

Flexible Low Loss Cable

Flexible Low Loss Cables are coaxial cables engineered to maintain signal integrity across a broad range of frequencies, such as applications requiring frequent flexure or tight bends. These high-performance cables utilize specialized dielectric materials to reduce signal degradation and shielding constructions, like DynaCore® PTFE dielectric technology from Winchester's DynaFlex® Cable Series. Their flexibility makes them suitable for dynamic applications, short-run connections, and complex routing within compact electronic systems.



KEY FEATURES & BENEFITS

- **Lower Attenuation:** Reduces signal loss to improve efficiency
- **Excellent Phase Stability:** Winchester's DynaCore® technology ensures a consistent signal even when the cable is bent
- **Broadband Performance:** Wide frequency range (DC to 40 GHz and beyond).
- **Flexible & Durable:** Withstands repeated bending without compromising performance.
- **Space & Weight Savings:** The flexible design allows for tight bends, and lightweight conductors can provide up to 40% weight reduction.
- **Superior Shielding:** Blocks external interference and minimizes RF leakage.
- **Reduced Rework Costs:** Robust cores, like DynaCore® PTFE, protect against damage during installation, preventing field failures

PRODUCT SPECIFICATIONS

Electrical Properties*	
Impedance	50 Ohms
Frequency Range	DC to 50 GHz
Voltage Rating	Varies by cable size and construction, typically hundreds to thousands of VRMS.
Velocity of Propagation (VP)	Typically ranging from 70% to 85% (e.g., Dynawave DF218 at 84%), (fast signal speed and lower inherent delay.)
Shielding Effectiveness	Typically >90 dB, preventing signal leakage and external interference.
Capacitance	Typically 25-30 pF/ft (e.g., Dynawave DF418XM141 at 276 pF/ft).
VSWR (Voltage Standing Wave Ratio)	Designed for excellent impedance matching, resulting in very low VSWR across the operating band.
Attenuation (Insertion Loss)	Low, ranging from a few dB/100ft at lower GHz frequencies to tens of dB/100ft at higher GHz frequencies (e.g., Dynawave's DF226: 39.92 dB/100ft up to 26 GHz).

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Environmental Properties*	
Temperature Range	-40°C or -65°C to +165°C (standard)
Thermal Shock	Resistant to rapid temperature changes without degradation in performance.
Vibration & Shock	Engineered to maintain electrical and mechanical integrity under specified levels of vibration and shock.
Moisture Resistance	Designed with robust jackets and sealed constructions (e.g., watertight PE jackets, IP-rated assemblies)
UV Resistance	Jackets (e.g., black PE) are often UV-stabilized for long-term outdoor exposure.
Chemical Resistance	Some jacket materials offer resistance to oils, fuels, and common chemicals.
Flame Retardancy	Specific versions may be available with fire-retardant (FR) jackets for indoor/plenum applications.

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties*	
Inner Conductor	Solid or stranded, often silver-plated copper clad steel or copper.
Dielectric/Insulator Material	Advanced low-density PTFE (Polytetrafluoroethylene), foam or DynaCore® for improved electrical and mechanical stability.
Outer Conductor/Shield	Typically multi-layered with bonded aluminum foil and braided silver-plated or tin-plated copper.
Jacket	FEP, ETFE, or UV Resistance PolyurethaneVC, chosen for environmental protection and flexibility.
Outer Diameter	Available in various diameters to suit different power handling and flexibility requirements (e.g., 0.047", 0.086", 0.141", 0.195", 0.430)
Minimum Bend Radius	Crucial and often specified for both single installation (tighter) and repeated flexure (larger).
Weight	Lighter than semi-rigid cables of comparable performance. (DynaFlex® Cable 300 Series provides up to 40% weight savings)
Tensile Strength	Withstands pulling forces during installation and operation.

*reference website for specific part number specifications