

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: P251526

Luminaire Tested: **LD4B15D010 EU4B10209040 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251526
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B15D010 EU4B10209040 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1197.0 lumens
Efficiency: N/A
Efficacy: 83.2 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

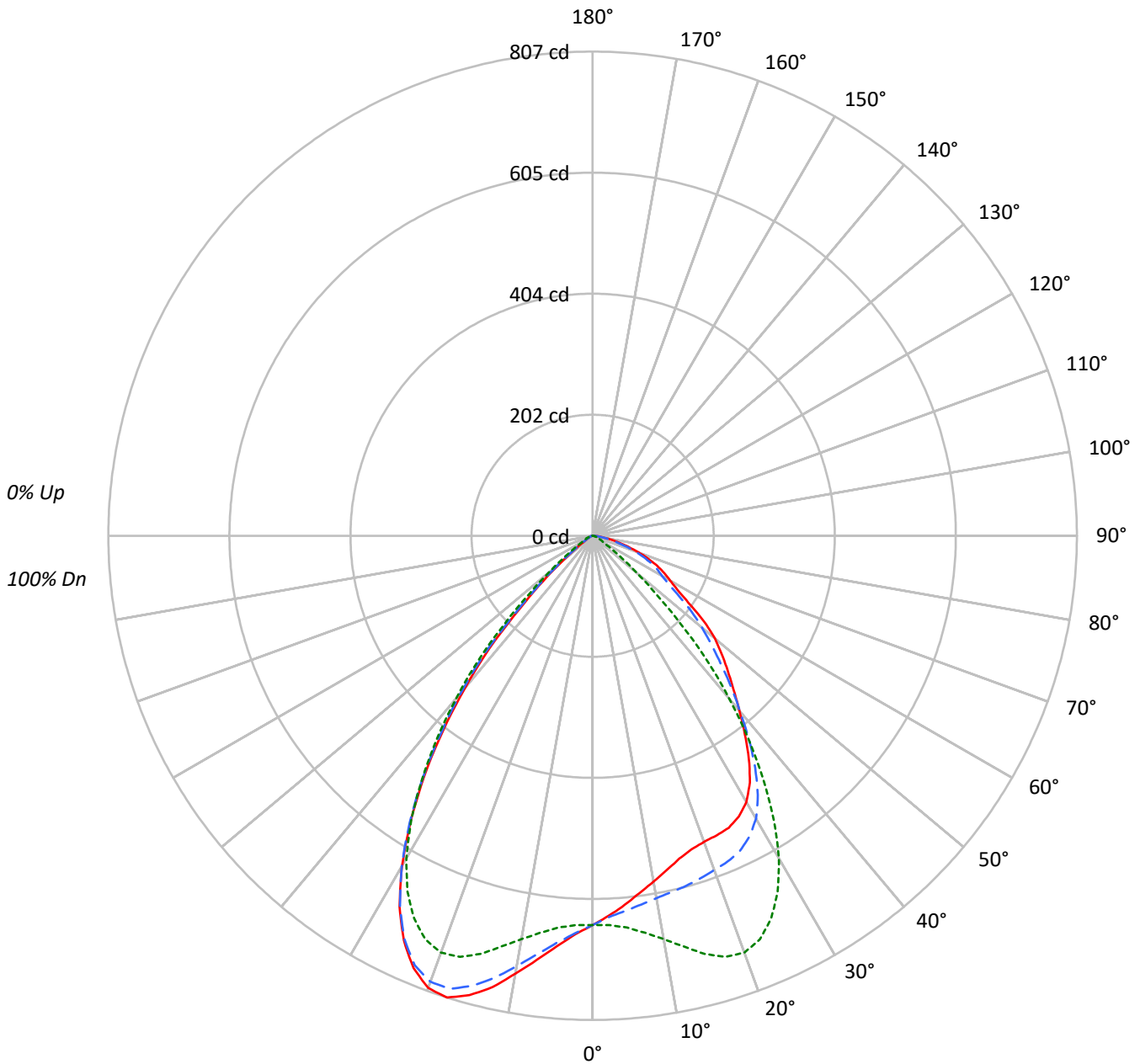
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	63221	63221	63221
5°	60391	64118	67190
10°	57902	67541	73330
15°	56219	72796	79970
20°	56295	76675	83167
25°	57735	75671	80037
30°	57652	69850	71471
35°	54002	59035	58238
40°	48370	45037	42022
45°	43884	28599	23458
50°	40315	14510	10022
55°	33099	6474	3313
60°	29043	3625	1813
65°	27350	2744	1361
70°	23394	2166	1197
75°	17848	1582	941
80°	12852	954	449
85°	9505	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.0	5.3
10°-20°	196.4	16.4
20°-30°	303.8	25.4
30°-40°	299.3	25.0
40°-50°	183.8	15.4
50°-60°	81.7	6.8
60°-70°	45.7	3.8
70°-80°	19.7	1.6
80°-90°	3.5	0.3
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°	563.2	47.1
0°-40°	862.5	72.1
0°-60°	1128.1	94.2
0°-90°	1197.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1197.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	649	649	649	649	649	
5°	617	628	655	681	687	58
15°	557	604	722	776	793	158
25°	537	580	704	742	744	246
35°	454	472	496	494	490	282
45°	318	302	208	181	170	247
55°	195	176	38	22	20	179
65°	119	107	12	7	6	116
75°	47	41	4	2	2	52
85°	8	7	0	0	0	10
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°	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7
2.5°	633.4	633.4	633.4	633.4	635.1	632.6	635.1	635.1	637.6	638.5	635.9
5°	617.3	616.5	617.3	617.3	619.0	618.2	620.7	622.4	625.8	627.5	627.5
7.5°	600.4	600.4	600.4	602.1	604.6	603.8	606.3	608.9	613.9	617.3	619.9
10°	585.1	584.3	586.8	587.7	590.2	590.2	594.5	597.0	602.9	609.7	613.1
12.5°	570.7	569.9	571.6	574.1	578.4	578.4	581.8	586.0	594.5	602.1	608.0
15°	557.2	558.0	560.6	562.3	567.4	567.4	571.6	576.7	586.0	595.3	603.8
17.5°	547.9	548.7	550.4	553.0	558.0	558.0	562.3	568.2	578.4	588.5	598.7
20°	542.8	543.6	545.3	547.9	552.1	553.0	556.3	563.1	572.4	583.4	592.8
22.5°	540.3	542.0	543.6	545.3	549.6	549.6	553.8	558.9	568.2	579.2	587.7
25°	536.9	538.6	539.4	542.0	545.3	545.3	547.9	553.8	562.3	571.6	580.1
27.5°	527.6	529.3	530.1	532.6	536.0	535.2	538.6	542.8	550.4	558.9	565.7
30°	512.3	513.2	514.9	515.7	518.2	518.2	520.8	525.0	530.1	537.7	544.5
32.5°	487.8	489.5	490.3	491.1	493.7	492.8	493.7	496.2	501.3	508.1	512.3
35°	453.9	457.3	457.3	459.0	459.8	459.0	459.0	462.4	464.9	470.0	472.5
37.5°	416.6	419.2	418.3	420.0	420.9	418.3	420.0	420.9	424.2	426.8	427.6
40°	380.2	381.1	381.1	381.1	381.1	380.2	381.1	381.9	384.4	384.4	381.9
42.5°	347.2	348.0	348.0	346.3	348.0	347.2	347.2	347.2	347.2	343.8	341.3
45°	318.4	319.2	319.2	318.4	318.4	316.7	315.9	315.0	312.5	308.2	302.3
47.5°	291.3	293.0	293.8	292.1	291.3	289.6	289.6	284.5	281.1	276.1	267.6
50°	265.9	267.6	267.6	265.9	265.9	263.4	260.8	259.1	254.0	248.1	238.0
52.5°	233.7	236.3	236.3	235.4	235.4	232.0	231.2	227.8	223.6	216.8	208.3
55°	194.8	198.2	197.3	196.5	194.8	194.8	194.8	192.2	189.7	184.6	176.1
57.5°	166.8	167.7	167.7	166.8	166.8	165.1	165.1	162.6	161.7	156.7	149.9
60°	149.0	149.0	149.9	149.0	148.2	147.3	146.5	144.8	142.3	138.9	133.8
62.5°	134.6	135.5	135.5	134.6	133.8	132.9	132.1	130.4	128.7	126.2	121.1
65°	118.6	120.2	119.4	118.6	117.7	116.9	116.9	115.2	113.5	111.8	106.7
67.5°	100.8	101.6	102.5	100.8	100.8	99.9	99.9	98.2	97.4	94.0	90.6
70°	82.1	83.0	83.0	82.1	82.1	81.3	81.3	80.4	79.6	77.1	73.7
72.5°	64.4	65.2	64.4	63.5	63.5	63.5	62.7	61.8	61.0	59.3	56.7
75°	47.4	47.4	48.3	47.4	46.6	46.6	45.7	45.7	44.0	43.2	40.6
77.5°	33.9	34.7	33.9	33.9	33.0	32.2	32.2	31.3	31.3	30.5	28.8
80°	22.9	22.9	23.7	22.9	22.0	22.9	22.0	21.2	21.2	20.3	18.6
82.5°	14.4	15.2	14.4	14.4	14.4	14.4	14.4	13.5	13.5	12.7	11.9
85°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.6	7.6	7.6	6.8
87.5°	4.2	4.2	3.4	3.4	4.2	4.2	4.2	3.4	3.4	3.4	3.4
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°	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7
2.5°	639.3	640.2	641.9	644.4	644.4	642.7	647.0	647.0	648.7	649.5	652.9
5°	632.6	634.3	637.6	641.9	642.7	641.9	647.8	650.3	652.9	655.4	660.5
7.5°	626.6	630.0	635.9	641.9	644.4	644.4	653.7	657.1	662.2	667.3	673.2
10°	623.2	628.3	636.8	646.1	648.7	651.2	662.2	669.0	675.7	682.5	691.0
12.5°	619.0	628.3	639.3	651.2	656.3	659.7	674.9	683.4	692.7	701.2	712.2
15°	618.2	629.2	643.6	658.8	665.6	670.7	687.6	699.5	710.5	721.5	732.5
17.5°	614.8	628.3	646.1	663.0	671.5	678.3	697.8	712.2	724.9	735.9	748.6
20°	610.5	625.8	645.3	663.9	673.2	680.0	701.2	714.7	729.1	739.3	751.1
22.5°	604.6	619.9	639.3	658.0	666.4	672.4	693.5	705.4	718.1	728.3	739.3
25°	594.5	608.9	625.8	641.0	649.5	654.6	673.2	684.2	693.5	703.7	713.9
27.5°	580.1	591.1	605.5	616.5	621.6	626.6	641.9	651.2	659.7	668.1	674.9
30°	554.7	563.1	573.3	582.6	587.7	588.5	602.9	608.0	614.8	620.7	625.8
32.5°	520.8	527.6	533.5	538.6	542.0	542.8	553.8	555.5	562.3	562.3	569.9
35°	477.6	481.0	485.2	485.2	487.8	485.2	492.8	494.5	495.4	496.2	502.2
37.5°	428.5	430.2	432.7	427.6	427.6	425.1	427.6	429.3	425.9	425.9	430.2
40°	381.9	378.5	375.1	370.1	367.5	362.4	362.4	358.2	355.7	354.0	354.8
42.5°	337.0	329.4	321.8	310.8	305.7	300.6	295.5	289.6	287.9	283.7	281.1
45°	293.8	282.8	272.7	254.9	244.7	239.6	228.6	216.8	209.2	207.5	200.7
47.5°	257.4	241.3	224.4	203.2	193.1	183.8	167.7	157.5	147.3	142.3	138.0
50°	225.2	210.9	188.8	166.0	153.3	144.0	126.2	114.3	103.3	95.7	90.6
52.5°	197.3	181.2	160.9	134.6	121.9	111.8	92.3	78.8	69.4	61.8	55.9
55°	166.0	153.3	132.9	108.4	95.7	83.8	66.9	52.5	43.2	38.1	33.9
57.5°	143.1	132.1	112.6	88.9	77.1	66.1	49.1	37.3	29.6	24.6	22.0
60°	127.9	117.7	100.8	77.9	66.9	56.7	40.6	29.6	22.9	18.6	16.9
62.5°	115.2	105.0	89.8	68.6	59.3	49.1	34.7	24.6	18.6	15.2	12.7
65°	100.8	91.5	77.9	59.3	50.8	42.3	29.6	20.3	15.2	11.9	10.2
67.5°	85.5	77.1	65.2	49.1	42.3	35.6	23.7	16.9	12.7	10.2	8.5
70°	69.4	62.7	51.7	39.8	33.9	27.9	19.5	13.5	9.3	7.6	6.8
72.5°	53.3	47.4	39.8	30.5	25.4	21.2	14.4	10.2	7.6	5.9	5.1
75°	38.1	33.9	27.9	22.0	18.6	15.2	11.0	7.6	5.1	4.2	3.4
77.5°	26.3	23.7	19.5	15.2	12.7	11.0	7.6	5.1	4.2	3.4	2.5
80°	16.9	15.2	12.7	9.3	7.6	6.8	4.2	3.4	2.5	1.7	1.7
82.5°	10.2	9.3	7.6	5.1	4.2	3.4	2.5	1.7	1.7	0.8	0.8
85°	5.9	5.1	3.4	2.5	2.5	1.7	1.7	0.8	0.8	0.0	0.0
87.5°	2.5	1.7	1.7	0.8	0.8	0.8	0.8	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7
2.5°	651.2	655.4	654.6	657.1	656.3	656.3	660.5	658.8	663.0	663.0	663.9
5°	660.5	666.4	666.4	670.7	669.8	671.5	675.7	675.7	680.8	682.5	682.5
7.5°	674.1	681.7	683.4	687.6	688.5	691.8	695.2	696.1	702.8	704.5	705.4
10°	692.7	702.0	704.5	708.8	710.5	713.9	718.1	719.8	728.3	729.1	732.5
12.5°	715.5	725.7	728.3	733.3	734.2	738.4	744.3	746.0	754.5	757.0	759.6
15°	737.6	746.9	751.1	756.2	757.0	762.1	767.2	768.9	776.5	779.9	782.4
17.5°	752.8	763.8	766.4	773.1	773.1	777.4	782.4	784.1	791.8	794.3	796.0
20°	756.2	766.4	769.7	774.8	775.7	778.2	782.4	784.1	790.9	791.8	794.3
22.5°	743.5	753.7	755.3	760.4	761.3	763.8	767.2	766.4	774.8	774.0	774.8
25°	716.4	725.7	725.7	731.6	730.8	733.3	735.0	734.2	741.8	741.8	741.8
27.5°	677.4	685.9	686.8	691.0	688.5	689.3	691.0	690.1	695.2	695.2	695.2
30°	629.2	635.9	633.4	636.8	635.1	636.8	635.1	634.3	635.9	637.6	636.8
32.5°	569.1	574.1	574.1	575.0	575.0	569.9	568.2	568.2	567.4	566.5	566.5
35°	499.6	503.8	502.2	502.2	501.3	496.2	493.7	492.0	494.5	489.5	492.8
37.5°	428.5	429.3	426.8	425.9	421.7	421.7	417.5	414.1	415.8	414.9	411.5
40°	350.6	354.0	348.9	347.2	349.7	346.3	342.1	337.9	341.3	337.0	338.7
42.5°	274.4	273.5	271.8	271.8	271.8	266.7	265.9	265.0	265.9	262.5	260.0
45°	198.2	195.6	193.1	193.1	189.7	188.0	188.0	185.4	181.2	181.2	176.1
47.5°	133.8	127.9	126.2	125.3	123.6	123.6	121.9	120.2	119.4	115.2	115.2
50°	87.2	81.3	79.6	78.8	79.6	77.9	76.2	74.5	72.8	72.0	70.3
52.5°	52.5	50.0	48.3	47.4	45.7	44.9	44.0	42.3	41.5	41.5	40.6
55°	31.3	28.8	25.4	25.4	25.4	24.6	23.7	22.9	22.0	22.0	21.2
57.5°	19.5	17.8	16.1	15.2	15.2	15.2	14.4	14.4	14.4	14.4	13.5
60°	14.4	12.7	11.9	11.9	11.9	11.0	11.0	11.0	11.0	10.2	10.2
62.5°	11.0	10.2	9.3	9.3	8.5	8.5	8.5	8.5	8.5	8.5	7.6
65°	9.3	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
67.5°	6.8	5.9	5.9	5.9	5.9	5.1	5.1	5.1	5.1	5.1	5.1
70°	5.1	5.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	4.2	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	3.4	3.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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°	648.7	648.7	648.7	648.7	648.7	648.7	648.7	648.7
2.5°	663.9	668.1	663.9	663.9	666.4	665.6	667.3	664.7
5°	683.4	689.3	685.1	684.2	688.5	687.6	688.5	686.8
7.5°	707.1	713.0	708.8	708.8	713.0	712.2	714.7	713.0
10°	734.2	741.0	735.0	735.9	741.8	741.0	741.0	741.0
12.5°	762.1	768.9	765.5	765.5	769.7	770.6	771.4	770.6
15°	785.0	791.8	787.5	787.5	793.5	792.6	793.5	792.6
17.5°	798.5	805.3	800.2	800.2	805.3	805.3	806.2	807.0
20°	795.1	802.8	798.5	796.8	802.8	802.8	801.9	801.9
22.5°	775.7	782.4	779.1	777.4	781.6	779.9	779.1	779.9
25°	741.8	748.6	741.8	741.8	745.2	744.3	745.2	744.3
27.5°	696.1	701.2	694.4	693.5	696.9	695.2	694.4	696.9
30°	635.1	640.2	636.8	634.3	638.5	635.9	634.3	635.1
32.5°	565.7	569.1	567.4	563.1	565.7	564.0	563.1	564.0
35°	489.5	493.7	486.9	486.1	490.3	486.9	485.2	489.5
37.5°	410.7	415.8	409.9	410.7	408.2	409.0	407.3	409.9
40°	336.2	335.3	333.6	332.8	333.6	331.1	332.8	330.3
42.5°	255.7	257.4	256.6	255.7	256.6	253.2	251.5	254.9
45°	177.8	177.0	175.3	173.6	173.6	172.7	172.7	170.2
47.5°	114.3	113.5	110.1	110.9	112.6	110.9	108.4	111.8
50°	69.4	68.6	68.6	67.7	69.4	67.7	66.1	66.1
52.5°	39.0	39.0	38.1	38.1	38.1	38.1	37.3	36.4
55°	21.2	20.3	20.3	20.3	19.5	19.5	19.5	19.5
57.5°	13.5	13.5	13.5	13.5	13.5	13.5	12.7	12.7
60°	10.2	10.2	10.2	10.2	9.3	10.2	9.3	9.3
62.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
65°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
67.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
70°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)