

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: P274327

Luminaire Tested: **LD4B20DE010W2N2765 EU4B1020W2N902765 4LBSW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274327  
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: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBSW0H  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, SINGLE WALLWASH WITH HAZE FINISH  
Light Source: W2N 2700K-6500K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1458.1 lumens  
Efficiency: N/A  
Efficacy: 52.1 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

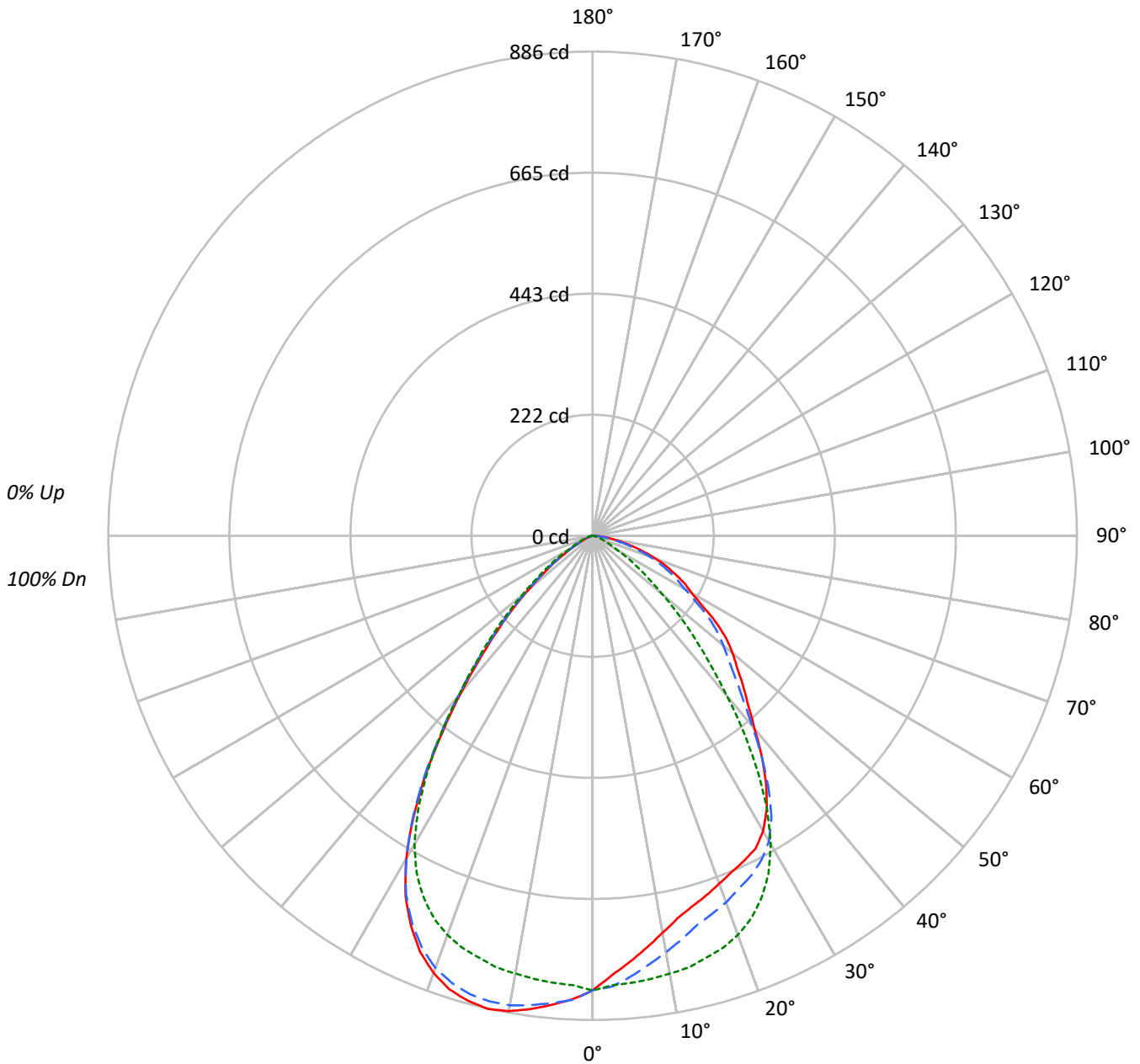
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	81066	81066	81066
5°	76552	80329	84310
10°	72984	80515	87413
15°	70839	80687	88899
20°	70265	80606	88270
25°	70542	78617	84607
30°	70211	73339	76726
35°	65805	62616	63259
40°	58637	48548	47454
45°	53628	36193	33974
50°	50701	25351	22909
55°	46624	17127	14392
60°	40737	10038	7933
65°	38557	6434	4451
70°	35134	4588	2736
75°	29070	3238	2033
80°	22842	1796	1179
85°	20351	1230	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.6	5.4
10°-20°	225.5	15.5
20°-30°	334.2	22.9
30°-40°	334.7	23.0
40°-50°	233.9	16.0
50°-60°	139.2	9.5
60°-70°	72.6	5.0
70°-80°	32.3	2.2
80°-90°	7.0	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°	638.3	43.8
0°-40°	973.0	66.7
0°-60°	1346.1	92.3
0°-90°	1458.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1458.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	832	832	832	832	832	
5°	782	809	821	859	862	73
15°	702	738	800	868	881	199
25°	656	686	731	782	787	302
35°	553	560	526	536	532	343
45°	389	370	263	254	246	302
55°	274	257	101	88	85	244
65°	167	153	28	20	19	165
75°	77	68	9	5	5	83
85°	18	14	1	1	0	20
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°	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8
2.5°	805.0	814.7	805.0	808.3	821.1	809.3	815.8	815.8	812.5	820.0	825.4
5°	782.5	792.2	782.5	786.8	800.7	789.0	796.5	794.3	795.4	801.8	809.3
7.5°	760.0	767.5	758.9	764.3	777.2	767.5	773.9	773.9	775.0	784.7	791.1
10°	737.5	743.9	737.5	741.8	755.7	747.2	751.4	752.5	755.7	764.3	773.9
12.5°	717.1	722.5	716.1	722.5	734.3	725.7	731.1	732.1	735.4	745.0	755.7
15°	702.1	707.5	701.1	706.4	717.1	710.7	715.0	717.1	719.3	727.9	737.5
17.5°	690.3	694.6	689.3	695.7	704.3	696.8	703.2	703.2	706.4	715.0	725.7
20°	677.5	681.8	677.5	682.8	692.5	686.0	691.4	691.4	694.6	704.3	713.9
22.5°	665.7	667.8	665.7	670.0	679.6	674.3	677.5	678.5	681.8	690.3	698.9
25°	656.0	660.3	658.2	662.5	668.9	663.5	666.8	667.8	671.0	678.5	686.0
27.5°	645.3	647.5	645.3	650.7	656.0	651.7	655.0	653.9	656.0	662.5	668.9
30°	623.9	626.0	626.0	629.2	633.5	631.4	634.6	631.4	633.5	638.9	645.3
32.5°	592.8	593.9	594.9	598.1	601.4	598.1	600.3	600.3	600.3	604.6	608.9
35°	553.1	555.3	554.2	556.3	559.6	558.5	558.5	557.4	555.3	557.4	559.6
37.5°	508.1	504.9	504.9	508.1	510.2	506.0	508.1	506.0	506.0	507.0	507.0
40°	460.9	457.7	460.9	462.0	463.1	460.9	459.9	457.7	454.5	455.6	453.4
42.5°	421.3	419.1	420.2	420.2	421.3	419.1	420.2	415.9	412.7	410.6	407.3
45°	389.1	385.9	389.1	387.0	387.0	385.9	384.8	382.7	378.4	375.2	369.8
47.5°	359.1	359.1	360.2	360.2	360.2	358.0	358.0	353.7	349.5	345.2	337.7
50°	334.4	332.3	336.6	336.6	333.4	332.3	333.4	328.0	324.8	319.4	311.9
52.5°	307.7	307.7	308.7	308.7	307.7	305.5	306.6	302.3	299.1	293.7	286.2
55°	274.4	272.3	275.5	275.5	274.4	273.3	274.4	271.2	268.0	263.7	257.3
57.5°	236.9	235.8	238.0	239.0	236.9	236.9	238.0	234.8	233.7	229.4	223.0
60°	209.0	208.0	210.1	211.2	209.0	209.0	209.0	204.7	202.6	198.3	194.0
62.5°	189.7	188.7	190.8	189.7	188.7	187.6	188.7	184.4	182.2	177.9	173.7
65°	167.2	168.3	169.4	169.4	168.3	167.2	167.2	165.1	162.9	158.6	153.3
67.5°	145.8	145.8	146.9	147.9	146.9	146.9	146.9	143.6	141.5	138.3	131.9
70°	123.3	122.2	125.4	125.4	123.3	124.3	123.3	122.2	120.1	115.8	110.4
72.5°	99.7	99.7	100.8	100.8	99.7	99.7	99.7	98.6	95.4	93.3	87.9
75°	77.2	77.2	78.3	79.3	77.2	77.2	78.3	76.1	74.0	70.7	67.5
77.5°	57.9	56.8	57.9	57.9	56.8	56.8	56.8	55.7	54.7	51.5	48.2
80°	40.7	39.7	40.7	40.7	40.7	39.7	39.7	38.6	38.6	36.4	33.2
82.5°	27.9	26.8	27.9	27.9	27.9	26.8	26.8	26.8	25.7	24.7	22.5
85°	18.2	17.2	17.2	18.2	17.2	17.2	17.2	17.2	16.1	15.0	13.9
87.5°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	7.5	7.5	7.5	6.4
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°	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8
2.5°	821.1	819.0	825.4	823.3	824.3	819.0	827.5	823.3	828.6	823.3	834.0
5°	807.2	805.0	814.7	813.6	814.7	810.4	820.0	819.0	825.4	821.1	832.9
7.5°	792.2	790.0	800.7	801.8	804.0	799.7	812.5	812.5	819.0	817.9	830.8
10°	775.0	776.1	786.8	789.0	793.2	791.1	802.9	806.1	814.7	813.6	829.7
12.5°	758.9	758.9	772.9	777.2	780.4	779.3	793.2	797.5	807.2	809.3	824.3
15°	742.9	743.9	756.8	763.2	767.5	766.4	781.5	786.8	798.6	799.7	817.9
17.5°	730.0	728.9	742.9	748.2	754.7	753.6	769.7	776.1	787.9	791.1	808.3
20°	719.3	718.2	731.1	737.5	741.8	740.7	756.8	764.3	775.0	777.2	794.3
22.5°	706.4	704.3	717.1	722.5	726.8	725.7	739.6	745.0	755.7	757.9	773.9
25°	691.4	689.3	701.1	704.3	707.5	705.3	717.1	720.4	728.9	731.1	747.2
27.5°	674.3	668.9	678.5	678.5	680.7	677.5	686.0	689.3	696.8	696.8	711.8
30°	647.5	640.0	645.3	644.2	645.3	641.0	646.4	647.5	652.8	651.7	662.5
32.5°	609.9	599.2	602.4	599.2	596.0	589.6	596.0	593.9	598.1	593.9	603.5
35°	558.5	547.8	546.7	542.4	539.2	533.8	533.8	528.5	529.5	526.3	532.8
37.5°	502.7	488.8	486.7	478.1	472.7	466.3	466.3	462.0	456.7	454.5	459.9
40°	448.1	433.1	427.7	413.8	408.4	402.0	397.7	392.3	390.2	381.6	385.9
42.5°	400.9	384.8	373.0	358.0	352.7	343.0	336.6	330.2	326.9	317.3	321.6
45°	361.2	342.0	329.1	309.8	302.3	291.6	281.9	274.4	266.9	262.6	260.5
47.5°	328.0	307.7	290.5	269.1	257.3	247.6	234.8	227.3	217.6	212.2	209.0
50°	300.1	277.6	258.3	233.7	221.9	211.2	196.2	184.4	175.8	167.2	165.1
52.5°	275.5	251.9	230.5	202.6	188.7	175.8	159.7	146.9	139.4	129.7	128.6
55°	246.5	226.2	202.6	173.7	159.7	146.9	129.7	116.8	107.2	100.8	98.6
57.5°	215.5	196.2	173.7	144.7	130.8	116.8	100.8	89.0	80.4	75.0	74.0
60°	186.5	168.3	146.9	117.9	104.0	92.2	75.0	63.2	55.7	51.5	49.3
62.5°	165.1	147.9	127.6	100.8	87.9	76.1	60.0	49.3	42.9	38.6	36.4
65°	144.7	127.6	109.3	84.7	74.0	63.2	48.2	38.6	32.2	27.9	25.7
67.5°	123.3	108.3	91.1	70.7	60.0	51.5	38.6	30.0	24.7	21.4	19.3
70°	101.8	87.9	74.0	56.8	49.3	40.7	30.0	23.6	18.2	16.1	13.9
72.5°	80.4	69.7	57.9	44.0	37.5	32.2	23.6	17.2	13.9	11.8	9.6
75°	60.0	52.5	42.9	33.2	27.9	23.6	17.2	12.9	10.7	8.6	7.5
77.5°	42.9	36.4	30.0	22.5	20.4	17.2	11.8	9.6	7.5	5.4	4.3
80°	28.9	25.7	20.4	16.1	12.9	11.8	8.6	6.4	4.3	3.2	3.2
82.5°	19.3	16.1	12.9	9.6	8.6	7.5	5.4	4.3	3.2	2.1	2.1
85°	11.8	9.6	7.5	5.4	5.4	4.3	3.2	2.1	1.1	1.1	1.1
87.5°	5.4	4.3	3.2	2.1	2.1	1.1	1.1	1.1	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°	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8
2.5°	842.6	836.1	831.8	837.2	839.3	836.1	839.3	844.7	850.1	851.1	836.1
5°	843.6	837.2	835.1	841.5	842.6	841.5	844.7	852.2	858.6	860.8	845.8
7.5°	843.6	839.3	838.3	845.8	846.8	845.8	851.1	859.7	866.1	870.4	855.4
10°	841.5	839.3	840.4	846.8	849.0	849.0	856.5	866.1	872.6	876.9	861.8
12.5°	838.3	838.3	838.3	845.8	847.9	849.0	855.4	868.3	872.6	879.0	864.0
15°	832.9	832.9	832.9	840.4	843.6	843.6	851.1	862.9	868.3	874.7	859.7
17.5°	823.3	823.3	824.3	830.8	834.0	834.0	841.5	854.3	857.6	865.1	850.1
20°	809.3	809.3	810.4	816.8	820.0	817.9	827.5	838.3	841.5	847.9	832.9
22.5°	789.0	789.0	789.0	795.4	797.5	796.5	806.1	815.8	815.8	824.3	808.3
25°	758.9	761.1	758.9	765.4	767.5	766.4	775.0	783.6	781.5	791.1	775.0
27.5°	722.5	721.4	721.4	726.8	726.8	725.7	732.1	741.8	739.6	746.1	731.1
30°	672.1	675.3	670.0	677.5	674.3	672.1	676.4	685.0	681.8	687.1	675.3
32.5°	614.2	609.9	609.9	609.9	612.1	606.7	611.0	615.3	612.1	617.4	604.6
35°	538.1	539.2	536.0	537.0	538.1	531.7	536.0	540.3	536.0	539.2	527.4
37.5°	462.0	463.1	455.6	459.9	455.6	453.4	457.7	459.9	455.6	458.8	445.9
40°	385.9	383.8	382.7	382.7	383.8	378.4	381.6	384.8	381.6	383.8	372.0
42.5°	319.4	318.4	316.2	317.3	314.1	313.0	314.1	317.3	314.1	316.2	307.7
45°	261.6	259.4	256.2	257.3	257.3	251.9	255.1	257.3	254.1	255.1	247.6
47.5°	208.0	204.7	204.7	203.7	203.7	201.5	204.7	203.7	200.5	202.6	195.1
50°	161.9	159.7	159.7	159.7	159.7	156.5	157.6	159.7	156.5	156.5	152.2
52.5°	126.5	123.3	121.1	121.1	121.1	120.1	120.1	121.1	117.9	117.9	116.8
55°	95.4	94.3	91.1	91.1	91.1	87.9	89.0	89.0	87.9	87.9	84.7
57.5°	70.7	67.5	65.4	65.4	63.2	63.2	62.2	63.2	61.1	61.1	59.0
60°	47.2	45.0	44.0	42.9	42.9	41.8	42.9	41.8	41.8	40.7	39.7
62.5°	34.3	32.2	30.0	30.0	30.0	28.9	28.9	28.9	28.9	28.9	27.9
65°	24.7	22.5	22.5	21.4	21.4	20.4	20.4	20.4	20.4	20.4	19.3
67.5°	17.2	16.1	15.0	15.0	15.0	15.0	15.0	15.0	13.9	13.9	13.9
70°	12.9	11.8	10.7	10.7	10.7	10.7	10.7	9.6	10.7	10.7	9.6
72.5°	8.6	8.6	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
75°	6.4	6.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
77.5°	4.3	4.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
80°	3.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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°	831.8	831.8	831.8	831.8	831.8	831.8	831.8	831.8
2.5°	852.2	851.1	849.0	852.2	843.6	840.4	839.3	849.0
5°	864.0	861.8	861.8	865.1	855.4	853.3	851.1	861.8
7.5°	874.7	872.6	872.6	875.8	867.2	865.1	862.9	873.6
10°	881.1	881.1	881.1	883.3	875.8	873.6	872.6	883.3
12.5°	884.4	884.4	883.3	887.6	877.9	877.9	875.8	886.5
15°	880.1	880.1	880.1	883.3	874.7	872.6	872.6	881.1
17.5°	869.4	869.4	868.3	871.5	861.8	861.8	860.8	870.4
20°	853.3	853.3	851.1	855.4	845.8	842.6	841.5	851.1
22.5°	827.5	826.5	825.4	827.5	819.0	816.8	815.8	824.3
25°	794.3	793.2	791.1	793.2	783.6	780.4	780.4	786.8
27.5°	747.2	747.2	743.9	747.2	736.4	735.4	734.3	741.8
30°	689.3	685.0	682.8	687.1	676.4	676.4	674.3	681.8
32.5°	617.4	613.2	612.1	614.2	604.6	601.4	605.7	609.9
35°	534.9	536.0	531.7	531.7	523.1	524.2	525.3	531.7
37.5°	455.6	453.4	452.4	453.4	447.0	444.9	442.7	449.1
40°	381.6	376.3	375.2	375.2	369.8	368.8	369.8	373.0
42.5°	311.9	310.9	306.6	308.7	303.4	305.5	304.4	304.4
45°	251.9	253.0	248.7	251.9	247.6	244.4	244.4	246.5
47.5°	199.4	199.4	198.3	198.3	195.1	196.2	194.0	197.2
50°	154.4	154.4	152.2	153.3	151.1	151.1	150.1	151.1
52.5°	117.9	116.8	116.8	115.8	113.6	114.7	115.8	113.6
55°	85.8	86.8	84.7	85.8	83.6	84.7	83.6	84.7
57.5°	59.0	60.0	57.9	60.0	57.9	59.0	57.9	57.9
60°	40.7	40.7	39.7	40.7	39.7	39.7	38.6	40.7
62.5°	27.9	27.9	27.9	27.9	27.9	26.8	27.9	27.9
65°	20.4	19.3	19.3	19.3	19.3	19.3	19.3	19.3
67.5°	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
70°	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
72.5°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
75°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
77.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.1	1.1	1.1	0.0	1.1	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)