

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: P251605

Luminaire Tested: **LD4B15D010 EU4B10209050 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251605
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 EU4B10209050 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1155.9 lumens
Efficiency: N/A
Efficacy: 80.3 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

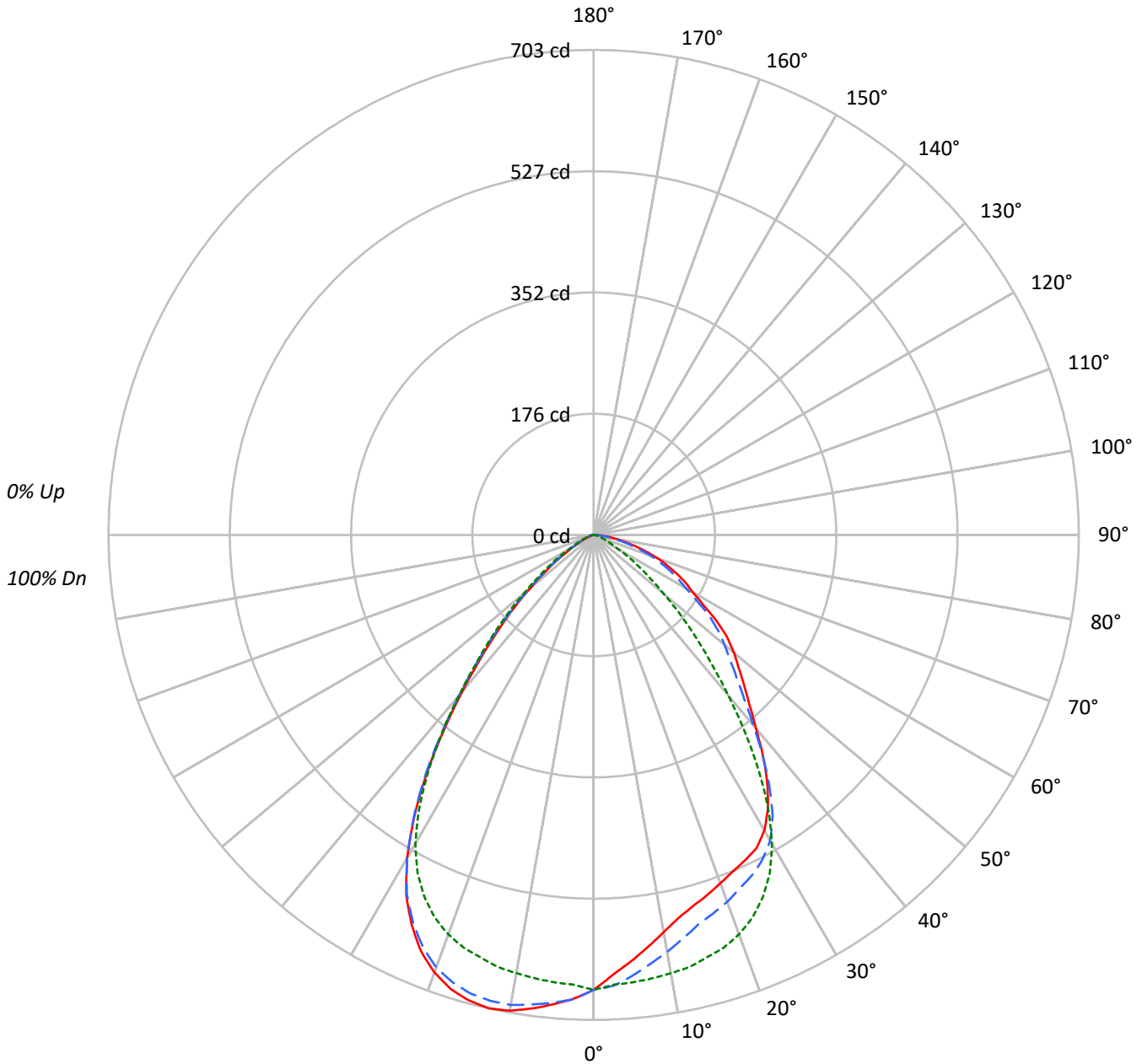
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70
4	90	80	72	67	88	78	72	67	76	70	66	74	69	65	72	68	64	62				62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	64274	64274	64274
5°	60694	63688	66847
10°	57863	63830	69303
15°	56169	63968	70486
20°	55704	63897	69985
25°	55928	62326	67079
30°	55660	58147	60825
35°	52170	49648	50148
40°	46487	38485	37620
45°	42519	28695	26945
50°	40209	20105	18164
55°	36973	13576	11401
60°	32298	7953	6296
65°	30578	5096	3528
70°	27839	3619	2166
75°	23045	2561	1582
80°	18128	1403	954
85°	16102	895	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.3	5.4
10°-20°	178.8	15.5
20°-30°	265.0	22.9
30°-40°	265.4	23.0
40°-50°	185.5	16.0
50°-60°	110.3	9.5
60°-70°	57.6	5.0
70°-80°	25.6	2.2
80°-90°	5.6	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°	506.1	43.8
0°-40°	771.4	66.7
0°-60°	1067.2	92.3
0°-90°	1155.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1155.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	660	660	660	660	660	
5°	620	642	651	681	683	58
15°	557	585	634	688	699	158
25°	520	544	580	620	624	240
35°	438	444	417	425	422	272
45°	308	293	208	201	196	240
55°	218	204	80	70	67	193
65°	133	122	22	16	15	131
75°	61	54	7	4	4	66
85°	14	11	1	1	0	16
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°	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5
2.5°	638.2	645.9	638.2	640.8	651.0	641.6	646.7	646.7	644.2	650.1	654.4
5°	620.4	628.0	620.4	623.8	634.8	625.5	631.4	629.7	630.6	635.7	641.6
7.5°	602.5	608.5	601.7	605.9	616.1	608.5	613.6	613.6	614.4	622.1	627.2
10°	584.7	589.8	584.7	588.1	599.1	592.3	595.7	596.6	599.1	605.9	613.6
12.5°	568.5	572.8	567.7	572.8	582.1	575.3	579.6	580.4	583.0	590.6	599.1
15°	556.7	560.9	555.8	560.1	568.5	563.5	566.8	568.5	570.2	577.0	584.7
17.5°	547.3	550.7	546.5	551.6	558.4	552.4	557.5	557.5	560.1	566.8	575.3
20°	537.1	540.5	537.1	541.4	549.0	543.9	548.2	548.2	550.7	558.4	566.0
22.5°	527.8	529.5	527.8	531.2	538.8	534.6	537.1	538.0	540.5	547.3	554.1
25°	520.1	523.5	521.8	525.2	530.3	526.1	528.6	529.5	532.0	538.0	543.9
27.5°	511.6	513.3	511.6	515.9	520.1	516.7	519.3	518.4	520.1	525.2	530.3
30°	494.6	496.3	496.3	498.9	502.3	500.6	503.1	500.6	502.3	506.5	511.6
32.5°	470.0	470.8	471.7	474.2	476.8	474.2	475.9	475.9	475.9	479.3	482.7
35°	438.5	440.2	439.4	441.1	443.6	442.8	442.8	441.9	440.2	441.9	443.6
37.5°	402.8	400.3	400.3	402.8	404.5	401.1	402.8	401.1	401.1	402.0	402.0
40°	365.4	362.9	365.4	366.3	367.1	365.4	364.6	362.9	360.3	361.2	359.5
42.5°	334.0	332.3	333.1	333.1	334.0	332.3	333.1	329.7	327.2	325.5	322.9
45°	308.5	305.9	308.5	306.8	306.8	305.9	305.1	303.4	300.0	297.4	293.2
47.5°	284.7	284.7	285.5	285.5	285.5	283.8	283.8	280.5	277.1	273.7	267.7
50°	265.2	263.5	266.9	266.9	264.3	263.5	264.3	260.1	257.5	253.3	247.3
52.5°	243.9	243.9	244.8	244.8	243.9	242.2	243.1	239.7	237.1	232.9	226.9
55°	217.6	215.9	218.4	218.4	217.6	216.7	217.6	215.0	212.5	209.1	204.0
57.5°	187.8	187.0	188.7	189.5	187.8	187.8	188.7	186.1	185.3	181.9	176.8
60°	165.7	164.9	166.6	167.4	165.7	165.7	165.7	162.3	160.6	157.2	153.8
62.5°	150.4	149.6	151.3	150.4	149.6	148.7	149.6	146.2	144.5	141.1	137.7
65°	132.6	133.4	134.3	134.3	133.4	132.6	132.6	130.9	129.2	125.8	121.5
67.5°	115.6	115.6	116.4	117.3	116.4	116.4	116.4	113.9	112.2	109.6	104.5
70°	97.7	96.9	99.4	99.4	97.7	98.6	97.7	96.9	95.2	91.8	87.5
72.5°	79.0	79.0	79.9	79.9	79.0	79.0	79.0	78.2	75.6	73.9	69.7
75°	61.2	61.2	62.0	62.9	61.2	61.2	62.0	60.3	58.6	56.1	53.5
77.5°	45.9	45.0	45.9	45.9	45.0	45.0	45.0	44.2	43.3	40.8	38.2
80°	32.3	31.4	32.3	32.3	32.3	31.4	31.4	30.6	30.6	28.9	26.3
82.5°	22.1	21.2	22.1	22.1	22.1	21.2	21.2	21.2	20.4	19.5	17.8
85°	14.4	13.6	13.6	14.4	13.6	13.6	13.6	13.6	12.7	11.9	11.0
87.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.1
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°	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5
2.5°	651.0	649.3	654.4	652.7	653.5	649.3	656.1	652.7	656.9	652.7	661.2
5°	639.9	638.2	645.9	645.0	645.9	642.5	650.1	649.3	654.4	651.0	660.3
7.5°	628.0	626.3	634.8	635.7	637.4	634.0	644.2	644.2	649.3	648.4	658.6
10°	614.4	615.3	623.8	625.5	628.9	627.2	636.5	639.1	645.9	645.0	657.8
12.5°	601.7	601.7	612.7	616.1	618.7	617.8	628.9	632.3	639.9	641.6	653.5
15°	588.9	589.8	600.0	605.1	608.5	607.6	619.5	623.8	633.1	634.0	648.4
17.5°	578.7	577.9	588.9	593.2	598.3	597.4	610.2	615.3	624.6	627.2	640.8
20°	570.2	569.4	579.6	584.7	588.1	587.2	600.0	605.9	614.4	616.1	629.7
22.5°	560.1	558.4	568.5	572.8	576.2	575.3	586.4	590.6	599.1	600.8	613.6
25°	548.2	546.5	555.8	558.4	560.9	559.2	568.5	571.1	577.9	579.6	592.3
27.5°	534.6	530.3	538.0	538.0	539.7	537.1	543.9	546.5	552.4	552.4	564.3
30°	513.3	507.4	511.6	510.8	511.6	508.2	512.5	513.3	517.6	516.7	525.2
32.5°	483.6	475.1	477.6	475.1	472.5	467.4	472.5	470.8	474.2	470.8	478.5
35°	442.8	434.3	433.4	430.0	427.5	423.2	423.2	419.0	419.8	417.3	422.4
37.5°	398.6	387.5	385.8	379.0	374.8	369.7	369.7	366.3	362.0	360.3	364.6
40°	355.2	343.3	339.1	328.0	323.8	318.7	315.3	311.0	309.3	302.5	305.9
42.5°	317.8	305.1	295.7	283.8	279.6	272.0	266.9	261.8	259.2	251.6	255.0
45°	286.4	271.1	260.9	245.6	239.7	231.2	223.5	217.6	211.6	208.2	206.5
47.5°	260.1	243.9	230.3	213.3	204.0	196.3	186.1	180.2	172.5	168.3	165.7
50°	238.0	220.1	204.8	185.3	175.9	167.4	155.5	146.2	139.4	132.6	130.9
52.5°	218.4	199.7	182.7	160.6	149.6	139.4	126.6	116.4	110.5	102.8	102.0
55°	195.5	179.3	160.6	137.7	126.6	116.4	102.8	92.6	85.0	79.9	78.2
57.5°	170.8	155.5	137.7	114.7	103.7	92.6	79.9	70.5	63.7	59.5	58.6
60°	147.9	133.4	116.4	93.5	82.4	73.1	59.5	50.1	44.2	40.8	39.1
62.5°	130.9	117.3	101.1	79.9	69.7	60.3	47.6	39.1	34.0	30.6	28.9
65°	114.7	101.1	86.7	67.1	58.6	50.1	38.2	30.6	25.5	22.1	20.4
67.5°	97.7	85.8	72.2	56.1	47.6	40.8	30.6	23.8	19.5	17.0	15.3
70°	80.7	69.7	58.6	45.0	39.1	32.3	23.8	18.7	14.4	12.7	11.0
72.5°	63.7	55.2	45.9	34.8	29.7	25.5	18.7	13.6	11.0	9.3	7.6
75°	47.6	41.6	34.0	26.3	22.1	18.7	13.6	10.2	8.5	6.8	5.9
77.5°	34.0	28.9	23.8	17.8	16.1	13.6	9.3	7.6	5.9	4.2	3.4
80°	22.9	20.4	16.1	12.7	10.2	9.3	6.8	5.1	3.4	2.5	2.5
82.5°	15.3	12.7	10.2	7.6	6.8	5.9	4.2	3.4	2.5	1.7	1.7
85°	9.3	7.6	5.9	4.2	4.2	3.4	2.5	1.7	0.8	0.8	0.8
87.5°	4.2	3.4	2.5	1.7	1.7	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°	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5
2.5°	668.0	662.9	659.5	663.7	665.4	662.9	665.4	669.7	673.9	674.8	662.9
5°	668.8	663.7	662.0	667.1	668.0	667.1	669.7	675.6	680.7	682.4	670.5
7.5°	668.8	665.4	664.6	670.5	671.4	670.5	674.8	681.6	686.7	690.1	678.2
10°	667.1	665.4	666.3	671.4	673.1	673.1	679.0	686.7	691.8	695.2	683.3
12.5°	664.6	664.6	664.6	670.5	672.2	673.1	678.2	688.4	691.8	696.9	685.0
15°	660.3	660.3	660.3	666.3	668.8	668.8	674.8	684.1	688.4	693.5	681.6
17.5°	652.7	652.7	653.5	658.6	661.2	661.2	667.1	677.3	679.9	685.8	673.9
20°	641.6	641.6	642.5	647.6	650.1	648.4	656.1	664.6	667.1	672.2	660.3
22.5°	625.5	625.5	625.5	630.6	632.3	631.4	639.1	646.7	646.7	653.5	640.8
25°	601.7	603.4	601.7	606.8	608.5	607.6	614.4	621.2	619.5	627.2	614.4
27.5°	572.8	571.9	571.9	576.2	576.2	575.3	580.4	588.1	586.4	591.5	579.6
30°	532.9	535.4	531.2	537.1	534.6	532.9	536.3	543.1	540.5	544.8	535.4
32.5°	487.0	483.6	483.6	483.6	485.3	481.0	484.4	487.8	485.3	489.5	479.3
35°	426.6	427.5	424.9	425.8	426.6	421.5	424.9	428.3	424.9	427.5	418.1
37.5°	366.3	367.1	361.2	364.6	361.2	359.5	362.9	364.6	361.2	363.7	353.5
40°	305.9	304.2	303.4	303.4	304.2	300.0	302.5	305.1	302.5	304.2	294.9
42.5°	253.3	252.4	250.7	251.6	249.0	248.2	249.0	251.6	249.0	250.7	243.9
45°	207.4	205.7	203.1	204.0	204.0	199.7	202.3	204.0	201.4	202.3	196.3
47.5°	164.9	162.3	162.3	161.5	161.5	159.8	162.3	161.5	158.9	160.6	154.7
50°	128.3	126.6	126.6	126.6	126.6	124.1	124.9	126.6	124.1	124.1	120.7
52.5°	100.3	97.7	96.0	96.0	96.0	95.2	95.2	96.0	93.5	93.5	92.6
55°	75.6	74.8	72.2	72.2	72.2	69.7	70.5	70.5	69.7	69.7	67.1
57.5°	56.1	53.5	51.8	51.8	50.1	50.1	49.3	50.1	48.4	48.4	46.7
60°	37.4	35.7	34.8	34.0	34.0	33.1	34.0	33.1	33.1	32.3	31.4
62.5°	27.2	25.5	23.8	23.8	23.8	22.9	22.9	22.9	22.9	22.9	22.1
65°	19.5	17.8	17.8	17.0	17.0	16.1	16.1	16.1	16.1	16.1	15.3
67.5°	13.6	12.7	11.9	11.9	11.9	11.9	11.9	11.9	11.0	11.0	11.0
70°	10.2	9.3	8.5	8.5	8.5	8.5	8.5	7.6	8.5	8.5	7.6
72.5°	6.8	6.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
75°	5.1	5.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	3.4	3.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	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°	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5
2.5°	675.6	674.8	673.1	675.6	668.8	666.3	665.4	673.1
5°	685.0	683.3	683.3	685.8	678.2	676.5	674.8	683.3
7.5°	693.5	691.8	691.8	694.3	687.5	685.8	684.1	692.6
10°	698.6	698.6	698.6	700.3	694.3	692.6	691.8	700.3
12.5°	701.1	701.1	700.3	703.7	696.0	696.0	694.3	702.8
15°	697.7	697.7	697.7	700.3	693.5	691.8	691.8	698.6
17.5°	689.2	689.2	688.4	690.9	683.3	683.3	682.4	690.1
20°	676.5	676.5	674.8	678.2	670.5	668.0	667.1	674.8
22.5°	656.1	655.2	654.4	656.1	649.3	647.6	646.7	653.5
25°	629.7	628.9	627.2	628.9	621.2	618.7	618.7	623.8
27.5°	592.3	592.3	589.8	592.3	583.8	583.0	582.1	588.1
30°	546.5	543.1	541.4	544.8	536.3	536.3	534.6	540.5
32.5°	489.5	486.1	485.3	487.0	479.3	476.8	480.2	483.6
35°	424.1	424.9	421.5	421.5	414.7	415.6	416.4	421.5
37.5°	361.2	359.5	358.6	359.5	354.4	352.7	351.0	356.1
40°	302.5	298.3	297.4	297.4	293.2	292.3	293.2	295.7
42.5°	247.3	246.5	243.1	244.8	240.5	242.2	241.4	241.4
45°	199.7	200.6	197.2	199.7	196.3	193.8	193.8	195.5
47.5°	158.1	158.1	157.2	157.2	154.7	155.5	153.8	156.4
50°	122.4	122.4	120.7	121.5	119.8	119.8	119.0	119.8
52.5°	93.5	92.6	92.6	91.8	90.1	90.9	91.8	90.1
55°	68.0	68.8	67.1	68.0	66.3	67.1	66.3	67.1
57.5°	46.7	47.6	45.9	47.6	45.9	46.7	45.9	45.9
60°	32.3	32.3	31.4	32.3	31.4	31.4	30.6	32.3
62.5°	22.1	22.1	22.1	22.1	22.1	21.2	22.1	22.1
65°	16.1	15.3	15.3	15.3	15.3	15.3	15.3	15.3
67.5°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
70°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
72.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
75°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.0	0.8	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)