

Typical Coaxial Cabling (Exploded View):

Center Conductor:

The main signal path. Can be solid or stranded wire.

Shielding:

One of the two conductors in coaxial cable. Braid or braid + foil is typical.

Dielectric:

Insulating material isolates shield from center conductor. This also gives the cable its impedance property.

Jacket:

Insulates and protects shielding and center conductor. Extruded PVC is typical.

Typical Coaxial Connector (BNC Exploded View):

Center Pin:

Terminates to center conductor via crimping or soldering.

Crimp Sleeve:

Provides strain relief by securing braid to connector.

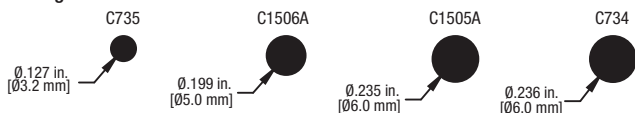
Ferrule:

Provides mating surface for coaxial shielding.

Connector (Plug) Body:

Nickel plated brass is typical.

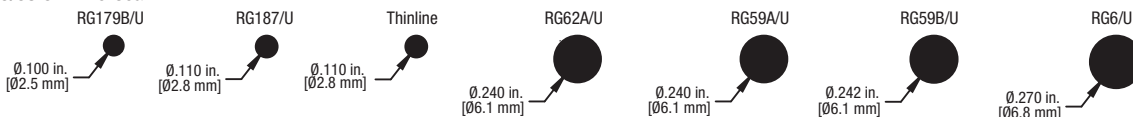
75 Ohm Digital Rated



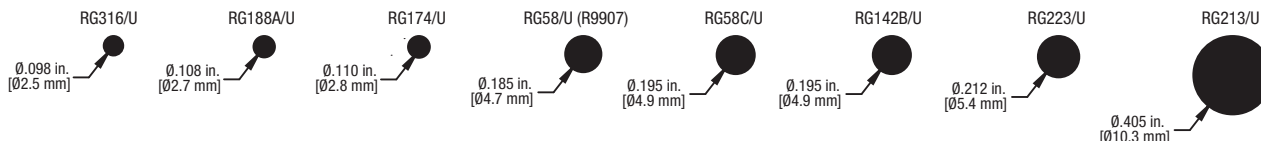
Coaxial Cable Sizing Chart

This chart illustrates the diameter difference between different types of coaxial cable. The drawings below are shown in actual size.

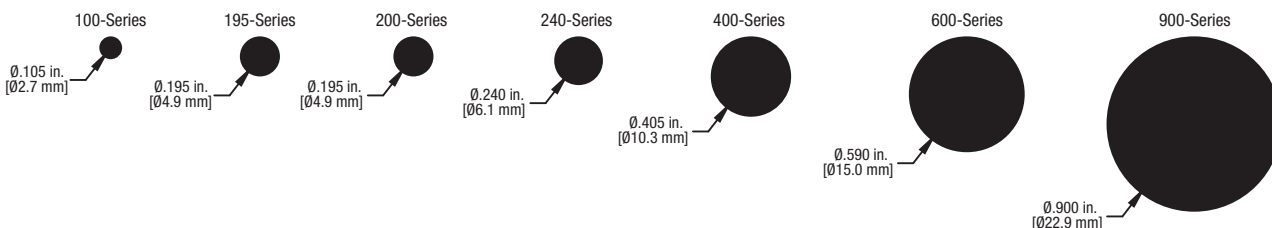
75/98 Ohm RG Coax



50 Ohm RG Coax



50 Ohm Low-Loss Coax

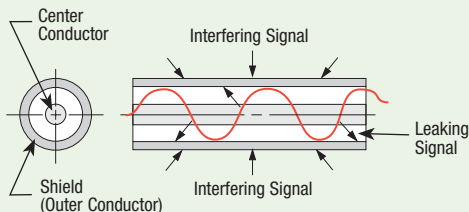
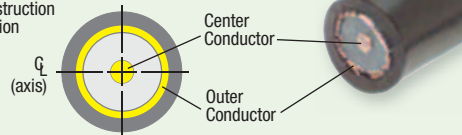


Understanding Coaxial Cable

Coaxial is a term derived from the construction of the cable, as illustrated here. In a coaxial cable an electrical impulse signal is transmitted along the cable length between the center conductor and the outer conductor. The center conductor and the outer conductor share the same center line or axis hence the term coaxial.

Shielding Effectiveness is the relative ability of a shield to screen out undesirable interference. In coaxial cable, the outer conductor provides a shield to keep interfering signals from getting in and to keep signals from leaking out to become undesirable interference for nearby devices. Shielding Effectiveness is measured in dB with higher values indicating better shielding properties. The table below illustrates the relative shielding properties of various shielding types.

Cable Construction Cross Section



Notice as the shielding density increases there is a correlated increase in the shielding effectiveness value. The best shielding effectiveness value can be found in a rigid coaxial cable due to the solid tube construction of the outer jacket. In this type of cable the limiting factor for shielding effectiveness is the quality of the connector attachment.

Shielding Type			
Single Braid Shield (95% coverage)	Single Braid Shield (60%) + Foil Wrap (100%)	(2) Braids (60%) + (2) Foil Wraps (100%)	Conformable Cable
Approximate Shielding Effectiveness Value			
-55dB	-90dB	-110dB	-150dB