

## ARACON<sup>®</sup> Braided EMI Shields



### ABOUT ARACON

ARACON fibers combine the strength, light weight, and flexibility of genuine DuPont™ Kevlar® with the electrical conductivity and corrosion resistance of nickel and the solderability of silver. When braided into a shield, ARACON provides superior performance against electromagnetic interference (EMI) with weight savings of up to 80% over conventional metal braiding.

When braided or woven, the natural tendency for the fine, lightweight fibers is to spread out for high optical coverage. This translates into superior shielding effectiveness versus copper wire.

Most ARACON braided EMI shields are available from stock in both a nickel or silver finish. Blends of ARACON with plated copper wire are also available. The blended braids enhance lower frequency shielding performance and provide additional lightning protection, all while still offering substantial weight savings compared to the traditional full metal shield.

ARACON braids can be cut with a scissors and may be terminated with banding straps, continuous force springs, or compression-style terminations. ARACON braids are available in standard sizes ranging from 0.062 to 2.00-inch inner diameter. Our engineers can also work to tailor a special size for your specific application.

FEATURES	BENEFITS
Reliable	<ul style="list-style-type: none"> <li>• Military &amp; spaceflight-qualified</li> <li>• Will perform in the harshest environments</li> </ul>
Industry-Leading Electrical Conductivity	<ul style="list-style-type: none"> <li>• Low transfer impedance</li> <li>• Better RF shielding</li> </ul>
Light Weight	<ul style="list-style-type: none"> <li>• Up to 80% lighter than copper in typical applications</li> <li>• Saves fuel; more payload</li> </ul>
Stronger Than Steel	<ul style="list-style-type: none"> <li>• Built on DuPont™ Kevlar®</li> <li>• No more broken wires during installation</li> </ul>
Flexible	<ul style="list-style-type: none"> <li>• Feels like a textile</li> <li>• Easier to shape the most difficult configurations</li> <li>• Longer flex life</li> <li>• Lower maintenance cost</li> </ul>
Affordable	<ul style="list-style-type: none"> <li>• The most cost effective composite solution</li> <li>• Will satisfy almost an cost-weight benefit analysis</li> </ul>

## ARACON<sup>®</sup> Braided EMI Shields

### SPECIFICATIONS

MECHANICAL	
• Designed for an optical coverage of 90% min	
• Shall withstand 50,000 flexures of $\pm 90^\circ$ around a mandrel no greater than 10 times the nominal braid diameter	
• Minimum continuous length shall be 10 feet.	
ELECTRICAL	
• DC resistance shall be specified in the Data Tables	
• Transfer impedance will closely match the DC resistance of the braided EMI shield up to 10 MHz. After that, transfer impedance will increase approximately 10 to 20 dB/decade.	
• RF Shielding Effectiveness shall be per the figure when tested per IEC 61000-4-21, Annex F.	
ENVIRONMENTAL	
• Operating temperature shall be -110 °C to +150 °C	
• Thermal shock per MIL-STD-202, Method 107, Test Condition B-2.	
• Shall exhibit less than 1% Total Mass Loss (TML) and 0.1% Collected Volatile Condensable Materials (CVCM) when tested per ASTM E-595. Water vapor recovered (VMR) is considered when performing calculations.	
• Shall not support the growth of fungus when tested in accordance with MIL-STD-810, Method 508.5.	
• 48-hour exposure to a salt fog environment in accordance with ASTM B-117	
• 48-hour exposure to a sulfur dioxide environment in accordance with ASTM G-85, Annex A4 and X4	
• FAA flammability requirements as specified in CFR 14 Part 25	
• FAA smoke density requirements as specified in CFR 14 Part 25	
• Smoke toxicity as specified in BSS 7239 and AITM 2.0008	
FLUID RESISTANT	
• JP-8 Military Jet Aircraft Fuel per MIL-DTL-83133	• Methyl Isobutyl Ketone per ASTM D-1153
• Lubricating Hydraulic Fluid per MIL-PRF-5606	• Solvent per ASTM D-740 MEK
• Coolant Fluid, Silicate Ester HT per MIL-C-47220B	• Solvent 3M Novec HFE-72DE (methyl ethyl-HFE/DCE blend)
• Coolant Fluid, Polyalphaolefin per MIL-PRF-87252	• Solvent 3M Novec HFE-7200 (ethyl-HFE blend)
• Cleaning Compound, Aerospace Equipment per MIL-PRF-87937	• Corrosion Inhibitor, Type III per MIL-PRF-81309
• Deicing, Aircraft, SAE Type I (Ethylene Glycol) per SAE AMS 1424	• Deicing Fluid, Generic, Runways and Taxiways per SAE AMS 1435
• Deicing/Anti-Icing Fluid, Aircraft, SAE Type I per SAE AMS 1424	• Deicing Fluid, Aircraft, SAE Type IV (Propylene Glycol) per SAE AMS 1428
• JP-4 Turbine Fuel per MIL-DTL-5624	• Isopropyl Alcohol per TT-I-735
• JP-5 Turbine Fuel per MIL-DTL-5624	• Lubricating Oil per MIL-PRF-23699 (Aeroshell 500)
• Cleaning Compound, Aircraft, Exterior per MIL-PRF-85570	• Lubricating Hydraulic Fluid per AS1241 (Skydrol 5)
• Fire Extinguishing Foam	• Cleaning Compound, Aircraft Surface per MIL-C-43616
• Refrigerant, R-134 (under pressure)	

# ARACON<sup>®</sup> Braided EMI Shields

## BRAIDED EMI SHIELD DATA: 100% NICKEL-PLATED ARACON

Nominal Size (in)	Braid PN	Reference Wire Bundle Range (in)		Max DC Resistance (mΩ/ft)	Max Weight (g/ft)	Weight of Copper Braid per AA59569 (g/ft)
		Min	Max			
0.0625	BXN0200E/00-100/0-0062-1	0.045	0.085	210.9	0.57	2.14
0.125	BXN0400E/00-100/0-0125-1	0.090	0.150	75.9	1.43	4.02
0.250	BXN0400E/00-100/0-0250-1	0.125	0.312	36.7	2.76	7.74
0.375	BXN0400E/00-100/0-0375-1	0.187	0.562	24.1	4.08	11.46
0.500	BXN0400E/00-100/0-0500-1	0.250	0.750	17.8	5.37	15.17
0.625	BXN0400E/00-100/0-0625-1	0.375	0.875	17.6	6.82	40.23
0.750	BXN0400E/00-100/0-0750-1	0.500	1.000	11.9	8.04	23.54
1.000	BXN0400E/00-100/0-1000-1	0.780	1.187	8.5	13.22	60.70
1.250	BXN0400E/00-100/0-1250-1	0.938	1.312	5.9	16.34	83.01
1.500	BXN0400E/00-100/0-1500-1	1.187	1.875	5.7	20.00	90.45
2.000	BXN0400E/00-100/0-2000-1	1.300	2.125	3.6	26.66	120.21

## BRAIDED EMI SHIELD DATA: 100% SILVER-PLATED ARACON

Nominal Size (in)	Braid PN	Reference Wire Bundle Range (in)		Max DC Resistance (mΩ/ft)	Max Weight (g/ft)	Weight of Copper Braid per AA59569 (g/ft)
		Min	Max			
0.0625	BXS0200E/00-100/0-0062-1	0.045	0.085	210.9	0.57	2.14
0.125	BXS0400E/00-100/0-0125-1	0.090	0.150	75.9	1.44	4.02
0.250	BXS0400E/00-100/0-0250-1	0.125	0.312	36.7	2.79	7.74
0.375	BXS0400E/00-100/0-0375-1	0.187	0.562	24.1	4.13	11.46
0.500	BXS0400E/00-100/0-0500-1	0.250	0.750	17.8	5.44	15.17
0.625	BXS0400E/00-100/0-0625-1	0.375	0.875	17.6	6.79	40.23
0.750	BXS0400E/00-100/0-0750-1	0.500	1.000	11.9	8.15	23.54
1.000	BXS0400E/00-100/0-1000-1	0.780	1.187	8.5	13.39	60.70
1.250	BXS0400E/00-100/0-1250-1	0.938	1.312	5.9	16.56	83.01
1.500	BXS0400E/00-100/0-1500-1	1.187	1.875	5.7	20.27	90.45
2.000	BXS0400E/00-100/0-2000-1	1.300	2.125	3.6	27.02	120.21

# ARACON<sup>®</sup> Braided EMI Shields

## BRAIDED EMI SHIELD DATA: 75/25% BLENDED NICKEL-PLATED ARACON

Nominal Size (in)	Braid PN	Reference Wire Bundle Range (in)		Max DC Resistance (mΩ/ft)	Max Weight (g/ft)	Weight of Copper Braid per AA59569 (g/ft)
		Min	Max			
0.0625	BXN0200E/NC-75/25-0062-1	0.045	0.085	28.8	1.21	2.14
0.125	BXN0400E/NC-75/25-0125-1	0.090	0.150	26.8	2.32	4.02
0.250	BXN0400E/NC-75/25-0250-1	0.125	0.312	9.1	4.01	7.74
0.375	BXN0400E/NC-75/25-0375-1	0.187	0.562	6.0	6.06	11.46
0.500	BXN0400E/NC-75/25-0500-1	0.250	0.750	4.4	8.05	15.17
0.625	BXN0400E/NC-75/25-0625-1	0.375	0.875	4.6	11.13	40.23
0.750	BXN0400E/NC-75/25-0750-1	0.500	1.000	5.6	11.71	23.54
1.000	BXN0400E/NC-75/25-1000-1	0.780	1.187	4.3	17.53	60.70
1.250	BXN0400E/NC-75/25-1250-1	0.938	1.312	3.0	21.68	83.01
1.500	BXN0400E/NC-75/25-1500-1	1.187	1.875	1.3	30.50	90.45
2.000	BXN0400E/NC-75/25-2000-1	1.300	2.125	1.0	40.66	120.21

## BRAIDED EMI SHIELD DATA: 75/25% BLENDED SILVER-PLATED ARACON

Nominal Size (in)	Braid PN	Reference Wire Bundle Range (in)		Max DC Resistance (mΩ/ft)	Max Weight (g/ft)	Weight of Copper Braid per AA59569 (g/ft)
		Min	Max			
0.0625	BXS0200E/SC-75/25-0062-1	0.045	0.085	28.8	1.21	2.14
0.125	BXS0400E/SC-75/25-0125-1	0.090	0.150	18.8	2.09	4.02
0.250	BXS0400E/SC-75/25-0250-1	0.125	0.312	9.1	4.04	7.74
0.375	BXS0400E/SC-75/25-0375-1	0.187	0.562	6.2	5.98	11.46
0.500	BXS0400E/SC-75/25-0500-1	0.250	0.750	4.4	7.87	15.17
0.625	BXS0400E/SC-75/25-0625-1	0.375	0.875	4.4	9.82	40.23
0.750	BXS0400E/SC-75/25-0750-1	0.500	1.000	2.9	11.79	23.54
1.000	BXS0400E/SC-75/25-1000-1	0.780	1.187	2.4	17.66	60.70
1.250	BXS0400E/SC-75/25-1250-1	0.938	1.312	1.7	21.84	83.01
1.500	BXS0400E/SC-75/25-1500-1	1.187	1.875	1.3	30.70	90.45
2.000	BXS0400E/SC-75/25-2000-1	1.300	2.125	1.0	40.93	120.21

# ARACON® Braided EMI Shields

## PART NUMBER CROSS REFERENCE (100% ARACON)

Braid Diameter	Micro-Coax Brand PN (100% ARACON)	AmberStrand PN (100% ARACON)	ArmorLite PN (100% ARACON)
1/16"	BXN0400E/00-100/0-0062-1	103-026-002	103-051-002
1/8"	BXN0400E/00-100/0-0125-1	103-026-004	103-051-004
1/4"	BXN0400E/00-100/0-0250-1	103-026-008	103-051-008
3/8"	BXN0400E/00-100/0-0375-1	103-026-012	103-051-012
1/2"	BXN0400E/00-100/0-0500-1	103-026-016	103-051-016
5/8"	BXN0400E/00-100/0-0625-1	103-026-020	103-051-020
3/4"	BXN0400E/00-100/0-0750-1	103-026-024	103-051-024
1"	BXN0400E/00-100/0-1000-1	103-026-032	103-051-032
1-1/4"	BXN0400E/00-100/0-1250-1	103-026-040	103-051-040
1-1/2"	BXN0400E/00-100/0-1500-1	103-026-048	103-051-048
2"	BXN0400E/00-100/0-2000-1	103-026-064	103-051-064

## PART NUMBER CROSS REFERENCE (75% ARACON / 25% NICKEL-PLATED COPPER)

Braid Diameter	Micro-Coax Brand PN (75% ARACON / 25% NPC)	AmberStrand PN (75% ARACON / 25% NPC)	ArmorLite PN (75% ARACON / 25% NPC)
1/16"	BXN0400E/NC-75/25-0062-1	103-027-002	103-052-002
1/8"	BXN0400E/NC-75/25-0125-1	103-027-004	103-052-004
1/4"	BXN0400E/NC-75/25-0250-1	103-027-008	103-052-008
3/8"	BXN0400E/NC-75/25-0375-1	103-027-012	103-052-012
1/2"	BXN0400E/NC-75/25-0500-1	103-027-016	103-052-016
5/8"	BXN0400E/NC-75/25-0625-1	103-027-020	103-052-020
3/4"	BXN0400E/NC-75/25-0750-1	103-027-024	103-052-024
1"	BXN0400E/NC-75/25-1000-1	103-027-032	103-052-032
1-1/4"	BXN0400E/NC-75/25-1250-1	103-027-040	103-052-040
1-1/2"	BXN0400E/NC-75/25-1500-1	103-027-048	103-052-048
2"	BXN0400E/NC-75/25-2000-1	103-027-064	103-052-064

Micro-Coax® and ARACON® are registered trademarks of Amphenol CIT™. DuPont™ and KEVLAR® are trademarks or registered trademarks of E. I. DuPont or its affiliates.