

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: P251747

Luminaire Tested: **LD4B10D010 EU4B10209040 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251747
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 EU4B10209040 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 712.0 lumens
Efficiency: N/A
Efficacy: 70.8 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

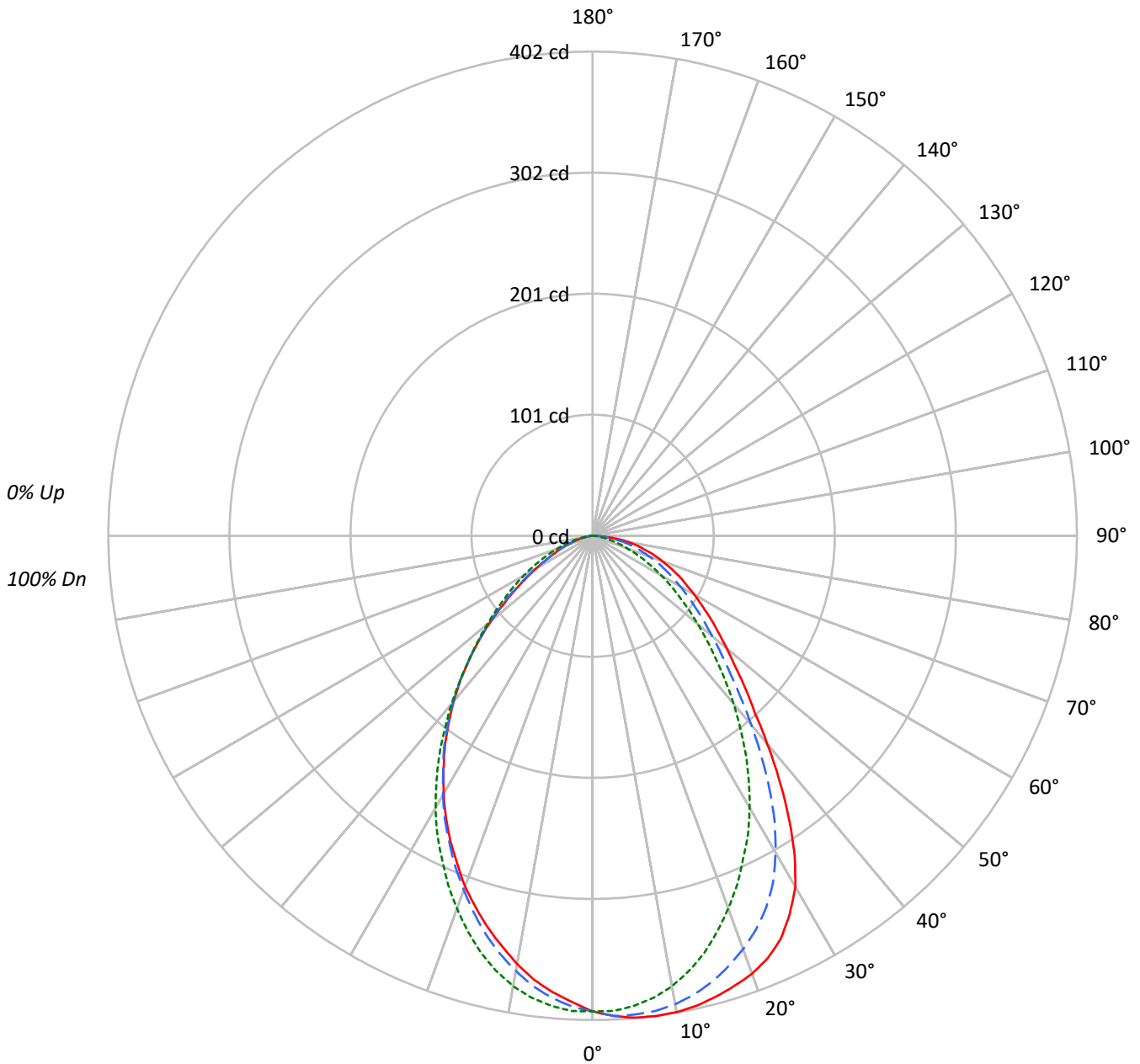
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	38486	38486	38486
5°	39289	38330	37205
10°	39743	37576	35715
15°	39965	36161	33962
20°	40137	34153	32130
25°	39723	31808	30045
30°	37879	29327	27819
35°	33682	26377	25437
40°	28676	23180	22798
45°	24699	19930	19847
50°	22015	17224	16678
55°	20237	14867	13321
60°	18946	12786	10428
65°	18218	10792	8117
70°	17496	8662	6582
75°	16945	6853	5046
80°	17062	4771	3087
85°	14313	3355	1342



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.0	5.2
10°-20°	101.6	14.3
20°-30°	142.1	20.0
30°-40°	146.1	20.5
40°-50°	118.6	16.7
50°-60°	83.5	11.7
60°-70°	51.4	7.2
70°-80°	25.7	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°	280.7	39.4
0°-40°	426.8	59.9
0°-60°	628.8	88.3
0°-90°	712.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	712.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	395	395	395	395	395	
5°	402	399	392	385	380	38
15°	396	383	358	343	337	112
25°	369	341	296	281	279	169
35°	283	256	222	215	214	176
45°	179	162	145	145	144	139
55°	119	104	88	80	78	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°	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9
2.5°	399.1	399.7	397.9	399.7	397.3	398.5	399.1	397.9	396.7	399.1	399.1
5°	401.6	401.6	399.7	402.2	399.1	399.7	400.9	399.1	397.3	399.7	399.1
7.5°	402.2	402.2	399.7	402.2	399.1	399.7	400.3	398.5	396.7	398.5	397.9
10°	401.6	400.9	399.1	401.6	398.5	398.5	399.1	397.3	394.3	396.1	394.9
12.5°	399.7	399.7	397.3	399.7	395.5	395.5	396.1	393.7	391.2	391.2	390.0
15°	396.1	396.1	393.7	395.5	391.8	391.8	391.2	388.8	385.8	385.8	383.3
17.5°	391.8	391.8	389.4	391.2	387.0	387.0	386.4	382.7	378.5	377.9	374.8
20°	387.0	387.0	383.9	385.2	380.3	380.3	379.7	375.4	370.6	369.4	365.1
22.5°	379.7	379.7	376.6	377.3	372.4	371.8	371.2	366.3	361.5	359.6	354.2
25°	369.4	368.7	366.3	366.3	361.5	360.2	359.0	354.2	349.3	345.7	340.8
27.5°	354.2	354.8	351.7	352.3	346.3	345.1	344.4	338.4	332.9	329.3	324.4
30°	336.6	334.7	331.7	331.7	326.8	326.2	325.0	319.5	313.5	309.2	303.7
32.5°	311.6	311.0	308.0	308.0	302.5	302.5	300.1	294.6	289.2	286.7	281.3
35°	283.1	282.5	280.1	280.1	275.2	275.8	273.4	269.1	263.7	260.0	255.8
37.5°	253.9	253.3	250.9	251.5	247.2	247.2	245.4	241.2	236.9	235.1	229.6
40°	225.4	224.8	221.7	223.6	219.9	218.7	218.1	215.1	210.2	207.8	204.7
42.5°	199.3	199.9	196.8	198.0	195.0	193.8	193.2	190.8	187.1	184.7	181.6
45°	179.2	178.0	176.8	176.8	173.7	173.1	172.5	169.5	167.1	164.6	161.6
47.5°	160.4	159.2	157.9	158.6	156.1	155.5	154.3	151.9	148.8	147.6	144.6
50°	145.2	144.6	142.8	142.8	140.3	139.7	138.5	136.7	133.6	131.8	129.4
52.5°	131.2	131.2	129.4	128.8	127.0	126.4	125.8	123.3	120.9	118.5	116.0
55°	119.1	118.5	117.2	117.2	114.8	114.2	113.6	111.2	108.7	106.9	104.5
57.5°	107.5	107.5	106.3	106.3	104.5	103.3	103.3	100.8	97.8	96.6	93.6
60°	97.2	97.2	96.0	96.0	94.2	94.2	92.9	90.5	88.7	86.3	83.8
62.5°	87.5	88.1	86.9	86.3	84.4	83.8	83.8	82.0	79.0	77.2	74.7
65°	79.0	78.4	77.8	77.2	75.3	74.7	74.7	72.3	70.5	68.0	66.2
67.5°	69.9	69.9	68.6	68.6	67.4	66.8	65.6	63.8	62.0	60.1	58.3
70°	61.4	61.4	60.7	60.7	58.9	58.3	57.7	55.9	54.1	52.2	49.8
72.5°	53.5	52.9	52.2	52.2	51.0	50.4	49.8	48.0	46.2	44.3	42.5
75°	45.0	45.0	44.3	44.3	43.1	42.5	42.5	41.3	38.9	37.7	35.2
77.5°	37.7	37.7	37.1	37.1	35.8	35.8	35.2	33.4	32.2	30.4	29.2
80°	30.4	29.8	29.8	29.2	27.9	27.9	27.3	26.7	24.9	23.7	21.9
82.5°	21.3	21.3	21.3	20.7	20.0	20.0	19.4	18.2	17.0	16.4	14.6
85°	12.8	12.8	12.1	11.5	12.1	11.5	10.9	10.3	9.7	9.1	8.5
87.5°	5.5	5.5	4.9	4.9	4.9	4.9	4.9	4.3	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°	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9
2.5°	395.5	397.3	396.7	396.1	394.9	394.9	394.9	394.3	394.9	394.9	393.7
5°	395.5	396.7	396.1	394.9	393.7	393.7	393.0	391.8	391.8	391.8	389.4
7.5°	393.7	394.9	393.0	391.8	390.6	389.4	389.4	387.6	387.6	387.0	384.5
10°	390.0	390.6	388.2	387.0	385.2	384.5	383.3	380.9	380.3	379.7	377.3
12.5°	384.5	385.2	382.1	379.7	377.3	376.6	375.4	372.4	371.2	370.0	366.9
15°	376.6	376.6	373.0	370.0	367.5	366.9	363.9	360.9	359.6	358.4	354.2
17.5°	367.5	366.9	362.1	359.0	356.0	354.8	351.7	348.1	345.7	344.4	340.8
20°	357.8	356.0	350.5	347.5	343.8	342.0	339.0	334.1	331.7	329.3	325.6
22.5°	346.3	343.8	337.8	333.5	329.9	328.0	323.8	319.5	315.9	313.5	309.2
25°	332.3	329.3	322.6	317.1	314.1	312.3	308.0	303.1	299.5	295.8	292.2
27.5°	315.9	312.3	305.6	300.1	297.1	294.0	291.0	285.5	282.5	279.4	275.2
30°	295.8	291.6	285.5	280.7	277.0	274.6	270.9	266.1	262.4	260.6	256.4
32.5°	274.0	269.1	263.7	258.8	257.0	253.9	250.9	246.0	243.0	241.2	238.1
35°	249.7	246.0	240.0	236.3	233.3	232.1	229.6	224.8	223.6	221.7	218.1
37.5°	224.2	221.1	216.9	213.8	211.4	210.2	207.8	204.7	202.9	201.1	199.3
40°	200.5	198.0	194.4	192.0	188.9	187.1	187.1	183.5	182.2	182.2	180.4
42.5°	177.4	176.2	173.1	169.5	168.9	167.1	166.5	164.6	163.4	162.8	162.2
45°	157.9	156.1	153.1	151.3	149.4	149.4	147.6	145.8	145.2	144.6	144.0
47.5°	140.9	138.5	136.1	134.3	133.0	132.4	130.6	129.4	128.8	128.8	128.2
50°	125.8	123.9	121.5	119.7	118.5	117.2	116.0	114.8	114.2	113.6	113.6
52.5°	113.0	110.6	108.1	106.3	104.5	103.9	102.7	101.5	100.8	100.2	99.6
55°	101.5	99.6	96.6	94.8	92.9	92.9	91.1	89.3	88.1	87.5	86.9
57.5°	90.5	88.7	85.7	83.8	82.6	81.4	80.2	79.0	77.8	76.5	75.3
60°	80.8	79.0	75.9	73.5	72.9	71.7	70.5	68.0	66.8	65.6	64.4
62.5°	71.7	69.3	66.8	64.4	63.8	62.6	60.7	58.9	57.1	55.9	54.1
65°	63.2	61.4	58.3	56.5	54.7	54.1	52.2	49.8	48.0	46.8	45.0
67.5°	55.3	52.9	49.8	48.0	46.8	45.6	43.7	41.9	40.1	38.3	36.4
70°	47.4	45.6	42.5	40.7	39.5	38.3	36.4	34.0	32.2	30.4	29.2
72.5°	40.1	37.7	35.2	33.4	32.2	31.0	29.2	27.3	25.5	24.3	22.5
75°	33.4	31.0	29.2	26.7	26.1	24.9	23.1	21.3	19.4	18.2	17.0
77.5°	26.7	24.9	22.5	21.3	20.0	18.8	17.6	15.8	14.6	12.8	11.5
80°	20.0	18.2	16.4	15.2	14.0	13.4	12.1	10.9	9.7	8.5	7.9
82.5°	13.4	12.1	10.3	9.7	9.1	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	3.6	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°	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9
2.5°	394.3	391.8	391.8	391.8	390.0	390.6	391.2	391.8	391.2	389.4	391.2
5°	390.0	387.6	387.6	386.4	385.2	385.2	385.2	385.8	385.2	383.3	383.9
7.5°	384.5	381.5	380.9	379.7	378.5	377.9	377.9	377.9	377.3	374.8	376.0
10°	376.0	373.0	371.8	371.2	369.4	368.7	368.1	367.5	366.9	364.5	365.7
12.5°	365.7	363.3	360.9	360.2	358.4	357.2	356.6	356.6	355.4	353.0	354.2
15°	353.6	349.9	348.1	346.9	345.1	343.8	342.6	343.2	342.6	340.2	340.8
17.5°	339.0	335.3	333.5	332.9	330.5	329.3	328.7	328.7	328.0	325.6	326.2
20°	323.2	319.5	318.3	317.1	315.9	314.7	314.1	313.5	312.9	310.4	312.3
22.5°	307.4	303.1	301.3	301.3	298.9	298.3	297.7	298.3	297.7	295.2	296.5
25°	291.0	286.7	285.5	283.7	282.5	281.9	281.9	281.9	281.3	280.1	281.3
27.5°	272.8	269.7	267.9	267.3	266.1	265.5	264.9	265.5	265.5	263.7	264.9
30°	254.5	252.1	250.9	250.3	248.5	247.9	248.5	248.5	248.5	246.6	248.5
32.5°	236.3	234.5	233.9	232.1	230.8	230.8	230.8	231.5	230.8	229.6	231.5
35°	218.1	215.7	215.1	214.4	214.4	213.2	214.4	213.8	215.1	213.2	214.4
37.5°	198.7	197.4	196.8	196.8	195.6	196.2	196.2	196.2	197.4	195.6	196.8
40°	180.4	179.2	179.2	179.2	178.6	178.6	178.6	179.2	179.8	178.6	179.8
42.5°	162.2	161.6	161.6	161.0	160.4	161.0	161.6	161.6	162.2	161.0	161.6
45°	144.6	144.0	144.6	144.0	144.0	143.4	144.0	144.6	144.6	144.0	144.0
47.5°	128.2	128.2	127.6	127.6	127.6	127.6	127.6	127.6	127.6	126.4	127.6
50°	113.6	112.4	113.0	112.4	112.4	111.8	111.8	111.2	110.6	110.0	110.0
52.5°	99.6	98.4	98.4	97.8	97.2	97.2	96.6	96.0	95.4	94.2	94.2
55°	86.3	85.0	84.4	83.8	83.2	82.6	82.0	81.4	80.2	79.6	79.6
57.5°	74.1	72.9	71.7	71.7	70.5	69.9	68.6	67.4	66.8	65.6	65.6
60°	63.2	62.0	60.1	59.5	58.9	57.7	55.9	55.3	54.7	53.5	54.1
62.5°	52.9	51.0	49.2	48.6	48.0	46.8	45.6	44.3	43.7	44.3	44.3
65°	43.1	41.3	40.1	38.9	38.3	37.1	36.4	35.8	35.8	35.8	36.4
67.5°	34.6	32.8	31.6	31.0	29.8	29.2	29.2	29.2	29.2	29.2	29.2
70°	27.3	26.1	24.9	23.7	23.7	23.1	23.1	23.1	23.1	23.1	23.1
72.5°	20.7	19.4	18.8	18.8	18.2	18.2	18.2	18.2	17.6	17.6	18.2
75°	15.2	14.6	14.0	14.0	14.0	13.4	13.4	13.4	13.4	13.4	13.4
77.5°	10.9	10.3	10.3	9.7	9.7	9.7	9.7	9.7	9.7	9.1	9.1
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	3.6	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°	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9
2.5°	387.6	390.0	390.6	388.8	389.4	388.2	388.8	387.6
5°	380.9	382.7	383.3	382.1	382.1	380.9	381.5	380.3
7.5°	372.4	374.2	374.8	373.6	373.6	372.4	372.4	371.8
10°	362.7	363.3	364.5	362.7	363.3	362.1	362.1	360.9
12.5°	350.5	351.7	353.0	351.1	351.1	350.5	350.5	348.7
15°	337.8	339.0	339.6	338.4	338.4	337.8	337.2	336.6
17.5°	324.4	325.0	326.2	324.4	325.6	324.4	324.4	323.2
20°	309.2	311.0	311.6	309.8	310.4	309.8	309.8	309.8
22.5°	294.6	295.8	296.5	295.2	295.8	294.6	295.2	294.0
25°	279.4	280.1	280.7	279.4	280.7	280.1	279.4	279.4
27.5°	263.7	264.3	264.9	263.7	264.9	264.3	264.9	263.7
30°	246.6	247.9	249.1	247.9	248.5	247.9	247.9	247.2
32.5°	229.6	230.8	232.1	230.8	232.1	230.8	231.5	230.2
35°	213.8	214.4	215.1	213.8	214.4	214.4	214.4	213.8
37.5°	196.2	197.4	197.4	196.8	198.0	197.4	197.4	196.2
40°	179.2	179.8	180.4	179.2	179.8	179.2	179.8	179.2
42.5°	161.6	162.8	163.4	162.2	162.2	162.2	161.6	162.2
45°	143.4	144.6	145.8	144.0	144.6	144.6	144.6	144.0
47.5°	127.0	127.0	127.6	127.0	127.6	126.4	127.6	127.0
50°	110.0	110.0	111.2	110.0	110.0	110.0	110.0	110.0
52.5°	93.6	94.2	94.2	92.9	93.6	92.9	93.6	92.9
55°	78.4	78.4	79.0	78.4	78.4	78.4	78.4	78.4
57.5°	65.0	65.6	65.6	65.0	65.6	65.0	65.0	65.0
60°	54.1	54.1	54.1	53.5	54.1	53.5	54.1	53.5
62.5°	43.7	44.3	44.3	43.7	44.3	43.7	43.7	43.7
65°	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.2
67.5°	28.6	28.6	29.2	28.6	29.2	29.2	29.2	29.2
70°	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1
72.5°	17.6	17.6	18.2	17.6	17.6	17.6	17.6	17.6
75°	13.4	13.4	13.4	13.4	13.4	12.8	12.8	13.4
77.5°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.7
80°	6.1	6.1	6.1	6.1	5.5	5.5	6.1	5.5
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)