

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: PORTFOLIO

Report Number: P843405

Luminaire Tested: **LD4C15DE010B40 EU4C15B40 4LBSWLI**

Issue Date: 5/7/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P843405  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P251556)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/7/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: PORTFOLIO  
Catalog Number: LD4C15DE010B40 EU4C15B40 4LBSWLI  
Description: 4in Downlight with BioUp LEDs  
Light Source: -  
Ballast/Driver:

**Summary**

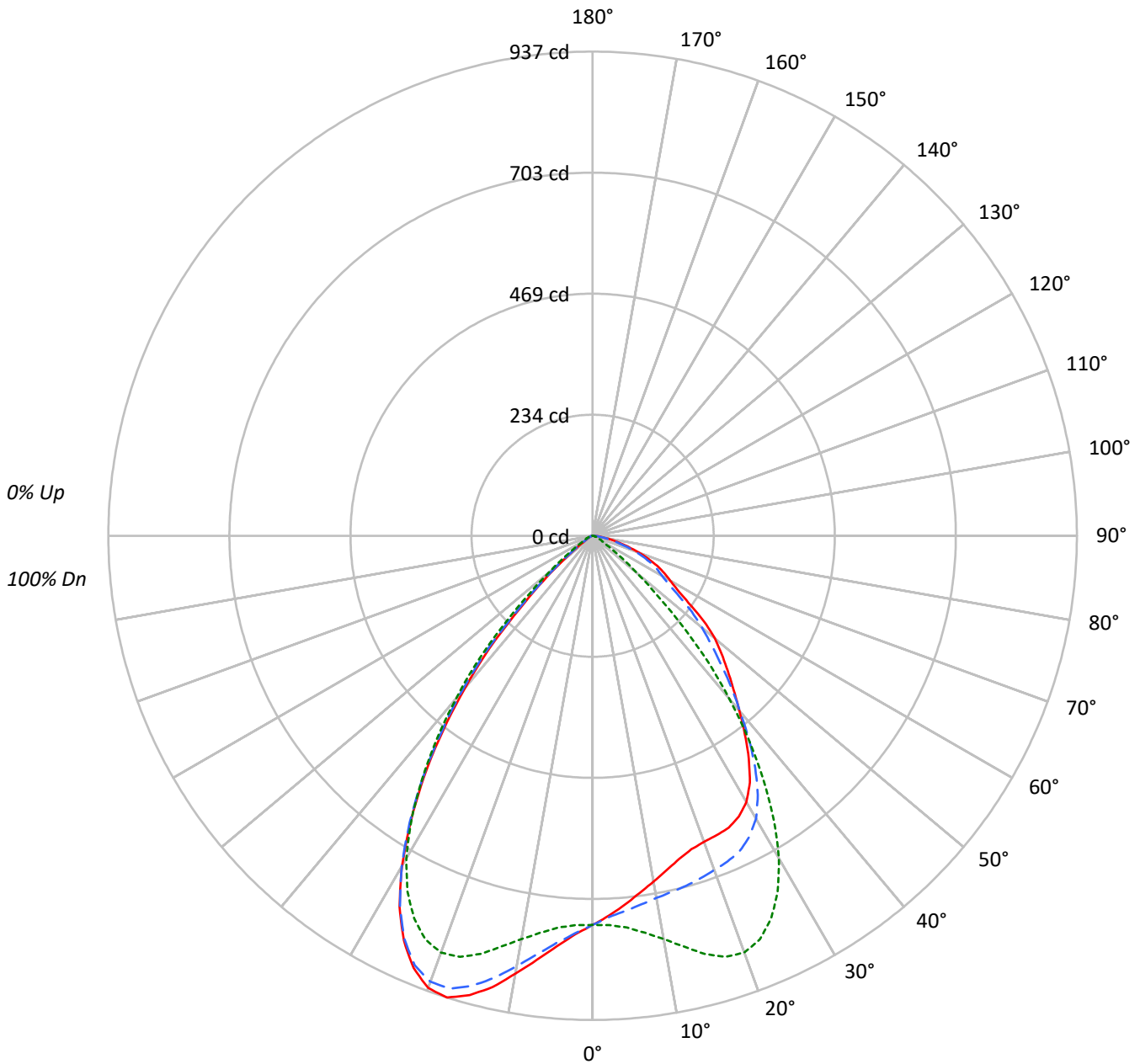
Lumens per Lamp: N/A  
Luminaire Lumens: 1389.7 lumens  
Efficiency: N/A  
Efficacy: 81.7 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 17  
Input Voltage (V):  
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°	92521	92521	92521
5°	88385	93849	98338
10°	84742	98851	107321
15°	82290	106532	117038
20°	82391	112212	121717
25°	84491	110747	117146
30°	84378	102238	104607
35°	79023	86401	85232
40°	70805	65914	61503
45°	64215	41837	34331
50°	59001	21234	14659
55°	48428	9467	4841
60°	42507	5332	2654
65°	40000	3983	2006
70°	34268	3197	1796
75°	26107	2373	1424
80°	18748	1415	707
85°	13814	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.2	5.3
10°-20°	228.0	16.4
20°-30°	352.7	25.4
30°-40°	347.5	25.0
40°-50°	213.4	15.4
50°-60°	94.9	6.8
60°-70°	53.0	3.8
70°-80°	23.0	1.7
80°-90°	4.1	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°	653.9	47.0
0°-40°	1001.4	72.1
0°-60°	1309.7	94.2
0°-90°	1389.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1389.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	753	753	753	753	753	
5°	717	728	761	790	797	67
15°	647	701	838	902	920	184
25°	623	673	817	861	864	286
35°	527	549	576	574	568	327
45°	370	351	241	210	198	286
55°	226	204	44	26	23	208
65°	138	124	14	8	7	135
75°	55	47	5	3	3	61
85°	10	8	0	0	0	12
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°	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1
2.5°	735.4	735.4	735.4	735.4	737.4	734.4	737.4	737.4	740.3	741.3	738.3
5°	716.7	715.7	716.7	716.7	718.7	717.7	720.7	722.6	726.6	728.5	728.5
7.5°	697.1	697.1	697.1	699.0	702.0	701.0	704.0	706.9	712.7	716.7	719.7
10°	679.3	678.4	681.3	682.3	685.2	685.2	690.2	693.2	699.9	707.9	711.8
12.5°	662.6	661.7	663.7	666.6	671.5	671.5	675.4	680.4	690.2	699.0	705.9
15°	647.0	647.9	650.9	652.8	658.7	658.7	663.7	669.5	680.4	691.2	701.0
17.5°	636.1	637.1	639.0	642.0	647.9	647.9	652.8	659.6	671.5	683.2	695.1
20°	630.2	631.2	633.2	636.1	641.0	642.0	645.9	653.8	664.6	677.4	688.2
22.5°	627.3	629.2	631.2	633.2	638.1	638.1	642.9	648.9	659.6	672.4	682.3
25°	623.3	625.3	626.2	629.2	633.2	633.2	636.1	642.9	652.8	663.7	673.4
27.5°	612.5	614.5	615.4	618.4	622.3	621.4	625.3	630.2	639.0	648.9	656.7
30°	594.8	595.8	597.8	598.7	601.7	601.7	604.6	609.5	615.4	624.3	632.1
32.5°	566.3	568.3	569.2	570.2	573.2	572.2	573.2	576.1	582.0	589.9	594.8
35°	526.9	530.9	530.9	532.8	533.9	532.8	532.8	536.7	539.7	545.6	548.6
37.5°	483.7	486.7	485.7	487.7	488.6	485.7	487.7	488.6	492.5	495.5	496.5
40°	441.5	442.4	442.4	442.4	442.4	441.5	442.4	443.4	446.3	446.3	443.4
42.5°	403.1	404.1	404.1	402.1	404.1	403.1	403.1	403.1	403.1	399.2	396.2
45°	369.6	370.7	370.7	369.6	369.6	367.7	366.7	365.7	362.8	357.9	350.9
47.5°	338.2	340.1	341.2	339.2	338.2	336.2	336.2	330.3	326.4	320.5	310.7
50°	308.7	310.7	310.7	308.7	308.7	305.8	302.8	300.8	295.0	288.1	276.3
52.5°	271.4	274.2	274.2	273.3	273.3	269.4	268.4	264.5	259.5	251.7	241.9
55°	226.1	230.0	229.1	228.1	226.1	226.1	226.1	223.2	220.2	214.3	204.4
57.5°	193.7	194.7	194.7	193.7	193.7	191.7	191.7	188.8	187.7	181.9	174.0
60°	173.0	173.0	174.0	173.0	172.1	171.0	170.1	168.2	165.2	161.2	155.4
62.5°	156.3	157.3	157.3	156.3	155.4	154.3	153.4	151.5	149.4	146.5	140.6
65°	137.6	139.6	138.7	137.6	136.6	135.7	135.7	133.7	131.8	129.8	123.8
67.5°	117.0	118.0	119.0	117.0	117.0	116.0	116.0	114.0	113.1	109.1	105.2
70°	95.4	96.4	96.4	95.4	95.4	94.3	94.3	93.4	92.4	89.5	85.6
72.5°	74.8	75.7	74.8	73.7	73.7	73.7	72.8	71.7	70.8	68.9	65.9
75°	55.0	55.0	56.1	55.0	54.0	54.0	53.1	53.1	51.1	50.1	47.2
77.5°	39.3	40.3	39.3	39.3	38.3	37.3	37.3	36.4	36.4	35.4	33.4
80°	26.5	26.5	27.5	26.5	25.6	26.5	25.6	24.5	24.5	23.6	21.7
82.5°	16.7	17.7	16.7	16.7	16.7	16.7	16.7	15.8	15.8	14.7	13.7
85°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	8.9	8.9	8.9	7.8
87.5°	5.0	5.0	3.9	3.9	5.0	5.0	5.0	3.9	3.9	3.9	3.9
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°	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1
2.5°	742.2	743.2	745.2	748.2	748.2	746.2	751.1	751.1	753.1	754.1	758.0
5°	734.4	736.4	740.3	745.2	746.2	745.2	752.1	755.0	758.0	761.0	766.9
7.5°	727.5	731.5	738.3	745.2	748.2	748.2	759.0	763.0	768.8	774.7	781.6
10°	723.6	729.4	739.3	750.2	753.1	756.0	768.8	776.7	784.6	792.4	802.2
12.5°	718.7	729.4	742.2	756.0	761.9	765.8	783.6	793.4	804.2	814.1	826.9
15°	717.7	730.5	747.2	764.9	772.7	778.6	798.3	812.1	824.8	837.6	850.4
17.5°	713.8	729.4	750.2	769.9	779.7	787.5	810.1	826.9	841.6	854.4	869.2
20°	708.8	726.6	749.1	770.8	781.6	789.4	814.1	829.8	846.4	858.3	872.0
22.5°	702.0	719.7	742.2	763.9	773.8	780.6	805.2	818.9	833.7	845.5	858.3
25°	690.2	706.9	726.6	744.3	754.1	759.9	781.6	794.4	805.2	817.0	828.8
27.5°	673.4	686.2	702.9	715.7	721.6	727.5	745.2	756.0	765.8	775.7	783.6
30°	644.0	653.8	665.6	676.5	682.3	683.2	699.9	705.9	713.8	720.7	726.6
32.5°	604.6	612.5	619.4	625.3	629.2	630.2	642.9	644.9	652.8	652.8	661.7
35°	554.5	558.4	563.3	563.3	566.3	563.3	572.2	574.2	575.1	576.1	583.0
37.5°	497.5	499.4	502.4	496.5	496.5	493.5	496.5	498.5	494.5	494.5	499.4
40°	443.4	439.4	435.5	429.6	426.6	420.7	420.7	415.9	412.9	411.0	411.9
42.5°	391.3	382.4	373.6	360.8	354.9	349.0	343.1	336.2	334.2	329.3	326.4
45°	341.2	328.4	316.5	295.9	284.2	278.3	265.5	251.7	242.8	240.8	233.0
47.5°	298.9	280.2	260.5	236.0	224.2	213.3	194.7	182.9	171.0	165.2	160.2
50°	261.4	244.8	219.2	192.7	178.0	167.1	146.5	132.7	119.9	111.1	105.2
52.5°	229.1	210.4	186.8	156.3	141.6	129.8	107.1	91.5	80.6	71.7	64.9
55°	192.7	178.0	154.3	125.9	111.1	97.3	77.6	61.0	50.1	44.2	39.3
57.5°	166.2	153.4	130.7	103.2	89.5	76.7	57.0	43.3	34.4	28.6	25.6
60°	148.5	136.6	117.0	90.4	77.6	65.9	47.2	34.4	26.5	21.7	19.7
62.5°	133.7	121.9	104.2	79.6	68.9	57.0	40.3	28.6	21.7	17.7	14.7
65°	117.0	106.2	90.4	68.9	59.0	49.2	34.4	23.6	17.7	13.7	11.7
67.5°	99.3	89.5	75.7	57.0	49.2	41.2	27.5	19.7	14.7	11.7	9.8
70°	80.6	72.8	60.0	46.2	39.3	32.5	22.6	15.8	10.8	8.9	7.8
72.5°	62.0	55.0	46.2	35.4	29.5	24.5	16.7	11.7	8.9	6.9	5.9
75°	44.2	39.3	32.5	25.6	21.7	17.7	12.8	8.9	5.9	5.0	3.9
77.5°	30.5	27.5	22.6	17.7	14.7	12.8	8.9	5.9	5.0	3.9	3.0
80°	19.7	17.7	14.7	10.8	8.9	7.8	5.0	3.9	3.0	2.0	2.0
82.5°	11.7	10.8	8.9	5.9	5.0	3.9	3.0	2.0	2.0	1.0	1.0
85°	6.9	5.9	3.9	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°	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1
2.5°	756.0	761.0	759.9	763.0	761.9	761.9	766.9	764.9	769.9	769.9	770.8
5°	766.9	773.8	773.8	778.6	777.7	779.7	784.6	784.6	790.5	792.4	792.4
7.5°	782.5	791.4	793.4	798.3	799.3	803.2	807.2	808.1	816.0	818.0	818.9
10°	804.2	815.0	818.0	822.9	824.8	828.8	833.7	835.6	845.5	846.4	850.4
12.5°	830.8	842.5	845.5	851.4	852.5	857.3	864.2	866.2	875.9	878.9	881.9
15°	856.4	867.2	872.0	877.9	878.9	884.8	890.7	892.6	901.5	905.4	908.4
17.5°	874.0	886.8	889.8	897.6	897.6	902.5	908.4	910.4	919.2	922.2	924.2
20°	877.9	889.8	893.7	899.6	900.6	903.5	908.4	910.4	918.2	919.2	922.2
22.5°	863.1	875.0	877.0	882.9	883.9	886.8	890.7	889.8	899.6	898.6	899.6
25°	831.7	842.5	842.5	849.4	848.4	851.4	853.4	852.5	861.2	861.2	861.2
27.5°	786.5	796.4	797.4	802.2	799.3	800.3	802.2	801.3	807.2	807.2	807.2
30°	730.5	738.3	735.4	739.3	737.4	739.3	737.4	736.4	738.3	740.3	739.3
32.5°	660.7	666.6	666.6	667.6	667.6	661.7	659.6	659.6	658.7	657.7	657.7
35°	580.0	585.0	583.0	583.0	582.0	576.1	573.2	571.2	574.2	568.3	572.2
37.5°	497.5	498.5	495.5	494.5	489.6	489.6	484.7	480.7	482.7	481.8	477.8
40°	407.0	411.0	405.1	403.1	406.0	402.1	397.2	392.3	396.2	391.3	393.2
42.5°	318.6	317.5	315.6	315.6	315.6	309.7	308.7	307.8	308.7	304.8	301.8
45°	230.0	227.1	224.2	224.2	220.2	218.3	218.3	215.3	210.4	210.4	204.4
47.5°	155.4	148.5	146.5	145.5	143.5	143.5	141.6	139.6	138.7	133.7	133.7
50°	101.2	94.3	92.4	91.5	92.4	90.4	88.5	86.5	84.5	83.6	81.6
52.5°	61.0	58.0	56.1	55.0	53.1	52.1	51.1	49.2	48.2	48.2	47.2
55°	36.4	33.4	29.5	29.5	29.5	28.6	27.5	26.5	25.6	25.6	24.5
57.5°	22.6	20.6	18.7	17.7	17.7	17.7	16.7	16.7	16.7	16.7	15.8
60°	16.7	14.7	13.7	13.7	13.7	12.8	12.8	12.8	12.8	11.7	11.7
62.5°	12.8	11.7	10.8	10.8	9.8	9.8	9.8	9.8	9.8	9.8	8.9
65°	10.8	8.9	8.9	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
67.5°	7.8	6.9	6.9	6.9	6.9	5.9	5.9	5.9	5.9	5.9	5.9
70°	5.9	5.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
72.5°	5.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	3.9	3.9	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°	753.1	753.1	753.1	753.1	753.1	753.1	753.1	753.1
2.5°	770.8	775.7	770.8	770.8	773.8	772.7	774.7	771.8
5°	793.4	800.3	795.3	794.4	799.3	798.3	799.3	797.4
7.5°	820.9	827.8	822.9	822.9	827.8	826.9	829.8	827.8
10°	852.5	860.3	853.4	854.4	861.2	860.3	860.3	860.3
12.5°	884.8	892.6	888.7	888.7	893.7	894.7	895.7	894.7
15°	911.4	919.2	914.3	914.3	921.2	920.2	921.2	920.2
17.5°	927.1	934.9	929.1	929.1	934.9	934.9	935.9	937.0
20°	923.2	932.0	927.1	925.1	932.0	932.0	931.0	931.0
22.5°	900.6	908.4	904.5	902.5	907.4	905.4	904.5	905.4
25°	861.2	869.2	861.2	861.2	865.1	864.2	865.1	864.2
27.5°	808.1	814.1	806.1	805.2	809.2	807.2	806.1	809.2
30°	737.4	743.2	739.3	736.4	741.3	738.3	736.4	737.4
32.5°	656.7	660.7	658.7	653.8	656.7	654.8	653.8	654.8
35°	568.3	573.2	565.3	564.4	569.2	565.3	563.3	568.3
37.5°	476.8	482.7	475.8	476.8	473.9	474.9	472.9	475.8
40°	390.3	389.3	387.4	386.4	387.4	384.4	386.4	383.5
42.5°	296.9	298.9	297.9	296.9	297.9	293.9	292.0	295.9
45°	206.5	205.5	203.5	201.5	201.5	200.5	200.5	197.6
47.5°	132.7	131.8	127.8	128.8	130.7	128.8	125.9	129.8
50°	80.6	79.6	79.6	78.7	80.6	78.7	76.7	76.7
52.5°	45.3	45.3	44.2	44.2	44.2	44.2	43.3	42.3
55°	24.5	23.6	23.6	23.6	22.6	22.6	22.6	22.6
57.5°	15.8	15.8	15.8	15.8	15.8	15.8	14.7	14.7
60°	11.7	11.7	11.7	11.7	10.8	11.7	10.8	10.8
62.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
65°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
67.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
70°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
72.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
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)