316.8	316.8	310.9	309.9	308.9	309.9	305.9	303.0
45°	230.9	228.0	225.0	225.0	221.1	219.1	219.1	216.1	211.2	211.2	205.3
47.5°	155.9	149.0	147.0	146.1	144.1	144.1	142.1	140.1	139.1	134.2	134.2
50°	101.6	94.7	92.8	91.8	92.8	90.8	88.8	86.8	84.9	83.9	81.9
52.5°	61.2	58.2	56.3	55.3	53.3	52.3	51.3	49.3	48.4	48.4	47.4
55°	36.5	33.6	29.6	29.6	29.6	28.6	27.6	26.6	25.7	25.7	24.7
57.5°	22.7	20.7	18.8	17.8	17.8	17.8	16.8	16.8	16.8	16.8	15.8
60°	16.8	14.8	13.8	13.8	13.8	12.8	12.8	12.8	12.8	11.8	11.8
62.5°	12.8	11.8	10.9	10.9	9.9	9.9	9.9	9.9	9.9	9.9	8.9
65°	10.9	8.9	8.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
67.5°	7.9	6.9	6.9	6.9	6.9	5.9	5.9	5.9	5.9	5.9	5.9
70°	5.9	5.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
72.5°	4.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	3.9	3.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
77.5°	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	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	0.0	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°	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9
2.5°	773.7	778.6	773.7	773.7	776.7	775.7	777.7	774.7
5°	796.4	803.3	798.4	797.4	802.3	801.3	802.3	800.4
7.5°	824.0	830.9	826.0	826.0	830.9	830.0	832.9	830.9
10°	855.6	863.5	856.6	857.6	864.5	863.5	863.5	863.5
12.5°	888.2	896.1	892.1	892.1	897.1	898.1	899.0	898.1
15°	914.8	922.7	917.8	917.8	924.7	923.7	924.7	923.7
17.5°	930.6	938.5	932.6	932.6	938.5	938.5	939.5	940.5
20°	926.7	935.6	930.6	928.7	935.6	935.6	934.6	934.6
22.5°	904.0	911.9	907.9	906.0	910.9	908.9	907.9	908.9
25°	864.5	872.4	864.5	864.5	868.5	867.5	868.5	867.5
27.5°	811.2	817.1	809.2	808.3	812.2	810.2	809.2	812.2
30°	740.2	746.1	742.1	739.2	744.1	741.1	739.2	740.2
32.5°	659.2	663.2	661.2	656.3	659.2	657.3	656.3	657.3
35°	570.4	575.3	567.5	566.5	571.4	567.5	565.5	570.4
37.5°	478.6	484.6	477.6	478.6	475.7	476.7	474.7	477.6
40°	391.8	390.8	388.8	387.8	388.8	385.9	387.8	384.9
42.5°	298.0	300.0	299.0	298.0	299.0	295.1	293.1	297.0
45°	207.2	206.3	204.3	202.3	202.3	201.3	201.3	198.4
47.5°	133.2	132.2	128.3	129.3	131.3	129.3	126.3	130.3
50°	80.9	79.9	79.9	79.0	80.9	79.0	77.0	77.0
52.5°	45.4	45.4	44.4	44.4	44.4	44.4	43.4	42.4
55°	24.7	23.7	23.7	23.7	22.7	22.7	22.7	22.7
57.5°	15.8	15.8	15.8	15.8	15.8	15.8	14.8	14.8
60°	11.8	11.8	11.8	11.8	10.9	11.8	10.9	10.9
62.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
65°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
67.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
70°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
72.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)