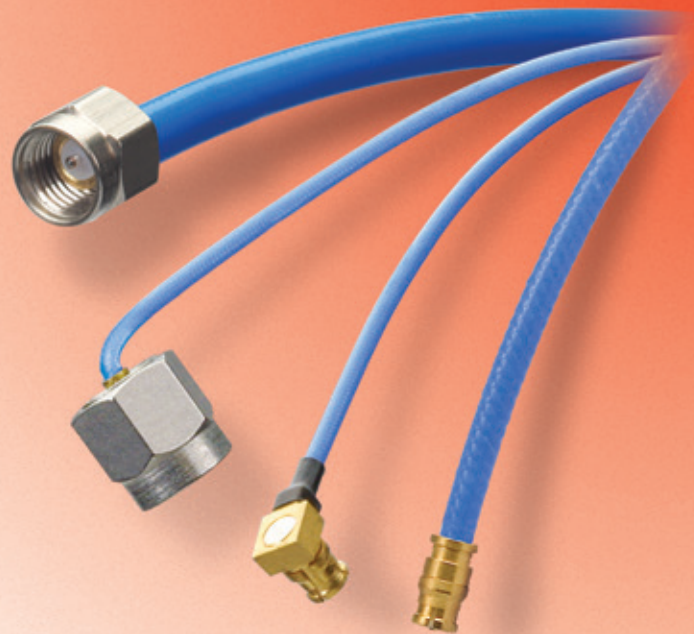


STORM FLEX®

047, 086, & 141 SERIES



STORM FLEX® 047 & 086

MINIATURE ASSEMBLIES

With 0.055" and 0.096" (1.40 mm and 2.44 mm) diameters, durable construction, and low profiles in SMA SP configuration, Storm Flex® miniature cables offer **superior electrical performance in a trouble-free, compact assembly.**

IDEAL WHEN:

- *Development of complicated semi-rigid cable drawings is prohibitive from a standpoint of time or cost.*
- *Expensive SMA right-angle connectors may be prohibitive from a standpoint of cost.*
- *Installation of other miniature cable assemblies has caused expensive or hard-to-find failures.*
- *High density devices require stable, miniature cable assemblies for connection during test.*

STORM FLEX® 141

Combining flexibility and durability with a larger diameter (0.160"/4.06 mm), Storm Flex® 141 maintains **excellent electrical characteristics through multiple flexures** and offers a **high strength flexible replacement for RG 402 semi rigid cable.**

FEATURES

- ~ Solid PTFE dielectric
- ~ Ultra-high strength, multilayer outer braid
- ~ 0.055", 0.096", & 0.160" (1.40 mm, 2.44 mm, & 4.06 mm) diameters
- ~ Wide range of low profile SMA, GPO®, and GPPO® connectors

BENEFITS

- ~ High compression resistance and greater durability
- ~ Eliminates cable breakage associated with repeated bending and handling
- ~ Provides alternatives to 0.047", 0.086", & 0.141" (1.19 mm, 2.18 mm, & 3.58 mm) semi-rigid cable – eliminating costs associated with time-consuming cable layout
- ~ Storm Flex® cables can be configured to solve tough packaging challenges

Need it NOW? We stock Storm Flex® 047, 086, & 141 Express assemblies in a number of popular lengths, all terminated with 18 GHz SMA male connectors.

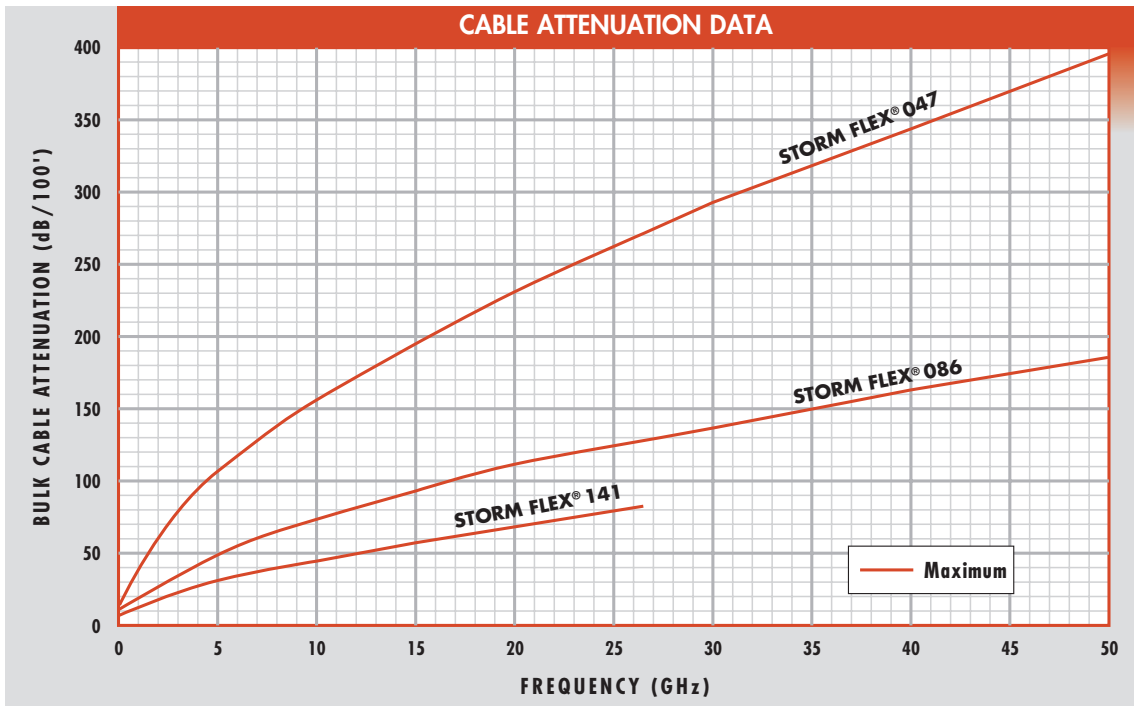
For applications requiring custom lengths or connector options, the standard Storm Flex® 047, 086, & 141 lines can be **configured to meet your unique requirements.**



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STORM MICROWAVE
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High value microwave and
electronic interconnect solutions

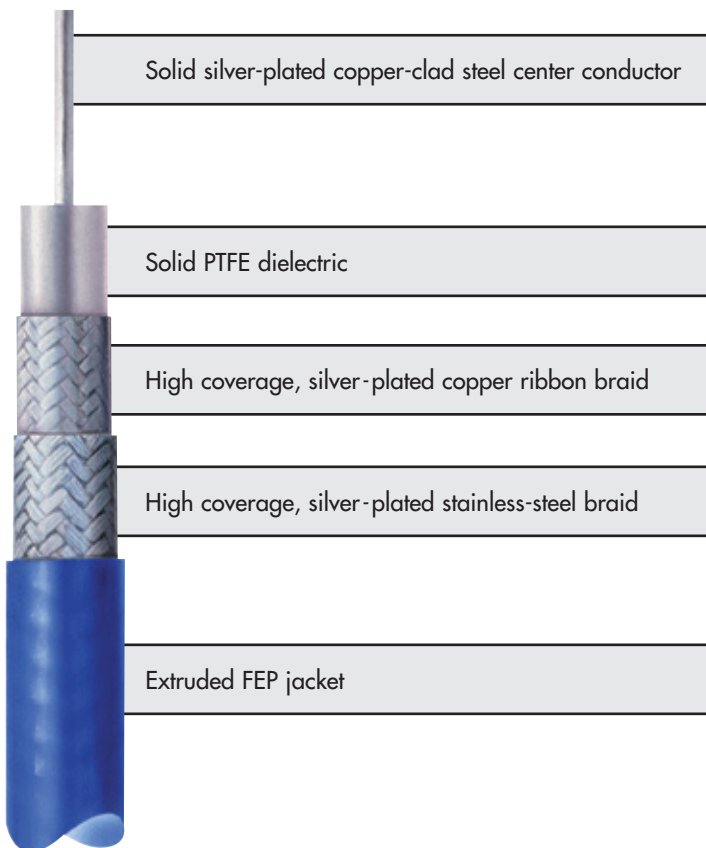
www.teledynestorm.com



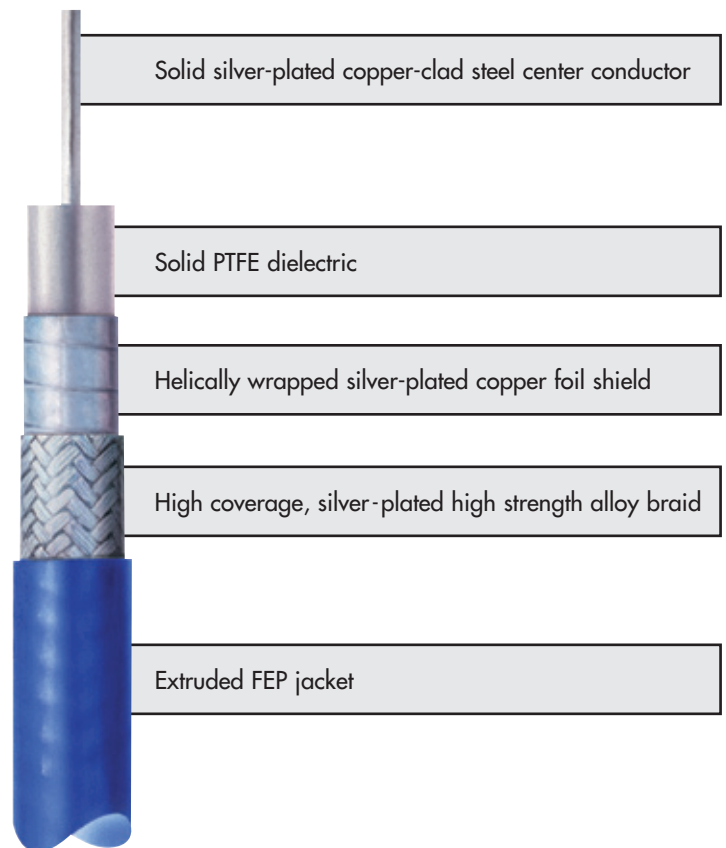
For cable assembly insertion loss, call us or visit our Web site, www.teledynestorm.com/microwave

CABLE CONSTRUCTION

Storm Flex® 047



Storm Flex® 086 & 141



SPECIFICATIONS	STORM FLEX®		
	047	086	141
Cable Designator	900	910	920
Diameter (in/mm)	0.055/1.40	0.096/2.44	0.160/4.06
Max Frequency (GHz)	50	50	26.5
Attenuation–Nominal @ 18 GHz (dB/ft)	1.94	0.94	0.60
Attenuation–Nominal @ 26.5 GHz (dB/ft)	2.42	1.17	0.76
Attenuation–Nominal @ 50 GHz (dB/ft)	3.52	1.71	–
Shielding Effectiveness (dB, 0-18 GHz)*	–85 or better	–90 or better	–90 or better
Phase Matching	Available (except Express)	Available (except Express)	Available (except Express)
Minimum Centerline Bend Radius (in/mm), static	0.100/2.54	0.187/4.75	0.320/8.13
Connector Retention (lbs/kg min), straight pull	10/4.54	10†/4.54†	40/18.14
Connector Retention (lbs/kg min), right angle pull	5/2.27	10†/4.54†	15/6.80
Weight (grams/ft & /m)	1.54/5.05	5.25/17.22	13.4/43.95
Temperature Range (°C)	–54 to +125	–54 to +125	–54 to +125

* Based on a 14"/355.6 mm assembly with SMA SP connectors

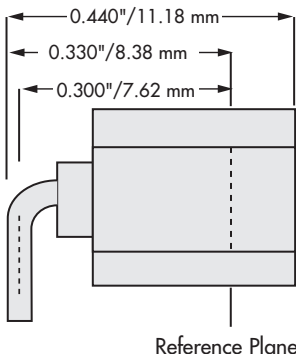
† 30 lb/13.61 kg straight and 20 lb/9.07 kg right angle pull strength can be achieved by using assembly p/n 910-0505. Consult Storm for details.

Ultra Durability & Low Profiles Lower Costs

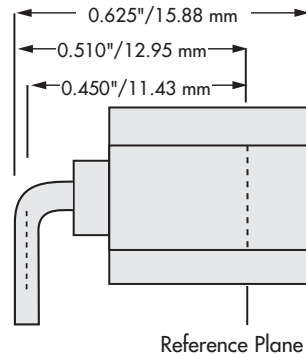
When lowering costs, saving space, or greater durability is needed, look to Storm Flex® assemblies. Due to the extremely strong construction, all Storm Flex® assemblies can withstand multiple flexures immediately behind the connectors without breaking or degrading. The benefit: fewer failures and reduced rework. In addition, the low profiles attainable using Storm Flex® 047 and 086 with SMA straight plug connectors make Storm Flex® miniature assemblies the ideal alternative to expensive SMA right-angle connectors.

Ultra Low Profile Storm Flex® 047

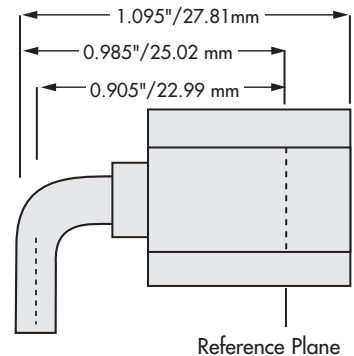
One of the lowest profiles available in the industry.



Low Profile Storm Flex® 086*



Storm Flex® 141†



The bend dimension with RA connector is 0.541"/13.74 mm (from reference plane to top of connector)

* Dimensions shown typical of 910-0202 configuration.

† Dimensions shown typical of 920-0202 configuration.

Specifications subject to change without notice.

When you need it NOW! Storm Flex® 047 and 086 Express assemblies—in the lengths listed below and terminated with 18 GHz SMA male connectors—are available off-the-shelf using the listed part numbers.

STORM FLEX® 047

■ **CONNECTOR COMBINATION PART NUMBERS***

CONNECTOR OPERATING FREQUENCY

	50 GHz	40 GHz	26.5 GHz		18 GHz					
	2.4 mm SP	GPPO® SJ	SMA SP	SSMA SP	SMA SP	GPPO® RAJ	GPO® SJ	GPO® RAJ		
50 GHz	2.4 mm SP	4040	2140	0340	3040	0240	2240	0640	0940	
40 GHz	GPPO® SJ	2140	2121	0321	2130	0221	2122	0621	0921	
26.5 GHz	SMA SP	0340	0321	0303	0330					
	SSMA SP	3040	2130	0330	3030	0230	2230	0630	0930	
18 GHz	SMA SP	0240	0221		0230	0202	0222	0206	0209	
	GPPO® RAJ	2240	2122		2230	0222	2222	0622	0922	
	GPO® SJ	0640	0621		0630	0206	0622	0606	0609	
	GPO® RAJ	0940	0921		0930	0209	0922	0609	0909	

ORDERING INFORMATION: Storm Flex® 047 Express

Part Number w/ SMA SP	Length (in/mm) ±0.125/3.18	2 GHz 10 GHz 18 GHz		
		VSWR, Typical		
		1.07:1	1.15:1	1.15:1
		INSERTION LOSS Nominal (dB)		
900-0202-006	6.00/152.40	0.37	0.83	1.16
900-0202-008	8.00/203.20	0.47	1.07	1.48
900-0202-010	10.00/254.00	0.56	1.30	1.80
900-0202-012	12.00/304.80	0.66	1.53	2.13
900-0202-014	14.00/355.60	0.76	1.76	2.45
900-0202-016	16.00/406.40	0.86	1.99	2.77

STORM FLEX® 086

■ **CONNECTOR COMBINATION PART NUMBERS***

CONNECTOR OPERATING FREQUENCY

	50 GHz	26.5 GHz		18 GHz					
	2.4 mm SP	SMA SP	SSMA SP	SMA SP	SMA SJ	GPO® SJ	GPO® RAJ	GPPO® SJ	
50 GHz	2.4 mm SP	4040	0340	3040	0240	0440	0640	0740	2140
	SMA SP	0340	0303	0330					
26.5 GHz	SSMA SP	3040	0330	3030	0230	0430	0630	0730	2130
	SMA SP	0240		0230	0202	0204	0206	0207	0221
	SMA SJ	0440		0430	0204	0404	0406	0407	0421
18 GHz	GPO® SJ	0640		0630	0206	0406	0606	0607	0621
	GPO® RAJ	0740		0730	0207	0407	0607	0707	0721
	GPPO® SJ	2140		2130	0221	0421	0621	0721	2121

ORDERING INFORMATION: Storm Flex® 086 Express

Part Number w/ SMA SP	Length (in/mm) ±0.125/3.18	2 GHz 10 GHz 18 GHz		
		VSWR, Typical		
		1.05:1	1.10:1	1.16:1
		INSERTION LOSS Nominal (dB)		
910-0202-004	4.00/101.60	0.17	0.35	0.50
910-0202-004.5	4.50/114.30	0.18	0.38	0.54
910-0202-005	5.00/127.00	0.19	0.41	0.58
910-0202-006	6.00/152.40	0.21	0.47	0.66
910-0202-007	7.00/177.80	0.24	0.52	0.74
910-0202-008	8.00/203.20	0.26	0.58	0.81
910-0202-009	9.00/228.60	0.28	0.63	0.89
910-0202-010	10.00/254.00	0.31	0.69	0.97
910-0202-012	12.00/304.80	0.35	0.80	1.13
910-0202-014	14.00/355.60	0.40	0.91	1.28
910-0202-016	16.00/406.40	0.45	1.02	1.44
910-0202-018	18.00/457.20	0.49	1.14	1.59

CONNECTOR CODES	
SP	Straight Plug
SJ	Straight Jack
RAJ	Right-Angle Jack

* Other connector styles available, including 2.9 mm & BNC; consult Storm.

GPO and GPPO are registered marks of Corning Gilbert Inc.

STORM FLEX® 141

■ **CONNECTOR COMBINATION PART NUMBERS***

CONNECTOR OPERATING FREQUENCY

	26.5 GHz	18 GHz	12 GHz		
	SMA SP†	SMA SP†	SMA SJ	N SP	SMA RAP
26.5 GHz	SMA SP†	0303			
18 GHz	SMA SP†		0202	0204	0250
	SMA SJ		0204	0404	0450
12 GHz	N SP		0250	0450	5050
	SMA RAP		0205	0405	0550

† Center conductor of cable used as contact.

For 26.5 GHz SMA SP connector with separate contact, use connector combination part numbers below:

	26.5 GHz	
26.5 GHz	SMA SP	1212
18 GHz	SMA SJ	0412
	N SP	1250
12 GHz	SMA RAP	0512

* Other connector styles available; consult Storm.

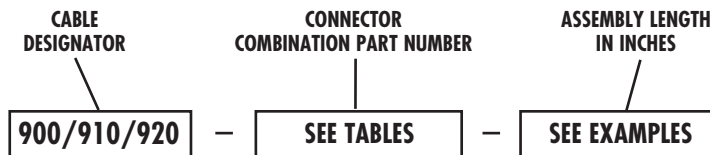
When you need it NOW! Storm Flex® 141 Express assemblies—in the lengths listed below and terminated with 18 GHz SMA male connectors—are available off-the-shelf using the listed part numbers.

ORDERING INFORMATION: Storm Flex® 141 Express

Part Number w/ SMA SP	Length (in/mm) ±0.125/3.18	2 GHz 10 GHz 18 GHz		
		VSWR, Typical		
		1.03:1	1.06:1	1.10:1
INSERTION LOSS Nominal (dB)				
920-0202-006	6.00/152.40	0.16	0.34	0.48
920-0202-010	10.00/254.00	0.21	0.48	0.68
920-0202-012	12.00/304.80	0.24	0.55	0.78
920-0202-014	14.00/355.60	0.27	0.62	0.88
920-0202-016	16.00/406.40	0.30	0.69	0.98
920-0202-018	18.00/457.20	0.33	0.76	1.08
920-0202-024	24.00/609.60	0.41	0.97	1.38
920-0202-036	36.00/914.40	0.58	1.39	1.98
920-0202-048	48.00/1219.20	0.74	1.81	2.58
920-0202-060	60.00/1524.00	0.91	2.23	3.18
920-0202-072	72.00/1828.8	1.08	2.64	3.78

CONNECTOR CODES	
SP	Straight Plug
SJ	Straight Jack
RAP	Right-Angle Plug

■ **ORDERING INFORMATION: Part Number Designation**



EXAMPLES:

900-0622-048 = Storm Flex® 047, GPO® SJ to GPPO® RAJ (assembly operates to 18 GHz), **48 inches**

910-0303-006 = Storm Flex® 086, SMA SP to SMA SP (assembly operates to 26.5 GHz), **6 inches**

910-0202-024 = Storm Flex® 086, SMA SP to SMA SP (assembly operates to 18 GHz), **24 inches**

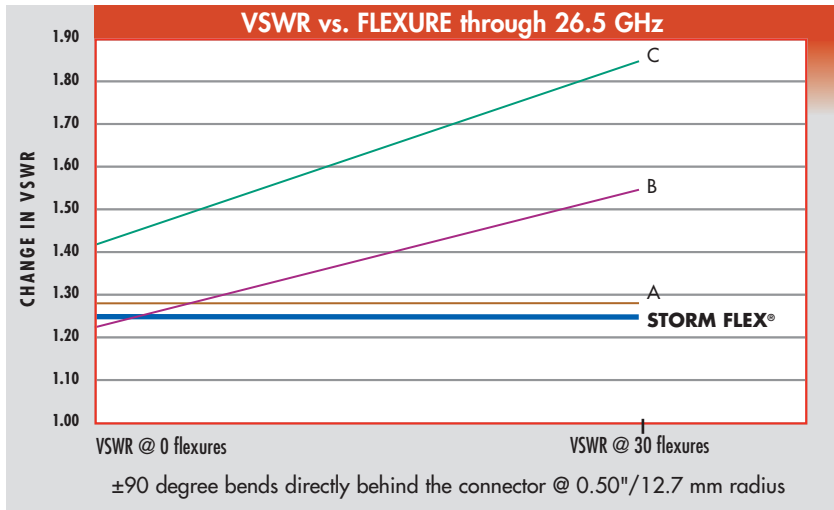
920-0204-014 = Storm Flex® 141, SMA SP [with center conductor of cable used as contact] to SMA SJ (assembly operates to 18 GHz), **14 inches**

920-0412-014 = Storm Flex® 141, SMA SJ to SMA SP [with separate contact] (assembly operates to 18 GHz), **14 inches**

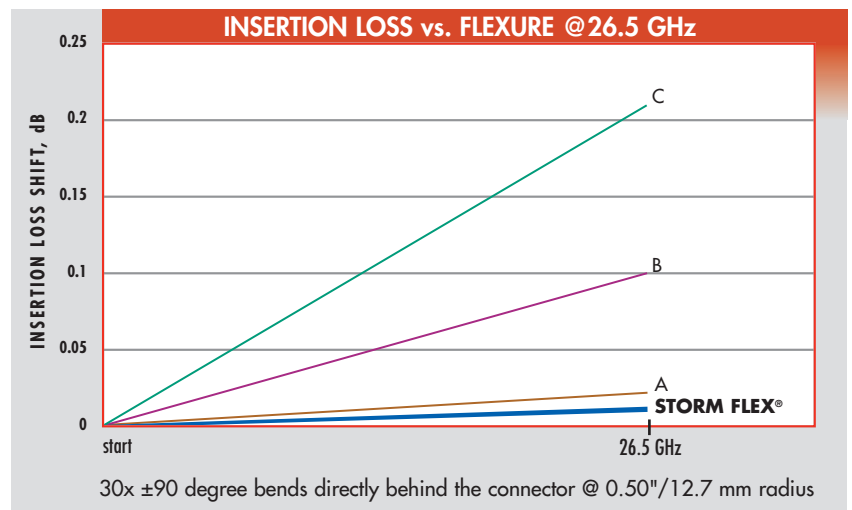
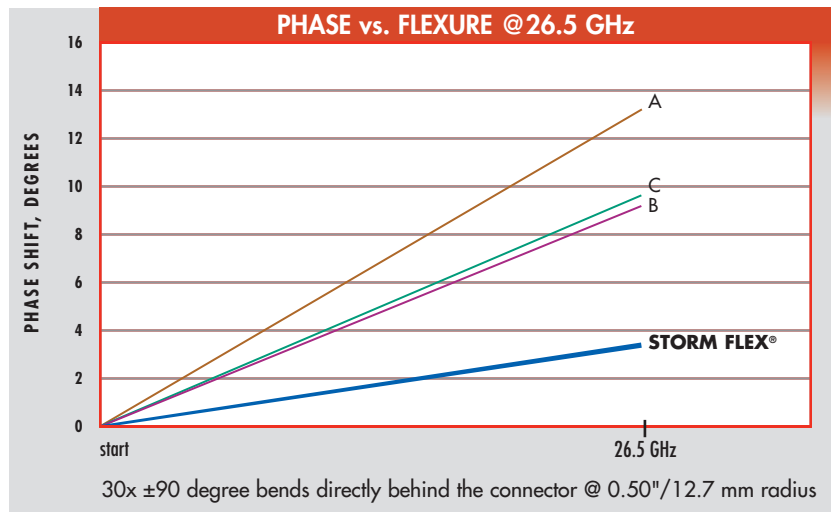
BUILT FOR USE . . . BUILT TO LAST

**THE FLEXIBILITY TO HANDLE TIGHT BENDS.
DURABILITY YOU CAN RELY ON.
PERFORMANCE TESTED.**

Built to be durable, Storm Flex® products provide consistent performance with flexure...**out-performing leading competitors when put to the test.**



- █ STORM FLEX®
- █ Competitor A
- █ Competitor B
- █ Competitor C



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storm_microwave@teledyne.com

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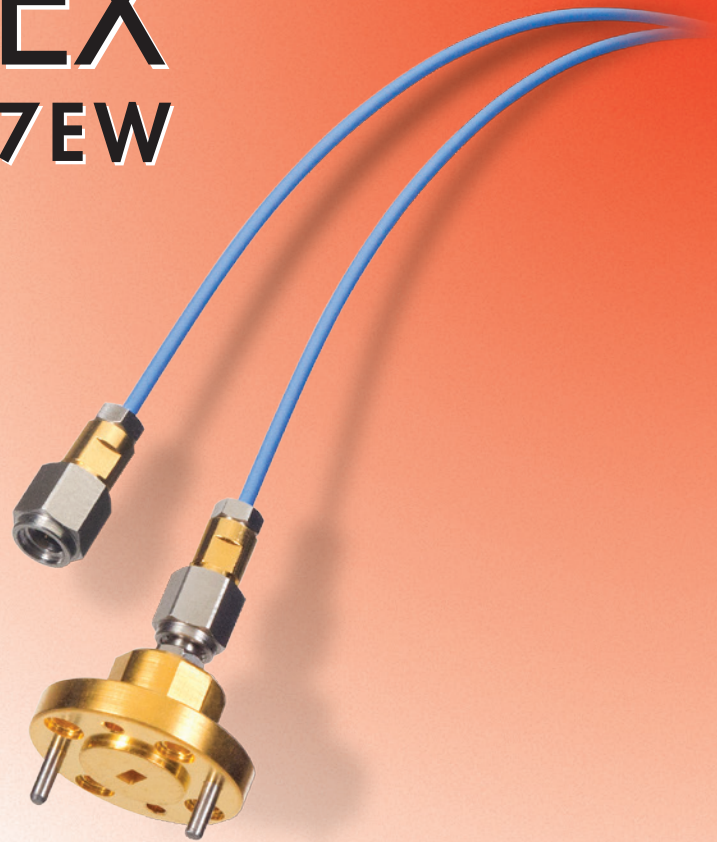
AS9100/ISO 9001 REGISTERED

09/14

Test data based on Storm Flex® 086 cable.

STORM FLEX®

SF047EW



E- AND W-BAND TEST ASSEMBLY



An SF047EW assembly offers test engineers the proven durability and robustness of Storm Flex® 047 cable, optimized for coaxial connectivity at frequencies up to 110 GHz.

SF047EW cable can withstand handling and flexing and still match the original Insertion Loss and VSWR performance at frequencies previously addressed by waveguides.

While useful in controlling loss, the waveguide's rigidity did not allow for flexibility in test set-ups.

And, early attempts at higher frequency - flexible cables resulted in fragile, unstable, and high-reflection assemblies.

SF047EW assemblies are designed to address all of those issues, delivering:

- *The flexibility to accommodate a variety of test set-ups*
- *Durable, trouble-free construction*
- *Consistent, repeatable electrical performance with flexure*
- *Optimized connectivity at frequencies up to 110 GHz*

FEATURES

- ~ *Solid PTFE dielectric*
- ~ *Ultra-high strength outer braid*
- ~ *Optimized for use in E and W bands*

BENEFITS

- ~ *High compression resistance and greater durability*
- ~ *Eliminates cable breakage associated with repeated bending and handling*
- ~ *Consistent, repeatable electrical performance with flexure*
- ~ *Enables coaxial connectivity up to 110 GHz*
- ~ *Eliminates the need for waveguides*



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STORM FLEX®

SF047EW

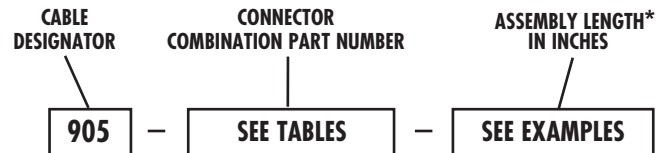
E- AND W-BAND
TEST ASSEMBLY

SPECIFICATIONS	STORM FLEX® 047EW
Cable Designator	905
Diameter (in/mm)	0.055/1.40
Max Frequency (GHz)	110
Attenuation–Nominal @ 67 GHz (dB/ft)	4.48
Attenuation–Nominal @ 90 GHz (dB/ft)	5.09
Attenuation–Nominal @ 110 GHz (dB/ft)	5.87
Shielding Effectiveness (dB, 0-18 GHz)	–85 or better
Minimum Centerline Bend Radius (in/mm), static	0.040/1.016
Connector Retention (lbs/kg min), straight pull	10/4.54
Connector Retention (lbs/kg min), right angle pull	5/2.27
Weight (grams/ft & /m)	1.54/5.05
Operating Temperature Range (°C)	–55 to +85

Insertion loss stability verified per VDI/VDE/DGQ/DKD 2622 Part 19

Specifications subject to change without notice.

ORDERING INFORMATION: Part Number Designation



EXAMPLES:

905-4243-048 = Storm Flex® 047EW, 1 mm SP to 1 mm SJ (assembly operates to 110 GHz), 48 inches

905-4343-048 = Storm Flex® 047EW, 1 mm SJ to 1 mm SJ (assembly operates to 110 GHz), 48 inches

* Max assembly length is 84 in/2.1 m

CONNECTOR COMBINATION PART NUMBERS

CONNECTOR OPERATING FREQUENCY

	1.0 mm SP	1.0 mm SJ
110 GHz	4242	4243
	4243	4343

CONNECTOR CODES

SP	Straight Plug
SJ	Straight Jack



AS9100/ISO 9001 REGISTERED

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