

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: P251745

Luminaire Tested: **LD4B10D010 EU4B10209030 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251745
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10209030 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 701.0 lumens
Efficiency: N/A
Efficacy: 69.8 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

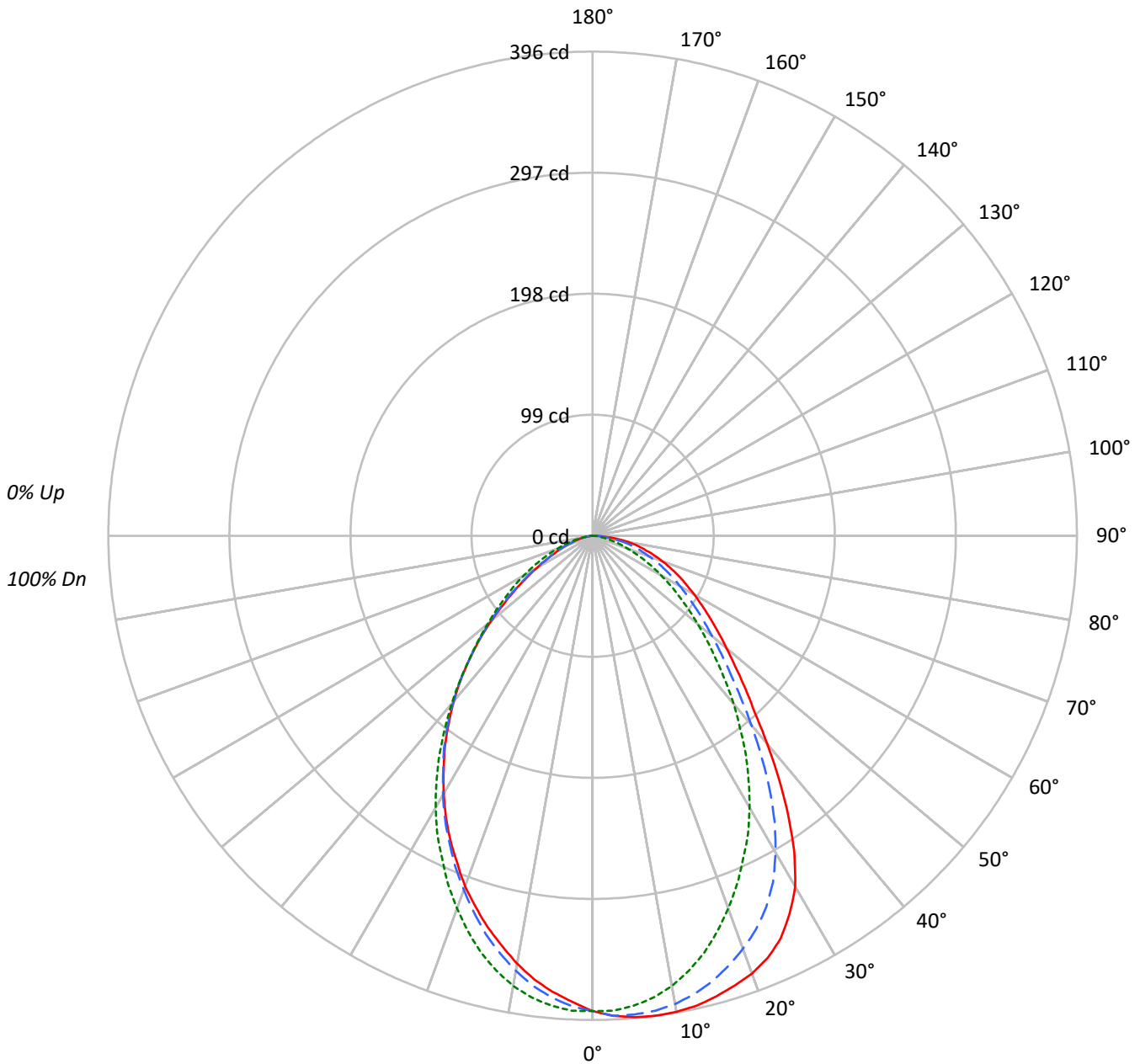
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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				100				
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88				88				
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76				76				
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67				67				
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59				59				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52				52				
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47				47				
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42				42				
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38				38				
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35				35				
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32				32				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	37892	37892	37892
5°	38672	37743	36628
10°	39119	36992	35161
15°	39349	35606	33437
20°	39515	33624	31632
25°	39099	31324	29582
30°	37294	28876	27391
35°	33158	25972	25044
40°	28231	22824	22442
45°	24313	19613	19544
50°	21666	16951	16420
55°	19914	14630	13117
60°	18653	12592	10253
65°	17941	10631	8002
70°	17211	8520	6468
75°	16681	6740	4970
80°	16781	4714	3031
85°	14089	3355	1342



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.4	5.2
10°-20°	100.1	14.3
20°-30°	139.9	20.0
30°-40°	143.8	20.5
40°-50°	116.7	16.7
50°-60°	82.2	11.7
60°-70°	50.6	7.2
70°-80°	25.3	3.6
80°-90°	6.0	0.9
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°	276.4	39.4
0°-40°	420.2	59.9
0°-60°	619.1	88.3
0°-90°	701.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	701.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	389	389	389	389	389	
5°	395	393	386	379	374	38
15°	390	377	353	337	331	110
25°	364	336	291	277	275	166
35°	279	252	218	212	210	173
45°	176	159	142	142	142	137
55°	117	103	86	79	77	105
65°	78	65	46	35	35	77
75°	44	35	18	13	13	47
85°	13	8	3	2	1	15
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°	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8
2.5°	393.0	393.6	391.8	393.6	391.2	392.4	393.0	391.8	390.6	393.0	393.0
5°	395.3	395.3	393.6	395.9	393.0	393.6	394.8	393.0	391.2	393.6	393.0
7.5°	395.9	395.9	393.6	395.9	393.0	393.6	394.2	392.4	390.6	392.4	391.8
10°	395.3	394.8	393.0	395.3	392.4	392.4	393.0	391.2	388.2	390.0	388.8
12.5°	393.6	393.6	391.2	393.6	389.4	389.4	390.0	387.6	385.2	385.2	384.0
15°	390.0	390.0	387.6	389.4	385.8	385.8	385.2	382.8	379.8	379.8	377.4
17.5°	385.8	385.8	383.4	385.2	381.0	381.0	380.4	376.8	372.6	372.0	369.0
20°	381.0	381.0	378.0	379.2	374.4	374.4	373.8	369.6	364.8	363.6	359.5
22.5°	373.8	373.8	370.8	371.4	366.6	366.0	365.4	360.7	355.9	354.1	348.7
25°	363.6	363.1	360.7	360.7	355.9	354.7	353.5	348.7	343.9	340.3	335.5
27.5°	348.7	349.3	346.3	346.9	340.9	339.7	339.1	333.1	327.8	324.2	319.4
30°	331.4	329.6	326.6	326.6	321.8	321.2	320.0	314.6	308.6	304.4	299.1
32.5°	306.8	306.2	303.2	303.2	297.9	297.9	295.5	290.1	284.7	282.3	276.9
35°	278.7	278.1	275.7	275.7	270.9	271.5	269.1	265.0	259.6	256.0	251.8
37.5°	250.0	249.4	247.0	247.6	243.4	243.4	241.6	237.4	233.3	231.5	226.1
40°	221.9	221.3	218.3	220.1	216.5	215.3	214.7	211.7	206.9	204.6	201.6
42.5°	196.2	196.8	193.8	195.0	192.0	190.8	190.2	187.8	184.2	181.8	178.8
45°	176.4	175.2	174.0	174.0	171.1	170.5	169.9	166.9	164.5	162.1	159.1
47.5°	157.9	156.7	155.5	156.1	153.7	153.1	151.9	149.5	146.5	145.3	142.3
50°	142.9	142.3	140.6	140.6	138.2	137.6	136.4	134.6	131.6	129.8	127.4
52.5°	129.2	129.2	127.4	126.8	125.0	124.4	123.8	121.4	119.0	116.6	114.2
55°	117.2	116.6	115.4	115.4	113.0	112.4	111.8	109.5	107.1	105.3	102.9
57.5°	105.9	105.9	104.7	104.7	102.9	101.7	101.7	99.3	96.3	95.1	92.1
60°	95.7	95.7	94.5	94.5	92.7	92.7	91.5	89.1	87.3	84.9	82.5
62.5°	86.1	86.7	85.5	84.9	83.1	82.5	82.5	80.7	77.8	76.0	73.6
65°	77.8	77.2	76.6	76.0	74.2	73.6	73.6	71.2	69.4	67.0	65.2
67.5°	68.8	68.8	67.6	67.6	66.4	65.8	64.6	62.8	61.0	59.2	57.4
70°	60.4	60.4	59.8	59.8	58.0	57.4	56.8	55.0	53.2	51.4	49.0
72.5°	52.6	52.0	51.4	51.4	50.2	49.6	49.0	47.3	45.5	43.7	41.9
75°	44.3	44.3	43.7	43.7	42.5	41.9	41.9	40.7	38.3	37.1	34.7
77.5°	37.1	37.1	36.5	36.5	35.3	35.3	34.7	32.9	31.7	29.9	28.7
80°	29.9	29.3	29.3	28.7	27.5	27.5	26.9	26.3	24.5	23.3	21.5
82.5°	20.9	20.9	20.9	20.3	19.7	19.7	19.1	17.9	16.7	16.1	14.4
85°	12.6	12.6	12.0	11.4	12.0	11.4	10.8	10.2	9.6	9.0	8.4
87.5°	5.4	5.4	4.8	4.8	4.8	4.8	4.8	4.2	3.6	3.6	3.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8
2.5°	389.4	391.2	390.6	390.0	388.8	388.8	388.8	388.2	388.8	388.8	387.6
5°	389.4	390.6	390.0	388.8	387.6	387.6	387.0	385.8	385.8	385.8	383.4
7.5°	387.6	388.8	387.0	385.8	384.6	383.4	383.4	381.6	381.6	381.0	378.6
10°	384.0	384.6	382.2	381.0	379.2	378.6	377.4	375.0	374.4	373.8	371.4
12.5°	378.6	379.2	376.2	373.8	371.4	370.8	369.6	366.6	365.4	364.2	361.3
15°	370.8	370.8	367.2	364.2	361.9	361.3	358.3	355.3	354.1	352.9	348.7
17.5°	361.9	361.3	356.5	353.5	350.5	349.3	346.3	342.7	340.3	339.1	335.5
20°	352.3	350.5	345.1	342.1	338.5	336.7	333.7	329.0	326.6	324.2	320.6
22.5°	340.9	338.5	332.5	328.4	324.8	323.0	318.8	314.6	311.0	308.6	304.4
25°	327.2	324.2	317.6	312.2	309.2	307.4	303.2	298.5	294.9	291.3	287.7
27.5°	311.0	307.4	300.8	295.5	292.5	289.5	286.5	281.1	278.1	275.1	270.9
30°	291.3	287.1	281.1	276.3	272.7	270.3	266.8	262.0	258.4	256.6	252.4
32.5°	269.7	265.0	259.6	254.8	253.0	250.0	247.0	242.2	239.2	237.4	234.5
35°	245.8	242.2	236.3	232.7	229.7	228.5	226.1	221.3	220.1	218.3	214.7
37.5°	220.7	217.7	213.5	210.5	208.1	206.9	204.6	201.6	199.8	198.0	196.2
40°	197.4	195.0	191.4	189.0	186.0	184.2	184.2	180.6	179.4	179.4	177.6
42.5°	174.6	173.5	170.5	166.9	166.3	164.5	163.9	162.1	160.9	160.3	159.7
45°	155.5	153.7	150.7	148.9	147.1	147.1	145.3	143.5	142.9	142.3	141.8
47.5°	138.8	136.4	134.0	132.2	131.0	130.4	128.6	127.4	126.8	126.8	126.2
50°	123.8	122.0	119.6	117.8	116.6	115.4	114.2	113.0	112.4	111.8	111.8
52.5°	111.2	108.9	106.5	104.7	102.9	102.3	101.1	99.9	99.3	98.7	98.1
55°	99.9	98.1	95.1	93.3	91.5	91.5	89.7	87.9	86.7	86.1	85.5
57.5°	89.1	87.3	84.3	82.5	81.3	80.1	79.0	77.8	76.6	75.4	74.2
60°	79.5	77.8	74.8	72.4	71.8	70.6	69.4	67.0	65.8	64.6	63.4
62.5°	70.6	68.2	65.8	63.4	62.8	61.6	59.8	58.0	56.2	55.0	53.2
65°	62.2	60.4	57.4	55.6	53.8	53.2	51.4	49.0	47.3	46.1	44.3
67.5°	54.4	52.0	49.0	47.3	46.1	44.9	43.1	41.3	39.5	37.7	35.9
70°	46.7	44.9	41.9	40.1	38.9	37.7	35.9	33.5	31.7	29.9	28.7
72.5°	39.5	37.1	34.7	32.9	31.7	30.5	28.7	26.9	25.1	23.9	22.1
75°	32.9	30.5	28.7	26.3	25.7	24.5	22.7	20.9	19.1	17.9	16.7
77.5°	26.3	24.5	22.1	20.9	19.7	18.5	17.3	15.6	14.4	12.6	11.4
80°	19.7	17.9	16.1	15.0	13.8	13.2	12.0	10.8	9.6	8.4	7.8
82.5°	13.2	12.0	10.2	9.6	9.0	8.4	7.2	6.6	6.0	5.4	4.8
85°	7.2	6.6	6.0	4.8	4.8	4.2	3.6	3.6	3.0	3.0	2.4
87.5°	3.0	2.4	2.4	1.8	1.8	1.8	1.2	1.2	1.2	0.6	0.6
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°	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8
2.5°	388.2	385.8	385.8	385.8	384.0	384.6	385.2	385.8	385.2	383.4	385.2
5°	384.0	381.6	381.6	380.4	379.2	379.2	379.2	379.8	379.2	377.4	378.0
7.5°	378.6	375.6	375.0	373.8	372.6	372.0	372.0	372.0	371.4	369.0	370.2
10°	370.2	367.2	366.0	365.4	363.6	363.1	362.5	361.9	361.3	358.9	360.1
12.5°	360.1	357.7	355.3	354.7	352.9	351.7	351.1	351.1	349.9	347.5	348.7
15°	348.1	344.5	342.7	341.5	339.7	338.5	337.3	337.9	337.3	334.9	335.5
17.5°	333.7	330.2	328.4	327.8	325.4	324.2	323.6	323.6	323.0	320.6	321.2
20°	318.2	314.6	313.4	312.2	311.0	309.8	309.2	308.6	308.0	305.6	307.4
22.5°	302.6	298.5	296.7	296.7	294.3	293.7	293.1	293.7	293.1	290.7	291.9
25°	286.5	282.3	281.1	279.3	278.1	277.5	277.5	277.5	276.9	275.7	276.9
27.5°	268.6	265.6	263.8	263.2	262.0	261.4	260.8	261.4	261.4	259.6	260.8
30°	250.6	248.2	247.0	246.4	244.6	244.0	244.6	244.6	244.6	242.8	244.6
32.5°	232.7	230.9	230.3	228.5	227.3	227.3	227.3	227.9	227.3	226.1	227.9
35°	214.7	212.3	211.7	211.1	211.1	209.9	211.1	210.5	211.7	209.9	211.1
37.5°	195.6	194.4	193.8	193.8	192.6	193.2	193.2	193.2	194.4	192.6	193.8
40°	177.6	176.4	176.4	176.4	175.8	175.8	175.8	176.4	177.0	175.8	177.0
42.5°	159.7	159.1	159.1	158.5	157.9	158.5	159.1	159.1	159.7	158.5	159.1
45°	142.3	141.8	142.3	141.8	141.8	141.2	141.8	142.3	142.3	141.8	141.8
47.5°	126.2	126.2	125.6	125.6	125.6	125.6	125.6	125.6	125.6	124.4	125.6
50°	111.8	110.6	111.2	110.6	110.6	110.1	110.1	109.5	108.9	108.3	108.3
52.5°	98.1	96.9	96.9	96.3	95.7	95.7	95.1	94.5	93.9	92.7	92.7
55°	84.9	83.7	83.1	82.5	81.9	81.3	80.7	80.1	79.0	78.4	78.4
57.5°	73.0	71.8	70.6	70.6	69.4	68.8	67.6	66.4	65.8	64.6	64.6
60°	62.2	61.0	59.2	58.6	58.0	56.8	55.0	54.4	53.8	52.6	53.2
62.5°	52.0	50.2	48.4	47.8	47.3	46.1	44.9	43.7	43.1	43.7	43.7
65°	42.5	40.7	39.5	38.3	37.7	36.5	35.9	35.3	35.3	35.3	35.9
67.5°	34.1	32.3	31.1	30.5	29.3	28.7	28.7	28.7	28.7	28.7	28.7
70°	26.9	25.7	24.5	23.3	23.3	22.7	22.7	22.7	22.7	22.7	22.7
72.5°	20.3	19.1	18.5	18.5	17.9	17.9	17.9	17.9	17.3	17.3	17.9
75°	15.0	14.4	13.8	13.8	13.8	13.2	13.2	13.2	13.2	13.2	13.2
77.5°	10.8	10.2	10.2	9.6	9.6	9.6	9.6	9.6	9.6	9.0	9.0
80°	7.2	6.6	6.6	6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0
82.5°	4.2	4.2	4.2	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
85°	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
87.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	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°	388.8	388.8	388.8	388.8	388.8	388.8	388.8	388.8
2.5°	381.6	384.0	384.6	382.8	383.4	382.2	382.8	381.6
5°	375.0	376.8	377.4	376.2	376.2	375.0	375.6	374.4
7.5°	366.6	368.4	369.0	367.8	367.8	366.6	366.6	366.0
10°	357.1	357.7	358.9	357.1	357.7	356.5	356.5	355.3
12.5°	345.1	346.3	347.5	345.7	345.7	345.1	345.1	343.3
15°	332.5	333.7	334.3	333.1	333.1	332.5	331.9	331.4
17.5°	319.4	320.0	321.2	319.4	320.6	319.4	319.4	318.2
20°	304.4	306.2	306.8	305.0	305.6	305.0	305.0	305.0
22.5°	290.1	291.3	291.9	290.7	291.3	290.1	290.7	289.5
25°	275.1	275.7	276.3	275.1	276.3	275.7	275.1	275.1
27.5°	259.6	260.2	260.8	259.6	260.8	260.2	260.8	259.6
30°	242.8	244.0	245.2	244.0	244.6	244.0	244.0	243.4
32.5°	226.1	227.3	228.5	227.3	228.5	227.3	227.9	226.7
35°	210.5	211.1	211.7	210.5	211.1	211.1	211.1	210.5
37.5°	193.2	194.4	194.4	193.8	195.0	194.4	194.4	193.2
40°	176.4	177.0	177.6	176.4	177.0	176.4	177.0	176.4
42.5°	159.1	160.3	160.9	159.7	159.7	159.7	159.1	159.7
45°	141.2	142.3	143.5	141.8	142.3	142.3	142.3	141.8
47.5°	125.0	125.0	125.6	125.0	125.6	124.4	125.6	125.0
50°	108.3	108.3	109.5	108.3	108.3	108.3	108.3	108.3
52.5°	92.1	92.7	92.7	91.5	92.1	91.5	92.1	91.5
55°	77.2	77.2	77.8	77.2	77.2	77.2	77.2	77.2
57.5°	64.0	64.6	64.6	64.0	64.6	64.0	64.0	64.0
60°	53.2	53.2	53.2	52.6	53.2	52.6	53.2	52.6
62.5°	43.1	43.7	43.7	43.1	43.7	43.1	43.1	43.1
65°	35.3	35.3	35.3	35.3	35.3	35.3	35.3	34.7
67.5°	28.1	28.1	28.7	28.1	28.7	28.7	28.7	28.7
70°	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7
72.5°	17.3	17.3	17.9	17.3	17.3	17.3	17.3	17.3
75°	13.2	13.2	13.2	13.2	13.2	12.6	12.6	13.2
77.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.6
80°	6.0	6.0	6.0	6.0	5.4	5.4	6.0	5.4
82.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2
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)