

UTiFLEX® Thermal Vacuum Test Cable Assemblies

Thermal vacuum testing is a risk mitigation strategy utilized in some hi-rel applications, notably space equipment such as satellites. Our TVAC Test Assemblies are thermal vacuum compatible for use in TVAC chambers. These assemblies utilize high-performance, Ultra-Low-Loss UTiFLEX® Cable, and are produced to exacting space-grade standards utilizing low-outgassing materials and vented connectors.

Key Characteristics

- » Low outgassing per ASTM E-595 (<1%TML and <0.1% CVCM) temperature range: -65 °C to 165 °C (Typical, consult factory for individual types)
 - » Ideal phase performance due to ultra-low-loss dielectric materials
 - » Superior cable mechanical stability & connector captivation techniques to address increasing thermal extremes of the space market
 - » Clean-room manufacturing & real-time X-ray upon request
- » High-power configurations available. All high-power TVAC Assemblies are manufactured in a clean-room environment to full space-grade standards. Consult us for specific power/frequency requirements
 - » Individually bagged to prevent post-assembly contamination
 - » Vented connectors



We are constantly improving products. Please contact us for the latest detailed specification sheet for any individual cable.

Mechanical Characteristics	UFB142A	UFC185A	UFB197C	UFB205A	UFB293C	UFB311A
Nom. Outer Diameter <i>in (mm)</i>	0.142 (3.61)	0.185 (4.70)	0.197 (5.00)	0.205 (5.21)	0.293 (7.44)	0.311 (7.90)
Center Conductor Type	Solid	Solid	Stranded	Solid	Stranded	Solid
Max Weight <i>g/ft (g/m)</i>	10.1 (33.1)	17.6 (57.7)	19.8 (65.0)	20 (65.6)	42 (137.8)	44.5 (146.0)
Static Bend Radius <i>in (mm)</i>	0.38 (9.65)	0.38 (9.65)	0.50 (12.70)	0.50 (12.70)	0.75 (19.05)	1.25 (31.75)
Electrical Characteristics	UFB142A	UFC185A	UFB197C	UFB205A	UFB293C	UFB311A
Impedance	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
Max. Frequency	40 GHz	32 GHz	26.5 GHz	26.5 GHz	18 GHz	18 GHz
Max. Insertion Loss <i>db/ft (dB/M)</i>	@ 1 GHz	0.10 (0.33)	0.08 (0.26)	0.09 (0.28)	0.07 (0.23)	0.06 (0.20)
	@ 10 GHz	0.33 (1.08)	0.27 (0.89)	0.28 (0.93)	0.23 (0.75)	0.18 (0.59)
	@ 18 GHz	0.44 (1.44)	0.36 (1.18)	0.38 (1.26)	0.32 (1.05)	0.25 (0.82)
	@ 26.5 GHz	0.54 (1.77)	0.44 (1.44)	0.47 (1.55)	0.39 (1.28)	—
	@ 32 GHz	0.60 (1.97)	0.49 (1.61)	—	—	—
	@ 40 GHz	0.68 (2.23)	—	—	—	—
Power Handling <i>Watts (CW)</i>	@ 10 GHz	175	267	296	326	570

Connector Options

Description	Connector P/N	TVAC CABLE P/Ns	Frequency	Max SWR (Per Connector)
SMK PLUG	20V	142	DC – 40 GHz	1.16:1 – 18 GHz, 1.22:1 – 40 GHz
SMK PLUG	20V	185	DC – 32 GHz	1.16:1 – 18 GHz, 1.22:1 – 32 GHz
SMK PLUG	20V	205	DC – 26.5 GHz	1.16:1 – 18 GHz, 1.20:1 – 26.5 GHz
PC3.5MM PLUG	00V	205	DC – 26.5 GHz	1.16:1 – 18 GHz, 1.20:1 – 26.5 GHz
SMA PLUG	30V	142, 197, 205, 293, 311	DC – 18 GHz	1.16:1 – 18 GHz
Precision N PLUG	50V	142, 197, 205, 293, 311	DC – 18 GHz	1.16:1 – 18 GHz
Precision TNC PLUG	60V	142, 197, 205, 293, 311	DC – 18 GHz	1.20:1 – 18 GHz

Part Number Designation (Example)

Base Part Number	Phase Matching (Optional)
UFB142A-0-XXXX-20V20V TV	AM
Where	XXXX is cable assembly length in 0.1 inch increment. Length Tolerance = -0 / +0.5 inches (XXXX <= 100 inches) Length Tolerance = -0 / + 0.5% (XXXX >= 100 inches) If absolute phase matching is required, then add “AM” code. For phase-matched assemblies, length tolerance is not applicable.

