



**Discontinued product** HBF078-U2S4-660-LI

HYBRIFLEX® Hybrid Feeder Cabling Solution 2x4, 7/8", 2 pairs 6AWG, Low-Inductance Coaxial Power Wire, 4 pairs Single-Mode Fiber, DLC Connectors, 660 ft

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments. It 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. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It may eliminate the need for junction boxes as well as works in conjunction with and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.



**FEATURES / BENEFITS**

- Aluminum corrugated armor with outstanding bending characteristics – Minimizes installation time and enables mechanical protection and shielding
- Same accessories as 7/8" coaxial cable
- Outer conductor grounding – Utilizes same grounding methods as coaxial cable
- Lightweight solution and compact design – Decreases tower loading
- Robust cabling – Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- UL-Listed, flame-retardant jacket, UV protected assemblies - Allows both indoor and outdoor applications
- **Maximum robustness – Fully armored cable includes riser trunk and top outdoor breakout**

**TECHNICAL FEATURES**

**STRUCTURE**

Cable Type		HYBRIFLEX® Low Inductance
Fire Performance		Flame Retardant
Size		7/8"
Length	m (ft)	201.1 (660)

**MECHANICAL SPECIFICATIONS**

Outer Diameter Nominal	mm (in)	29.2 (1.15)
Cable Weight	kg/m (lb/ft)	1.1 (0.7)
Minimum Bending Radius, Single Bend	mm (in)	125 (5)
Minimum Bending Radius, Multiple Bends	mm (in)	254 (10)
Recommended / Maximum Clamp Spacing	m (ft)	1 / 1.2 (3.25 / 4)

**ARMOR SPECIFICATIONS**

Armor Type		Corrugated Aluminum
Maximum DC-Resistance of Armor	Ω/km (Ω/kft)	1.05 (0.32)
Diameter Corrugated Armor	mm (in)	25.4 (0.99)



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**CABLE JACKET**

UV-Protection Individual and External Jacket		Yes
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**DC POWER CABLE SPECIFICATIONS**

Number of DC Pairs		2
Maximum DC-Resistance Power Cable	Ω/km (Ω/kft)	1.4 (0.41)
Cross Section of Power Cable	mm <sup>2</sup> (AWG)	13.3 (6)
DC Wire Jacket Material		PVC
DC Cable Single Bending Radius	mm (in)	137 (5.4)
DC Cable Diameter	mm (in)	9.3 (0.365)
DC Cable Jacket Material		PVC
DC Standards (Meets or Exceeds)		For use in UL 2882, PVC, RoHS/REACH Compliant
Break-out Length (Top)	mm (in)	1346 (53)
Break-out Length (Bottom)	mm (in)	1244 (49)
Alarm Wire		10 (5 twisted pairs), 0.8 mm <sup>2</sup> (8), 18 AWG
Alarm Wire Standards (Meets or Exceeds)		UL Standard 1063, 1581 VW-1, MTW Oil and Gasoline RES1 SUNRES (Cable meets UL requirements), RoHS/REACH Compliant

**F/O CABLE SPECIFICATIONS**

F/O Cable Type		G657-A1 Single Mode, Bend Tolerant
Number of F/O Pairs		4
Core/Clad	μm	9/125
Secondary Protection Nominal	μm (in)	900 (0.035)
Single Bending Radius	mm (in)	157 (6.2)
Cable Diameter		5.512 (0.217)
F/O Standards (Meets or Exceeds)		UL Listed Type OFNR (UL1666), RoHS Compliant
Optical Loss	dB/Km	0.5 @ 1310 nm 0.5 @ 1550 nm
Fiber Termination End 1		DLC connector
Fiber Termination End 2		DLC connector
FO Break-out Length (Top)	mm (in)	1422 (56)
FO Break-out Length (Bottom)	mm (in)	1320 (52)

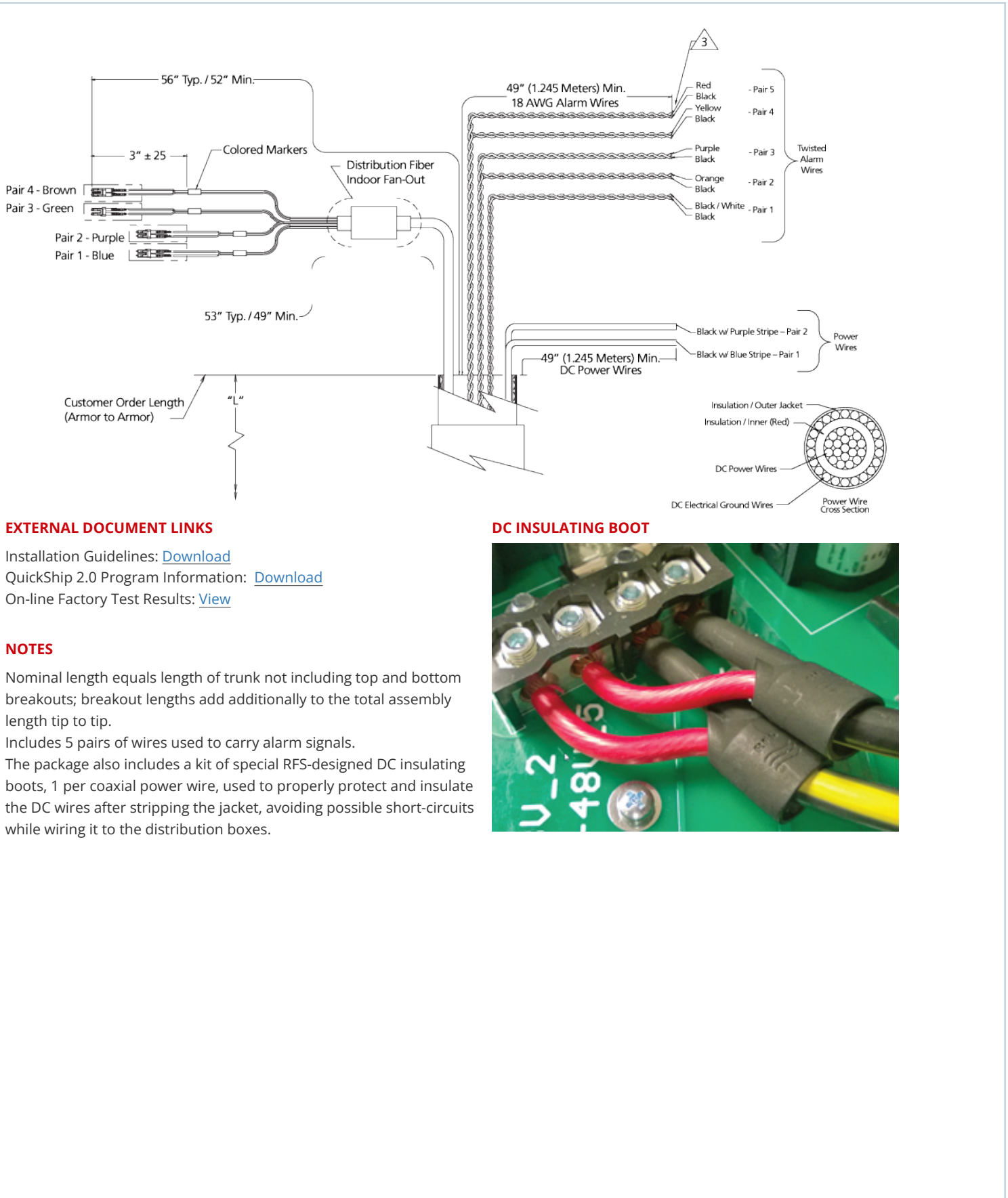
**TESTING AND ENVIRONMENTAL**

Storage Temperature	°C (°F)	-40 to 70 (-40 to 158)
Operation Temperature	°C (°F)	-40 to 65 (-40 to 149)
Installation Temperature	°C (°F)	-20 to 65 (-4 to 149)
Jacket Specifications		UL2882, UL Listed



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**EXTERNAL DOCUMENT LINKS**

- Installation Guidelines: [Download](#)
- QuickShip 2.0 Program Information: [Download](#)
- On-line Factory Test Results: [View](#)

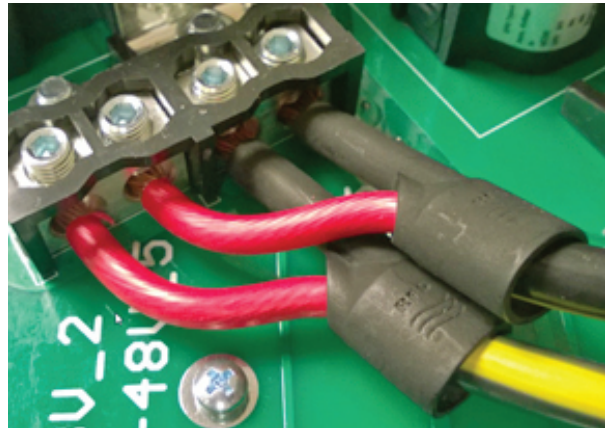
**NOTES**

Nominal length equals length of trunk not including top and bottom breakouts; breakout lengths add additionally to the total assembly length tip to tip.

Includes 5 pairs of wires used to carry alarm signals.

The package also includes a kit of special RFS-designed DC insulating boots, 1 per coaxial power wire, used to properly protect and insulate the DC wires after stripping the jacket, avoiding possible short-circuits while wiring it to the distribution boxes.

**DC INSULATING BOOT**





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**ADDITIONAL ASSEMBLY LENGTHS**

Length (ft)	Model Number
30	HBF078-U2S4-30-LI
60	HBF078-U2S4-60-LI
90	HBF078-U2S4-90-LI
120	HBF078-U2S4-120-LI
150	HBF078-U2S4-150-LI
180	HBF078-U2S4-180-LI
210	HBF078-U2S4-210-LI
240	HBF078-U2S4-240-LI
270	HBF078-U2S4-270-LI
300	HBF078-U2S4-300-LI
330	HBF078-U2S4-330-LI
360	HBF078-U2S4-360-LI
390	HBF078-U2S4-390-LI
420	HBF078-U2S4-420-LI
450	HBF078-U2S4-450-LI
480	HBF078-U2S4-480-LI
510	HBF078-U2S4-510-LI
540	HBF078-U2S4-540-LI
570	HBF078-U2S4-570-LI
600	HBF078-U2S4-600-LI
630	HBF078-U2S4-630-LI
660	HBF078-U2S4-660-LI
690	HBF078-U2S4-690-LI