

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: P251748

Luminaire Tested: **LD4B10D010 EU4B10209050 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251748
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 EU4B10209050 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 715.0 lumens
Efficiency: N/A
Efficacy: 71.1 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

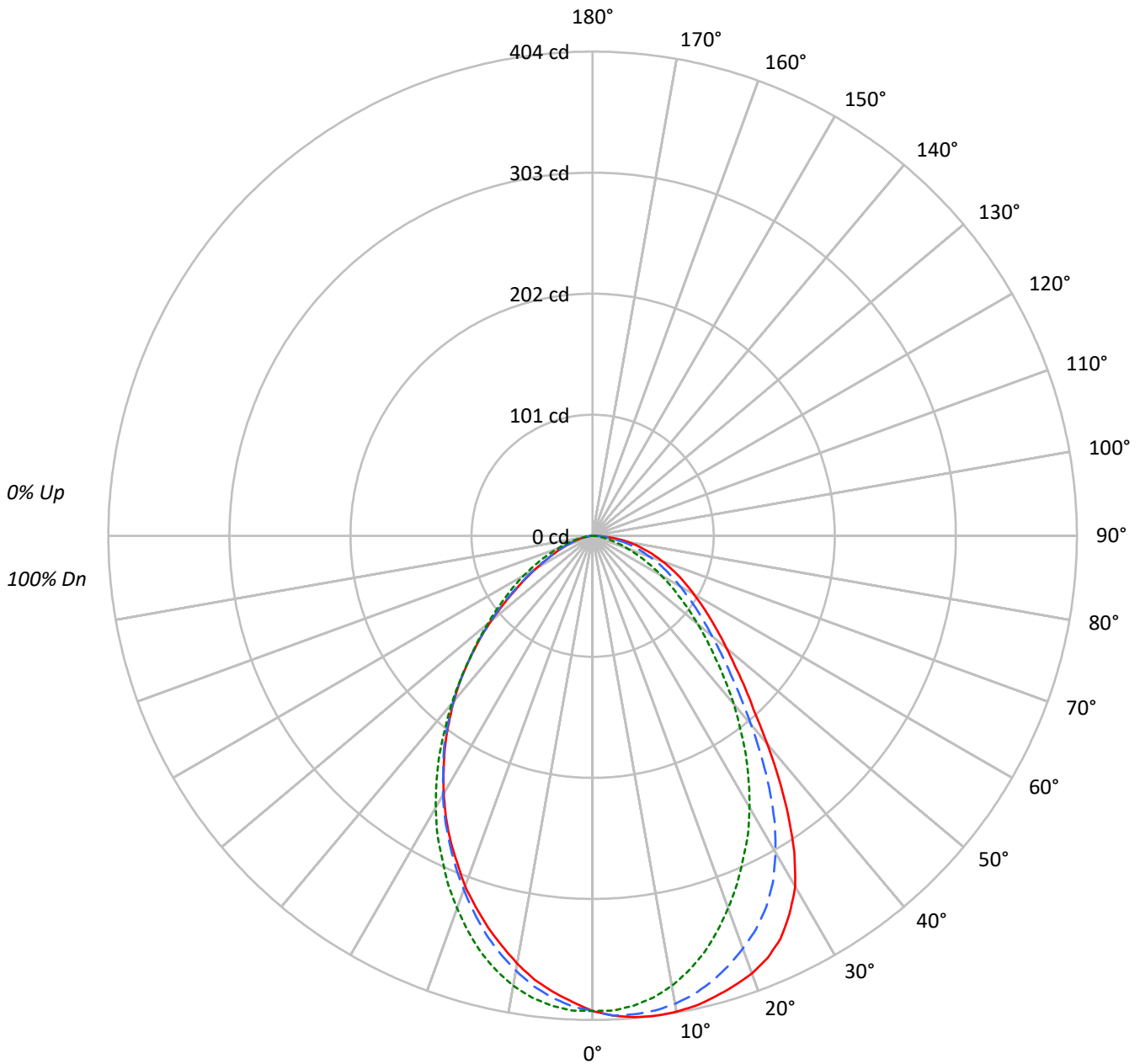
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	38642	38642	38642
5°	39445	38496	37361
10°	39901	37734	35864
15°	40136	36312	34103
20°	40303	34287	32265
25°	39884	31948	30174
30°	38037	29450	27942
35°	33824	26496	25544
40°	28790	23282	22900
45°	24809	20012	19930
50°	22106	17300	16739
55°	20322	14918	13372
60°	19024	12845	10467
65°	18287	10838	8163
70°	17553	8691	6611
75°	16982	6891	5046
80°	17118	4771	3087
85°	14313	3466	1342



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.1	5.2
10°-20°	102.1	14.3
20°-30°	142.7	20.0
30°-40°	146.7	20.5
40°-50°	119.1	16.7
50°-60°	83.8	11.7
60°-70°	51.6	7.2
70°-80°	25.8	3.6
80°-90°	6.1	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°	281.9	39.4
0°-40°	428.6	59.9
0°-60°	631.5	88.3
0°-90°	715.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	715.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	396	396	396	396	396	
5°	403	401	394	387	382	38
15°	398	385	360	344	338	112
25°	371	342	297	282	281	170
35°	284	257	223	216	215	177
45°	180	162	145	145	145	140
55°	120	105	88	80	79	107
65°	79	66	47	36	35	78
75°	45	35	18	13	13	48
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°	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5
2.5°	400.8	401.4	399.6	401.4	399.0	400.2	400.8	399.6	398.4	400.8	400.8
5°	403.2	403.2	401.4	403.9	400.8	401.4	402.6	400.8	399.0	401.4	400.8
7.5°	403.9	403.9	401.4	403.9	400.8	401.4	402.0	400.2	398.4	400.2	399.6
10°	403.2	402.6	400.8	403.2	400.2	400.2	400.8	399.0	395.9	397.8	396.5
12.5°	401.4	401.4	399.0	401.4	397.1	397.1	397.8	395.3	392.9	392.9	391.7
15°	397.8	397.8	395.3	397.1	393.5	393.5	392.9	390.4	387.4	387.4	384.9
17.5°	393.5	393.5	391.0	392.9	388.6	388.6	388.0	384.3	380.1	379.5	376.4
20°	388.6	388.6	385.6	386.8	381.9	381.9	381.3	377.0	372.1	370.9	366.6
22.5°	381.3	381.3	378.2	378.8	374.0	373.4	372.7	367.9	363.0	361.2	355.7
25°	370.9	370.3	367.9	367.9	363.0	361.8	360.5	355.7	350.8	347.1	342.2
27.5°	355.7	356.3	353.2	353.8	347.7	346.5	345.9	339.8	334.3	330.6	325.8
30°	338.0	336.1	333.1	333.1	328.2	327.6	326.4	320.9	314.8	310.5	305.0
32.5°	313.0	312.3	309.3	309.3	303.8	303.8	301.4	295.9	290.4	287.9	282.5
35°	284.3	283.7	281.2	281.2	276.4	277.0	274.5	270.3	264.8	261.1	256.8
37.5°	255.0	254.4	252.0	252.6	248.3	248.3	246.5	242.2	237.9	236.1	230.6
40°	226.3	225.7	222.7	224.5	220.8	219.6	219.0	216.0	211.1	208.6	205.6
42.5°	200.1	200.7	197.7	198.9	195.8	194.6	194.0	191.6	187.9	185.5	182.4
45°	180.0	178.7	177.5	177.5	174.5	173.9	173.3	170.2	167.8	165.3	162.3
47.5°	161.1	159.8	158.6	159.2	156.8	156.2	155.0	152.5	149.5	148.2	145.2
50°	145.8	145.2	143.4	143.4	140.9	140.3	139.1	137.3	134.2	132.4	129.9
52.5°	131.8	131.8	129.9	129.3	127.5	126.9	126.3	123.8	121.4	119.0	116.5
55°	119.6	119.0	117.7	117.7	115.3	114.7	114.1	111.6	109.2	107.4	104.9
57.5°	108.0	108.0	106.8	106.8	104.9	103.7	103.7	101.3	98.2	97.0	93.9
60°	97.6	97.6	96.4	96.4	94.6	94.6	93.3	90.9	89.1	86.6	84.2
62.5°	87.8	88.5	87.2	86.6	84.8	84.2	84.2	82.4	79.3	77.5	75.0
65°	79.3	78.7	78.1	77.5	75.6	75.0	75.0	72.6	70.8	68.3	66.5
67.5°	70.2	70.2	68.9	68.9	67.7	67.1	65.9	64.1	62.2	60.4	58.6
70°	61.6	61.6	61.0	61.0	59.2	58.6	58.0	56.1	54.3	52.5	50.0
72.5°	53.7	53.1	52.5	52.5	51.2	50.6	50.0	48.2	46.4	44.5	42.7
75°	45.1	45.1	44.5	44.5	43.3	42.7	42.7	41.5	39.0	37.8	35.4
77.5°	37.8	37.8	37.2	37.2	36.0	36.0	35.4	33.6	32.3	30.5	29.3
80°	30.5	29.9	29.9	29.3	28.1	28.1	27.5	26.8	25.0	23.8	22.0
82.5°	21.4	21.4	21.4	20.7	20.1	20.1	19.5	18.3	17.1	16.5	14.6
85°	12.8	12.8	12.2	11.6	12.2	11.6	11.0	10.4	9.8	9.2	8.5
87.5°	5.5	5.5	4.9	4.9	4.9	4.9	4.9	4.3	3.7	3.7	3.1
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5
2.5°	397.1	399.0	398.4	397.8	396.5	396.5	396.5	395.9	396.5	396.5	395.3
5°	397.1	398.4	397.8	396.5	395.3	395.3	394.7	393.5	393.5	393.5	391.0
7.5°	395.3	396.5	394.7	393.5	392.3	391.0	391.0	389.2	389.2	388.6	386.2
10°	391.7	392.3	389.8	388.6	386.8	386.2	384.9	382.5	381.9	381.3	378.8
12.5°	386.2	386.8	383.7	381.3	378.8	378.2	377.0	374.0	372.7	371.5	368.5
15°	378.2	378.2	374.6	371.5	369.1	368.5	365.4	362.4	361.2	359.9	355.7
17.5°	369.1	368.5	363.6	360.5	357.5	356.3	353.2	349.6	347.1	345.9	342.2
20°	359.3	357.5	352.0	348.9	345.3	343.5	340.4	335.5	333.1	330.6	327.0
22.5°	347.7	345.3	339.2	334.9	331.3	329.4	325.2	320.9	317.2	314.8	310.5
25°	333.7	330.6	323.9	318.4	315.4	313.6	309.3	304.4	300.8	297.1	293.4
27.5°	317.2	313.6	306.9	301.4	298.3	295.3	292.2	286.7	283.7	280.6	276.4
30°	297.1	292.8	286.7	281.8	278.2	275.7	272.1	267.2	263.5	261.7	257.4
32.5°	275.1	270.3	264.8	259.9	258.1	255.0	252.0	247.1	244.0	242.2	239.1
35°	250.7	247.1	241.0	237.3	234.3	233.0	230.6	225.7	224.5	222.7	219.0
37.5°	225.1	222.1	217.8	214.7	212.3	211.1	208.6	205.6	203.8	201.9	200.1
40°	201.3	198.9	195.2	192.8	189.7	187.9	187.9	184.2	183.0	183.0	181.2
42.5°	178.1	176.9	173.9	170.2	169.6	167.8	167.2	165.3	164.1	163.5	162.9
45°	158.6	156.8	153.7	151.9	150.1	150.1	148.2	146.4	145.8	145.2	144.6
47.5°	141.5	139.1	136.7	134.8	133.6	133.0	131.2	129.9	129.3	129.3	128.7
50°	126.3	124.5	122.0	120.2	119.0	117.7	116.5	115.3	114.7	114.1	114.1
52.5°	113.5	111.0	108.6	106.8	104.9	104.3	103.1	101.9	101.3	100.7	100.0
55°	101.9	100.0	97.0	95.2	93.3	93.3	91.5	89.7	88.5	87.8	87.2
57.5°	90.9	89.1	86.0	84.2	83.0	81.7	80.5	79.3	78.1	76.9	75.6
60°	81.1	79.3	76.3	73.8	73.2	72.0	70.8	68.3	67.1	65.9	64.7
62.5°	72.0	69.5	67.1	64.7	64.1	62.8	61.0	59.2	57.3	56.1	54.3
65°	63.4	61.6	58.6	56.7	54.9	54.3	52.5	50.0	48.2	47.0	45.1
67.5°	55.5	53.1	50.0	48.2	47.0	45.8	43.9	42.1	40.3	38.4	36.6
70°	47.6	45.8	42.7	40.9	39.7	38.4	36.6	34.2	32.3	30.5	29.3
72.5°	40.3	37.8	35.4	33.6	32.3	31.1	29.3	27.5	25.6	24.4	22.6
75°	33.6	31.1	29.3	26.8	26.2	25.0	23.2	21.4	19.5	18.3	17.1
77.5°	26.8	25.0	22.6	21.4	20.1	18.9	17.7	15.9	14.6	12.8	11.6
80°	20.1	18.3	16.5	15.3	14.0	13.4	12.2	11.0	9.8	8.5	7.9
82.5°	13.4	12.2	10.4	9.8	9.2	8.5	7.3	6.7	6.1	5.5	4.9
85°	7.3	6.7	6.1	4.9	4.9	4.3	3.7	3.7	3.1	3.1	2.4
87.5°	3.1	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°	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5
2.5°	395.9	393.5	393.5	393.5	391.7	392.3	392.9	393.5	392.9	391.0	392.9
5°	391.7	389.2	389.2	388.0	386.8	386.8	386.8	387.4	386.8	384.9	385.6
7.5°	386.2	383.1	382.5	381.3	380.1	379.5	379.5	379.5	378.8	376.4	377.6
10°	377.6	374.6	373.4	372.7	370.9	370.3	369.7	369.1	368.5	366.0	367.3
12.5°	367.3	364.8	362.4	361.8	359.9	358.7	358.1	358.1	356.9	354.4	355.7
15°	355.1	351.4	349.6	348.3	346.5	345.3	344.1	344.7	344.1	341.6	342.2
17.5°	340.4	336.7	334.9	334.3	331.9	330.6	330.0	330.0	329.4	327.0	327.6
20°	324.5	320.9	319.7	318.4	317.2	316.0	315.4	314.8	314.2	311.7	313.6
22.5°	308.7	304.4	302.6	302.6	300.1	299.5	298.9	299.5	298.9	296.5	297.7
25°	292.2	287.9	286.7	284.9	283.7	283.1	283.1	283.1	282.5	281.2	282.5
27.5°	273.9	270.9	269.0	268.4	267.2	266.6	266.0	266.6	266.6	264.8	266.0
30°	255.6	253.2	252.0	251.3	249.5	248.9	249.5	249.5	249.5	247.7	249.5
32.5°	237.3	235.5	234.9	233.0	231.8	231.8	231.8	232.4	231.8	230.6	232.4
35°	219.0	216.6	216.0	215.3	215.3	214.1	215.3	214.7	216.0	214.1	215.3
37.5°	199.5	198.3	197.7	197.7	196.4	197.0	197.0	197.0	198.3	196.4	197.7
40°	181.2	180.0	180.0	180.0	179.4	179.4	179.4	180.0	180.6	179.4	180.6
42.5°	162.9	162.3	162.3	161.7	161.1	161.7	162.3	162.3	162.9	161.7	162.3
45°	145.2	144.6	145.2	144.6	144.6	144.0	144.6	145.2	145.2	144.6	144.6
47.5°	128.7	128.7	128.1	128.1	128.1	128.1	128.1	128.1	128.1	126.9	128.1
50°	114.1	112.9	113.5	112.9	112.9	112.2	112.2	111.6	111.0	110.4	110.4
52.5°	100.0	98.8	98.8	98.2	97.6	97.6	97.0	96.4	95.8	94.6	94.6
55°	86.6	85.4	84.8	84.2	83.6	83.0	82.4	81.7	80.5	79.9	79.9
57.5°	74.4	73.2	72.0	72.0	70.8	70.2	68.9	67.7	67.1	65.9	65.9
60°	63.4	62.2	60.4	59.8	59.2	58.0	56.1	55.5	54.9	53.7	54.3
62.5°	53.1	51.2	49.4	48.8	48.2	47.0	45.8	44.5	43.9	44.5	44.5
65°	43.3	41.5	40.3	39.0	38.4	37.2	36.6	36.0	36.0	36.0	36.6
67.5°	34.8	32.9	31.7	31.1	29.9	29.3	29.3	29.3	29.3	29.3	29.3
70°	27.5	26.2	25.0	23.8	23.8	23.2	23.2	23.2	23.2	23.2	23.2
72.5°	20.7	19.5	18.9	18.9	18.3	18.3	18.3	18.3	17.7	17.7	18.3
75°	15.3	14.6	14.0	14.0	14.0	13.4	13.4	13.4	13.4	13.4	13.4
77.5°	11.0	10.4	10.4	9.8	9.8	9.8	9.8	9.8	9.8	9.2	9.2
80°	7.3	6.7	6.7	6.7	6.7	6.1	6.1	6.1	6.1	6.1	6.1
82.5°	4.3	4.3	4.3	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
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°	396.5	396.5	396.5	396.5	396.5	396.5	396.5	396.5
2.5°	389.2	391.7	392.3	390.4	391.0	389.8	390.4	389.2
5°	382.5	384.3	384.9	383.7	383.7	382.5	383.1	381.9
7.5°	374.0	375.8	376.4	375.2	375.2	374.0	374.0	373.4
10°	364.2	364.8	366.0	364.2	364.8	363.6	363.6	362.4
12.5°	352.0	353.2	354.4	352.6	352.6	352.0	352.0	350.2
15°	339.2	340.4	341.0	339.8	339.8	339.2	338.6	338.0
17.5°	325.8	326.4	327.6	325.8	327.0	325.8	325.8	324.5
20°	310.5	312.3	313.0	311.1	311.7	311.1	311.1	311.1
22.5°	295.9	297.1	297.7	296.5	297.1	295.9	296.5	295.3
25°	280.6	281.2	281.8	280.6	281.8	281.2	280.6	280.6
27.5°	264.8	265.4	266.0	264.8	266.0	265.4	266.0	264.8
30°	247.7	248.9	250.1	248.9	249.5	248.9	248.9	248.3
32.5°	230.6	231.8	233.0	231.8	233.0	231.8	232.4	231.2
35°	214.7	215.3	216.0	214.7	215.3	215.3	215.3	214.7
37.5°	197.0	198.3	198.3	197.7	198.9	198.3	198.3	197.0
40°	180.0	180.6	181.2	180.0	180.6	180.0	180.6	180.0
42.5°	162.3	163.5	164.1	162.9	162.9	162.9	162.3	162.9
45°	144.0	145.2	146.4	144.6	145.2	145.2	145.2	144.6
47.5°	127.5	127.5	128.1	127.5	128.1	126.9	128.1	127.5
50°	110.4	110.4	111.6	110.4	110.4	110.4	110.4	110.4
52.5°	93.9	94.6	94.6	93.3	93.9	93.3	93.9	93.3
55°	78.7	78.7	79.3	78.7	78.7	78.7	78.7	78.7
57.5°	65.3	65.9	65.9	65.3	65.9	65.3	65.3	65.3
60°	54.3	54.3	54.3	53.7	54.3	53.7	54.3	53.7
62.5°	43.9	44.5	44.5	43.9	44.5	43.9	43.9	43.9
65°	36.0	36.0	36.0	36.0	36.0	36.0	36.0	35.4
67.5°	28.7	28.7	29.3	28.7	29.3	29.3	29.3	29.3
70°	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
72.5°	17.7	17.7	18.3	17.7	17.7	17.7	17.7	17.7
75°	13.4	13.4	13.4	13.4	13.4	12.8	12.8	13.4
77.5°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.8
80°	6.1	6.1	6.1	6.1	5.5	5.5	6.1	5.5
82.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
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)