

MegaPhase®



With the right connections,
anything is possible.

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.

Electrical Data

Maximum Frequency:
110 GHz

Impedance:
50 Ω nominal

Propagation Velocity:
TM40 69% nominal
TM67 80% nominal
TM110 78.7 % nominal

Time Delay:
TM40 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:
TM40 10 kV at 60 Hz
TM67 1.2 kV at 60 Hz
TM110 400 V at 60 Hz

Capacitance:
TM40 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:
-85°F to 329°F (-65°C to 165°)
TM40 includes TM34, TM26, TM18, TM8, TM4
TM67 includes TM50
TM110 includes TM70

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



Cable Construction

Inner Conductor: Solid Ag-plated Cu
Outer Armor: GrooveTube® Cu
Standard Finish: Polyolefin over
Metallic Braid

Dielectric:
TM40 PTFE
TM67/110 F Foamed FEP

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)

122 Banner Road, Stroudsburg, PA 18360-6433
Tel: 570-424-8400

Solutions@MegaPhase.com | www.MegaPhase.com

MegaPhase RF Orange Flexible Cable To 110 GHz (continued)

Specifications

Frequency		TM40 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	
	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	
	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	1.35
	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	1.40
	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	1.121	3.676	1.375	4.510	2.055	6.743	0.243	1.45
	36.0	1.168	3.833	1.423	4.669	2.124	6.969	0.256	
V	40.0	1.262	4.141	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	
	90.0					3.656	11.995	0.591	
	100.0					3.900	12.795	0.652	
	110.0					4.136	13.571	0.713	

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

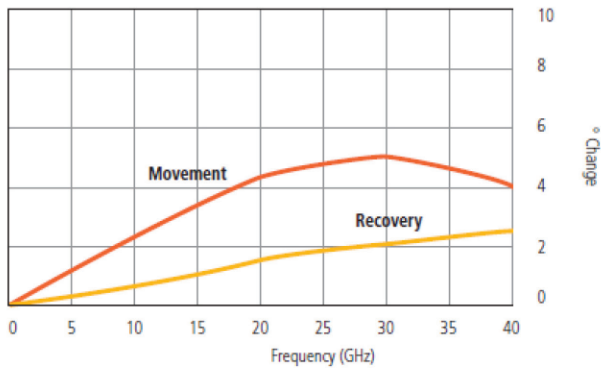
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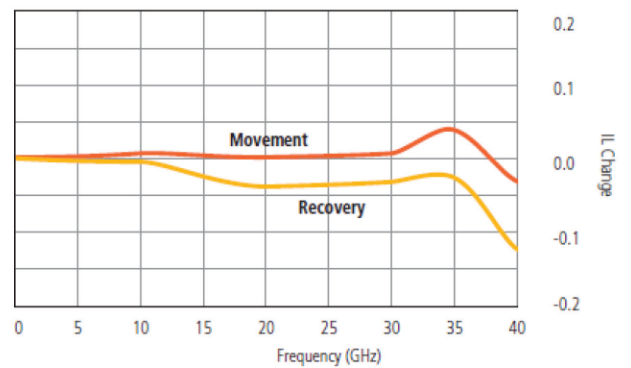
With the right connections,
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MegaPhase RF Orange Flexible Cable to 40 GHz

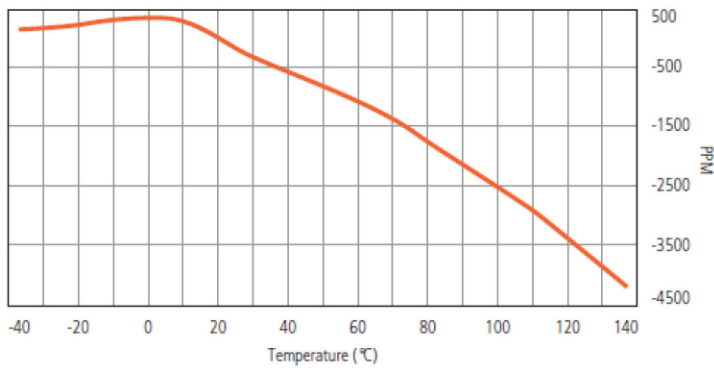
Phase Change vs. Flexure



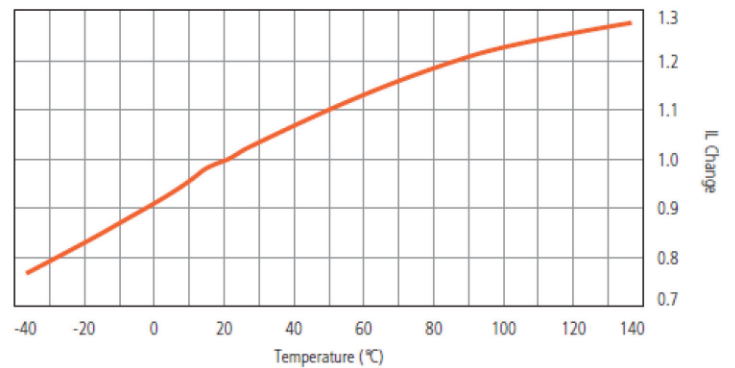
Insertion Loss vs. Flexure



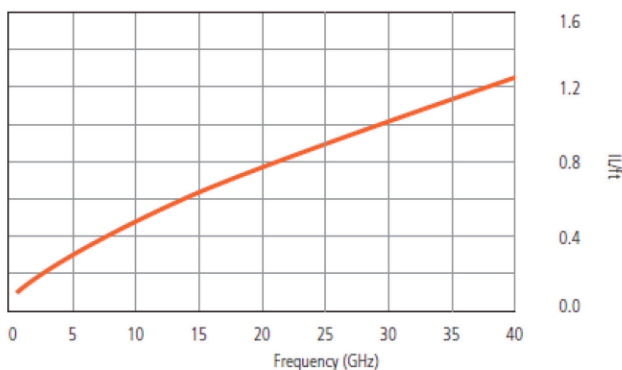
Phase Change vs. Temperature



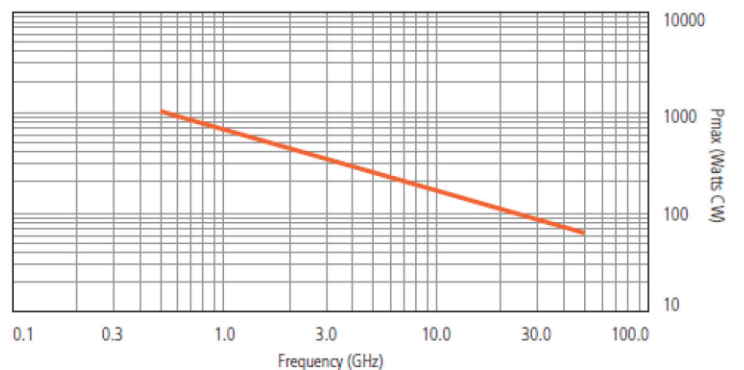
Insertion Loss vs. Temperature



Insertion Loss



Cable CW Power Handling



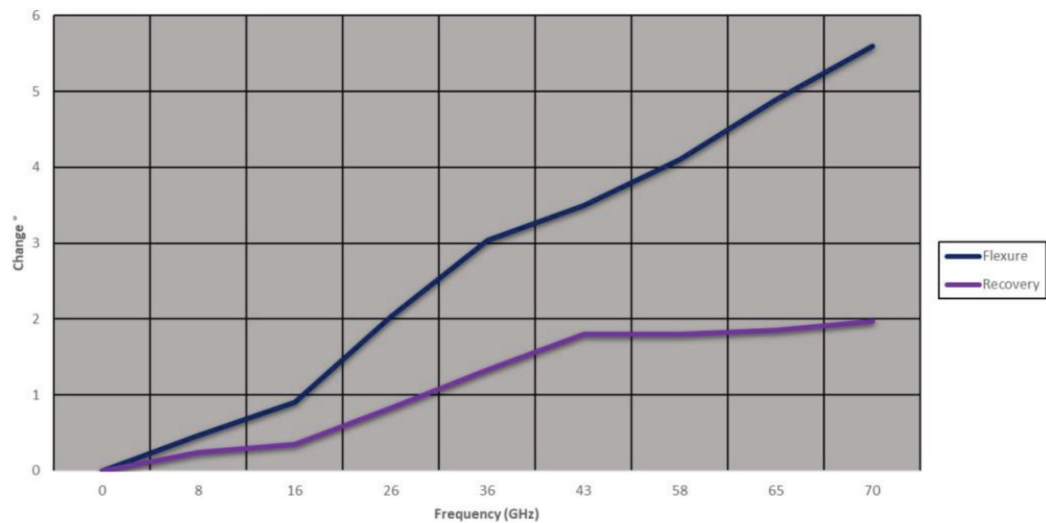
Note: Data at ambient temperature and sea level. Power handling of a cable assembly is also connector dependent and includes variables such as altitude, temperature and system VSWR. See website for connector power handling standards, including altitude, temperature and VSWR derating.



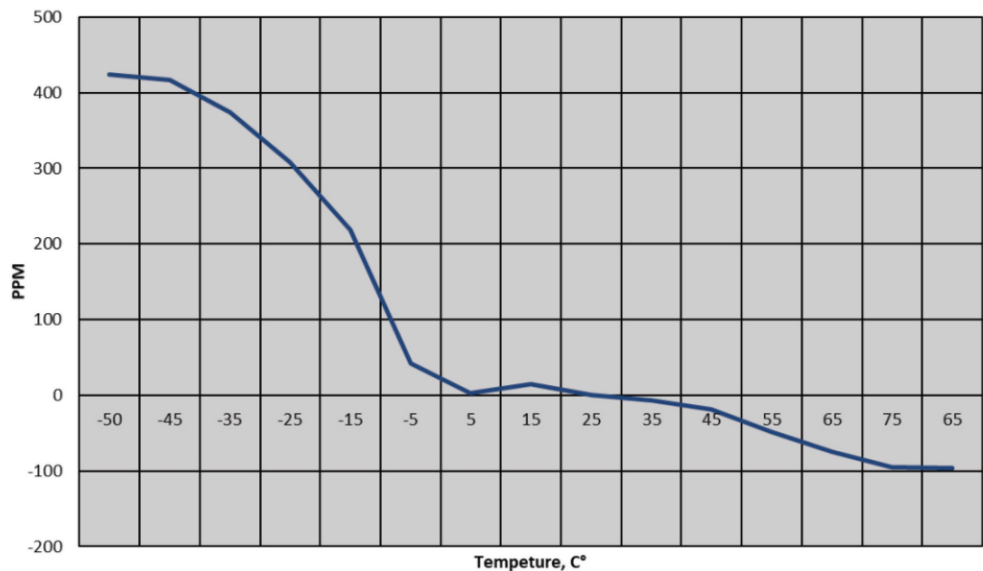
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MegaPhase RF Orange Flexible Cable to 67 GHz

Phase vs. Flexure



Phase vs. Temperature



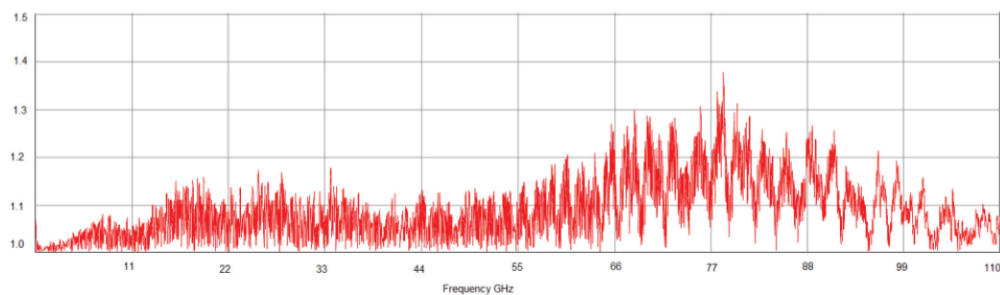
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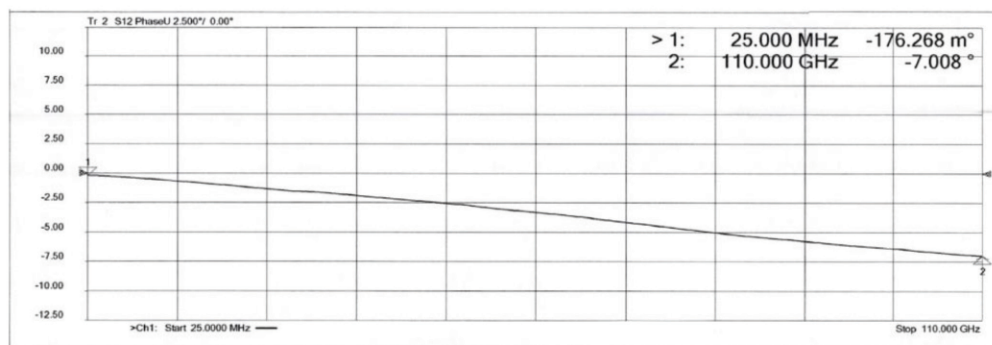
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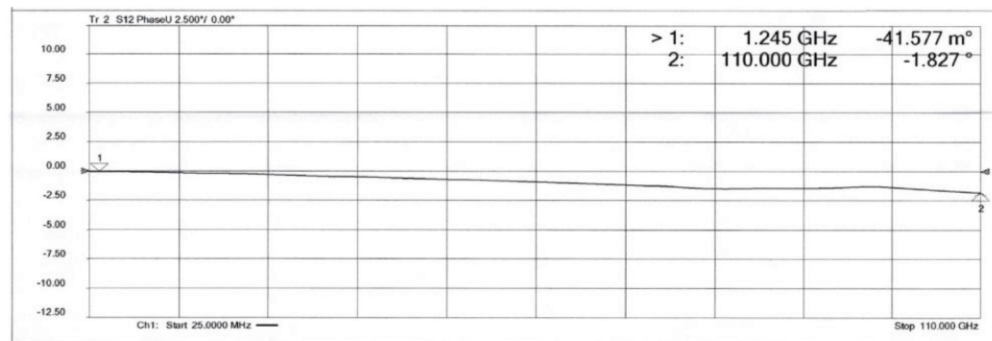
Typical VSWR



Phase vs. Flexure



Phase Recovery



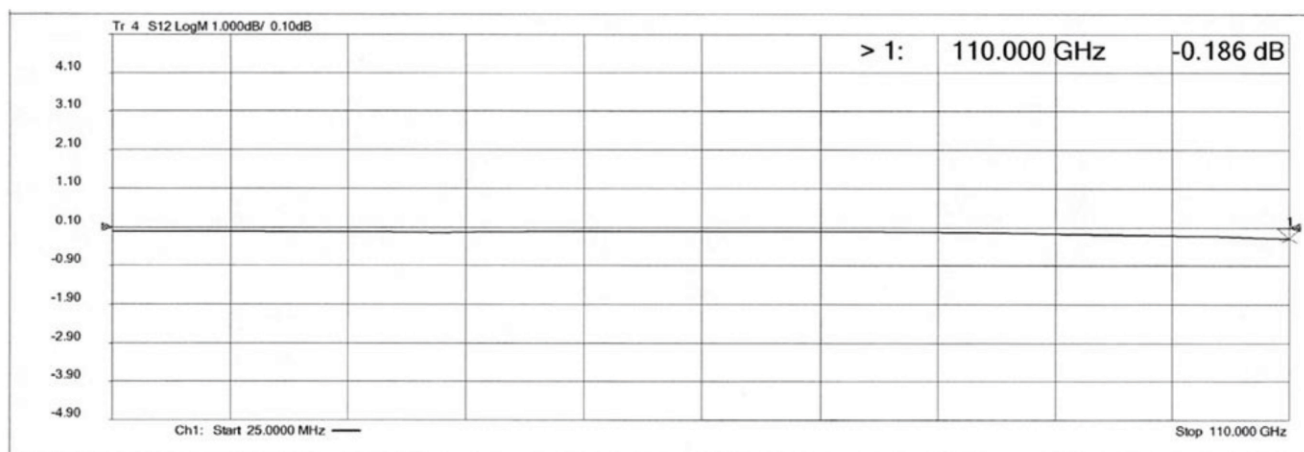
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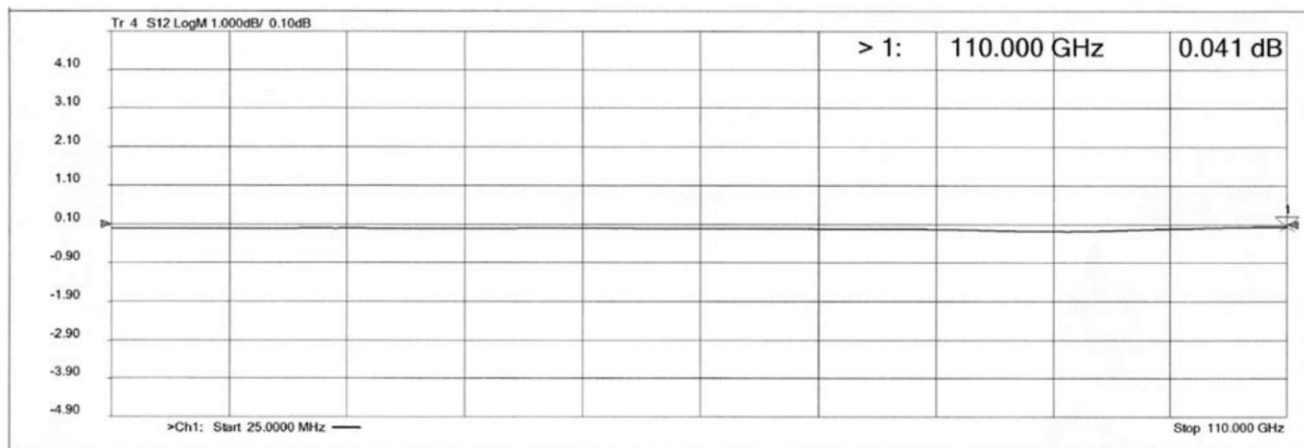
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Insertion Loss vs. Flexure



Insertion Loss Recovery



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