

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: P251596

Luminaire Tested: **LD4B15D010 EU4B10208030 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251596
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B15D010 EU4B10208030 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE 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: 1327.0 lumens
Efficiency: N/A
Efficacy: 92.2 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

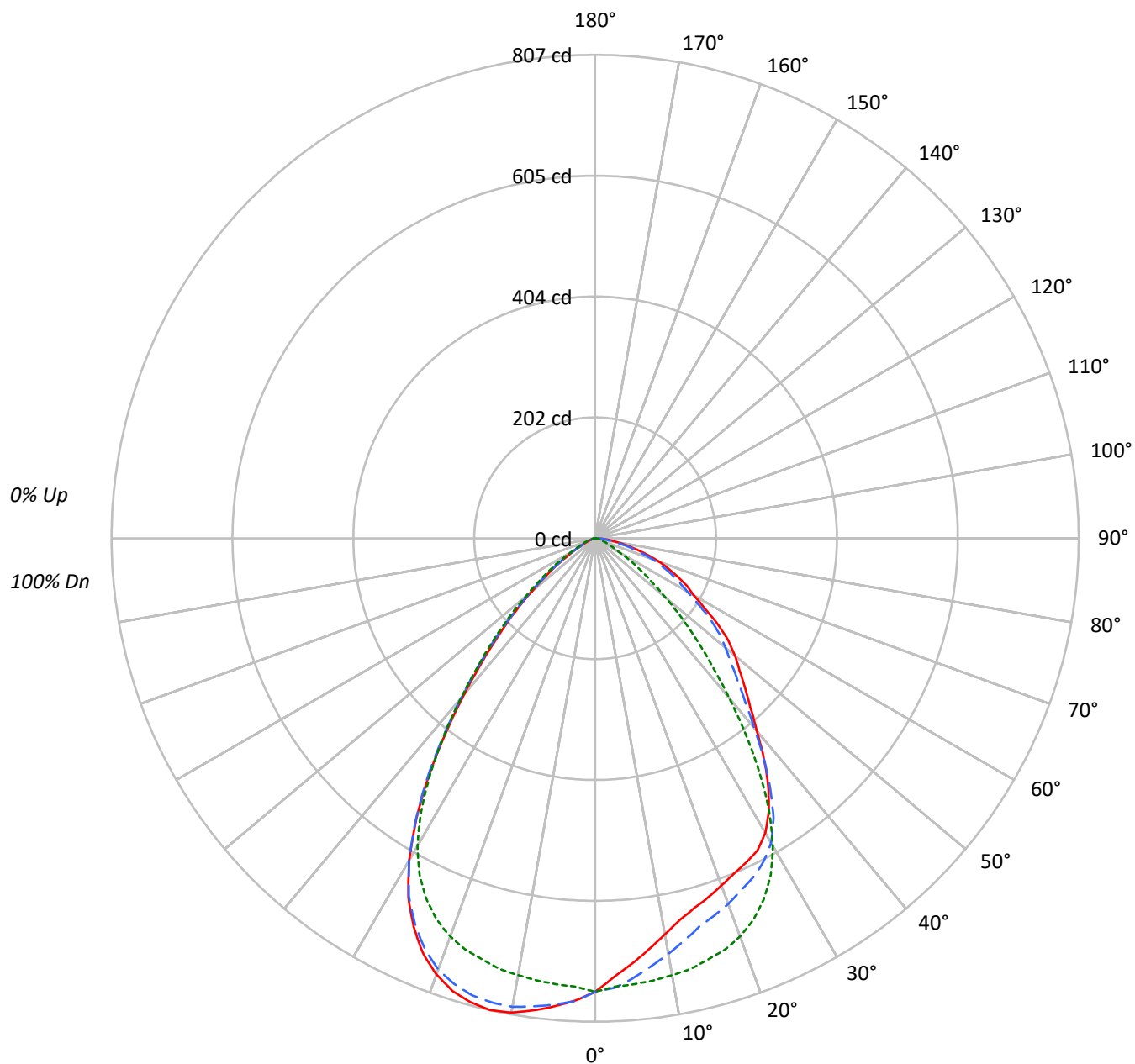
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89		
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79		
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70		
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62		
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56		
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50		
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46		
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42		
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38		
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	73776	73776	73776
5°	69675	73109	76738
10°	66423	73281	79555
15°	64473	73432	80909
20°	63949	73356	80336
25°	64197	71542	77004
30°	63897	66744	69828
35°	59892	56989	57572
40°	53370	44184	43192
45°	48804	32941	30928
50°	46152	23076	20863
55°	42427	15581	13100
60°	37073	9122	7231
65°	35098	5857	4059
70°	31971	4160	2508
75°	26434	2937	1845
80°	20822	1628	1122
85°	18562	1118	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.5	5.4
10°-20°	205.2	15.5
20°-30°	304.2	22.9
30°-40°	304.6	23.0
40°-50°	212.9	16.0
50°-60°	126.7	9.5
60°-70°	66.1	5.0
70°-80°	29.4	2.2
80°-90°	6.4	0.5
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°	580.9	43.8
0°-40°	885.5	66.7
0°-60°	1225.1	92.3
0°-90°	1327.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1327.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	757	757	757	757	757	
5°	712	736	747	781	784	67
15°	639	671	728	790	802	181
25°	597	624	665	711	716	275
35°	503	509	479	488	484	312
45°	354	337	239	231	224	275
55°	250	234	92	80	77	222
65°	152	140	25	18	18	151
75°	70	62	8	5	5	76
85°	17	13	1	1	0	19
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°	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0
2.5°	732.6	741.4	732.6	735.6	747.3	736.5	742.4	742.4	739.5	746.3	751.2
5°	712.2	720.9	712.2	716.1	728.7	718.0	724.8	722.9	723.9	729.7	736.5
7.5°	691.7	698.5	690.7	695.6	707.3	698.5	704.4	704.4	705.3	714.1	720.0
10°	671.2	677.0	671.2	675.1	687.8	680.0	683.9	684.8	687.8	695.6	704.4
12.5°	652.7	657.5	651.7	657.5	668.3	660.5	665.3	666.3	669.2	678.0	687.8
15°	639.0	643.9	638.0	642.9	652.7	646.8	650.7	652.7	654.6	662.4	671.2
17.5°	628.3	632.2	627.3	633.1	640.9	634.1	640.0	640.0	642.9	650.7	660.5
20°	616.6	620.5	616.6	621.4	630.2	624.4	629.2	629.2	632.2	640.9	649.7
22.5°	605.8	607.8	605.8	609.7	618.5	613.6	616.6	617.5	620.5	628.3	636.1
25°	597.0	600.9	599.0	602.9	608.8	603.9	606.8	607.8	610.7	617.5	624.4
27.5°	587.3	589.2	587.3	592.2	597.0	593.1	596.1	595.1	597.0	602.9	608.8
30°	567.8	569.7	569.7	572.7	576.6	574.6	577.5	574.6	576.6	581.4	587.3
32.5°	539.5	540.5	541.4	544.4	547.3	544.4	546.3	546.3	546.3	550.2	554.1
35°	503.4	505.3	504.4	506.3	509.2	508.3	508.3	507.3	505.3	507.3	509.2
37.5°	462.4	459.5	459.5	462.4	464.4	460.5	462.4	460.5	460.5	461.4	461.4
40°	419.5	416.6	419.5	420.5	421.4	419.5	418.5	416.6	413.6	414.6	412.7
42.5°	383.4	381.4	382.4	382.4	383.4	381.4	382.4	378.5	375.6	373.6	370.7
45°	354.1	351.2	354.1	352.2	352.2	351.2	350.2	348.3	344.4	341.4	336.6
47.5°	326.8	326.8	327.8	327.8	327.8	325.8	325.8	321.9	318.0	314.1	307.3
50°	304.4	302.4	306.3	306.3	303.4	302.4	303.4	298.5	295.6	290.7	283.9
52.5°	280.0	280.0	281.0	281.0	280.0	278.0	279.0	275.1	272.2	267.3	260.5
55°	249.7	247.8	250.7	250.7	249.7	248.8	249.7	246.8	243.9	240.0	234.1
57.5°	215.6	214.6	216.6	217.6	215.6	215.6	216.6	213.6	212.7	208.8	202.9
60°	190.2	189.3	191.2	192.2	190.2	190.2	190.2	186.3	184.4	180.5	176.6
62.5°	172.7	171.7	173.7	172.7	171.7	170.7	171.7	167.8	165.8	161.9	158.0
65°	152.2	153.2	154.1	154.1	153.2	152.2	152.2	150.2	148.3	144.4	139.5
67.5°	132.7	132.7	133.7	134.6	133.7	133.7	133.7	130.7	128.8	125.8	120.0
70°	112.2	111.2	114.1	114.1	112.2	113.2	112.2	111.2	109.3	105.4	100.5
72.5°	90.7	90.7	91.7	91.7	90.7	90.7	90.7	89.8	86.8	84.9	80.0
75°	70.2	70.2	71.2	72.2	70.2	70.2	71.2	69.3	67.3	64.4	61.5
77.5°	52.7	51.7	52.7	52.7	51.7	51.7	51.7	50.7	49.8	46.8	43.9
80°	37.1	36.1	37.1	37.1	37.1	36.1	36.1	35.1	35.1	33.2	30.2
82.5°	25.4	24.4	25.4	25.4	25.4	24.4	24.4	24.4	23.4	22.4	20.5
85°	16.6	15.6	15.6	16.6	15.6	15.6	15.6	15.6	14.6	13.7	12.7
87.5°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	6.8	6.8	6.8	5.9
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°	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0
2.5°	747.3	745.3	751.2	749.2	750.2	745.3	753.1	749.2	754.1	749.2	759.0
5°	734.6	732.6	741.4	740.5	741.4	737.5	746.3	745.3	751.2	747.3	758.0
7.5°	720.9	719.0	728.7	729.7	731.7	727.8	739.5	739.5	745.3	744.4	756.1
10°	705.3	706.3	716.1	718.0	721.9	720.0	730.7	733.6	741.4	740.5	755.1
12.5°	690.7	690.7	703.4	707.3	710.2	709.2	721.9	725.8	734.6	736.5	750.2
15°	676.1	677.0	688.7	694.6	698.5	697.5	711.2	716.1	726.8	727.8	744.4
17.5°	664.4	663.4	676.1	680.9	686.8	685.8	700.5	706.3	717.0	720.0	735.6
20°	654.6	653.6	665.3	671.2	675.1	674.1	688.7	695.6	705.3	707.3	722.9
22.5°	642.9	640.9	652.7	657.5	661.4	660.5	673.1	678.0	687.8	689.7	704.4
25°	629.2	627.3	638.0	640.9	643.9	641.9	652.7	655.6	663.4	665.3	680.0
27.5°	613.6	608.8	617.5	617.5	619.5	616.6	624.4	627.3	634.1	634.1	647.8
30°	589.2	582.4	587.3	586.3	587.3	583.4	588.3	589.2	594.1	593.1	602.9
32.5°	555.1	545.3	548.3	545.3	542.4	536.6	542.4	540.5	544.4	540.5	549.2
35°	508.3	498.5	497.5	493.6	490.7	485.8	485.8	481.0	481.9	479.0	484.9
37.5°	457.5	444.9	442.9	435.1	430.2	424.4	424.4	420.5	415.6	413.6	418.5
40°	407.8	394.1	389.2	376.6	371.7	365.8	361.9	357.1	355.1	347.3	351.2
42.5°	364.9	350.2	339.5	325.8	321.0	312.2	306.3	300.5	297.5	288.8	292.7
45°	328.8	311.2	299.5	281.9	275.1	265.4	256.6	249.7	242.9	239.0	237.1
47.5°	298.5	280.0	264.4	244.9	234.1	225.4	213.6	206.8	198.0	193.2	190.2
50°	273.2	252.7	235.1	212.7	201.9	192.2	178.5	167.8	160.0	152.2	150.2
52.5°	250.7	229.3	209.7	184.4	171.7	160.0	145.4	133.7	126.8	118.0	117.1
55°	224.4	205.8	184.4	158.0	145.4	133.7	118.0	106.3	97.6	91.7	89.8
57.5°	196.1	178.5	158.0	131.7	119.0	106.3	91.7	81.0	73.2	68.3	67.3
60°	169.7	153.2	133.7	107.3	94.6	83.9	68.3	57.6	50.7	46.8	44.9
62.5°	150.2	134.6	116.1	91.7	80.0	69.3	54.6	44.9	39.0	35.1	33.2
65°	131.7	116.1	99.5	77.1	67.3	57.6	43.9	35.1	29.3	25.4	23.4
67.5°	112.2	98.5	82.9	64.4	54.6	46.8	35.1	27.3	22.4	19.5	17.6
70°	92.7	80.0	67.3	51.7	44.9	37.1	27.3	21.5	16.6	14.6	12.7
72.5°	73.2	63.4	52.7	40.0	34.1	29.3	21.5	15.6	12.7	10.7	8.8
75°	54.6	47.8	39.0	30.2	25.4	21.5	15.6	11.7	9.8	7.8	6.8
77.5°	39.0	33.2	27.3	20.5	18.5	15.6	10.7	8.8	6.8	4.9	3.9
80°	26.3	23.4	18.5	14.6	11.7	10.7	7.8	5.9	3.9	2.9	2.9
82.5°	17.6	14.6	11.7	8.8	7.8	6.8	4.9	3.9	2.9	2.0	2.0
85°	10.7	8.8	6.8	4.9	4.9	3.9	2.9	2.0	1.0	1.0	1.0
87.5°	4.9	3.9	2.9	2.0	2.0	1.0	1.0	1.0	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°	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0
2.5°	766.8	760.9	757.0	761.9	763.9	760.9	763.9	768.7	773.6	774.6	760.9
5°	767.8	761.9	760.0	765.8	766.8	765.8	768.7	775.6	781.4	783.4	769.7
7.5°	767.8	763.9	762.9	769.7	770.7	769.7	774.6	782.4	788.3	792.2	778.5
10°	765.8	763.9	764.8	770.7	772.6	772.6	779.5	788.3	794.1	798.0	784.4
12.5°	762.9	762.9	762.9	769.7	771.7	772.6	778.5	790.2	794.1	800.0	786.3
15°	758.0	758.0	758.0	764.8	767.8	767.8	774.6	785.3	790.2	796.1	782.4
17.5°	749.2	749.2	750.2	756.1	759.0	759.0	765.8	777.5	780.5	787.3	773.6
20°	736.5	736.5	737.5	743.4	746.3	744.4	753.1	762.9	765.8	771.7	758.0
22.5°	718.0	718.0	718.0	723.9	725.8	724.8	733.6	742.4	742.4	750.2	735.6
25°	690.7	692.6	690.7	696.6	698.5	697.5	705.3	713.1	711.2	720.0	705.3
27.5°	657.5	656.6	656.6	661.4	661.4	660.5	666.3	675.1	673.1	679.0	665.3
30°	611.7	614.6	609.7	616.6	613.6	611.7	615.6	623.4	620.5	625.3	614.6
32.5°	559.0	555.1	555.1	555.1	557.0	552.2	556.1	560.0	557.0	561.9	550.2
35°	489.7	490.7	487.8	488.8	489.7	483.9	487.8	491.7	487.8	490.7	480.0
37.5°	420.5	421.4	414.6	418.5	414.6	412.7	416.6	418.5	414.6	417.5	405.8
40°	351.2	349.3	348.3	348.3	349.3	344.4	347.3	350.2	347.3	349.3	338.5
42.5°	290.7	289.7	287.8	288.8	285.8	284.9	285.8	288.8	285.8	287.8	280.0
45°	238.0	236.1	233.2	234.1	234.1	229.3	232.2	234.1	231.2	232.2	225.4
47.5°	189.3	186.3	186.3	185.4	185.4	183.4	186.3	185.4	182.4	184.4	177.6
50°	147.3	145.4	145.4	145.4	145.4	142.4	143.4	145.4	142.4	142.4	138.5
52.5°	115.1	112.2	110.2	110.2	110.2	109.3	109.3	110.2	107.3	107.3	106.3
55°	86.8	85.8	82.9	82.9	82.9	80.0	81.0	81.0	80.0	80.0	77.1
57.5°	64.4	61.5	59.5	59.5	57.6	57.6	56.6	57.6	55.6	55.6	53.7
60°	42.9	41.0	40.0	39.0	39.0	38.0	39.0	38.0	38.0	37.1	36.1
62.5°	31.2	29.3	27.3	27.3	27.3	26.3	26.3	26.3	26.3	26.3	25.4
65°	22.4	20.5	20.5	19.5	19.5	18.5	18.5	18.5	18.5	18.5	17.6
67.5°	15.6	14.6	13.7	13.7	13.7	13.7	13.7	13.7	12.7	12.7	12.7
70°	11.7	10.7	9.8	9.8	9.8	9.8	9.8	8.8	9.8	9.8	8.8
72.5°	7.8	7.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
75°	5.9	5.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	3.9	3.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
80°	2.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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°	757.0	757.0	757.0	757.0	757.0	757.0	757.0	757.0
2.5°	775.6	774.6	772.6	775.6	767.8	764.8	763.9	772.6
5°	786.3	784.4	784.4	787.3	778.5	776.5	774.6	784.4
7.5°	796.1	794.1	794.1	797.0	789.2	787.3	785.3	795.1
10°	801.9	801.9	801.9	803.9	797.0	795.1	794.1	803.9
12.5°	804.8	804.8	803.9	807.8	799.0	799.0	797.0	806.8
15°	800.9	800.9	800.9	803.9	796.1	794.1	794.1	801.9
17.5°	791.2	791.2	790.2	793.1	784.4	784.4	783.4	792.2
20°	776.5	776.5	774.6	778.5	769.7	766.8	765.8	774.6
22.5°	753.1	752.2	751.2	753.1	745.3	743.4	742.4	750.2
25°	722.9	721.9	720.0	721.9	713.1	710.2	710.2	716.1
27.5°	680.0	680.0	677.0	680.0	670.2	669.2	668.3	675.1
30°	627.3	623.4	621.4	625.3	615.6	615.6	613.6	620.5
32.5°	561.9	558.0	557.0	559.0	550.2	547.3	551.2	555.1
35°	486.8	487.8	483.9	483.9	476.1	477.1	478.0	483.9
37.5°	414.6	412.7	411.7	412.7	406.8	404.9	402.9	408.8
40°	347.3	342.4	341.4	341.4	336.6	335.6	336.6	339.5
42.5°	283.9	282.9	279.0	281.0	276.1	278.0	277.1	277.1
45°	229.3	230.2	226.3	229.3	225.4	222.4	222.4	224.4
47.5°	181.5	181.5	180.5	180.5	177.6	178.5	176.6	179.5
50°	140.5	140.5	138.5	139.5	137.6	137.6	136.6	137.6
52.5°	107.3	106.3	106.3	105.4	103.4	104.4	105.4	103.4
55°	78.0	79.0	77.1	78.0	76.1	77.1	76.1	77.1
57.5°	53.7	54.6	52.7	54.6	52.7	53.7	52.7	52.7
60°	37.1	37.1	36.1	37.1	36.1	36.1	35.1	37.1
62.5°	25.4	25.4	25.4	25.4	25.4	24.4	25.4	25.4
65°	18.5	17.6	17.6	17.6	17.6	17.6	17.6	17.6
67.5°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
70°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
72.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
75°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	0.0	1.0	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)