FLEXIBLE RF CABLE / PHASE STABLE CABLE

Cable Name: W42

Part No: VXW420



40 GHz
MAX FREQUENCY

1500 V.DC
WITHSTANDING VOLTS

6 Layers
MAXIMUM CRUSH RESISTANCE

< 750 PPM
PHASE STABILITY

General Description: The Vinstronics VXW420W is a premium, ultra-low loss, phase-stable RF coaxial cable engineered for demanding microwave environments. Featuring a specialized 6-layer construction and a green FEP jacket, it delivers exceptional signal integrity up to 40GHz. With strict phase stability (<750PPM) and a remarkable 1500 V.DC voltage rating, it is the ideal interconnect solution for advanced aerospace and communication systems.

Core Features

- **Phase Stability:** <750PPM @ -55℃ ~ +85℃ for high signal fidelity.
- **Ultra-Low Loss:** Optimized for precision, long-distance signal transmission.
- **Low PIM:** Outstanding -155dBc performance for minimal interference.
- **High Voltage Rating:** 1500 V.DC architecture for high-intensity requirements.
- **Advanced 6-Layer Design:** Includes LD PTFE interlayer for enhanced protection.

Target Applications

- **Avionics:** Meets stringent weight and environmental stability standards.
- **Phased Array Radar:** Ensures the precise phase consistency crucial for tracking.
- **ECM Systems:** Reliable performance in harsh electromagnetic environments.
- **High-Frequency Interconnects:** Ideal for any strict loss and phase applications.

CONSTRUCTION SPECIFICATION

Item	Material & Process	Diameter mm [in]
1. Inner Conductor	Silver-plated copper	**1.05** [0.041]
2. Dielectric	Low Density PTFE (LD PTFE)	**2.85** [0.112]
3. Inner Shield	Silver-plated copper strip	**3.05** [0.120]
4. Interlayer	Low Density PTFE (LD PTFE)	**3.30** [0.130]
5. Outer Shield	Silver-plated copper wire braiding	**3.65** [0.144]
6. Jacket	FEP / Green (Customizable)	**4.20** [0.165]

ELECTRICAL CHARACTERISTICS

Operating Frequency	**40 GHz**
Cut-off Frequency	**41 GHz**
Impedance	**50 ± 1 Ω**
Velocity of Propagation	**82 %**
Shielding Effectiveness	**>90 dB**
Dielectric Withstanding Voltage	**1500 V.DC**

ATTENUATION AND TRANSMISSION POWER

Frequency (MHz)	**1000**	**2000**	**3000**	**6000**	**8000**	**10000**	**12400**	**18000**	**26500**	**40000**
Attenuation (dB/100m)	**33.5**	**47.5**	**58.3**	**82.8**	**95.8**	**107.2**	**119.7**	**144.7**	**176.4**	**218.1**
Average Power (kW)	**0.634**	**0.447**	**0.365**	**0.257**	**0.222**	**0.198**	**0.178**	**0.147**	**0.120**	**0.097**

K1 = 1.054470 **K2 =** 0.000180 **Formula:** Attenuation = K1 × √F(MHz) + K2 × F(MHz)

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

Static Bending Radius	**20 mm** [0.787 in]
Dynamic Bending Radius	**40 mm** [1.575 in]
Weight	**0.037 kg/m** [0.0249 lbs/ft]
Temperature Range	**-55 ~ +165 ℃** [-67 ~ +329 ℉]