

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: P251739

Luminaire Tested: **LD4B10D010 EU4B10208030 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251739
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 EU4B10208030 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 821.0 lumens
Efficiency: N/A
Efficacy: 81.7 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

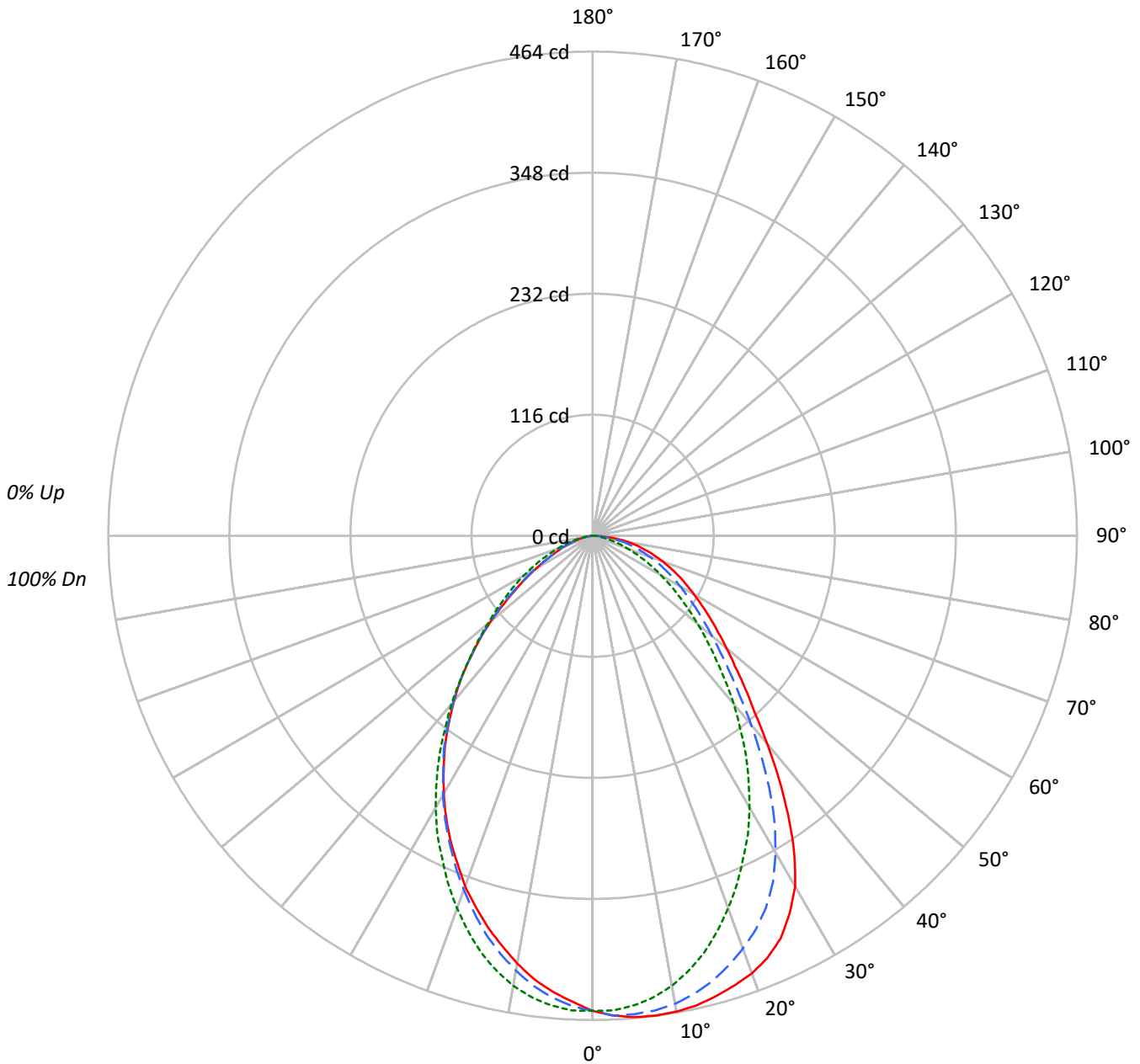
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	44373	44373	44373
5°	45295	44200	42899
10°	45819	43325	41178
15°	46079	41700	39158
20°	46277	39380	37057
25°	45798	36680	34647
30°	43675	33817	32084
35°	38833	30422	29339
40°	33065	26729	26284
45°	28475	22976	22879
50°	25381	19862	19225
55°	23329	17144	15360
60°	21850	14755	12007
65°	21008	12430	9363
70°	20146	9973	7580
75°	19505	7908	5799
80°	19643	5500	3536
85°	16438	3914	1565



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.6	5.2
10°-20°	117.2	14.3
20°-30°	163.9	20.0
30°-40°	168.4	20.5
40°-50°	136.7	16.7
50°-60°	96.3	11.7
60°-70°	59.3	7.2
70°-80°	29.6	3.6
80°-90°	7.0	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°	323.7	39.4
0°-40°	492.1	59.9
0°-60°	725.1	88.3
0°-90°	821.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	821.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	455	455	455	455	455	
5°	463	460	452	444	438	44
15°	457	442	413	395	388	129
25°	426	393	341	324	322	195
35°	326	295	256	248	247	203
45°	207	186	167	167	166	161
55°	137	120	101	92	90	123
65°	91	76	54	41	41	90
75°	52	41	21	15	15	55
85°	15	10	4	2	1	17
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°	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3
2.5°	460.2	460.9	458.8	460.9	458.1	459.5	460.2	458.8	457.4	460.2	460.2
5°	463.0	463.0	460.9	463.7	460.2	460.9	462.3	460.2	458.1	460.9	460.2
7.5°	463.7	463.7	460.9	463.7	460.2	460.9	461.6	459.5	457.4	459.5	458.8
10°	463.0	462.3	460.2	463.0	459.5	459.5	460.2	458.1	454.6	456.7	455.3
12.5°	460.9	460.9	458.1	460.9	456.0	456.0	456.7	453.9	451.1	451.1	449.7
15°	456.7	456.7	453.9	456.0	451.8	451.8	451.1	448.3	444.8	444.8	442.0
17.5°	451.8	451.8	449.0	451.1	446.2	446.2	445.5	441.3	436.4	435.7	432.2
20°	446.2	446.2	442.7	444.1	438.5	438.5	437.8	432.9	427.3	425.9	421.0
22.5°	437.8	437.8	434.3	435.0	429.4	428.7	428.0	422.4	416.8	414.7	408.4
25°	425.9	425.2	422.4	422.4	416.8	415.4	414.0	408.4	402.8	398.6	393.0
27.5°	408.4	409.1	405.6	406.3	399.3	397.9	397.2	390.2	383.9	379.7	374.1
30°	388.1	386.0	382.5	382.5	376.9	376.2	374.8	368.5	361.5	356.6	350.2
32.5°	359.4	358.7	355.2	355.2	348.8	348.8	346.0	339.7	333.4	330.6	324.3
35°	326.4	325.7	322.9	322.9	317.3	318.0	315.2	310.3	304.0	299.8	294.9
37.5°	292.8	292.1	289.3	290.0	285.1	285.1	283.0	278.1	273.2	271.1	264.8
40°	259.9	259.2	255.7	257.8	253.6	252.2	251.5	248.0	242.4	239.6	236.1
42.5°	229.8	230.5	227.0	228.4	224.9	223.5	222.8	220.0	215.8	213.0	209.4
45°	206.6	205.2	203.8	203.8	200.3	199.6	198.9	195.4	192.6	189.8	186.3
47.5°	184.9	183.5	182.1	182.8	180.0	179.3	177.9	175.1	171.6	170.2	166.7
50°	167.4	166.7	164.6	164.6	161.8	161.1	159.7	157.6	154.1	152.0	149.2
52.5°	151.3	151.3	149.2	148.5	146.4	145.7	145.0	142.2	139.4	136.6	133.8
55°	137.3	136.6	135.2	135.2	132.4	131.7	131.0	128.2	125.4	123.3	120.5
57.5°	124.0	124.0	122.6	122.6	120.5	119.1	119.1	116.3	112.8	111.4	107.9
60°	112.1	112.1	110.7	110.7	108.6	108.6	107.2	104.4	102.3	99.5	96.7
62.5°	100.9	101.6	100.2	99.5	97.4	96.7	96.7	94.6	91.1	89.0	86.2
65°	91.1	90.4	89.7	89.0	86.9	86.2	86.2	83.4	81.3	78.5	76.4
67.5°	80.6	80.6	79.2	79.2	77.8	77.1	75.7	73.6	71.5	69.3	67.2
70°	70.7	70.7	70.0	70.0	67.9	67.2	66.5	64.4	62.3	60.2	57.4
72.5°	61.6	60.9	60.2	60.2	58.8	58.1	57.4	55.3	53.2	51.1	49.0
75°	51.8	51.8	51.1	51.1	49.7	49.0	49.0	47.6	44.8	43.4	40.6
77.5°	43.4	43.4	42.7	42.7	41.3	41.3	40.6	38.5	37.1	35.0	33.6
80°	35.0	34.3	34.3	33.6	32.2	32.2	31.5	30.8	28.7	27.3	25.2
82.5°	24.5	24.5	24.5	23.8	23.1	23.1	22.4	21.0	19.6	18.9	16.8
85°	14.7	14.7	14.0	13.3	14.0	13.3	12.6	11.9	11.2	10.5	9.8
87.5°	6.3	6.3	5.6	5.6	5.6	5.6	5.6	4.9	4.2	4.2	3.5
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3
2.5°	456.0	458.1	457.4	456.7	455.3	455.3	455.3	454.6	455.3	455.3	453.9
5°	456.0	457.4	456.7	455.3	453.9	453.9	453.2	451.8	451.8	451.8	449.0
7.5°	453.9	455.3	453.2	451.8	450.4	449.0	449.0	446.9	446.9	446.2	443.4
10°	449.7	450.4	447.6	446.2	444.1	443.4	442.0	439.2	438.5	437.8	435.0
12.5°	443.4	444.1	440.6	437.8	435.0	434.3	432.9	429.4	428.0	426.6	423.1
15°	434.3	434.3	430.1	426.6	423.8	423.1	419.6	416.1	414.7	413.3	408.4
17.5°	423.8	423.1	417.5	414.0	410.5	409.1	405.6	401.4	398.6	397.2	393.0
20°	412.6	410.5	404.2	400.7	396.5	394.4	390.9	385.3	382.5	379.7	375.5
22.5°	399.3	396.5	389.5	384.6	380.4	378.3	373.4	368.5	364.3	361.5	356.6
25°	383.2	379.7	372.0	365.7	362.2	360.1	355.2	349.5	345.3	341.1	336.9
27.5°	364.3	360.1	352.3	346.0	342.5	339.0	335.5	329.2	325.7	322.2	317.3
30°	341.1	336.2	329.2	323.6	319.4	316.6	312.4	306.8	302.6	300.5	295.6
32.5°	315.9	310.3	304.0	298.4	296.3	292.8	289.3	283.7	280.2	278.1	274.6
35°	287.9	283.7	276.7	272.5	269.0	267.6	264.8	259.2	257.8	255.7	251.5
37.5°	258.5	255.0	250.1	246.6	243.8	242.4	239.6	236.1	234.0	231.9	229.8
40°	231.2	228.4	224.2	221.4	217.9	215.8	215.8	211.5	210.1	210.1	208.0
42.5°	204.5	203.1	199.6	195.4	194.7	192.6	191.9	189.8	188.4	187.7	187.0
45°	182.1	180.0	176.5	174.4	172.3	172.3	170.2	168.1	167.4	166.7	166.0
47.5°	162.5	159.7	156.9	154.8	153.4	152.7	150.6	149.2	148.5	148.5	147.8
50°	145.0	142.9	140.1	138.0	136.6	135.2	133.8	132.4	131.7	131.0	131.0
52.5°	130.3	127.5	124.7	122.6	120.5	119.8	118.4	117.0	116.3	115.6	114.9
55°	117.0	114.9	111.4	109.3	107.2	107.2	105.1	103.0	101.6	100.9	100.2
57.5°	104.4	102.3	98.8	96.7	95.3	93.9	92.5	91.1	89.7	88.3	86.9
60°	93.2	91.1	87.6	84.8	84.1	82.7	81.3	78.5	77.1	75.7	74.3
62.5°	82.7	79.9	77.1	74.3	73.6	72.2	70.0	67.9	65.8	64.4	62.3
65°	72.9	70.7	67.2	65.1	63.0	62.3	60.2	57.4	55.3	53.9	51.8
67.5°	63.7	60.9	57.4	55.3	53.9	52.5	50.4	48.3	46.2	44.1	42.0
70°	54.6	52.5	49.0	46.9	45.5	44.1	42.0	39.2	37.1	35.0	33.6
72.5°	46.2	43.4	40.6	38.5	37.1	35.7	33.6	31.5	29.4	28.0	25.9
75°	38.5	35.7	33.6	30.8	30.1	28.7	26.6	24.5	22.4	21.0	19.6
77.5°	30.8	28.7	25.9	24.5	23.1	21.7	20.3	18.2	16.8	14.7	13.3
80°	23.1	21.0	18.9	17.5	16.1	15.4	14.0	12.6	11.2	9.8	9.1
82.5°	15.4	14.0	11.9	11.2	10.5	9.8	8.4	7.7	7.0	6.3	5.6
85°	8.4	7.7	7.0	5.6	5.6	4.9	4.2	4.2	3.5	3.5	2.8
87.5°	3.5	2.8	2.8	2.1	2.1	2.1	1.4	1.4	1.4	0.7	0.7
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°	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3
2.5°	454.6	451.8	451.8	451.8	449.7	450.4	451.1	451.8	451.1	449.0	451.1
5°	449.7	446.9	446.9	445.5	444.1	444.1	444.1	444.8	444.1	442.0	442.7
7.5°	443.4	439.9	439.2	437.8	436.4	435.7	435.7	435.7	435.0	432.2	433.6
10°	433.6	430.1	428.7	428.0	425.9	425.2	424.5	423.8	423.1	420.3	421.7
12.5°	421.7	418.9	416.1	415.4	413.3	411.9	411.2	411.2	409.8	407.0	408.4
15°	407.7	403.5	401.4	400.0	397.9	396.5	395.1	395.8	395.1	392.3	393.0
17.5°	390.9	386.7	384.6	383.9	381.1	379.7	379.0	379.0	378.3	375.5	376.2
20°	372.7	368.5	367.1	365.7	364.3	362.9	362.2	361.5	360.8	358.0	360.1
22.5°	354.4	349.5	347.4	347.4	344.6	343.9	343.2	343.9	343.2	340.4	341.8
25°	335.5	330.6	329.2	327.1	325.7	325.0	325.0	325.0	324.3	322.9	324.3
27.5°	314.5	311.0	308.9	308.2	306.8	306.1	305.4	306.1	306.1	304.0	305.4
30°	293.5	290.7	289.3	288.6	286.5	285.8	286.5	286.5	286.5	284.4	286.5
32.5°	272.5	270.4	269.7	267.6	266.2	266.2	266.2	266.9	266.2	264.8	266.9
35°	251.5	248.7	248.0	247.3	247.3	245.9	247.3	246.6	248.0	245.9	247.3
37.5°	229.1	227.7	227.0	227.0	225.6	226.3	226.3	226.3	227.7	225.6	227.0
40°	208.0	206.6	206.6	206.6	205.9	205.9	205.9	206.6	207.3	205.9	207.3
42.5°	187.0	186.3	186.3	185.6	184.9	185.6	186.3	186.3	187.0	185.6	186.3
45°	166.7	166.0	166.7	166.0	166.0	165.3	166.0	166.7	166.7	166.0	166.0
47.5°	147.8	147.8	147.1	147.1	147.1	147.1	147.1	147.1	147.1	145.7	147.1
50°	131.0	129.6	130.3	129.6	129.6	128.9	128.9	128.2	127.5	126.8	126.8
52.5°	114.9	113.5	113.5	112.8	112.1	112.1	111.4	110.7	110.0	108.6	108.6
55°	99.5	98.1	97.4	96.7	96.0	95.3	94.6	93.9	92.5	91.8	91.8
57.5°	85.5	84.1	82.7	82.7	81.3	80.6	79.2	77.8	77.1	75.7	75.7
60°	72.9	71.5	69.3	68.6	67.9	66.5	64.4	63.7	63.0	61.6	62.3
62.5°	60.9	58.8	56.7	56.0	55.3	53.9	52.5	51.1	50.4	51.1	51.1
65°	49.7	47.6	46.2	44.8	44.1	42.7	42.0	41.3	41.3	41.3	42.0
67.5°	39.9	37.8	36.4	35.7	34.3	33.6	33.6	33.6	33.6	33.6	33.6
70°	31.5	30.1	28.7	27.3	27.3	26.6	26.6	26.6	26.6	26.6	26.6
72.5°	23.8	22.4	21.7	21.7	21.0	21.0	21.0	21.0	20.3	20.3	21.0
75°	17.5	16.8	16.1	16.1	16.1	15.4	15.4	15.4	15.4	15.4	15.4
77.5°	12.6	11.9	11.9	11.2	11.2	11.2	11.2	11.2	11.2	10.5	10.5
80°	8.4	7.7	7.7	7.7	7.7	7.0	7.0	7.0	7.0	7.0	7.0
82.5°	4.9	4.9	4.9	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
85°	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
87.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	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°	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3
2.5°	446.9	449.7	450.4	448.3	449.0	447.6	448.3	446.9
5°	439.2	441.3	442.0	440.6	440.6	439.2	439.9	438.5
7.5°	429.4	431.5	432.2	430.8	430.8	429.4	429.4	428.7
10°	418.2	418.9	420.3	418.2	418.9	417.5	417.5	416.1
12.5°	404.2	405.6	407.0	404.9	404.9	404.2	404.2	402.1
15°	389.5	390.9	391.6	390.2	390.2	389.5	388.8	388.1
17.5°	374.1	374.8	376.2	374.1	375.5	374.1	374.1	372.7
20°	356.6	358.7	359.4	357.3	358.0	357.3	357.3	357.3
22.5°	339.7	341.1	341.8	340.4	341.1	339.7	340.4	339.0
25°	322.2	322.9	323.6	322.2	323.6	322.9	322.2	322.2
27.5°	304.0	304.7	305.4	304.0	305.4	304.7	305.4	304.0
30°	284.4	285.8	287.2	285.8	286.5	285.8	285.8	285.1
32.5°	264.8	266.2	267.6	266.2	267.6	266.2	266.9	265.5
35°	246.6	247.3	248.0	246.6	247.3	247.3	247.3	246.6
37.5°	226.3	227.7	227.7	227.0	228.4	227.7	227.7	226.3
40°	206.6	207.3	208.0	206.6	207.3	206.6	207.3	206.6
42.5°	186.3	187.7	188.4	187.0	187.0	187.0	186.3	187.0
45°	165.3	166.7	168.1	166.0	166.7	166.7	166.7	166.0
47.5°	146.4	146.4	147.1	146.4	147.1	145.7	147.1	146.4
50°	126.8	126.8	128.2	126.8	126.8	126.8	126.8	126.8
52.5°	107.9	108.6	108.6	107.2	107.9	107.2	107.9	107.2
55°	90.4	90.4	91.1	90.4	90.4	90.4	90.4	90.4
57.5°	75.0	75.7	75.7	75.0	75.7	75.0	75.0	75.0
60°	62.3	62.3	62.3	61.6	62.3	61.6	62.3	61.6
62.5°	50.4	51.1	51.1	50.4	51.1	50.4	50.4	50.4
65°	41.3	41.3	41.3	41.3	41.3	41.3	41.3	40.6
67.5°	32.9	32.9	33.6	32.9	33.6	33.6	33.6	33.6
70°	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
72.5°	20.3	20.3	21.0	20.3	20.3	20.3	20.3	20.3
75°	15.4	15.4	15.4	15.4	15.4	14.7	14.7	15.4
77.5°	10.5	10.5	10.5	10.5	10.5	10.5	10.5	11.2
80°	7.0	7.0	7.0	7.0	6.3	6.3	7.0	6.3
82.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
85°	2.1	2.1	1.4	1.4	1.4	1.4	1.4	1.4
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)