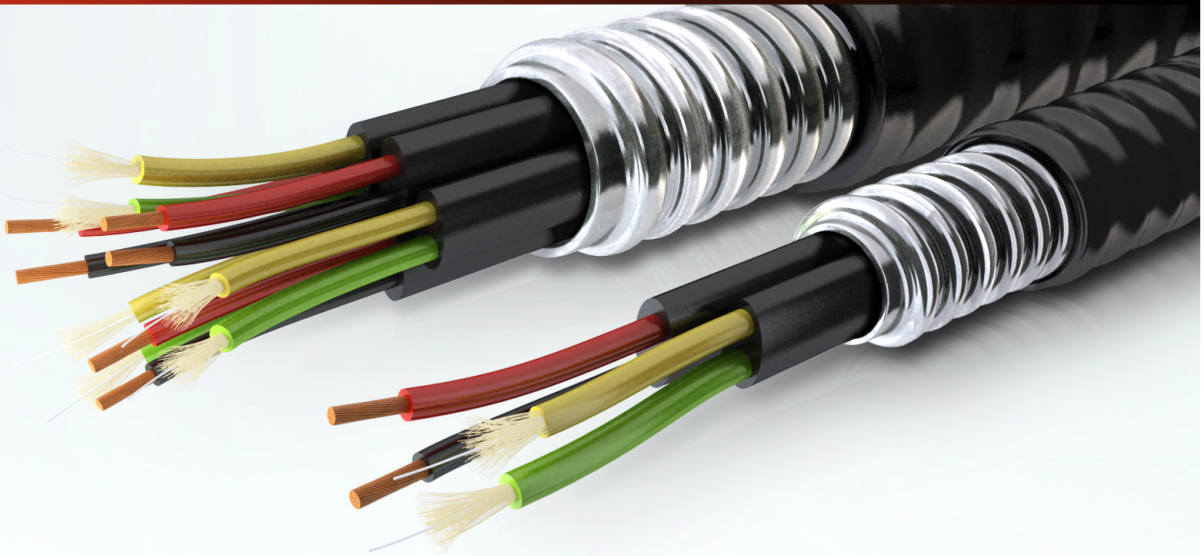


HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution

Your clear choice for world-class innovation in RRH deployments



➔ **RFS' HYBRIFLEX RRH hybrid feeder cabling solution combines optical fiber and DC power for Remote Radio Heads (RRHs) in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments**

- Connects up to 3 sectors with a single cable
- Minimizes installation time
- On-site and pre-connectorized options
- Eliminates typical need for junction boxes
- Supports CELLFLEX® accessories range
- Extremely lightweight aluminum construction

Features	Benefits
<ul style="list-style-type: none"> • Aluminum corrugated armor with outstanding bending characteristics 	<ul style="list-style-type: none"> • Minimizes installation time and enables mechanical protection and shielding as well as the ability to ground the RRH
<ul style="list-style-type: none"> • Installation of stripped fiber optic cable pairs directly to the RRH (individual UV-protection jacket) 	<ul style="list-style-type: none"> • Reduces capital expenditures (CAPEX) and wind load by eliminating need for interconnection or split-up boxes
<ul style="list-style-type: none"> • Accessories common with RFS standard 1/2-inch and 7/8-inch feeder cables (grounding kits, hanger kits and wallglands) 	<ul style="list-style-type: none"> • Reduces inventory requirements and simplifies installation logistics
<ul style="list-style-type: none"> • Optical fiber and power cables housed in a single corrugated cable 	<ul style="list-style-type: none"> • Saves CAPEX by standardizing RRH cable installation and reducing workforce requirements
<ul style="list-style-type: none"> • Outer conductor grounding 	<ul style="list-style-type: none"> • Eliminates usual grounding cable and saves installation costs
<ul style="list-style-type: none"> • Robust cabling 	<ul style="list-style-type: none"> • Eliminates need for expensive cable trays and ducts
<ul style="list-style-type: none"> • Lightweight aluminum solution and compact design 	<ul style="list-style-type: none"> • Decreases tower load
<ul style="list-style-type: none"> • Outdoor polyethylene jacket 	<ul style="list-style-type: none"> • Ensures long-lasting cable protection
<ul style="list-style-type: none"> • Bulk delivery and factory pre-terminated options available 	<ul style="list-style-type: none"> • Provides the ability to choose the right approach for each deployment scenario

HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution

RFS' unique HYBRIFLEX RRH hybrid feeder cabling solution was developed to reduce installation complexity and costs at cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable.

Specifications	Power cable	Fiber optic cable
Characteristics	- Used to feed the RRH or Remote Radio Unit (RRU)	- Multi-mode or single-mode fiber for data transfer - Flame-retardant PVC jacket - Fiber performance: ITU-T G.651, G.652, G.655 or G.657
Construction	Conductor: Flexible tinned copper wires Isolation: Flame-retardant PVC jacket	- Acrylate-coated optical fiber with a thermoplastic secondary coating - Aramid yarn layer and a PVC jacket to protect the fiber
Norms and standards applied	- NBR NM 247-3: Isolated cables with PVC for nominal voltages up to 450/750V, Part 3: Isolated conductors for fixed installations (IEC 60227-3 MOD) - NBR NM 280: Conductors of Isolated Cables (IEC 60228 MOD) - NBR NM 247-2: Isolated cables with PVC for nominal voltages up to 450/750V, Part 2: Method of test (IEC 60227-2 MOD)	- SDT 235-350-709 (TELEBRÁS) - NBR 14106 (ABNT)

Structure

	1-sector cable	3-sector cable
Diameter corrugated aluminum armor, mm (in)	13.80 (0.54) *	25.20 (0.99) **
Diameter over jacket nominal, mm (in)	15.80 (0.62)	27.80 (1.09)
UV-protection (individual and external jacket)	Yes	Yes

* Outer conductor equivalent to LCF12-50JL ** Outer conductor equivalent to LCF78-50JL

Mechanical properties

Single bending radius, mm (in)	70 (3)	120 (5)
Multiple bending radius, mm (in)	125 (5)	250 (10)
Cable weight, kg/m (lb/ft)	0.22 (0.15)	0.55 (0.37)
Recommended/Maximum clamp spacing, m (ft)	0.6 / 1.0 (2.0 / 3.25)	0.8 / 1.0 (2.75 / 3.25)
Connectors protection during hoisting process	Bubble wrap	Bubble wrap

Electrical properties

DC-resistance aluminum armor, Ω/km (Ω/1000ft)	2.78 (0.85)	1.42 (0.43)
DC-resistance power cable, Ω/km (Ω/1000ft)	2.5mm ² = 8.21 (2.5)	2.5mm ² = 8.21 (2.5)

Fiber optic properties

Fiber optic version	Multi-mode or single-mode	Multi-mode or single-mode
Fiber optic core/clad (μm)	50/125 or 9/125	50/125 or 9/125
Fiber optic primary coating (acrylate) (μm)	250	250
Fiber optic secondary protection (PVC) (μm)	900	900

Environment

	Specifications
Installation temperature	-20°C to +65°C
Operation temperature	-20°C to +65°C

