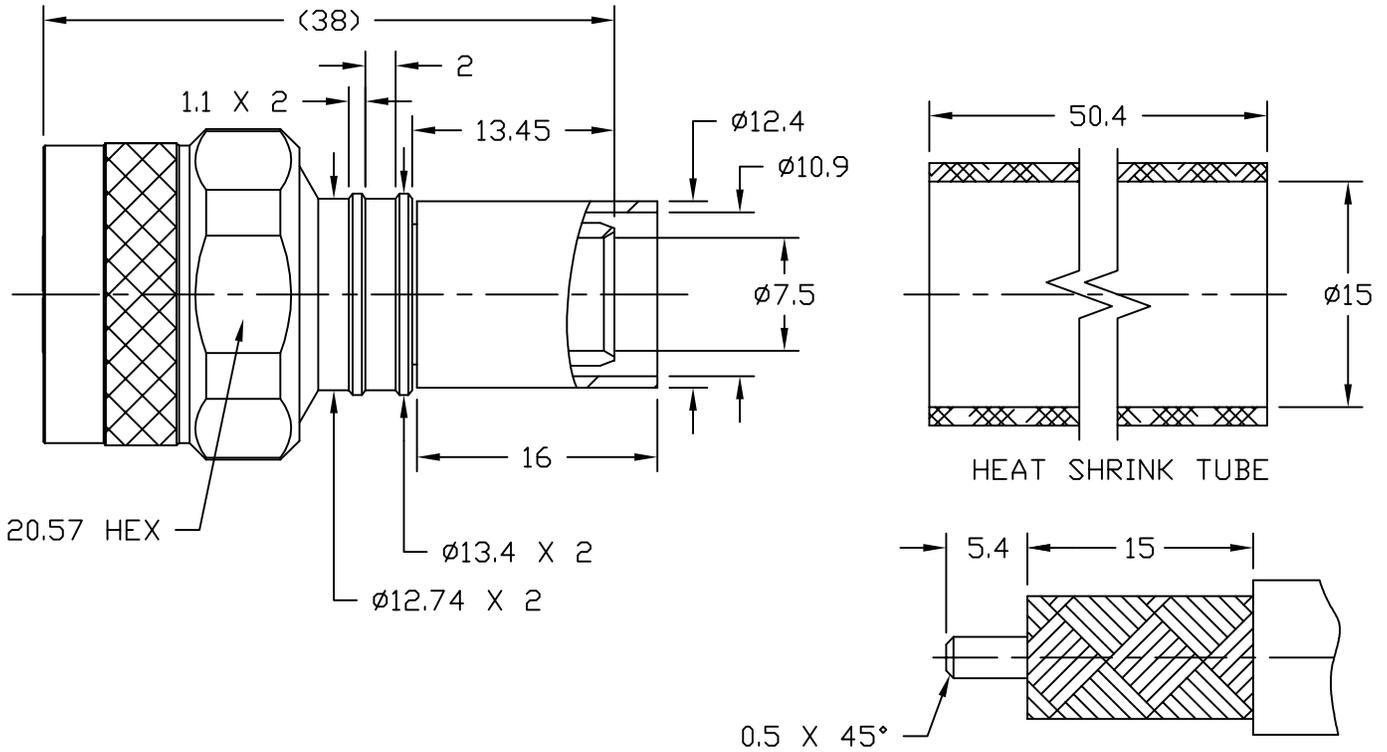


**NOTICE OF PROPRIETARY RIGHTS** THIS DOCUMENT CONTAINS CONFIDENTIAL TECHNICAL DATA, INCLUDING TRADE SECRETS, PROPRIETARY TO TIMES MICROWAVE SYSTEMS. DISCLOSURE OF THIS DATA IS EXPRESSLY CONDITIONED UPON YOUR ASSENT THAT ITS USE IS LIMITED TO USE WITHIN YOUR COMPANY ONLY. ANY OTHER USE IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF TIMES MICROWAVE SYSTEMS.

| SYM | REVISION DESCRIPTION    | DFTM     | DATE    | APPD     | DATE    |
|-----|-------------------------|----------|---------|----------|---------|
| A   | RELEASED FOR PRODUCTION | D. J. H. | 3/15/11 | J. D. B. | 8/16/11 |



CABLE PREP.  
USE CST-400  
(3192-004)  
.429" HEX.

|                               |  |  |                                |
|-------------------------------|--|--|--------------------------------|
| Reference standard            | IEC60169-16                                  | III. Material and plating:   |                                |
| I. Electric Performance       |  | <u>Component</u>   | <u>Material</u>                |
| Impedance(Ω):                 | 50   | inner conductor  | Brass                          |
| Frequency Range:              | DC-6GHz                                      | outer conductor  | Brass                          |
| VSWR:                         | ≤1.25  | tube   | Copper                         |
| Insert Loss: (dB)             | ≤0.1   | nut  | Brass                          |
| Insulation resistance (MΩ)    | >5000  | gasket   | Silicone rubber                |
| Work voltage (V)              | 1500   | insulator  | PTFE                           |
| Conductor resistance (mΩ)     | outer conductor <0.2<br>inner conductor <0.8 | IV. Environment  |                                |
| II. Mechanical Performance    |  | Temp. range  | -55°C~+155°C                   |
| Nut torque                    | 25N.m  | Weather standard   | IEC 60068 55 / 155/ 56         |
| (Nut) Whorl pull              | 1000N  | Thermal shock  | US MIL-STD 202,Meth.107,Cond.B |
| Tensile force (cable-connect) | 400N   | Vibration  | US MIL-STD 202,Meth.204,Cond.B |
| Torsion (cable-connect)       | 2N.m   | Shock  | US MIL-STD 202,Meth.213,Cond.I |
|                               |  | Waterproofing standard   | IP67                           |
|                               |  | V. Assembly: inner conductor soldered and outer conductor crimped. |                                |

|                      |   |       |          |   |
|----------------------|---|-------|----------|---|
| MATERIAL:            | UNLESS OTHERWISE SPECIFIED  | DFTM. | D. J. H. | TIMES MICROWAVE SYSTEMS   |
|                      |   | DATE  | 3/15/11  |   |
| USED ON: 0           | ALL DIMENSIONS ARE IN mm<br>MACHINED SURFACES FINISH N/A RMS MAX.<br>REMOVE ALL BURRS N/A MAX. BREAK<br>MACHINE CORNERS N/A MAX. FILLET R.<br>TOLERANCES ON DECIMALS<br>. XX ± N/A . XXX ± N/A<br>ANGLES ± 1° FRACTIONS ± N/A | CHKD. | J. D. B. | <b>TC-400-NMH-X</b><br>"N" MALE FOR LMR-400 CABLE<br>SOLDER/CRIMP/NO BRAID TRIM |
|                      |   | DATE  | 8/16/11  |   |
| SCALE: N/A           | DWG. SIZE: A  | APPD. | J. D. B. | SHEET 1 of 1   SD3190-2626   REV A  |
| DO NOT SCALE DRAWING | CODE IDENT: 68999   | DATE  | 8/16/11  |   |



N Male Connector Clamp/Solder Attachment for PE-C400, PE-B400, PE-B405, LMR-400, LMR-400-DB, LMR-400-UF, 0.400 inch

## RF Connectors Technical Data Sheet

PE4133

### Configuration

- N Male Connector
- MIL-STD-348
- 50 Ohms
- Straight Body Geometry
- PE-C400, PE-B400, PE-B405, LMR-400, LMR-400-DB, LMR-400-UF, 0.400 inch Interface Type
- Clamp/Solder Attachment

### Features

- Gold Plated Brass Contact
- Contact plating according to ASTM-B488

### Applications

- General Purpose Test
- Custom Cable Assemblies

### Description

Pasternack's PE4133 type N male connector with clamp/solder attachment for PE-C400, PE-B400, PE-B405, LMR-400, LMR-400-DB, LMR-400-UF and 0.400 inch is part of our full line of RF components available for same-day shipping.

Our type N male connector PE4133 datasheet specifications and drawing with dimensions are shown below in this PDF. Pasternack's broad catalog of RF, microwave and millimeter wave connectors allows designers to configure and customize their signal connections however they like. Whether the need is to provide an I/O for a board design, or simply create a custom cable assembly configuration, Pasternack has the right connector for the job. Pasternack can also expertly build your custom cable assemblies for you and ship same-day.

### Electrical Specifications

| Description                          | Minimum | Typical | Maximum | Units |
|--------------------------------------|---------|---------|---------|-------|
| Operating Voltage (AC)               |         |         | 1,000   | Vrms  |
| Dielectric Withstanding Voltage (AC) |         |         | 2,500   | Vrms  |

### Mechanical Specifications

|             |                     |
|-------------|---------------------|
| <b>Size</b> |                     |
| Length      | 1.5 in [38.1 mm]    |
| Width/Dia.  | 0.8 in [20.32 mm]   |
| Weight      | 0.123 lbs [55.79 g] |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Connector Clamp/Solder Attachment for PE-C400, PE-B400, PE-B405, LMR-400, LMR-400-DB, LMR-400-UF, 0.400 inch PE4133](#)



N Male Connector Clamp/Solder Attachment for PE-C400, PE-B400, PE-B405, LMR-400, LMR-400-DB, LMR-400-UF, 0.400 inch

## RF Connectors Technical Data Sheet

PE4133

### Material Specifications

| Description  | Material | Plating             |
|--------------|----------|---------------------|
| Contact      | Brass    | Gold<br>ASTM-B488   |
| Insulation   | PTFE     |                     |
| Body         | Brass    | Nickel<br>ASTM-B689 |
| Coupling Nut | Brass    | Nickel<br>ASTM-B689 |

### Environmental Specifications

#### Temperature

Operating Range

-65 to +165 deg C

**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

N Male Connector Clamp/Solder Attachment for PE-C400, PE-B400, PE-B405, LMR-400, LMR-400-DB, LMR-400-UF, 0.400 inch from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Connector Clamp/Solder Attachment for PE-C400, PE-B400, PE-B405, LMR-400, LMR-400-DB, LMR-400-UF, 0.400 inch PE4133](#)

URL: <https://www.pasternack.com/n-male-standard-pe-b400-pe-b405-pe-c400-connector-pe4133-p.aspx>

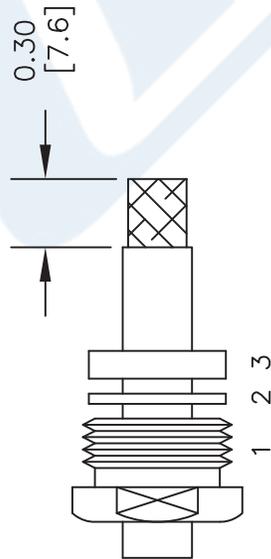
The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

# PE4133 CAD Drawing

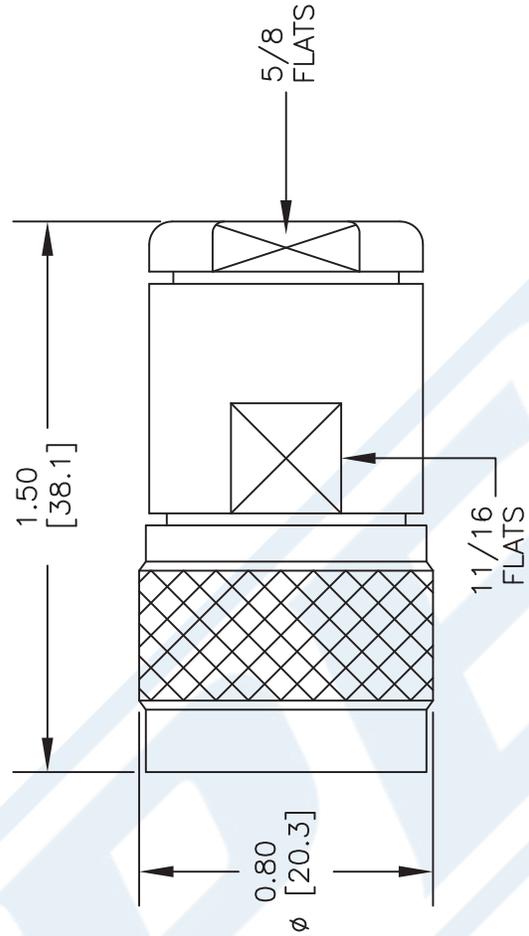
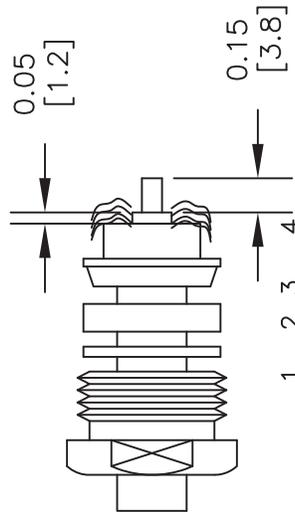
N Male Connector Clamp/Solder Attachment for PE-C400, PE-B400, PE-B405, LMR-400, LMR-400-DB, LMR-400-UF, 0.400 inch

## ASSEMBLY PROCEDURES

1. SLIDE CLAMP NUT (1), WASHER (2) & GASKET (3) OVER CABLE. STRIP CABLE AS SHOWN. DO NOT NICK BRAID WHILE CUTTING JACKET. TAPER END OF BRAID TO PERMIT ASSEMBLY OF BRAID CLAMP (4). SLIDE BRAID CLAMP (4) OVER BRAID & SEAT AGAINST JACKET.



2. FORM BRAID OVER CLAMP NUT (4). TRIM BRAID BACK TO SHOULDER. CUT DIELECTRIC & CENTER CONDUCTOR TO DIMENSION SHOWN. DO NOT NICK CENTER CONDUCTOR. SOLDER CONTACT TO CENTER CONDUCTOR. REMOVE EXCESS SOLDER. DO NOT OVER HEAT DIELECTRIC. INSERT CABLE ASSEMBLY INTO BODY & TIGHTEN.



| STANDARD TOLERANCES |       |
|---------------------|-------|
| .X                  | ±0.2  |
| .XX                 | ±0.1  |
| .XXX                | ±0.05 |

\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

### 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].

DWG TITLE

**PE4133**

CAGE CODE 53919

CAD FILE 090111

SCALE N/A

SIZE A

2231



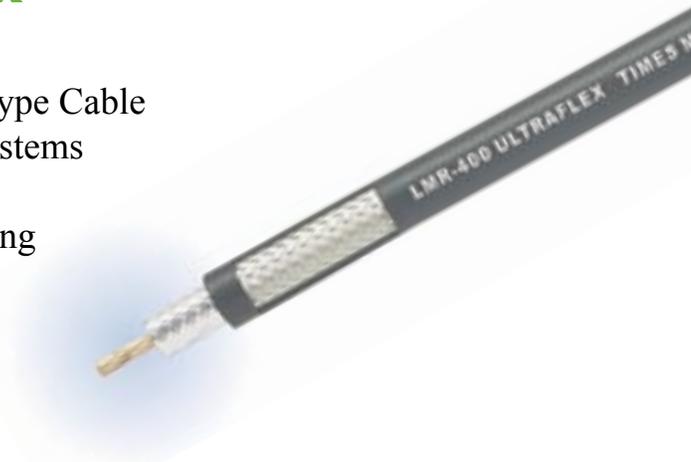
THE ENGINEER'S RF SOURCE  
Pasternack Enterprises, Inc.  
P.O. Box 16759 | Irvine | CA | 92623

Phone: (949) 261-1920 | Fax: (949) 261-7451  
Website: www.pasternack.com | E-Mail: sales@pasternack.com

## LMR-<sup>®</sup>400-UF UltraFlex Communications Coax

### Ideal for...

- Drop-in replacement for RG-8/9913 Air-Dielectric type Cable
- Jumper Assemblies in Wireless Communications Systems
- Short Antenna Feeder runs
- Any application that requires periodic/repeated flexing



• **LMR<sup>®</sup> - 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-400-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-400-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-400-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-400-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-400-UF cable types are available as pre-terminated cable assemblies. Refer to the section on FlexTech for further details.

| Part Description |                |        |       |            |
|------------------|----------------|--------|-------|------------|
| Part Number      | Application    | Jacket | Color | Stock Code |
| LMR-400-UF       | Indoor/Outdoor | TPE    | Black | 54040      |

| Construction Specifications |                               |       |         |  |
|-----------------------------|-------------------------------|-------|---------|--|
| Description                 | Material                      | In.   | (mm)    |  |
| Inner Conductor             | Stranded BC                   | 0.108 | (2.74)  |  |
| Dielectric                  | Foam Polyethylene             | 0.285 | (7.24)  |  |
| Outer Conductor             | Aluminum Tape                 | 0.291 | (7.39)  |  |
| Overall Braid               | Tinned Copper                 | 0.320 | (8.13)  |  |
| Jacket                      | Black Thermoplastic Elastomer | 0.405 | (10.29) |  |

# LMR<sup>®</sup>-400-UF UltraFlex Communications Coax



## Connectors

| Interface       | Description   | Part Number     | Stock Code | VSWR**<br>Freq. (GHz) | Coupling<br>Nut | Inner<br>Contact<br>Attach | Outer<br>Contact<br>Attach | Finish*<br>Body<br>/Pin | Length<br>in<br>(mm) | Width<br>in<br>(mm) | Weight<br>lb<br>(g) |
|-----------------|---------------|-----------------|------------|-----------------------|-----------------|----------------------------|----------------------------|-------------------------|----------------------|---------------------|---------------------|
| 7-16 DIN Female | Straight Jack | TC-400-716-FC   | 3190-376   | <1.25:1 (2.5)         | NA              | Solder                     | Clamp                      | S/S                     | 1.6 (41)             | 1.13 (28.7)         | 0.281 (127.5)       |
| 7-16 DIN Male   | Straight Plug | TC-400-716-MC   | 3190-279   | <1.25:1 (2.5)         | Hex             | Solder                     | Clamp                      | S/S                     | 1.4 (36)             | 1.40 (35.6)         | 0.268 (121.6)       |
| BNC Male        | Straight Plug | TC-400-BM       | 3190-318   | <1.25:1 (2.5)         | Knurl           | Solder                     | Crimp                      | N/S                     | 1.7 (43)             | 0.56 (14.2)         | 0.063 (28.6)        |
| Mini-UHF        | Straight Plug | TC-400-MUHF     | 3190-520   | <1.25:1 (2.5)         | Knurl           | Solder                     | Crimp                      | N/G                     | 1.1 (28)             | 0.50 (12.7)         | 0.020 (9.1)         |
| N Female        | Straight Jack | TC-400-NFC      | 3190-299   | <1.25:1 (2.5)         | NA              | Solder                     | Clamp                      | N/S                     | 1.6 (41)             | 0.75 (19.1)         | 0.119 (54.0)        |
| N Male          | Straight Plug | SC-400-NM       | 3190-1454  | <1.25:1 (2.5)         | Knurl           | Solder                     | Crimp                      | N/G                     | 1.5 (38)             | 0.75 (19.1)         | 0.090 (40.8)        |
|                 | Straight Plug | TC-400-NM       | 3190-188   | <1.25:1 (2.5)         | Knurl           | Solder                     | Crimp                      | N/G                     | 1.5 (38)             | 0.75 (19.1)         | 0.090 (40.8)        |
|                 | Straight Plug | TC-400-NMC      | 3190-277   | <1.25:1 (2.5)         | Knurl           | Solder                     | Clamp                      | N/G                     | 1.5 (38)             | 0.75 (19.1)         | 0.121 (54.9)        |
|                 | Straight Plug | TC-400-NMH-D    | 3190-552   | <1.25:1 (10)          | Hex/Knurl       | Solder                     | Crimp                      | A/G                     | 1.5 (38)             | 0.89 (22.6)         | 0.113 (51.3)        |
|                 | Right Angle   | TC-400-NMH-RA   | 3190-422*  | <1.35:1 (6)           | Hex             | Solder                     | Crimp                      | S/G                     | 1.8 (46)             | 1.25 (31.8)         | 0.130 (59.0)        |
|                 | Right Angle   | TC-400-NMH-RA-D | 3190-2293* | <1.35:1 (6)           | Hex/Knurl       | Solder                     | Crimp                      | A/G                     | 1.8 (46)             | 1.25 (31.8)         | 0.130 (59.0)        |
| SMA Male        | Straight Plug | TC-400-SM       | 3190-439   | <1.25:1 (8)           | Hex             | Solder                     | Crimp                      | N/G                     | 1.2 (29)             | 0.50 (12.7)         | 0.032 (14.5)        |
| TNC Male        | Straight Plug | TC-400-TM       | 3190-260   | <1.25:1 (2.5)         | Knurl           | Solder                     | Crimp                      | N/S                     | 1.7 (43)             | 0.59 (15.0)         | 0.074 (33.6)        |
|                 | Right Angle   | TC-400-TM-RA    | 3190-442*  | <1.35:1 (2.5)         | Knurl           | Solder                     | Crimp                      | N/G                     | 1.7 (43)             | 0.59 (15.0)         | 0.085 (38.6)        |

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

### Mechanical Specifications

| Performance Property      | Units          | US    | (metric) |
|---------------------------|----------------|-------|----------|
| Bend Radius: installation | in. (mm)       | 1.0   | (25.4)   |
| Bend Radius: repeated     | in. (mm)       | 4.0   | (101.6)  |
| Bending Moment            | ft-lb (N-m)    | 0.375 | (0.51)   |
| Weight                    | lb/ft (kg/m)   | .088  | (0.131)  |
| Tensile Strength          | lb (kg)        | 160   | (72.6)   |
| Flat Plate Crush          | lb/in. (kg/mm) | 20    | (0.36)   |

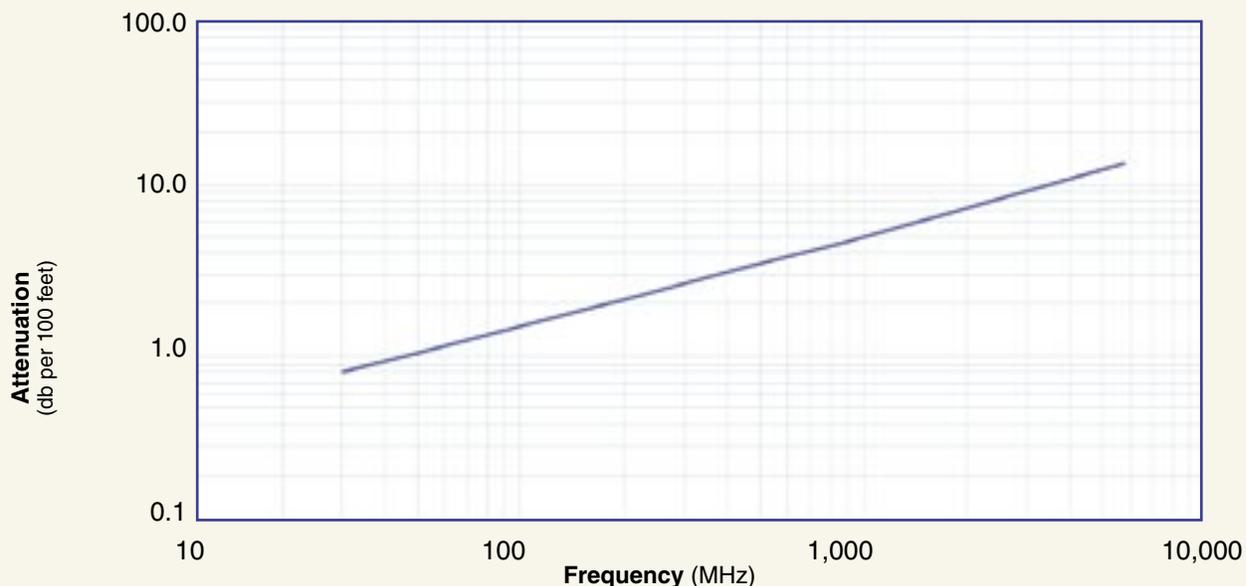
### Environmental Specifications

| 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               | 16.2  |          |
| 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  | (78.40)  |
| Inductance              | uH/ft (uH/m)      | 0.060 | (0.21)   |
| Shielding Effectiveness | dB                | >90   |          |
| DC Resistance           |                   |       |          |
| Inner Conductor         | ohms/1000ft (/km) | 1.07  | (3.51)   |
| Outer Conductor         | ohms/1000ft (/km) | 1.65  | (5.4)    |
| Voltage Withstand       | Volts DC          | 2500  |          |
| Jacket Spark            | Volts RMS         | 8000  |          |
| Peak Power              | kW                | 16    |          |

### Attenuation vs. Frequency (typical)



| Frequency (MHz)       | 30   | 50   | 150  | 220  | 450  | 900  | 1500 | 1800 | 2000 | 2500 | 5800 |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|
| Attenuation dB/100 ft | 0.8  | 1.1  | 1.8  | 2.2  | 3.3  | 4.7  | 6.2  | 6.8  | 7.2  | 8.1  | 13.0 |
| Attenuation dB/100 m  | 2.7  | 3.5  | 6.1  | 7.4  | 10.7 | 15.4 | 20.2 | 22.3 | 23.6 | 26.6 | 42.6 |
| Avg. Power kW         | 2.77 | 2.14 | 1.22 | 1.00 | 0.69 | 0.48 | 0.36 | 0.33 | 0.31 | 0.28 | 0.17 |

Calculate Attenuation =  $(0.146748) \cdot \sqrt{\text{FMHz}} + (0.000312) \cdot \text{FMHz}$  (interactive calculator available at [http://www.timesmicrowave.com/cable\\_calculators](http://www.timesmicrowave.com/cable_calculators))  
 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



## Hardware Accessories

| Type          | Part Number | Stock Code | Description                   |
|---------------|-------------|------------|-------------------------------|
| Ground Kit    | GK-S400TT   | GK-S400TT  | Standard Grounding Kit (each) |
| Hoisting Grip | HG-400T     | HG-400T    | Laced Type (each)             |



## Install Tools

| Type              | Part Number | Stock Code | Description  |
|-------------------|-------------|------------|--|
| Crimp Tool        | HX-4        | 3190-200   | Crimp Handle   |
| Crimp Dies        | Y1719       | 3190-202   | .429" Hex Dies                                       |
| Crimp Tool        | CT-400/300  | 3190-666   | Crimp tool for LMR 400 connectors                    |
| Crimp Rings       | CR-400      | 3190-830   | Crimp rings for TC/EZ-400 connectors (package of 10) |
| Cutting Tool      | CCT-01      | 3190-1544  | Cable end flush cut tool                             |
| Replacement Blade | RB-01       | 3190-1609  | Replacement blade for cutting tool                   |