

# COAXIAL CABLES

Larsen offers a full selection of quality cables in popular RG-174, RG-58 and RG8 sizes. Cables are produced to Larsen's exact specifications by recognized suppliers.

In this section, you will find a wide variety of cables and connectors to suit your needs, no matter what your specific application might be. Please be sure to consider such parameters as acceptable loss, temperature, noise and connector type when making your selection.



**RG-174 - Small Diameter Coax**

RG-174 is the industry standard for applications requiring a small diameter, highly flexible coax. Frequently used in mobile mag mount applications. Subject to higher losses at higher frequencies. Good performance for environmental variations but lower in overall ruggedness.

#### Recommended Applications

Mobile/Portable less than 900 MHz where flexibility and small diameter is important.

Larsen Part Number:  
RG-174

Stocking Lengths:  
1000'/Spool  
Cut to order



**RG-213 - Stranded Bare Braid - Mil Spec QPI**

This RG-8-sized cable uses a stranded center conductor with a polyethylene dielectric and PVC jacket. Built to Mil Specs this cable is used in all Larsen UHF/VHF products targeted for outdoor installation.

#### Recommended Applications

For lower frequency applications requiring high ruggedness.

Larsen Part Number:  
RG-213

Stocking Lengths:  
500', 1000'/Spool  
Cut to order  
Belden 8267



**RG-58U - Low Loss Dual Shield with Solid Center Conductor (UD)**

This is Larsen's premium coax for 800 and 900 MHz applications. The solid center conductor (20 AWG) is easy to use with all connectors. Digital applications benefit from the 100% Duofoil aluminum shield. The shield is not glued to the dielectric making it easier to peel back for connector installation. The braid is 95% coverage. This cable is standard for most mounting kits over 800 MHz and can be special ordered with other frequencies. Uses standard RG-58 connectors.

#### Recommended Applications

For all applications at 808 MHz and 900 MHz.

Larsen Part Number:  
UD Coax

Stocking Lengths:  
1000'/Spool  
Cut to order



**RG-58A/U - CX Standard Coax**

The industry standard in quality, value-priced coax. Stranded center conductor offers good flexibility and long-life under most conditions. Not typically recommended for applications above 512 MHz due to higher losses. Uses standard RG-58 connectors.

#### Recommended Applications

General applications under 512 MHz. First choice for value priced coax.

Larsen Part Number:  
CX Coax

Stocking Lengths:  
1000'/Spool  
Cut to order



**RG-58A/U - "Digi-Shield"™  
Low Loss Braided Center**

Employs two shields, consisting of a full aluminum/mylar wrap covered by a braid. This combination of shields, plus low-loss dielectric material and stranded center conductor makes an excellent choice for mobile applications. Performance features include low-loss and high flexibility. Uses standard RG-58 connectors.

#### Recommended Applications

Higher performance applications where lower loss and flexibly are important. Recommended for applications above 800 MHz.

Larsen Part Number:  
DS Coax

Stocking Lengths:  
1000'/Spool  
Cut to order

# COAX SPECIFICATIONS COMPARISON

## TECHNICAL CHARACTERISTICS OF INSULATION AND JACKET COMPOUNDS

### PVC

Sometimes referred to as vinyl or polyvinyl chloride. Extremely high or low temperature properties cannot be found in one formulation. Certain formulations may have -55° C to +105° C rating. Other common vinyls may have -20° C to +60° C. There are many formulations for the variety of different applications. The many varieties of PVC also differ in pliability and electrical properties. The price range can vary accordingly. Typical dielectric constant values can vary from 3.5 to 6.5.

### Polyethylene (Solid and Foam)

A very good insulation in terms of electrical properties. Low dielectric constant, a stable dielectric constant over all frequencies, very high insulation resistance. In terms of flexibility, polyethylene can be rated stiff to very hard, depending on molecular weight and density — low-density being the most flexible, and high-density, high-molecular weight formulation being very hard. Moisture resistance is rated excellent. Correct Brown and Black formulations have excellent weather resistance. The dielectric constant is 2.3 for solid insulation and 1.64 for foam designs. Flame retardant formulations are available with dielectric constants ranging from about 1.7 for foam flame retardant to 2.58 solid flame retardant polyethylene.

### Teflon

This material has excellent electrical properties, temperature range and chemical resistance. It is not suitable where subjected to nuclear radiation and does not have good high voltage characteristics. FEP Teflon is extrudable in a manner similar to PVC and polyethylene. This means long wire and cable lengths are available. TFE Teflon is extrudable in hydraulic ram-type process. Lengths are limited due to amount of material in the ram, thickness of the insulation and preform size. TFE must be extruded over a silver- or nickel-coated wire. The nickel- and silver-coated designs are rated 260° C and 200° C maximum, respectively. The cost of Teflon is approximately 8 to 10 times more per pound than PVC compounds.

TYPE CATEGORY	LARSEN PART#	SUPPLIER	BELDEN PART#	DESCRIPTION	STANDARD LENGTH (FT)	WEIGHT (1000 LBS)	AWG STRANDING	WIRE DIAMETER
RG-174	RG174	Belden	8216	26 Solid Foil/Braid-Poly-Miniature Cable OD.054	1000	9	26	0.019 Bare Copper
RG-316	RG316	Belden	83284	26 Stranded Braid/Braid TEF Teflon	500/1000	10.5	26	0.020 Silver Coated Copper Covered Steel
RG-58A/U	CX	Belden	YR27132	20 Stranded Braid/Poly	1000	24	20	0.035 Tinned Copper
RG-58/U	UD	Belden	YR29741	20 Solid Foil/Braid-Poly-Low Loss-2500 MHz	1000	25	20 (solid)	Bare Copper
RG-58A/U	DS	Belden	YR22688	20 Stranded Foil/Braid-Low Loss	1000	21.6	20	0.037 Tinned Copper
RG-58/U	DT	Belden	YR29777	20 Solid Bare-Teflon	1000	30	20	0.031 BC
RG-213	RG213	Belden	8267	13 Stranded Bare Braid-Poly-Mil Spec Q.P.I.	500/1000	111.1	13	0.089 Bare Copper Covered Steel

# COAX SPECIFICATIONS COMPARISON

## Nominal Temperature Range/Insulating and Jacketing Compounds

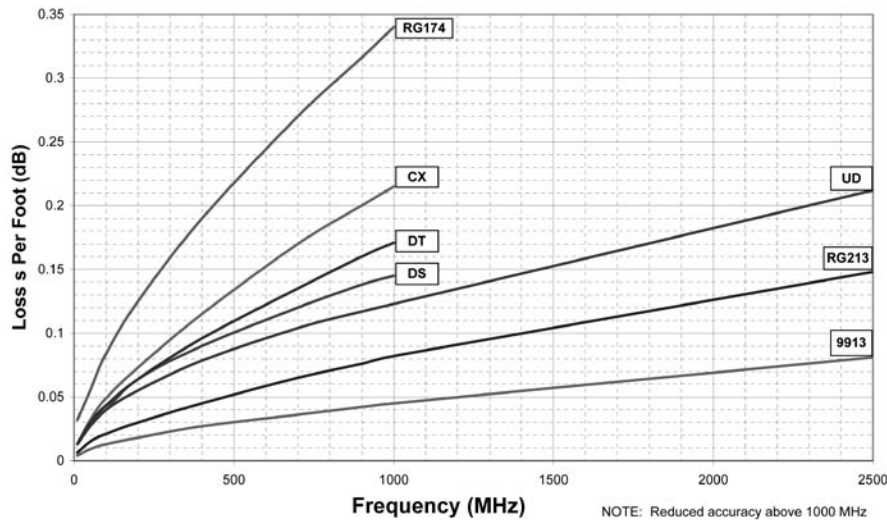
COMPOUND	NORMAL LOW	NORMAL HIGH	SPECIAL LOW	SPECIAL HIGH
Polyethylene - Solid	-60° C	80° C	--	--
Polyethylene - Foam	-60° C	80° C	--	--
FEP Teflon	-70° C	200° C	--	--
PVC	-20° C	80° C	-55° C	105° C
TFE Teflon	-70° C	260° C	--	--

## Comparative Properties of Insulation and Jacket

	PVC Low-density Polyethylene	
Oxidation Resistance	E	E
Heat Resistance	G-E	G
Oil Resistance	F	G-E
Low Temperature Flexibility	P-G	E
Weather, Sun Resistance	G-E	E
Ozone Resistance	E	E
Abrasion Resistance	F-G	G
Electrical Properties	F-G	E
Flame Resistance	E	P
Nuclear Radiation Resistance	F	G-E
Water Resistance	F-G	E
Acid Resistance	G-E	G-E
Alkali Resistance	G-E	G-E
Gasoline, Kerosene, Etc. (Aliphatic Hydrocarbons) Resistance	P	G-E
Benzol, Toluol, Etc., (Aromatic Hydrocarbons) Resistance	P-F	P
Degreaser Solvents (Halogenated Hydrocarbons) Resistance	P-F	G
Alcohol Resistance	G-E	E
Underground Burial	P-G	G

P = Poor    F = Fair    G = Good    E = Excellent

## Cable Attenuation



NOMINAL DC RESISTANCE (OHMS/1000')	INSULATION	INSULATOR NOMINAL CORE O.D. (IN)	NMOINAL O.D. O.D. (INS)	SHIELD MATERIAL	SHIELD COVERAGE	SHIELD NOMINAL RESISTANCE	JACKET MATERIAL	NOMINAL IMPEDANCE (OHMS)	NOMINAL VEL OF PROP	NOMINAL CAPACITANCE PF/FT
9.7	POLYETHYLENE	0.05	0.11	Tinned Copper Braid	90%	10.3	Black PVC	50	66%	30.8a
84.1	TFE Teflon	0.06	0.098	Silver Coated Copper Braid	95%	6.5	White FEP	50	69.5%	29.2
21.5	Solid Polyethylene	0.11	0.193	Tinned Copper Braid	95%	4.1	Black PVC	50	66%	30.8
12.6	Polyethylene	0.116	0.195	100% Duofoil & 95 Tinned Copper Braid	100%	3.8	Black PVC	50	66%	30.9
14.5	Foam Polyethylene	0.114	0.198	Duofoil + 85% Tinned Copper Braid	100%	5.6	Black PVC	50	78%	26
15.5	Solid FEP Teflon	0.112	0.19	Tinned Copper Braid	95%	4.4	Black PVC	53.5 ± 2.5	69.5%	28.5
1.7	Polyethylene	0.285	0.405	Copper Braid	97%	1.2	Black PVC	50	66%	30.8

NOTE: Antennas are not to scale

1 800 ANTENNA

