

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: P251672

Luminaire Tested: **LD4B10D010 EU4B10209730 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251672
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10209730 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 648.0 lumens
Efficiency: N/A
Efficacy: 64.5 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

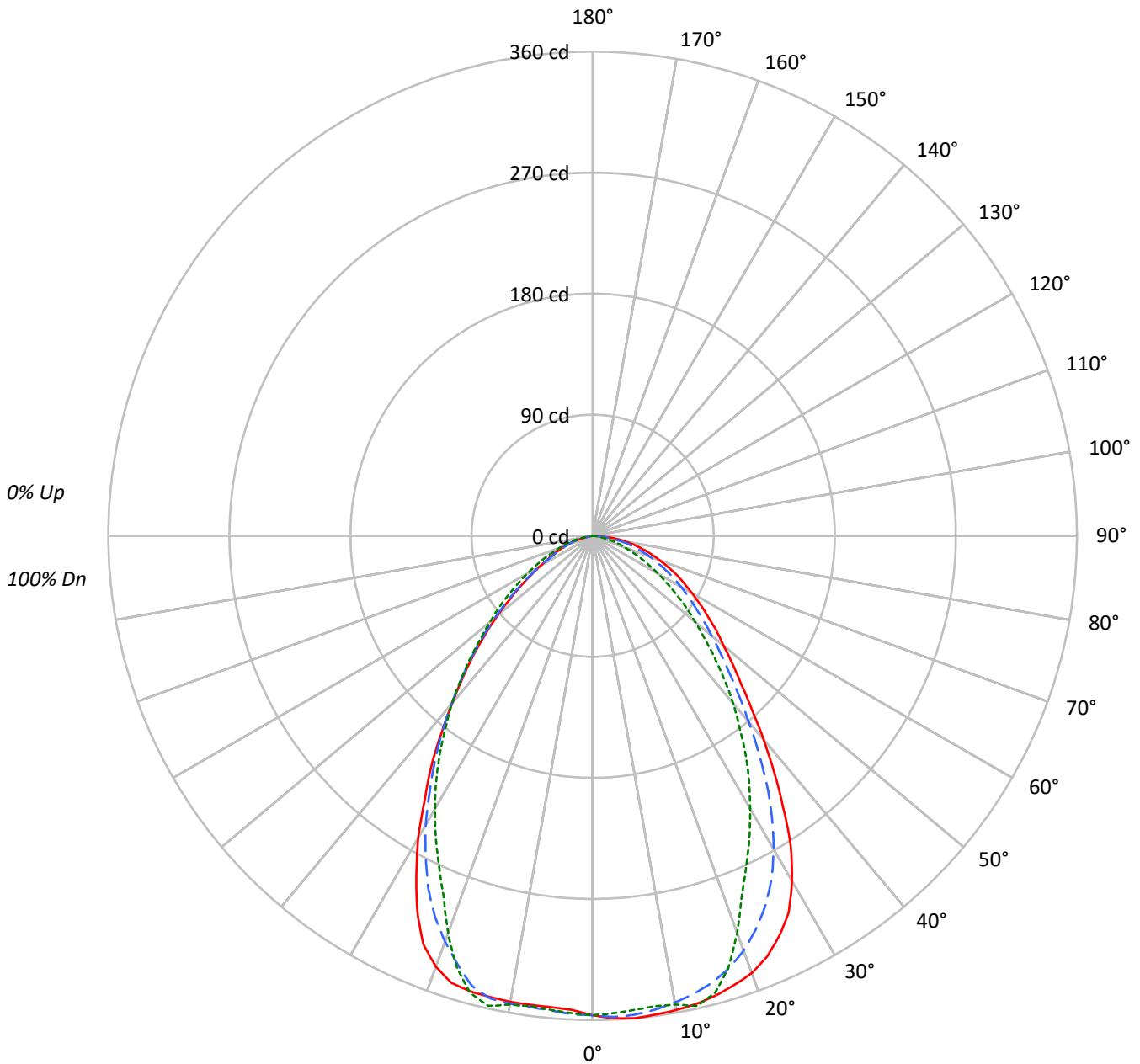
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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								
1	111	107	103	100	108	105	102	99	101	98	96	97	95	93	93	91	90	88								
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77								
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67								
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60								
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53								
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48								
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43								
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39								
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36								
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	34744	34744	34744
5°	35229	34622	34417
10°	35438	35022	34815
15°	35707	35495	35384
20°	35885	32587	35345
25°	35303	29055	33163
30°	33355	26356	29180
35°	29410	23569	24878
40°	25139	20686	20610
45°	21542	17656	17215
50°	19255	15056	14025
55°	17756	12879	11095
60°	16607	10896	8771
65°	15912	9040	7241
70°	15045	7295	6098
75°	14572	5912	4330
80°	14087	3199	1179
85°	12300	1789	559



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.9	5.2
10°-20°	97.4	15.0
20°-30°	135.2	20.9
30°-40°	133.4	20.6
40°-50°	104.6	16.1
50°-60°	72.5	11.2
60°-70°	44.4	6.9
70°-80°	22.2	3.4
80°-90°	4.4	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°	266.5	41.1
0°-40°	399.8	61.7
0°-60°	576.9	89.0
0°-90°	648.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	648.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	356	356	356	356	356	
5°	360	358	354	354	352	34
15°	354	344	352	347	351	100
25°	328	304	270	289	308	150
35°	247	226	198	204	209	154
45°	156	143	128	126	125	122
55°	104	94	76	67	65	94
65°	69	60	39	29	31	68
75°	39	32	16	12	12	41
85°	11	6	2	0	0	13
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°	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5
2.5°	359.1	358.1	357.5	359.1	358.6	359.6	359.1	358.6	357.5	358.1	358.1
5°	360.1	358.6	358.1	359.1	359.1	360.1	359.6	358.6	357.5	358.1	357.5
7.5°	359.1	358.1	358.1	358.6	358.1	359.1	358.1	357.0	356.0	356.5	355.4
10°	358.1	356.5	356.5	356.5	356.5	357.5	356.5	354.9	353.4	353.4	352.3
12.5°	356.5	354.9	354.9	355.4	354.4	355.4	354.4	351.8	350.2	349.7	348.6
15°	353.9	352.3	352.3	352.3	351.3	351.8	350.2	347.6	345.5	345.5	343.9
17.5°	350.2	348.6	348.1	348.1	346.6	347.1	345.5	342.9	339.8	338.7	337.1
20°	346.0	343.9	342.9	342.9	341.3	341.9	339.8	336.6	332.4	330.9	328.3
22.5°	338.7	337.7	336.1	335.6	334.0	333.5	331.4	327.2	323.6	320.9	316.8
25°	328.3	327.7	326.2	325.7	323.6	322.5	320.4	315.7	312.1	307.9	303.7
27.5°	315.7	313.6	312.6	311.0	308.9	308.4	305.8	301.6	295.9	293.2	288.0
30°	296.4	295.3	294.3	292.7	290.6	289.6	288.0	283.3	278.6	273.9	269.2
32.5°	274.4	272.3	270.8	271.3	268.7	267.6	265.0	260.8	256.7	253.5	248.3
35°	247.2	246.7	246.2	245.2	243.1	242.5	240.4	237.3	232.6	228.9	225.8
37.5°	221.6	220.1	219.0	219.0	216.9	216.9	215.4	211.7	209.1	206.5	202.3
40°	197.6	195.0	195.0	195.0	192.9	193.4	192.4	188.7	186.1	182.9	180.3
42.5°	175.1	174.1	173.5	172.5	171.4	171.4	170.4	168.3	165.7	163.6	161.0
45°	156.3	155.8	155.2	154.7	153.7	153.2	152.6	149.5	147.9	145.8	143.2
47.5°	141.1	140.1	139.6	139.0	138.0	137.5	136.4	134.3	132.8	130.7	128.6
50°	127.0	126.5	126.0	126.0	124.9	124.4	123.4	121.8	119.2	118.1	115.5
52.5°	116.0	115.0	114.0	114.0	112.9	112.9	111.3	109.8	107.2	106.1	104.0
55°	104.5	104.0	103.5	103.5	102.5	101.9	101.4	99.3	97.2	95.7	93.6
57.5°	94.6	94.1	93.6	93.6	92.5	92.0	91.5	89.9	87.8	86.8	84.2
60°	85.2	85.2	84.7	84.2	83.6	83.1	82.6	81.0	79.5	77.9	75.8
62.5°	76.8	76.3	75.8	75.3	75.3	74.7	74.2	72.1	71.1	69.5	67.4
65°	69.0	68.0	68.0	67.4	67.4	66.9	66.4	64.3	63.2	61.7	59.6
67.5°	60.6	60.1	59.6	59.6	59.1	59.1	58.5	57.0	55.4	54.4	52.3
70°	52.8	52.8	52.3	52.3	51.7	51.2	51.2	50.2	48.6	47.0	45.0
72.5°	46.0	45.5	45.0	45.0	44.4	44.4	43.9	42.9	41.8	40.8	38.2
75°	38.7	38.2	38.2	38.2	37.6	37.6	37.1	36.1	35.0	34.0	32.4
77.5°	31.9	31.9	31.4	31.4	30.8	30.8	30.8	29.8	28.7	27.7	25.6
80°	25.1	25.1	25.1	24.6	24.0	24.0	24.0	23.0	22.0	20.9	19.3
82.5°	18.3	17.8	17.8	17.2	16.7	16.7	16.7	15.7	15.2	13.6	12.5
85°	11.0	10.5	10.5	9.9	9.4	9.4	9.4	8.9	7.8	7.3	6.3
87.5°	4.2	4.2	4.2	4.2	4.2	3.7	3.7	3.1	3.1	2.6	2.6
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5
2.5°	358.1	357.5	357.5	357.0	357.5	356.5	356.5	356.5	356.5	355.4	355.4
5°	357.0	357.0	356.5	356.0	356.5	355.4	356.0	355.4	355.4	353.9	353.9
7.5°	354.9	354.4	353.4	352.8	353.4	352.8	352.8	352.8	353.9	352.8	352.8
10°	351.3	350.7	349.7	349.2	349.2	348.6	349.7	350.7	352.8	353.9	356.0
12.5°	347.6	346.6	346.0	346.0	346.6	346.6	348.6	351.3	356.5	358.1	360.1
15°	342.9	342.4	342.4	343.9	346.0	347.6	351.8	353.4	353.9	351.8	350.7
17.5°	336.6	336.6	337.1	338.7	340.3	340.3	340.8	339.8	338.7	336.1	333.0
20°	326.2	325.7	324.6	324.6	324.6	322.5	323.6	319.9	317.3	314.2	309.4
22.5°	313.1	310.5	306.8	304.2	302.7	301.6	299.0	294.8	291.7	289.6	287.5
25°	299.0	294.8	289.6	285.4	282.8	282.3	278.6	274.9	272.9	270.2	269.2
27.5°	282.8	278.1	271.8	267.6	265.5	264.0	260.8	257.2	254.6	252.5	250.9
30°	264.0	259.3	254.0	248.8	246.7	244.1	241.0	238.4	235.7	234.2	233.1
32.5°	243.1	238.4	233.1	229.5	226.9	224.8	222.2	219.5	217.4	216.4	215.4
35°	221.6	216.9	212.7	209.1	207.0	205.4	203.3	200.2	198.6	198.1	197.1
37.5°	198.6	195.5	191.8	188.7	187.1	185.0	184.0	181.4	181.4	179.3	179.3
40°	177.2	175.1	171.4	168.8	167.8	166.2	164.7	163.6	163.1	162.6	162.0
42.5°	158.4	155.2	153.2	151.1	149.5	148.5	148.5	146.9	146.4	144.8	144.3
45°	141.1	139.6	135.9	134.3	133.8	132.2	131.7	130.7	129.1	128.1	127.5
47.5°	126.0	124.4	122.3	120.2	119.2	118.1	117.1	115.5	114.5	112.9	112.4
50°	113.4	110.8	108.7	107.2	105.6	105.1	104.0	101.9	100.9	99.3	99.3
52.5°	101.9	99.8	97.2	95.7	94.1	93.0	91.5	89.9	88.3	87.8	86.2
55°	92.0	89.4	86.8	84.7	83.1	81.5	81.0	78.9	76.8	75.8	74.7
57.5°	82.6	80.0	76.8	74.2	73.2	72.1	70.6	68.5	66.9	65.3	64.3
60°	73.2	71.1	68.0	65.3	64.3	62.7	61.2	59.1	57.5	55.9	54.9
62.5°	65.3	62.2	59.6	57.0	55.4	54.4	52.3	50.7	48.6	47.0	45.5
65°	57.5	54.4	51.7	49.1	48.1	46.5	45.0	42.9	40.8	39.2	37.1
67.5°	49.7	47.0	44.4	41.8	40.8	39.7	37.6	35.5	33.5	31.9	29.8
70°	42.9	40.2	37.6	35.5	34.5	33.5	31.4	29.3	27.7	25.6	24.0
72.5°	36.6	34.5	31.9	29.8	28.7	27.7	25.6	24.0	22.0	20.9	19.3
75°	30.3	28.2	26.1	24.0	23.0	22.0	20.4	18.8	17.2	15.7	14.6
77.5°	24.0	22.0	19.9	18.3	17.2	16.7	15.2	13.6	12.0	11.0	9.4
80°	17.8	15.7	14.1	12.5	11.5	11.0	9.4	8.4	7.3	5.7	5.2
82.5°	11.0	9.4	8.4	7.3	6.8	6.3	5.2	4.2	3.7	3.1	2.6
85°	5.7	5.2	4.2	3.7	3.1	3.1	2.6	2.1	1.6	1.6	1.0
87.5°	2.1	1.6	1.6	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5
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°	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5
2.5°	354.4	354.9	355.4	356.0	355.4	355.4	356.5	354.4	356.0	356.0	353.9
5°	353.4	354.4	353.9	354.9	353.9	353.9	354.4	353.4	354.4	354.4	352.8
7.5°	352.3	353.4	353.4	353.9	353.4	353.4	353.9	352.3	353.4	353.4	351.8
10°	357.0	358.1	357.5	357.0	355.4	354.4	354.9	352.3	353.4	353.4	351.8
12.5°	358.6	358.1	356.0	354.9	353.9	352.8	353.4	351.3	352.3	352.3	351.3
15°	348.1	347.1	345.5	346.0	345.0	344.5	345.5	344.5	346.6	347.6	346.6
17.5°	330.4	329.8	328.8	328.8	328.8	329.3	330.9	330.9	334.0	336.1	337.1
20°	307.4	306.8	307.4	308.4	308.9	311.0	314.7	316.8	320.9	324.6	327.2
22.5°	286.4	287.5	289.1	291.2	291.7	294.3	299.0	301.1	306.3	310.5	313.1
25°	268.7	270.2	271.3	272.9	273.4	276.5	280.7	283.3	289.1	292.2	295.3
27.5°	250.9	253.0	253.5	255.6	255.6	258.7	262.4	265.0	268.7	271.8	274.4
30°	233.7	234.2	235.7	236.3	237.3	240.4	242.5	244.1	248.3	249.9	251.4
32.5°	214.8	216.9	218.0	218.5	218.0	220.6	222.7	223.7	225.3	227.4	228.4
35°	197.1	198.1	198.6	199.7	200.2	200.7	201.8	202.3	204.4	204.9	205.4
37.5°	179.3	180.9	180.3	180.9	180.9	181.4	182.4	181.9	183.5	184.0	183.5
40°	161.5	161.5	162.6	162.0	162.6	162.0	163.1	163.1	163.1	163.6	163.1
42.5°	143.7	144.3	143.7	144.8	143.7	144.3	144.3	143.7	144.3	143.7	143.7
45°	127.5	127.5	127.5	127.5	126.5	126.5	127.5	127.0	126.5	126.0	125.5
47.5°	111.9	112.4	111.3	111.9	111.3	110.8	110.3	110.3	109.8	108.7	108.2
50°	98.8	97.7	97.2	97.7	97.2	96.7	96.2	95.1	94.6	93.6	93.0
52.5°	85.7	84.7	83.6	83.6	83.1	82.1	81.5	80.5	80.0	78.9	78.9
55°	74.2	73.2	72.1	71.6	70.6	69.5	69.0	68.0	67.4	66.4	65.3
57.5°	63.2	61.7	60.6	60.1	59.6	58.0	57.5	56.5	55.4	54.4	53.8
60°	53.3	51.7	50.2	49.7	49.1	47.6	47.0	45.5	45.0	43.9	43.4
62.5°	43.9	42.9	40.8	40.2	39.2	38.2	36.6	36.1	35.5	36.1	36.1
65°	35.5	34.0	32.4	31.9	30.8	29.8	29.3	28.7	29.3	29.3	29.8
67.5°	28.2	26.7	25.1	25.1	24.6	23.5	23.5	23.5	24.0	24.0	24.6
70°	22.5	21.4	20.4	19.9	19.9	19.3	19.9	19.9	20.4	20.4	20.4
72.5°	17.8	17.2	16.7	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.7
75°	13.6	13.1	12.5	12.5	12.0	12.0	12.0	12.0	12.0	12.0	11.5
77.5°	8.9	8.4	7.8	7.8	7.3	6.8	6.8	6.3	6.3	6.3	6.3
80°	4.7	4.2	3.7	3.1	3.1	2.6	2.6	2.6	2.6	2.1	2.1
82.5°	2.1	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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°	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5
2.5°	354.9	353.9	354.9	355.4	354.4	353.9	354.9	352.8
5°	354.4	352.8	353.4	353.9	352.8	352.3	353.4	351.8
7.5°	353.4	352.8	353.4	353.9	352.3	352.3	353.4	351.8
10°	353.4	352.3	352.8	353.9	352.8	352.8	353.9	351.8
12.5°	352.8	351.3	352.8	353.4	352.3	352.3	353.4	351.3
15°	349.2	349.2	349.7	350.7	350.2	350.7	352.3	350.7
17.5°	341.3	342.4	344.5	346.0	347.1	348.1	349.7	348.6
20°	331.9	333.5	336.1	337.7	339.8	340.3	342.9	340.8
22.5°	317.3	320.4	322.5	324.1	325.7	327.2	329.3	328.8
25°	299.5	301.6	303.2	304.7	306.8	307.9	308.9	308.4
27.5°	278.1	279.1	281.2	282.3	283.3	284.4	286.4	283.8
30°	254.6	255.1	256.1	257.7	257.7	258.7	259.8	259.3
32.5°	230.5	230.5	231.6	232.6	232.1	232.6	234.7	232.1
35°	207.0	206.5	208.0	208.6	208.6	208.0	209.6	209.1
37.5°	184.0	184.5	185.0	185.6	184.5	185.6	185.6	184.5
40°	163.1	162.6	163.6	164.1	163.6	164.1	164.1	162.0
42.5°	144.3	143.2	143.7	144.3	143.7	144.3	143.7	142.7
45°	126.0	125.5	125.5	126.0	124.9	124.9	124.9	124.9
47.5°	108.7	108.2	108.7	108.7	107.7	107.7	108.2	107.7
50°	93.0	92.5	92.5	92.5	92.0	92.0	92.5	92.5
52.5°	78.9	77.9	77.9	77.9	77.9	77.9	78.4	77.4
55°	64.8	64.8	64.8	64.8	65.3	65.3	65.3	65.3
57.5°	53.3	53.8	53.8	54.4	53.8	54.4	54.4	53.8
60°	44.4	43.9	44.4	44.4	45.0	45.0	45.0	45.0
62.5°	36.6	36.6	36.6	37.1	37.1	37.1	37.6	37.1
65°	30.3	30.3	30.8	30.8	30.8	31.4	31.4	31.4
67.5°	25.1	25.1	25.1	25.1	25.6	25.6	26.1	25.6
70°	20.9	20.9	20.9	20.9	20.9	21.4	21.4	21.4
72.5°	16.7	16.7	16.7	16.7	17.2	17.2	17.2	17.2
75°	11.5	11.5	11.5	12.0	11.5	11.5	11.5	11.5
77.5°	5.7	5.7	5.7	5.7	5.7	5.2	5.2	5.2
80°	2.1	2.1	2.1	2.1	2.1	2.1	1.6	2.1
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5
85°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)