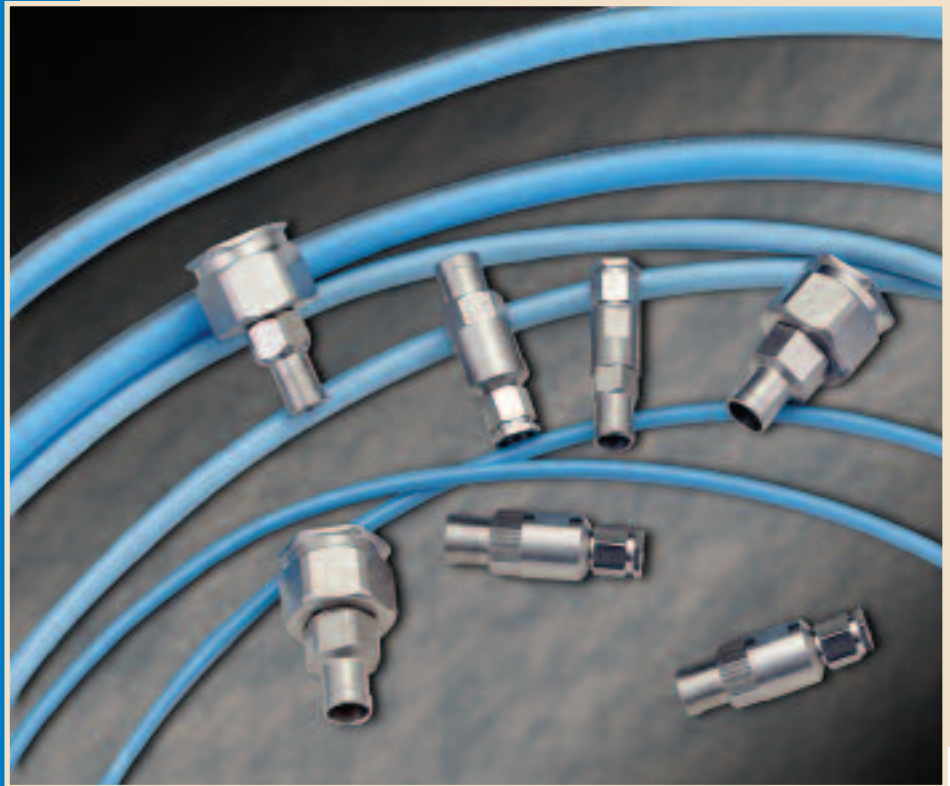


# HELI-FOIL™

ISO 9001 Certified

*DC-18 GHz Ultra Low Loss  
Bulk Coaxial Cable and  
Connectors for Self Assembly.*

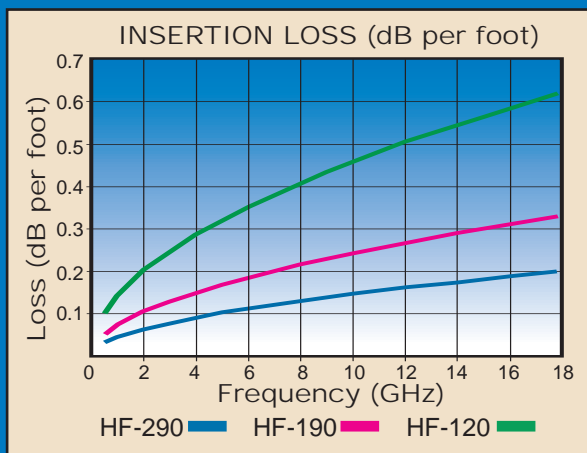


Bulk HELI-FOIL™ ultra low loss, flexible Microwave Coaxial Cable and a full range of passivated stainless steel connectors are now available for self assembly. Covering the DC-18 GHz frequency, Heli-Foil cable comes in three different diameters, with options of stranded center conductors (for dynamic applications) and solid center conductors (for static applications). All sizes provide state of the art lowest insertion loss and excellent phase stability.

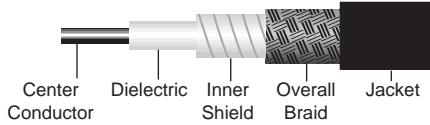
HELI-FOIL assemblies are used for general applications in both field and laboratory conditions. They are ideally suited for high ambient temperature environments, such as communication systems' internal interconnects.

#### Features & Benefits:

- DC-18 GHz Do It Yourself Cable Assemblies
- Lowest Insertion Loss Available, DC-18GHz
- Ultra Stable Insertion Loss, Phase and VSWR with Flexing
- Excellent Phase Tracking Performance with Wide Temperature (-55°C to +150°C)
- Extremely Flexible, Low Minimum Bend Radius
- Superior Shielding Effectiveness (>100 dB)



**Construction**



**Center Conductor:** Silver-Plated Copper

**Dielectric:** Low Density PTFE

**Inner Shield:** Helical Silver-Plated Copper Tape

**Overall Braid:** Silver-plated Copper Braid

**Jacket:** Blue Teflon® FEP

	HS-120	HS-120S*	HF-190	HF-190S*	HF-290	HF-290S*
<b>Physical Specifications</b> (*-stranded)						
Overall Diameter: in (mm)	0.120 (3.05)	0.120 (3.05)	0.192 (4.88)	0.192 (4.88)	0.301 (7.65)	0.301 (7.65)
Bend Radius: in (mm)	0.625 (15.9)	0.625 (15.9)	1.000 (25.4)	1.000 (25.4)	1.500 (38.1)	1.500 (38.1)
Weight: lbs/ft (Kg/m)	0.017 (0.025)	0.017 (0.025)	0.040 (0.060)	0.039 (0.058)	0.092 (0.137)	0.090 (0.134)
<b>Environmental Specifications</b>						
Operating Temp. Range	-67°/+302°F -55°/+150°C					
<b>Electrical Specifications</b>						
Cutoff Frequency (GHz)	58		31			19
Velocity of Propagation	83%					
Dielectric Constant	1.45					
Time Delay: nS/ft (nS/m)	1.22 (4.02)					
Capacitance: pF/ft (pF/m)	24.5 (80.3)					
Impedance (nominal)	50 ohms					
Shielding Effectiveness	>90 dB					
<b>Attenuation (+25°C) &amp; Power Handling (+40°C Ambient; Sea Level; VSWR 1:1)</b>						
	HS-120	HS-120S*	HF-190	HF-190S*	HF-290	HF-290S*
Frequency/Size	dB/100ft dB/100m kW	dB/100ft dB/100m kW	dB/100ft dB/100m kW	dB/100ft dB/100m kW	dB/100ft dB/100m kW	dB/100ft dB/100m kW
100 MHz	4.3 14.1 1.2	4.8 15.7 1.1	2.3 7.6 2.8	2.5 8.4 2.5	1.4 4.6 5.6	1.5 5.1 5.1
400 MHz	8.7 28.4 0.6	9.6 31.5 0.5	4.6 15.2 1.4	5.1 16.8 1.3	2.8 9.2 2.8	3.1 10.2 2.5
1000 MHz	13.8 45.1 0.4	15.3 50.2 0.3	7.4 24.3 0.9	8.1 26.7 0.8	4.5 14.7 1.7	5.0 16.3 1.6
3000 MHz	24.0 78.7 0.2	26.7 87.5 0.2	13.0 42.6 0.5	14.3 46.9 0.4	8.0 26.1 1.0	8.8 28.9 0.9
8000 MHz	39.6 129.8 0.1	44.0 144.2 0.1	21.6 70.9 0.3	23.7 77.9 0.3	13.4 44.0 0.6	14.8 48.5 0.5
10000 MHz	44.4 145.6 0.1	49.3 161.7 0.1	24.3 79.7 0.3	26.7 87.6 0.2	15.1 49.6 0.5	16.7 54.7 0.5
12000 MHz	48.7 159.9 0.1	54.1 177.5 0.1	26.8 87.8 0.2	29.4 96.4 0.2	16.7 54.8 0.5	18.4 60.4 0.4
13500 MHz	51.8 170.0 0.1	57.5 188.7 0.1	28.5 93.5 0.2	31.3 102.6 0.2	17.8 58.5 0.4	19.6 64.4 0.4
18000 MHz	60.0 196.9 0.1	67.0 219.8 0.1	33.2 109.0 0.2	36.4 119.5 0.2	20.0 68.6 0.4	23.0 75.4 0.3
Attenuation at Frequency $(A=K1 \sqrt{F_{mhz}} + K2 F_{mhz})$						
K1	0.430142	0.479448	0.229587	0.253447	0.131900	0.153308
K2	0.000134	0.000134	0.000134	0.000134	0.000134	0.000134
<b>Connector Selection Table</b>						
Cable	SMA Male	SMA Male 90°	N Male	N Male 90°	TNC Male	TNC Male 90°
HF-120	HC-120-SM	HC-120-SMRA	HC-120-NM	HC-120-NMRA	HC-120-TM	HC-120-TMRA
HF-120S	HC-120S-SM	HC-120S-SMRA	HC-120S-NM	HC-120S-NMRA	HC-120S-TM	HC-120S-TMRA
HF-190	HC-190-SM	HC-190-SMRA	HC-190-NM	HC-190-NMRA	HC-190-TM	HC-190-TMRA
HF-190S	HC-190S-SM	HC-190S-SMRA	HC-190S-NM	HC-190S-NMRA	HC-190S-TM	HC-190S-TMRA
HF-290	HC-290-SM	HC-290-SMRA	HC-290-NM	HC-290-NMRA	HC-290-TM	HC-290-TMRA
HF-290S	HC-290S-SM	HC-290S-SMRA	HC-290S-NM	HC-290S-NMRA	HC-290S-TM	HC-290S-TMRA

Consult Times Microwave Systems for other connector options not listed above.



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