

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: P251536

Luminaire Tested: **LD4B20D010 EU4B10209027 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251536
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 EU4B10209027 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1534.0 lumens
Efficiency: N/A
Efficacy: 73.8 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

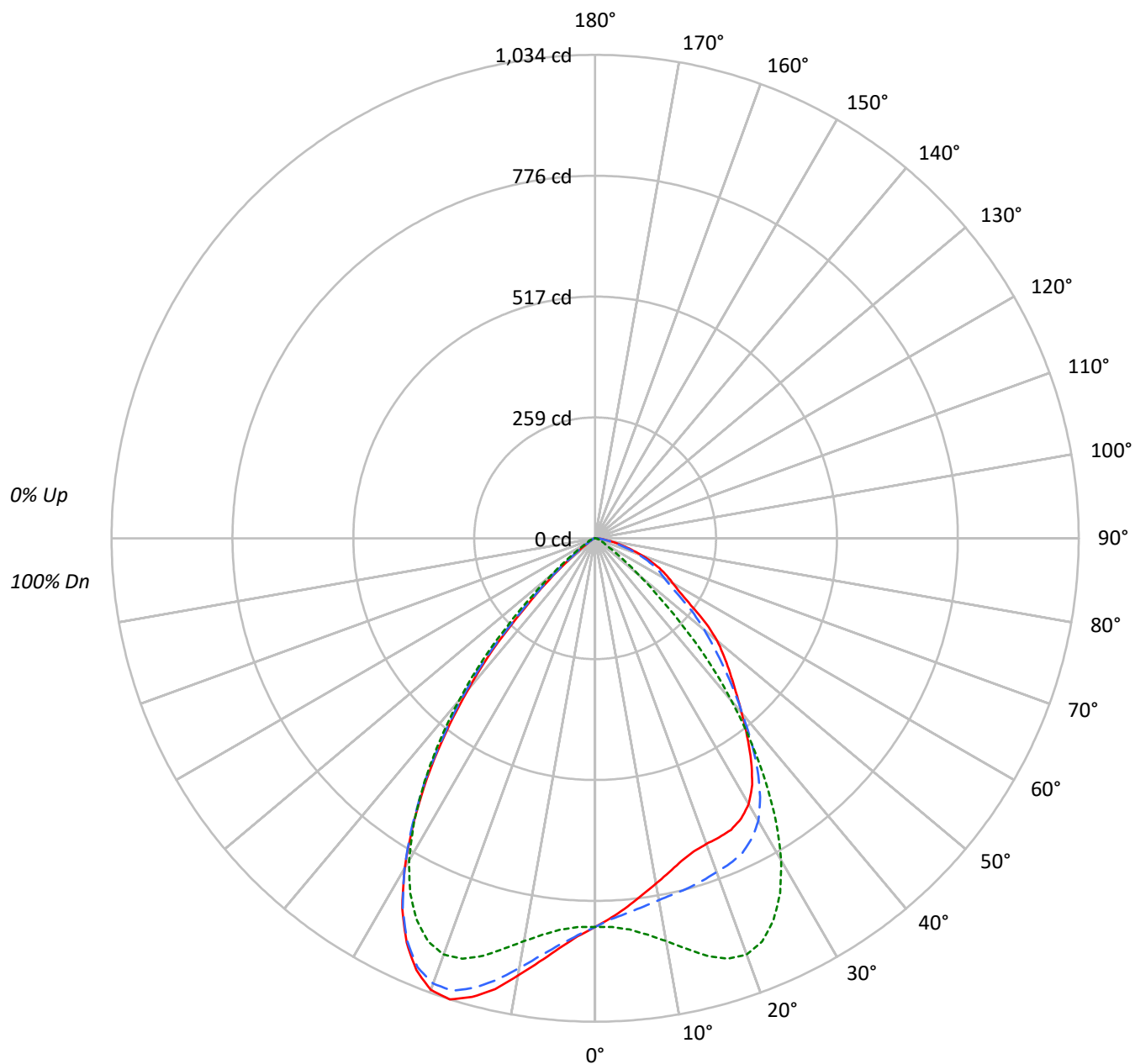
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	108	105	102	109	106	103	101	102	100	98		98	96	95		95
2	104	98	93	89	102	96	92	88	93	89	86		90	87	84		87
3	97	89	83	78	95	88	82	77	85	80	76		82	78	75		80
4	91	81	75	69	89	80	74	69	78	72	68		76	71	67		74
5	85	75	67	62	83	74	67	62	72	66	61		70	65	60		68
6	79	69	61	56	78	68	61	56	66	60	55		64	59	55		63
7	75	63	56	51	73	62	55	51	61	55	50		60	54	50		58
8	70	58	51	46	69	58	51	46	57	50	46		55	50	46		54
9	66	54	47	42	65	54	47	42	53	46	42		52	46	42		51
10	62	51	44	39	61	50	43	39	49	43	39		48	43	39		47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	81017	81017	81017
5°	77394	82177	86100
10°	74211	86562	93974
15°	72050	93288	102490
20°	72143	98257	106586
25°	73983	96973	102576
30°	73890	89522	91592
35°	69207	75656	74633
40°	61996	57708	53841
45°	56233	36648	30060
50°	51671	18588	12827
55°	42410	8292	4248
60°	37229	4658	2320
65°	35029	3505	1753
70°	30005	2792	1539
75°	22894	2033	1243
80°	16444	1235	617
85°	12188	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.7	5.3
10°-20°	251.7	16.4
20°-30°	389.3	25.4
30°-40°	383.6	25.0
40°-50°	235.6	15.4
50°-60°	104.7	6.8
60°-70°	58.5	3.8
70°-80°	25.3	1.7
80°-90°	4.5	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°	721.7	47.0
0°-40°	1105.4	72.1
0°-60°	1445.6	94.2
0°-90°	1534.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1534.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	831	831	831	831	831	
5°	791	804	840	872	880	74
15°	714	774	925	995	1016	203
25°	688	743	902	951	954	316
35°	582	606	636	634	627	361
45°	408	387	266	232	218	316
55°	250	226	49	28	25	229
65°	152	137	15	9	8	149
75°	61	52	5	3	3	67
85°	11	9	0	0	0	13
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°	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3
2.5°	811.7	811.7	811.7	811.7	813.9	810.7	813.9	813.9	817.2	818.2	815.0
5°	791.1	790.0	791.1	791.1	793.3	792.2	795.5	797.6	802.0	804.1	804.1
7.5°	769.4	769.4	769.4	771.6	774.8	773.8	777.0	780.3	786.8	791.1	794.4
10°	749.9	748.8	752.1	753.1	756.4	756.4	761.8	765.1	772.7	781.4	785.7
12.5°	731.4	730.3	732.5	735.8	741.2	741.2	745.5	751.0	761.8	771.6	779.2
15°	714.1	715.2	718.4	720.6	727.1	727.1	732.5	739.0	751.0	762.9	773.8
17.5°	702.1	703.2	705.4	708.6	715.2	715.2	720.6	728.2	741.2	754.2	767.2
20°	695.6	696.7	698.9	702.1	707.6	708.6	713.0	721.7	733.6	747.7	759.6
22.5°	692.4	694.5	696.7	698.9	704.3	704.3	709.7	716.2	728.2	742.3	753.1
25°	688.0	690.2	691.3	694.5	698.9	698.9	702.1	709.7	720.6	732.5	743.4
27.5°	676.1	678.3	679.3	682.6	686.9	685.9	690.2	695.6	705.4	716.2	724.9
30°	656.6	657.6	659.8	660.9	664.1	664.1	667.4	672.8	679.3	689.1	697.8
32.5°	625.1	627.3	628.3	629.4	632.7	631.6	632.7	635.9	642.4	651.1	656.6
35°	581.7	586.0	586.0	588.2	589.3	588.2	588.2	592.5	595.8	602.3	605.5
37.5°	533.9	537.2	536.1	538.3	539.3	536.1	538.3	539.3	543.7	546.9	548.0
40°	487.3	488.3	488.3	488.3	488.3	487.3	488.3	489.4	492.7	492.7	489.4
42.5°	444.9	446.0	446.0	443.9	446.0	444.9	444.9	444.9	444.9	440.6	437.3
45°	408.0	409.1	409.1	408.0	408.0	405.9	404.8	403.7	400.4	395.0	387.4
47.5°	373.3	375.5	376.6	374.4	373.3	371.1	371.1	364.6	360.3	353.8	342.9
50°	340.8	342.9	342.9	340.8	340.8	337.5	334.2	332.1	325.6	318.0	304.9
52.5°	299.5	302.8	302.8	301.7	301.7	297.3	296.3	291.9	286.5	277.8	267.0
55°	249.6	253.9	252.9	251.8	249.6	249.6	249.6	246.3	243.1	236.6	225.7
57.5°	213.8	214.9	214.9	213.8	213.8	211.6	211.6	208.4	207.3	200.8	192.1
60°	191.0	191.0	192.1	191.0	189.9	188.8	187.7	185.6	182.3	178.0	171.5
62.5°	172.5	173.6	173.6	172.5	171.5	170.4	169.3	167.1	165.0	161.7	155.2
65°	151.9	154.1	153.0	151.9	150.8	149.8	149.8	147.6	145.4	143.2	136.7
67.5°	129.1	130.2	131.3	129.1	129.1	128.1	128.1	125.9	124.8	120.5	116.1
70°	105.3	106.4	106.4	105.3	105.3	104.2	104.2	103.1	102.0	98.8	94.4
72.5°	82.5	83.6	82.5	81.4	81.4	81.4	80.3	79.2	78.1	76.0	72.7
75°	60.8	60.8	61.9	60.8	59.7	59.7	58.6	58.6	56.4	55.3	52.1
77.5°	43.4	44.5	43.4	43.4	42.3	41.2	41.2	40.2	40.2	39.1	36.9
80°	29.3	29.3	30.4	29.3	28.2	29.3	28.2	27.1	27.1	26.0	23.9
82.5°	18.4	19.5	18.4	18.4	18.4	18.4	18.4	17.4	17.4	16.3	15.2
85°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	9.8	9.8	9.8	8.7
87.5°	5.4	5.4	4.3	4.3	5.4	5.4	5.4	4.3	4.3	4.3	4.3
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°	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3
2.5°	819.3	820.4	822.6	825.8	825.8	823.7	829.1	829.1	831.3	832.4	836.7
5°	810.7	812.8	817.2	822.6	823.7	822.6	830.2	833.4	836.7	840.0	846.5
7.5°	803.1	807.4	815.0	822.6	825.8	825.8	837.8	842.1	848.6	855.1	862.7
10°	798.7	805.2	816.1	828.0	831.3	834.5	848.6	857.3	866.0	874.7	885.5
12.5°	793.3	805.2	819.3	834.5	841.0	845.4	864.9	875.8	887.7	898.6	912.7
15°	792.2	806.3	824.8	844.3	853.0	859.5	881.2	896.4	910.5	924.6	938.7
17.5°	787.9	805.2	828.0	849.7	860.6	869.3	894.2	912.7	928.9	943.0	959.3
20°	782.4	802.0	826.9	850.8	862.7	871.4	898.6	915.9	934.4	947.4	962.6
22.5°	774.8	794.4	819.3	843.2	854.1	861.7	888.8	904.0	920.3	933.3	947.4
25°	761.8	780.3	802.0	821.5	832.4	838.9	862.7	876.8	888.8	901.8	914.8
27.5°	743.4	757.5	775.9	790.0	796.5	803.1	822.6	834.5	845.4	856.2	864.9
30°	710.8	721.7	734.7	746.6	753.1	754.2	772.7	779.2	787.9	795.5	802.0
32.5°	667.4	676.1	683.7	690.2	694.5	695.6	709.7	711.9	720.6	720.6	730.3
35°	612.1	616.4	621.8	621.8	625.1	621.8	631.6	633.8	634.8	635.9	643.5
37.5°	549.1	551.3	554.5	548.0	548.0	544.8	548.0	550.2	545.9	545.9	551.3
40°	489.4	485.1	480.7	474.2	471.0	464.5	464.5	459.0	455.8	453.6	454.7
42.5°	431.9	422.1	412.4	398.3	391.8	385.2	378.7	371.1	369.0	363.5	360.3
45°	376.6	362.5	349.4	326.6	313.6	307.1	293.0	277.8	268.0	265.9	257.2
47.5°	329.9	309.3	287.6	260.5	247.4	235.5	214.9	201.8	188.8	182.3	176.9
50°	288.7	270.2	242.0	212.7	196.4	184.5	161.7	146.5	132.4	122.6	116.1
52.5°	252.9	232.2	206.2	172.5	156.3	143.2	118.3	100.9	89.0	79.2	71.6
55°	212.7	196.4	170.4	138.9	122.6	107.4	85.7	67.3	55.3	48.8	43.4
57.5°	183.4	169.3	144.3	113.9	98.8	84.6	62.9	47.7	38.0	31.5	28.2
60°	163.9	150.8	129.1	99.8	85.7	72.7	52.1	38.0	29.3	23.9	21.7
62.5°	147.6	134.6	115.0	87.9	76.0	62.9	44.5	31.5	23.9	19.5	16.3
65°	129.1	117.2	99.8	76.0	65.1	54.3	38.0	26.0	19.5	15.2	13.0
67.5°	109.6	98.8	83.6	62.9	54.3	45.6	30.4	21.7	16.3	13.0	10.9
70°	89.0	80.3	66.2	51.0	43.4	35.8	25.0	17.4	11.9	9.8	8.7
72.5°	68.4	60.8	51.0	39.1	32.6	27.1	18.4	13.0	9.8	7.6	6.5
75°	48.8	43.4	35.8	28.2	23.9	19.5	14.1	9.8	6.5	5.4	4.3
77.5°	33.6	30.4	25.0	19.5	16.3	14.1	9.8	6.5	5.4	4.3	3.3
80°	21.7	19.5	16.3	11.9	9.8	8.7	5.4	4.3	3.3	2.2	2.2
82.5°	13.0	11.9	9.8	6.5	5.4	4.3	3.3	2.2	2.2	1.1	1.1
85°	7.6	6.5	4.3	3.3	3.3	2.2	2.2	1.1	1.1	0.0	0.0
87.5°	3.3	2.2	2.2	1.1	1.1	1.1	1.1	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°	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3
2.5°	834.5	840.0	838.9	842.1	841.0	841.0	846.5	844.3	849.7	849.7	850.8
5°	846.5	854.1	854.1	859.5	858.4	860.6	866.0	866.0	872.5	874.7	874.7
7.5°	863.8	873.6	875.8	881.2	882.3	886.6	891.0	892.0	900.7	902.9	904.0
10°	887.7	899.6	902.9	908.3	910.5	914.8	920.3	922.4	933.3	934.4	938.7
12.5°	917.0	930.0	933.3	939.8	940.9	946.3	953.9	956.1	966.9	970.2	973.4
15°	945.2	957.2	962.6	969.1	970.2	976.7	983.2	985.4	995.1	999.5	1002.7
17.5°	964.8	978.9	982.1	990.8	990.8	996.2	1002.7	1004.9	1014.7	1017.9	1020.1
20°	969.1	982.1	986.5	993.0	994.1	997.3	1002.7	1004.9	1013.6	1014.7	1017.9
22.5°	952.8	965.8	968.0	974.5	975.6	978.9	983.2	982.1	993.0	991.9	993.0
25°	918.1	930.0	930.0	937.6	936.5	939.8	942.0	940.9	950.6	950.6	950.6
27.5°	868.2	879.0	880.1	885.5	882.3	883.4	885.5	884.4	891.0	891.0	891.0
30°	806.3	815.0	811.7	816.1	813.9	816.1	813.9	812.8	815.0	817.2	816.1
32.5°	729.3	735.8	735.8	736.9	736.9	730.3	728.2	728.2	727.1	726.0	726.0
35°	640.3	645.7	643.5	643.5	642.4	635.9	632.7	630.5	633.8	627.3	631.6
37.5°	549.1	550.2	546.9	545.9	540.4	540.4	535.0	530.7	532.8	531.8	527.4
40°	449.3	453.6	447.1	444.9	448.2	443.9	438.4	433.0	437.3	431.9	434.1
42.5°	351.6	350.5	348.4	348.4	348.4	341.8	340.8	339.7	340.8	336.4	333.2
45°	253.9	250.7	247.4	247.4	243.1	240.9	240.9	237.7	232.2	232.2	225.7
47.5°	171.5	163.9	161.7	160.6	158.4	158.4	156.3	154.1	153.0	147.6	147.6
50°	111.8	104.2	102.0	100.9	102.0	99.8	97.7	95.5	93.3	92.2	90.1
52.5°	67.3	64.0	61.9	60.8	58.6	57.5	56.4	54.3	53.2	53.2	52.1
55°	40.2	36.9	32.6	32.6	32.6	31.5	30.4	29.3	28.2	28.2	27.1
57.5°	25.0	22.8	20.6	19.5	19.5	19.5	18.4	18.4	18.4	18.4	17.4
60°	18.4	16.3	15.2	15.2	15.2	14.1	14.1	14.1	14.1	13.0	13.0
62.5°	14.1	13.0	11.9	11.9	10.9	10.9	10.9	10.9	10.9	10.9	9.8
65°	11.9	9.8	9.8	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
67.5°	8.7	7.6	7.6	7.6	7.6	6.5	6.5	6.5	6.5	6.5	6.5
70°	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
72.5°	5.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
75°	4.3	4.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	3.3	3.3	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	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°	831.3	831.3	831.3	831.3	831.3	831.3	831.3	831.3
2.5°	850.8	856.2	850.8	850.8	854.1	853.0	855.1	851.9
5°	875.8	883.4	877.9	876.8	882.3	881.2	882.3	880.1
7.5°	906.2	913.7	908.3	908.3	913.7	912.7	915.9	913.7
10°	940.9	949.6	942.0	943.0	950.6	949.6	949.6	949.6
12.5°	976.7	985.4	981.0	981.0	986.5	987.5	988.6	987.5
15°	1006.0	1014.7	1009.2	1009.2	1016.8	1015.8	1016.8	1015.8
17.5°	1023.4	1032.0	1025.5	1025.5	1032.0	1032.0	1033.1	1034.2
20°	1019.0	1028.8	1023.4	1021.2	1028.8	1028.8	1027.7	1027.7
22.5°	994.1	1002.7	998.4	996.2	1001.6	999.5	998.4	999.5
25°	950.6	959.3	950.6	950.6	955.0	953.9	955.0	953.9
27.5°	892.0	898.6	889.9	888.8	893.1	891.0	889.9	893.1
30°	813.9	820.4	816.1	812.8	818.2	815.0	812.8	813.9
32.5°	724.9	729.3	727.1	721.7	724.9	722.8	721.7	722.8
35°	627.3	632.7	624.0	622.9	628.3	624.0	621.8	627.3
37.5°	526.3	532.8	525.2	526.3	523.1	524.2	522.0	525.2
40°	430.8	429.7	427.6	426.5	427.6	424.3	426.5	423.2
42.5°	327.7	329.9	328.8	327.7	328.8	324.5	322.3	326.6
45°	227.9	226.8	224.6	222.5	222.5	221.4	221.4	218.1
47.5°	146.5	145.4	141.1	142.2	144.3	142.2	138.9	143.2
50°	89.0	87.9	87.9	86.8	89.0	86.8	84.6	84.6
52.5°	49.9	49.9	48.8	48.8	48.8	48.8	47.7	46.7
55°	27.1	26.0	26.0	26.0	25.0	25.0	25.0	25.0
57.5°	17.4	17.4	17.4	17.4	17.4	17.4	16.3	16.3
60°	13.0	13.0	13.0	13.0	11.9	13.0	11.9	11.9
62.5°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
65°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
67.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
70°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
72.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
75°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)