

InstaBend® 047

High Performance Microwave Assemblies



InstaBend® are flexible, coaxial microwave assemblies designed for interconnects between RF circuit cards, modules and enclosure panels. The cable can be bent very closely behind the connector, simplifying cable routing.

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

Ω Impedance
50 Ohms

Op Temp
-85 to +257°F
-65 to +125°C

Units

	Units	
Diameter	in (mm)	0.064 (1.63)
Weight	lb/ft (g/m)	0.004 (6)
Minimum Bend Radius	in (mm)	0.130 (3.30)
Maximum Frequency	GHz	50
Velocity of Propagation	%	70
Capacitance	pF/ft (pF/m)	29.9 (98.1)
Delay	ns/ft (ns/m)	1.45 (4.76)
Shielding	dB	>90

Calculation

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

Cable Insertion Loss
f = Frequency (MHz)

Use K values with
matching length unit

K values	dB/ft	dB/m
K1	0.01195	0.03920795
K2	0.000013	0.000042653

CENTER CONDUCTOR

Silver Plated Copper
Clad Steel

DIELECTRIC

PTFE

SHIELD

Silver Plated Copper
Clad Steel

OUTER BRAID

Silver Plated Copper
Clad Steel

JACKET

Blue FEP

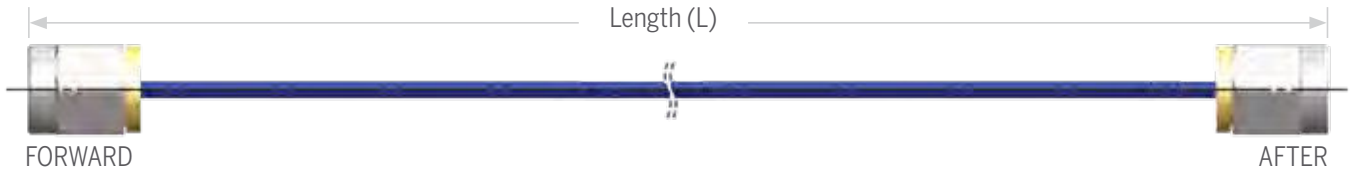
Insertion loss & VSWR

Stock Code	Max. Insertion Loss in dB @ 40GHz	Max. VSWR @ 40GHz
IE-00414-01	1.53	1.40
IE-00414-02	2.07	1.40
IE-00414-03	2.60	1.40
IE-00414-04	3.13	1.40
IE-00414-05	3.67	1.40
	Max. Insertion Loss in dB @ 22GHz	Max. VSWR @ 22GHz
IE-00415-01	1.10	1.35
IE-00415-02	1.48	1.35
IE-00415-03	1.85	1.35
IE-00415-04	2.23	1.35
IE-00415-05	2.61	1.35

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High Performance Microwave Assemblies

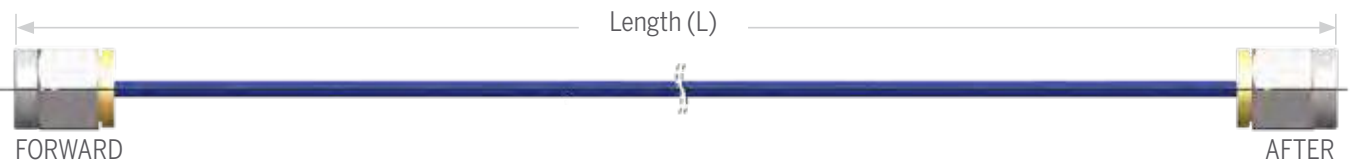
Ordering Guide



IBS047 - **SP121** **SP121** - **XX.X** **IN**
 Forward Connector After Connector Length Units of measure
 IN - Inches

Stock Code	Part-Number	Length (L) in inch
IE-00414-01	IBS047-KMKM-4.0IN	4
IE-00414-02	IBS047-KMKM-6.0IN	6
IE-00414-03	IBS047-KMKM-8.0IN	8
IE-00414-04	IBS047-KMKM-10.0IN	10
IE-00414-05	IBS047-KMKM-12.0IN	12

Connector Code	Description	Connector Body	Center Contact	Connector Loss (per pair)
SP121	Type K (M) Straight	Stainless Steel, Gold Plated	Beryllium Copper, Gold Plated	0.06 x v(f) (GHz)



IBS047 - **SP112** **SP112** - **XX.X** **IN**
 Forward Connector After Connector Length Units of measure
 IN - Inches

Stock Code	Part-Number	Length (L) in inch
IE-00415-01	IBS047-SMSM-4.0IN	4
IE-00415-02	IBS047-SMSM-6.0IN	6
IE-00415-03	IBS047-SMSM-8.0IN	8
IE-00415-04	IBS047-SMSM-10.0IN	100
IE-00415-05	IBS047-SMSM-12.0IN	12

Connector Code	Description	Connector Body	Center Contact	Connector Loss (per pair)
SP112	Type SMA (M) Straight	Stainless Steel, Gold Plated	Beryllium Copper, Gold Plated	0.06 x v(f) (GHz)



Global manufacturing capability: US, and Asia.



Heritage—in the air and on the ground, thousands of assemblies built over decades.



Assembled and tested assemblies provide assured performance.

Rev.3: 3/27/2023

Commercial Space Line

InstaBend® 086

High Performance Microwave Assemblies



InstaBend® are flexible, coaxial microwave assemblies designed for interconnects between RF circuit cards, modules and enclosure panels. The cable can be bent very closely behind the connector, simplifying cable routing.

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
- 90° torque resistance

Specifications

Ω Impedance
50 Ohms

Op Temp
-85 to 257°F
-65 to 125°C

Units

	Units	
Diameter	in (mm)	0.108 (2.74)
Weight	lb/ft (g/m)	0.013 (19)
Minimum Bend Radius	in (mm)	0.25 (6.35)
Maximum Frequency	GHz	50
Velocity of Propagation	%	70
Capacitance	pF/ft (pF/m)	29 (95.1)
Delay	ns/ft (ns/m)	1.45 (4.76)
Shielding	dB	>90

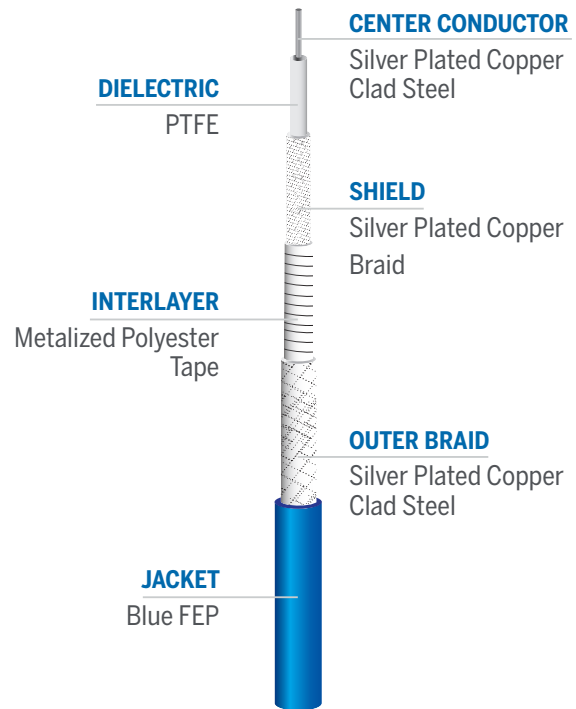
Calculation

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

Cable Insertion Loss
f = Frequency (MHz)

Use **K** values with
matching length unit

K values	dB/ft	dB/m
K1	0.006446	0.021148
K2	0.000013	0.000043



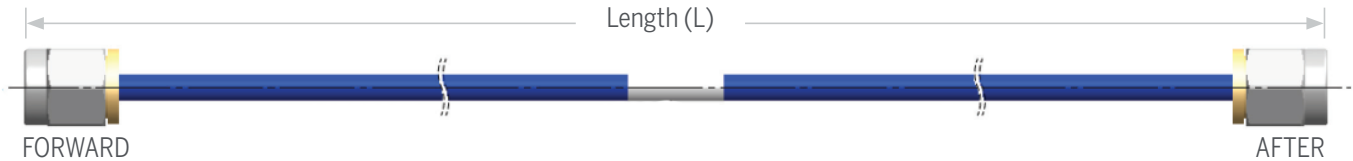
Insertion loss & VSWR

Stock Code	Max. Insertion Loss in dB @ 40GHz	Max. VSWR @ 40GHz
IE-00412-01	1.45	1.40
IE-00412-02	1.78	1.40
IE-00412-03	2.11	1.40
IE-00412-04	2.45	1.40
	Max. Insertion Loss in dB @ 22GHz	Max. VSWR @ 22GHz
IE-00413-01	1.02	1.35
IE-00413-02	1.24	1.35
IE-00413-03	1.47	1.35
IE-00413-04	1.71	1.35

InstaBend® 086

High Performance Microwave Assemblies

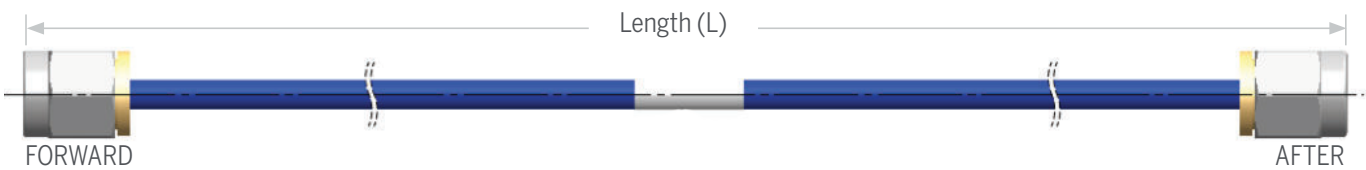
Ordering Guide



IBS086 - **SP120** **SP120** - **XX.X** **IN**
 Forward Connector After Connector Length Units of measure IN - Inchs

Stock Code	Part-Number	Length (L) in inch
IE-00412-01	IBS086-KMKM-6.0IN	6
IE-00412-02	IBS086-KMKM-8.0IN	8
IE-00412-03	IBS086-KMKM-10.0IN	10
IE-00412-04	IBS086-KMKM-12.0IN	12

Connector Code	Description	Connector Body	Center Contact	Connector Loss (per pair)
SP120	Type 2.92mm (M) Straight	Stainless Steel, Gold Plated	Beryllium Copper, Gold Plated	0.06 x v(f) (GHz)




IBS086 - **SP110** **SP110** - **XX.X** **IN**
 Forward Connector After Connector Length Units of measure IN - Inchs

Stock Code	Part-Number	Length (L) in inch
E-00413-01	IBS086-SMSM-6.0IN	6
IE-00413-02	IBS086-SMSM-8.0IN	8
IE-00413-03	IBS086-SMSM-10.0IN	10
IE-00413-04	IBS086-SMSM-12.0IN	12

Connector Code	Description	Connector Body	Center Contact	Connector Loss (per pair)
SP110	Type SMA (M) Straight	Stainless Steel, Gold Plated	Beryllium Copper, Gold Plated	0.06 x v(f) (GHz)


Global manufacturing capability: US, and Asia.


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Rev.2: 3/6/2023