

LMR®-500-UF UltraFlex Communications Coax

Ideal for...

- Jumper Assemblies in Wireless Communications Systems
- Short Antenna Feeder runs
- Any application that requires periodic/repeated flexing



• **LMR®- UltraFlex** has a stranded center conductor and rubber outer jacket designed for multiple bending/flexing cycles. It is used for both indoor and outdoor applications.

• **Flexibility** and bendability are hallmarks of the LMR-500-UF cable design. The flexible outer conductor enables the tightest bend radius available for any cable of similar size and performance.

• **Low Loss** is another hallmark feature of LMR-500-UF. Size for size LMR has the lowest loss of any flexible cable and comparable loss to semirigid hard-line cables.

• **RF Shielding** is 50 dB greater than typical single shielded coax (40 dB). The multi-ply bonded foil outer conductor is rated conservatively at > 90 dB (i.e. >180 dB between two adjacent cables).

• **Weatherability:** LMR-500-UF cables are designed for outdoor exposure and have a life expectancy in excess of 10 years.

• **Connectors:** A wide variety of connectors are available for LMR-500-UF cable, including all common interface types, reverse polarity, and solder-on center pins. Most LMR connectors employ crimp outer attachment using standard hex crimp sizes.

• **Cable Assemblies:** All LMR-500-UF cable types are available as pre-terminated cable assemblies. Refer to the section on FlexTech for further details.

Construction Specifications

| Description | Material | In. | (mm) |
|-----------------|-------------------------------|-------|---------|
| Inner Conductor | Stranded BC | 0.142 | (3.61) |
| Dielectric | Foam Polyethylene | 0.370 | (9.40) |
| Outer Conductor | Aluminum Tape | 0.376 | (9.55) |
| Overall Braid | Tinned Copper | 0.405 | (10.29) |
| Jacket | Black Thermoplastic Elastomer | 0.500 | (12.70) |

Mechanical Specifications

| Performance Property | Units | US | (metric) |
|---------------------------|----------------|------|----------|
| Bend Radius: installation | in. (mm) | 1.25 | (31.8) |
| Bend Radius: repeated | in. (mm) | 5.0 | (127.0) |
| Bending Moment | ft-lb (N-m) | 1.25 | (1.69) |
| Weight | lb/ft (kg/m) | 0.1 | (0.15) |
| Tensile Strength | lb (kg) | 260 | (118.0) |
| Flat Plate Crush | lb/in. (kg/mm) | 35 | (0.63) |

Environmental Specifications

| Performance Property | °F | °C |
|--------------------------------|----------|---------|
| Installation Temperature Range | -40/+185 | -40/+85 |
| Storage Temperature Range | -94/+185 | -70/+85 |
| Operating Temperature Range | -40/+185 | -40/+85 |

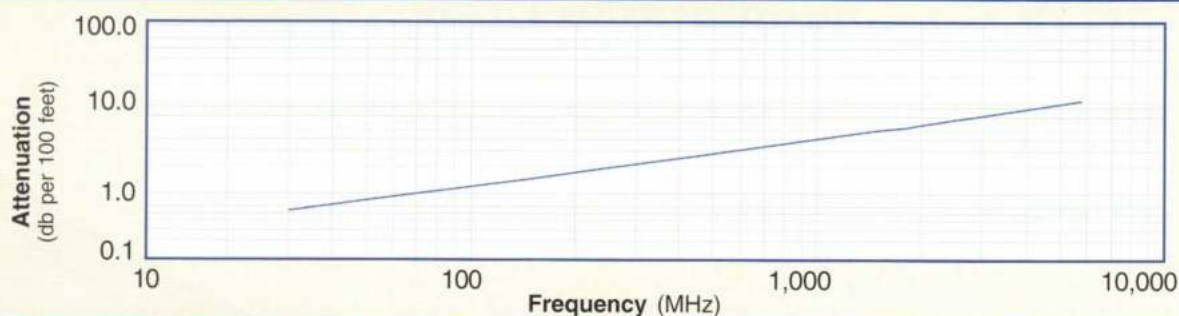
Electrical Specifications

| Performance Property | Units | US | (metric) |
|-------------------------|-------------------|-------|----------|
| Cutoff Frequency | GHz | 12 | |
| Velocity of Propagation | % | 85 | |
| Dielectric Constant | NA | 1.38 | |
| Time Delay | nS/ft (nS/m) | 1.20 | (3.92) |
| Impedance | ohms | 50 | |
| Capacitance | pF/ft (pF/m) | 23.9 | (78.4) |
| Inductance | uH/ft (uH/m) | 0.060 | (0.20) |
| Shielding Effectiveness | dB | >90 | |
| DC Resistance | | | |
| Inner Conductor | ohms/1000ft (/km) | 0.68 | (2.21) |
| Outer Conductor | ohms/1000ft (/km) | 1.65 | (5.4) |
| Voltage Withstand | Volts DC | 2500 | |
| Jacket Spark | Volts RMS | 8000 | |
| Peak Power | kW | 16 | |

Part Description

| Part No. | Application | Jacket | Color | Stock Code |
|------------|----------------|--------|-------|------------|
| LMR-500-UF | Indoor/Outdoor | TPE | Black | 54043 |

Attenuation vs. Frequency (typical)



| Frequency (MHz) | 30 | 50 | 150 | 220 | 450 | 900 | 1500 | 1800 | 2000 | 2500 | 5800 |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|
| Attenuation dB/100 ft | 0.6 | 0.8 | 1.5 | 1.8 | 2.6 | 3.8 | 5.0 | 5.5 | 5.8 | 6.6 | 10.6 |
| Attenuation dB/100 m | 2.1 | 2.7 | 4.8 | 5.9 | 8.5 | 12.3 | 16.3 | 18.0 | 19.1 | 21.6 | 34.9 |
| Avg. Power kW | 3.68 | 2.84 | 1.61 | 1.32 | 0.91 | 0.63 | 0.48 | 0.43 | 0.41 | 0.36 | 0.22 |

Calculate Attenuation = $(0.115908) \cdot \sqrt{\text{FMHz}} + (0.000312) \cdot \text{FMHz}$ (interactive calculator available at <http://www.timesmicrowave/telecom>)
 Attenuation: VSWR=1.0; Ambient = +25°C (77°F) Power: VSWR=1.0; Ambient = +40°C; Inner Conductor = 100°C (212°F);
 Sea Level; dry air; atmospheric pressure; no solar loading



Connectors

| Interface | Description | Part Number | Stock Code | VSWR Freq. (GHz) | Coupling Nut | Inner Contact Attach | Outer Contact Attach | Finish* Body /Pin | Length in (mm) | Width in (mm) | Weight lb (g) |
|-----------|---------------|---------------|------------|------------------|--------------|----------------------|----------------------|-------------------|----------------|---------------|---------------|
| N Male | Straight Plug | TC-500-NMC | 3190-377 | <1.25:1 (2.5) | Hex | Solder | Clamp | S/G | 2.1 (53) | 0.92 (23.4) | 0.228 (103.4) |
| | Right Angle | TC-500-NMC-RA | 3190-227 | <1.35:1 (2.5) | Hex | Solder | Clamp | S/G | 2.4 (61) | 1.5 (38.1) | 0.275 (124.7) |
| N Female | Straight Jack | TC-500-NFC | 3190-215 | <1.25:1 (2.5) | NA | Solder | Clamp | S/G | 2.2 (56) | 0.94 (23.9) | 0.215 (97.5) |
| | Bulkhead Kit | BHA-KIT | 3190-223 | <1.25:1 (2.5) | NA | NA | NA | NA | NA | NA | 0.014 (6.4) |
| TNC Male | Straight Plug | TC-500-TM | 3190-464 | <1.25:1 (2.5) | Hex | Solder | Crimp | N/G | 1.5 (38) | 0.62 (15.7) | 0.082 (28.1) |
| UHF Male | Straight Plug | TC-500-UMC | 3190-354 | <1.25:1 (2.5) | Knurl | Solder | Clamp | S/G | 2.1 (53) | 0.88 (22.4) | 0.215 (97.5) |

* Finish metals: N=Nickel, S=Silver, G=Gold, SS=Stainless Steel, A=Alballoy **VSWR spec based on 3 foot cable with a connector pair



Install Tools

| Type | Part Number | Stock Code | Description |
|-------------------|-------------|------------|------------------------------------|
| Crimp Tool | HX-4 | 3190-200 | Crimp Handle |
| Crimp Dies | Y151 | 3190-465 | .532" Hex Dies |
| Cutting Tool | CCT-01 | 3190-1544 | Cable end flush cut tool |
| Replacement Blade | RB-01 | 3190-1609 | Replacement blade for cutting tool |

Hardware Accessories

| Type | Part Number | Stock Code | Description |
|------------|-------------|------------|----------------------------|
| Ground Kit | GK-S500T | GK-S500T | Standard Ground Kit (each) |

