

StabilityWafer™ Microwave/RF Cable Assemblies

DATA SHEET / 2Z-015

THE INDUSTRY'S BEST PHASE
STABLE CABLE ASSEMBLY JUST
GOT BETTER!



MODELS:

SW-35 // 3.5mm color-coded StabilityWafer™ cables

SW-292 // 2.92mm color-coded StabilityWafer™ cables

SW-24 // 2.4mm color-coded StabilityWafer™ cables

SW-185 // 1.85mm color-coded StabilityWafer™ cables



StabilityWafer™ Microwave/RF Cable Assemblies

SERIES SW-35, SW-292, SW-24, SW-185

Features and Benefits

- > Stable and repeatable electrical performance
- > Flexible to facilitate easy installation
- > Small profile for tight spacing requirements
- > Straight, right-angle and extended 90° and 83° connectors for optimized connections to probes
- > Color-coded connectors to avoid damage caused by connector

Typical Applications

- > Wafer probing



Stability™ Specifications

StabilityWafer™ Cable Type	Frequency	Typical Phase Stability with Flexure	Typical Amplitude Stability with Flexure
SW-185	67 GHz	±5°	±0.15 dB
SW-24	50 GHz	±3°	±0.05 dB
SW-292	40 GHz	±2°	±0.05 dB
SW-35	26.5 GHz	±2°	±0.04 dB

Electrical Specifications

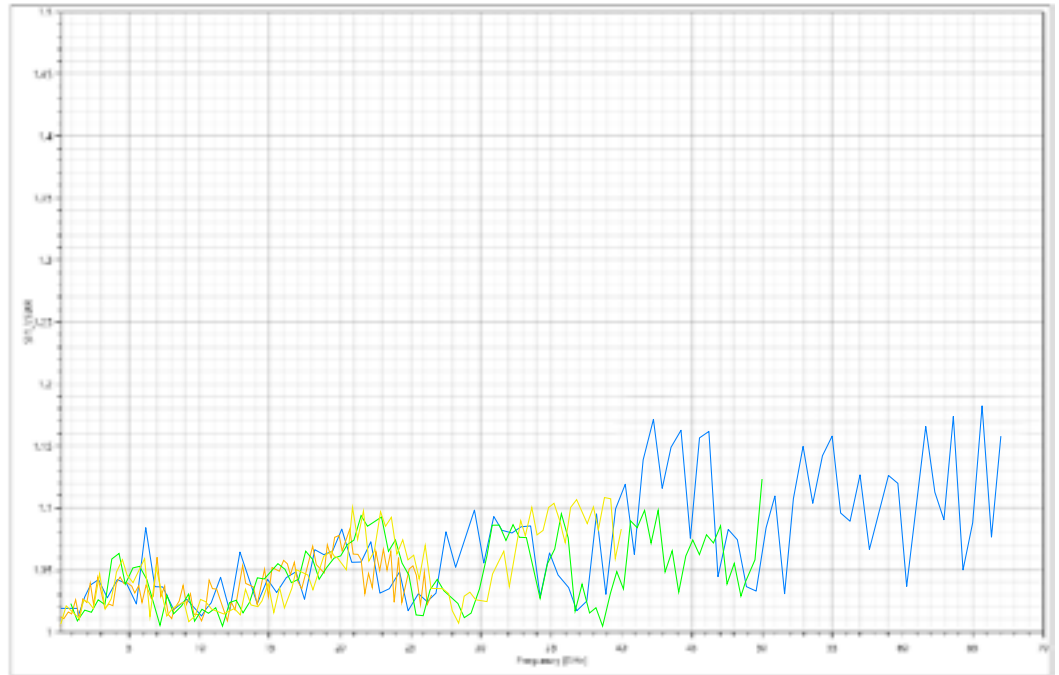
Stability™ Cable Type	SW-185	SW-24	SW-292	SW-35
Maximum Frequency	67 GHz	50 GHz	40 GHz	26.5 GHz
Typical Insertion Loss (cable only)	1.79 dB/ft	1.52 dB/ft	1.34 dB/ft	1.07 dB/ft
VSWR (typical)	1.20:1	1.15:1		1.10:1
VSWR (maximum)	1.40:1	1.30:1	1.25:1	
Typical Phase Stability (degree)	±5°	±3°	±2°	
Max Phase Stability (degree)	±14°	±10.5°	±8.5°	± 5.5°
Typical Amplitude Stability (dB)	±0.15 dB	±0.05 dB		±0.04 dB
Max Amplitude Stability (dB)	±0.20 dB	±0.10 dB		
Phase Stability vs Temp	<4°/m/GHz (-40°+105°C)			
Impedance (nominal)	50 ohm			
Velocity of Propagation	74% (nominal)			
Shielding Effectiveness	> 90 dB (DC-18 GHz)			
Time Delay (nominal)	1.34 ns/ft (4.5 ns/m)			

Mechanical Specifications

Stability™ Cable Type	SW-185	SW-24	SW-292	SW-35
Center Conductor Material	Silver Plated Copper			
Connector Outer Diameter (nominal)	0.36 in (9.2mm)			
Cable Outer Diameter (nominal)	0.1 in (2.6mm)			
Nominal Weight	0.237 oz/ft			
Flex Life Cycles (typical)	>10,000			
Connector Mating Cycles	>5,000			
Static. Bend Radius	0.51 in (13mm)			
Dynamic. Bend Radius	1.1 in (28mm)			
Crush Resistance	>34 lbf/in (6 kgf/cm)			
Operating Temperature Range	-40°+122 °F(-40°C to 105°C)			
ROH/Reach	Yes			

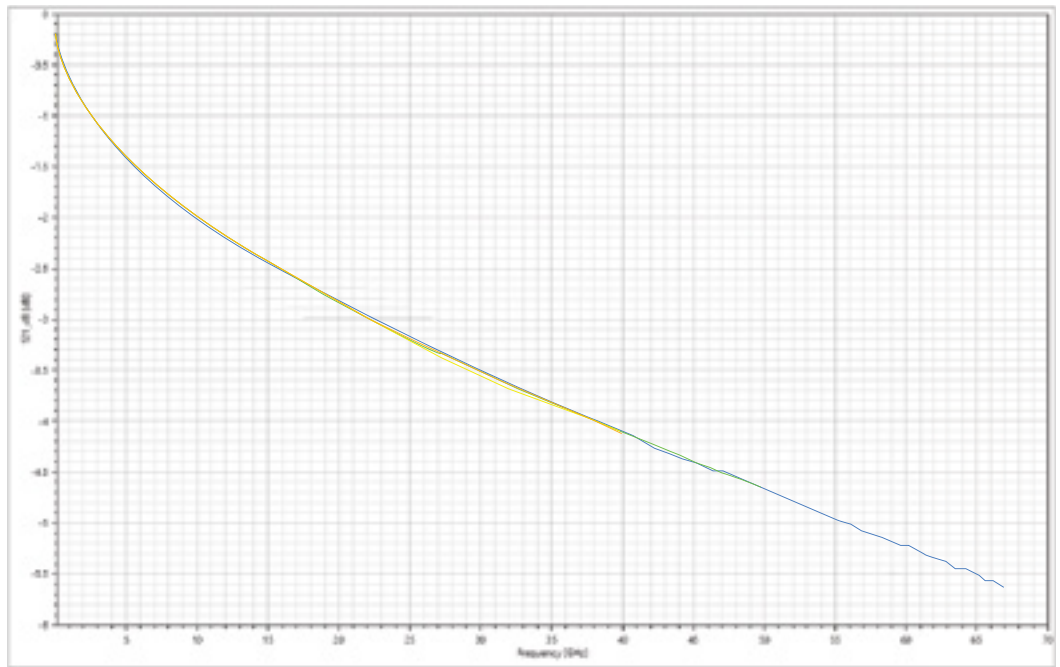
Maury StabilityWafer™ Cable Assembly Typical Performance

Maury StabilityWafer™
36" Cable Assembly
Typical VSWR



■ SW-185-LL
 ■ SW-24-LL
 ■ SW-292-LL
 ■ SW-35-LL

Maury StabilityWafer™ 36"
Cable Assembly Typical
Insertion Loss



■ SW-185-LL
 ■ SW-24-LL
 ■ SW-292-LL
 ■ SW-35-LL

Max Insertion Loss/Attenuation

(1:1 VSWR, 25 C, Sea Level, Cable Only)

Freq (GHz)	SW-185 (dB/100 ft)	SW-24 (dB/100 ft)	SW-292 (dB/100 ft)	SW-35 (dB/100 ft)
1	19.2	19.2	19.2	19.2
2	27.37	27.37	27.37	27.37
4	39.14	39.14	39.14	39.14
6	48.35	48.35	48.35	48.35
8	56.23	56.23	56.23	56.23
12	69.7	69.7	69.7	69.7
18	86.57	86.57	86.57	86.57
26.5	106.77	106.77	106.77	106.77
40	133.94	133.94	133.94	—
50	151.7	151.7	—	—
67	179	—	—	—

Average Power Handling

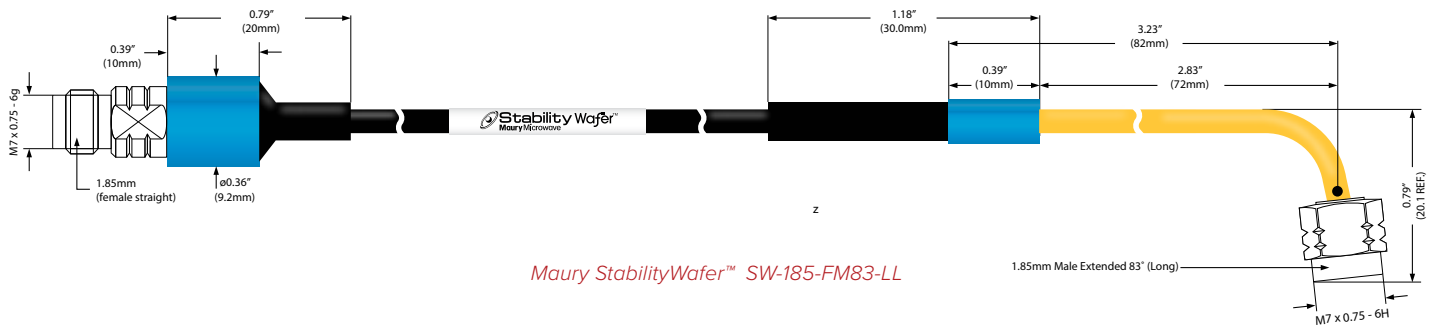
(1:1 VSWR, 25 C, Sea Level, Cable Only)

Freq (GHz)	SW-185 Watts (Max)	SW-24 Watts (Max)	SW-292 Watts (Max)	SW-35 Watts (Max)
1	271	271	271	271
2	190	190	190	190
4	133	133	133	133
6	108	108	108	108
8	93	93	93	93
12	75	75	75	75
18	60	60	60	60
26.5	49	49	49	49
40	39	39	39	—
50	34	34	—	—
67	29	—	—	—

StabilityWafer™ Dimensions



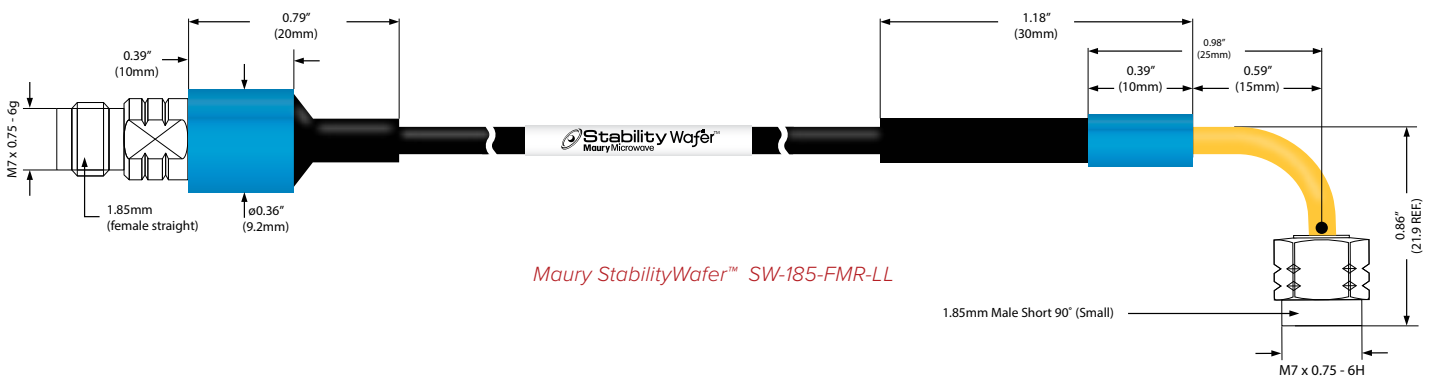
Maury StabilityWafer™ SW-185-FM-LL



Maury StabilityWafer™ SW-185-FM83-LL



Maury StabilityWafer™ SW-185-FM90-LL

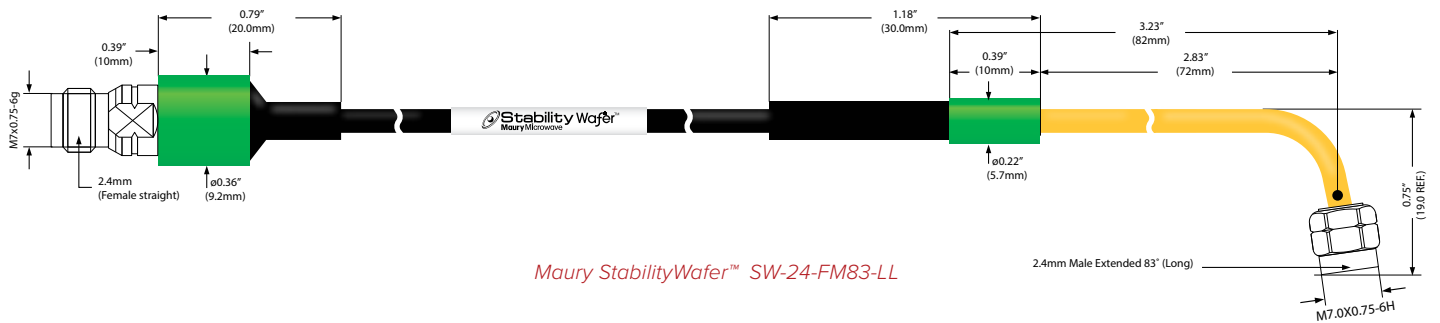


Maury StabilityWafer™ SW-185-FMR-LL

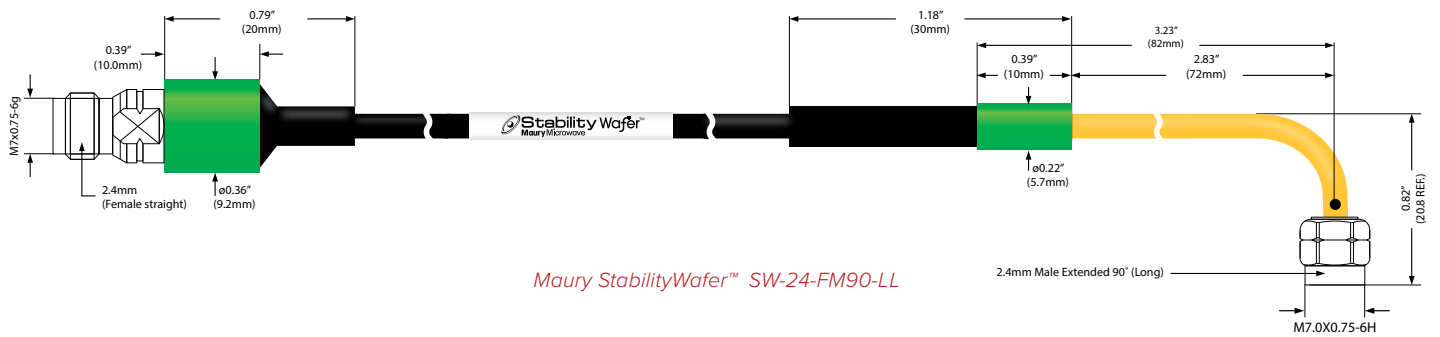
StabilityWafer™
Dimensions



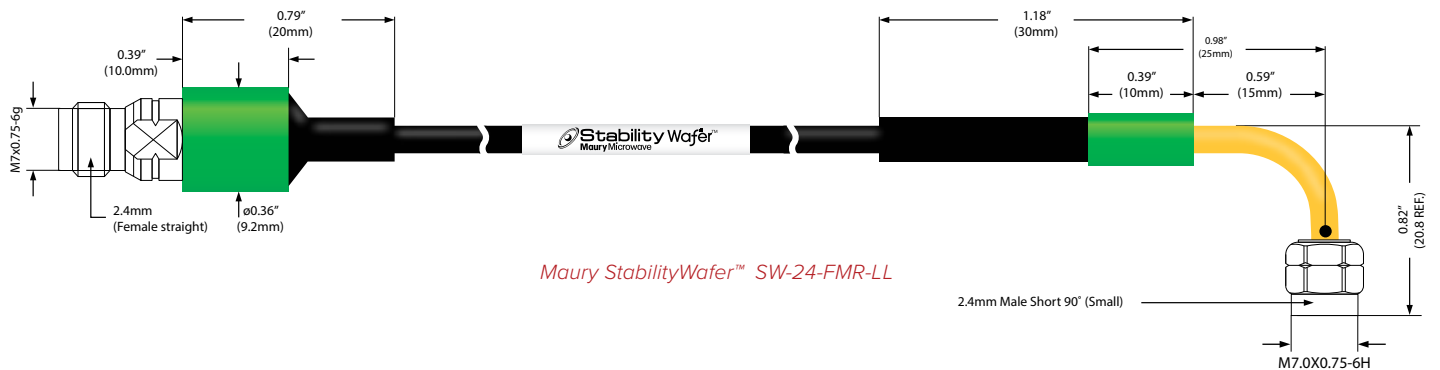
Maury StabilityWafer™ SW-24-FM-LL



Maury StabilityWafer™ SW-24-FM83-LL



Maury StabilityWafer™ SW-24-FM90-LL

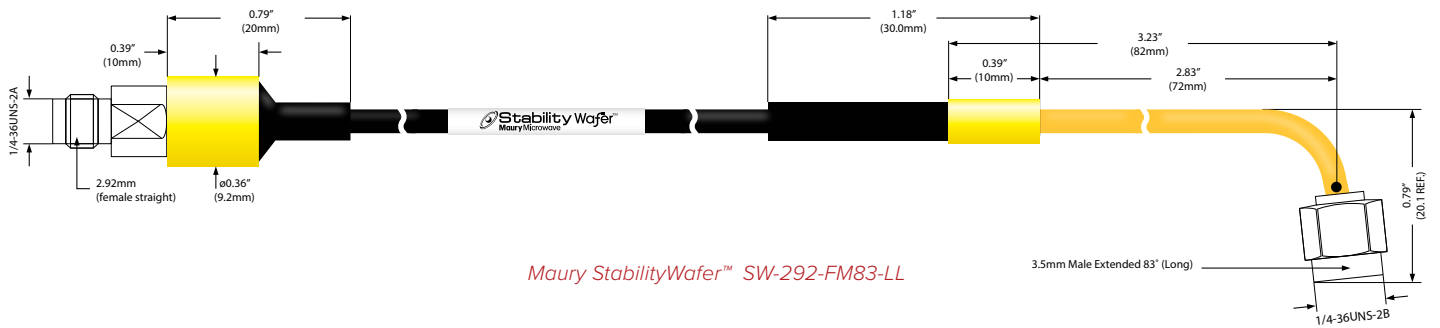


Maury StabilityWafer™ SW-24-FMR-LL

StabilityWafer™
Dimensions



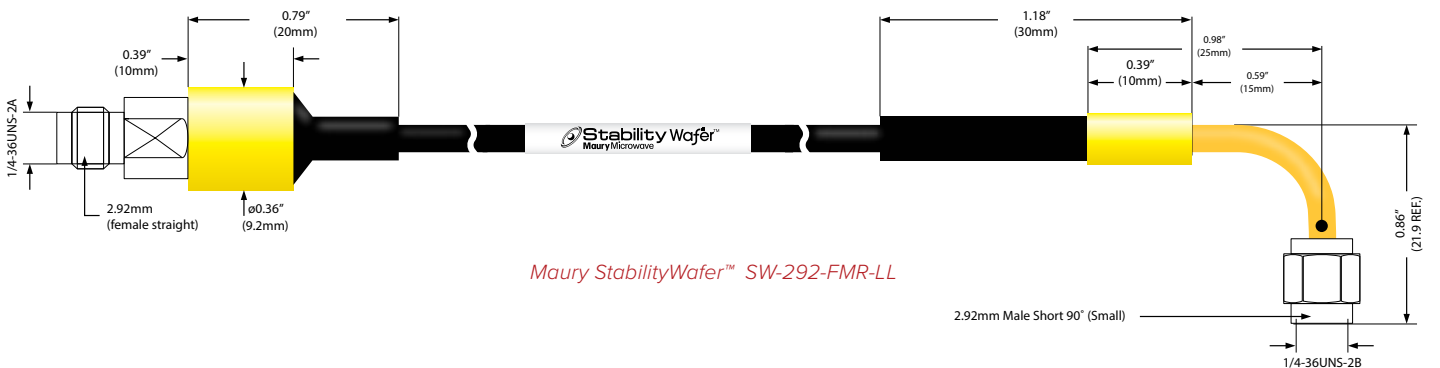
Maury StabilityWafer™ SW-292-FM-LL



Maury StabilityWafer™ SW-292-FM83-LL



Maury StabilityWafer™ SW-292-FM90-LL

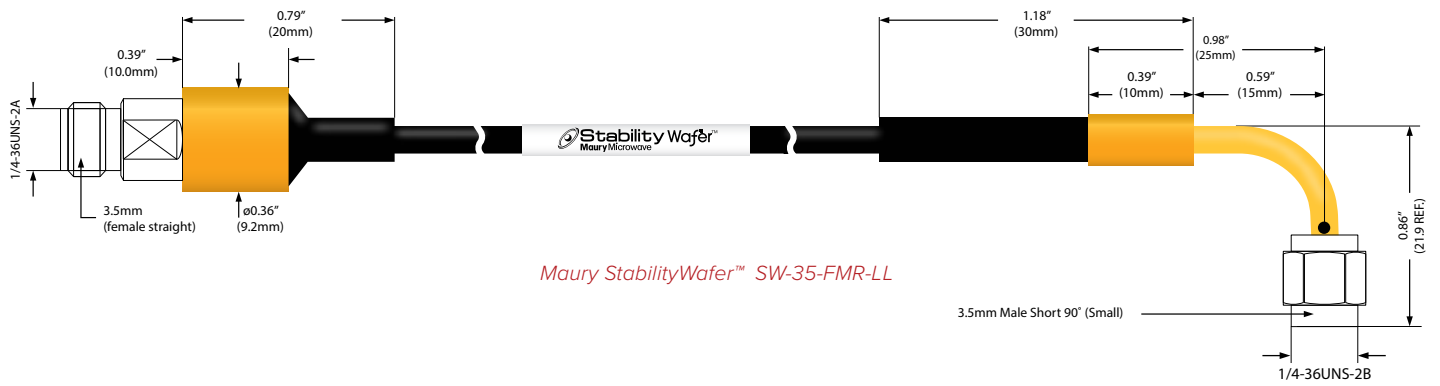


Maury StabilityWafer™ SW-292-FMR-LL

StabilityWafer™
Dimensions



Maury StabilityWafer™ SW-35-FM-LL



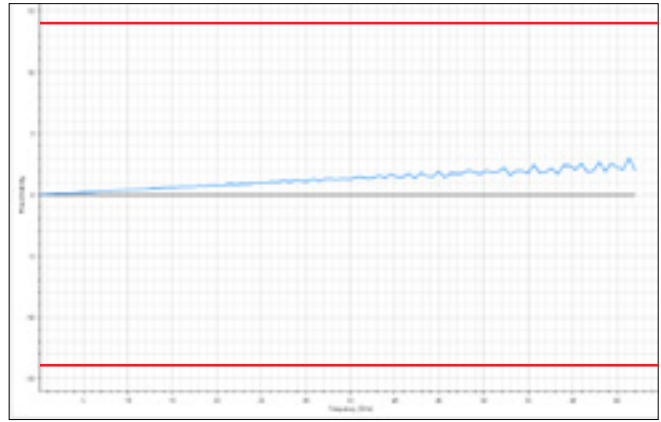
Maury StabilityWafer™ SW-35-FMR-LL

Phase Stability

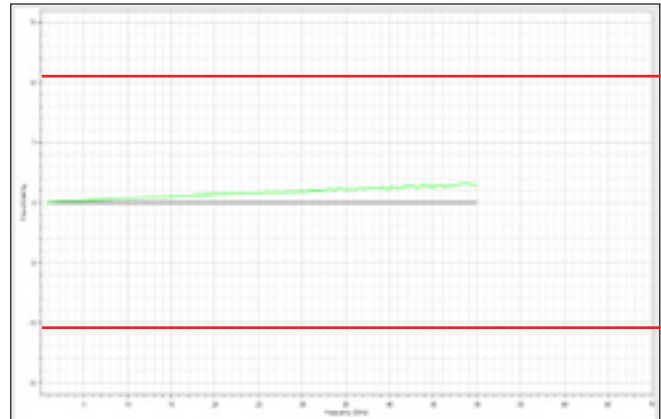
The maximum value for phase and amplitude stability was established using the following method. The cable was terminated with a short. With the cable in a straight position the VNA was normalized. The cable was coiled 180° around a mandrel 4 inches in diameter counter-clockwise and held in position for one sweep. The maximum deviation over the frequency range was recorded. The cable was then coiled 180° around the mandrel clockwise and held in position for one sweep and the maximum deviation was recorded. The cable was then returned to its original position for one sweep and the maximum deviation was recorded.

The plots on the right show the recorded worst-case phase variation.

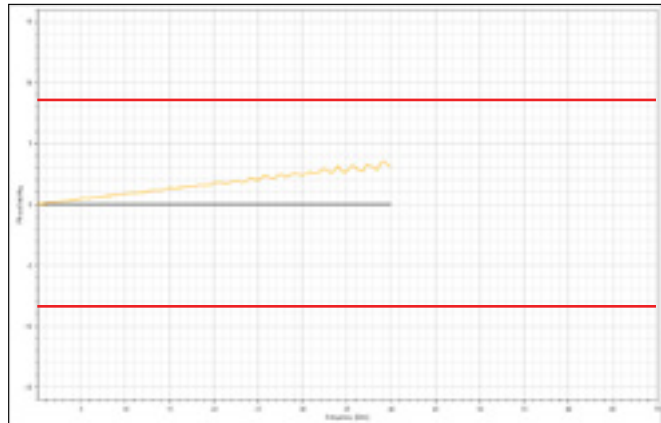
Exemplary data for SW-185-FM-36



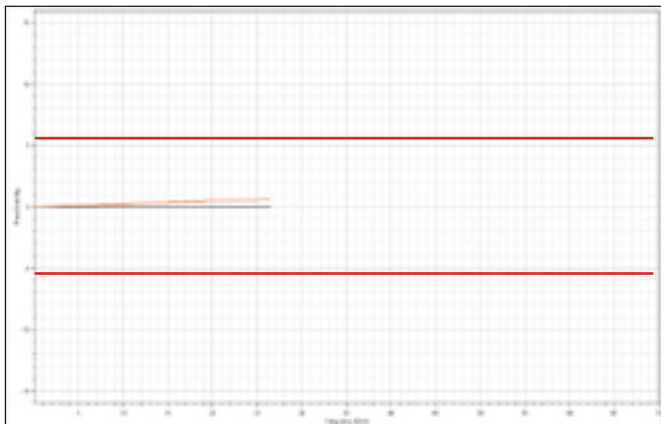
Exemplary data for SW-24-FM-36



Exemplary data for SW-292-FM-36



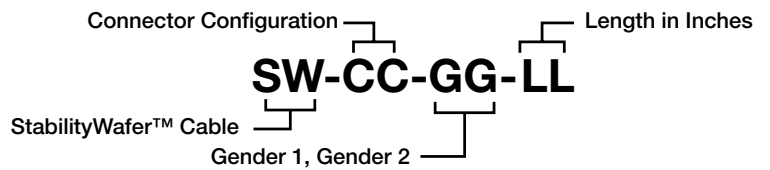
Exemplary data for SW-35-FM-36





Ordering Instructions for StabilityWafer™ Cable Assemblies

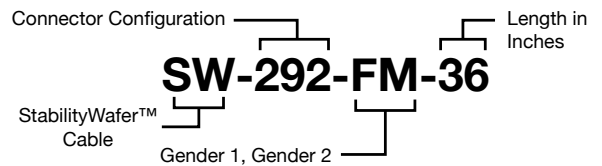
Standard StabilityWafer™ Cable Assemblies



CC	GG	LL (Standard Lengths)
	FM (Female To Male)	
	FMR (Female To Male Short 90°)	
35 (3.5mm)	FM90 (Female To Male Extended 90°)	36
292 (2.92mm)	FM83 (Female To Male Extended 83°)	48
24 (2.4mm)	MM (Male To Male)	60
185 (1.85mm)	MMR (Male To Male Short 90°)	
	MM90 (Male To Male Extended 90°)	
	MM83 (Male To Male Extended 83°)	

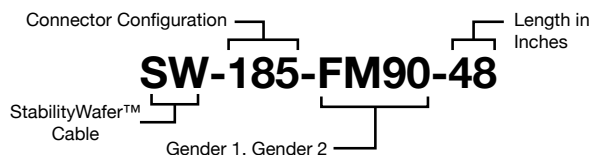
EXAMPLE:

The following is a StabilityWafer™ cable assembly with 2.92mm female connector on one end and 2.92mm male connector on the other end, and 36 inches overall length.



EXAMPLE:

The following is a StabilityWafer™ cable assembly with 1.85mm female connector on one end and male extended 90° connector on the other end, and 48 inches overall length.



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