

# dB MISER™

## ULTRA LOW LOSS CABLE ASSEMBLIES



### COST-EFFECTIVE, HIGH- PERFORMANCE SOLUTIONS FOR LOW LOSS CHALLENGES



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™ 130**

0.959 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**

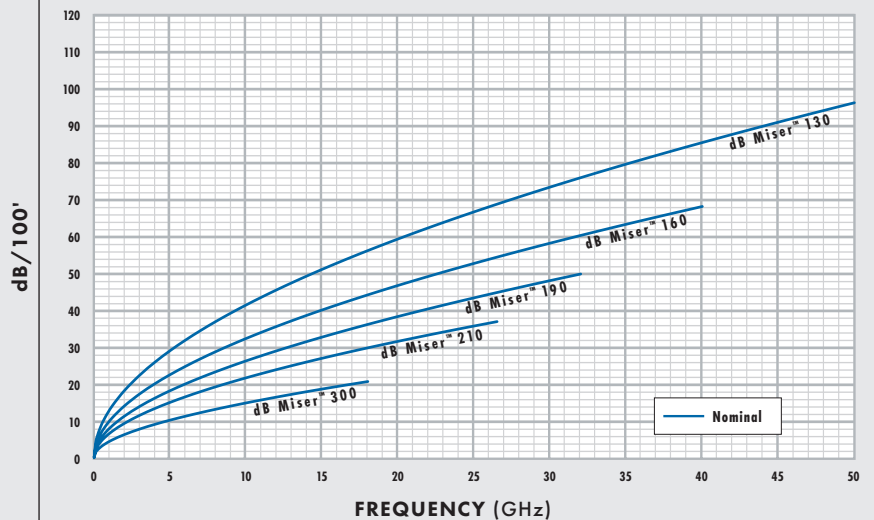
0.367 dB/ft nom @ 26.5 GHz

#### **dB Miser™ 300**

0.205 dB/ft nom @ 18 GHz

Please consult Teledyne Storm Microwave for other available connector styles.

**Cable Attenuation**



**TELEDYNE  
STORM MICROWAVE**  
Everywhereyoulook™

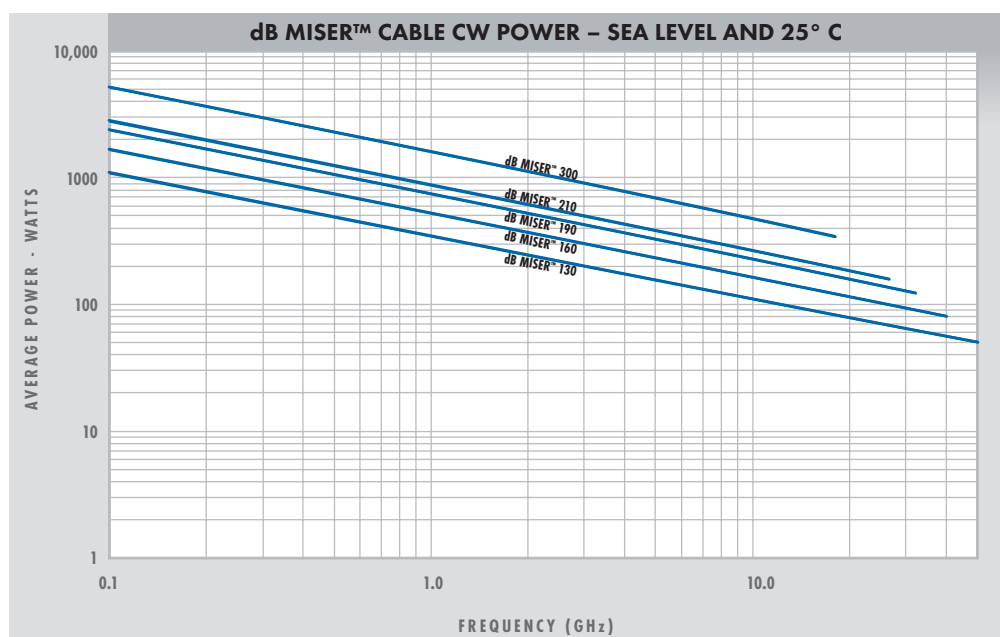
High value microwave and  
electronic interconnect solutions

[www.teledynestorm.com](http://www.teledynestorm.com)

SPECIFICATIONS	dB MISER™		
	130	160	
<b>Cable Designator</b>	<b>88</b>	<b>84</b>	
Diameter (in/mm)	0.127/3.23	0.159/4.04	
Operating Frequency (Max, GHz)	50	40	
Attenuation–Nom @ 2 GHz (dB/ft)	0.181	0.139	
Attenuation–Nom @ 10 GHz (dB/ft)	0.412	0.321	
Attenuation–Nom @ 18 GHz (dB/ft)	0.559	0.439	
Attenuation–Nom @ 26.5 GHz (dB/ft)	0.684	0.541	
Attenuation–Nom @ 32 GHz (dB/ft)	0.756	0.600	
Attenuation–Nom @ 40 GHz (dB/ft)	0.851	0.678	
Attenuation–Nom @ 50 GHz (dB/ft)	0.959	–	
Power Handling -- Avg Power in Watts @ 1 GHz	348	528	
Phase Stability vs. Flexure† (@ 18 GHz, nom)	±2.7°	±3.5°	
Shielding Effectiveness–Min‡ (dB @ 1 GHz)	> –90	> 90	
Typical VSWR (2 straight connectors)	1.35 to 50 GHz	1.28 to 40 GHz	
Min Bend Radius (in/mm)	Static	0.625/15.9	0.75/19.05
	Dynamic	1.25/31.8	1.53/38.1
Connector Retention, Straight pull (lbs/kg max)	25/11.34	20/9.07	
Velocity of Propagation (%)	84.0	87.0	
Weight (grams/ft & /m)	9.24/30.31	12.12/39.75	
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
<b>Cable Designator</b>	<b>83</b>	<b>82</b>	<b>81</b>
Diameter (in/mm)	0.187/4.75	0.210/5.33	0.299 / 7.59
Operating Frequency (Max, GHz)	32	26.5	18
Attenuation–Nom @ 2 GHz (dB/ft)	0.112	0.092	0.062
Attenuation–Nom @ 10 GHz (dB/ft)	0.261	0.215	0.147
Attenuation–Nom @ 18 GHz (dB/ft)	0.359	0.296	0.205
Attenuation–Nom @ 26.5 GHz (dB/ft)	0.446	0.367	–
Attenuation–Nom @ 32 GHz (dB/ft)	0.496	--	--
Attenuation–Nom @ 40 GHz (dB/ft)	--	–	–
Attenuation–Nom @ 50 GHz (dB/ft)	--	–	–
Power Handling -- Avg Power in Watts @ 1 GHz	750	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
	Dynamic	2/50.8	2.0/50.8
Connector Retention, Straight pull (lbs/kg max)	40/18.14	50/22.68	75/34.02
Velocity of Propagation (%)	82.75	84.0	84.6
Weight (grams/ft & /m)	15.9/52.15	19.40/63.65	39.2/128.58
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 0.127", 0.159", 0.187", 0.210" and 0.299"

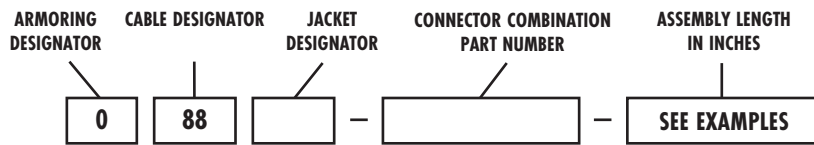
### ADVANTAGES

- ~ 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



**Armoring Designator:** **0** - Unarmored **A** - Armored

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

## dB MISER™ 130

CONNECTOR COMBINATION PART NUMBERS\*

	CONNECTOR OPERATING FREQUENCY				
	26.5 GHz	40 GHz	50 GHz		
26.5 GHz	SMA SP	SMK (2.92 mm) SP	SMK (2.92 mm) SJ	2.4 mm SP	2.4 mm SJ
40 GHz	SMK (2.92 mm) SP	SMK (2.92 mm) SJ	2.4 mm SP	2.4 mm SJ	
50 GHz	2.4 mm SP	2.4 mm SJ			

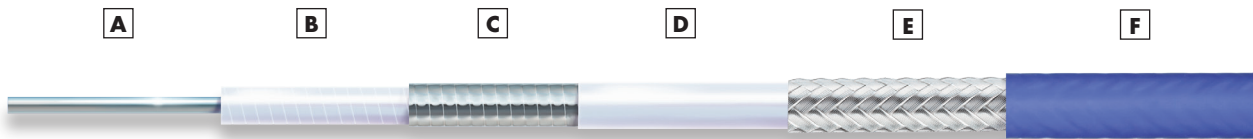
CONNECTOR CODES	
SP	Straight Plug
SJ	Straight Jack

### EXAMPLES:

**088-0606-048** = Unarmored dB Miser™ 130 with standard FEP jacket, 2.4 mm SP to 2.4 mm SP (assembly operates to 50 GHz), **48 inches**

**088Z-0115-150** = Unarmored dB Miser™ 130 with LSZH jacket, SMA SP to SMK (2.92 mm) SJ (assembly operates to 26.5 GHz), **150 inches**

## dB MISER™ 130 CABLE CONSTRUCTION

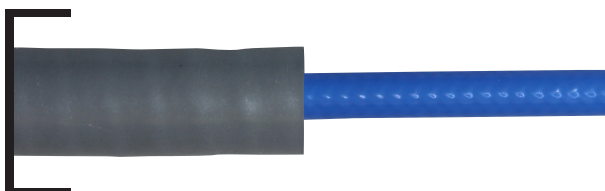


- A** Silver-plated copper center conductor
- B** Expanded PTFE dielectric
- C** Helically wrapped SPC flat wire shield
- D** PTFE
- E** Silver-plated copper braid
- F** Extruded blue FEP jacket standard; blue LSZH (low smoke zero halogen) jacket on request

## ARMORING OPTION FOR dB MISER™ 130

### ARMORED

Armoring Designator: **A**



Design for both inside and outside environments where the application requires more cut and crush resistance. This armor option is extremely flexible and light while still providing protection. The cable is covered with a stainless steel flat wire spiral, fiberglass braid, and silicone jacket.

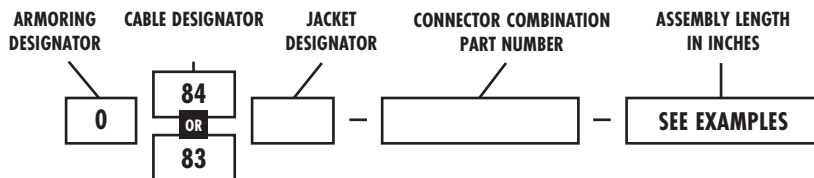
Temperature: -55° C thru +125° C

Diameter: **0.276"/7.00 mm**

\* Other connector styles available; consult Storm | Connector requirements in accordance with MIL-PRF-39012, MIL-STD-348, and IEEE-287 as appropriate.



# dB MISER™ ORDERING INFORMATION: Part Number Designation



**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)

## dB MISER™ 160

### CONNECTOR COMBINATION PART NUMBERS\*

		CONNECTOR OPERATING FREQUENCY							
		26.5 GHz				40 GHz			
		3.5 mm SP	SMA SP	SMA RAP	SMA FFRAP	SMK (2.92 mm) SP	SMK (2.92 mm) FFRAP	2.4 mm SP	2.4 mm FFRAP
26.5 GHz	3.5 mm SP	0404	0104	0421	0451	0405	0455	0406	0456
	SMA SP	0104	0101	0121	0151	0105	0155	0106	0156
	SMA RAP	0421	0121	2121	2151	0521	2155	0621	2156
	SMA FFRAP	0451	0151	2151	5151	0551	5155	0651	5156
40 GHz	SMK (2.92 mm) SP	0405	0105	0521	0551	0505	0555	0506	0556
	SMK (2.92 mm) FFRAP	0455	0155	2155	5155	0555	5555	0655	5556
	2.4 mm SP	0406	0106	0621	0651	0506	0655	0606	0656
	2.4 mm FFRAP	0456	0156	2156	5156	0556	5556	0656	5656

Other connector styles include: SMA SJ, SMK(2.92 mm) SJ, SMK(2.92 mm) BFJ and SMK(2.92 mm) RAP.

CONNECTOR CODES	
SJ	Straight Jack
BFJ	Bulkhead Feedthru Jack
SP	Straight Plug
RAP	Right-Angle 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

### CONNECTOR COMBINATION PART NUMBERS\*

		CONNECTOR OPERATING FREQUENCY						
		18 GHz	26.5 GHz		32 GHz			
		SMA SP	SMA SJ	3.5 mm SP	3.5 mm SJ	SMK (2.92 mm) SP	SMK (2.92 mm) SJ	SMK (2.92 mm) FFRAP
18 GHz	SMA SP	0101	0111	0104	0114	0105	0115	0155
	SMA SJ	0111	1111	0411	1115	0511	1115	1155
26.5 GHz	3.5 mm SP	0104	0411	0404	0414	0405	0415	0455
	3.5 mm SJ	0114	1115	0414	1414	0514	1415	1455
32 GHz	SMK (2.92 mm) SP	0105	0511	0405	0514	0505	0515	0555
	SMK (2.92 mm) SJ	0115	1115	0415	1415	0515	1515	1555
	SMK (2.92 mm) FFRAP	0155	1155	0455	1455	0555	1555	5555

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

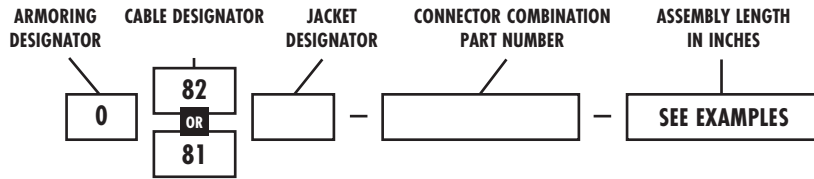
### EXAMPLES:

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

\* Other connector styles available; consult Storm | Connector requirements in accordance with MIL-PRF-39012, MIL-STD-348, and IEEE-287 as appropriate.

# dB MISER™ ORDERING INFORMATION: Part Number Designation



**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)

## dB MISER™ 210

### CONNECTOR COMBINATION PART NUMBERS\*

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

Other connector styles include: SMA SJ, 3.5mm SJ, N BFJ and N 4HFMJ.

CONNECTOR CODES	
4HFMJ	4-Hole Flange Mount Jack
SJ	Straight Jack
BFJ	Bulkhead Feedthru Jack
SP	Straight Plug
RAP	Right-Angle Plug
FFRAP	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

## dB MISER™ 300

### CONNECTOR COMBINATION PART NUMBERS\*

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

Other connector styles include: SMA RAP, SMA SJ and N BFJ.

CONNECTOR CODES	
RAP	Right-Angle Plug
SJ	Straight Jack
BFJ	Bulkhead Feedthru Jack
SP	Straight Plug
FFRAP	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

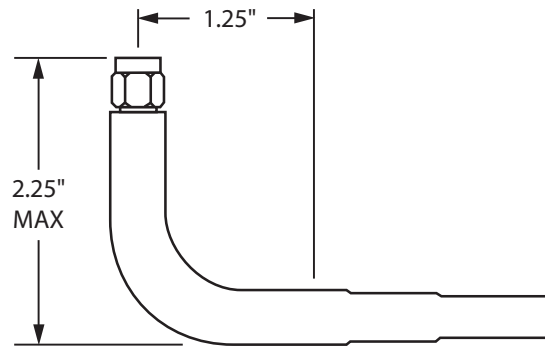
\* Other connector styles available; consult Storm | Connector requirements in accordance with MIL-PRF-39012, MIL-STD-348, and IEEE-287 as appropriate.

## FACTORY FORMED RIGHT-ANGLE (FFRA) CONNECTORS

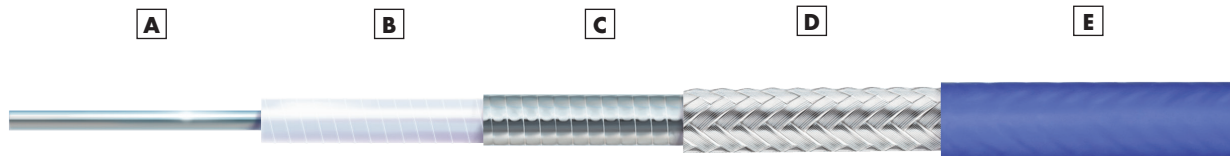
Designed using straight connectors and a shrink tubing–strain relief combination, FFRA connectors offer a moderate right-angle space advantage at a significant cost savings over traditional right-angle connectors.

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

**Note:** The dimensions given here are for dBM 160 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 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 for dB Miser™ 210 and 300 cables, 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: -55° 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**



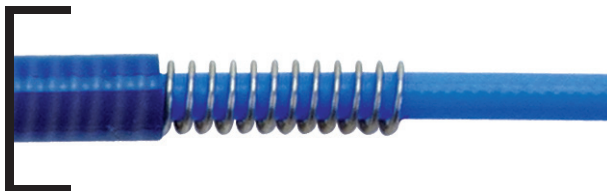
Designed for both inside and outside environments where flexibility and weight are not as critical, but where the application requires the ultimate in cut and crush resistance (500 lbs/in). The cable is covered with a stainless steel interlocked armor.

Temperature: -55° 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: -55° C thru +100° C

**Diameter:** dB Miser™ 210 – 0.348"/8.84 mm  
dB Miser™ 300 – 0.454"/11.53 mm