Fairview Microwave
an INFINITE brand

FMHR0220
DATA SHEET

Temperature Conditioned Low Loss N Male to N Female Bulkhead Cable LL160 Coax

Temperature conditioned low loss N Male to N Female Bulkhead cable assemblies with RF test reports from Fairview Microwave are part of our full line of reliable RF components available to ship same day. These COTS (commercial-off-the-shelf) cable assemblies using LL160 triple shielded coax with expanded PTFE dielectric have traceable processes and materials that are recorded and provided in the included test report. The temperature pre-conditioned coaxial cable and captivated stainless steel RF connectors are assembled with J-STD-001 soldering processes and meet WHMA-A-620 workmanship criteria. The carefully selected materials, temperature conditioning, assembly processes and test sequence ensure a dependable cable assembly for high-reliability applications with wide temperature excursions and where the cost of failure is high. Each serialized N to N low loss cable assembly is traceable to its component lots and test data ships with every cable.

This low loss temperature tolerant hi-rel cable assembly using LL160 expanded PTFE cable datasheet PDF contains specifications, CAD drawing and dimensions that are shown below. Fairview Microwave offers these high-reliability RF cable assemblies with test data and many other RF, microwave and millimeter wave components which allow designers to configure and customize their signal systems however they like. Whether the need is to provide reliable interconnects over wide temperature extremes or have supporting test reports, Fairview Microwave has the right cable assemblies for the job. Fairview can also expertly build your custom RF cable assemblies for you and ship same day.

Referenced Specifications

IPC/WHMA-A-620	Requirements and Acceptance for Cable and Wire Harness Assemblies
MIL-STD-348	Radio Frequency Connector Interfaces for MIL-DTL-3643, MIL-DTL-3650, MIL-DTL-3655, MIL-DTL-25516, MIL-PRF-31031, MIL-PRF-39012, MIL-PRF-49142, MIL-PRF...
IPC J-STD-001	Requirements for Soldered Electrical and Electronic Assemblies
IPC J-STD-006	Requirements for Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications
SAE AS5942	Marking of Electrical Insulating Materials
SAE AS23053	Insulation Sleeving, Electrical, Heat Shrinkable, General Specifications For

Material Specifications

Component	Specification
Cable	LL160 per LL160 datasheet
Connector 1	FMCN1471 per MIL-STD-348
Connector 2	FMCN1472 per MIL-STD-348
Heat Shrink 1	SUMITUBE W3B2(4X) 12/3 per SAE AS23053 as applicable
Heat Shrink 2	SUMITUBE W3B2(4X) 12/3 per SAE AS23053 as applicable
Heat Shrink 3	M23053/4-303-0 per SAE AS23053
Heat Shrink 4	M23053/4-303-0 per SAE AS23053
Solder	SN63 per J-STD-006

Configuration:

- Connector 1: FMCN1471 (N Male)
- Connector 2: FMCN1472 (N Female Bulkhead)
- Cable: LL160

Features:

- Max Frequency 18 GHz
- 82.5% Phase Velocity
- Triple Shielded
- FEP Jacket
- Temperature Pre-Conditioned Cable
- J-STD Soldering
- Lot Traceability
- Captivated Stainless Steel Connectors
- Expanded PTFE dielectric
- Serialized Test Data & Report
- In-stock and ships same day

Applications:

- General Purpose
- Laboratory Use
- Extreme Temperatures
- Hi-Reliability
- Unmanned Systems
- COTS Solutions
- Avionics
- Electronic Countermeasures(ECM)

Cable Diagram:

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Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
VSWR			1.37:1	
Velocity of Propagation		82.5		%
Capacitance		25 [82.02]		pF/ft [pF/m]
Dielectric Withstanding Voltage (AC)			1,000	Vrms

Specifications by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency	1	2	4.5	9	18	GHz
Insertion Loss (Max.)	0.11	0.16	0.24	0.35	0.51	dB/ft
	0.36	0.52	0.79	1.15	1.67	dB/m

Electrical Specification Notes:
Insertion Loss does not include the loss of the connectors. Insertion Loss is estimated as 0.04*SQRT(FGHz) dB per connector.

Mechanical Specifications

Cable Assembly

Description	Min	Typ	Max	Units
Cable Outer Diameter	0.155	0.16	0.165	in
Weight			0.23 [104.33]	lbs [g]

Cable Characteristics

Component	Specification
Cable Type	LL160
Impedance	50 Ohms
Inner Conductor Type	Solid
Inner Conductor Mat. & Plat.	Copper, Silver
Dielectric Type	Expanded PTFE Tape
Number of Shields	3
Shield Layer 1	Silver Plated Copper
Shield Layer 2	Aluminum Polyester
Shield Layer 3	Silver Plated Copper Wire
Jacket Material	FEP

Connector Characteristics

Description	Connector 1	Connector 2
Type	N Male	N Female Bulkhead
Specification	MIL-STD-348	MIL-STD-348
Impedance	50 Ohms	50 Ohms
Contact Mat. & Plat.	Beryllium Copper, Gold over Nickel	Beryllium Copper, Gold over Nickel
Contact Plating Spec.	50 µin minimum	50 µin minimum
Dielectric Type	PTFE	PTFE
Outer Conductor Mat. & Plat.		Passivated Stainless Steel
Outer Conductor Plating Spec.		SAE-AMS-2700
Body Mat. & Plat.	Passivated Stainless Steel	Passivated Stainless Steel
Body Plating Spec.	SAE-AMS-2700	SAE-AMS-2700
Coupling Nut Mat. & Plat.	Passivated Stainless Steel	
Coupling Nut Plating Spec.	SAE-AMS-2700	
Hex Size	3/4 inch	
Seal Gasket Material	Silicone Rubber	
Contact Gage Spec.	0.210 in min	0.187 to 0.207 in

Environmental Specifications

Description	Specification
Temperature Operating Range	-55 to +125 deg C

Compliance Certifications (see product page for current document)

Process Specifications

Process	Specification
Cable Preconditioning	5 cycles, -55 °C to +125°C, 20 minute dwells
Soldering	in accordance with J-STD-001, class 3
Marking	shall meet the adherence requirements of SAE AS5942
Workmanship	shall be in accordance with IPC/WHMA-A-620, class 3

Tests and Inspections

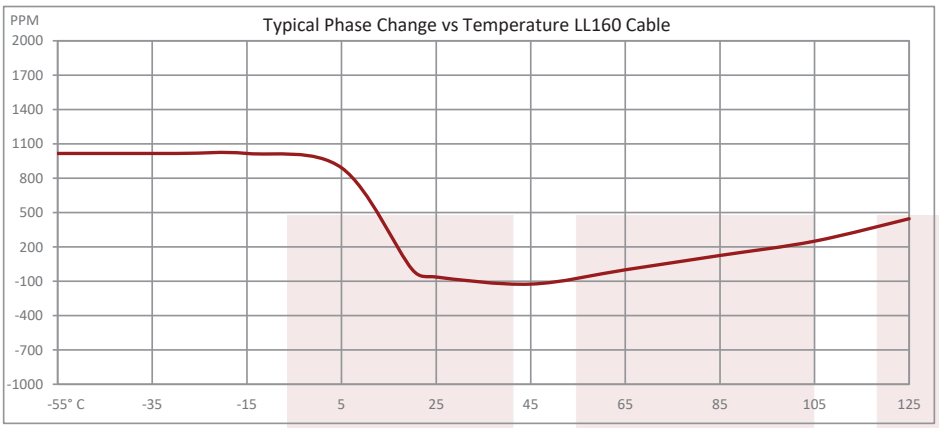
Test	Sampling
Connector Gaging (pin and insulator position)	100%
Insertion Loss	100%
VSWR	100%
Dielectric Withstanding Voltage (DWV)	100%
Visual - workmanship, configuration and marking	100%
Length	C=0, 1.5 AQL
Mass	C=0, 1.5 AQL

Plotted and Other Data

Notes:

- Values at 25°C, sea level.

Typical Performance Data



How to Order

Part Number Configuration: **FMHR0220 - xx uu**

- **xx** = Length
- **uu** = cm = Centimeters, <blank> = Inches

Example: FMHR0220-12 = 12 inches long cable
FMHR0220-100cm = 100 cm long cable

Cable Assembly Length Tolerances:

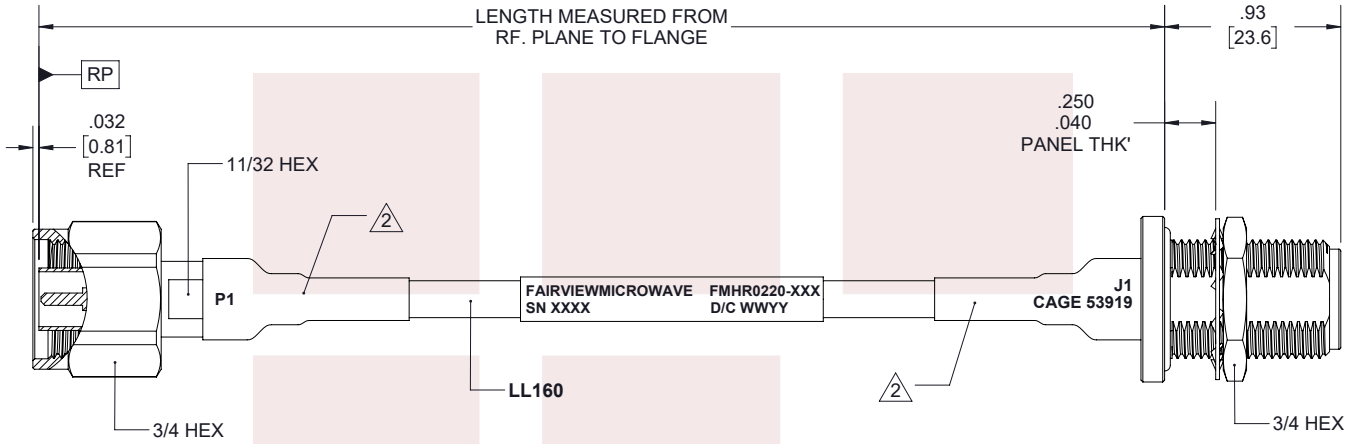
Imperial English		Metric	
"L" ≤ 1 ft	+0.5 in / -0 in	"L" ≤ 0.3 m	+12.5 mm / -0 mm
1 ft < "L" ≤ 5 ft	+1 in / -0 in	0.3 m < "L" ≤ 1.5 m	+25 mm / -0 mm
5 ft < "L" ≤ 10 ft	+2 in / -0 in	1.5 m < "L" ≤ 3 m	+50 mm / -0 mm
10 ft < "L" ≤ 25 ft	+3 in / -0 in	3 m < "L" ≤ 7.5 m	+75 mm / -0 mm
25 ft < "L"	+2%"L" / -0%"L"	7.5 m < "L"	+2%"L" / -0%"L"

* Cable Length = "L"

Temperature Conditioned Low Loss N Male to N Female Bulkhead Cable LL160 Coax from Fairview Microwave has same day shipment for domestic and International orders. Our RF, microwave and fiber optic products maintain a 99% availability and are part of the broadest selection in the industry.

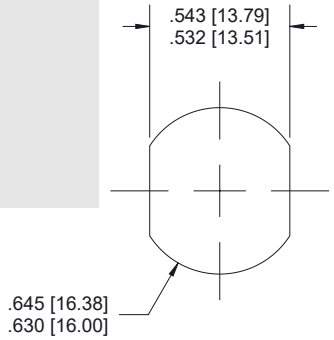
Click the following link to obtain additional part information: Temperature Conditioned Low Loss N Male to N Female Bulkhead Cable LL160 Coax FMHR0220

URL: https://www.fairviewmicrowave.com/temperature-conditioned-n-male-n-female-cable-ll160-coax-fmhr0220-p.aspx



FMCN1471
N MALE

FMCN1472
N FEMALE
BULKHEAD



MOUNTING HOLE

STANDARD TOLERANCES	
.X	±0.2
.XX	±0.01
.XXX	±0.005

*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

NOTES:
1. ALL BLACK HEAT SHRINK WITH WHITE MARKINGS.
2. TOP LAYER: SUMITUBE W3B2 (4X) - SIZE 12/3.
   BOTTOM LAYER: M23053/4-303-0.

Fairview Microwave
RF COMPONENTS ON DEMAND. Done!

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. DIMENSIONS ARE IN INCHES [mm].

TITLE	DWG NO	CAGE CODE
Temperature Conditioned Low Loss N Male to N Female Bulkhead Cable LL160 Coax	FMHR0220	3FKR5

CAD FILE	SHEET	SCALE	SIZE	
02/12/19	1 OF 1	N/A	A	7361

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