

UTiPHASE™

Phase Linear Microwave Cable Assemblies UFP088D & UFP205A Series

INTRODUCTION

For many years, designers all over the world have relied on Carlisle Interconnect Technologies' (CarlisleIT) UTiFLEX® Flexible Microwave Cable Assemblies for the most demanding defense, space, and testing applications. When a microwave assembly must deliver consistent reliable performance over time, UTiFLEX has become the industry choice.

Now, CarlisleIT offers UTiPHASE™, which combines every traditional feature of UTiFLEX with a thermally phase-stable proprietary dielectric that eliminates the PTFE "knee".

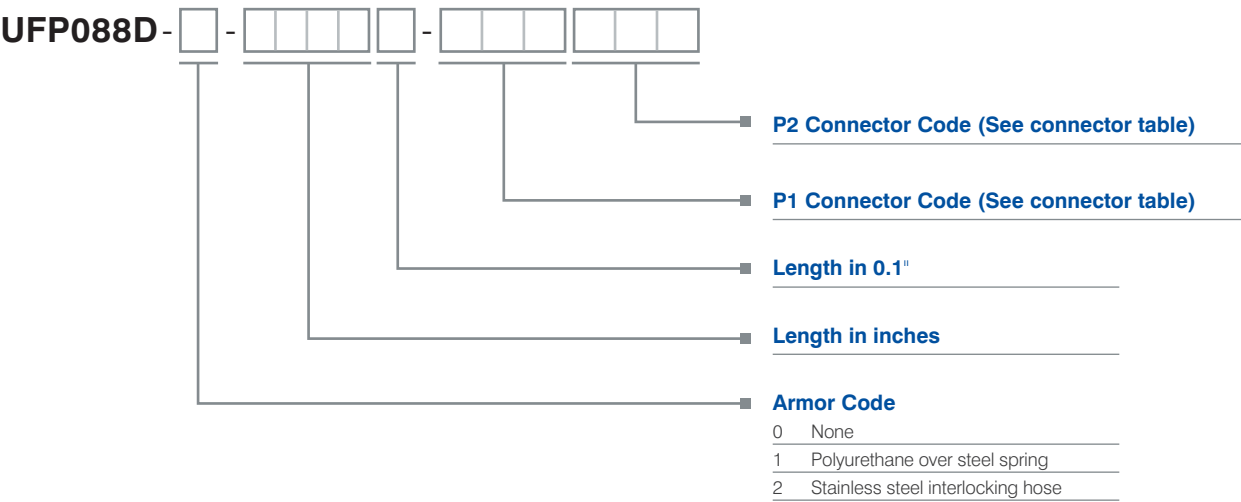
UTiPHASE also leverages the same cable assembly terminations and proven connector families that have made UTiFLEX famous, thus saving money, validation schedules, and lead-times.

APPLICATIONS

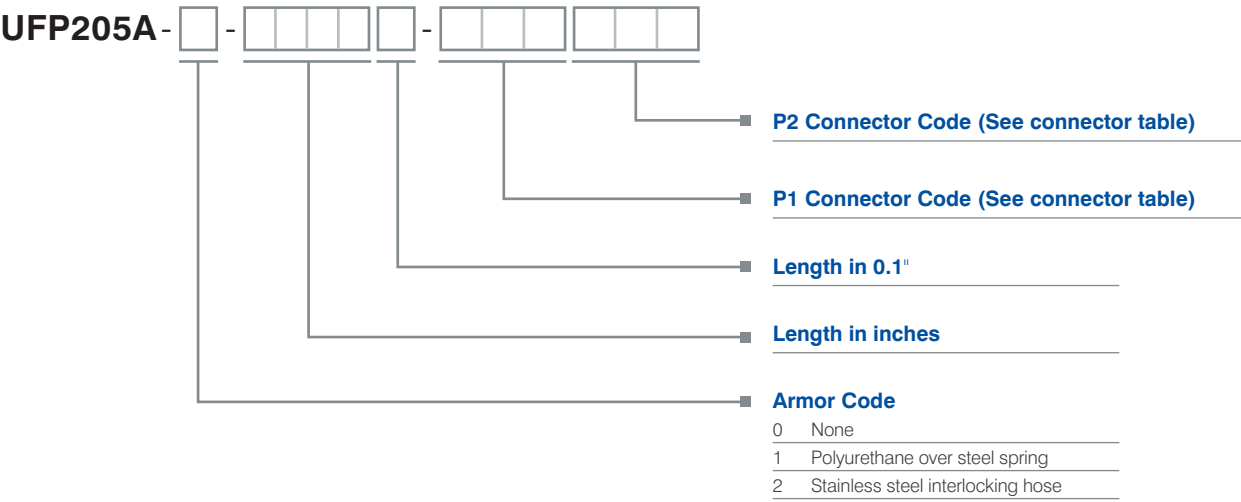
- Commercial and military phased-array radars
- Synthetic aperture radars
- Thermal test sets
- Any RF/microwave system operating at or near room temperature
- Commercial and military aerospace SATCOM and TCAS (Traffic Collision Avoidance System)



Part Numbering Key



For Example:
UFP088D-0-0197-300310 (UFP088D cable assembly, no armor, 19.7" in length, SMA plug by SMA jack)



For Example:
UFP205A-0-0360-30050U (UFP205A cable assembly, no armor, 36" in length, SMA plug by PN Plug)

These products are subject to U.S. export control regulations and subject to certain licensing requirements and may be restricted for export.

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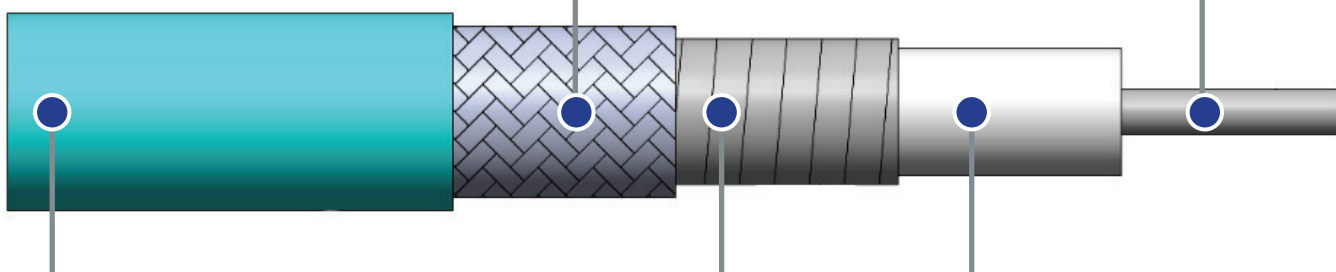
Cable Construction

Outer Shield:

- **UFP088D:** High-Strength, High Conductivity Copper Alloy Wire, Silver Coated (HSSPC)
- **UFP205A:** Silver-Plated Copper (SPC)

Center Conductor:

- **UFP088D:** Silver-Plated Copper-Weld Steel (SPCW)
- **UFP205A:** Silver-Plated Copper (SPC)



Outer Jacket:

- Fluorinated Ethylene Propylene (FEP)

Outer Conductor:

- Silver-Plated Copper

Dielectric:

- CarlisleIT Fluoropolymer

Features

Linear thermal phase performance	• Minimizes system phase variation • Increases accuracy • Eliminates PTFE "knee"
Naturally ruggedized with sturdy concentric core	• Improved reliability • Improved crush-resistance
Vertically integrated	• Controlled fluoropolymer performance • Reliable delivery
Typical velocity of propagation 80%	• Excellent insertion loss • Drop-in replacement for many competing cables
Universally configurable with standard connectors and armor	• Proven UTiFLEX® assembly reliability and performance • Reduced lead-time using existing assembly hardware and techniques

Benefits



The UTiPHASE™ family of flexible coaxial microwave cables flatten the phase vs. temperature response curve and are designed for use in phase-critical flexible cable applications.

UFP088D Series

Cable Details

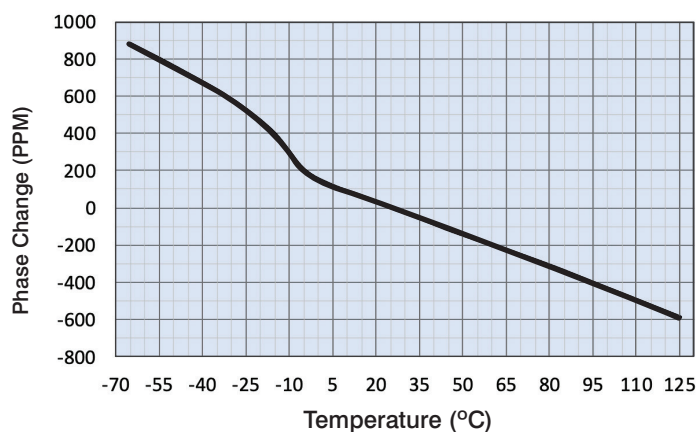
Diameter	Frequency Range	V of P	Minimum Bend Radius	Mass	Maximum Insertion Loss
0.088" (2.24 mm)	DC-70 GHz	80%	0.250" (6.35 mm)	4.5 gm/ft (14.8 gm/m)	2.37 dB/ft @ 70 GHz (7.78 dB/m)

Connector Options

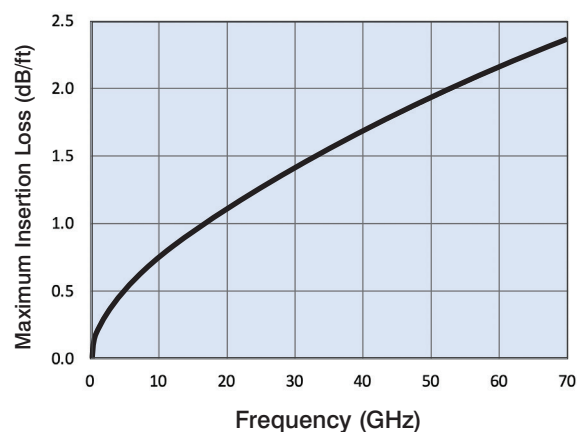
Series	Max Frequency	Types (CODES)
SMA	18 GHz	Plug (300), Jack (310), Right-Angle Plug (380), Bulkhead Jack (320)
SMP	40 GHz	Jack (F10), Bulkhead Plug (F3M), Bulkhead Jack (F90)
SSMA	40 GHz	Plug (G00), Right-Angle Plug (G80)
1.85 mm	70 GHz	Plug (C00), Bulkhead Jack (C20)
2.4 mm	50 GHz	Plug (100)
2.92 mm	40 GHz	Plug (200)
SMMP	65 GHz	Right-Angle Jack (Q90)

Electrical Performance

Typical Phase Change vs. Temperature



Cable Insertion Loss



UFP205A Series

Cable Details

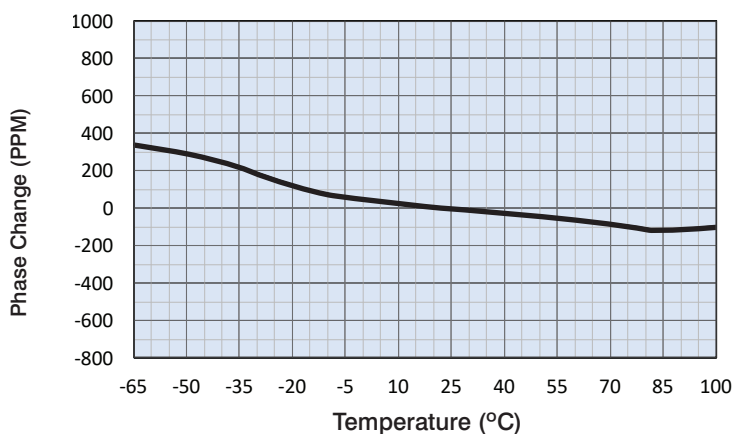
Diameter	Frequency Range	V of P	Minimum Bend Radius	Mass	Maximum Insertion Loss
0.205" (5.21 mm)	DC-26.5 GHz	80%	0.500" (12.7 mm)	20.6 gm/ft (67.6 gm/m)	0.56 dB/ft @ 26.5 GHz (1.84 dB/m)

Connector Options

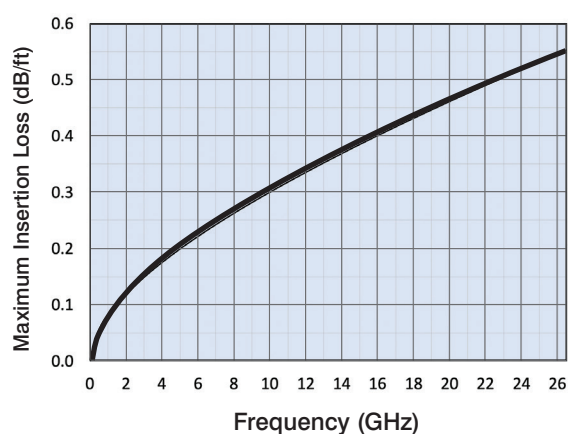
Series	Max Frequency	Types (CODES)
SMA	18 GHz	Plug (300), Jack (310), Right-Angle Plug (380), Bulkhead Jack (320)
PN	18 GHz	Plug hex/knurl (50U), Jack (510), Bulkhead Jack (520), 4-Hole Flange Jack (550)
N	12.4 GHz	Plug hex/knurl (70U), Jack (710)
PC 3.5 mm	26.5 GHz	Plug (000), Jack (010)
PTNC	18 GHz	Plug hex/knurl (60U), Jack (610)
PC 7 mm	18 GHz	Universal (400)
BNC	6 GHz	Plug (804)

Electrical Performance

Typical Phase Change vs. Temperature



Cable Insertion Loss



Global Manufacturing. Local Support.

Wherever you are, so are we. With manufacturing centers around the globe, our highly qualified team of engineers is up to any challenge. Our extensive worldwide manufacturing capabilities, coupled with end-to-end local project management and engineering support, allow us to design, build, test, and certify your product in-house, saving you the time and hassle of managing multiple vendors.



DIVISION HEADQUARTERS

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FACILITIES CERTIFICATIONS

- » AS9100
- » ISO 9001
- » ISO 13485
- » ISO 14001
- » ITAR registration
- » MIL-SPEC / SAE
- » RoHS compliance

Performance with Purpose



See CarlisleIT's full line of cable assemblies and harnesses at:
CarlisleIT.com/products/cable-assemblies-harnesses

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