

**MSHA
APPROVED!**



RADIO FREQUENCY SYSTEMS

CELLFLEX® and RADIAFLEX® 1/2" Cable

Specially designed for underground mining telecommunications applications

CELLFLEX® LCF12-50JFN and RADIAFLEX® RCF12-50JFN Cables

These low loss foam dielectric cables combine excellent electrical characteristics with robust mechanical performance. They feature a remarkable flexibility with high strength and superior electrical performance. The cable construction allows easy handling and easy preparation for attachment of connectors together with high resistance to connector pull-off. Both cables utilize a flame retardant jacket.

Additionally, RCF12-50JFN Cables...

...function as distributed antennas to provide communications in tunnels, mines and large building complexes and is the solution for any application in confined areas.

Slots in the copper outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length. RCF12-50JFN is designed for low coupling loss with the benefit of no stop bands. This facilitates excellent underground signal radiation.

RADIAFLEX® is used for both one-way and two-way communication systems and, because of its broadband capability, a single radiating cable can handle multiple communication systems simultaneously.

- **Cable meets MSHA requirements approved for U.S. mining applications**
- **Broadband Communication from 30 to 6000MHz**
Supports FM, VHF, UHF, Cellular, PCS, WiFi, WiMAX, 3G and 4G technologies
- **Typically deployed in mines, vehicles and in-building**
Designed for broad application
- **Used for both one- and two-way communication systems**
- **Best combination of flexibility, high strength and excellent electrical performance**
Rugged for harsh environments such as coal mines
- **Low bending radii**
- **Manufactured and stocked in the U.S.A.**

N Male Connectors



RFS Connectors and Accessories for Easy Installation

Hoisting Grip



Cable Trim Tool



Broadband Communication from 30-6000MHz



Product Specifications

Model Number	RCF12-50JFN	LCF12-50JFN
Size	1/2"	1/2"
Maximum Frequency, MHz	6000	8800
Jacket	Flame Retardant	Flame Retardant
Slot Design	Milled (Two-Row)	N/A
Impedance, ohm	50 +/-2	50 +/-1
Velocity of Propagation, %	88	88
Inner Conductor dc Resistance, ohm/1000 m (1000 ft)	1.57 (0.48)	1.57 (0.48)
Outer Conductor dc Resistance, ohm/1000 m (1000 ft)	2.23 (0.68)	1.93 (0.59)
Outer Conductor Material	Annularly Corrugated Copper	Annularly Corrugated Copper
Inner Conductor Material	Copper-Clad Aluminum Wire	Copper-Clad Aluminum Wire
Diameter over Jacket, mm (in)	16.2 (0.64)	16.2 (0.64)
Diameter Outer Conductor, mm (in)	13.8 (0.54)	13.8 (0.54)
Diameter Inner Conductor, mm (in)	4.8 (0.19)	4.8 (0.19)
Minimum Bending Radius, Single Bend, mm (in)	125 (5)	70 (3)
Cable Weight, kg/m (lb/ft)	0.22 (0.15)	0.22 (0.15)
Tensile Force, N (lb)	1000 (225)	1100 (247)
Indication of Slot Alignment	None	N/A
Storage Temperature, °C (°F)	-70 to +85 (-94 to +185)	-40 to +85 (-40 to +185)
Installation Temperature, °C (°F)	-25 to +60 (-13 to +140)	-25 to +60 (-13 to +140)
Operation Temperature, °C (°F)	-50 to +85 (-58 to +185)	-50 to +85 (-58 to +185)
Stop bands, MHz	None	N/A
Recommended Clamp Spacing, m (ft)	0.6 (2.0)	0.6 (2.0)
Minimum Distance to Wall, mm (in)	50 (2)	N/A

Superior Cable Design

- Low attenuation cables such as RCF12-50JFN enable greater distance between amplification points
- Low DC resistance attributed to solid copper clad aluminum inner conductor
- Broadband capabilities allow system to be upgraded as new technologies emerge



Offers Key Benefits

- Less active equipment (Reduced CAPEX & OPEX) = less annual maintenance requirements
- At intrinsically safe power levels RADIAFLEX can carry enough DC power to operate active in-line devices – even at 2.4GHz and wireless LAN frequencies
- Systems using RCF12-50JFN are “future-friendly” and can handle voice and data simultaneously on the same cable



Broadband Communication from 30-6000MHz