

# Wireless Inside. Made Transportable.

The 50  $\Omega$  Radiating Cable is specifically designed to act as both a transmission line and antenna to offer powerful, uniform signal coverage in propagation-restricted area. This cable is a product of choice for distributing wireless signals inside buildings and underground environments such as metros, mines, parking garages, and tunnels.

The Radiating cable possesses slots in its outer conductor to allow wireless signals to emit out of the cable and into the air to eliminate the need for antennas and to allow signals to penetrate confined areas. It also possesses broadband capabilities that enable wireless coverage across multiple frequency bands simultaneously. Plus, its unique, totally bonded, air-dielectric design provides unparalleled structural integrity and total protection against water migration. This cable is also available with a non-halogenated, flame retardant jacket that meets the fire retardant provisions of Underwriters' Laboratories, Inc. (UL), National Electric Code (NEC), and the Canadian Electric Code (CEC).

*Bringing wireless communications to difficult-to-reach areas!*



## Features & Benefits

**Superior Construction** Unlike foam-core cables, the Radiating cable utilizes an air-dielectric construction. The air is enclosed in hermetically-sealed polyethylene chambers, bonded to an aluminum outer conductor. This unique design successfully eliminates any water migration and doesn't require pressurization.

**Multiband Capabilities** A single Radiating cable can act as a multiband distributed antenna, enabling wireless coverage across multiple frequencies to operate simultaneously.

**Low Attenuation & Optimal Coupling Loss** The air-dielectric design and high velocity of propagation in the Radiating cable provides for low attenuation. Plus, the dual longitudinal slots found in the outer conductor offers optimal coupling loss to ensure seamless wireless communications over longer distances.

**Flexibility & Ease of Installation** The Radiating cable uses a smooth aluminum outer conductor that ensures superior flexibility and ease of installation. The cable features a 10-inch bend radius and can endure multiple bends during installation without damaging the structure of the cable.

**Ease of Connectorization** The Radiating cable has the fastest field connectorization time in the industry, with no soldering required. With the use of the appropriate connectors, the Radiating cable can be attached in minutes to both the center conductor and the aluminum outer conductor, keeping moisture out to maintain excellent electrical performance.

**Weather-Resistant** The hermetically sealed, fully bonded, Radiating cable prohibits water migration through the cable and provides complete environmental protection, ideal for both indoor and outdoor applications.

**Fire Retardant** The Radiating cable is also available in a non-halogenated, flame retardant jacket to meet more stringent requirements.

**Certified** The Radiating cable is certified according to the test methods of:

---

Underwriter's Laboratories, Inc.

---

National Electric Code

---

Canadian Electric Code

™ Trademark of Kaval Wireless Technologies. ™ Service Mark of Kaval Wireless Technologies.

## Specifications

### Description

K50R-100	7/8" Cable, Black Polyethylene Jacket
K50R-100F	7/8" Non-Halogenated, Fire Retardant Jacket

### Physical Characteristics

Center Conductor	Copper Clad Aluminum
Outer Conductor	Dual Slotted, Solid Aluminum Tube
Dia. Over Outer Conductor	1.012" (25.70 mm)
Dia. Over Jacket	1.092" (27.73 mm)
Center Diameter	0.383" (9.73 mm)

### Electrical Characteristics

Impedance	50Ω
Maximum Frequency	5 GHz
Velocity of Propagation	91%
Peak Power Rating	90 kW
Capacitance	22.3 pF/ft (73.16 m)
Inductance	0.056 mH/ft (0.185 m)

### Mechanical Characteristics

Minimum Bending Radius	10" (254 mm)
Number of Bends	20
Bending Moment	26.0 lb/ft (35.1 N.m)
Cable Weight	299 lb/1,000 ft (445 kg/km)
Tensile Strength	734 lb (333.6 kg)
Operating Temperature Range	-40°C to +77°C

### RF Attenuation at 20° C

Frequency	RF Attenuation	Coupling Loss*
150 MHz	0.43 dB/100 ft	67 dB
200 MHz	0.51 dB/100 ft	66 dB
400 MHz	0.78 dB/100 ft	66 dB
450 MHz	0.84 dB/100 ft	68 dB
500 MHz	0.89 dB/100 ft	68 dB
512 MHz	0.91 dB/100 ft	68 dB
800 MHz	1.21 dB/100 ft	69 dB
824 MHz	1.23 dB/100 ft	69 dB
894 MHz	1.30 dB/100 ft	70 dB
900 MHz	1.31 dB/100 ft	70 dB
960 MHz	1.36 dB/100 ft	70 dB
1.9 GHz	2.19 dB/100 ft	71 dB
2.0 GHz	2.26 dB/100 ft	71 dB

### Connectors

Model No.	Description
NM50-100	7/8" N male
NF50-100	7/8" N female

\*50% Coupling Loss at 6 feet (2 m), ±10 dB.

Specifications are subject to change.

V3-01/03