

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: P274324

Luminaire Tested: **LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P274324
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1808-906-2)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0LI
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, SINGLE WALLWASH WITH SPECULAR FINISH
Light Source: W2N 2000K-5000K CCT TUNING RANGE
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1413.4 lumens
Efficiency: N/A
Efficacy: 50.5 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.29 / 1.17
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

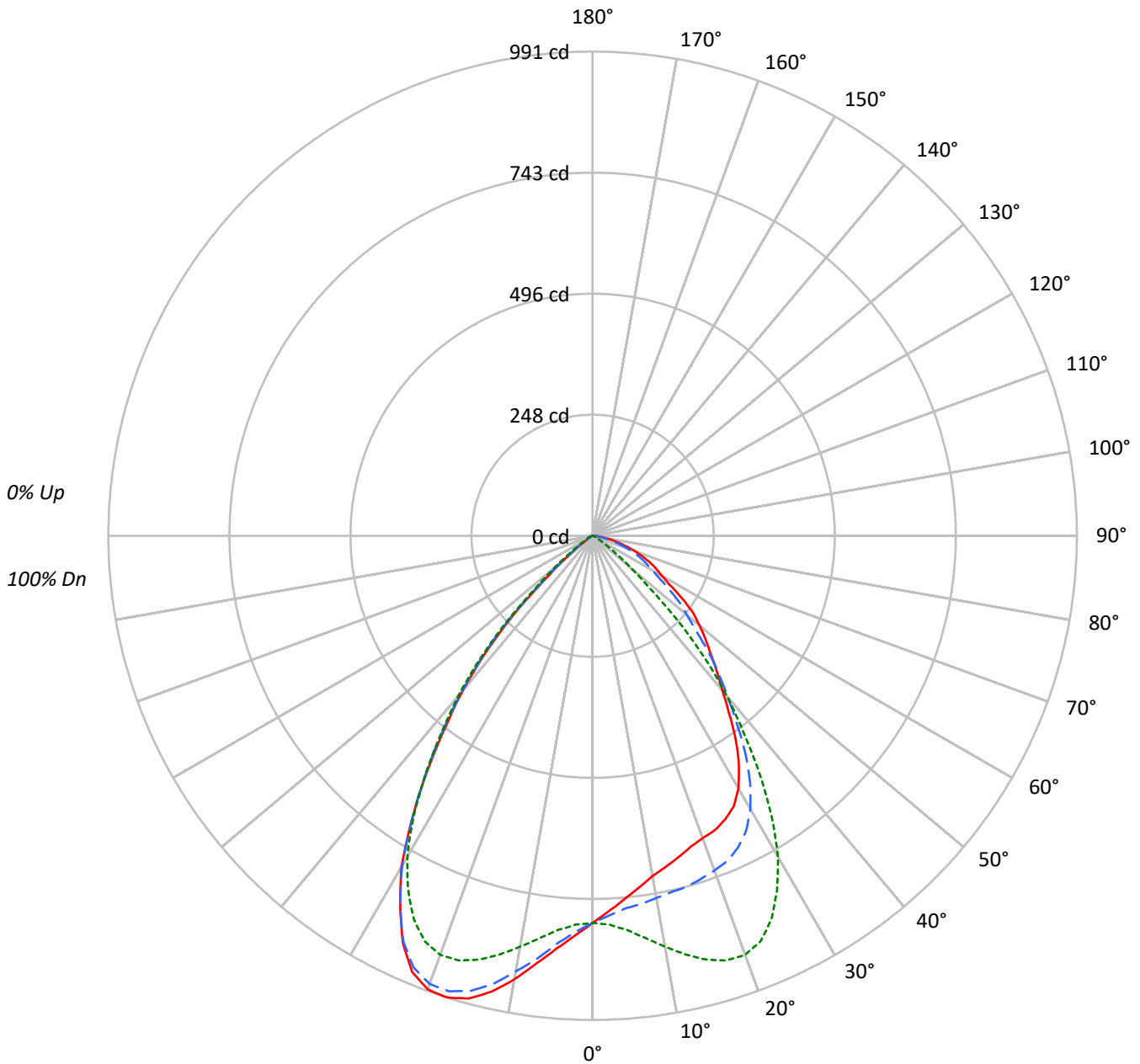
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	103	109	106	104	101	102	100	98	98	97	95	95	94	92	90					90			
2	105	99	94	89	102	97	92	88	94	90	86	91	87	85	88	85	83	81					81			
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73					73			
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65					65			
5	86	75	68	63	84	74	68	63	72	67	62	71	66	62	69	65	61	59					59			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54					54			
7	75	64	57	52	74	63	56	52	62	56	51	61	55	51	59	54	51	49					49			
8	71	59	52	47	69	59	52	47	58	51	47	56	51	47	55	50	47	45					45			
9	67	55	48	43	65	55	48	43	54	47	43	53	47	43	52	47	43	41					41			
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38					38			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	77216	77216	77216
5°	73050	79233	82980
10°	69966	84513	91213
15°	68670	90615	98929
20°	68295	94669	102447
25°	68918	93102	98791
30°	67161	85358	88002
35°	60855	71004	70480
40°	52556	54235	52556
45°	46999	34236	31604
50°	43241	15162	11144
55°	37959	6491	3245
60°	31810	2865	858
65°	29840	2375	669
70°	26386	1681	826
75°	20484	1092	565
80°	15659	842	842
85°	13195	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.5	5.5
10°-20°	242.4	17.1
20°-30°	370.9	26.2
30°-40°	354.8	25.1
40°-50°	211.9	15.0
50°-60°	85.8	6.1
60°-70°	45.5	3.2
70°-80°	20.3	1.4
80°-90°	4.3	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°	690.9	48.9
0°-40°	1045.7	74.0
0°-60°	1343.3	95.0
0°-90°	1413.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1413.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	792	792	792	792	792	
5°	747	766	810	838	848	70
15°	681	744	898	964	980	192
25°	641	704	866	916	919	294
35°	512	545	597	597	592	317
45°	341	334	248	240	229	266
55°	223	191	38	21	19	199
65°	129	109	10	3	3	127
75°	54	43	3	2	2	60
85°	12	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°	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3
2.5°	768.8	770.2	770.2	771.7	770.2	773.2	771.7	776.1	774.7	776.1	777.6
5°	746.7	746.7	746.7	749.7	749.7	752.6	752.6	755.5	760.0	762.9	765.8
7.5°	726.2	724.7	727.6	727.6	730.6	733.5	736.4	742.3	746.7	752.6	760.0
10°	707.0	707.0	710.0	712.9	714.4	718.8	721.7	727.6	733.5	743.8	752.6
12.5°	693.8	692.3	695.3	698.2	702.6	705.6	708.5	717.3	724.7	736.4	746.7
15°	680.6	680.6	683.5	686.5	690.9	695.3	698.2	708.5	717.3	730.6	743.8
17.5°	667.4	667.4	670.3	674.7	679.1	683.5	686.5	696.8	708.5	723.2	736.4
20°	658.5	657.1	661.5	664.4	670.3	676.2	679.1	689.4	699.7	714.4	729.1
22.5°	652.7	651.2	654.1	657.1	662.9	668.8	671.8	680.6	692.3	704.1	720.3
25°	640.9	640.9	643.8	646.8	652.7	657.1	660.0	668.8	679.1	690.9	704.1
27.5°	624.7	623.3	626.2	627.7	633.5	638.0	640.9	648.2	658.5	665.9	680.6
30°	596.8	596.8	596.8	599.7	602.7	608.6	610.0	617.4	624.7	635.0	645.3
32.5°	557.1	558.6	558.6	561.5	564.5	568.9	570.3	576.2	583.6	589.4	599.7
35°	511.5	508.6	510.1	511.5	515.9	518.9	518.9	526.2	527.7	535.1	545.3
37.5°	458.6	460.1	460.1	461.6	466.0	466.0	470.4	471.9	476.3	480.7	485.1
40°	413.1	414.5	416.0	416.0	418.9	418.9	420.4	423.3	424.8	429.2	429.2
42.5°	376.3	373.4	374.8	373.4	376.3	377.8	379.2	379.2	380.7	380.7	380.7
45°	341.0	341.0	341.0	341.0	341.0	341.0	342.5	344.0	341.0	338.1	333.7
47.5°	313.1	313.1	311.6	311.6	310.2	310.2	308.7	304.3	299.9	294.0	285.2
50°	285.2	285.2	285.2	282.2	282.2	279.3	279.3	274.9	269.0	261.6	251.4
52.5°	258.7	257.2	258.7	255.8	252.8	252.8	251.4	247.0	241.1	232.3	223.4
55°	223.4	223.4	222.0	219.0	217.6	217.6	217.6	213.1	207.3	201.4	191.1
57.5°	186.7	186.7	186.7	183.7	182.3	182.3	180.8	179.3	174.9	169.0	161.7
60°	163.2	163.2	163.2	161.7	158.8	158.8	157.3	154.3	151.4	145.5	139.6
62.5°	147.0	145.5	145.5	145.5	142.6	142.6	142.6	139.6	135.2	130.8	124.9
65°	129.4	129.4	129.4	127.9	126.4	126.4	124.9	123.5	119.1	116.1	108.8
67.5°	110.2	111.7	110.2	108.8	107.3	108.8	107.3	104.4	101.4	98.5	92.6
70°	92.6	91.1	91.1	89.7	89.7	88.2	88.2	85.3	82.3	79.4	75.0
72.5°	72.0	72.0	72.0	70.6	69.1	69.1	67.6	67.6	64.7	60.3	57.3
75°	54.4	54.4	54.4	52.9	52.9	51.4	50.0	50.0	48.5	45.6	42.6
77.5°	39.7	39.7	39.7	38.2	38.2	36.7	36.7	35.3	33.8	32.3	29.4
80°	27.9	27.9	27.9	26.5	26.5	26.5	25.0	25.0	23.5	22.0	19.1
82.5°	19.1	19.1	19.1	19.1	17.6	17.6	17.6	16.2	16.2	14.7	13.2
85°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	10.3	10.3	8.8	8.8
87.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	4.4	4.4
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°	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3
2.5°	777.6	782.0	782.0	784.9	786.4	787.9	787.9	792.3	793.8	796.7	796.7
5°	770.2	774.7	780.5	786.4	786.4	790.8	793.8	799.6	804.1	809.9	814.3
7.5°	765.8	773.2	782.0	789.4	793.8	798.2	805.5	812.9	820.2	830.5	836.4
10°	762.9	773.2	784.9	796.7	802.6	808.5	820.2	827.6	840.8	854.0	861.4
12.5°	760.0	773.2	789.4	804.1	811.4	820.2	836.4	846.7	862.9	877.6	889.3
15°	758.5	773.2	792.3	811.4	820.2	829.0	849.6	864.3	880.5	898.1	912.8
17.5°	752.6	773.2	793.8	817.3	826.1	836.4	857.0	874.6	892.3	911.4	924.6
20°	748.2	767.3	792.3	815.8	827.6	836.4	859.9	877.6	895.2	912.8	927.5
22.5°	739.4	757.0	782.0	805.5	815.8	824.6	846.7	865.8	880.5	898.1	908.4
25°	723.2	742.3	762.9	784.9	793.8	801.1	818.8	836.4	849.6	865.8	877.6
27.5°	696.8	712.9	733.5	749.7	760.0	762.9	777.6	793.8	804.1	817.3	824.6
30°	658.5	671.8	686.5	702.6	711.5	711.5	724.7	737.9	745.3	758.5	762.9
32.5°	608.6	618.8	632.1	640.9	645.3	648.2	657.1	665.9	673.2	682.1	685.0
35°	551.2	561.5	565.9	574.7	573.3	576.2	582.1	586.5	593.9	596.8	599.7
37.5°	488.0	493.9	498.3	498.3	501.2	496.8	501.2	501.2	505.7	507.1	514.5
40°	429.2	430.7	427.8	427.8	427.8	423.3	423.3	421.9	421.9	426.3	423.3
42.5°	377.8	371.9	364.5	358.7	354.3	348.4	344.0	342.5	338.1	341.0	338.1
45°	327.8	316.0	302.8	288.1	280.8	273.4	263.1	255.8	251.4	248.4	248.4
47.5°	274.9	258.7	239.6	217.6	205.8	195.5	182.3	167.6	161.7	155.8	149.9
50°	236.7	219.0	197.0	172.0	160.2	148.5	129.4	116.1	105.8	100.0	95.5
52.5°	208.7	188.2	166.1	139.6	126.4	114.7	94.1	80.8	69.1	61.7	57.3
55°	179.3	161.7	139.6	114.7	101.4	88.2	69.1	54.4	44.1	38.2	33.8
57.5°	151.4	136.7	116.1	91.1	77.9	67.6	50.0	36.7	27.9	22.0	19.1
60°	129.4	116.1	98.5	76.4	64.7	54.4	38.2	27.9	19.1	14.7	11.8
62.5°	116.1	102.9	85.3	66.1	57.3	48.5	32.3	23.5	16.2	11.8	8.8
65°	101.4	88.2	73.5	55.9	48.5	41.2	27.9	19.1	13.2	10.3	7.3
67.5°	83.8	73.5	60.3	47.0	39.7	33.8	23.5	16.2	10.3	8.8	5.9
70°	67.6	58.8	48.5	36.7	30.9	26.5	17.6	11.8	8.8	5.9	4.4
72.5°	51.4	44.1	36.7	27.9	23.5	20.6	13.2	8.8	7.3	4.4	2.9
75°	38.2	32.3	25.0	19.1	17.6	14.7	10.3	7.3	4.4	2.9	2.9
77.5°	26.5	22.0	17.6	13.2	11.8	10.3	7.3	4.4	2.9	2.9	1.5
80°	17.6	14.7	11.8	8.8	7.3	7.3	4.4	2.9	2.9	1.5	1.5
82.5°	11.8	8.8	7.3	5.9	4.4	4.4	2.9	1.5	1.5	1.5	1.5
85°	7.3	5.9	4.4	2.9	2.9	1.5	1.5	1.5	0.0	0.0	0.0
87.5°	4.4	2.9	1.5	1.5	1.5	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3
2.5°	799.6	801.1	804.1	804.1	805.5	805.5	808.5	811.4	811.4	812.9	814.3
5°	815.8	821.7	823.2	824.6	829.0	829.0	832.0	836.4	837.9	839.3	839.3
7.5°	842.3	846.7	851.1	854.0	857.0	859.9	865.8	870.2	873.1	873.1	874.6
10°	868.7	876.1	884.9	887.8	890.8	893.7	901.1	902.5	905.5	907.0	909.9
12.5°	899.6	907.0	915.8	918.7	923.1	927.5	933.4	934.9	939.3	942.2	943.7
15°	923.1	931.9	940.8	943.7	948.1	952.5	958.4	959.9	964.3	965.8	970.2
17.5°	936.4	945.2	954.0	958.4	961.3	965.8	974.6	974.6	977.5	979.0	981.9
20°	934.9	946.6	955.5	958.4	962.8	967.2	973.1	974.6	976.0	979.0	980.5
22.5°	920.2	930.5	934.9	939.3	943.7	945.2	952.5	954.0	956.9	956.9	959.9
25°	884.9	892.3	899.6	901.1	907.0	908.4	909.9	909.9	915.8	914.3	917.2
27.5°	833.5	839.3	843.7	845.2	848.2	848.2	851.1	849.6	852.6	851.1	855.5
30°	767.3	773.2	776.1	777.6	777.6	777.6	779.1	777.6	779.1	774.7	774.7
32.5°	687.9	693.8	692.3	693.8	696.8	693.8	693.8	686.5	687.9	689.4	689.4
35°	601.2	602.7	610.0	607.1	605.6	601.2	601.2	599.7	596.8	593.9	592.4
37.5°	513.0	515.9	514.5	511.5	511.5	513.0	508.6	508.6	504.2	502.7	502.7
40°	424.8	426.3	420.4	421.9	423.3	421.9	420.4	420.4	414.5	413.1	413.1
42.5°	338.1	333.7	335.1	336.6	333.7	335.1	336.6	333.7	330.7	327.8	329.3
45°	248.4	241.1	241.1	239.6	241.1	241.1	242.5	241.1	239.6	233.7	236.7
47.5°	149.9	145.5	142.6	142.6	142.6	141.1	138.2	141.1	139.6	136.7	138.2
50°	92.6	86.7	86.7	83.8	82.3	83.8	80.8	79.4	77.9	75.0	76.4
52.5°	54.4	51.4	48.5	48.5	47.0	45.6	45.6	42.6	42.6	42.6	42.6
55°	29.4	26.5	23.5	22.0	22.0	20.6	20.6	20.6	20.6	19.1	19.1
57.5°	16.2	14.7	11.8	10.3	8.8	8.8	7.3	7.3	7.3	5.9	7.3
60°	8.8	7.3	5.9	5.9	4.4	4.4	4.4	4.4	4.4	4.4	4.4
62.5°	7.3	5.9	4.4	4.4	4.4	2.9	2.9	2.9	2.9	2.9	2.9
65°	5.9	4.4	4.4	4.4	2.9	2.9	2.9	2.9	2.9	2.9	2.9
67.5°	4.4	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
70°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
72.5°	2.9	2.9	1.5	2.9	1.5	1.5	1.5	1.5	2.9	1.5	1.5
75°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
77.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	1.5	0.0	0.0	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	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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CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	792.3	792.3	792.3	792.3	792.3	792.3	792.3	792.3
2.5°	812.9	815.8	817.3	815.8	817.3	817.3	817.3	818.8
5°	843.7	845.2	846.7	843.7	846.7	846.7	846.7	848.2
7.5°	876.1	879.0	880.5	880.5	880.5	882.0	882.0	883.4
10°	914.3	914.3	915.8	915.8	917.2	918.7	915.8	921.7
12.5°	946.6	949.6	949.6	949.6	951.1	951.1	951.1	955.5
15°	971.6	973.1	974.6	974.6	974.6	979.0	977.5	980.5
17.5°	984.9	987.8	987.8	986.3	989.3	990.7	989.3	990.7
20°	981.9	984.9	983.4	983.4	984.9	986.3	984.9	987.8
22.5°	961.3	961.3	961.3	958.4	962.8	962.8	959.9	965.8
25°	915.8	918.7	917.2	914.3	914.3	915.8	912.8	918.7
27.5°	855.5	855.5	852.6	852.6	849.6	851.1	852.6	852.6
30°	777.6	776.1	776.1	773.2	776.1	774.7	774.7	782.0
32.5°	685.0	686.5	685.0	683.5	686.5	686.5	686.5	687.9
35°	596.8	595.3	592.4	590.9	593.9	589.4	590.9	592.4
37.5°	501.2	498.3	498.3	495.4	498.3	495.4	493.9	495.4
40°	413.1	411.6	411.6	410.1	410.1	411.6	408.6	413.1
42.5°	326.3	323.4	324.9	324.9	321.9	321.9	321.9	323.4
45°	238.1	235.2	236.7	235.2	232.3	230.8	230.8	229.3
47.5°	135.2	135.2	132.3	135.2	135.2	133.8	130.8	127.9
50°	76.4	76.4	75.0	75.0	75.0	73.5	73.5	73.5
52.5°	41.2	41.2	41.2	41.2	39.7	41.2	41.2	41.2
55°	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
57.5°	5.9	7.3	7.3	5.9	7.3	5.9	7.3	5.9
60°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
62.5°	4.4	2.9	4.4	4.4	2.9	4.4	4.4	4.4
65°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
67.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
70°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
72.5°	2.9	1.5	2.9	2.9	2.9	2.9	2.9	1.5
75°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
77.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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)