



## **RFORANGE®**

### MegaPhase RF Orange Flexible Cable To 110 GHz



The MegaPhase RF Orange® product line now features 110 GHz capabilities! This rugged, armored test cable allows for excellent VSWR, phase and amplitude stability versus flexure and temperature. Whether you're in a lab, production environment, or building an ATE, this rugged test cable provides a long service life with repeatable performance throughout the life cycle of the cable.

- Phase Stable
- Low VSWR
- Armored
- Ultra-Flexible

#### Electrical Data

**Maximum Frequency:**  
110 GHz

**Impedance:**  
50 Ω nominal

**Propagation Velocity:**  
TM32 69% nominal  
TM67 80% nominal  
TM110 78.7 % nominal

**Time Delay:**  
TM32 1.47 ns/ft (4.82 ns/m)  
TM67 1.27 ns/ft. (4.167 ns/m)  
TM110 1.291 ns/ft. (4.236 ns/m)

**Dielectric Withstanding Voltage:**  
TM32 10 kV at 60 Hz  
TM67 1.2 kV at 60 Hz  
TM110 400 V at 60 Hz

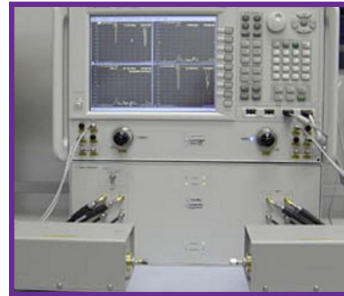
**Capacitance:**  
TM32 29.0 pF/ft (95.1 pF/m)  
TM67 25.4 pF/ft. (83.3 pF/m)  
TM110 25.82 pF/ft. (84.71 pF/m)

#### Mechanical Data

**Outer Diameter:**  
0.285 in (0.724 cm)

**Static Bend Radius:**  
1.5 in (3.81 cm)

**Max. Operating Temperature:**  
-67 to 275° F (-55 to 135° C)  
TM32 includes TM26, TM18, TM8, TM4  
TM67 includes TM50, TM40, TM34  
TM110 includes TM67



#### Cable Construction

**Inner Conductor:** Solid Ag-plated Cu

**Dielectric:**

TM32 PTFE

TM67, TM110 Foamed FEP

**Outer Conductor:** TM 32 - GrooveTube® Cu  
TM 67 / TM 110 - Ag plated Cu/  
Ag plated Cu

**Standard Finish:** Polyolefin over  
Metallic Braid

#### Available Connectors

(dependent on cable type)  
1.0mm 1.85mm. 2.4mm. 2.92mm, 3.5mm,  
BNC, SMA, TNC, Type N,

#### Maximum Assembly Length

(Consult Factory)



## MegaPhase RF Orange Flexible Cable To 110 GHz (continued)

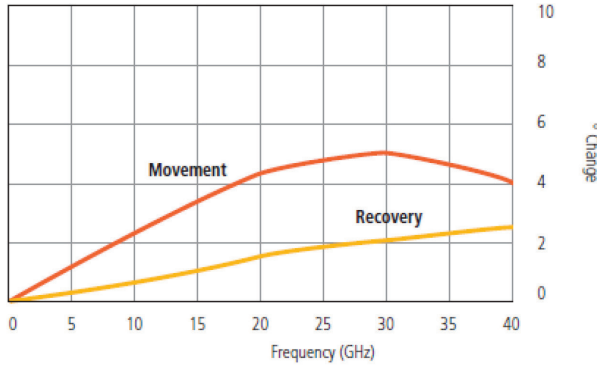
### Specifications

Frequency		TM32 Series*		TM67 Series**		TM110 Series***		Conn Loss dB	VSWR
		Attenuation		Attenuation		Attenuation			
Band	GHz	dB/ft	dB/m	dB/ft	dB/m	dB/ft	dB/m		
UHF	0.3	0.062	0.203	0.104	0.341	0.167	0.548	0.006	1.10
	0.5	0.082	0.268	0.135	0.443	0.217	0.711	0.009	
	0.8	0.106	0.348	0.172	0.566	0.276	0.904	0.012	
L	1.0	0.120	0.394	0.194	0.635	0.309	1.014	0.014	
S	2.0	0.178	0.585	0.279	0.915	0.442	1.451	0.024	1.15
	2.4	0.199	0.652	0.307	1.009	0.486	1.596	0.027	
	3.0	0.227	0.744	0.347	1.137	0.547	1.793	0.032	
C	4.0	0.270	0.885	0.405	1.328	0.636	2.087	0.040	1.20
	6.0	0.347	1.138	0.505	1.658	0.789	2.588	0.055	
X	8.0	0.417	1.367	0.593	1.945	0.921	3.020	0.070	1.20
	10.0	0.482	1.580	0.672	2.205	1.039	3.408	0.084	1.25
	12.4	0.555	1.822	0.759	2.491	1.168	3.832	0.101	1.30
Ku	15.0	0.631	2.070	0.847	2.779	1.297	4.255	0.118	1.35
	18.0	0.715	2.345	0.941	3.089	1.435	4.707	0.139	
K	20.0	0.769	2.522	1.001	3.285	1.522	4.992	0.152	1.40
	22.0	0.821	2.695	1.059	3.475	1.605	5.266	0.165	
	24.0	0.873	2.865	1.115	3.659	1.686	5.530	0.178	
	26.5	0.937	3.073	1.183	3.881	1.783	5.849	0.194	
Ka	28.0	0.974	3.196	1.223	4.011	1.839	6.035	0.204	1.45
	30.0	1.024	3.358	1.274	4.181	1.913	6.277	0.217	
	32.0	1.072	3.518	1.325	4.347	1.985	6.513	0.230	
	34.0			1.375	4.510	2.055	6.743	0.243	
	36.0			1.423	4.669	2.124	6.969	0.256	
V	40.0			1.518	4.980	2.257	7.406	0.281	1.50
	45.0			1.633	5.356	2.417	7.931	0.313	
	50.0			1.743	5.719	2.571	8.436	0.344	1.55
	60.0			1.955	6.414	2.864	9.396	0.406	
	67.0			2.097	6.881	3.059	10.035	0.450	1.60
	70.0					3.140	10.302	0.468	
W	80.0					3.403	11.166	0.530	1.60
	90.0					3.656	11.995	0.591	
	100.0					3.900	12.795	0.652	
	110.0					4.136	13.571	0.713	

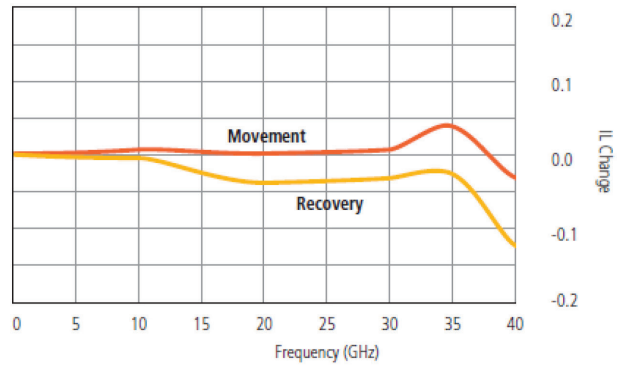
\*TM32 includes TM26, TM18, TM8, TM4. \*\*TM67 includes TM50, TM40, TM34. \*\*\*TM110 includes TM70

## MegaPhase RF Orange Flexible Cable to 32 GHz

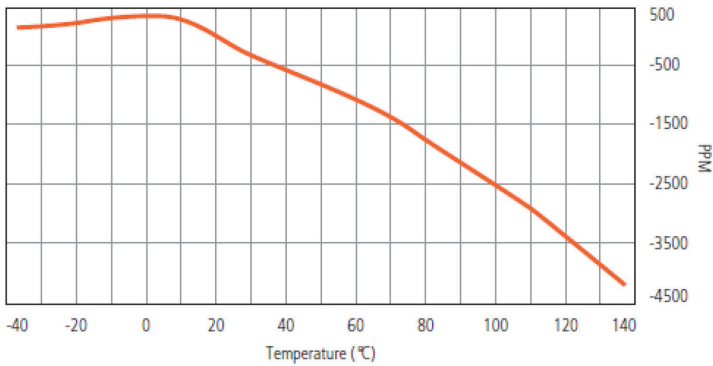
### Phase Change vs. Flexure



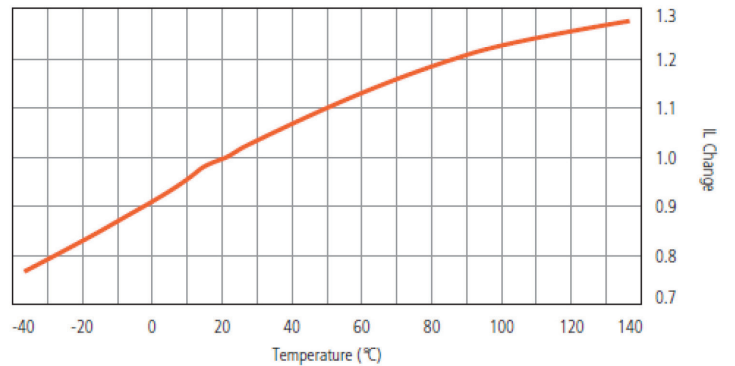
### Insertion Loss vs. Flexure



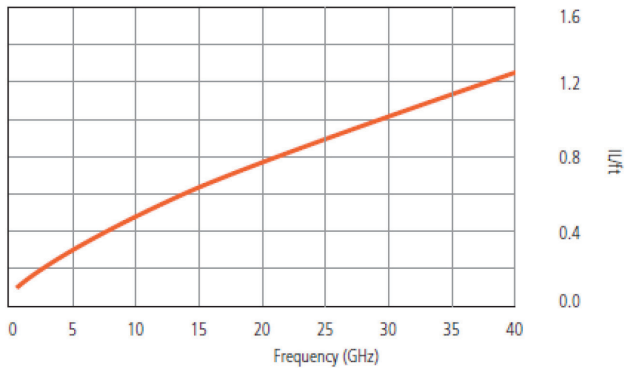
### Phase Change vs. Temperature



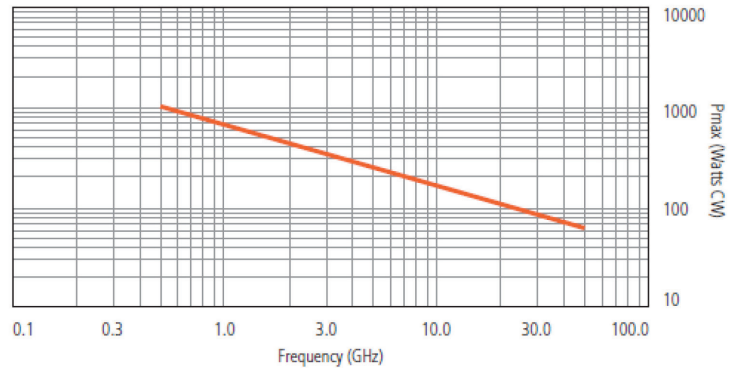
### Insertion Loss vs. Temperature



### Insertion Loss



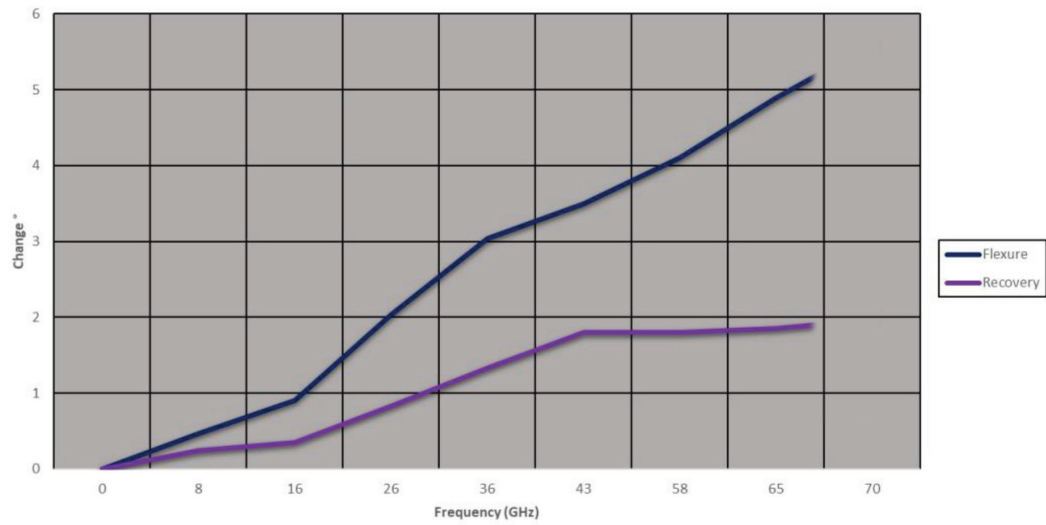
### Cable CW Power Handling



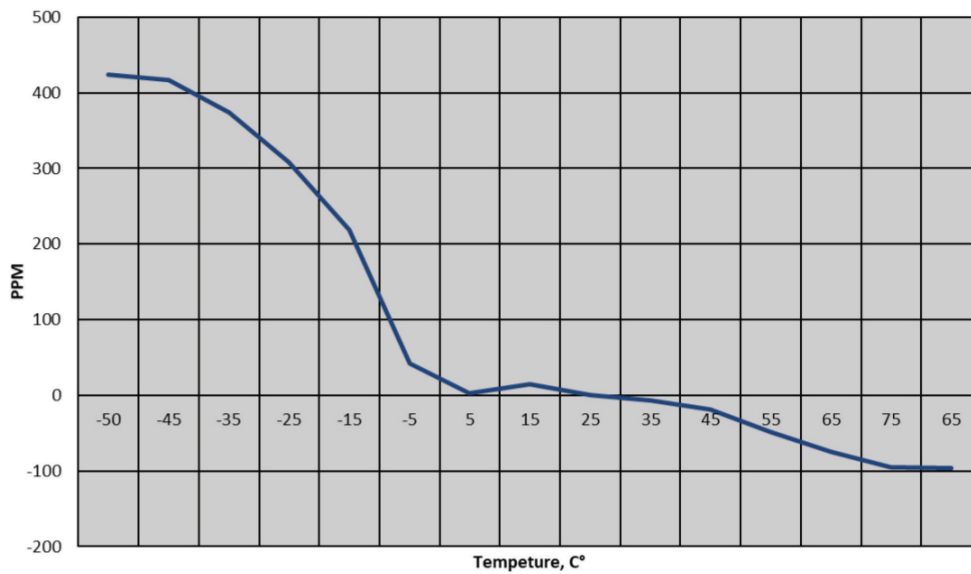
Note: Data at ambient temperature and sea level. Power handling of a cable assembly is also connector dependent and includes variables such as altitude, temperature and system VSWR. See website for connector power handling standards, including altitude, temperature and VSWR derating.

## MegaPhase RF Orange Flexible Cable to 67 GHz

### Phase vs. Flexure

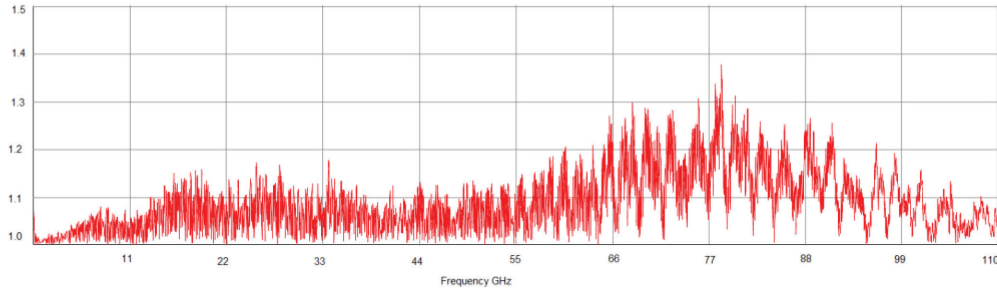


### Phase vs. Temperature

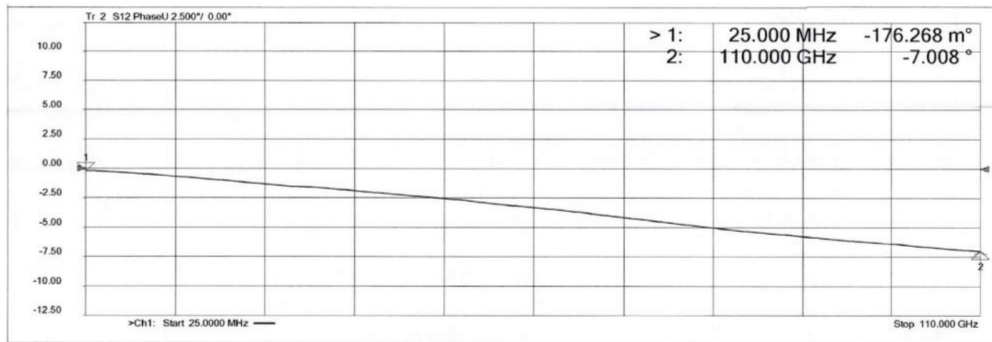


# MegaPhase RF Orange Flexible Cable to 110 GHz

## Typical VSWR



## Phase vs. Flexure



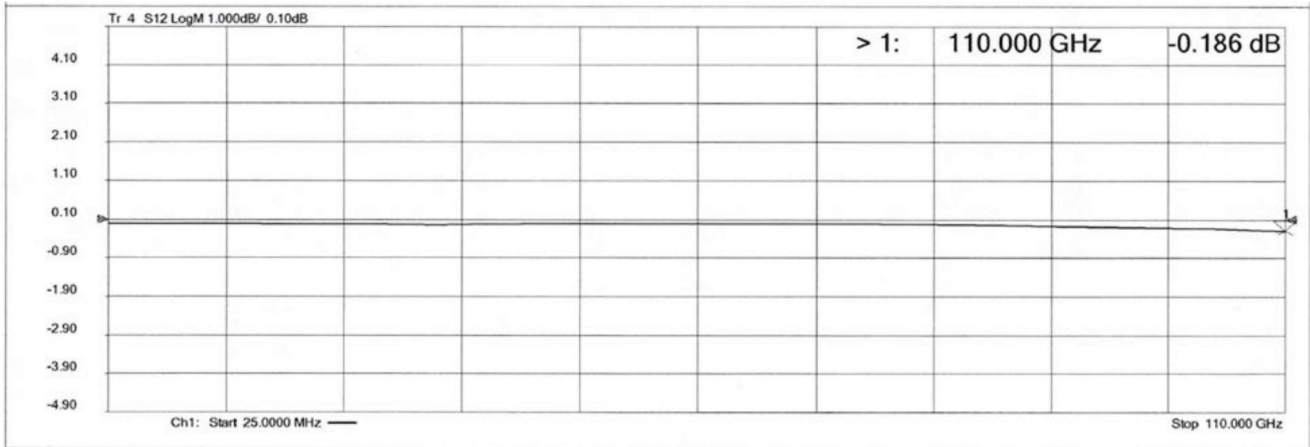
## Phase Recovery





## MegaPhase RF Orange Flexible Cable to 110 GHz

### Insertion Loss vs. Flexure



### Insertion Loss Recovery

