industrial data rf cable series

RCF12-50 / RCF78

Slotted Outer Conductor Radiating Leaky Feeder Cable

50 Ω 1/2-inch & 7/8-inch slotted-copper broadband radiating leaky feeder (75–2700 MHz)



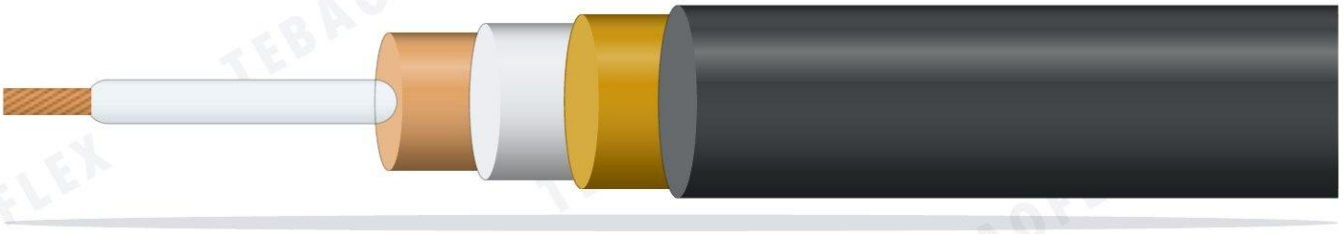
IEC 61196-4 · Leaky Feeder | 50 Ω · 75–2700 MHz Broadband | CPR B2ca LSZH · RCF12 & RCF78

Application

50 Ω broadband slotted-copper radiating ('leaky feeder') RF coaxial cable (RCF12-50 / RCF78-50 / RLKU158-50) per IEC 61196-4 with a copper tube core, foam PE dielectric (88 % VoP), milled slotted copper outer tube, and EN 45545-2 HL3 LSZH jacket.

Typical uses: High-Speed Rail & GSM-R / FRMCS Tunnels, Metro Subway & Underground Stations, Highway & Alpine Road Tunnels, Underground Hard-Rock & Coal Mines, Airport Baggage & Utility Tunnels

Construction





Cross-section, not to scale

1. Copper-clad aluminum or copper tube inner conductor
2. High-expansion closed-cell foam PE dielectric
3. Slotted copper outer conductor (coupled mode)
4. Low-smoke zero-halogen (LSZH / FRNC) tunnel jacket

Technical data

Typical values

Characteristic impedance	50 Ω ± 2 Ω	Operating frequency band	75 MHz to 2,700 MHz (VHF/TETRA/GSM-R/LTE/5G)
Velocity of propagation	88 % (RCF12, 76 pF/m) · 89 % (RCF78, 75 pF/m)	Longitudinal loss @ 450 / 900 MHz	5.3 / 7.8 dB/100m (RCF12) · 2.7 / 4.1 dB/100m (RCF78)
Longitudinal loss @ 1800 / 2400 MHz	11.8 / 14.5 dB/100m (RCF12) · 6.5 / 8.2 dB/100m (RCF78)	Coupling loss (50% / 95% @ 900 MHz)	56 dB / 65 dB at 2.0 m distance (IEC 61196-4)
Operating temperature range	-40 °C to +85 °C	Installation temperature	-25 °C to +60 °C (LSZH tunnel jacket)
Passive intermodulation (PIM3)	≤ -155 dBc (2 × 43 dBm carriers)	Inner / dielectric diameter	4.8 / 12.3 mm (RCF12) · 9.3 / 23.8 mm (RCF78)
Overall jacket diameter	15.8 mm (1/2" RCF12) · 28.5 mm (7/8" RCF78)	Min. bending radius	200 mm (RCF12) · 350 mm (RCF78)
Recommended clamp spacing	1.0 m – 1.5 m on non-metallic standoffs (≥ 80 mm)	Tunnel fire & CPR rating	EN 50575 B2ca-s1a,d0,a1 & IEC 60332-3-24 Cat C
Smoke density & halogen-free	IEC 61034-2 (≥ 70 % transmittance) & IEC 60754-1/2	Tunnel wind-load endurance	Withstands 350 km/h high-speed train piston pressure
Standards	IEC 61196-4 (Radiating Coaxial Cables)		

Sizes

8 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Impedance / size	Conductor & dielectric	Wall ≈ mm	Outer Ø ≈ mm	Metal kg/km	Weight ≈ kg/km	Min. bend R fixed mm
Standard RCF12-50 / RCF78 configurations 8 sizes							
☐ RCF12-50JFN	1/2" · 50 Ω LSZH	CCA Ø 4.8 + Slotted Cu	1.25	15.80	102.0	215.0	200
☐ RCF12-50B2	1/2" · 50 Ω CPR B2ca	CCA Ø 4.8 + Slotted Cu	1.30	16.00	102.0	230.0	200
☐ RCF58-50JFN	5/8" · 50 Ω LSZH	Cu Ø 6.4 + Slotted Cu	1.40	20.50	168.0	335.0	260
☐ RCF78-50JFN	7/8" · 50 Ω LSZH	Cu Tube Ø 9.3 + Slotted Cu	1.60	28.50	255.0	520.0	350
☐ RCF78-50B2	7/8" · 50 Ω CPR B2ca	Cu Tube Ø 9.3 + Slotted Cu	1.65	28.80	255.0	550.0	350
☐ RCF114-50JFN	1-1/4" · 50 Ω LSZH	Cu Tube Ø 13.1 + Slotted Cu	1.80	39.50	410.0	840.0	500
☐ RCF158-50JFN	1-5/8" · 50 Ω LSZH	Cu Tube Ø 17.6 + Slotted Cu	2.00	50.40	595.0	1,210.0	650
☐ RLKU12-50 Mine VHF/UHF	1/2" · 50 Ω Mine PE	CCA Ø 4.8 + Braided/Slotted	1.25	15.60	98.0	195.0	180

– Outer diameters and weights are nominal engineering values for RCF12-50 / RCF78 subject to standard manufacturing tolerances per IEC 61196-4 / EN 50575 B2ca (Slotted-Outer-Conductor Radiating Leaky Feeder).

RF & electrical data

8 sizes

Configuration	Max. DC R @ 20 °C Ω/km	Char. Z0 Ω	Velocity VoP / L (% or nH/m)	Dielectric test VAC rms
RCF12-50JFN (1/2" · 50 Ω LSZH)	1.48	50.0	88.0	3,500
RCF12-50B2 (1/2" · 50 Ω CPR B2ca)	1.48	50.0	88.0	3,500
RCF58-50JFN (5/8" · 50 Ω LSZH)	1.12	50.0	88.0	4,500
RCF78-50JFN (7/8" · 50 Ω LSZH)	0.88	50.0	89.0	6,000
RCF78-50B2 (7/8" · 50 Ω CPR B2ca)	0.88	50.0	89.0	6,000
RCF114-50JFN (1-1/4" · 50 Ω LSZH)	0.56	50.0	90.0	8,000
RCF158-50JFN (1-5/8" · 50 Ω LSZH)	0.41	50.0	91.0	10,000
RLKU12-50 Mine VHF/UHF (1/2" · 50 Ω Mine PE)	1.48	50.0	88.0	3,500

– Characteristic impedance, propagation velocity, DC resistance at +20 °C, and dielectric withstand voltages verified per IEC 61196-4 / EN 50575 B2ca (Slotted-Outer-Conductor Radiating Leaky Feeder).

Standards and approvals

- IEC 61196-4 / EN 50575 B2ca (Slotted-Outer-Conductor Radiating Leaky Feeder)
- CE (2014/35/EU) & RoHS 3 (2015/863/EU) Compliant
- REACH SVHC Compliance Verified

Certifications

Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

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Email
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tebaoflex.com/cables/radiaflex-slotted-outer-conductor-tunnel-underground-radiating-leaky-feeder-cable

Typical values for this cable type, based on IEC 61196-4 / EN 50575 B2ca (Slotted-Outer-Conductor Radiating Leaky Feeder). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.