

Product Specifications

COMMScope®



F4A-PNMDF-1M

FSJ4-50B SureFlex® Jumper with interface types N Male and 7-16 DIN Female, 1 m

Product Classification

Product Series	FSJ4-50B
Product Type	SureFlex® standard

General Specifications

Body Style, Connector A	Straight
Body Style, Connector B	Straight
Cable Family	FSJ4-50B
Interface, Connector A	N Male
Interface, Connector B	7-16 DIN Female
Length	1.000 m 3.281 ft
Nominal Size	1/2 in
Specification Sheet Revision Level	A

Electrical Specifications

DTF, Connector A	-32.00 dB
DTF, Connector B	-32.00 dB

Jumper Assembly Sample Label



Return Loss/VSWR

Frequency Band	VSWR, typical	Return Loss, typical (dB)
0-3000 MHz	1.11	26.00
2.2-2.7 GHz	1.08	28.00

Regulatory Compliance/Certifications

Agency	Classification
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Product Specifications

COMMScope®

F4A-PN/MDF-1M

RoHS 2011/65/EU

China RoHS SJ/T 11364-2006

ISO 9001:2008

Compliant by Exemption

Above Maximum Concentration Value (MCV)

Designed, manufactured and/or distributed under this quality management system



Included Products

FSJ4-50B — FSJ4-50B, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/2 in, black PE jacket

L4DR-PS — 7-16 DIN Male Right Angle Positive Stop™ for 1/2 in LDF4-50A cable

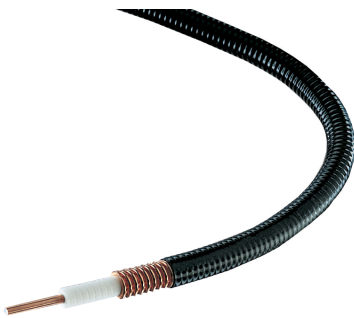
L4NR-PS — Type N Male Right Angle Positive Stop™ for 1/2 in LDF4-50A cable

F4DR-C — 7-16 DIN Male Right Angle for 1/2 in FSJ4-50B cable

F4NR-HC — Type N Male Right Angle for 1/2 in FSJ4-50B cable

Product Specifications

COMMSCOPE®



FSJ4-50B

FSJ4-50B, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/2 in, black PE jacket

Product Classification

Brand	HELIAX® SureFlex®
Product Series	FSJ4-50B
Product Type	Coaxial wireless cable

Standards And Qualifications

EN50575 CPR Cable EuroClass	Fca
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Construction Materials

Jacket Material	PE
Outer Conductor Material	Corrugated copper
Dielectric Material	Foam PE
Flexibility	Superflexible
Inner Conductor Material	Copper-clad aluminum wire
Jacket Color	Black

Dimensions

Nominal Size	1/2 in
Cable Weight	0.14 lb/ft 0.21 kg/m
Diameter Over Dielectric	8.890 mm 0.350 in
Diameter Over Jacket	13.462 mm 0.530 in
Inner Conductor OD	3.5560 mm 0.1400 in
Outer Conductor OD	12.192 mm 0.480 in

Electrical Specifications

Cable Impedance	50 ohm $\pm$ 1 ohm
Capacitance	25.2 pF/ft 82.7 pF/m
dc Resistance, Inner Conductor	0.820 ohms/kft 2.690 ohms/km
dc Resistance, Outer Conductor	1.560 ohms/kft 5.120 ohms/km
dc Test Voltage	2500 V
Inductance	0.207 μ H/m 0.063 μ H/ft
Insulation Resistance	100000 Mohms•km
Jacket Spark Test Voltage (rms)	5000 V
Operating Frequency Band	1 – 10200 MHz
Peak Power	15.6 kW

Product Specifications

COMMScope®

FSJ4-50B

Velocity 81%

Environmental Specifications

Installation Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-70 °C to +85 °C (-94 °F to +185 °F)

General Specifications

Brand	HELIAX®
Ordering Note	CommScope® standard product (Global)

Mechanical Specifications

Bending Moment	2.7 N-m 2.0 ft lb
Flat Plate Crush Strength	110.0 lb/in 2.0 kg/mm
Minimum Bend Radius, Multiple Bends	31.75 mm 1.25 in
Minimum Bend Radius, Single Bend	31.75 mm 1.25 in
Number of Bends, minimum	20
Tensile Strength	79 kg 175 lb

Note

Performance Note	Values typical, unless otherwise stated
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Standard Conditions

Attenuation, Ambient Temperature	20 °C 68 °F
Average Power, Ambient Temperature	40 °C 104 °F
Average Power, Inner Conductor Temperature	100 °C 212 °F

Return Loss/VSWR

Frequency Band	VSWR	Return Loss (dB)
680–800 MHz	1.2	20.80
800–960 MHz	1.2	20.80
1700–2200 MHz	1.2	20.80
2300–2700 MHz	1.2	20.80

Product Specifications

COMMSCOPE®

FSJ4-50B

Attenuation

Frequency (MHz)	Attenuation (dB/100 m)	Attenuation (dB/100 ft)	Average Power (kW)
0.5	0.231	0.07	15.60
1	0.327	0.1	15.60
1.5	0.401	0.122	15.60
2	0.463	0.141	15.60
10	1.044	0.318	10.14
20	1.485	0.453	7.12
30	1.828	0.557	5.79
50	2.377	0.724	4.45
85	3.13	0.954	3.38
88	3.187	0.971	3.32
100	3.406	1.038	3.11
108	3.546	1.081	2.98
150	4.214	1.285	2.51
174	4.558	1.389	2.32
200	4.908	1.496	2.16
204	4.96	1.512	2.13
300	6.095	1.858	1.74
400	7.121	2.17	1.49
450	7.592	2.314	1.39
500	8.042	2.451	1.32
512	8.148	2.483	1.30
600	8.891	2.71	1.19
700	9.683	2.951	1.09
800	10.431	3.179	1.01
824	10.605	3.232	1.00
894	11.101	3.383	0.95
960	11.555	3.522	0.92
1000	11.824	3.604	0.89
1218	13.226	4.031	0.80
1250	13.423	4.091	0.79
1500	14.906	4.543	0.71
1700	16.027	4.885	0.66
1794	16.537	5.04	0.64
1800	16.57	5.05	0.64
2000	17.624	5.371	0.60
2100	18.137	5.528	0.58
2200	18.641	5.682	0.57
2300	19.138	5.833	0.55
2500	20.11	6.129	0.53
2700	21.056	6.418	0.50
3000	22.432	6.837	0.47
3400	24.198	7.375	0.44
3700	25.478	7.765	0.42
4000	26.727	8.146	0.40
5000	30.693	9.355	0.34
6000	34.427	10.493	0.31
8000	41.403	12.619	0.26
8800	44.054	13.427	0.24
10000	47.914	14.604	0.22

* Values typical, guaranteed within 5%

Product Specifications

COMMSCOPE®

FSJ4-50B

Regulatory Compliance/Certifications

Agency

RoHS 2011/65/EU

China RoHS SJ/T 11364-2006

ISO 9001:2008

CENELEC

Classification

Compliant

Below Maximum Concentration Value (MCV)

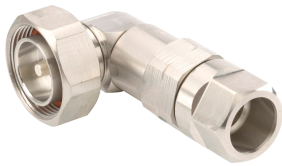
Designed, manufactured and/or distributed under this quality management system

EN 50575 compliant, Declaration of Performance (DoP) available



Product Specifications

COMMScope®



L4DR-PS

7-16 DIN Male Right Angle Positive Stop™ for 1/2 in LDF4-50A cable

General Specifications

Interface	7-16 DIN Male
Body Style	Right angle
Brand	HELIAX®
Mounting Angle	Right angle
Ordering Note	CommScope® standard product (Global)

Electrical Specifications

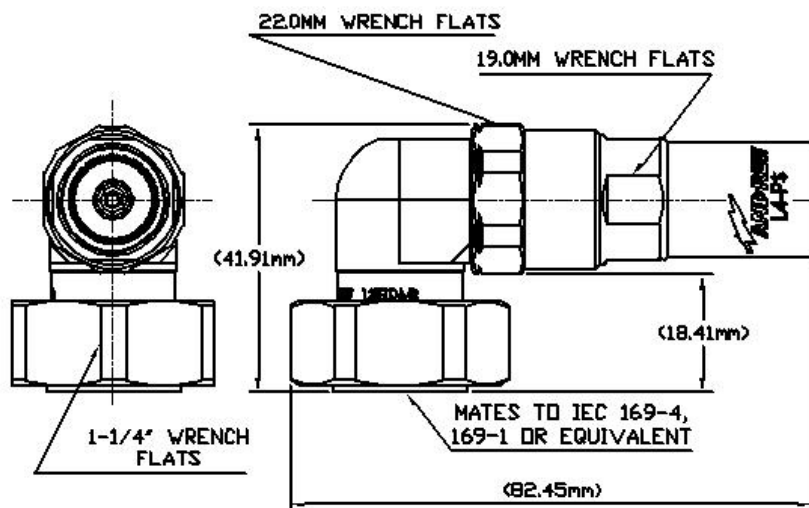
Connector Impedance	50 ohm
Operating Frequency Band	0 – 7500 MHz
Cable Impedance	50 ohm
3rd Order IMD, typical	-120 dBm @ 910 MHz
3rd Order IMD Test Method	Two +43 dBm carriers
RF Operating Voltage, maximum (vrms)	884.00 V
dc Test Voltage	2500 V
Outer Contact Resistance, maximum	1.50 mOhm
Inner Contact Resistance, maximum	0.80 mOhm
Insulation Resistance, minimum	5000 MOhm
Average Power	1.0 kW @ 900 MHz
Peak Power, maximum	15.60 kW
Insertion Loss, typical	0.05 dB
Shielding Effectiveness	-110 dB

Product Specifications

COMMSCOPE®

L4DRPS

Outline Drawing



Mechanical Specifications

Outer Contact Attachment Method	Self-flare
Inner Contact Attachment Method	Captivated
Outer Contact Plating	Trimetal
Inner Contact Plating	Gold Silver
Interface Durability	500 cycles
Interface Durability Method	IEC 61169-4:9.5
Connector Retention Tensile Force	890 N 200 lbf
Connector Retention Torque	5.42 N-m 48.00 in lb
Pressurizable	No
Coupling Nut Proof Torque	24.86 N-m 220.00 in lb
Coupling Nut Retention Force	1000.85 N 225.00 lbf
Coupling Nut Retention Force Method	MIL-C-39012C-3.25, 4.6.22

Dimensions

Nominal Size	1/2 in
Height	41.91 mm 1.65 in
Length	82.45 mm 3.25 in
Right Angle Length	18.41 mm 0.72 in
Weight	166.90 g 0.37 lb
Width	34.60 mm 1.36 in

Environmental Specifications

Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Immersion Depth	1 m

Product Specifications

COMMSCOPE®

L4DRPS

Immersion Test Mating	Unmated
Immersion Test Method	IEC 60529:2001, IP68
Water Jetting Test Mating	Unmated
Water Jetting Test Method	IEC 60529:2001, IP66
Moisture Resistance Test Method	MIL-STD-202F, Method 106F
Mechanical Shock Test Method	MIL-STD-202F, Method 213B, Test Condition C
Thermal Shock Test Method	MIL-STD-202F, Method 107G, Test Condition A-1, Low Temperature -55 °C
Vibration Test Method	MIL-STD-202F, Method 204D, Test Condition B
Corrosion Test Method	MIL-STD-1344A, Method 1001.1, Test Condition A

Standard Conditions

Attenuation, Ambient Temperature	20 °C 68 °F
Average Power, Ambient Temperature	40 °C 104 °F

Return Loss/VSWR

Frequency Band	VSWR	Return Loss (dB)
50–1000 MHz	1.02	-41.00
1000–1900 MHz	1.03	-36.00
1900–2200 MHz	1.06	-31.00
2200–2700 MHz	1.07	-29.00
2700–3600 MHz	1.09	-27.00
3600–6000 MHz	1.19	-21.00
6000–8800 MHz	1.67	-12.00

Regulatory Compliance/Certifications

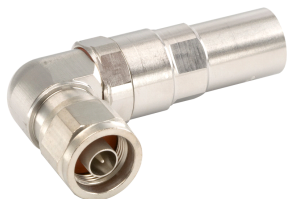
Agency	Classification
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

* Footnotes

Immersion Depth	Immersion at specified depth for 24 hours
Insertion Loss, typical	0.05v ⁻ freq (GHz) (not applicable for elliptical waveguide)

Product Specifications

COMMSCOPE®



L4NR-PS

Type N Male Right Angle Positive Stop™ for 1/2 in LDF4-50A cable

Product Classification

Brand	HELIAX® Positive Stop™
Product Type	Wireless and radiating connector

General Specifications

Interface	N Male
Body Style	Right angle
Brand	HELIAX® Positive Stop™
Mounting Angle	Right angle
Ordering Note	CommScope® standard product (Global)

Electrical Specifications

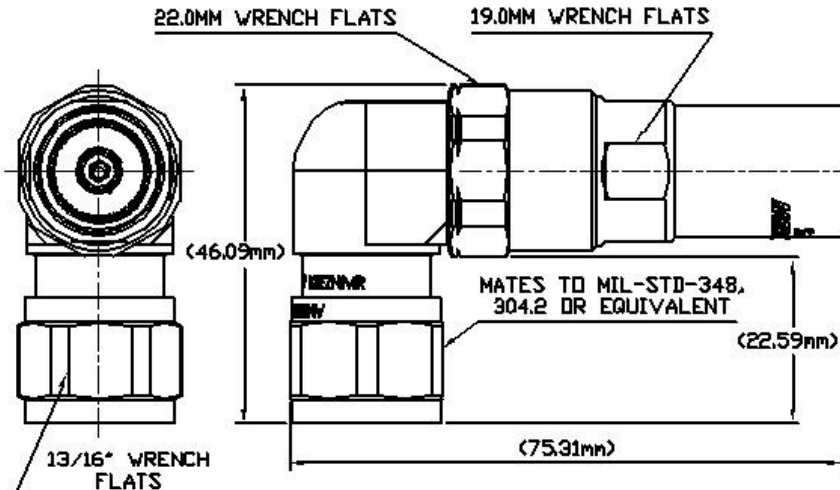
Connector Impedance	50 ohm
Operating Frequency Band	0 – 8800 MHz
Cable Impedance	50 ohm
3rd Order IMD, typical	-116 dBm @ 910 MHz
3rd Order IMD Test Method	Two +43 dBm carriers
RF Operating Voltage, maximum (vrms)	707.00 V
dc Test Voltage	2000 V
Outer Contact Resistance, maximum	0.30 mOhm
Inner Contact Resistance, maximum	2.00 mOhm
Insulation Resistance, minimum	5000 MOhm
Average Power	0.6 kW @ 900 MHz
Peak Power, maximum	10.00 kW
Insertion Loss, typical	0.05 dB
Shielding Effectiveness	-110 dB

Product Specifications

COMMSCOPE®

L4NR-PS

Outline Drawing



Mechanical Specifications

Outer Contact Attachment Method	Self-flare
Inner Contact Attachment Method	Captivated
Outer Contact Plating	Trimetal
Inner Contact Plating	Gold Silver
Interface Durability	500 cycles
Interface Durability Method	IEC 61169-4:9.5
Connector Retention Tensile Force	890 N 200 lbf
Connector Retention Torque	5.42 N-m 48.00 in lb
Pressurizable	No
Coupling Nut Proof Torque	4.52 N-m 40.00 in lb
Coupling Nut Retention Force	444.82 N 100.00 lbf
Coupling Nut Retention Force Method	MIL-C-39012C-3.23, 4.6.22

Dimensions

Nominal Size	1/2 in
Height	46.09 mm 1.81 in
Length	75.31 mm 2.96 in
Right Angle Length	22.60 mm 0.89 in
Weight	133.10 g 0.29 lb
Width	23.50 mm 0.93 in

Environmental Specifications

Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Immersion Depth	1 m

Product Specifications

COMMSCOPE®

L4NR-PS

Immersion Test Mating	Unmated
Immersion Test Method	IEC 60529:2001, IP68
Water Jetting Test Mating	Unmated
Water Jetting Test Method	IEC 60529:2001, IP66
Moisture Resistance Test Method	MIL-STD-202F, Method 106F
Mechanical Shock Test Method	MIL-STD-202F, Method 213B, Test Condition C
Thermal Shock Test Method	MIL-STD-202F, Method 107G, Test Condition A-1, Low Temperature -55 °C
Vibration Test Method	MIL-STD-202F, Method 204D, Test Condition B
Corrosion Test Method	MIL-STD-1344A, Method 1001.1, Test Condition A

Standard Conditions

Attenuation, Ambient Temperature	20 °C 68 °F
Average Power, Ambient Temperature	40 °C 104 °F

Return Loss/VSWR

Frequency Band	VSWR	Return Loss (dB)
50–1000 MHz	1.02	-39.00
1000–1900 MHz	1.04	-34.00
1900–2200 MHz	1.05	-32.00
2200–2700 MHz	1.08	-28.00
2700–3600 MHz	1.10	-26.00
3600–6000 MHz	1.12	-25.00
6000–8800 MHz	1.29	-18.00

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system



* Footnotes

Immersion Depth	Immersion at specified depth for 24 hours
Insertion Loss, typical	0.05v̄ freq (GHz) (not applicable for elliptical waveguide)

Product Specifications

COMMScope®

F4DR-C

7-16 DIN Male Right Angle for 1/2 in FSJ4-50B cable

General Specifications

Interface	7-16 DIN Male
Body Style	Right angle
Brand	HELIAX®
Mounting Angle	Right angle
Ordering Note	CommScope® standard product (Global)

Electrical Specifications

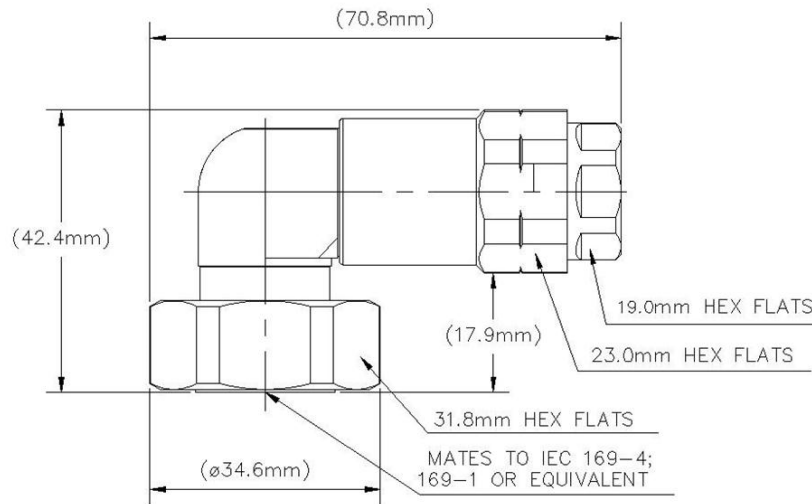
Connector Impedance	50 ohm
Operating Frequency Band	0 – 7500 MHz
Cable Impedance	50 ohm
3rd Order IMD, typical	-120 dBm @ 910 MHz
3rd Order IMD Test Method	Two +43 dBm carriers
RF Operating Voltage, maximum (vrms)	884.00 V
dc Test Voltage	2500 V
Outer Contact Resistance, maximum	1.50 mOhm
Inner Contact Resistance, maximum	0.80 mOhm
Insulation Resistance, minimum	5000 MOhm
Average Power	1.0 kW @ 900 MHz
Peak Power, maximum	15.60 kW
Insertion Loss, typical	0.05 dB
Shielding Effectiveness	-110 dB

Product Specifications

COMMSCOPE®

F4DRC

Outline Drawing



Mechanical Specifications

Outer Contact Attachment Method	Self-flare
Inner Contact Attachment Method	Captivated
Outer Contact Plating	Trimetal
Inner Contact Plating	Gold Silver
Interface Durability	500 cycles
Interface Durability Method	IEC 61169-4:9.5
Connector Retention Tensile Force	445 N 100 lbf
Connector Retention Torque	5.42 N-m 48.00 in lb
Pressurizable	No
Coupling Nut Proof Torque	24.86 N-m 220.00 in lb
Coupling Nut Retention Force	1000.85 N 225.00 lbf
Coupling Nut Retention Force Method	MIL-C-39012C-3.25, 4.6.22

Dimensions

Nominal Size	1/2 in
Height	42.41 mm 1.67 in
Length	70.82 mm 2.79 in
Right Angle Length	17.91 mm 0.71 in
Weight	197.20 g 0.43 lb
Width	34.60 mm 1.36 in

Environmental Specifications

Product Specifications

COMMSCOPE®

F4DRC

Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Immersion Depth	1 m
Immersion Test Mating	Unmated
Immersion Test Method	IEC 60529:2001, IP68
Water Jetting Test Mating	Unmated
Water Jetting Test Method	IEC 60529:2001, IP66
Moisture Resistance Test Method	MIL-STD-202F, Method 106F
Mechanical Shock Test Method	MIL-STD-202F, Method 213B, Test Condition C
Thermal Shock Test Method	MIL-STD-202F, Method 107G, Test Condition A-1, Low Temperature -55 °C
Vibration Test Method	MIL-STD-202F, Method 204D, Test Condition B
Corrosion Test Method	MIL-STD-1344A, Method 1001.1, Test Condition A

Standard Conditions

Attenuation, Ambient Temperature	20 °C 68 °F
Average Power, Ambient Temperature	40 °C 104 °F

Return Loss/VSWR

Frequency Band	VSWR	Return Loss (dB)
50–1000 MHz	1.04	33.00
1000–1900 MHz	1.04	33.00
1900–2200 MHz	1.07	29.00
2200–2700 MHz	1.10	26.00
2700–3600 MHz	1.13	24.00
3600–6000 MHz	1.25	19.00
6000–8800 MHz	1.67	12.00
8000–10200 MHz	1.67	12.00

Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

* Footnotes

Immersion Depth	Immersion at specified depth for 24 hours
Insertion Loss, typical	$0.05\sqrt{\text{freq (GHz)}}$ (not applicable for elliptical waveguide)

Product Specifications

COMMSCOPE®



F4NR-HC

Type N Male Right Angle for 1/2 in FSJ4-50B cable

General Specifications

Interface	N Male
Body Style	Right angle
Brand	HELIAX®
Mounting Angle	Right angle
Ordering Note	CommScope® standard product in Asia Pacific CommScope® standard product in Europe, the Middle East, and Africa

Electrical Specifications

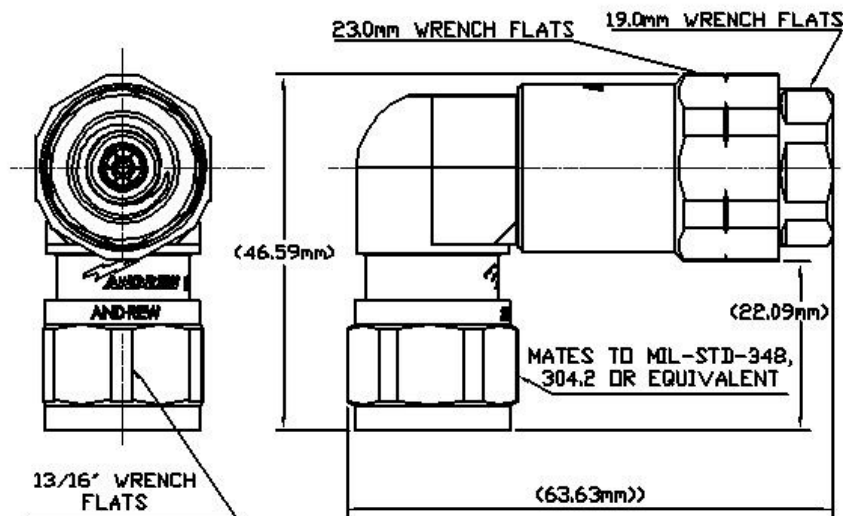
Connector Impedance	50 ohm
Operating Frequency Band	0 – 10200 MHz
Cable Impedance	50 ohm
3rd Order IMD, typical	-116 dBm @ 910 MHz
3rd Order IMD Test Method	Two +43 dBm carriers
RF Operating Voltage, maximum (vrms)	707.00 V
dc Test Voltage	2000 V
Outer Contact Resistance, maximum	0.30 mOhm
Inner Contact Resistance, maximum	2.00 mOhm
Insulation Resistance, minimum	5000 MOhm
Average Power	0.6 kW @ 900 MHz
Peak Power, maximum	10.00 kW
Insertion Loss, typical	0.05 dB
Shielding Effectiveness	-110 dB

Product Specifications

COMMSCOPE®

F4NRHC

Outline Drawing



Mechanical Specifications

Outer Contact Attachment Method	Self-flare
Inner Contact Attachment Method	Captivated
Outer Contact Plating	Trimetal
Inner Contact Plating	Gold Silver
Interface Durability	500 cycles
Interface Durability Method	IEC 61169-4:9.5
Connector Retention Tensile Force	445 N 100 lbf
Connector Retention Torque	5.42 N-m 48.00 in lb
Pressurizable	No
Coupling Nut Proof Torque	4.52 N-m 40.00 in lb
Coupling Nut Retention Force	444.82 N 100.00 lbf
Coupling Nut Retention Force Method	MIL-C-39012C-3.23, 4.6.22

Dimensions

Nominal Size	1/2 in
Height	46.59 mm 1.83 in
Length	63.63 mm 2.51 in
Right Angle Length	22.10 mm 0.87 in
Weight	160.90 g 0.35 lb
Width	24.50 mm 0.96 in

Environmental Specifications

Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Immersion Depth	1 m

Product Specifications

COMMSCOPE®

F4NRHC

Immersion Test Mating	Unmated
Immersion Test Method	IEC 60529:2001, IP68
Water Jetting Test Mating	Unmated
Water Jetting Test Method	IEC 60529:2001, IP66
Moisture Resistance Test Method	MIL-STD-202F, Method 106F
Mechanical Shock Test Method	MIL-STD-202F, Method 213B, Test Condition C
Thermal Shock Test Method	MIL-STD-202F, Method 107G, Test Condition A-1, Low Temperature -55 °C
Vibration Test Method	MIL-STD-202F, Method 204D, Test Condition B
Corrosion Test Method	MIL-STD-1344A, Method 1001.1, Test Condition A

Standard Conditions

Attenuation, Ambient Temperature	20 °C 68 °F
Average Power, Ambient Temperature	40 °C 104 °F

Return Loss/VSWR

Frequency Band	VSWR	Return Loss (dB)
50–1000 MHz	1.05	-32.00
1000–1900 MHz	1.06	-30.00
1900–2200 MHz	1.06	-30.00
2200–2700 MHz	1.08	-28.00
2700–3600 MHz	1.19	-21.00
3600–6000 MHz	1.19	-21.00
6000–8800 MHz	1.25	-19.00
8800–10200 MHz	1.29	-18.00

Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

* Footnotes

Immersion Depth	Immersion at specified depth for 24 hours
Insertion Loss, typical	0.05v ⁻ freq (GHz) (not applicable for elliptical waveguide)