



# Cable Assemblies

Cristek designs and manufactures semi-rigid and flexible microwave coaxial cable assemblies for interconnect and instrumentation applications from DC to 65 GHz. Contact Cristek early in your design process so our application experts can assist you with recommending the most cost effective solution to meet your environmental, electrical and mechanical requirements. Cristek defines cable assemblies in several categories as described below. Whichever category you choose and not matter how touch your application you may be confident in Cristek's design experience and "best in class" process controls.



## Cable Rating Scale

Cristek has developed the cable rating scale to illustrate, on the following pages, some cable/connector selection guidelines to assist users designing to fulfill a particular application. Cristek has developed a comparative cable rating scale determined by scoring different cable types based on attributes and other factors. These attributes and factors include frequency range, attenuation, shielding, phase stability, temperature range, availability of connectors, cost, flexibility, ease of assembly, environmental conditions and durability. Please note that all cable assemblies built by Cristek are quality assemblies and cable assemblies with lower scores may still be the best fit for the application given based on the specification and price.

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**Build to Print** Cable assemblies built to a specific technical data package (drawings, specifications, prescribed bill of materials) provided by a customer. Upon receipt of a customer's package, Cristek will review it and will process with the package as documented or sometimes make suggestions to improve affordability, reliability and availability.

**Build to Spec** Cable assemblies built using materials and processes selected by our experts upon review of a customer's specification requirements. When a customer provides us with the mechanical, electrical and environmental requirements for their application, Cristek will select the most affordable, and readily available combination of cable and connectors to reliably meet the specifications.

**Custom** Cable assemblies that incorporate customized components and/or processes to meet a customer's particularly demanding application. Cristek excels in solving the most demanding and unique electrical, environmental and mechanical challenges. Let us show you how we can address your challenge with a reliable solution that will meet both your budget and timeframe.

**Formed** A specific type of custom and build to print type assemblies. These cables are custom formed with semi-rigid cable and in accordance with exacting customer requirements and tolerances. To assist in repeatability and precision, You can rely on minimal variation and maximum precision because Cristek employs the latest in automated bending technology and specialized custom fixtures and tooling.

**Standard** Cable assemblies designed to meet or exceed industry standards using standard Cristek parts. The difference between these cable assemblies and the build to spec type is that the electrical, mechanical and environmental specifications are predetermined and are not specific to a drawing or specification.

## Flexible Rg Cable

POOR

RG ASSEMBLIES

EXCELLENT



### Example Construction

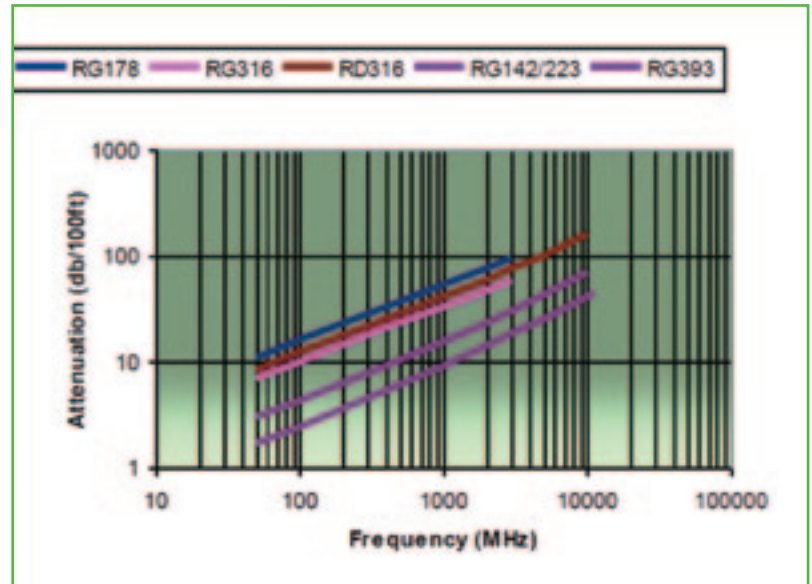
Cable construction may vary, see specific slash sheets for actual sizes and construction.

**RG Cable** uses standard MIL-DTL-17 cable and standard Cristek or other commercially available connectors. These cables have the widest diameter and connector selection range. Cable sizes are from 0.067 inches (1.7mm) to 0.500 inches (12.7mm) and come in both single and double braided styles. Frequency ranges are limited to 12.4 GHz and cables will have good to average performance.

The table to the right depicts appropriate connector interfaces to use with several example cables from this class.

### Applications

- General Interconnect
- Rack, enclosure and panel applications
- Cost sensitive applications under 6 GHz



	RG178	RG316 / RD316	RG142 / RG223	RG393	MAX FREQ**
SMPM	✓				12.4
SMP	✓	✓			12.4
MMCX	✓				6
MCX	✓	✓			6
SSMA	✓	✓			12.4
SMA	✓	✓	✓		12.4
TYPE N			✓	✓	12.4
TNC		✓	✓	✓	12.4
BNC		✓	✓		2
SMB	✓	✓			3
SMC	✓	✓			3
BMMA	✓	✓			12.4
BMA	✓	✓	✓		12.4
SC				✓	10
HN				✓	10
C				✓	6
BMZ			✓		12.4

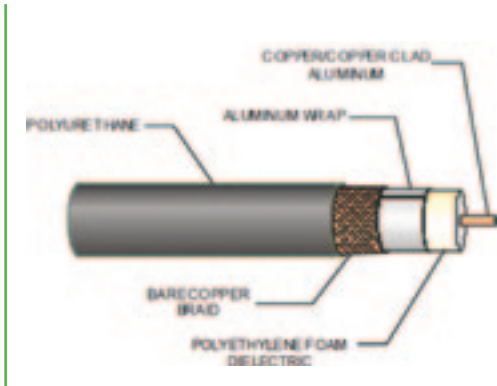
\*\*Frequencies are based on maximum frequencies of the connector on RG cable. The type of cable selected will limit the maximum frequency of

# Low Loss Foam Cable

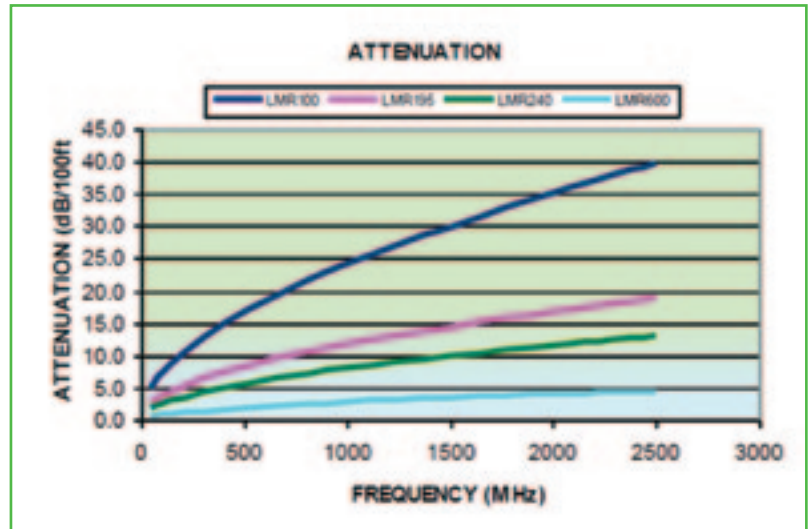
POOR

FOAM CABLE ASSEMBLIES

EXCELLENT



Example Construction



Low Loss Foam Cable Types were developed for the Telecom industry. This low loss cable is an alternative to some of the RG cable types. These cable assemblies use standard Cristek or other commercially available connectors and cable sizes range from 0.100 inches (2.5mm) to 0.600 inches (15.3mm). These cables are lower loss and higher shielded than the equivalent size RG cable, but are limited in Temperature and Frequency ranges.

The table to the right depicts appropriate connector interfaces to use with several example cables from this class.

	LMR100®	LMR195®	LMR240®	LMR600®
SMP	✓			
MMCX	✓			
MCX	✓			
SSMA	✓			
SMA	✓	✓	✓	
TYPE N		✓	✓	✓
TNC		✓	✓	✓
BNC		✓	✓	
SMB	✓			
SMC	✓			
BMMA	✓			
BMA	✓	✓		
SC				✓
HN				✓
C				✓

LMR is a registered trademark of Times Microwave

## Applications

- Telecom applications
- General Interconnect
- Low Temp rack, enclosure and panel applications
- Cost sensitive applications under 6 GHz

CABLE ASSEMBLIES

# R-Flex and S-Flex Improved Performance Cables



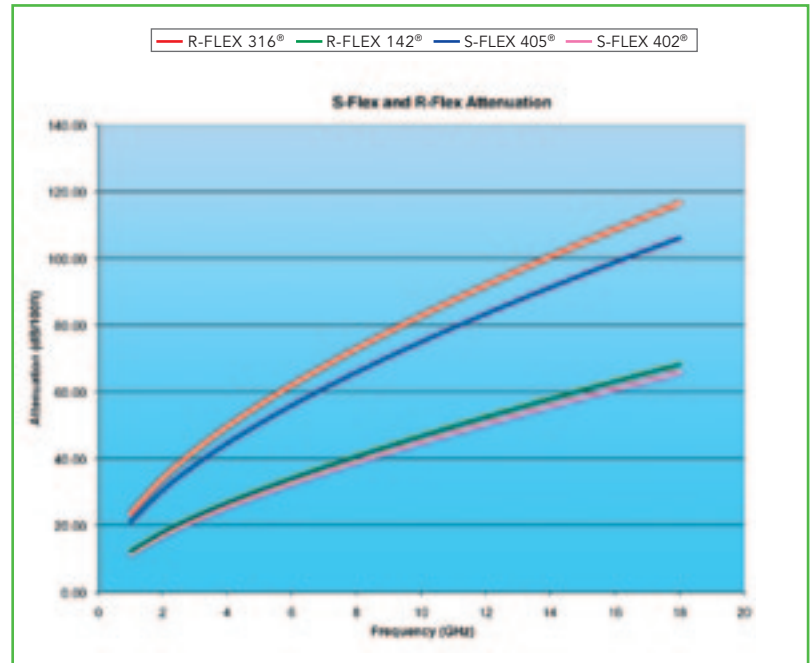
Example Construction

Improved Performance Cables were developed to provide higher performance and improved frequency range than standard RG cables. They are also a flexible option to semi-rigid cable assemblies. With improved shielding and braid design these cables can work up to 20 GHz while still using some off the shelf connectors.

The table to the right depicts the connector interfaces that are appropriate to several example cables from this class.

## Applications

- General Interconnect
- High frequency rack and panel designs
- Cost sensitive applications up to 20 GHz
- Replace semi-rigid cables.
- Communications
- Antennas
- High shielding applications



	R-FLEX 316®	R-FLEX 142®	S-FLEX 405®	S-FLEX 402®
SMP	✓		✓	
MMCX	✓		✓	
MCX	✓		✓	
SSMA	✓		✓	
SMA	✓	✓	✓	✓
TYPE N		✓		✓
TNC		✓		✓
BNC		✓		✓
SMB	✓		✓	
SMC	✓		✓	
BMMA	✓		✓	
BMA	✓	✓	✓	✓
2.92MM			✓	
3.5MM			✓	✓
2.4MM			✓	

# L-Flex Low Loss, High Frequency Cable

POOR

LOW LOSS CABLE ASSEMBLIES — EXCELLENT



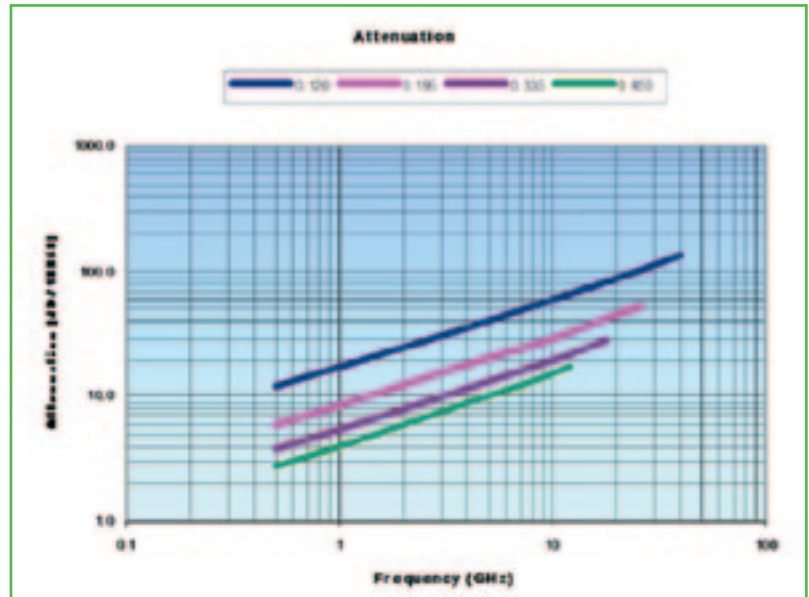
Example Construction

**Low Loss High Frequency.** These low loss custom cables give the best performance over a sizeable frequency range. With expanded PTFE tape wrapped cores and silver plated copper shielding these cables work up to 40 GHz. Because of the special construction, custom connectors are used maximize performance through each connector's frequency range. The improved shielding and low density core allows for improved phase stability over flexure and temperature while its robust design makes it ideal for test equipment applications.

The table to the right depicts the connector interfaces that are appropriate to several example cables from this class.

## Applications

- High frequency rack and panel designs
- Test and Measurement
- Phase Stable requirements.
- Phase Array Antennas
- High shielding applications
- Airborne, Sea and Ground Systems
- Extreme environmental conditions.



	.120	.195	.305	.450
SMP	✓		✓	
SSMA	✓		✓	
SMA	✓	✓	✓	✓
TYPE N		✓		✓
TNC		✓		✓
TNCA		✓		
BNC		✓		✓
BMMA	✓		✓	
BMA	✓	✓	✓	✓
SC			✓	✓
HN			✓	✓
C				✓
7/16				✓
2.92MM	✓			
3.5MM	✓	✓		
2.4MM	✓			

CABLE ASSEMBLIES