

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: P251537

Luminaire Tested: **LD4B20D010 EU4B10209030 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251537
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 EU4B10209030 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1596.0 lumens
Efficiency: N/A
Efficacy: 76.7 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

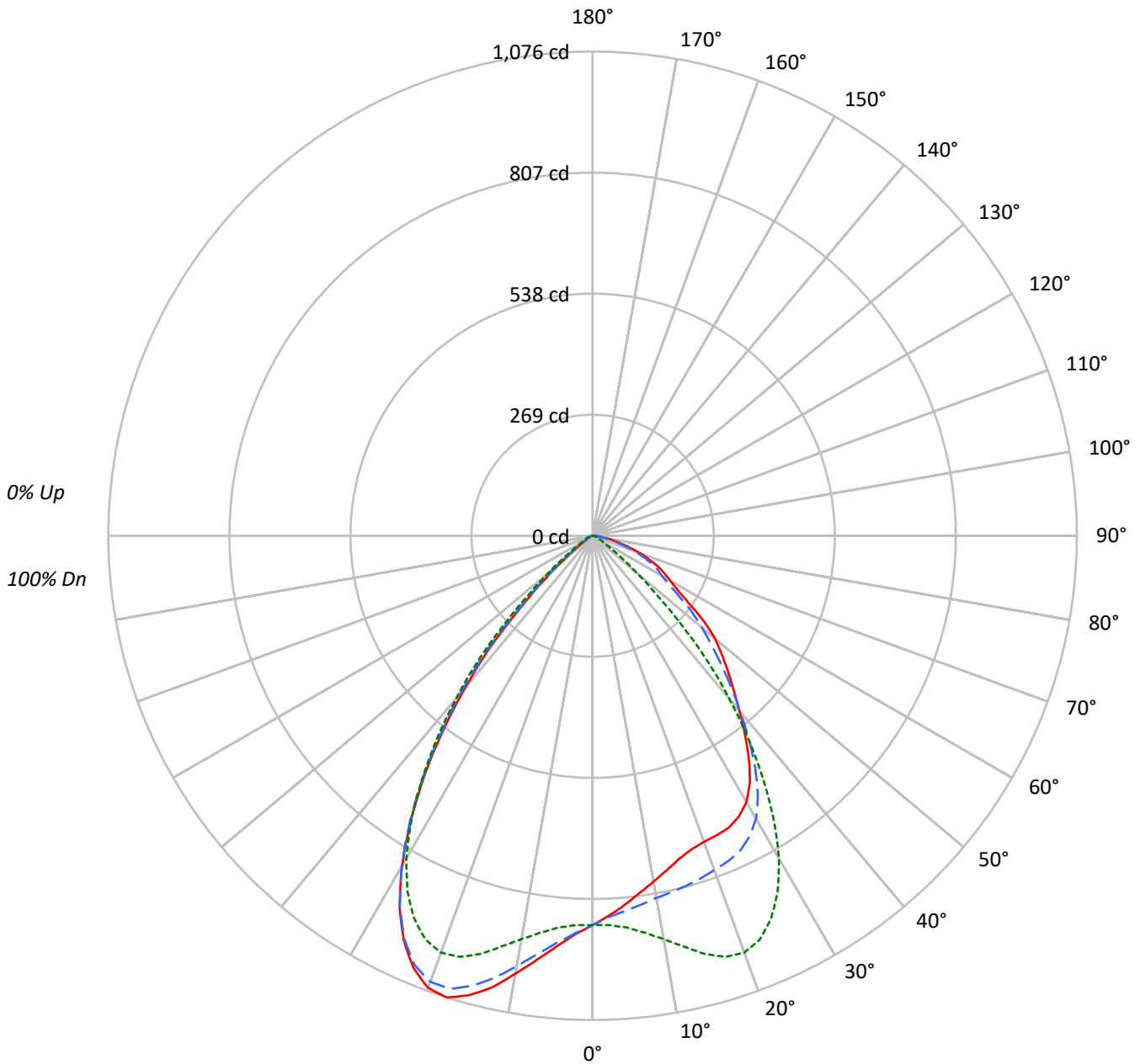
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	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°	84291	84291	84291
5°	80524	85494	89583
10°	77210	90055	97764
15°	74956	97062	106627
20°	75057	102230	110890
25°	76972	100898	106727
30°	76873	93134	95295
35°	72003	78713	77643
40°	64502	60049	56016
45°	58507	38123	31273
50°	53749	19346	13358
55°	44126	8632	4418
60°	38730	4834	2417
65°	36459	3644	1822
70°	31202	2906	1596
75°	23798	2109	1280
80°	17118	1291	617
85°	12636	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.0	5.3
10°-20°	261.8	16.4
20°-30°	405.1	25.4
30°-40°	399.1	25.0
40°-50°	245.1	15.4
50°-60°	109.0	6.8
60°-70°	60.9	3.8
70°-80°	26.3	1.7
80°-90°	4.7	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°	750.9	47.1
0°-40°	1150.0	72.1
0°-60°	1504.1	94.2
0°-90°	1596.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1596.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	865	865	865	865	865	
5°	823	837	874	908	916	77
15°	743	805	962	1035	1057	211
25°	716	773	938	989	992	328
35°	605	630	662	659	653	376
45°	424	403	277	242	227	329
55°	260	235	51	29	26	239
65°	158	142	16	9	8	155
75°	63	54	6	3	3	70
85°	11	9	0	0	0	14
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°	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9
2.5°	844.5	844.5	844.5	844.5	846.8	843.4	846.8	846.8	850.2	851.3	847.9
5°	823.1	822.0	823.1	823.1	825.4	824.2	827.6	829.9	834.4	836.6	836.6
7.5°	800.5	800.5	800.5	802.8	806.2	805.0	808.4	811.8	818.6	823.1	826.5
10°	780.2	779.1	782.4	783.6	787.0	787.0	792.6	796.0	803.9	812.9	817.4
12.5°	761.0	759.9	762.1	765.5	771.2	771.2	775.7	781.3	792.6	802.8	810.7
15°	742.9	744.1	747.4	749.7	756.5	756.5	762.1	768.9	781.3	793.7	805.0
17.5°	730.5	731.6	733.9	737.3	744.1	744.1	749.7	757.6	771.2	784.7	798.3
20°	723.7	724.9	727.1	730.5	736.2	737.3	741.8	750.8	763.3	777.9	790.3
22.5°	720.3	722.6	724.9	727.1	732.8	732.8	738.4	745.2	757.6	772.3	783.6
25°	715.8	718.1	719.2	722.6	727.1	727.1	730.5	738.4	749.7	762.1	773.4
27.5°	703.4	705.7	706.8	710.2	714.7	713.6	718.1	723.7	733.9	745.2	754.2
30°	683.1	684.2	686.5	687.6	691.0	691.0	694.4	700.0	706.8	717.0	726.0
32.5°	650.3	652.6	653.7	654.9	658.2	657.1	658.2	661.6	668.4	677.4	683.1
35°	605.2	609.7	609.7	612.0	613.1	612.0	612.0	616.5	619.9	626.6	630.0
37.5°	555.5	558.9	557.8	560.0	561.1	557.8	560.0	561.1	565.7	569.1	570.2
40°	507.0	508.1	508.1	508.1	508.1	507.0	508.1	509.2	512.6	512.6	509.2
42.5°	462.9	464.0	464.0	461.8	464.0	462.9	462.9	462.9	462.9	458.4	455.0
45°	424.5	425.7	425.7	424.5	424.5	422.3	421.1	420.0	416.6	411.0	403.1
47.5°	388.4	390.7	391.8	389.5	388.4	386.1	386.1	379.4	374.9	368.1	356.8
50°	354.5	356.8	356.8	354.5	354.5	351.1	347.8	345.5	338.7	330.8	317.3
52.5°	311.6	315.0	315.0	313.9	313.9	309.4	308.2	303.7	298.1	289.0	277.8
55°	259.7	264.2	263.1	261.9	259.7	259.7	259.7	256.3	252.9	246.1	234.8
57.5°	222.4	223.6	223.6	222.4	222.4	220.2	220.2	216.8	215.7	208.9	199.8
60°	198.7	198.7	199.8	198.7	197.6	196.5	195.3	193.1	189.7	185.2	178.4
62.5°	179.5	180.7	180.7	179.5	178.4	177.3	176.1	173.9	171.6	168.2	161.5
65°	158.1	160.3	159.2	158.1	156.9	155.8	155.8	153.6	151.3	149.0	142.3
67.5°	134.4	135.5	136.6	134.4	134.4	133.2	133.2	131.0	129.8	125.3	120.8
70°	109.5	110.6	110.6	109.5	109.5	108.4	108.4	107.3	106.1	102.7	98.2
72.5°	85.8	86.9	85.8	84.7	84.7	84.7	83.6	82.4	81.3	79.0	75.6
75°	63.2	63.2	64.4	63.2	62.1	62.1	61.0	61.0	58.7	57.6	54.2
77.5°	45.2	46.3	45.2	45.2	44.0	42.9	42.9	41.8	41.8	40.6	38.4
80°	30.5	30.5	31.6	30.5	29.4	30.5	29.4	28.2	28.2	27.1	24.8
82.5°	19.2	20.3	19.2	19.2	19.2	19.2	19.2	18.1	18.1	16.9	15.8
85°	11.3	11.3	11.3	11.3	11.3	11.3	11.3	10.2	10.2	10.2	9.0
87.5°	5.6	5.6	4.5	4.5	5.6	5.6	5.6	4.5	4.5	4.5	4.5
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°	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9
2.5°	852.4	853.6	855.8	859.2	859.2	857.0	862.6	862.6	864.9	866.0	870.5
5°	843.4	845.7	850.2	855.8	857.0	855.8	863.7	867.1	870.5	873.9	880.7
7.5°	835.5	840.0	847.9	855.8	859.2	859.2	871.6	876.2	882.9	889.7	897.6
10°	831.0	837.8	849.1	861.5	864.9	868.3	882.9	892.0	901.0	910.0	921.3
12.5°	825.4	837.8	852.4	868.3	875.0	879.5	899.9	911.2	923.6	934.9	949.5
15°	824.2	838.9	858.1	878.4	887.5	894.2	916.8	932.6	947.3	962.0	976.6
17.5°	819.7	837.8	861.5	884.1	895.4	904.4	930.4	949.5	966.5	981.2	998.1
20°	814.1	834.4	860.4	885.2	897.6	906.6	934.9	952.9	972.1	985.7	1001.5
22.5°	806.2	826.5	852.4	877.3	888.6	896.5	924.7	940.5	957.5	971.0	985.7
25°	792.6	811.8	834.4	854.7	866.0	872.8	897.6	912.3	924.7	938.3	951.8
27.5°	773.4	788.1	807.3	822.0	828.7	835.5	855.8	868.3	879.5	890.8	899.9
30°	739.5	750.8	764.4	776.8	783.6	784.7	803.9	810.7	819.7	827.6	834.4
32.5°	694.4	703.4	711.3	718.1	722.6	723.7	738.4	740.7	749.7	749.7	759.9
35°	636.8	641.3	647.0	647.0	650.3	647.0	657.1	659.4	660.5	661.6	669.5
37.5°	571.3	573.6	577.0	570.2	570.2	566.8	570.2	572.4	567.9	567.9	573.6
40°	509.2	504.7	500.2	493.4	490.0	483.2	483.2	477.6	474.2	472.0	473.1
42.5°	449.4	439.2	429.0	414.4	407.6	400.8	394.0	386.1	383.9	378.2	374.9
45°	391.8	377.1	363.6	339.9	326.3	319.5	304.8	289.0	278.9	276.6	267.6
47.5°	343.2	321.8	299.2	271.0	257.4	245.0	223.6	210.0	196.5	189.7	184.0
50°	300.3	281.1	251.8	221.3	204.4	191.9	168.2	152.4	137.7	127.6	120.8
52.5°	263.1	241.6	214.5	179.5	162.6	149.0	123.1	105.0	92.6	82.4	74.5
55°	221.3	204.4	177.3	144.5	127.6	111.8	89.2	70.0	57.6	50.8	45.2
57.5°	190.8	176.1	150.2	118.6	102.7	88.1	65.5	49.7	39.5	32.7	29.4
60°	170.5	156.9	134.4	103.9	89.2	75.6	54.2	39.5	30.5	24.8	22.6
62.5°	153.6	140.0	119.7	91.5	79.0	65.5	46.3	32.7	24.8	20.3	16.9
65°	134.4	121.9	103.9	79.0	67.7	56.5	39.5	27.1	20.3	15.8	13.5
67.5°	114.0	102.7	86.9	65.5	56.5	47.4	31.6	22.6	16.9	13.5	11.3
70°	92.6	83.6	68.9	53.1	45.2	37.3	26.0	18.1	12.4	10.2	9.0
72.5°	71.1	63.2	53.1	40.6	33.9	28.2	19.2	13.5	10.2	7.9	6.8
75°	50.8	45.2	37.3	29.4	24.8	20.3	14.7	10.2	6.8	5.6	4.5
77.5°	35.0	31.6	26.0	20.3	16.9	14.7	10.2	6.8	5.6	4.5	3.4
80°	22.6	20.3	16.9	12.4	10.2	9.0	5.6	4.5	3.4	2.3	2.3
82.5°	13.5	12.4	10.2	6.8	5.6	4.5	3.4	2.3	2.3	1.1	1.1
85°	7.9	6.8	4.5	3.4	3.4	2.3	2.3	1.1	1.1	0.0	0.0
87.5°	3.4	2.3	2.3	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°	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9
2.5°	868.3	873.9	872.8	876.2	875.0	875.0	880.7	878.4	884.1	884.1	885.2
5°	880.7	888.6	888.6	894.2	893.1	895.4	901.0	901.0	907.8	910.0	910.0
7.5°	898.7	908.9	911.2	916.8	917.9	922.5	927.0	928.1	937.1	939.4	940.5
10°	923.6	936.0	939.4	945.0	947.3	951.8	957.5	959.7	971.0	972.1	976.6
12.5°	954.1	967.6	971.0	977.8	978.9	984.6	992.5	994.7	1006.0	1009.4	1012.8
15°	983.4	995.8	1001.5	1008.3	1009.4	1016.2	1022.9	1025.2	1035.4	1039.9	1043.3
17.5°	1003.7	1018.4	1021.8	1030.8	1030.8	1036.5	1043.3	1045.5	1055.7	1059.1	1061.3
20°	1008.3	1021.8	1026.3	1033.1	1034.2	1037.6	1043.3	1045.5	1054.6	1055.7	1059.1
22.5°	991.3	1004.9	1007.1	1013.9	1015.0	1018.4	1022.9	1021.8	1033.1	1032.0	1033.1
25°	955.2	967.6	967.6	975.5	974.4	977.8	980.0	978.9	989.1	989.1	989.1
27.5°	903.3	914.5	915.7	921.3	917.9	919.1	921.3	920.2	927.0	927.0	927.0
30°	838.9	847.9	844.5	849.1	846.8	849.1	846.8	845.7	847.9	850.2	849.1
32.5°	758.7	765.5	765.5	766.6	766.6	759.9	757.6	757.6	756.5	755.3	755.3
35°	666.2	671.8	669.5	669.5	668.4	661.6	658.2	656.0	659.4	652.6	657.1
37.5°	571.3	572.4	569.1	567.9	562.3	562.3	556.6	552.1	554.4	553.2	548.7
40°	467.4	472.0	465.2	462.9	466.3	461.8	456.1	450.5	455.0	449.4	451.6
42.5°	365.8	364.7	362.4	362.4	362.4	355.7	354.5	353.4	354.5	350.0	346.6
45°	264.2	260.8	257.4	257.4	252.9	250.7	250.7	247.3	241.6	241.6	234.8
47.5°	178.4	170.5	168.2	167.1	164.8	164.8	162.6	160.3	159.2	153.6	153.6
50°	116.3	108.4	106.1	105.0	106.1	103.9	101.6	99.4	97.1	96.0	93.7
52.5°	70.0	66.6	64.4	63.2	61.0	59.8	58.7	56.5	55.3	55.3	54.2
55°	41.8	38.4	33.9	33.9	33.9	32.7	31.6	30.5	29.4	29.4	28.2
57.5°	26.0	23.7	21.5	20.3	20.3	20.3	19.2	19.2	19.2	19.2	18.1
60°	19.2	16.9	15.8	15.8	15.8	14.7	14.7	14.7	14.7	13.5	13.5
62.5°	14.7	13.5	12.4	12.4	11.3	11.3	11.3	11.3	11.3	11.3	10.2
65°	12.4	10.2	10.2	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
67.5°	9.0	7.9	7.9	7.9	7.9	6.8	6.8	6.8	6.8	6.8	6.8
70°	6.8	6.8	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
72.5°	5.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
75°	4.5	4.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
77.5°	3.4	3.4	3.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	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°	864.9	864.9	864.9	864.9	864.9	864.9	864.9	864.9
2.5°	885.2	890.8	885.2	885.2	888.6	887.5	889.7	886.3
5°	911.2	919.1	913.4	912.3	917.9	916.8	917.9	915.7
7.5°	942.8	950.7	945.0	945.0	950.7	949.5	952.9	950.7
10°	978.9	987.9	980.0	981.2	989.1	987.9	987.9	987.9
12.5°	1016.2	1025.2	1020.7	1020.7	1026.3	1027.5	1028.6	1027.5
15°	1046.6	1055.7	1050.0	1050.0	1057.9	1056.8	1057.9	1056.8
17.5°	1064.7	1073.7	1067.0	1067.0	1073.7	1073.7	1074.9	1076.0
20°	1060.2	1070.4	1064.7	1062.5	1070.4	1070.4	1069.2	1069.2
22.5°	1034.2	1043.3	1038.7	1036.5	1042.1	1039.9	1038.7	1039.9
25°	989.1	998.1	989.1	989.1	993.6	992.5	993.6	992.5
27.5°	928.1	934.9	925.8	924.7	929.2	927.0	925.8	929.2
30°	846.8	853.6	849.1	845.7	851.3	847.9	845.7	846.8
32.5°	754.2	758.7	756.5	750.8	754.2	752.0	750.8	752.0
35°	652.6	658.2	649.2	648.1	653.7	649.2	647.0	652.6
37.5°	547.6	554.4	546.5	547.6	544.2	545.3	543.1	546.5
40°	448.2	447.1	444.9	443.7	444.9	441.5	443.7	440.3
42.5°	341.0	343.2	342.1	341.0	342.1	337.6	335.3	339.9
45°	237.1	236.0	233.7	231.5	231.5	230.3	230.3	226.9
47.5°	152.4	151.3	146.8	147.9	150.2	147.9	144.5	149.0
50°	92.6	91.5	91.5	90.3	92.6	90.3	88.1	88.1
52.5°	51.9	51.9	50.8	50.8	50.8	50.8	49.7	48.6
55°	28.2	27.1	27.1	27.1	26.0	26.0	26.0	26.0
57.5°	18.1	18.1	18.1	18.1	18.1	18.1	16.9	16.9
60°	13.5	13.5	13.5	13.5	12.4	13.5	12.4	12.4
62.5°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
65°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
67.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
70°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
72.5°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
75°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)