PRODUCT DATASHEET

FR-N-4SM-01-90F1

HYBRIFLEX® RRH Optical Fiber Cable, 4 Pair, Ruggedized Bend-Insensitive Single-Mode Fiber, DLC to DLC/FullAXS Compatible Connectors, 90 ft

PRODUCT DESCRIPTION

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines any combination of optical fiber and/or DC power for RRHs in a single lightweight armored or unarmored cable, making it the world's most innovative solution for RRH deployments. Hybrid, Fiber Optic and DC riser trunk and jumper cables are available in a large variety of fiber counts, DC counts and cross sections. Both pre-connectorized and on-site options are available.

FEATURES / BENEFITS

- Ruggedized, bend-insensitive fiber design with outstanding bending characteristics
- 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 pair directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Outdoor, black jacket – Ensures long-lasting cable protection
- **100% Factory tested - Online test results available**

TECHNICAL FEATURES

STRUCTURE

Cable Type		HYBRIFLEX®
Fire Performance		Flame Retardant
Length	m (ft)	27.4 (90)

MECHANICAL SPECIFICATIONS

Outer Diameter Nominal	mm (in)	5.5 (0.217)
Cable Weight	kg/m (lb/ft)	0.033 (0.022)
Minimum Bending Radius, Single Bend	mm (in)	66 (2.6)
Minimum Bending Radius, Multiple Bends	mm (in)	83 (3.3)
Recommended / Maximum Clamp Spacing	m (ft)	1 / 1.2 (3.25 / 4)

F/O CABLE SPECIFICATIONS

Number of F/O Pairs		4

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

FR-N-4SM-01-90F1

HYBRIFLEX® RRH Optical Fiber Cable, 4 Pair, Ruggedized Bend-Insensitive Single-Mode Fiber, DLC to DLC/FullAXS Compatible Connectors, 90 ft

F/O Cable Type		G657-A2 Single Mode, Bend Tolerant
Core/Clad	µm	9/125
Secondary Protection Nominal	µm (in)	900 (0.035)
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
FO Break-out Length (Top)	mm (in)	279 (11)
FO Break-out Length (Bottom)	mm (in)	228 (9)
Cable Sealing Method		Semi-rigid flame-retardant polyolefin, with hot melt adhesive

Fiber Termination End 1		DLC Connector
Fiber Termination End 2		DLC Connector with FullAXS Compatibility

CABLE JACKET

UV-Protection Individual and External Jacket		Yes
Jacket Material		Flame Retardant, Indoor/Outdoor, PVC, Black

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		UL 1666

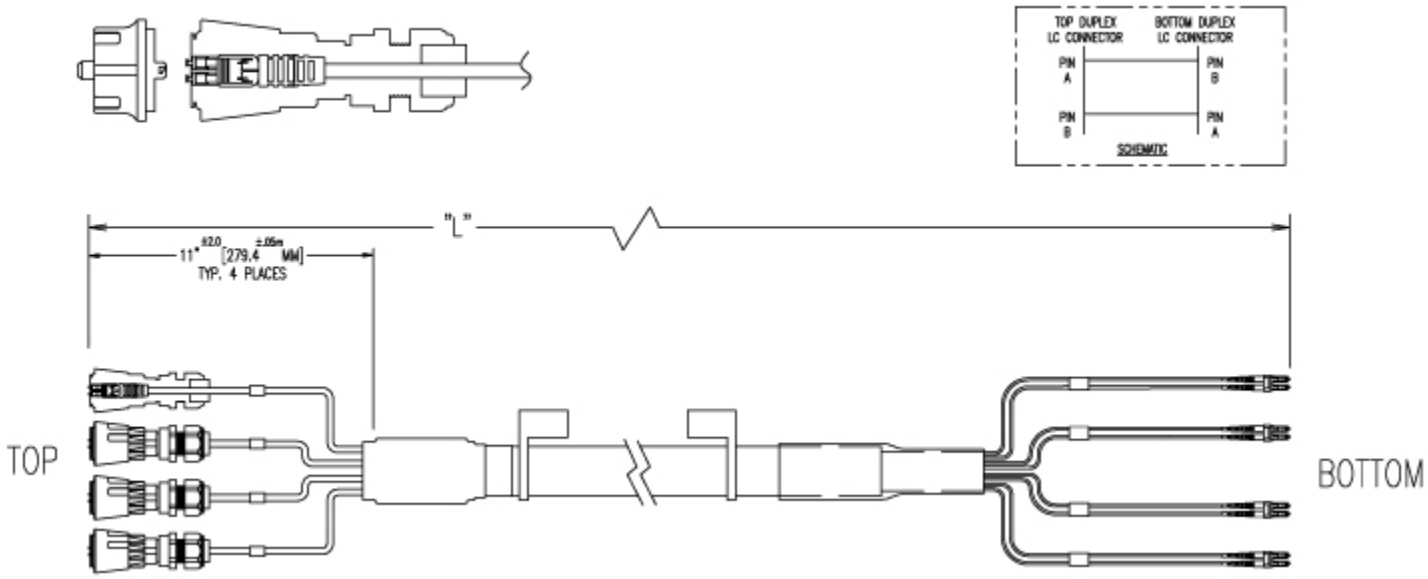
EXTERNAL DOCUMENT LINKS

Installation Guidelines: Download
QuickShip 2.0 Program Information: Download
On-line Factory Test Results: View

NOTES

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

HYBRIFLEX® RRH Optical Fiber Cable, 4 Pair, Ruggedized Bend-Insensitive Single-Mode Fiber, DLC to DLC/FullAXS Compatible Connectors, 90 ft



All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

ADDITIONAL ASSEMBLIES - 1 PAIR SM FIBER

Length, ft	Model Number
10	FR-N-1SM-01-10F1
20	FR-N-1SM-01-20F1
30	FR-N-1SM-01-30F1
40	FR-N-1SM-01-40F1
50	FR-N-1SM-01-50F1
60	FR-N-1SM-01-60F1
79	FR-N-1SM-01-70F1
80	FR-N-1SM-01-80F1
90	FR-N-1SM-01-90F1
100	FR-N-1SM-01-100F1

ADDITIONAL ASSEMBLIES - 2 PAIR SM FIBER

Length, ft	Model Number
10	FR-N-2SM-01-10F1
20	FR-N-2SM-01-20F1
30	FR-N-2SM-01-30F1
40	FR-N-2SM-01-40F1
50	FR-N-2SM-01-50F1
60	FR-N-2SM-01-60F1
70	FR-N-2SM-01-70F1
80	FR-N-2SM-01-80F1
90	FR-N-2SM-01-90F1
100	FR-N-2SM-01-100F1

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

ADDITIONAL ASSEMBLIES - 3 PAIR SM FIBER

Length, ft	Model Number
10	FR-N-3SM-01-10F1
20	FR-N-3SM-01-20F1
30	FR-N-3SM-01-30F1
40	FR-N-3SM-01-40F1
50	FR-N-3SM-01-50F1
60	FR-N-3SM-01-60F1
79	FR-N-3SM-01-70F1
80	FR-N-3SM-01-80F1
90	FR-N-3SM-01-90F1
100	FR-N-3SM-01-100F1

ADDITIONAL ASSEMBLIES - 4 PAIR SM FIBER

Length, ft	Model Number
10	FR-N-4SM-01-10F1
20	FR-N-4SM-01-20F1
30	FR-N-4SM-01-30F1
40	FR-N-4SM-01-40F1
50	FR-N-4SM-01-50F1
60	FR-N-4SM-01-60F1
70	FR-N-4SM-01-70F1
80	FR-N-4SM-01-80F1
90	FR-N-4SM-01-90F1
100	FR-N-4SM-01-100F1

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

ADDITIONAL ASSEMBLIES - 1 STRAND SM FIBER

Length, ft	Model Number
10	FR-N-1SSM-01-10F1
20	FR-N-1SSM-01-20F1
30	FR-N-1SSM-01-30F1
40	FR-N-1SSM-01-40F1
50	FR-N-1SSM-01-50F1
60	FR-N-1SSM-01-60F1
70	FR-N-1SSM-01-70F1
80	FR-N-1SSM-01-80F1
90	FR-N-1SSM-01-90F1
100	FR-N-1SSM-01-100F1

ADDITIONAL ASSEMBLIES - 2 STRAND SM FIBER

Length, ft	Model Number
10	FR-N-2SSM-01-10F1
20	FR-N-2SSM-01-20F1
30	FR-N-2SSM-01-30F1
40	FR-N-2SSM-01-40F1
50	FR-N-2SSM-01-50F1
60	FR-N-2SSM-01-60F1
70	FR-N-2SSM-01-70F1
80	FR-N-2SSM-01-80F1
90	FR-N-2SSM-01-90F1
100	FR-N-2SSM-01-100F1

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

ADDITIONAL ASSEMBLIES - 3 STRAND SM FIBER

Length, ft	Model Number
10	FR-N-3SSM-01-10F1
20	FR-N-3SSM-01-20F1
30	FR-N-3SSM-01-30F1
40	FR-N-3SSM-01-40F1
50	FR-N-3SSM-01-50F1
60	FR-N-3SSM-01-60F1
70	FR-N-3SSM-01-70F1
80	FR-N-3SSM-01-80F1
90	FR-N-3SSM-01-90F1
100	FR-N-3SSM-01-100F1

ADDITIONAL ASSEMBLIES - 4 STRAND SM FIBER

Length, ft	Model Number
10	FR-N-4SSM-01-10F1
20	FR-N-4SSM-01-20F1
30	FR-N-4SSM-01-30F1
40	FR-N-4SSM-01-40F1
50	FR-N-4SSM-01-50F1
60	FR-N-4SSM-01-60F1
70	FR-N-4SSM-01-70F1
80	FR-N-4SSM-01-80F1
90	FR-N-4SSM-01-90F1
100	FR-N-4SSM-01-100F1

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

PRE-PACKED HYBRIFLEX KITS FOR EASY INTEGRATION INTO RAYCAP JUNCTION BOXES

RFS Technologies now offers Kitting options for most hybrid risers and jumpers that include both the cable assembly and the Raycap inserts. For reference, kits have a “K” as the third digit in the model number. HB158 does not require an additional gland/insert for proper installation and sealing into the Distribution Boxes.

Kit Model Prefix	Assembly Prefix	Assembly Qty	Raycap Insert Kit	Insert Kit Contents	Raycap Insert Kit Qty
HBK114	HB114	1	RFS Technologies-TRUNK-KIT	(2) 190 0620, Insert, M75, 1H, 40mm	1
HBK058	HBF058		RFS Technologies-JUMP-KIT	(1) 190 0621, Insert, M75, 3H, 22mm, Split w/ plugs	
HBK012	HBF012		RFS Technologies-JUMP-KIT-2	(1) 190 0903, Insert, M75, 2H, 15mm, Split w/ plugs	
FRK-N	FR-N		RFS Technologies-FIBER-KIT	(1) 190 0657, Insert, M75, 6H, 6.1mm, Split w/ plugs	

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering