

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: P251900

Luminaire Tested: **LD4B10D010 EU4B10209027 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251900
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: LD4B10D010 EU4B10209027 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 761.0 lumens
Efficiency: N/A
Efficacy: 75.7 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

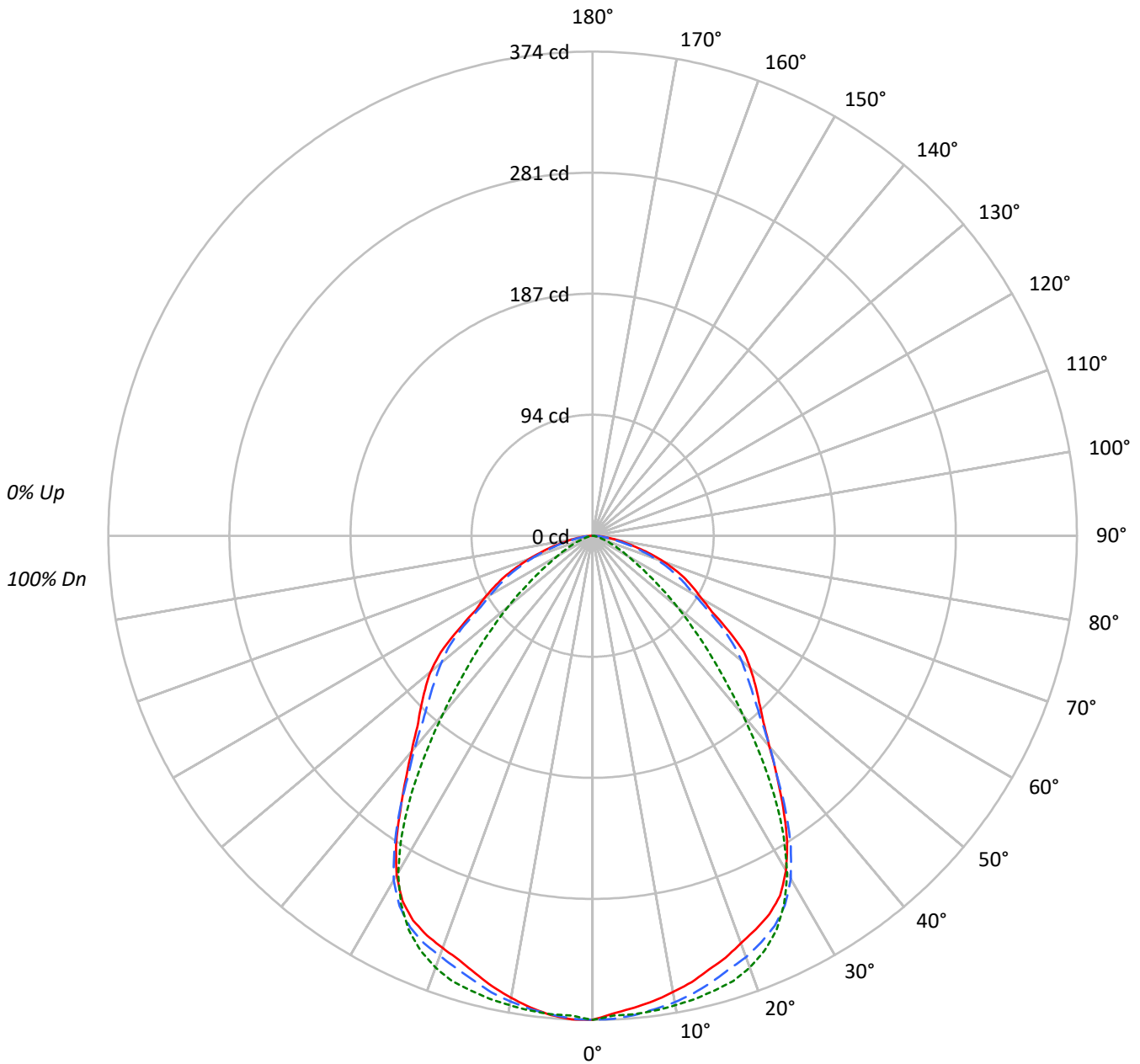
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	36440	36440	36440
5°	35796	36295	36354
10°	35408	36438	35864
15°	35001	36686	35293
20°	34723	36808	35138
25°	34701	36131	35260
30°	33603	33794	34053
35°	30529	29089	30802
40°	27009	22913	27671
45°	25057	17449	25842
50°	24077	12903	24774
55°	21800	8886	21511
60°	18946	6062	18829
65°	18310	4382	17388
70°	16555	2963	14760
75°	13631	1958	11711
80°	11000	1291	8699
85°	9057	671	5815



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.3	4.6
10°-20°	100.9	13.3
20°-30°	152.5	20.0
30°-40°	159.6	21.0
40°-50°	129.2	17.0
50°-60°	94.0	12.4
60°-70°	58.0	7.6
70°-80°	26.2	3.4
80°-90°	5.3	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°	288.7	37.9
0°-40°	448.3	58.9
0°-60°	671.5	88.2
0°-90°	761.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	761.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	374	374	374	374	374	
5°	366	372	371	371	372	35
15°	347	357	364	356	350	98
25°	323	332	336	334	328	148
35°	257	260	244	260	259	160
45°	182	176	127	178	188	141
55°	128	120	52	121	127	114
65°	79	71	19	70	75	78
75°	36	31	5	27	31	39
85°	8	6	1	5	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°	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9
2.5°	369.3	369.3	372.8	376.8	373.4	369.9	372.2	371.0	375.1	375.1	373.4
5°	365.9	367.0	369.9	373.4	370.5	367.0	369.9	368.7	372.8	372.8	371.6
7.5°	362.4	363.0	366.4	370.5	367.6	364.1	366.4	365.9	369.3	369.9	368.7
10°	357.8	358.4	361.8	365.9	363.0	360.1	362.4	361.8	366.4	366.4	365.9
12.5°	353.2	353.8	357.2	360.7	357.8	354.9	357.2	357.2	361.8	362.4	361.8
15°	346.9	348.0	350.9	354.4	352.6	349.2	351.5	351.5	355.5	356.7	356.7
17.5°	341.7	342.3	345.2	348.6	346.3	343.4	345.7	345.7	349.8	350.9	350.9
20°	334.8	336.0	338.8	342.3	340.6	338.3	340.0	340.0	344.6	345.7	346.3
22.5°	329.1	330.2	332.5	337.1	334.2	332.5	334.8	334.2	339.4	340.0	340.0
25°	322.7	323.9	326.8	329.6	327.9	326.2	327.9	327.9	331.9	332.5	332.5
27.5°	313.5	314.1	317.0	319.9	318.1	315.8	318.1	317.5	321.6	322.2	321.6
30°	298.6	299.7	300.9	304.9	303.2	301.4	303.7	302.6	306.6	306.6	306.0
32.5°	279.6	279.6	281.9	284.8	282.5	281.3	283.0	283.6	286.5	286.5	284.8
35°	256.6	257.7	259.4	261.2	259.4	258.3	260.0	259.4	262.9	261.7	260.0
37.5°	233.6	234.1	235.9	238.2	235.9	234.1	234.7	234.1	237.0	237.0	234.1
40°	212.3	213.4	214.6	216.9	214.6	213.4	214.0	212.3	215.7	214.6	212.9
42.5°	195.0	195.6	197.3	198.5	196.2	195.6	196.2	195.0	196.7	195.6	192.1
45°	181.8	181.8	182.4	184.1	181.8	181.2	181.2	180.1	181.8	179.5	176.0
47.5°	170.3	170.9	171.4	172.6	170.9	169.1	169.7	167.4	168.6	166.8	162.2
50°	158.8	159.9	160.5	161.7	159.9	158.8	159.3	157.0	157.0	154.2	150.1
52.5°	147.3	147.8	147.3	148.4	147.3	145.5	146.1	143.8	143.8	140.4	136.3
55°	128.3	128.9	129.4	130.6	129.4	127.7	128.9	127.1	127.1	124.8	120.2
57.5°	109.3	109.9	110.5	111.0	111.0	109.9	110.5	109.3	108.7	107.0	103.5
60°	97.2	97.2	97.2	97.8	97.2	96.6	96.6	95.5	95.5	93.2	89.7
62.5°	88.0	88.6	88.6	89.2	88.6	88.0	87.4	86.3	85.7	83.4	80.5
65°	79.4	79.4	78.8	80.0	79.4	78.8	78.8	77.7	76.5	74.2	71.3
67.5°	69.0	69.6	69.0	69.6	69.6	69.0	68.5	67.3	66.7	65.0	61.6
70°	58.1	58.1	58.1	58.7	58.1	58.1	58.7	57.0	56.4	54.1	51.2
72.5°	47.2	47.7	47.7	47.2	47.7	46.6	46.6	46.6	46.0	43.7	40.8
75°	36.2	36.8	36.8	37.4	36.8	36.2	36.2	35.7	35.1	33.4	31.1
77.5°	27.0	27.0	27.6	27.6	27.6	27.0	27.0	25.9	25.9	24.7	22.4
80°	19.6	19.6	19.0	19.6	19.6	19.0	19.0	18.4	18.4	17.3	15.5
82.5°	12.7	13.2	13.2	13.2	13.2	12.7	12.7	12.7	12.1	11.5	10.4
85°	8.1	8.1	8.1	8.1	8.6	8.1	8.6	8.1	8.1	6.9	6.3
87.5°	3.5	3.5	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	2.9
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°	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9
2.5°	373.4	373.9	372.2	374.5	372.8	373.4	373.9	373.4	371.0	371.0	377.4
5°	371.0	372.2	370.5	373.4	372.2	372.2	373.4	372.8	370.5	371.0	376.8
7.5°	368.7	370.5	369.3	372.2	370.5	370.5	371.6	371.6	369.3	369.9	375.1
10°	365.3	367.6	367.0	369.9	368.2	368.2	369.9	369.9	367.6	368.2	373.4
12.5°	362.4	364.7	364.1	367.0	365.9	366.4	367.0	368.2	365.3	366.4	371.0
15°	357.8	360.1	360.1	363.0	361.8	363.0	364.1	365.9	363.6	363.6	368.2
17.5°	352.6	355.5	355.5	357.8	357.8	358.4	360.7	362.4	360.1	360.7	364.7
20°	346.9	350.3	350.3	353.2	352.6	353.8	355.5	357.2	354.9	354.9	359.5
22.5°	341.1	344.0	344.6	346.3	346.3	346.9	348.6	349.8	346.9	346.9	351.5
25°	333.1	336.0	336.5	337.7	336.5	336.5	337.7	338.8	336.0	336.0	340.0
27.5°	322.2	325.0	325.0	324.5	323.3	323.9	323.3	323.9	321.0	320.4	324.5
30°	306.0	307.8	307.8	307.2	305.5	305.5	303.7	304.3	300.3	300.3	303.7
32.5°	284.2	285.9	284.8	283.6	281.3	280.2	279.0	278.4	274.4	274.4	278.4
35°	258.3	259.4	257.7	255.4	252.5	250.8	249.1	246.8	243.9	244.5	246.8
37.5°	231.8	231.8	229.5	224.9	222.6	219.8	216.9	216.9	212.3	211.7	213.4
40°	209.4	207.1	203.1	196.7	192.7	189.8	185.8	183.5	180.1	180.1	182.9
42.5°	189.3	184.7	179.5	170.9	166.8	163.4	158.2	155.9	151.9	151.3	153.0
45°	171.4	166.8	159.3	150.1	145.0	140.9	133.5	130.6	127.1	126.6	127.7
47.5°	157.0	151.9	142.7	130.6	125.4	120.2	112.8	108.7	105.8	104.1	105.8
50°	144.4	137.5	127.7	115.1	108.2	103.5	94.3	90.3	86.3	85.1	85.7
52.5°	130.6	123.7	113.3	100.1	93.8	86.9	78.2	72.5	69.0	67.3	69.0
55°	115.6	108.7	98.4	85.1	78.2	71.9	62.7	58.1	54.1	52.3	54.1
57.5°	99.5	93.2	84.0	70.8	64.4	58.7	50.0	45.4	41.4	40.3	41.4
60°	85.7	80.5	71.3	58.7	53.5	47.2	39.7	35.1	31.6	31.1	31.6
62.5°	76.5	70.8	62.1	50.0	44.9	39.7	32.8	28.2	25.3	24.7	25.3
65°	67.3	61.0	52.9	42.6	37.4	33.4	26.5	22.4	19.6	19.0	19.6
67.5°	57.0	51.2	44.3	35.1	31.1	27.0	21.3	17.3	15.0	14.4	15.0
70°	47.2	42.0	35.1	28.2	24.2	21.3	16.1	13.2	10.9	10.4	10.9
72.5°	37.4	32.8	27.0	21.3	19.0	16.1	12.7	9.8	8.1	7.5	8.1
75°	28.8	25.3	20.7	15.5	13.8	12.1	8.6	6.9	5.8	5.2	5.8
77.5°	20.1	17.8	14.4	11.5	9.8	8.6	6.3	4.6	4.0	3.5	4.0
80°	13.8	12.1	9.8	7.5	6.3	5.2	4.0	2.9	2.3	2.3	2.3
82.5°	9.2	7.5	5.8	4.6	4.0	3.5	2.3	1.7	1.7	1.2	1.2
85°	5.2	4.6	3.5	2.9	2.3	1.7	1.2	1.2	0.6	0.6	0.6
87.5°	2.3	1.7	1.2	1.2	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°	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9
2.5°	375.7	373.9	376.2	373.9	372.8	373.9	372.8	376.2	373.4	371.0	373.4
5°	375.1	372.8	375.1	373.4	371.6	372.2	371.0	374.5	371.0	369.3	370.5
7.5°	373.9	372.2	373.4	371.6	369.9	370.5	369.3	372.2	368.7	367.0	368.2
10°	372.2	370.5	371.0	369.9	368.2	368.2	367.0	369.3	365.3	363.0	364.1
12.5°	369.9	367.6	368.7	367.0	364.7	364.7	363.6	365.3	361.3	359.0	359.5
15°	367.0	364.7	364.7	363.0	360.7	360.7	358.4	360.1	355.5	353.2	353.2
17.5°	363.6	360.7	360.7	359.0	356.1	355.5	353.8	355.5	350.3	348.0	348.0
20°	358.4	356.1	355.5	354.4	351.5	350.9	348.6	349.2	345.2	343.4	342.9
22.5°	351.5	349.2	349.8	348.0	345.7	345.2	342.9	344.6	340.6	338.8	339.4
25°	339.4	338.3	339.4	338.8	337.1	337.1	336.0	337.1	333.7	332.5	333.1
27.5°	325.6	325.0	325.6	325.6	324.5	324.5	324.5	326.2	322.7	322.2	322.2
30°	305.5	305.5	306.0	306.6	306.6	307.8	307.2	309.5	307.2	306.0	307.2
32.5°	279.0	281.3	283.0	283.0	283.0	284.2	285.3	287.1	284.8	285.3	285.3
35°	249.1	250.8	252.0	254.8	253.1	257.1	258.3	260.6	260.0	261.2	260.6
37.5°	215.7	218.0	220.3	224.4	223.8	228.4	230.7	235.3	234.1	236.4	237.6
40°	184.7	188.1	191.6	194.4	196.7	201.3	205.9	211.7	213.4	215.2	215.7
42.5°	154.7	158.2	164.0	168.0	171.4	178.9	185.2	192.1	193.9	197.3	198.5
45°	130.6	133.5	140.4	145.5	148.4	159.3	166.8	175.5	178.3	182.4	184.1
47.5°	108.2	113.3	120.2	126.6	130.6	142.1	151.9	161.1	165.1	169.7	172.0
50°	88.6	94.3	103.5	109.3	115.1	127.7	138.6	148.4	152.4	157.6	159.9
52.5°	72.5	78.8	87.4	93.8	100.1	113.3	124.8	134.0	139.2	142.7	146.1
55°	57.0	63.9	72.5	79.4	84.6	98.9	108.7	117.9	121.4	124.3	126.0
57.5°	44.3	49.5	58.1	63.9	70.2	82.8	92.6	99.5	102.4	105.8	107.0
60°	34.5	39.7	47.7	53.5	59.3	71.3	81.1	88.0	90.9	93.8	95.5
62.5°	27.6	32.8	40.3	45.4	50.6	61.6	70.2	77.1	80.5	83.4	85.1
65°	21.9	26.5	32.8	38.0	42.0	51.8	60.4	66.7	70.2	73.1	74.8
67.5°	17.3	21.3	27.0	30.5	34.5	42.6	50.0	55.8	58.7	62.1	63.9
70°	13.2	16.1	21.3	24.2	27.0	33.9	39.7	45.4	48.3	50.6	51.8
72.5°	9.8	12.1	16.1	18.4	20.1	25.9	30.5	34.5	36.8	39.1	40.3
75°	6.9	8.6	11.5	13.2	14.4	18.4	22.4	25.3	27.0	28.8	30.5
77.5°	4.6	5.8	7.5	8.6	9.8	12.7	15.0	17.3	19.0	20.7	21.3
80°	2.9	4.0	5.2	5.8	6.3	8.1	10.4	11.5	12.7	13.8	14.4
82.5°	1.7	2.3	2.9	3.5	4.0	5.2	6.3	7.5	8.1	9.2	9.8
85°	0.6	1.2	1.2	1.7	1.7	2.9	3.5	4.0	4.6	5.2	5.8
87.5°	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.2	1.2
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°	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9
2.5°	375.7	373.9	372.8	372.2	376.2	371.0	373.4	373.9
5°	373.4	371.6	370.5	369.9	373.4	368.7	370.5	371.6
7.5°	369.9	368.7	367.0	366.4	369.9	364.7	367.0	367.6
10°	365.9	364.1	363.0	362.4	365.3	360.1	362.4	362.4
12.5°	360.7	359.5	357.2	357.2	359.5	354.9	356.7	356.7
15°	353.8	352.6	350.3	350.3	352.6	348.0	349.8	349.8
17.5°	348.0	346.9	345.2	344.6	346.9	342.3	344.0	343.4
20°	343.4	342.3	340.0	340.0	341.7	337.1	338.8	338.8
22.5°	339.4	338.8	336.5	336.5	338.8	334.2	335.4	334.2
25°	333.1	332.5	330.2	330.8	331.9	327.3	329.1	327.9
27.5°	322.7	322.7	320.4	319.9	321.6	317.5	318.7	318.1
30°	306.6	307.2	304.3	304.3	304.9	301.4	303.2	302.6
32.5°	284.8	285.3	283.0	282.5	284.2	281.3	282.5	282.5
35°	260.6	261.2	259.4	259.4	261.2	259.4	259.4	258.9
37.5°	236.4	237.6	236.4	237.0	238.2	236.4	237.6	237.0
40°	216.9	218.0	216.3	217.5	218.6	216.9	218.6	217.5
42.5°	199.0	200.8	199.6	200.8	201.9	200.8	201.9	200.2
45°	185.8	187.0	186.4	187.0	188.1	187.5	188.1	187.5
47.5°	173.2	175.5	174.3	175.5	177.2	176.0	177.2	175.5
50°	161.7	163.4	162.8	164.0	164.5	164.0	165.1	163.4
52.5°	146.7	148.4	147.8	147.8	149.0	147.8	149.0	147.8
55°	127.1	127.7	127.7	128.3	127.7	127.1	127.7	126.6
57.5°	108.2	109.3	107.6	109.3	108.7	108.2	108.2	107.0
60°	96.1	97.8	96.6	97.8	97.2	97.2	97.2	96.6
62.5°	86.3	87.4	86.3	86.9	86.9	86.9	86.3	85.7
65°	75.4	77.1	75.9	76.5	75.9	75.4	75.9	75.4
67.5°	64.4	65.0	65.0	64.4	64.4	64.4	64.4	63.3
70°	52.3	52.9	52.3	53.5	52.9	52.3	52.9	51.8
72.5°	40.8	41.4	40.8	41.4	40.8	40.8	40.8	40.8
75°	30.5	31.1	31.1	31.1	31.1	31.1	29.9	31.1
77.5°	21.9	21.9	21.9	22.4	21.9	21.9	21.9	21.9
80°	15.0	15.0	15.0	15.5	15.0	15.5	15.0	15.5
82.5°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
85°	5.2	5.8	5.8	5.2	5.2	5.2	5.2	5.2
87.5°	1.2	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)