

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: P274340

Luminaire Tested: **LD4B10DE010W2N2050 EU4B1020W2N902050 4LBDW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274340  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBDW0H  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, DOUBLE WALLWASH WITH HAZE FINISH  
Light Source: W2N 2000K-5000K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 742.0 lumens  
Efficiency: N/A  
Efficacy: 53.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

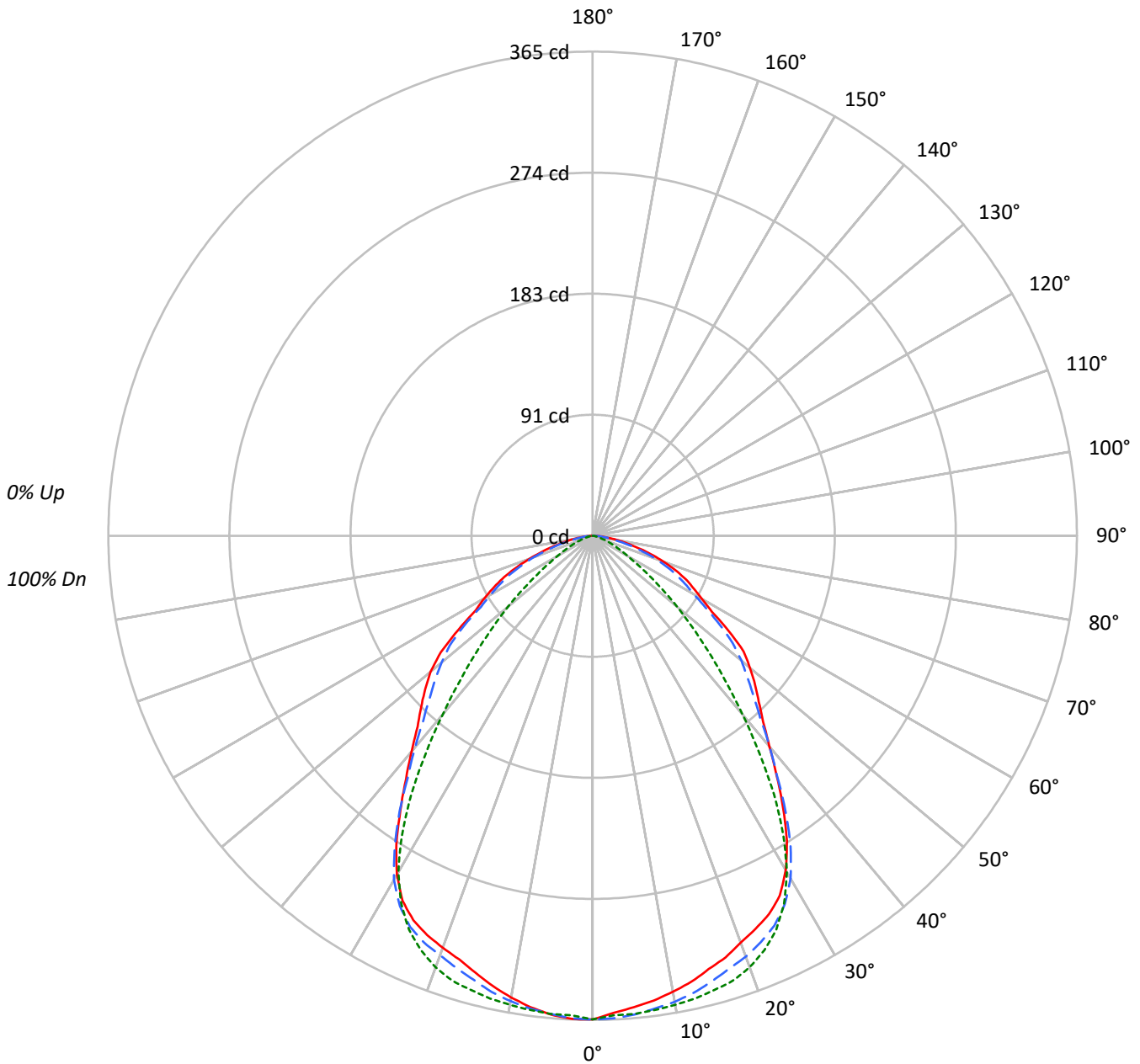
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88								
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76								
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66								
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58								
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51								
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46								
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41								
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37								
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34								
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31								

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

	0°	90°	180°
0°	35533	35533	35533
5°	34896	35395	35444
10°	34528	35527	34973
15°	34123	35768	34406
20°	33852	35895	34267
25°	33841	35228	34378
30°	32759	32950	33198
35°	29767	28363	30029
40°	26335	22340	26971
45°	24423	17008	25195
50°	23470	12584	24153
55°	21256	8666	20967
60°	18478	5906	18361
65°	17849	4266	16950
70°	16128	2878	14390
75°	13292	1883	11409
80°	10720	1235	8475
85°	8834	671	5591



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.4	4.6
10°-20°	98.4	13.3
20°-30°	148.7	20.0
30°-40°	155.6	21.0
40°-50°	126.0	17.0
50°-60°	91.7	12.4
60°-70°	56.5	7.6
70°-80°	25.5	3.4
80°-90°	5.2	0.7
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°	281.5	37.9
0°-40°	437.1	58.9
0°-60°	654.7	88.2
0°-90°	742.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	742.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	365	365	365	365	365	
5°	357	362	362	362	362	34
15°	338	348	354	347	341	96
25°	315	324	328	325	320	144
35°	250	254	238	254	252	156
45°	177	172	123	174	183	138
55°	125	117	51	118	123	112
65°	77	70	18	68	74	76
75°	35	30	5	26	30	38
85°	8	6	1	4	5	9
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°	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6
2.5°	360.1	360.1	363.5	367.4	364.0	360.6	362.9	361.8	365.7	365.7	364.0
5°	356.7	357.8	360.6	364.0	361.2	357.8	360.6	359.5	363.5	363.5	362.3
7.5°	353.4	353.9	357.3	361.2	358.4	355.0	357.3	356.7	360.1	360.6	359.5
10°	348.9	349.4	352.8	356.7	353.9	351.1	353.4	352.8	357.3	357.3	356.7
12.5°	344.4	344.9	348.3	351.7	348.9	346.1	348.3	348.3	352.8	353.4	352.8
15°	338.2	339.3	342.1	345.5	343.8	340.5	342.7	342.7	346.6	347.7	347.7
17.5°	333.2	333.7	336.5	339.9	337.7	334.8	337.1	337.1	341.0	342.1	342.1
20°	326.4	327.6	330.4	333.7	332.0	329.8	331.5	331.5	336.0	337.1	337.7
22.5°	320.8	321.9	324.2	328.7	325.9	324.2	326.4	325.9	330.9	331.5	331.5
25°	314.7	315.8	318.6	321.4	319.7	318.0	319.7	319.7	323.6	324.2	324.2
27.5°	305.7	306.2	309.0	311.8	310.2	307.9	310.2	309.6	313.5	314.1	313.5
30°	291.1	292.2	293.3	297.3	295.6	293.9	296.1	295.0	298.9	298.9	298.4
32.5°	272.6	272.6	274.8	277.6	275.4	274.3	276.0	276.5	279.3	279.3	277.6
35°	250.2	251.3	253.0	254.6	253.0	251.8	253.5	253.0	256.3	255.2	253.5
37.5°	227.7	228.3	230.0	232.2	230.0	228.3	228.8	228.3	231.1	231.1	228.3
40°	207.0	208.1	209.2	211.5	209.2	208.1	208.6	207.0	210.3	209.2	207.5
42.5°	190.1	190.7	192.4	193.5	191.3	190.7	191.3	190.1	191.8	190.7	187.3
45°	177.2	177.2	177.8	179.5	177.2	176.7	176.7	175.6	177.2	175.0	171.6
47.5°	166.0	166.6	167.1	168.3	166.6	164.9	165.5	163.2	164.3	162.7	158.2
50°	154.8	155.9	156.5	157.6	155.9	154.8	155.4	153.1	153.1	150.3	146.4
52.5°	143.6	144.1	143.6	144.7	143.6	141.9	142.5	140.2	140.2	136.9	132.9
55°	125.1	125.6	126.2	127.3	126.2	124.5	125.6	124.0	124.0	121.7	117.2
57.5°	106.6	107.1	107.7	108.3	108.3	107.1	107.7	106.6	106.0	104.3	101.0
60°	94.8	94.8	94.8	95.3	94.8	94.2	94.2	93.1	93.1	90.9	87.5
62.5°	85.8	86.4	86.4	86.9	86.4	85.8	85.3	84.1	83.6	81.3	78.5
65°	77.4	77.4	76.8	78.0	77.4	76.8	76.8	75.7	74.6	72.4	69.5
67.5°	67.3	67.9	67.3	67.9	67.9	67.3	66.7	65.6	65.1	63.4	60.0
70°	56.6	56.6	56.6	57.2	56.6	56.6	57.2	55.5	55.0	52.7	49.9
72.5°	46.0	46.6	46.6	46.0	46.6	45.4	45.4	45.4	44.9	42.6	39.8
75°	35.3	35.9	35.9	36.5	35.9	35.3	35.3	34.8	34.2	32.5	30.3
77.5°	26.4	26.4	26.9	26.9	26.9	26.4	26.4	25.2	25.2	24.1	21.9
80°	19.1	19.1	18.5	19.1	19.1	18.5	18.5	17.9	17.9	16.8	15.1
82.5°	12.3	12.9	12.9	12.9	12.9	12.3	12.3	12.3	11.8	11.2	10.1
85°	7.9	7.9	7.9	7.9	8.4	7.9	8.4	7.9	7.9	6.7	6.2
87.5°	3.4	3.4	3.4	3.9	3.9	3.4	3.4	3.4	3.4	3.4	2.8
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°	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6
2.5°	364.0	364.6	362.9	365.1	363.5	364.0	364.6	364.0	361.8	361.8	367.9
5°	361.8	362.9	361.2	364.0	362.9	362.9	364.0	363.5	361.2	361.8	367.4
7.5°	359.5	361.2	360.1	362.9	361.2	361.2	362.3	362.3	360.1	360.6	365.7
10°	356.2	358.4	357.8	360.6	359.0	359.0	360.6	360.6	358.4	359.0	364.0
12.5°	353.4	355.6	355.0	357.8	356.7	357.3	357.8	359.0	356.2	357.3	361.8
15°	348.9	351.1	351.1	353.9	352.8	353.9	355.0	356.7	354.5	354.5	359.0
17.5°	343.8	346.6	346.6	348.9	348.9	349.4	351.7	353.4	351.1	351.7	355.6
20°	338.2	341.6	341.6	344.4	343.8	344.9	346.6	348.3	346.1	346.1	350.6
22.5°	332.6	335.4	336.0	337.7	337.7	338.2	339.9	341.0	338.2	338.2	342.7
25°	324.8	327.6	328.1	329.2	328.1	328.1	329.2	330.4	327.6	327.6	331.5
27.5°	314.1	316.9	316.9	316.3	315.2	315.8	315.2	315.8	313.0	312.4	316.3
30°	298.4	300.1	300.1	299.5	297.8	297.8	296.1	296.7	292.8	292.8	296.1
32.5°	277.1	278.8	277.6	276.5	274.3	273.1	272.0	271.5	267.5	267.5	271.5
35°	251.8	253.0	251.3	249.0	246.2	244.5	242.9	240.6	237.8	238.4	240.6
37.5°	226.0	226.0	223.8	219.3	217.1	214.3	211.5	211.5	207.0	206.4	208.1
40°	204.2	201.9	198.0	191.8	187.9	185.1	181.2	178.9	175.6	175.6	178.4
42.5°	184.5	180.0	175.0	166.6	162.7	159.3	154.2	152.0	148.1	147.5	149.2
45°	167.1	162.7	155.4	146.4	141.3	137.4	130.1	127.3	124.0	123.4	124.5
47.5°	153.1	148.1	139.1	127.3	122.3	117.2	109.9	106.0	103.2	101.5	103.2
50°	140.8	134.1	124.5	112.2	105.4	101.0	92.0	88.1	84.1	83.0	83.6
52.5°	127.3	120.6	110.5	97.6	91.4	84.7	76.3	70.7	67.3	65.6	67.3
55°	112.7	106.0	95.9	83.0	76.3	70.1	61.1	56.6	52.7	51.0	52.7
57.5°	97.0	90.9	81.9	69.0	62.8	57.2	48.8	44.3	40.4	39.3	40.4
60°	83.6	78.5	69.5	57.2	52.2	46.0	38.7	34.2	30.8	30.3	30.8
62.5°	74.6	69.0	60.6	48.8	43.7	38.7	32.0	27.5	24.7	24.1	24.7
65°	65.6	59.5	51.6	41.5	36.5	32.5	25.8	21.9	19.1	18.5	19.1
67.5°	55.5	49.9	43.2	34.2	30.3	26.4	20.8	16.8	14.6	14.0	14.6
70°	46.0	40.9	34.2	27.5	23.6	20.8	15.7	12.9	10.7	10.1	10.7
72.5°	36.5	32.0	26.4	20.8	18.5	15.7	12.3	9.5	7.9	7.3	7.9
75°	28.0	24.7	20.2	15.1	13.5	11.8	8.4	6.7	5.6	5.0	5.6
77.5°	19.6	17.4	14.0	11.2	9.5	8.4	6.2	4.5	3.9	3.4	3.9
80°	13.5	11.8	9.5	7.3	6.2	5.0	3.9	2.8	2.2	2.2	2.2
82.5°	9.0	7.3	5.6	4.5	3.9	3.4	2.2	1.7	1.7	1.1	1.1
85°	5.0	4.5	3.4	2.8	2.2	1.7	1.1	1.1	0.6	0.6	0.6
87.5°	2.2	1.7	1.1	1.1	0.6	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°	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6
2.5°	366.3	364.6	366.8	364.6	363.5	364.6	363.5	366.8	364.0	361.8	364.0
5°	365.7	363.5	365.7	364.0	362.3	362.9	361.8	365.1	361.8	360.1	361.2
7.5°	364.6	362.9	364.0	362.3	360.6	361.2	360.1	362.9	359.5	357.8	359.0
10°	362.9	361.2	361.8	360.6	359.0	359.0	357.8	360.1	356.2	353.9	355.0
12.5°	360.6	358.4	359.5	357.8	355.6	355.6	354.5	356.2	352.2	350.0	350.6
15°	357.8	355.6	355.6	353.9	351.7	351.7	349.4	351.1	346.6	344.4	344.4
17.5°	354.5	351.7	351.7	350.0	347.2	346.6	344.9	346.6	341.6	339.3	339.3
20°	349.4	347.2	346.6	345.5	342.7	342.1	339.9	340.5	336.5	334.8	334.3
22.5°	342.7	340.5	341.0	339.3	337.1	336.5	334.3	336.0	332.0	330.4	330.9
25°	330.9	329.8	330.9	330.4	328.7	328.7	327.6	328.7	325.3	324.2	324.8
27.5°	317.5	316.9	317.5	317.5	316.3	316.3	316.3	318.0	314.7	314.1	314.1
30°	297.8	297.8	298.4	298.9	298.9	300.1	299.5	301.8	299.5	298.4	299.5
32.5°	272.0	274.3	276.0	276.0	276.0	277.1	278.2	279.9	277.6	278.2	278.2
35°	242.9	244.5	245.7	248.5	246.8	250.7	251.8	254.1	253.5	254.6	254.1
37.5°	210.3	212.6	214.8	218.7	218.2	222.7	224.9	229.4	228.3	230.5	231.6
40°	180.0	183.4	186.8	189.6	191.8	196.3	200.8	206.4	208.1	209.8	210.3
42.5°	150.9	154.2	159.9	163.8	167.1	174.4	180.6	187.3	189.0	192.4	193.5
45°	127.3	130.1	136.9	141.9	144.7	155.4	162.7	171.1	173.9	177.8	179.5
47.5°	105.4	110.5	117.2	123.4	127.3	138.5	148.1	157.0	161.0	165.5	167.7
50°	86.4	92.0	101.0	106.6	112.2	124.5	135.2	144.7	148.6	153.7	155.9
52.5°	70.7	76.8	85.3	91.4	97.6	110.5	121.7	130.7	135.7	139.1	142.5
55°	55.5	62.3	70.7	77.4	82.4	96.5	106.0	115.0	118.3	121.2	122.8
57.5°	43.2	48.2	56.6	62.3	68.4	80.8	90.3	97.0	99.8	103.2	104.3
60°	33.7	38.7	46.6	52.2	57.8	69.5	79.1	85.8	88.6	91.4	93.1
62.5°	26.9	32.0	39.3	44.3	49.4	60.0	68.4	75.2	78.5	81.3	83.0
65°	21.3	25.8	32.0	37.0	40.9	50.5	58.9	65.1	68.4	71.2	72.9
67.5°	16.8	20.8	26.4	29.7	33.7	41.5	48.8	54.4	57.2	60.6	62.3
70°	12.9	15.7	20.8	23.6	26.4	33.1	38.7	44.3	47.1	49.4	50.5
72.5°	9.5	11.8	15.7	17.9	19.6	25.2	29.7	33.7	35.9	38.1	39.3
75°	6.7	8.4	11.2	12.9	14.0	17.9	21.9	24.7	26.4	28.0	29.7
77.5°	4.5	5.6	7.3	8.4	9.5	12.3	14.6	16.8	18.5	20.2	20.8
80°	2.8	3.9	5.0	5.6	6.2	7.9	10.1	11.2	12.3	13.5	14.0
82.5°	1.7	2.2	2.8	3.4	3.9	5.0	6.2	7.3	7.9	9.0	9.5
85°	0.6	1.1	1.1	1.7	1.7	2.8	3.4	3.9	4.5	5.0	5.6
87.5°	0.0	0.0	0.6	0.6	0.6	0.6	1.1	1.1	1.1	1.1	1.1
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°	364.6	364.6	364.6	364.6	364.6	364.6	364.6	364.6
2.5°	366.3	364.6	363.5	362.9	366.8	361.8	364.0	364.6
5°	364.0	362.3	361.2	360.6	364.0	359.5	361.2	362.3
7.5°	360.6	359.5	357.8	357.3	360.6	355.6	357.8	358.4
10°	356.7	355.0	353.9	353.4	356.2	351.1	353.4	353.4
12.5°	351.7	350.6	348.3	348.3	350.6	346.1	347.7	347.7
15°	344.9	343.8	341.6	341.6	343.8	339.3	341.0	341.0
17.5°	339.3	338.2	336.5	336.0	338.2	333.7	335.4	334.8
20°	334.8	333.7	331.5	331.5	333.2	328.7	330.4	330.4
22.5°	330.9	330.4	328.1	328.1	330.4	325.9	327.0	325.9
25°	324.8	324.2	321.9	322.5	323.6	319.1	320.8	319.7
27.5°	314.7	314.7	312.4	311.8	313.5	309.6	310.7	310.2
30°	298.9	299.5	296.7	296.7	297.3	293.9	295.6	295.0
32.5°	277.6	278.2	276.0	275.4	277.1	274.3	275.4	275.4
35°	254.1	254.6	253.0	253.0	254.6	253.0	253.0	252.4
37.5°	230.5	231.6	230.5	231.1	232.2	230.5	231.6	231.1
40°	211.5	212.6	210.9	212.0	213.1	211.5	213.1	212.0
42.5°	194.1	195.7	194.6	195.7	196.9	195.7	196.9	195.2
45°	181.2	182.3	181.7	182.3	183.4	182.8	183.4	182.8
47.5°	168.8	171.1	169.9	171.1	172.8	171.6	172.8	171.1
50°	157.6	159.3	158.7	159.9	160.4	159.9	161.0	159.3
52.5°	143.0	144.7	144.1	144.1	145.3	144.1	145.3	144.1
55°	124.0	124.5	124.5	125.1	124.5	124.0	124.5	123.4
57.5°	105.4	106.6	104.9	106.6	106.0	105.4	105.4	104.3
60°	93.7	95.3	94.2	95.3	94.8	94.8	94.8	94.2
62.5°	84.1	85.3	84.1	84.7	84.7	84.7	84.1	83.6
65°	73.5	75.2	74.0	74.6	74.0	73.5	74.0	73.5
67.5°	62.8	63.4	63.4	62.8	62.8	62.8	62.8	61.7
70°	51.0	51.6	51.0	52.2	51.6	51.0	51.6	50.5
72.5°	39.8	40.4	39.8	40.4	39.8	39.8	39.8	39.8
75°	29.7	30.3	30.3	30.3	30.3	30.3	29.2	30.3
77.5°	21.3	21.3	21.3	21.9	21.3	21.3	21.3	21.3
80°	14.6	14.6	14.6	15.1	14.6	15.1	14.6	15.1
82.5°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
85°	5.0	5.6	5.6	5.0	5.0	5.0	5.0	5.0
87.5°	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)