

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: P274328

Luminaire Tested: **LD4B10DE010W2N2050 EU4B1020W2N902050 4LBSW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274328  
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: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBSW0H  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, SINGLE WALLWASH WITH HAZE FINISH  
Light Source: W2N 2000K-5000K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 762.7 lumens  
Efficiency: N/A  
Efficacy: 54.5 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

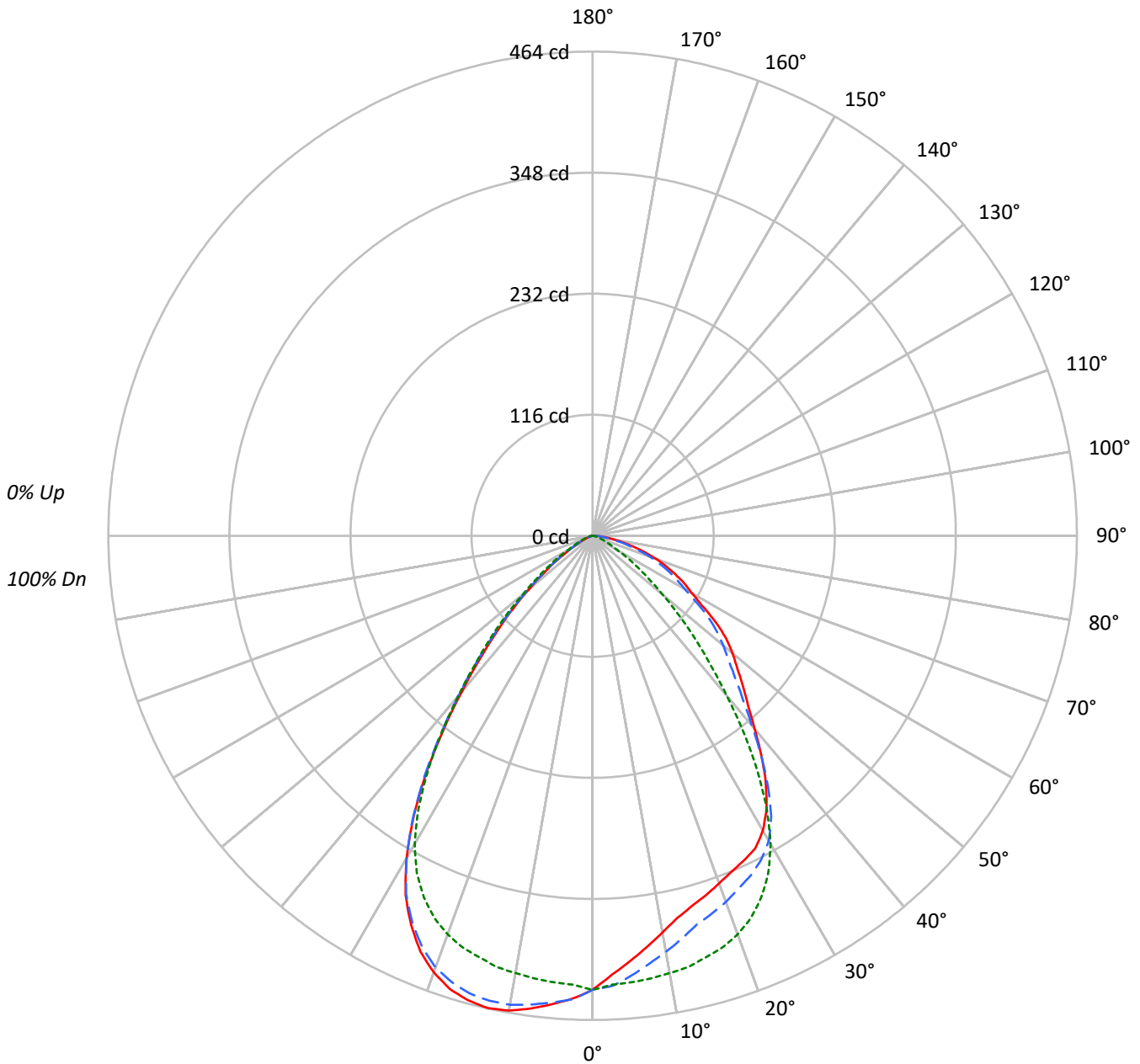
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89					89			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79					79			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70					70			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62					62			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56					56			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50					50			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46					46			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42					42			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38					38			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35					35			

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

	0°	90°	180°
0°	42404	42404	42404
5°	40042	42018	44102
10°	38179	42118	45720
15°	37059	42205	46503
20°	36756	42159	46173
25°	36905	41121	44261
30°	36720	38363	40130
35°	34419	32754	33087
40°	30673	25394	24821
45°	28048	18937	17780
50°	26518	13267	11993
55°	24383	8954	7527
60°	21304	5243	4152
65°	20178	3367	2329
70°	18379	2394	1425
75°	15213	1694	1054
80°	11954	954	617
85°	10623	671	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.1	5.4
10°-20°	117.9	15.5
20°-30°	174.8	22.9
30°-40°	175.1	23.0
40°-50°	122.4	16.0
50°-60°	72.8	9.5
60°-70°	38.0	5.0
70°-80°	16.9	2.2
80°-90°	3.7	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°	333.9	43.8
0°-40°	509.0	66.7
0°-60°	704.1	92.3
0°-90°	762.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	762.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	435	435	435	435	435	
5°	409	423	430	449	451	38
15°	367	386	418	454	461	104
25°	343	359	382	409	412	158
35°	289	293	275	280	278	179
45°	204	193	137	133	129	158
55°	144	135	53	46	44	127
65°	88	80	15	11	10	87
75°	40	35	4	3	3	44
85°	10	7	1	1	0	11
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°	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1
2.5°	421.1	426.1	421.1	422.8	429.5	423.3	426.7	426.7	425.0	429.0	431.8
5°	409.3	414.4	409.3	411.6	418.9	412.7	416.6	415.5	416.1	419.4	423.3
7.5°	397.6	401.5	397.0	399.8	406.5	401.5	404.8	404.8	405.4	410.4	413.8
10°	385.8	389.1	385.8	388.0	395.3	390.8	393.1	393.6	395.3	399.8	404.8
12.5°	375.1	377.9	374.6	377.9	384.1	379.6	382.4	383.0	384.7	389.7	395.3
15°	367.3	370.1	366.7	369.5	375.1	371.8	374.0	375.1	376.2	380.7	385.8
17.5°	361.1	363.3	360.5	363.9	368.4	364.5	367.8	367.8	369.5	374.0	379.6
20°	354.4	356.6	354.4	357.2	362.2	358.9	361.7	361.7	363.3	368.4	373.4
22.5°	348.2	349.3	348.2	350.5	355.5	352.7	354.4	354.9	356.6	361.1	365.6
25°	343.2	345.4	344.3	346.5	349.9	347.1	348.8	349.3	351.0	354.9	358.9
27.5°	337.6	338.7	337.6	340.4	343.2	340.9	342.6	342.0	343.2	346.5	349.9
30°	326.3	327.5	327.5	329.1	331.4	330.3	331.9	330.3	331.4	334.2	337.6
32.5°	310.1	310.6	311.2	312.9	314.6	312.9	314.0	314.0	314.0	316.2	318.5
35°	289.3	290.5	289.9	291.0	292.7	292.1	292.1	291.6	290.5	291.6	292.7
37.5°	265.8	264.1	264.1	265.8	266.9	264.7	265.8	264.7	264.7	265.2	265.2
40°	241.1	239.4	241.1	241.7	242.2	241.1	240.5	239.4	237.7	238.3	237.2
42.5°	220.4	219.2	219.8	219.8	220.4	219.2	219.8	217.6	215.9	214.8	213.1
45°	203.5	201.9	203.5	202.4	202.4	201.9	201.3	200.2	197.9	196.3	193.4
47.5°	187.8	187.8	188.4	188.4	188.4	187.3	187.3	185.0	182.8	180.6	176.6
50°	174.9	173.8	176.1	176.1	174.4	173.8	174.4	171.6	169.9	167.1	163.2
52.5°	160.9	160.9	161.5	161.5	160.9	159.8	160.4	158.1	156.4	153.6	149.7
55°	143.5	142.4	144.1	144.1	143.5	143.0	143.5	141.9	140.2	137.9	134.6
57.5°	123.9	123.4	124.5	125.0	123.9	123.9	124.5	122.8	122.2	120.0	116.6
60°	109.3	108.8	109.9	110.5	109.3	109.3	109.3	107.1	106.0	103.7	101.5
62.5°	99.2	98.7	99.8	99.2	98.7	98.1	98.7	96.4	95.3	93.1	90.8
65°	87.5	88.0	88.6	88.6	88.0	87.5	87.5	86.4	85.2	83.0	80.2
67.5°	76.3	76.3	76.8	77.4	76.8	76.8	76.8	75.1	74.0	72.3	69.0
70°	64.5	63.9	65.6	65.6	64.5	65.0	64.5	63.9	62.8	60.6	57.8
72.5°	52.1	52.1	52.7	52.7	52.1	52.1	52.1	51.6	49.9	48.8	46.0
75°	40.4	40.4	40.9	41.5	40.4	40.4	40.9	39.8	38.7	37.0	35.3
77.5°	30.3	29.7	30.3	30.3	29.7	29.7	29.7	29.2	28.6	26.9	25.2
80°	21.3	20.7	21.3	21.3	21.3	20.7	20.7	20.2	20.2	19.1	17.4
82.5°	14.6	14.0	14.6	14.6	14.6	14.0	14.0	14.0	13.5	12.9	11.8
85°	9.5	9.0	9.0	9.5	9.0	9.0	9.0	9.0	8.4	7.9	7.3
87.5°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.9	3.9	3.9	3.4
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°	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1
2.5°	429.5	428.4	431.8	430.6	431.2	428.4	432.9	430.6	433.4	430.6	436.2
5°	422.2	421.1	426.1	425.6	426.1	423.9	429.0	428.4	431.8	429.5	435.7
7.5°	414.4	413.3	418.9	419.4	420.5	418.3	425.0	425.0	428.4	427.8	434.6
10°	405.4	406.0	411.6	412.7	414.9	413.8	420.0	421.7	426.1	425.6	434.0
12.5°	397.0	397.0	404.3	406.5	408.2	407.6	414.9	417.2	422.2	423.3	431.2
15°	388.6	389.1	395.9	399.2	401.5	400.9	408.8	411.6	417.7	418.3	427.8
17.5°	381.9	381.3	388.6	391.4	394.7	394.2	402.6	406.0	412.1	413.8	422.8
20°	376.2	375.7	382.4	385.8	388.0	387.5	395.9	399.8	405.4	406.5	415.5
22.5°	369.5	368.4	375.1	377.9	380.2	379.6	386.9	389.7	395.3	396.4	404.8
25°	361.7	360.5	366.7	368.4	370.1	369.0	375.1	376.8	381.3	382.4	390.8
27.5°	352.7	349.9	354.9	354.9	356.1	354.4	358.9	360.5	364.5	364.5	372.3
30°	338.7	334.8	337.6	337.0	337.6	335.3	338.1	338.7	341.5	340.9	346.5
32.5°	319.1	313.4	315.1	313.4	311.8	308.4	311.8	310.6	312.9	310.6	315.7
35°	292.1	286.5	286.0	283.7	282.0	279.2	279.2	276.4	277.0	275.3	278.7
37.5°	263.0	255.7	254.6	250.1	247.3	243.9	243.9	241.7	238.9	237.7	240.5
40°	234.4	226.5	223.7	216.4	213.6	210.3	208.0	205.2	204.1	199.6	201.9
42.5°	209.7	201.3	195.1	187.3	184.5	179.4	176.1	172.7	171.0	166.0	168.2
45°	189.0	178.9	172.1	162.0	158.1	152.5	147.5	143.5	139.6	137.4	136.3
47.5°	171.6	160.9	152.0	140.7	134.6	129.5	122.8	118.9	113.8	111.0	109.3
50°	157.0	145.2	135.1	122.2	116.1	110.5	102.6	96.4	92.0	87.5	86.4
52.5°	144.1	131.8	120.6	106.0	98.7	92.0	83.5	76.8	72.9	67.8	67.3
55°	129.0	118.3	106.0	90.8	83.5	76.8	67.8	61.1	56.1	52.7	51.6
57.5°	112.7	102.6	90.8	75.7	68.4	61.1	52.7	46.5	42.1	39.3	38.7
60°	97.6	88.0	76.8	61.7	54.4	48.2	39.3	33.1	29.2	26.9	25.8
62.5°	86.4	77.4	66.7	52.7	46.0	39.8	31.4	25.8	22.4	20.2	19.1
65°	75.7	66.7	57.2	44.3	38.7	33.1	25.2	20.2	16.8	14.6	13.5
67.5°	64.5	56.6	47.7	37.0	31.4	26.9	20.2	15.7	12.9	11.2	10.1
70°	53.3	46.0	38.7	29.7	25.8	21.3	15.7	12.3	9.5	8.4	7.3
72.5°	42.1	36.4	30.3	23.0	19.6	16.8	12.3	9.0	7.3	6.2	5.0
75°	31.4	27.5	22.4	17.4	14.6	12.3	9.0	6.7	5.6	4.5	3.9
77.5°	22.4	19.1	15.7	11.8	10.7	9.0	6.2	5.0	3.9	2.8	2.2
80°	15.1	13.5	10.7	8.4	6.7	6.2	4.5	3.4	2.2	1.7	1.7
82.5°	10.1	8.4	6.7	5.0	4.5	3.9	2.8	2.2	1.7	1.1	1.1
85°	6.2	5.0	3.9	2.8	2.8	2.2	1.7	1.1	0.6	0.6	0.6
87.5°	2.8	2.2	1.7	1.1	1.1	0.6	0.6	0.6	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°	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1
2.5°	440.7	437.4	435.1	437.9	439.0	437.4	439.0	441.8	444.7	445.2	437.4
5°	441.3	437.9	436.8	440.2	440.7	440.2	441.8	445.8	449.1	450.3	442.4
7.5°	441.3	439.0	438.5	442.4	443.0	442.4	445.2	449.7	453.1	455.3	447.5
10°	440.2	439.0	439.6	443.0	444.1	444.1	448.0	453.1	456.4	458.7	450.8
12.5°	438.5	438.5	438.5	442.4	443.5	444.1	447.5	454.2	456.4	459.8	451.9
15°	435.7	435.7	435.7	439.6	441.3	441.3	445.2	451.4	454.2	457.5	449.7
17.5°	430.6	430.6	431.2	434.6	436.2	436.2	440.2	446.9	448.6	452.5	444.7
20°	423.3	423.3	423.9	427.3	429.0	427.8	432.9	438.5	440.2	443.5	435.7
22.5°	412.7	412.7	412.7	416.1	417.2	416.6	421.7	426.7	426.7	431.2	422.8
25°	397.0	398.1	397.0	400.4	401.5	400.9	405.4	409.9	408.8	413.8	405.4
27.5°	377.9	377.4	377.4	380.2	380.2	379.6	383.0	388.0	386.9	390.3	382.4
30°	351.6	353.3	350.5	354.4	352.7	351.6	353.8	358.3	356.6	359.4	353.3
32.5°	321.3	319.1	319.1	319.1	320.2	317.4	319.6	321.9	320.2	323.0	316.2
35°	281.5	282.0	280.4	280.9	281.5	278.1	280.4	282.6	280.4	282.0	275.9
37.5°	241.7	242.2	238.3	240.5	238.3	237.2	239.4	240.5	238.3	240.0	233.3
40°	201.9	200.7	200.2	200.2	200.7	197.9	199.6	201.3	199.6	200.7	194.6
42.5°	167.1	166.5	165.4	166.0	164.3	163.7	164.3	166.0	164.3	165.4	160.9
45°	136.8	135.7	134.0	134.6	134.6	131.8	133.5	134.6	132.9	133.5	129.5
47.5°	108.8	107.1	107.1	106.5	106.5	105.4	107.1	106.5	104.9	106.0	102.1
50°	84.7	83.5	83.5	83.5	83.5	81.9	82.4	83.5	81.9	81.9	79.6
52.5°	66.2	64.5	63.4	63.4	63.4	62.8	62.8	63.4	61.7	61.7	61.1
55°	49.9	49.3	47.7	47.7	47.7	46.0	46.5	46.5	46.0	46.0	44.3
57.5°	37.0	35.3	34.2	34.2	33.1	33.1	32.5	33.1	32.0	32.0	30.8
60°	24.7	23.6	23.0	22.4	22.4	21.9	22.4	21.9	21.9	21.3	20.7
62.5°	17.9	16.8	15.7	15.7	15.7	15.1	15.1	15.1	15.1	15.1	14.6
65°	12.9	11.8	11.8	11.2	11.2	10.7	10.7	10.7	10.7	10.7	10.1
67.5°	9.0	8.4	7.9	7.9	7.9	7.9	7.9	7.9	7.3	7.3	7.3
70°	6.7	6.2	5.6	5.6	5.6	5.6	5.6	5.0	5.6	5.6	5.0
72.5°	4.5	4.5	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	3.4	3.4	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
77.5°	2.2	2.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	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°	435.1	435.1	435.1	435.1	435.1	435.1	435.1	435.1
2.5°	445.8	445.2	444.1	445.8	441.3	439.6	439.0	444.1
5°	451.9	450.8	450.8	452.5	447.5	446.3	445.2	450.8
7.5°	457.5	456.4	456.4	458.1	453.6	452.5	451.4	457.0
10°	460.9	460.9	460.9	462.0	458.1	457.0	456.4	462.0
12.5°	462.6	462.6	462.0	464.3	459.2	459.2	458.1	463.7
15°	460.4	460.4	460.4	462.0	457.5	456.4	456.4	460.9
17.5°	454.7	454.7	454.2	455.9	450.8	450.8	450.3	455.3
20°	446.3	446.3	445.2	447.5	442.4	440.7	440.2	445.2
22.5°	432.9	432.3	431.8	432.9	428.4	427.3	426.7	431.2
25°	415.5	414.9	413.8	414.9	409.9	408.2	408.2	411.6
27.5°	390.8	390.8	389.1	390.8	385.2	384.7	384.1	388.0
30°	360.5	358.3	357.2	359.4	353.8	353.8	352.7	356.6
32.5°	323.0	320.7	320.2	321.3	316.2	314.6	316.8	319.1
35°	279.8	280.4	278.1	278.1	273.6	274.2	274.8	278.1
37.5°	238.3	237.2	236.6	237.2	233.8	232.7	231.6	234.9
40°	199.6	196.8	196.3	196.3	193.4	192.9	193.4	195.1
42.5°	163.2	162.6	160.4	161.5	158.7	159.8	159.2	159.2
45°	131.8	132.3	130.1	131.8	129.5	127.8	127.8	129.0
47.5°	104.3	104.3	103.7	103.7	102.1	102.6	101.5	103.2
50°	80.7	80.7	79.6	80.2	79.1	79.1	78.5	79.1
52.5°	61.7	61.1	61.1	60.6	59.4	60.0	60.6	59.4
55°	44.9	45.4	44.3	44.9	43.7	44.3	43.7	44.3
57.5°	30.8	31.4	30.3	31.4	30.3	30.8	30.3	30.3
60°	21.3	21.3	20.7	21.3	20.7	20.7	20.2	21.3
62.5°	14.6	14.6	14.6	14.6	14.6	14.0	14.6	14.6
65°	10.7	10.1	10.1	10.1	10.1	10.1	10.1	10.1
67.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
70°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
72.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.6	0.6	0.6	0.0	0.6	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)