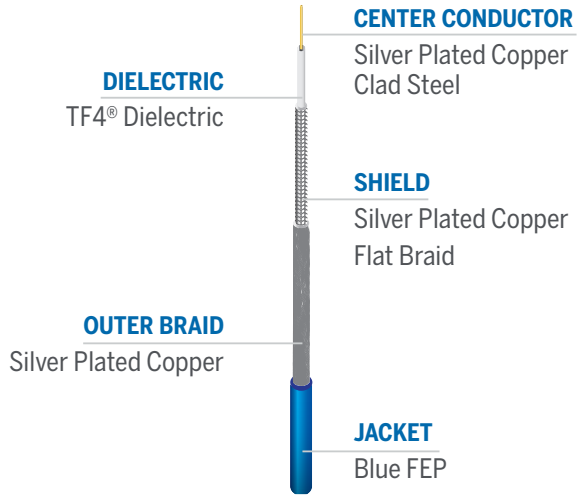
Commercial Space Line

# InstaBend® PhaseStable 047

IBPS-047 is a low-loss, highly flexible, foam-core micro coaxial cable. Originally designed for space satellite programs, this high-performance cable has many applications across multiple markets. It has a broad frequency range and strong durability making it ideal for medical, test equipment, and many other RF applications.

## Features

- Sold as cable assemblies
- Low outgassing materials per ASTM E595
- Class 100,000 clean room manufacturing
- Vented connectors, if applicable
- Optimized for lowest attenuation
- Ultra stable performance with flexure
- Superior shielding effectiveness (>90 dB)
- Radiation Resistance: 30 MRads




## Specifications

Impedance 50 Ohms | Op Temp -65 to 150°C

| | Units | |
|---|---|---|
| Diameter | in (mm) | 0.062 (1.58) |
| Weight | lb/ft (g/m) | 0.031 (46) |
| Minimum Bend Radius | in (mm) | 0.25 (6.5) |
| Maximum Frequency | GHz | 40 |
| Velocity of Propagation | % | 76 |
| Capacitance | pF/ft (pF/m) | 26.7 (87.6) |
| Delay | ns/ft (ns/m) | 1.25 (4.10) |
| Sheilding | dB | >80 |

## Calculation

$$IL = (K1 \times \sqrt{f} + K2 \times f) \times \text{Cable Length} + \text{Connector Loss}$$

Cable Insertion Loss
f = Frequency (MHz)

Use K values with matching length unit

| K values | dB/ft | dB/m |
|---|---|---|
| K1 | 0.01176752 | 0.03860924 |
| K2 | 0.00000775 | 0.00002543 |

## Insertion loss & VSWR

| Stock Code | Max. Insertion Loss in dB @ 40GHz | Max. VSWR @ 40GHz |
|---|---|---|
| IE-00419-01 | 1.45 | 1.40 |
| IE-00419-02 | 1.94 | 1.40 |
| IE-00419-03 | 2.43 | 1.40 |
| IE-00419-04 | 2.92 | 1.40 |
| IE-00419-05 | 3.43 | 1.40 |
| | Max. Insertion Loss in dB @ 40GHz | Max. VSWR @ 40GHz |
| IE-00420-01 | 1.45 | 1.40 |
| IE-00420-02 | 1.94 | 1.40 |
| IE-00420-03 | 2.43 | 1.40 |
| IE-00420-04 | 2.92 | 1.40 |
| IE-00420-05 | 3.43 | 1.40 |
| | Max. Insertion Loss in dB @ 27GHz | Max. VSWR @ 27GHz |
| IE-00421-01 | 1.17 | 1.35 |
| IE-00421-02 | 1.56 | 1.35 |
| IE-00421-03 | 1.96 | 1.35 |
| IE-00421-04 | 2.35 | 1.35 |
| IE-00421-05 | 2.76 | 1.35 |

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TIMES MICROWAVE SYSTEMS
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# InstaBend® PhaseStable 047

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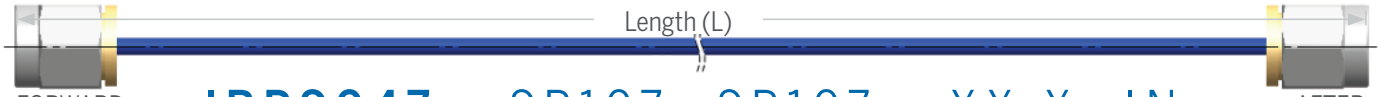
## Ordering Guide




IBPS047 -SP107 SP107- XX.X IN

Forward Connector | After Connector | Length | Units of measure: IN - Inchs

| Stock Code | Part-Number | Length (L) in inch |
|---|---|---|
| IE-00419-01 | IBPS047-KMKM-4.0IN | 4 |
| IE-00419-02 | IBPS047-KMKM-6.0IN | 6 |
| IE-00419-03 | IBPS047-KMKM-8.0IN | 8 |
| IE-00419-04 | IBPS047-KMKM-10.0IN | 10 |
| IE-00419-05 | IBPS047-KMKM-12.0IN | 12 |

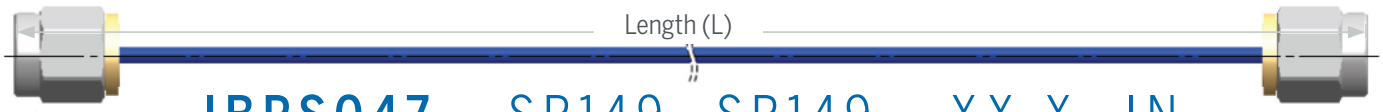
| Connector Code | Description | Connector Body | Center Contact | Connector Loss (per pair) |
|---|---|---|---|---|
| SP107 | Type K (M) Straight | Stainless Steel, Gold Plated | Beryllium Copper, Gold Plated | 0.06 x √(f) (GHz) |


IBPS047 -SP107 SP133- XX.X IN

Forward Connector | After Connector | Length | Units of measure: IN - Inchs

| Stock Code | Part-Number | Length (L) in inch |
|---|---|---|
| IE-00420-01 | IBPS047-KMKF-4.0IN | 4 |
| IE-00420-02 | IBPS047-KMKF-6.0IN | 6 |
| IE-00420-03 | IBPS047-KMKF-8.0IN | 8 |
| IE-00420-04 | IBPS047-KMKF-10.0IN | 10 |
| IE-00420-05 | IBPS047-KMKF-12.0IN | 12 |

| Connector Code | Description | Connector Body | Center Contact | Connector Loss (per pair) |
|---|---|---|---|---|
| SP133 | Type K (F) Straight | Stainless Steel, Gold Plated | Beryllium Copper, Gold Plated | 0.06 x √(f) (GHz) |




IBPS047 -SP149 SP149- XX.X IN

Forward Connector | After Connector | Length | Units of measure: IN - Inchs

| Stock Code | Part-Number | Length (L) in inch |
|---|---|---|
| IE-00421-01 | IBPS047-SMSM-4.0IN | 4 |
| IE-00421-02 | IBPS047-SMSM-6.0IN | 6 |
| IE-00421-03 | IBPS047-SMSM-8.0IN | 8 |
| IE-00421-04 | IBPS047-SMSM-10.0IN | 10 |
| IE-00421-05 | IBPS047-SMSM-12.0IN | 12 |

| Connector Code | Description | Connector Body | Center Contact | Connector Loss (per pair) |
|---|---|---|---|---|
| SP149 | Type SMA (M) Straight | Stainless Steel, Gold Plated | Beryllium Copper, Gold Plated | 0.06 x √f (GHz) |

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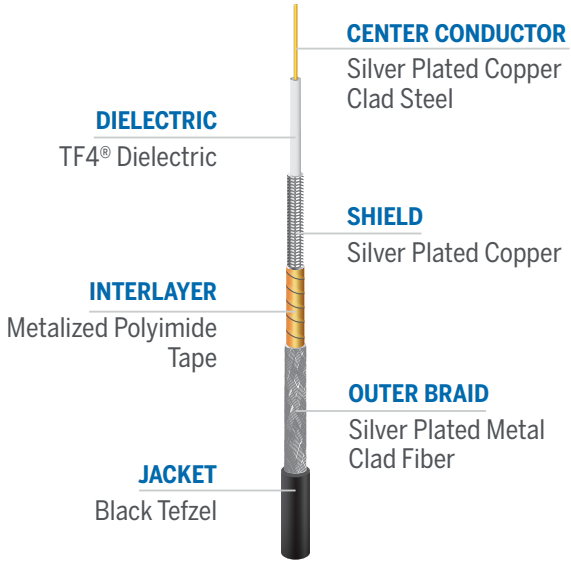
# InstaBend® PhaseStable 092

InstaBend® PhaseStable 092 is an Ultra-Flexible phase-stable coax assembly featuring a proprietary fluorocarbon dielectric, TF4®, eliminating the PTFE change phase occurring around 19 °C. PhaseTrack assemblies have the same triple-shield construction used in our popular SF®, SFT®, SilverLine®, and MilTtech® cables and are ideal for applications demanding stable phase over temperature.

## Features:

- Sold as cable assemblies
- Low outgassing materials per ASTM E595
- Class 100,000 clean room manufacturing
- Vented connectors, if applicable
- Radiation Resistance: 100 MRads




## Specifications

Ω Impedance 50 Ohms | Op Temp -65 to 150°C

| | Units | |
|---|---|---|
| Diameter | in (mm) | 0.103 (2.61) |
| Weight | lb/ft (g/m) | 0.0113 (17) |
| Minimum Bend Radius | in (mm) | 0.5 (12.7) |
| Maximum Frequency | GHz | 40 |
| Velocity of Propagation | % | 79.5 |
| Capacitance | pF/ft (pF/m) | 25.4 |
| Delay | ns/ft (ns/m) | 1.24 (4.07) |
| Sheilding | dB | -90 |

## Calculation

$$IL = (K1 \times \sqrt{f} + K2 \times f) \times \text{Cable Length} + \text{Connector Loss}$$

Cable Insertion Loss
f = Frequency (MHz)

Use K values with matching length unit

| K values | dB/ft | dB/m |
|---|---|---|
| K1 | 0.006575 | 0.021573 |
| K2 | 0.000009607 | 0.000031521 |

## Insertion loss & VSWR

| Stock Code | Max. Insertion Loss in dB @ 40GHz | Max. VSWR @ 40GHz |
|---|---|---|
| IE-00416-01 | 1.06 | 1.35 |
| IE-00416-02 | 1.29 | 1.35 |
| IE-00416-03 | 1.53 | 1.35 |
| IE-00416-04 | 1.76 | 1.35 |
| | Max. Insertion Loss in dB @ 27GHz | Max. VSWR @ 27GHz |
| IE-00417-01 | 0.83 | 1.50 |
| IE-00417-02 | 1.06 | 1.50 |
| IE-00417-03 | 1.29 | 1.50 |
| IE-00417-04 | 1.53 | 1.50 |
| IE-00417-05 | 1.76 | 1.50 |
| | Max. Insertion Loss in dB @ 27GHz | Max. VSWR @ 27GHz |
| IE-00418-01 | 1.06 | 1.35 |
| IE-00418-02 | 1.29 | 1.35 |
| IE-00418-03 | 1.53 | 1.35 |
| IE-00418-04 | 1.76 | 1.35 |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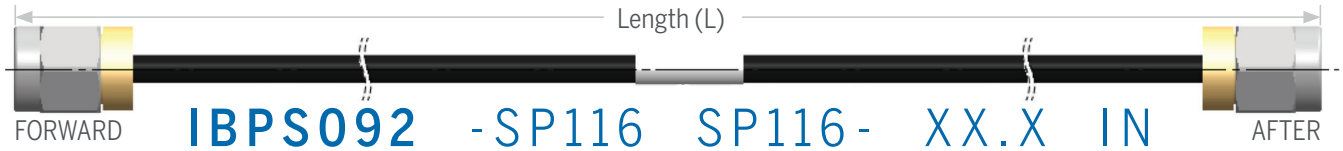
## Ordering Guide




IBPS092 -SP116 SP116- XX.X IN

Forward Connector | After Connector | Length | Units of measure: IN - Inchs

| Stock Code | Part-Number | Length (L) in inch |
|---|---|---|
| IE-00416-01 | IBPS092-KMKM-6.0IN | 6 |
| IE-00416-02 | IBPS092-KMKM-8.0IN | 8 |
| IE-00416-03 | IBPS092-KMKM-10.0IN | 12 |
| IE-00416-04 | IBPS092-KMKM-12.0IN | 10 |

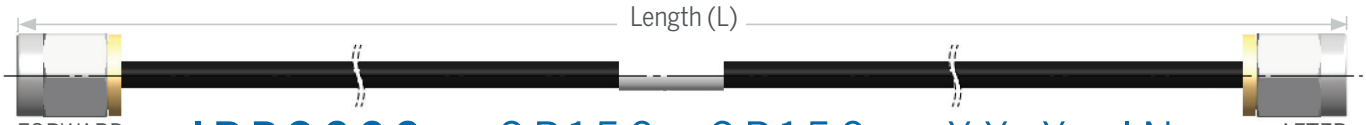
| Connector Code | Description | Connector Body | Center Contact | Connector Loss (per pair) |
|---|---|---|---|---|
| SP116 | Type K (M) Straight | Stainless Steel, Gold Plated | Beryllium Copper, Gold Plated | 0.06 x √(f) (GHz) |


IBPS092 -SP129 SP129- XX.X IN

Forward Connector | After Connector | Length | Units of measure: IN - Inchs

| Stock Code | Part-Number | Length (L) in inch |
|---|---|---|
| IE-00417-01 | IBPS092-MSMPFMSMPF-4.0IN | 4 |
| IE-00417-02 | IBPS092-MSMPFMSMPF-6.0IN | 6 |
| IE-00417-03 | IBPS092-MSMPFMSMPF-8.0IN | 8 |
| IE-00417-04 | IBPS092-MSMPFMSMPF-10.0IN | 10 |
| IE-00417-05 | IBPS092-MSMPFMSMPF-12.0IN | 12 |

| Connector Code | Description | Connector Body | Center Contact | Connector Loss (per pair) |
|---|---|---|---|---|
| SP129 | Type Mini SMP (F) Straight | Stainless Steel, Gold Plated | Beryllium Copper, Gold Plated | 0.06 x √(f) (GHz) |




IBPS092 -SP150 SP150- XX.X IN

Forward Connector | After Connector | Length | Units of measure: IN - Inchs

| Stock Code | Part-Number | Length (L) in inch |
|---|---|---|
| IE-00418-01 | IBPS092-SMSM-6.0IN | 6 |
| IE-00418-02 | IBPS092-SMSM-8.0IN | 8 |
| IE-00418-03 | IBPS092-SMSM-10.0IN | 10 |
| IE-00418-04 | IBPS092-SMSM-10.0IN | 12 |

| Connector Code | Description | Connector Body | Center Contact | Connector Loss (per pair) |
|---|---|---|---|---|
| SP150 | Type SMA (M) Straight | Stainless Steel, Gold Plated | Beryllium Copper, Gold Plated | 0.06 x √f (GHz) |

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