

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: P251928

Luminaire Tested: **LD4B20D010 EU4B10209035 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251928
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: LD4B20D010 EU4B10209035 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1515.0 lumens
Efficiency: N/A
Efficacy: 72.8 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

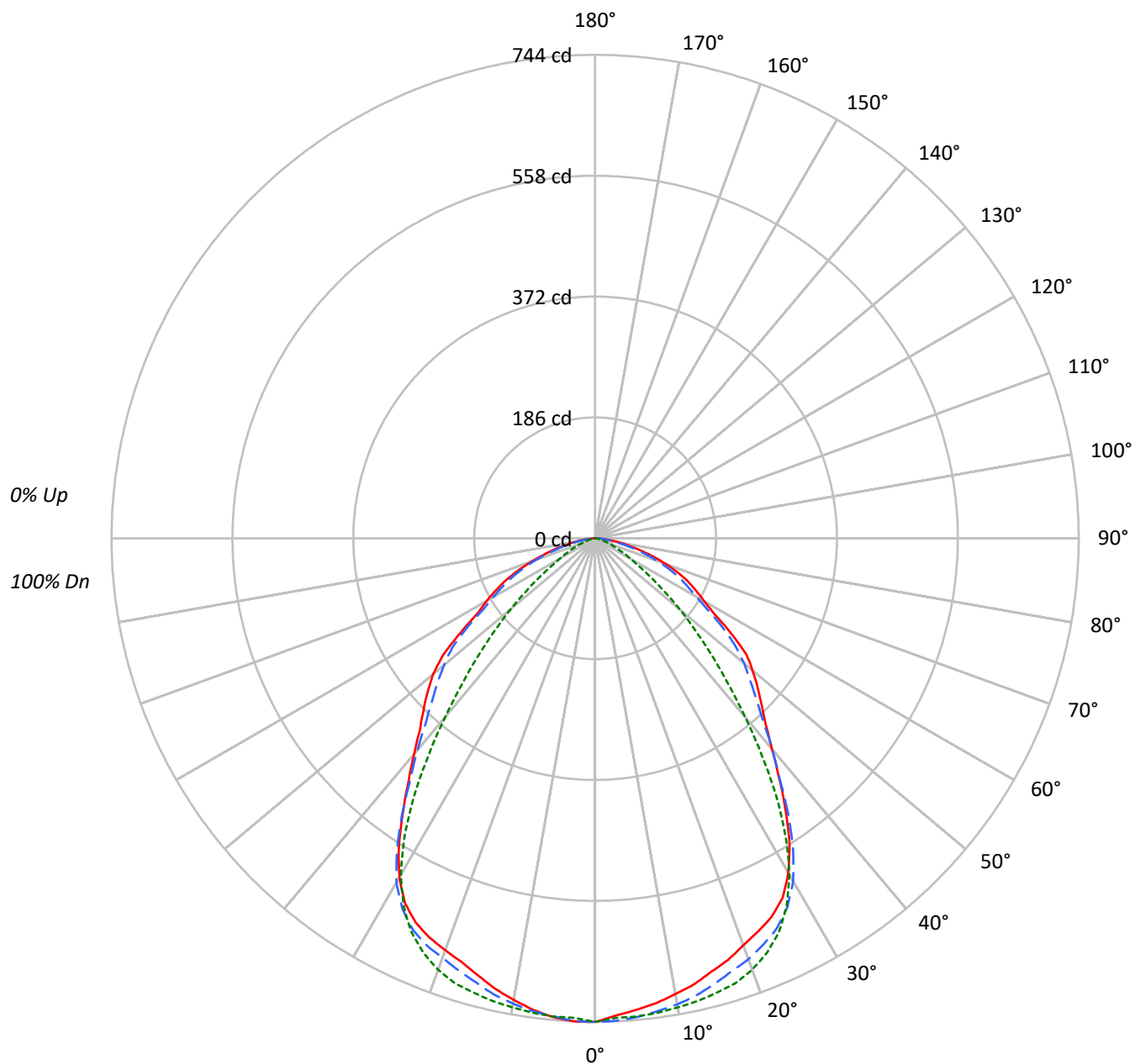
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RCR																					
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102
1	111	107	103	100		108	104	101	98		100	98	95		96	94	92		93	91	89
2	102	95	89	84		100	93	88	83		90	85	81		87	83	80		84	81	78
3	94	85	78	72		92	84	77	72		81	75	70		78	73	69		76	72	68
4	87	77	69	63		85	75	68	62		73	67	62		71	65	61		69	64	60
5	81	69	61	55		79	68	61	55		66	60	54		64	58	54		63	57	53
6	75	63	55	49		73	62	55	49		60	54	49		59	53	48		57	52	48
7	70	58	50	44		68	57	49	44		56	49	44		54	48	43		53	47	43
8	66	53	45	40		64	52	45	40		51	44	40		50	44	39		49	43	39
9	62	49	41	36		60	49	41	36		47	41	36		46	40	36		45	40	36
10	58	46	38	33		57	45	38	33		44	38	33		43	37	33		42	37	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	72548	72548	72548
5°	71260	72267	72375
10°	70490	72539	71401
15°	69679	73029	70254
20°	69125	73283	69965
25°	69090	71918	70198
30°	66891	67273	67791
35°	60772	57905	61319
40°	53764	45609	55075
45°	49879	34732	51464
50°	47926	25699	49321
55°	43396	17705	42818
60°	37716	12046	37502
65°	36436	8717	34591
70°	32969	5870	29378
75°	27187	3878	23271
80°	21832	2582	17342
85°	17891	1230	11518



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.3	4.6
10°-20°	200.9	13.3
20°-30°	303.5	20.0
30°-40°	317.7	21.0
40°-50°	257.3	17.0
50°-60°	187.1	12.4
60°-70°	115.4	7.6
70°-80°	52.2	3.4
80°-90°	10.6	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°	574.7	37.9
0°-40°	892.4	58.9
0°-60°	1336.8	88.2
0°-90°	1515.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1515.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	744	744	744	744	744	
5°	728	740	739	739	740	69
15°	691	710	724	708	696	195
25°	642	662	669	664	653	294
35°	511	518	487	518	515	318
45°	362	350	252	355	373	281
55°	255	239	104	242	252	228
65°	158	142	38	140	150	155
75°	72	62	10	54	62	78
85°	16	13	1	9	10	18
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°	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4
2.5°	735.2	735.2	742.1	750.1	743.3	736.4	741.0	738.7	746.7	746.7	743.3
5°	728.4	730.7	736.4	743.3	737.5	730.7	736.4	734.1	742.1	742.1	739.8
7.5°	721.5	722.7	729.5	737.5	731.8	724.9	729.5	728.4	735.2	736.4	734.1
10°	712.3	713.5	720.4	728.4	722.7	716.9	721.5	720.4	729.5	729.5	728.4
12.5°	703.2	704.3	711.2	718.1	712.3	706.6	711.2	711.2	720.4	721.5	720.4
15°	690.6	692.9	698.6	705.5	702.0	695.2	699.7	699.7	707.8	710.1	710.1
17.5°	680.3	681.4	687.1	694.0	689.4	683.7	688.3	688.3	696.3	698.6	698.6
20°	666.5	668.8	674.6	681.4	678.0	673.4	676.8	676.8	686.0	688.3	689.4
22.5°	655.1	657.4	662.0	671.1	665.4	662.0	666.5	665.4	675.7	676.8	676.8
25°	642.5	644.8	650.5	656.2	652.8	649.4	652.8	652.8	660.8	662.0	662.0
27.5°	624.2	625.3	631.0	636.8	633.3	628.7	633.3	632.2	640.2	641.3	640.2
30°	594.4	596.7	599.0	607.0	603.5	600.1	604.7	602.4	610.4	610.4	609.3
32.5°	556.6	556.6	561.2	566.9	562.3	560.0	563.5	564.6	570.3	570.3	566.9
35°	510.8	513.1	516.5	519.9	516.5	514.2	517.7	516.5	523.4	521.1	517.7
37.5°	465.0	466.1	469.6	474.1	469.6	466.1	467.3	466.1	471.8	471.8	466.1
40°	422.6	424.9	427.2	431.8	427.2	424.9	426.0	422.6	429.5	427.2	423.7
42.5°	388.2	389.4	392.8	395.1	390.5	389.4	390.5	388.2	391.7	389.4	382.5
45°	361.9	361.9	363.0	366.5	361.9	360.8	360.8	358.5	361.9	357.3	350.4
47.5°	339.0	340.1	341.3	343.6	340.1	336.7	337.8	333.3	335.6	332.1	323.0
50°	316.1	318.4	319.5	321.8	318.4	316.1	317.2	312.7	312.7	306.9	298.9
52.5°	293.2	294.3	293.2	295.5	293.2	289.7	290.9	286.3	286.3	279.4	271.4
55°	255.4	256.5	257.7	260.0	257.7	254.2	256.5	253.1	253.1	248.5	239.4
57.5°	217.6	218.7	219.9	221.0	221.0	218.7	219.9	217.6	216.5	213.0	206.1
60°	193.5	193.5	193.5	194.7	193.5	192.4	192.4	190.1	190.1	185.5	178.7
62.5°	175.2	176.4	176.4	177.5	176.4	175.2	174.1	171.8	170.6	166.1	160.3
65°	158.0	158.0	156.9	159.2	158.0	156.9	156.9	154.6	152.3	147.7	142.0
67.5°	137.4	138.6	137.4	138.6	138.6	137.4	136.3	134.0	132.8	129.4	122.5
70°	115.7	115.7	115.7	116.8	115.7	115.7	116.8	113.4	112.2	107.7	101.9
72.5°	93.9	95.1	95.1	93.9	95.1	92.8	92.8	92.8	91.6	87.0	81.3
75°	72.2	73.3	73.3	74.4	73.3	72.2	72.2	71.0	69.9	66.4	61.8
77.5°	53.8	53.8	55.0	55.0	55.0	53.8	53.8	51.5	51.5	49.2	44.7
80°	38.9	38.9	37.8	38.9	38.9	37.8	37.8	36.6	36.6	34.4	30.9
82.5°	25.2	26.3	26.3	26.3	26.3	25.2	25.2	25.2	24.1	22.9	20.6
85°	16.0	16.0	16.0	16.0	17.2	16.0	17.2	16.0	16.0	13.7	12.6
87.5°	6.9	6.9	6.9	8.0	8.0	6.9	6.9	6.9	6.9	6.9	5.7
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4
2.5°	743.3	744.4	741.0	745.6	742.1	743.3	744.4	743.3	738.7	738.7	751.3
5°	738.7	741.0	737.5	743.3	741.0	741.0	743.3	742.1	737.5	738.7	750.1
7.5°	734.1	737.5	735.2	741.0	737.5	737.5	739.8	739.8	735.2	736.4	746.7
10°	727.2	731.8	730.7	736.4	733.0	733.0	736.4	736.4	731.8	733.0	743.3
12.5°	721.5	726.1	724.9	730.7	728.4	729.5	730.7	733.0	727.2	729.5	738.7
15°	712.3	716.9	716.9	722.7	720.4	722.7	724.9	728.4	723.8	723.8	733.0
17.5°	702.0	707.8	707.8	712.3	712.3	713.5	718.1	721.5	716.9	718.1	726.1
20°	690.6	697.5	697.5	703.2	702.0	704.3	707.8	711.2	706.6	706.6	715.8
22.5°	679.1	684.9	686.0	689.4	689.4	690.6	694.0	696.3	690.6	690.6	699.7
25°	663.1	668.8	670.0	672.3	670.0	670.0	672.3	674.6	668.8	668.8	676.8
27.5°	641.3	647.1	647.1	645.9	643.6	644.8	643.6	644.8	639.0	637.9	645.9
30°	609.3	612.7	612.7	611.6	608.1	608.1	604.7	605.8	597.8	597.8	604.7
32.5°	565.8	569.2	566.9	564.6	560.0	557.7	555.4	554.3	546.3	546.3	554.3
35°	514.2	516.5	513.1	508.5	502.8	499.3	495.9	491.3	485.6	486.7	491.3
37.5°	461.5	461.5	457.0	447.8	443.2	437.5	431.8	431.8	422.6	421.5	424.9
40°	416.9	412.3	404.3	391.7	383.7	377.9	369.9	365.3	358.5	358.5	364.2
42.5°	376.8	367.6	357.3	340.1	332.1	325.3	314.9	310.4	302.3	301.2	304.6
45°	341.3	332.1	317.2	298.9	288.6	280.6	265.7	260.0	253.1	252.0	254.2
47.5°	312.7	302.3	284.0	260.0	249.7	239.4	224.5	216.5	210.7	207.3	210.7
50°	287.5	273.7	254.2	229.0	215.3	206.1	187.8	179.8	171.8	169.5	170.6
52.5°	260.0	246.2	225.6	199.3	186.7	172.9	155.8	144.3	137.4	134.0	137.4
55°	230.2	216.5	195.8	169.5	155.8	143.2	124.8	115.7	107.7	104.2	107.7
57.5°	198.1	185.5	167.2	140.9	128.3	116.8	99.6	90.5	82.5	80.2	82.5
60°	170.6	160.3	142.0	116.8	106.5	93.9	79.0	69.9	63.0	61.8	63.0
62.5°	152.3	140.9	123.7	99.6	89.3	79.0	65.3	56.1	50.4	49.2	50.4
65°	134.0	121.4	105.4	84.7	74.4	66.4	52.7	44.7	38.9	37.8	38.9
67.5°	113.4	101.9	88.2	69.9	61.8	53.8	42.4	34.4	29.8	28.6	29.8
70°	93.9	83.6	69.9	56.1	48.1	42.4	32.1	26.3	21.8	20.6	21.8
72.5°	74.4	65.3	53.8	42.4	37.8	32.1	25.2	19.5	16.0	14.9	16.0
75°	57.3	50.4	41.2	30.9	27.5	24.1	17.2	13.7	11.5	10.3	11.5
77.5°	40.1	35.5	28.6	22.9	19.5	17.2	12.6	9.2	8.0	6.9	8.0
80°	27.5	24.1	19.5	14.9	12.6	10.3	8.0	5.7	4.6	4.6	4.6
82.5°	18.3	14.9	11.5	9.2	8.0	6.9	4.6	3.4	3.4	2.3	2.3
85°	10.3	9.2	6.9	5.7	4.6	3.4	2.3	2.3	1.1	1.1	1.1
87.5°	4.6	3.4	2.3	2.3	1.1	1.1	1.1	1.1	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°	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4
2.5°	747.8	744.4	749.0	744.4	742.1	744.4	742.1	749.0	743.3	738.7	743.3
5°	746.7	742.1	746.7	743.3	739.8	741.0	738.7	745.6	738.7	735.2	737.5
7.5°	744.4	741.0	743.3	739.8	736.4	737.5	735.2	741.0	734.1	730.7	733.0
10°	741.0	737.5	738.7	736.4	733.0	733.0	730.7	735.2	727.2	722.7	724.9
12.5°	736.4	731.8	734.1	730.7	726.1	726.1	723.8	727.2	719.2	714.6	715.8
15°	730.7	726.1	726.1	722.7	718.1	718.1	713.5	716.9	707.8	703.2	703.2
17.5°	723.8	718.1	718.1	714.6	708.9	707.8	704.3	707.8	697.5	692.9	692.9
20°	713.5	708.9	707.8	705.5	699.7	698.6	694.0	695.2	687.1	683.7	682.6
22.5°	699.7	695.2	696.3	692.9	688.3	687.1	682.6	686.0	678.0	674.6	675.7
25°	675.7	673.4	675.7	674.6	671.1	671.1	668.8	671.1	664.2	662.0	663.1
27.5°	648.2	647.1	648.2	648.2	645.9	645.9	645.9	649.4	642.5	641.3	641.3
30°	608.1	608.1	609.3	610.4	610.4	612.7	611.6	616.1	611.6	609.3	611.6
32.5°	555.4	560.0	563.5	563.5	563.5	565.8	568.0	571.5	566.9	568.0	568.0
35°	495.9	499.3	501.6	507.3	503.9	511.9	514.2	518.8	517.7	519.9	518.8
37.5°	429.5	434.0	438.6	446.6	445.5	454.7	459.2	468.4	466.1	470.7	473.0
40°	367.6	374.5	381.4	387.1	391.7	400.8	410.0	421.5	424.9	428.3	429.5
42.5°	308.1	314.9	326.4	334.4	341.3	356.2	368.8	382.5	385.9	392.8	395.1
45°	260.0	265.7	279.4	289.7	295.5	317.2	332.1	349.3	355.0	363.0	366.5
47.5°	215.3	225.6	239.4	252.0	260.0	282.9	302.3	320.7	328.7	337.8	342.4
50°	176.4	187.8	206.1	217.6	229.0	254.2	276.0	295.5	303.5	313.8	318.4
52.5°	144.3	156.9	174.1	186.7	199.3	225.6	248.5	266.8	277.2	284.0	290.9
55°	113.4	127.1	144.3	158.0	168.4	197.0	216.5	234.8	241.6	247.4	250.8
57.5°	88.2	98.5	115.7	127.1	139.7	164.9	184.4	198.1	203.9	210.7	213.0
60°	68.7	79.0	95.1	106.5	118.0	142.0	161.5	175.2	180.9	186.7	190.1
62.5°	55.0	65.3	80.2	90.5	100.8	122.5	139.7	153.5	160.3	166.1	169.5
65°	43.5	52.7	65.3	75.6	83.6	103.1	120.3	132.8	139.7	145.4	148.9
67.5°	34.4	42.4	53.8	60.7	68.7	84.7	99.6	111.1	116.8	123.7	127.1
70°	26.3	32.1	42.4	48.1	53.8	67.6	79.0	90.5	96.2	100.8	103.1
72.5°	19.5	24.1	32.1	36.6	40.1	51.5	60.7	68.7	73.3	77.9	80.2
75°	13.7	17.2	22.9	26.3	28.6	36.6	44.7	50.4	53.8	57.3	60.7
77.5°	9.2	11.5	14.9	17.2	19.5	25.2	29.8	34.4	37.8	41.2	42.4
80°	5.7	8.0	10.3	11.5	12.6	16.0	20.6	22.9	25.2	27.5	28.6
82.5°	3.4	4.6	5.7	6.9	8.0	10.3	12.6	14.9	16.0	18.3	19.5
85°	1.1	2.3	2.3	3.4	3.4	5.7	6.9	8.0	9.2	10.3	11.5
87.5°	0.0	0.0	1.1	1.1	1.1	1.1	2.3	2.3	2.3	2.3	2.3
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°	744.4	744.4	744.4	744.4	744.4	744.4	744.4	744.4
2.5°	747.8	744.4	742.1	741.0	749.0	738.7	743.3	744.4
5°	743.3	739.8	737.5	736.4	743.3	734.1	737.5	739.8
7.5°	736.4	734.1	730.7	729.5	736.4	726.1	730.7	731.8
10°	728.4	724.9	722.7	721.5	727.2	716.9	721.5	721.5
12.5°	718.1	715.8	711.2	711.2	715.8	706.6	710.1	710.1
15°	704.3	702.0	697.5	697.5	702.0	692.9	696.3	696.3
17.5°	692.9	690.6	687.1	686.0	690.6	681.4	684.9	683.7
20°	683.7	681.4	676.8	676.8	680.3	671.1	674.6	674.6
22.5°	675.7	674.6	670.0	670.0	674.6	665.4	667.7	665.4
25°	663.1	662.0	657.4	658.5	660.8	651.6	655.1	652.8
27.5°	642.5	642.5	637.9	636.8	640.2	632.2	634.5	633.3
30°	610.4	611.6	605.8	605.8	607.0	600.1	603.5	602.4
32.5°	566.9	568.0	563.5	562.3	565.8	560.0	562.3	562.3
35°	518.8	519.9	516.5	516.5	519.9	516.5	516.5	515.4
37.5°	470.7	473.0	470.7	471.8	474.1	470.7	473.0	471.8
40°	431.8	434.0	430.6	432.9	435.2	431.8	435.2	432.9
42.5°	396.3	399.7	397.4	399.7	402.0	399.7	402.0	398.5
45°	369.9	372.2	371.1	372.2	374.5	373.4	374.5	373.4
47.5°	344.7	349.3	347.0	349.3	352.7	350.4	352.7	349.3
50°	321.8	325.3	324.1	326.4	327.5	326.4	328.7	325.3
52.5°	292.0	295.5	294.3	294.3	296.6	294.3	296.6	294.3
55°	253.1	254.2	254.2	255.4	254.2	253.1	254.2	252.0
57.5°	215.3	217.6	214.2	217.6	216.5	215.3	215.3	213.0
60°	191.3	194.7	192.4	194.7	193.5	193.5	193.5	192.4
62.5°	171.8	174.1	171.8	172.9	172.9	172.9	171.8	170.6
65°	150.0	153.5	151.2	152.3	151.2	150.0	151.2	150.0
67.5°	128.3	129.4	129.4	128.3	128.3	128.3	128.3	126.0
70°	104.2	105.4	104.2	106.5	105.4	104.2	105.4	103.1
72.5°	81.3	82.5	81.3	82.5	81.3	81.3	81.3	81.3
75°	60.7	61.8	61.8	61.8	61.8	61.8	59.6	61.8
77.5°	43.5	43.5	43.5	44.7	43.5	43.5	43.5	43.5
80°	29.8	29.8	29.8	30.9	29.8	30.9	29.8	30.9
82.5°	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
85°	10.3	11.5	11.5	10.3	10.3	10.3	10.3	10.3
87.5°	2.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)