

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: P251916

Luminaire Tested: **LD4B15D010 EU4B10209040 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251916
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B15D010 EU4B10209040 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE 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: 1120.0 lumens
Efficiency: N/A
Efficacy: 77.8 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

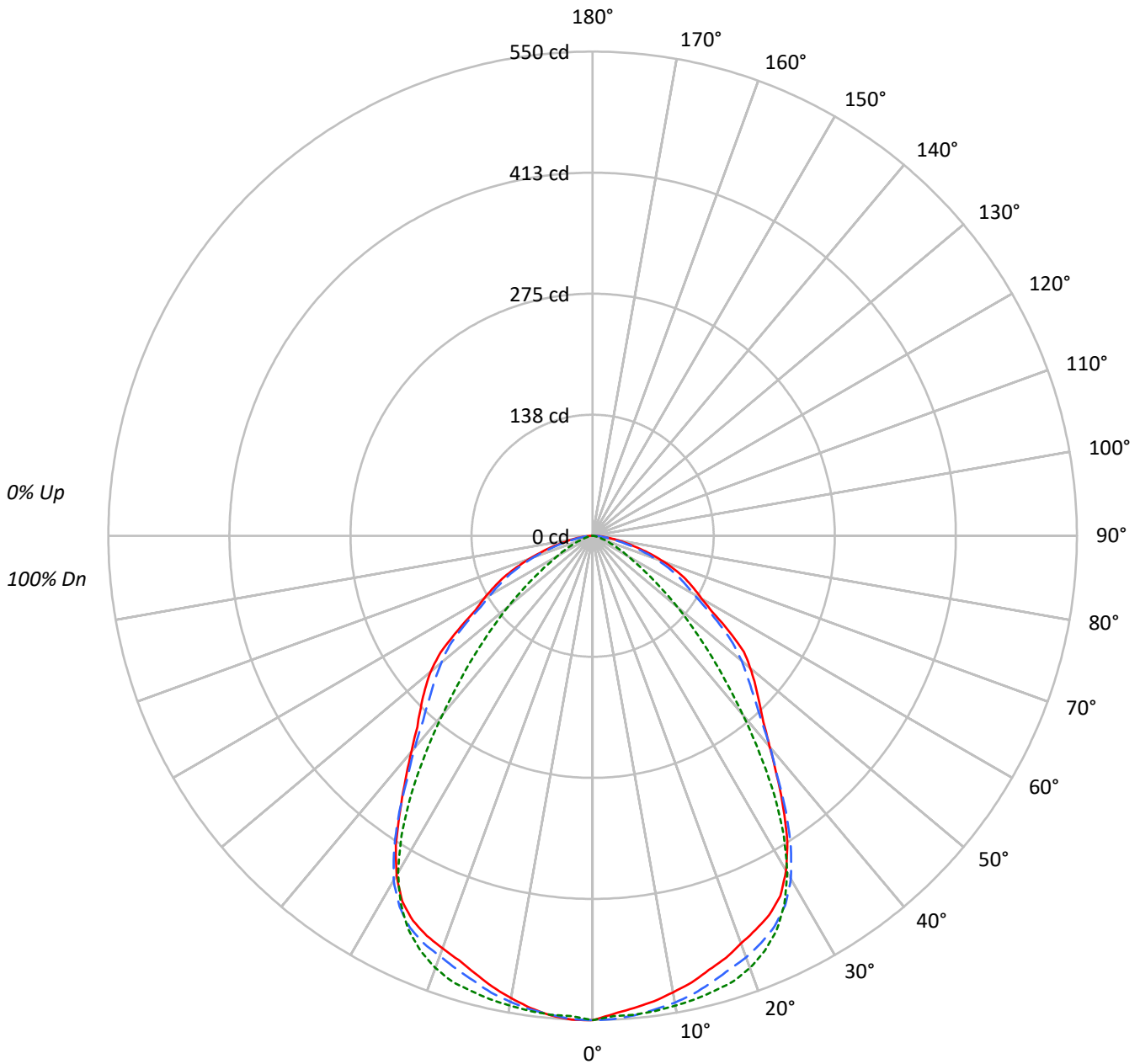
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	104	101	98	100	98	95	96	94	92	93	91	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	53631	53631	53631
5°	52682	53425	53503
10°	52113	53627	52786
15°	51507	53989	51941
20°	51110	54180	51722
25°	51078	53164	51895
30°	49448	49740	50112
35°	44925	42807	45329
40°	39744	33714	40711
45°	36869	25677	38040
50°	35433	18998	36449
55°	32080	13083	31655
60°	27893	8908	27717
65°	26935	6434	25574
70°	24363	4331	21713
75°	20070	2862	17208
80°	16164	1908	12852
85°	13307	895	8498



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.0	4.6
10°-20°	148.5	13.3
20°-30°	224.4	20.0
30°-40°	234.8	21.0
40°-50°	190.2	17.0
50°-60°	138.4	12.4
60°-70°	85.3	7.6
70°-80°	38.6	3.4
80°-90°	7.8	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°	424.9	37.9
0°-40°	659.7	58.9
0°-60°	988.3	88.2
0°-90°	1120.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1120.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	550	550	550	550	550	
5°	538	547	546	546	547	51
15°	510	525	535	523	515	144
25°	475	489	494	491	483	218
35°	378	383	360	383	381	235
45°	268	259	186	262	276	208
55°	189	177	77	179	186	168
65°	117	105	28	103	111	114
75°	53	46	8	40	46	58
85°	12	9	1	7	8	14
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°	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3
2.5°	543.6	543.6	548.6	554.6	549.5	544.4	547.8	546.1	552.0	552.0	549.5
5°	538.5	540.2	544.4	549.5	545.2	540.2	544.4	542.7	548.6	548.6	546.9
7.5°	533.4	534.2	539.3	545.2	541.0	535.9	539.3	538.5	543.6	544.4	542.7
10°	526.6	527.5	532.5	538.5	534.2	530.0	533.4	532.5	539.3	539.3	538.5
12.5°	519.8	520.7	525.8	530.9	526.6	522.4	525.8	525.8	532.5	533.4	532.5
15°	510.5	512.2	516.5	521.5	519.0	513.9	517.3	517.3	523.2	524.9	524.9
17.5°	502.9	503.8	508.0	513.1	509.7	505.5	508.8	508.8	514.8	516.5	516.5
20°	492.8	494.4	498.7	503.8	501.2	497.8	500.4	500.4	507.1	508.8	509.7
22.5°	484.3	486.0	489.4	496.1	491.9	489.4	492.8	491.9	499.5	500.4	500.4
25°	475.0	476.7	480.9	485.1	482.6	480.1	482.6	482.6	488.5	489.4	489.4
27.5°	461.4	462.3	466.5	470.7	468.2	464.8	468.2	467.4	473.3	474.1	473.3
30°	439.4	441.1	442.8	448.7	446.2	443.6	447.0	445.3	451.3	451.3	450.4
32.5°	411.5	411.5	414.9	419.1	415.7	414.0	416.6	417.4	421.6	421.6	419.1
35°	377.6	379.3	381.8	384.4	381.8	380.1	382.7	381.8	386.9	385.2	382.7
37.5°	343.7	344.6	347.1	350.5	347.1	344.6	345.4	344.6	348.8	348.8	344.6
40°	312.4	314.1	315.8	319.2	315.8	314.1	315.0	312.4	317.5	315.8	313.3
42.5°	287.0	287.9	290.4	292.1	288.7	287.9	288.7	287.0	289.6	287.9	282.8
45°	267.5	267.5	268.4	270.9	267.5	266.7	266.7	265.0	267.5	264.2	259.1
47.5°	250.6	251.5	252.3	254.0	251.5	248.9	249.8	246.4	248.1	245.5	238.8
50°	233.7	235.4	236.2	237.9	235.4	233.7	234.5	231.1	231.1	226.9	221.0
52.5°	216.7	217.6	216.7	218.4	216.7	214.2	215.0	211.7	211.7	206.6	200.7
55°	188.8	189.7	190.5	192.2	190.5	188.0	189.7	187.1	187.1	183.7	177.0
57.5°	160.9	161.7	162.6	163.4	163.4	161.7	162.6	160.9	160.0	157.5	152.4
60°	143.1	143.1	143.1	143.9	143.1	142.2	142.2	140.5	140.5	137.2	132.1
62.5°	129.5	130.4	130.4	131.2	130.4	129.5	128.7	127.0	126.2	122.8	118.5
65°	116.8	116.8	116.0	117.7	116.8	116.0	116.0	114.3	112.6	109.2	105.0
67.5°	101.6	102.4	101.6	102.4	102.4	101.6	100.8	99.1	98.2	95.7	90.6
70°	85.5	85.5	85.5	86.4	85.5	85.5	86.4	83.8	83.0	79.6	75.4
72.5°	69.4	70.3	70.3	69.4	70.3	68.6	68.6	68.6	67.7	64.3	60.1
75°	53.3	54.2	54.2	55.0	54.2	53.3	53.3	52.5	51.6	49.1	45.7
77.5°	39.8	39.8	40.6	40.6	40.6	39.8	39.8	38.1	38.1	36.4	33.0
80°	28.8	28.8	27.9	28.8	28.8	27.9	27.9	27.1	27.1	25.4	22.9
82.5°	18.6	19.5	19.5	19.5	19.5	18.6	18.6	18.6	17.8	16.9	15.2
85°	11.9	11.9	11.9	11.9	12.7	11.9	12.7	11.9	11.9	10.2	9.3
87.5°	5.1	5.1	5.1	5.9	5.9	5.1	5.1	5.1	5.1	5.1	4.2
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°	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3
2.5°	549.5	550.3	547.8	551.2	548.6	549.5	550.3	549.5	546.1	546.1	555.4
5°	546.1	547.8	545.2	549.5	547.8	547.8	549.5	548.6	545.2	546.1	554.6
7.5°	542.7	545.2	543.6	547.8	545.2	545.2	546.9	546.9	543.6	544.4	552.0
10°	537.6	541.0	540.2	544.4	541.9	541.9	544.4	544.4	541.0	541.9	549.5
12.5°	533.4	536.8	535.9	540.2	538.5	539.3	540.2	541.9	537.6	539.3	546.1
15°	526.6	530.0	530.0	534.2	532.5	534.2	535.9	538.5	535.1	535.1	541.9
17.5°	519.0	523.2	523.2	526.6	526.6	527.5	530.9	533.4	530.0	530.9	536.8
20°	510.5	515.6	515.6	519.8	519.0	520.7	523.2	525.8	522.4	522.4	529.2
22.5°	502.1	506.3	507.1	509.7	509.7	510.5	513.1	514.8	510.5	510.5	517.3
25°	490.2	494.4	495.3	497.0	495.3	495.3	497.0	498.7	494.4	494.4	500.4
27.5°	474.1	478.4	478.4	477.5	475.8	476.7	475.8	476.7	472.4	471.6	477.5
30°	450.4	453.0	453.0	452.1	449.6	449.6	447.0	447.9	442.0	442.0	447.0
32.5°	418.2	420.8	419.1	417.4	414.0	412.3	410.6	409.8	403.9	403.9	409.8
35°	380.1	381.8	379.3	375.9	371.7	369.1	366.6	363.2	359.0	359.8	363.2
37.5°	341.2	341.2	337.8	331.0	327.7	323.4	319.2	319.2	312.4	311.6	314.1
40°	308.2	304.8	298.9	289.6	283.6	279.4	273.5	270.1	265.0	265.0	269.2
42.5°	278.5	271.8	264.2	251.5	245.5	240.4	232.8	229.4	223.5	222.7	225.2
45°	252.3	245.5	234.5	221.0	213.4	207.4	196.4	192.2	187.1	186.3	188.0
47.5°	231.1	223.5	210.0	192.2	184.6	177.0	165.9	160.0	155.8	153.2	155.8
50°	212.5	202.3	188.0	169.3	159.2	152.4	138.9	132.9	127.0	125.3	126.2
52.5°	192.2	182.0	166.8	147.3	138.0	127.8	115.1	106.7	101.6	99.1	101.6
55°	170.2	160.0	144.8	125.3	115.1	105.8	92.3	85.5	79.6	77.0	79.6
57.5°	146.5	137.2	123.6	104.1	94.8	86.4	73.7	66.9	61.0	59.3	61.0
60°	126.2	118.5	105.0	86.4	78.7	69.4	58.4	51.6	46.6	45.7	46.6
62.5°	112.6	104.1	91.4	73.7	66.0	58.4	48.3	41.5	37.3	36.4	37.3
65°	99.1	89.7	77.9	62.7	55.0	49.1	38.9	33.0	28.8	27.9	28.8
67.5°	83.8	75.4	65.2	51.6	45.7	39.8	31.3	25.4	22.0	21.2	22.0
70°	69.4	61.8	51.6	41.5	35.6	31.3	23.7	19.5	16.1	15.2	16.1
72.5°	55.0	48.3	39.8	31.3	27.9	23.7	18.6	14.4	11.9	11.0	11.9
75°	42.3	37.3	30.5	22.9	20.3	17.8	12.7	10.2	8.5	7.6	8.5
77.5°	29.6	26.2	21.2	16.9	14.4	12.7	9.3	6.8	5.9	5.1	5.9
80°	20.3	17.8	14.4	11.0	9.3	7.6	5.9	4.2	3.4	3.4	3.4
82.5°	13.5	11.0	8.5	6.8	5.9	5.1	3.4	2.5	2.5	1.7	1.7
85°	7.6	6.8	5.1	4.2	3.4	2.5	1.7	1.7	0.8	0.8	0.8
87.5°	3.4	2.5	1.7	1.7	0.8	0.8	0.8	0.8	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3
2.5°	552.9	550.3	553.7	550.3	548.6	550.3	548.6	553.7	549.5	546.1	549.5
5°	552.0	548.6	552.0	549.5	546.9	547.8	546.1	551.2	546.1	543.6	545.2
7.5°	550.3	547.8	549.5	546.9	544.4	545.2	543.6	547.8	542.7	540.2	541.9
10°	547.8	545.2	546.1	544.4	541.9	541.9	540.2	543.6	537.6	534.2	535.9
12.5°	544.4	541.0	542.7	540.2	536.8	536.8	535.1	537.6	531.7	528.3	529.2
15°	540.2	536.8	536.8	534.2	530.9	530.9	527.5	530.0	523.2	519.8	519.8
17.5°	535.1	530.9	530.9	528.3	524.1	523.2	520.7	523.2	515.6	512.2	512.2
20°	527.5	524.1	523.2	521.5	517.3	516.5	513.1	513.9	508.0	505.5	504.6
22.5°	517.3	513.9	514.8	512.2	508.8	508.0	504.6	507.1	501.2	498.7	499.5
25°	499.5	497.8	499.5	498.7	496.1	496.1	494.4	496.1	491.1	489.4	490.2
27.5°	479.2	478.4	479.2	479.2	477.5	477.5	477.5	480.1	475.0	474.1	474.1
30°	449.6	449.6	450.4	451.3	451.3	453.0	452.1	455.5	452.1	450.4	452.1
32.5°	410.6	414.0	416.6	416.6	416.6	418.2	419.9	422.5	419.1	419.9	419.9
35°	366.6	369.1	370.8	375.1	372.5	378.5	380.1	383.5	382.7	384.4	383.5
37.5°	317.5	320.9	324.3	330.2	329.3	336.1	339.5	346.3	344.6	348.0	349.7
40°	271.8	276.9	281.9	286.2	289.6	296.3	303.1	311.6	314.1	316.6	317.5
42.5°	227.7	232.8	241.3	247.2	252.3	263.3	272.6	282.8	285.3	290.4	292.1
45°	192.2	196.4	206.6	214.2	218.4	234.5	245.5	258.2	262.5	268.4	270.9
47.5°	159.2	166.8	177.0	186.3	192.2	209.1	223.5	237.1	243.0	249.8	253.1
50°	130.4	138.9	152.4	160.9	169.3	188.0	204.0	218.4	224.4	232.0	235.4
52.5°	106.7	116.0	128.7	138.0	147.3	166.8	183.7	197.3	204.9	210.0	215.0
55°	83.8	94.0	106.7	116.8	124.5	145.6	160.0	173.6	178.6	182.9	185.4
57.5°	65.2	72.8	85.5	94.0	103.3	121.9	136.3	146.5	150.7	155.8	157.5
60°	50.8	58.4	70.3	78.7	87.2	105.0	119.4	129.5	133.8	138.0	140.5
62.5°	40.6	48.3	59.3	66.9	74.5	90.6	103.3	113.5	118.5	122.8	125.3
65°	32.2	38.9	48.3	55.9	61.8	76.2	88.9	98.2	103.3	107.5	110.1
67.5°	25.4	31.3	39.8	44.9	50.8	62.7	73.7	82.1	86.4	91.4	94.0
70°	19.5	23.7	31.3	35.6	39.8	50.0	58.4	66.9	71.1	74.5	76.2
72.5°	14.4	17.8	23.7	27.1	29.6	38.1	44.9	50.8	54.2	57.6	59.3
75°	10.2	12.7	16.9	19.5	21.2	27.1	33.0	37.3	39.8	42.3	44.9
77.5°	6.8	8.5	11.0	12.7	14.4	18.6	22.0	25.4	27.9	30.5	31.3
80°	4.2	5.9	7.6	8.5	9.3	11.9	15.2	16.9	18.6	20.3	21.2
82.5°	2.5	3.4	4.2	5.1	5.9	7.6	9.3	11.0	11.9	13.5	14.4
85°	0.8	1.7	1.7	2.5	2.5	4.2	5.1	5.9	6.8	7.6	8.5
87.5°	0.0	0.0	0.8	0.8	0.8	0.8	1.7	1.7	1.7	1.7	1.7
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	550.3	550.3	550.3	550.3	550.3	550.3	550.3	550.3
2.5°	552.9	550.3	548.6	547.8	553.7	546.1	549.5	550.3
5°	549.5	546.9	545.2	544.4	549.5	542.7	545.2	546.9
7.5°	544.4	542.7	540.2	539.3	544.4	536.8	540.2	541.0
10°	538.5	535.9	534.2	533.4	537.6	530.0	533.4	533.4
12.5°	530.9	529.2	525.8	525.8	529.2	522.4	524.9	524.9
15°	520.7	519.0	515.6	515.6	519.0	512.2	514.8	514.8
17.5°	512.2	510.5	508.0	507.1	510.5	503.8	506.3	505.5
20°	505.5	503.8	500.4	500.4	502.9	496.1	498.7	498.7
22.5°	499.5	498.7	495.3	495.3	498.7	491.9	493.6	491.9
25°	490.2	489.4	486.0	486.8	488.5	481.7	484.3	482.6
27.5°	475.0	475.0	471.6	470.7	473.3	467.4	469.0	468.2
30°	451.3	452.1	447.9	447.9	448.7	443.6	446.2	445.3
32.5°	419.1	419.9	416.6	415.7	418.2	414.0	415.7	415.7
35°	383.5	384.4	381.8	381.8	384.4	381.8	381.8	381.0
37.5°	348.0	349.7	348.0	348.8	350.5	348.0	349.7	348.8
40°	319.2	320.9	318.3	320.0	321.7	319.2	321.7	320.0
42.5°	292.9	295.5	293.8	295.5	297.2	295.5	297.2	294.6
45°	273.5	275.2	274.3	275.2	276.9	276.0	276.9	276.0
47.5°	254.8	258.2	256.5	258.2	260.8	259.1	260.8	258.2
50°	237.9	240.4	239.6	241.3	242.1	241.3	243.0	240.4
52.5°	215.9	218.4	217.6	217.6	219.3	217.6	219.3	217.6
55°	187.1	188.0	188.0	188.8	188.0	187.1	188.0	186.3
57.5°	159.2	160.9	158.3	160.9	160.0	159.2	159.2	157.5
60°	141.4	143.9	142.2	143.9	143.1	143.1	143.1	142.2
62.5°	127.0	128.7	127.0	127.8	127.8	127.8	127.0	126.2
65°	110.9	113.5	111.8	112.6	111.8	110.9	111.8	110.9
67.5°	94.8	95.7	95.7	94.8	94.8	94.8	94.8	93.1
70°	77.0	77.9	77.0	78.7	77.9	77.0	77.9	76.2
72.5°	60.1	61.0	60.1	61.0	60.1	60.1	60.1	60.1
75°	44.9	45.7	45.7	45.7	45.7	45.7	44.0	45.7
77.5°	32.2	32.2	32.2	33.0	32.2	32.2	32.2	32.2
80°	22.0	22.0	22.0	22.9	22.0	22.9	22.0	22.9
82.5°	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
85°	7.6	8.5	8.5	7.6	7.6	7.6	7.6	7.6
87.5°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)