

dB MISER™



ULTRA LOW LOSS CABLE ASSEMBLIES



Are you a design or test engineer fighting a challenging loss budget?

Consider **dB Miser™** ultra low loss cable assemblies.

High performance materials, careful attention to design detail, and stringent process control yields:

- Ultra low insertion loss over the specified frequency range
- Excellent amplitude stability with flexure
- Stable performance over operating temperature range
- Increased shielding effectiveness
- Greater connector retention

dB Miser™ 096

1.513 dB/ft nom @ 50 GHz

dB Miser™ 110

1.282 dB/ft nom @ 50 GHz

dB Miser™ 160

0.678 dB/ft nom @ 40 GHz

dB Miser™ 190

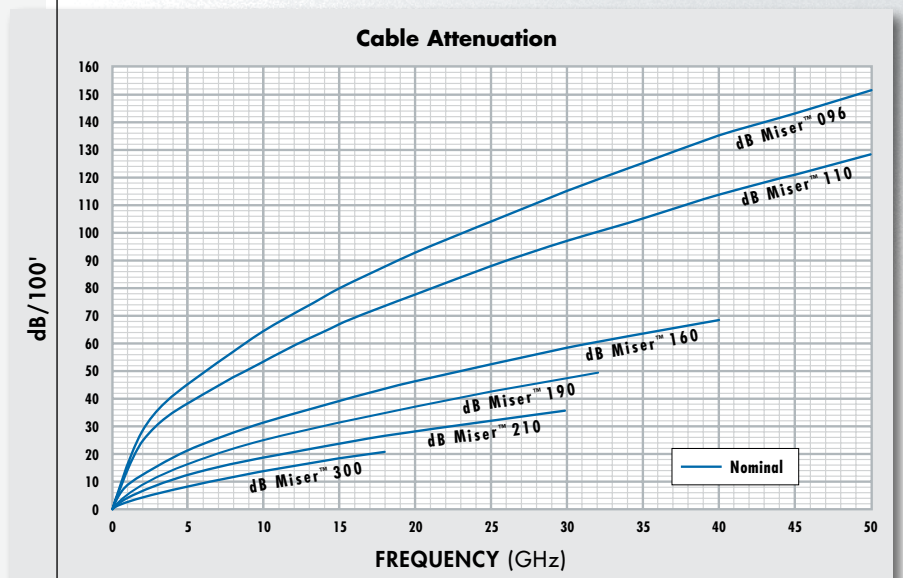
0.496 dB/ft nom @ 32 GHz

dB Miser™ 210

0.367 dB/ft nom @ 26.5 GHz

dB Miser™ 300

0.205 dB/ft nom @ 18 GHz



**TELEDYNE
STORM MICROWAVE**
Everywhereyoulook™

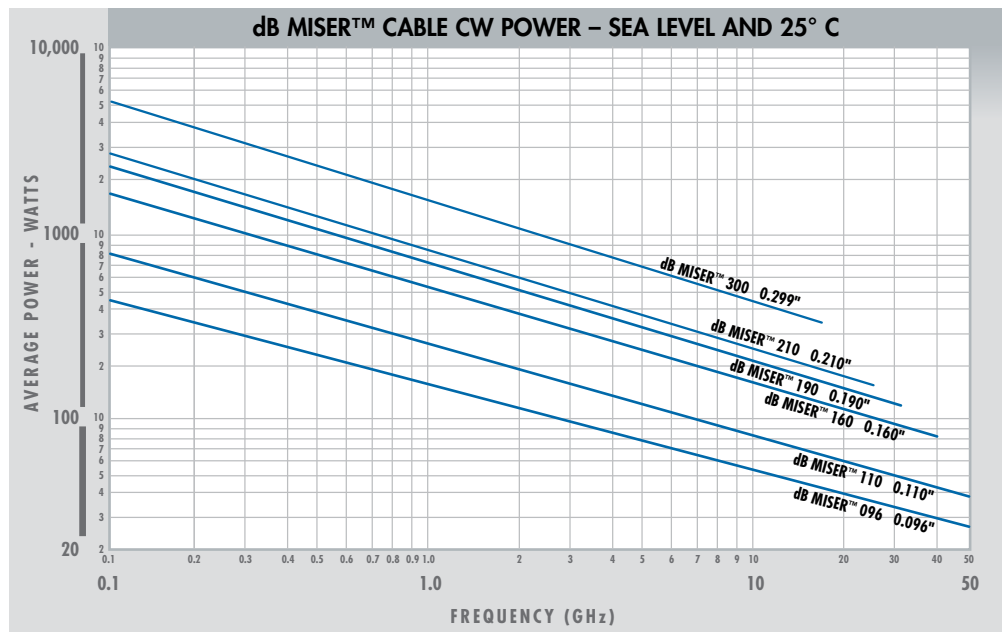
High value microwave and
electronic interconnect solutions

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SPECIFICATIONS	dB MISER™			
	096	110	160	
Cable Designator	86	85	84	
Diameter (in/mm)	0.096/2.44	0.110/2.79	0.160/4.06	
Operating Frequency (Max, GHz)	50	50	40	
Attenuation–Max @ 2 GHz (dB/ft)	0.303	0.253	0.150	
Attenuation–Max @ 10 GHz (dB/ft)	0.694	0.581	0.347	
Attenuation–Max @ 18 GHz (dB/ft)	0.944	0.794	0.474	
Attenuation–Max @ 26.5 GHz (dB/ft)	1.160	9.978	0.585	
Attenuation–Max @ 32 GHz (dB/ft)	1.283	1.083	0.648	
Attenuation–Max @ 40 GHz (dB/ft)	1.447	1.224	0.732	
Attenuation–Max @ 50 GHz (dB/ft)	1.634	1.384	–	
Power Handling - Avg Power in Watts @ 1 GHz	178	262	527	
Phase Stability vs. Flexure† (@ 18 GHz, nom)	±6.5°	±4°	±3.5°	
Shielding Effectiveness–Min‡ (dB @ 1 GHz)	> -95	> -95	> -90	
Typical VSWR (2 straight connectors)	1.30 to 50 GHz	1.33 to 50 GHz	1.28 to 40 GHz	
Min Bend Radius (in/mm)	Static	0.50/12.7	0.50/12.7	0.75/19.1
	Dynamic	1.00/25.4	1.00/25.4	1.5/38.2
Connector Retention to 18 GHz, pull (lbs/kg)	15/6.80	25/11.34	20/9.07	
Velocity of Propagation (%)	81.0	81.0	87.0	
Weight (grams/ft & /m)	4.83/15.85	6.77/22.21	12.12/39.76	
Operating Temperature Range (°C)	-55 to +125 (FEP jacket) -55 to +100 (LSZH jacket)			

† ± 360 degree bends around a 20 x cable OD mandrel. ‡ Subject to connector choice.

Specifications subject to change without notice.



SPECIFICATIONS	dB MISER™			
	190	210	300	
Cable Designator	83	82	81	
Diameter (in/mm)	0.190/4.83	0.210/5.33	0.300 / 7.62	
Operating Frequency (Max, GHz)	32	26.5	18	
Attenuation–Max @ 2 GHz (dB/ft)	0.121	0.099	0.067	
Attenuation–Max @ 10 GHz (dB/ft)	0.282	0.232	0.159	
Attenuation–Max @ 18 GHz (dB/ft)	0.388	0.320	0.221	
Attenuation–Max @ 26.5 GHz (dB/ft)	0.481	0.396	–	
Attenuation–Max @ 32 GHz (dB/ft)	0.535	–	–	
Attenuation–Max @ 40 GHz (dB/ft)	–	–	–	
Attenuation–Max @ 50 GHz (dB/ft)	–	–	–	
Power Handling – Avg Power in Watts @ 1 GHz	759	878	1615	
Phase Stability vs. Flexure† (@ 18 GHz, nom)	±4°	±4.5°	±8°	
Shielding Effectiveness–Min‡ (dB @ 1 GHz)	> –90	> –90	> –90	
Typical VSWR (2 straight connectors)	1.25 to 32 GHz	1.22 to 26.5 GHz	1.22 to 18 GHz	
Min Bend Radius (in/mm)	Static	0.95/24.1	1.0/25.4	1.5/38.1
	Dynamic	1.9/48.3	2.0/50.8	3.0/76.2
Connector Retention to 18 GHz, pull (lbs/kg)	40/18.14	50/22.68	75/34.02	
Velocity of Propagation (%)	82.4	84.0	84.6	
Weight (grams/ft & /m)	16.65/54.63	19.40/63.65	39.00/127.95	
Operating Temperature Range (°C)	–55 to +125 (FEP jacket) –55 to +100 (LSZH jacket)			

† ± 360 degree bends around a 20 x cable OD mandrel. ‡ Subject to connector choice.

Specifications subject to change without notice.

dB MISER™ FEATURES & BENEFITS

FEATURES

- ~ Low density, low loss ePTFE dielectric
- ~ Helically wrapped SPC primary shield
- ~ Fully captivated connectors
- ~ Combination hex/knurl coupling nuts
- ~ Diameters of 0.096", 0.110", 0.160", 0.190", 0.210" and 0.300"

ADVANTAGES

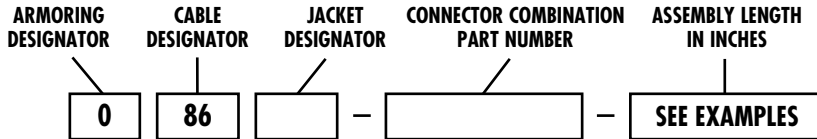
- ~ Reduced cable loss
- ~ Increased thermal stability
- ~ Reduced cable loss
- ~ Reduced leakage
- ~ Increased connector retention
- ~ Easier to tighten, while still able to torque
- ~ Sizes and frequencies to fit a wide range of applications

BENEFITS

- ~ Meet challenging system gain or signal-to-noise requirements
- ~ Meet challenging system power or Mean Time Between Failures (MTBF) requirements
- ~ Meet challenging system gain or signal-to-noise requirements
- ~ Improved system performance
- ~ Reduced chance of degradation after install or use
- ~ Reduced fatigue, increased repeatability
- ~ Enhanced design-in options

dB MISER™ ORDERING INFORMATION: Part Number Designation

dB MISER™ 096



Armoring Designator: 0 - Unarmored

Jacket Designator: Blank - Standard FEP **Z** - Low Smoke Zero Halogen (LSZH)

CONNECTOR COMBINATION PART NUMBERS*

	CONNECTOR OPERATING FREQUENCY				
	18 GHz	26.5 GHz	40 GHz	50 GHz	
	SMA RAP	SMA SP	SMK (2.92 mm†) SP	SMK RAP	2.4 mm SP
18 GHz	SMA RAP	2121	0121	0521	2125 0621
26.5 GHz	SMA SP	0121	0101	0105	0125 0106
40 GHz	SMK (2.92 mm†) SP	0521	0105	0505	0525 0506
	SMK RAP	2125	0125	0525	2525 0625
50 GHz	2.4 mm SP	0621	0106	0506	0625 0606

CONNECTOR CODES

SP	Straight Plug
RAP	Right-Angle Plug

EXAMPLES:

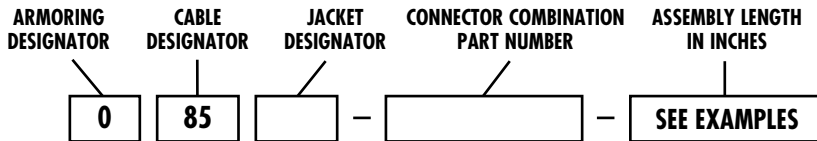
086-0505-048 = Unarmored dB Miser™ 096 with standard FEP jacket, SMK (2.92 mm) SP to SMK (2.92 mm) SP (assembly operates to 40 GHz), **48 inches**

086Z-0101-012 = Unarmored dB Miser™ 096 with LSZH jacket, SMA SP to SMA SP (assembly operates to 26.5 GHz), **12 inches**

* Other connector styles available; consult Storm

† IEEE Standard 287

dB MISER™ 110



Armoring Designator: 0 - Unarmored

Jacket Designator: Blank - Standard FEP **Z** - Low Smoke Zero Halogen (LSZH)

CONNECTOR COMBINATION PART NUMBERS*

	CONNECTOR OPERATING FREQUENCY				
	18 GHz	26.5 GHz	40 GHz	50 GHz	
	SMA RAP	SMA SP	SMK (2.92 mm†) SP	SMK RAP	2.4 mm SP
18 GHz	SMA RAP	2121	0121	0521	2125 0621
26.5 GHz	SMA SP	0121	0101	0105	0125 0106
40 GHz	SMK (2.92 mm†) SP	0521	0105	0505	0525 0506
	SMK RAP	2125	0125	0525	2525 0625
50 GHz	2.4 mm SP	0621	0106	0506	0625 0606

CONNECTOR CODES

SP	Straight Plug
RAP	Right-Angle Plug

EXAMPLES:

085-0606-180 = Unarmored dB Miser™ 110 with standard FEP jacket, 2.4 mm SP to 2.4 mm SP (assembly operates to 50 GHz), **180 inches**

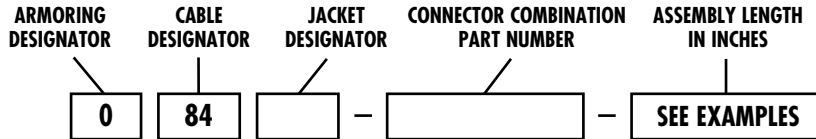
085Z-0525-036 = Unarmored dB Miser™ 110 with LSZH jacket, SMK (2.92 mm) SP to SMK RAP (assembly operates to 40 GHz), **36 inches**

* Other connector styles available; consult Storm

† IEEE Standard 287

dB MISER™ ORDERING INFORMATION: Part Number Designation

dB MISER™ 160



Armoring Designator†: **0** - Unarmored **A** - Hard Armored (polyolefin jacket)

AN - Hard Armored (no polyolefin jacket)

† Hard armoring with FFRA connectors is a custom part number; call Storm.

Jacket Designator: **Blank** - Standard FEP **Z** - Low Smoke Zero Halogen (LSZH)

CONNECTOR COMBINATION PART NUMBERS*

		CONNECTOR OPERATING FREQUENCY			
		40 GHz			
40 GHz		SMK (2.92 mm†) SP	SMK (2.92 mm†) FFRAP	2.4 mm SP	2.4 mm FFRAP
		SMK (2.92 mm†) SP		0505	0555
SMK (2.92 mm†) FFRAP		0555	5555	0655	5556
2.4 mm SP		0506	0655	0606	0656
2.4 mm FFRAP		0556	5556	0656	5656

* Other connector styles available; consult Storm

† IEEE Standard 287

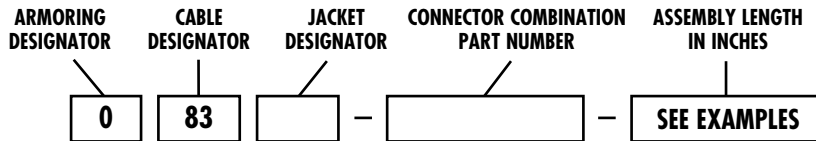
CONNECTOR CODES	
SP	Straight Plug
FFRAP	Factory Formed Right-Angle Plug

EXAMPLES:

084-0505-048 = Unarmored dB Miser™ 160 with standard FEP jacket, SMK (2.92 mm) SP to SMK (2.92 mm) SP (assembly operates to 40 GHz), **48 inches**

AN84Z-0606-180 = Hard Armored (no polyolefin jacket) dB Miser™ 160 with LSZH jacket, 2.4 mm SP to 2.4 mm SP (assembly operates to 40 GHz), **180 inches**

dB MISER™ 190



Armoring Designator†: **0** - Unarmored **A** - Hard Armored (polyolefin jacket)

AN - Hard Armored (no polyolefin jacket)

† Hard armoring with FFRA connectors is a custom part number; call Storm.

Jacket Designator: **Blank** - Standard FEP **Z** - Low Smoke Zero Halogen (LSZH)

CONNECTOR COMBINATION PART NUMBERS*

		CONNECTOR OPERATING FREQUENCY	
		32 GHz	
32 GHz		2.92 mm SP	2.92 mm FFRAP
		2.92 mm SP	
2.92 mm FFRAP		0555	5555

* Other connector styles available; consult Storm

CONNECTOR CODES	
SP	Straight Plug
FFRAP	Factory Formed Right-Angle Plug

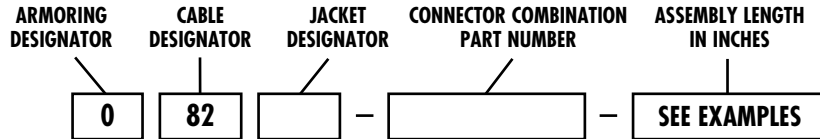
EXAMPLES:

083-5555-048 = Unarmored dB Miser™ 190 with standard FEP jacket, 2.92 mm FFRAP to 2.92 mm FFRAP (assembly operates to 32 GHz), **48 inches**

A83Z-0505-180 = Hard Armored (polyolefin jacket) dB Miser™ 190 with LSZH jacket, 2.92 mm SP to 2.92 mm SP (assembly operates to 32 GHz), **180 inches**

dB MISER™ ORDERING INFORMATION: Part Number Designation

dB MISER™ 210



Armoring Designator†: **O** - Unarmored **R** - Ruggedized (polyurethane jacket)

A - Hard Armored (polyolefin jacket) **AN** - Hard Armored (no polyolefin jacket)

† Hard armoring with FFRA connectors is a custom part number; call Storm.

Ruggedizing not available with FFRA connectors.

Jacket Designator: **Blank** - Standard FEP **Z** - Low Smoke Zero Halogen (LSZH)

CONNECTOR COMBINATION PART NUMBERS*

		26.5 GHz			18 GHz						
		3.5 mm SP	3.5 mm FFRA	SMA SP	SMA SP	SMA RAP	SMA FFRA	TNC SP	TNC FFRA	N SP	N FFRA
26.5 GHz	3.5 mm SP	0404	0454	0441	0104	0421	0451	0204	0452	0304	0453
	3.5 mm FFRA	0454	5454	4154	0154	2154	5154	0254	5254	0354	5354
	SMA SP	0441	4154	4141	0141	2141	4151	0241	4152	0341	4153
18 GHz	SMA SP	0104	0154	0141	0101	0121	0151	0102	0152	0103	0153
	SMA RAP	0421	2154	2141	0121	2121	2151	0221	2152	0321	2153
	SMA FFRA	0451	5154	4151	0151	2151	5151	0251	5152	0351	5153
	TNC SP	0204	0254	0241	0102	0221	0251	0202	0252	0203	0253
	TNC FFRA	0452	5254	4152	0152	2152	5152	0252	5252	0352	5253
	N SP	0304	0354	0341	0103	0321	0351	0203	0352	0303	0353
	N FFRA	0453	5354	4153	0153	2153	5153	0253	5253	0353	5353

CONNECTOR CODES	
SP	Straight Plug
RAP	Right-Angle Plug
FFRA	Factory Formed Right-Angle Plug

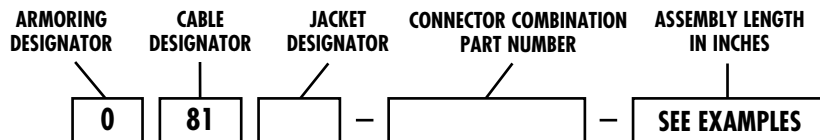
EXAMPLES:

082-0404-048 = Unarmored dB Miser™ 210 with standard FEP jacket,, 3.5 mm SP to 3.5 mm SP (assembly operates to 26.5 GHz), **48 inches**

R82Z-4141-120 = Ruggedized dB Miser™ 210 with LSZH jacket, SMA SP to SMA SP (assembly operates to 26.5 GHz), **120 inches**

* Other connector styles available; consult Storm

dB MISER™ 300



Armoring Designator†: **O** - Unarmored **A** - Hard Armored (polyolefin jacket)

AN - Hard Armored (no polyolefin jacket)

† Hard armoring with FFRA connectors is a custom part number; call Storm.

Jacket Designator: **Blank** - Standard FEP **Z** - Low Smoke Zero Halogen (LSZH)

CONNECTOR COMBINATION PART NUMBERS*

		18 GHz					
		SMA SP	SMA FFRA	TNC SP	TNC FFRA	N SP	N FFRA
18 GHz	SMA SP	0101	0151	0102	0152	0103	0153
	SMA FFRA	0151	5151	0251	5152	0351	5153
	TNC SP	0102	0251	0202	0252	0203	0253
	TNC FFRA	0152	5152	0252	5252	0352	5253
	N SP	0103	0351	0203	0352	0303	0353
	N FFRA	0153	5153	0253	5253	0353	5353

CONNECTOR CODES	
SP	Straight Plug
FFRA	Factory Formed Right-Angle Plug

EXAMPLES:

081-0303-036 = Unarmored dB Miser™ 300 with standard FEP jacket, N SP to N SP (assembly operates to 18 GHz), **36 inches**

AN81Z-0101-108 = Hard Armored (no polyolefin jacket) dB Miser™ 300 with LSZH jacket, SMA SP to SMA SP (assembly operates to 18 GHz), **108 inches**

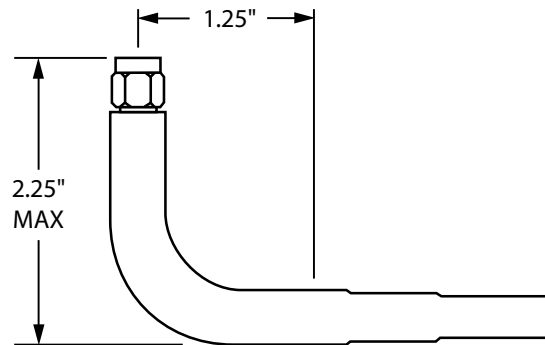
* Other connector styles available; consult Storm

FACTORY FORMED RIGHT-ANGLE (FFRA) CONNECTORS

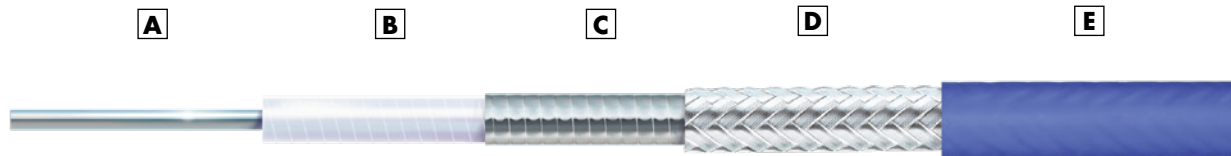
Designed using straight connectors and a shrink tubing-strain relief combination, FFRA connectors offer a moderate right-angle space advantage at a significant cost savings over traditional right-angle connectors.

FFRA connectors are available for all dB Miser™ cable sizes. See the Connector tables for specific connectors available as FFRA's.

Note: The dimensions given here are for dB M160 with an SMK connector. Larger cables will have proportionally larger dimensions. Contact Storm for specifics.



dB MISER™ CABLE CONSTRUCTION



- A** Silver-plated copper center conductor
- B** Expanded PTFE dielectric
- C** Helically wrapped SPC flat wire shield
- D** Silver-plated copper braid
- E** Extruded blue FEP jacket standard; blue LSZH (low smoke zero halogen) jacket on request

ARMORING & RUGGEDIZING OPTIONS

The Hard Armored option (with and without polyolefin jacket) is available only for dB Miser™ 160, 190, 210, and 300 cables. And, when specifying FFRAP connectors, custom part numbering must be used. Call Storm for details.

The Ruggedized option (with polyurethane jacket) is available only for dB Miser™ 210 cable, but not with FFRAP connectors.

HARD ARMORED – Polyolefin jacket

Armoring Designator: **A**



Designed for both inside and outside environments where flexibility and weight are not as critical, but where the application requires the ultimate in cut and crush resistance (500 lbs/in). The cable is covered with a stainless steel interlocked armor and a cross-linked polyolefin jacket.

Temperature: -54° C thru +125° C

Diameter: dB Miser™ 160 – 0.300"/7.62 mm
dB Miser™ 190 – 0.430"/10.92 mm
dB Miser™ 210 – 0.430"/10.92 mm
dB Miser™ 300 – 0.525"/13.34 mm

HARD ARMORED – No polyolefin jacket

Armoring Designator: **AN**



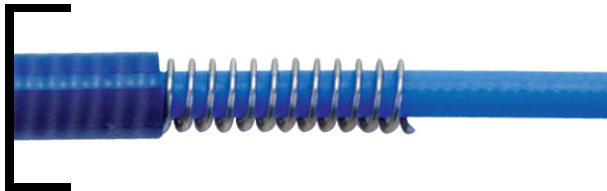
Designed for both inside and outside environments where flexibility and weight are not as critical, but where the application requires the ultimate in cut and crush resistance (500 lbs/in). The cable is covered with a stainless steel interlocked armor.

Temperature: -54° C thru +125° C

Diameter: dB Miser™ 160 – 0.265"/6.73 mm
dB Miser™ 190 – 0.395"/10.03 mm
dB Miser™ 210 – 0.395"/10.03 mm
dB Miser™ 300 – 0.475"/12.07 mm

RUGGEDIZED – Polyurethane jacket

Armoring Designator: **R**



For applications similar to the above, where weight, flexibility, and moderate compression resistance (300 lbs/in) are important, but where abrasion resistance is also critical. The cable is covered with a flexible wound helix of passivated stainless steel wire and an extruded polyurethane jacket.

Temperature: -54° C thru +100° C

Diameter: dB Miser™ 210 – 0.360"/9.14 mm