

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: P251521

Luminaire Tested: **LD4B15D010 EU4B10208050 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251521
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 EU4B10208050 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1428.0 lumens
Efficiency: N/A
Efficacy: 99.2 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

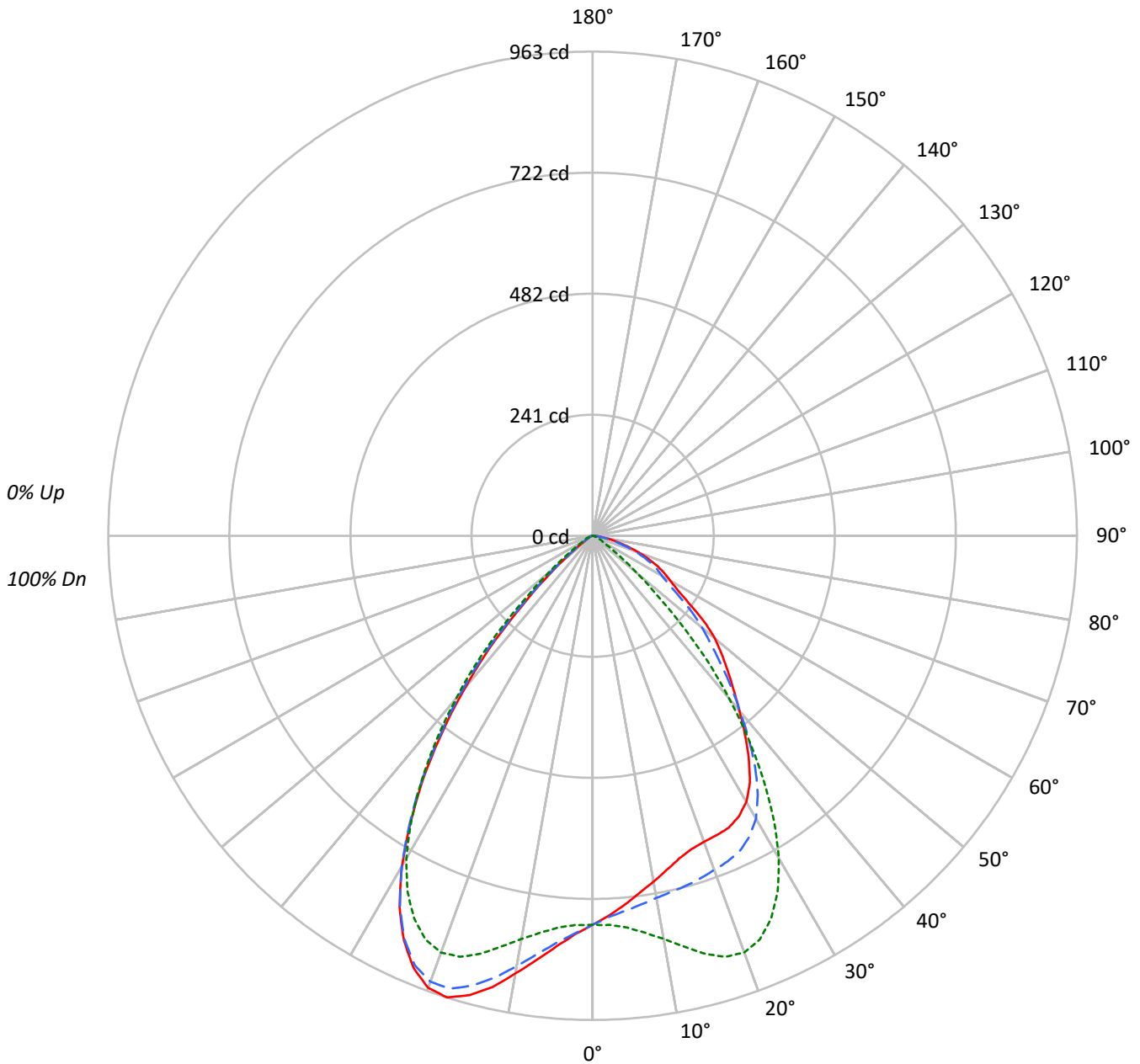
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	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°	75413	75413	75413
5°	72052	76494	80152
10°	69085	80574	87472
15°	67066	86841	95407
20°	67164	91464	99222
25°	68875	90274	95489
30°	68781	83332	85268
35°	64425	70433	69469
40°	57708	53726	50126
45°	52347	34112	27993
50°	48093	17315	11947
55°	39488	7731	3942
60°	34656	4327	2164
65°	32608	3252	1637
70°	27925	2593	1453
75°	21313	1920	1130
80°	15322	1122	561
85°	11294	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	75.2	5.3
10°-20°	234.3	16.4
20°-30°	362.4	25.4
30°-40°	357.1	25.0
40°-50°	219.3	15.4
50°-60°	97.5	6.8
60°-70°	54.5	3.8
70°-80°	23.6	1.7
80°-90°	4.2	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°	671.9	47.0
0°-40°	1029.0	72.1
0°-60°	1345.8	94.2
0°-90°	1428.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1428.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	774	774	774	774	774	
5°	736	749	782	812	819	69
15°	665	720	861	926	946	189
25°	640	692	840	885	888	294
35°	542	564	592	590	584	336
45°	380	361	248	216	203	294
55°	232	210	46	26	23	214
65°	141	127	14	8	7	138
75°	57	48	5	3	3	62
85°	10	8	0	0	0	13
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°	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8
2.5°	755.6	755.6	755.6	755.6	757.7	754.6	757.7	757.7	760.7	761.7	758.7
5°	736.5	735.4	736.5	736.5	738.5	737.5	740.5	742.5	746.6	748.6	748.6
7.5°	716.2	716.2	716.2	718.3	721.3	720.3	723.3	726.3	732.4	736.5	739.5
10°	698.1	697.1	700.1	701.1	704.1	704.1	709.2	712.2	719.3	727.4	731.4
12.5°	680.9	679.9	681.9	684.9	690.0	690.0	694.0	699.1	709.2	718.3	725.3
15°	664.7	665.7	668.8	670.8	676.8	676.8	681.9	688.0	699.1	710.2	720.3
17.5°	653.6	654.6	656.6	659.7	665.7	665.7	670.8	677.9	690.0	702.1	714.2
20°	647.6	648.6	650.6	653.6	658.7	659.7	663.7	671.8	682.9	696.0	707.2
22.5°	644.5	646.5	648.6	650.6	655.6	655.6	660.7	666.7	677.9	691.0	701.1
25°	640.5	642.5	643.5	646.5	650.6	650.6	653.6	660.7	670.8	681.9	692.0
27.5°	629.4	631.4	632.4	635.4	639.5	638.5	642.5	647.6	656.6	666.7	674.8
30°	611.2	612.2	614.2	615.2	618.3	618.3	621.3	626.3	632.4	641.5	649.6
32.5°	581.9	583.9	584.9	585.9	589.0	587.9	589.0	592.0	598.1	606.1	611.2
35°	541.5	545.5	545.5	547.5	548.6	547.5	547.5	551.6	554.6	560.7	563.7
37.5°	497.0	500.1	499.0	501.1	502.1	499.0	501.1	502.1	506.1	509.2	510.2
40°	453.6	454.6	454.6	454.6	454.6	453.6	454.6	455.6	458.6	458.6	455.6
42.5°	414.2	415.2	415.2	413.2	415.2	414.2	414.2	414.2	414.2	410.2	407.1
45°	379.8	380.9	380.9	379.8	379.8	377.8	376.8	375.8	372.8	367.7	360.6
47.5°	347.5	349.5	350.5	348.5	347.5	345.5	345.5	339.4	335.4	329.3	319.2
50°	317.2	319.2	319.2	317.2	317.2	314.2	311.1	309.1	303.1	296.0	283.9
52.5°	278.8	281.9	281.9	280.8	280.8	276.8	275.8	271.7	266.7	258.6	248.5
55°	232.4	236.4	235.4	234.4	232.4	232.4	232.4	229.3	226.3	220.2	210.1
57.5°	199.0	200.0	200.0	199.0	199.0	197.0	197.0	194.0	193.0	186.9	178.8
60°	177.8	177.8	178.8	177.8	176.8	175.8	174.8	172.7	169.7	165.7	159.6
62.5°	160.6	161.6	161.6	160.6	159.6	158.6	157.6	155.6	153.6	150.5	144.5
65°	141.4	143.5	142.4	141.4	140.4	139.4	139.4	137.4	135.4	133.3	127.3
67.5°	120.2	121.2	122.2	120.2	120.2	119.2	119.2	117.2	116.2	112.1	108.1
70°	98.0	99.0	99.0	98.0	98.0	97.0	97.0	96.0	95.0	91.9	87.9
72.5°	76.8	77.8	76.8	75.8	75.8	75.8	74.8	73.7	72.7	70.7	67.7
75°	56.6	56.6	57.6	56.6	55.6	55.6	54.6	54.6	52.5	51.5	48.5
77.5°	40.4	41.4	40.4	40.4	39.4	38.4	38.4	37.4	37.4	36.4	34.3
80°	27.3	27.3	28.3	27.3	26.3	27.3	26.3	25.3	25.3	24.2	22.2
82.5°	17.2	18.2	17.2	17.2	17.2	17.2	17.2	16.2	16.2	15.2	14.1
85°	10.1	10.1	10.1	10.1	10.1	10.1	10.1	9.1	9.1	9.1	8.1
87.5°	5.1	5.1	4.0	4.0	5.1	5.1	5.1	4.0	4.0	4.0	4.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8
2.5°	762.7	763.7	765.7	768.8	768.8	766.8	771.8	771.8	773.8	774.8	778.9
5°	754.6	756.7	760.7	765.7	766.8	765.7	772.8	775.9	778.9	781.9	788.0
7.5°	747.6	751.6	758.7	765.7	768.8	768.8	779.9	783.9	790.0	796.1	803.1
10°	743.5	749.6	759.7	770.8	773.8	776.9	790.0	798.1	806.2	814.2	824.3
12.5°	738.5	749.6	762.7	776.9	782.9	787.0	805.1	815.2	826.4	836.5	849.6
15°	737.5	750.6	767.8	786.0	794.0	800.1	820.3	834.4	847.6	860.7	873.8
17.5°	733.4	749.6	770.8	791.0	801.1	809.2	832.4	849.6	864.7	877.9	893.0
20°	728.4	746.6	769.8	792.0	803.1	811.2	836.5	852.6	869.8	881.9	896.1
22.5°	721.3	739.5	762.7	784.9	795.0	802.1	827.4	841.5	856.7	868.8	881.9
25°	709.2	726.3	746.6	764.7	774.8	780.9	803.1	816.3	827.4	839.5	851.6
27.5°	692.0	705.1	722.3	735.4	741.5	747.6	765.7	776.9	787.0	797.1	805.1
30°	661.7	671.8	683.9	695.0	701.1	702.1	719.3	725.3	733.4	740.5	746.6
32.5°	621.3	629.4	636.4	642.5	646.5	647.6	660.7	662.7	670.8	670.8	679.9
35°	569.8	573.8	578.9	578.9	581.9	578.9	587.9	590.0	591.0	592.0	599.1
37.5°	511.2	513.2	516.2	510.2	510.2	507.1	510.2	512.2	508.1	508.1	513.2
40°	455.6	451.6	447.5	441.5	438.4	432.4	432.4	427.3	424.3	422.3	423.3
42.5°	402.1	393.0	383.9	370.8	364.7	358.6	352.6	345.5	343.5	338.4	335.4
45°	350.5	337.4	325.3	304.1	292.0	285.9	272.8	258.6	249.5	247.5	239.4
47.5°	307.1	287.9	267.7	242.5	230.3	219.2	200.0	187.9	175.8	169.7	164.7
50°	268.7	251.5	225.3	198.0	182.9	171.7	150.5	136.4	123.2	114.2	108.1
52.5°	235.4	216.2	191.9	160.6	145.5	133.3	110.1	94.0	82.8	73.7	66.7
55°	198.0	182.9	158.6	129.3	114.2	100.0	79.8	62.6	51.5	45.5	40.4
57.5°	170.7	157.6	134.4	106.1	91.9	78.8	58.6	44.4	35.4	29.3	26.3
60°	152.5	140.4	120.2	92.9	79.8	67.7	48.5	35.4	27.3	22.2	20.2
62.5°	137.4	125.3	107.1	81.8	70.7	58.6	41.4	29.3	22.2	18.2	15.2
65°	120.2	109.1	92.9	70.7	60.6	50.5	35.4	24.2	18.2	14.1	12.1
67.5°	102.0	91.9	77.8	58.6	50.5	42.4	28.3	20.2	15.2	12.1	10.1
70°	82.8	74.8	61.6	47.5	40.4	33.3	23.2	16.2	11.1	9.1	8.1
72.5°	63.6	56.6	47.5	36.4	30.3	25.3	17.2	12.1	9.1	7.1	6.1
75°	45.5	40.4	33.3	26.3	22.2	18.2	13.1	9.1	6.1	5.1	4.0
77.5°	31.3	28.3	23.2	18.2	15.2	13.1	9.1	6.1	5.1	4.0	3.0
80°	20.2	18.2	15.2	11.1	9.1	8.1	5.1	4.0	3.0	2.0	2.0
82.5°	12.1	11.1	9.1	6.1	5.1	4.0	3.0	2.0	2.0	1.0	1.0
85°	7.1	6.1	4.0	3.0	3.0	2.0	2.0	1.0	1.0	0.0	0.0
87.5°	3.0	2.0	2.0	1.0	1.0	1.0	1.0	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8
2.5°	776.9	781.9	780.9	783.9	782.9	782.9	788.0	786.0	791.0	791.0	792.0
5°	788.0	795.0	795.0	800.1	799.1	801.1	806.2	806.2	812.2	814.2	814.2
7.5°	804.1	813.2	815.2	820.3	821.3	825.4	829.4	830.4	838.5	840.5	841.5
10°	826.4	837.5	840.5	845.6	847.6	851.6	856.7	858.7	868.8	869.8	873.8
12.5°	853.6	865.8	868.8	874.9	875.9	880.9	888.0	890.0	900.1	903.1	906.2
15°	879.9	891.0	896.1	902.1	903.1	909.2	915.3	917.3	926.4	930.4	933.4
17.5°	898.1	911.2	914.3	922.3	922.3	927.4	933.4	935.5	944.6	947.6	949.6
20°	902.1	914.3	918.3	924.4	925.4	928.4	933.4	935.5	943.5	944.6	947.6
22.5°	887.0	899.1	901.1	907.2	908.2	911.2	915.3	914.3	924.4	923.3	924.4
25°	854.6	865.8	865.8	872.8	871.8	874.9	876.9	875.9	885.0	885.0	885.0
27.5°	808.2	818.3	819.3	824.3	821.3	822.3	824.3	823.3	829.4	829.4	829.4
30°	750.6	758.7	755.6	759.7	757.7	759.7	757.7	756.7	758.7	760.7	759.7
32.5°	678.9	684.9	684.9	685.9	685.9	679.9	677.9	677.9	676.8	675.8	675.8
35°	596.0	601.1	599.1	599.1	598.1	592.0	589.0	586.9	590.0	583.9	587.9
37.5°	511.2	512.2	509.2	508.1	503.1	503.1	498.0	494.0	496.0	495.0	491.0
40°	418.2	422.3	416.2	414.2	417.2	413.2	408.1	403.1	407.1	402.1	404.1
42.5°	327.3	326.3	324.3	324.3	324.3	318.2	317.2	316.2	317.2	313.2	310.1
45°	236.4	233.4	230.3	230.3	226.3	224.3	224.3	221.2	216.2	216.2	210.1
47.5°	159.6	152.5	150.5	149.5	147.5	147.5	145.5	143.5	142.4	137.4	137.4
50°	104.1	97.0	95.0	94.0	95.0	92.9	90.9	88.9	86.9	85.9	83.8
52.5°	62.6	59.6	57.6	56.6	54.6	53.5	52.5	50.5	49.5	49.5	48.5
55°	37.4	34.3	30.3	30.3	30.3	29.3	28.3	27.3	26.3	26.3	25.3
57.5°	23.2	21.2	19.2	18.2	18.2	18.2	17.2	17.2	17.2	17.2	16.2
60°	17.2	15.2	14.1	14.1	14.1	13.1	13.1	13.1	13.1	12.1	12.1
62.5°	13.1	12.1	11.1	11.1	10.1	10.1	10.1	10.1	10.1	10.1	9.1
65°	11.1	9.1	9.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
67.5°	8.1	7.1	7.1	7.1	7.1	6.1	6.1	6.1	6.1	6.1	6.1
70°	6.1	6.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
72.5°	5.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
75°	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
77.5°	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	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	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°	773.8	773.8	773.8	773.8	773.8	773.8	773.8	773.8
2.5°	792.0	797.1	792.0	792.0	795.0	794.0	796.1	793.0
5°	815.2	822.3	817.3	816.3	821.3	820.3	821.3	819.3
7.5°	843.5	850.6	845.6	845.6	850.6	849.6	852.6	850.6
10°	875.9	883.9	876.9	877.9	885.0	883.9	883.9	883.9
12.5°	909.2	917.3	913.2	913.2	918.3	919.3	920.3	919.3
15°	936.5	944.6	939.5	939.5	946.6	945.6	946.6	945.6
17.5°	952.6	960.7	954.7	954.7	960.7	960.7	961.7	962.7
20°	948.6	957.7	952.6	950.6	957.7	957.7	956.7	956.7
22.5°	925.4	933.4	929.4	927.4	932.4	930.4	929.4	930.4
25°	885.0	893.0	885.0	885.0	889.0	888.0	889.0	888.0
27.5°	830.4	836.5	828.4	827.4	831.4	829.4	828.4	831.4
30°	757.7	763.7	759.7	756.7	761.7	758.7	756.7	757.7
32.5°	674.8	678.9	676.8	671.8	674.8	672.8	671.8	672.8
35°	583.9	589.0	580.9	579.9	584.9	580.9	578.9	583.9
37.5°	490.0	496.0	488.9	490.0	486.9	487.9	485.9	488.9
40°	401.1	400.0	398.0	397.0	398.0	395.0	397.0	394.0
42.5°	305.1	307.1	306.1	305.1	306.1	302.1	300.0	304.1
45°	212.1	211.1	209.1	207.1	207.1	206.1	206.1	203.1
47.5°	136.4	135.4	131.3	132.3	134.4	132.3	129.3	133.3
50°	82.8	81.8	81.8	80.8	82.8	80.8	78.8	78.8
52.5°	46.5	46.5	45.5	45.5	45.5	45.5	44.4	43.4
55°	25.3	24.2	24.2	24.2	23.2	23.2	23.2	23.2
57.5°	16.2	16.2	16.2	16.2	16.2	16.2	15.2	15.2
60°	12.1	12.1	12.1	12.1	11.1	12.1	11.1	11.1
62.5°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
65°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
67.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
70°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
72.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
75°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)