

# NETWORK & AUTOMATION



## Intelligent cable designs for total system integration and high-speed networking

Smart homes require intelligent cable designs. The backbone of any high-speed data interconnect, network cables must meet an exceptionally high performance level to ensure that the system operates reliably and at full data-rates. Produced in a variety of specialized and general purpose designs, Sheer Wire network and automation cables deliver solutions for a multitude of cross-platform and manufacturer specific standards and systems. As with all other Sheer Wire cables, each cable features leading-edge designs and comprehensive quality verification to deliver the foundation and bandwidth required for leading-edge data and control system integration.

AMX AXLINK

TOUCH PANEL CONTROL

TOUCH PANEL HYBRID

ELAN VIA!

KEYPAD & VOLUME CONTROL

TOTAL HOME HYBRID

CATEGORY 5E UTP

CATEGORY 5E 360MHz UTP

CATEGORY 6 UTP

LOW-SKEW UTP

MULTI-MODE BREAKOUT FIBER

MULTI-MODE DISTRIBUTION FIBER

SINGLE-MODE BREAKOUT FIBER

SINGLE-MODE DISTRIBUTION FIBER

### Certified Specifications that Ensure Performance

Each reel of cable is tested and verified to deliver consistent performance and ensure reliable cable interconnect systems.

### Extended Bandwidth for High Speed Data Applications

Many types are offered with extended bandwidth ratings for high-speed data applications such as Gigabit Ethernet, video over twisted-pair, and other proprietary system formats.

### Specialized Designs that Deliver Solutions

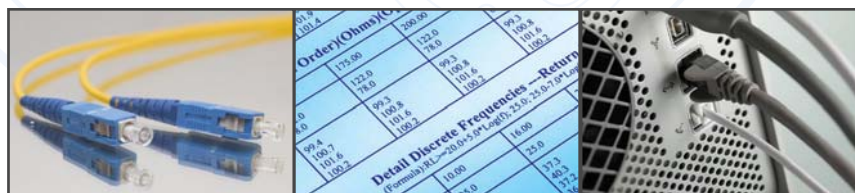
Sheer Wire automation and network cables are produced in a variety of specific designs to provide complete networking solutions for almost every type of residential control and data system.

### Meets or Exceeds Industry Standards

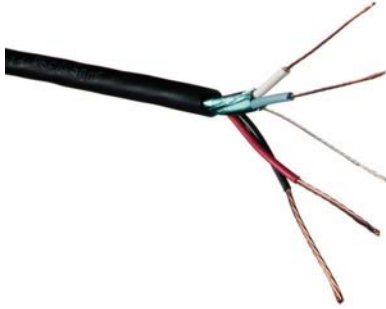
Each cable type is designed to meet or exceed the required industry or manufacturer standards.

### Time Saving Features

Features such as easy-to-strip jackets, footage markers, and flexible packaging allow for quick and simplified installation.



## AMX AXLink

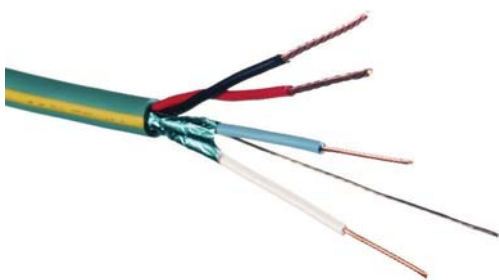


### Data and Power Cable for AMX AXLink Systems

- 22 Gage Low-cap, Shielded Single-pair
- For AMX AXLink Systems
- Low-loss Foam Dielectric (Data Pair)
- 18 Gage Power Conductors
- UL Rated for Permanent Installation

| Mechanical Specifications     |                         |                               |                           |                              |                                          |                               |                               |                    |            |                |
|-------------------------------|-------------------------|-------------------------------|---------------------------|------------------------------|------------------------------------------|-------------------------------|-------------------------------|--------------------|------------|----------------|
| Part #                        | # of Pairs              | Nominal OD                    | Conductor                 | Data Insulation (Type, OD)   | Data Shield & Drain                      | Power Conductors              | Power Insulation              | Overall Jacket     | UL Type    | Approx. Weight |
| 18/22AXL                      | 2 (One Power, One Data) | .242"                         | 22 AWG (7x30) Stranded BC | Foam PE, .022" Blue & White  | 100% Foil with 24 AWG (7x32) Stranded TC | 18 AWG (7x26) Stranded BC     | PVC, .010" Red & Black        | PVC, Black         | CL3R, FT-4 | 41 lbs/Mft     |
| AXLink™ Control Cable         |                         |                               |                           |                              |                                          |                               |                               |                    |            |                |
| 18/22AXLP                     | 2 (One Power, One Data) | .195"                         | 22 AWG (7x30) Stranded BC | Foam FEP, .020" Blue & White | 100% Foil with 24 AWG (7x32) Stranded TC | 18 AWG (16x30) Stranded BC    | Plenum PVC, .009" Red & Black | Plenum, PVC, Black | CMP        | 29 lbs/Mft     |
| AXLink™ Control Cable: Plenum |                         |                               |                           |                              |                                          |                               |                               |                    |            |                |
| Electrical Specifications     |                         |                               |                           |                              |                                          |                               |                               |                    |            |                |
| Data Pair                     |                         |                               |                           |                              |                                          | Power Pair                    |                               |                    |            |                |
| Part #                        | Impedance               | Capacitance                   | Conductor DCR             | Drain DCR                    | Velocity of Propagation                  | Capacitance                   | Power Conductor DCR           |                    |            |                |
| 18/22AXL                      | 95 Ω                    | 12.5 pF/ft between conductors | 15.3 Ω/Mft                | 23.8 Ω/Mft                   | 79%                                      | 31.7 pF/ft between conductors | 6.0 Ω/Mft                     |                    |            |                |
| 18/22AXLP                     | 95 Ω                    | 12.5 pF/ft between conductors | 15.3 Ω/Mft                | 23.8 Ω/Mft                   | 82%                                      | 31.7 pF/ft between conductors | 6.7 Ω/Mft                     |                    |            |                |

## Touch Panel Control



### Data and Power Cable for Touch Panel Systems

- 22 Gage Low-cap, Shielded Single-pair
- Low-loss Foam Dielectric (Data Pair)
- 18 Gage Power Conductors
- Yellow Stripe for Easy Identification
- UL Rated for Permanent Installation

| Mechanical Specifications         |                         |                               |                           |                              |                                          |                               |                               |                                      |            |                |
|-----------------------------------|-------------------------|-------------------------------|---------------------------|------------------------------|------------------------------------------|-------------------------------|-------------------------------|--------------------------------------|------------|----------------|
| Part #                            | # of Pairs              | Nominal OD                    | Conductor                 | Data Insulation (Type, OD)   | Data Shield & Drain                      | Power Conductors              | Power Insulation              | Overall Jacket                       | UL Type    | Approx. Weight |
| 18/22CRT                          | 2 (One Power, One Data) | .242"                         | 22 AWG (7x30) Stranded BC | Foam PE, .022" Blue & White  | 100% Foil with 24 AWG (7x32) Stranded TC | 18 AWG (7x26) Stranded BC     | PVC, .010" Red & Black        | PVC, Blue with Yellow Stripe         | CL3R, FT-4 | 41 lbs/Mft     |
| Touch Panel Control Cable         |                         |                               |                           |                              |                                          |                               |                               |                                      |            |                |
| 18/22CRTP                         | 2 (One Power, One Data) | .195"                         | 22 AWG (7x30) Stranded BC | Foam FEP, .020" Blue & White | 100% Foil with 24 AWG (7x32) Stranded TC | 18 AWG (16x30) Stranded BC    | Plenum PVC, .009" Red & Black | Plenum, PVC, Blue with Yellow Stripe | CMP        | 29 lbs/Mft     |
| Touch Panel Control Cable: Plenum |                         |                               |                           |                              |                                          |                               |                               |                                      |            |                |
| Electrical Specifications         |                         |                               |                           |                              |                                          |                               |                               |                                      |            |                |
| Data Pair                         |                         |                               |                           |                              |                                          | Power Pair                    |                               |                                      |            |                |
| Part #                            | Impedance               | Capacitance                   | Conductor DCR             | Drain DCR                    | Velocity of Propagation                  | Capacitance                   | Power Conductor DCR           |                                      |            |                |
| 18/22CRT                          | 95 Ω                    | 12.5 pF/ft between conductors | 15.3 Ω/Mft                | 23.8 Ω/Mft                   | 79%                                      | 31.7 pF/ft between conductors | 6.0 Ω/Mft                     |                                      |            |                |
| 18/22CRTP                         | 95 Ω                    | 12.5 pF/ft between conductors | 15.3 Ω/Mft                | 23.8 Ω/Mft                   | 82%                                      | 31.7 pF/ft between conductors | 6.7 Ω/Mft                     |                                      |            |                |

## Touch Panel Hybrid

## Hybrid Data Cables for Touch Panel Systems



- Touch Panel Elements
- Cat5E Elements
- RG6Q Coax Elements (Optional)
- Common Outer Jacket for Easy Pulling
- UL Rated for Permanent Installation

| Mechanical Specifications |                             |                                             |                          |                              |                  |          |                |
|---------------------------|-----------------------------|---------------------------------------------|--------------------------|------------------------------|------------------|----------|----------------|
| Part #                    | Control Elements (#, Color) | Cat5E Elements (#, Color)                   | RG6Q Elements (#, Color) | Master Jacket (Type, Color)  | Overall Diameter | UL Type  | Approx. Weight |
| 18/22CCT                  | 1, Teal with Yellow Stripe  | 1, White                                    | N/A                      | PVC, Teal with Red Stripe    | .524"            | CL3/FT-4 | 98 lbs/Mft     |
| 18/22CCD                  | 1, Teal with Yellow Stripe  | 2, One White, One Gray                      | N/A                      | PVC, Teal with Black Stripe  | .547"            | CL3/FT-4 | 130 lbs/Mft    |
| 18/22CCQ                  | 1, Teal with Yellow Stripe  | 4, One White, One Green, One Gray, One Blue | N/A                      | PVC, Teal with White Stripe  | .652"            | CL3/FT-4 | 189 lbs/Mft    |
| 18/22CDC                  | 1, Teal with Yellow Stripe  | 2, One White, One Gray                      | 2, Black & White         | PVC, Teal with Orange Stripe | .750"            | CL3/FT-4 | 177 lbs/Mft    |
| 18/22QM                   | 1                           | 1 (15ns/100m skew)                          | N/A                      | Dual-zip PVC, Teal           | .462" x .242"    | CL3/FT-4 | 70 lbs/Mft     |
| 18/22QMP                  | 1                           | 1 (15ns/100m skew)                          | N/A                      | Dual-zip Plenum PVC, Teal    | .385" x .195"    | CMP      | 66 lbs/Mft     |

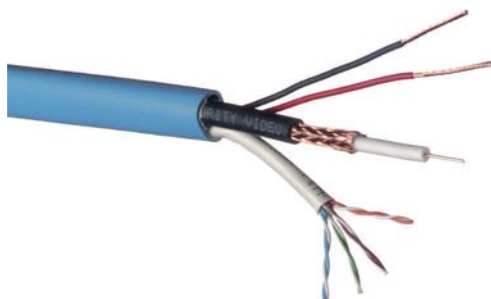
Touch Panel Control ELEMENT SPECIFICATIONS, See Page #29 (pn#18/22CRT)

Cat5E ELEMENT SPECIFICATIONS, See Page #32 (pn#244CAT5E360 except on QM and QMP Types)

RG6Q ELEMENT SPECIFICATIONS, Consult Factory for Detailed Specifications (pn#181VQ6)

## Elan Via!

## Coaxial and Data Cable for Elan Via! Systems



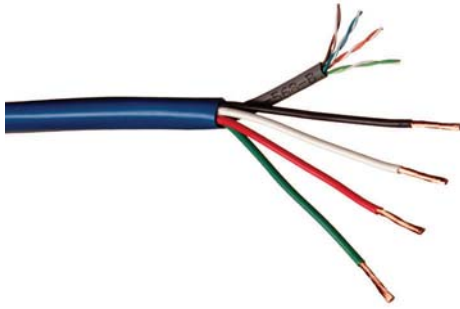
- Cat5E Element
- RG59 Coax Element
- 18 Gage Power Conductors
- Common Outer Jacket with Color Stripe
- UL Riser Rated for Permanent Installation

| Mechanical Specifications |                           |                          |                                                     |                             |                  |           |                |
|---------------------------|---------------------------|--------------------------|-----------------------------------------------------|-----------------------------|------------------|-----------|----------------|
| Part #                    | Cat5E Elements (#, Color) | RG59 Elements (#, Color) | Power Elements (#, Color)                           | Master Jacket (Type, Color) | Overall Diameter | UL Type   | Approx. Weight |
| 182R59C5                  | 1, White                  | 1, Black                 | 2x18 AWG (7x26), Stranded BC, Black & Red 6.4 Ω/Mft | PVC, Blue                   | .467"            | CL3R FT-4 | 83 lbs/Mft     |

Cat5E ELEMENT SPECIFICATIONS, See Page #32 (pn#244CAT5E360)

RG59 ELEMENT SPECIFICATIONS, See Page #18 (pn#1R201V59)

## Keypad & Volume Control



## General Purpose Cat5E and Audio Hybrid Cable

- Cat5E Element
- Four Audio Conductors
- Common Outer Jacket with Color Stripe
- UL Rated for Permanent Installation

| Mechanical Specifications              |                           |                                                                                 |                             |                  |          |                |
|----------------------------------------|---------------------------|---------------------------------------------------------------------------------|-----------------------------|------------------|----------|----------------|
| Part #                                 | Cat5E Elements (#, Color) | Audio Conductors (#, Color, DCR, Capacitance)                                   | Master Jacket (Type, Color) | Overall Diameter | UL Type  | Approx. Weight |
| 164NCAT                                | 1, Gray                   | 4x16 AWG (65x34), Stranded BC, Black, Red, White, Green, 4.0 Ω/Mft, 48.4 pF/ft  | PVC, Teal with Gray Stripe  | .388"            | CL3 & CM | 93 lbs/Mft     |
| Keypad & Volume Control Cable: 16 Gage |                           |                                                                                 |                             |                  |          |                |
| 144NCAT                                | 1, Gray                   | 4x14 AWG (105x34), Stranded BC, Black, Red, White, Green, 2.5 Ω/Mft, 40.5 pF/ft | PVC, Blue with Gray Stripe  | .415"            | CL3 & CM | 125 lbs/Mft    |
| Keypad & Volume Control Cable: 14 Gage |                           |                                                                                 |                             |                  |          |                |

Cat5E ELEMENT SPECIFICATIONS, See Page #32 (pn#244CAT5E360)

## Total Home Hybrid



## Hybrid Cable for Smart Home Video and Network Distribution

- Cat5E Elements
- RG6Q Coax Elements
- Multi-mode Fiber (Optional)
- Common Outer Jacket for Easy Pulling
- UL Rated for Permanent Installation

| Mechanical Specifications |                           |                          |                                      |                             |                  |         |                |
|---------------------------|---------------------------|--------------------------|--------------------------------------|-----------------------------|------------------|---------|----------------|
| Part #                    | Cat5E Elements (#, Color) | RG6Q Elements (#, Color) | Multi-mode Fiber Elements (#, Color) | Master Jacket (Type, Color) | Overall Diameter | UL Type | Approx. Weight |
| DV5E6U02                  | 1, Gray                   | 1, Black                 | N/A                                  | PVC, Blue                   | .485"            | CMG/CMR | 89 lbs/Mft     |
| DV5E6U03                  | 2, Gray & White           | 1, Black                 | N/A                                  | PVC, Blue                   | .575"            | CMG/CMR | 121 lbs/Mft    |
| DV5E6U04                  | 2, Gray & White           | 2, Black & White         | N/A                                  | PVC, Blue                   | .660"            | CMG/CMR | 156 lbs/Mft    |
| DV5E6U04F                 | 2, Gray & White           | 2, Black & White         | 1, (2 Fiber Distribution), Orange    | PVC, Blue                   | .670"            | CMG/CMR | 175 lbs/Mft    |

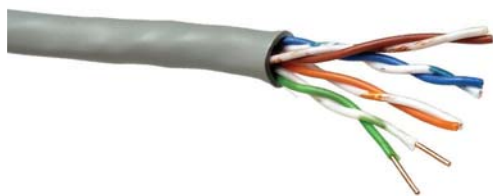
Cat5E ELEMENT SPECIFICATIONS, See Page #32 (pn#244CAT5E360)

RG6Q ELEMENT SPECIFICATIONS, Consult Factory for Detailed Specifications (pn#181VQ6)

Multi-mode Fiber ELEMENT SPECIFICATIONS, See Page #34 (pn#FMD2R)

## Category 5e UTP

## TIA/EIA Cat5e 100MHz Four-pair Network Cable



- Precision Cat5e Electrical Characteristics
- 100MHz Bandwidth
- 24 Gage Solid Copper Conductors
- Meets or Exceeds TIA/EIA-568-B.2 Standards
- UL Rated for Permanent Installation

### Mechanical Specifications

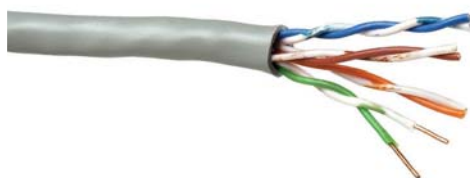
| Part #                               | # of Pairs | Nominal OD | Conductors      | Insulation           | Jacket     | UL Type | Approx. Weight |
|--------------------------------------|------------|------------|-----------------|----------------------|------------|---------|----------------|
| 244CAT5                              | 4          | .208"      | 24 AWG Solid BC | Polyolefin           | PVC        | CMR/MPR | 26 lbs/Mft     |
| Category 5e Four-pair 100MHz         |            |            |                 |                      |            |         |                |
| 244CAT5P                             | 4          | .180"      | 24 AWG Solid BC | Plenum Thermoplastic | Plenum PVC | CMP     | 23.5 lbs/Mft   |
| Category 5e Four-pair 100MHz: Plenum |            |            |                 |                      |            |         |                |

### Electrical Specifications

| Part #   | DCR Max | DCR Unbal. Max | Mutual Capac. Max        | Char. Imped. | Prop. Delay (Skew) Max | Vel. of Prop. (Non-plenum, Plenum) |      | Standards                                     |      |      |      |      |       |      |     |
|----------|---------|----------------|--------------------------|--------------|------------------------|------------------------------------|------|-----------------------------------------------|------|------|------|------|-------|------|-----|
|          |         |                | 17 pF/ft                 | 100 Ω        | 45 ns/100m             | 68%, 72%                           |      | Exceeds TIA/EIA-568-B.2-Cat 5e, ISO/IEC 11801 |      |      |      |      |       |      |     |
| 244CAT5  | 28.6 Ω  | 5%             | Freq. (MHz)              |              | 0.772                  | 1                                  | 4    | 8                                             | 10   | 16   | 20   | 25   | 31.25 | 62.5 | 100 |
| 244CAT5P |         |                | Insertion Loss (dB/100m) | 1.8          | 2.0                    | 4.1                                | 5.8  | 6.5                                           | 8.2  | 9.3  | 10.4 | 11.7 | 17.0  | 22.0 |     |
|          |         |                | PSNEXT (dB)              | 64.0         | 62.3                   | 53.3                               | 48.8 | 47.3                                          | 44.3 | 42.8 | 41.3 | 39.9 | 35.4  | 32.3 |     |
|          |         |                | PSACR (dB/100m)          | 62.2         | 60.3                   | 49.2                               | 43.0 | 40.8                                          | 36.1 | 33.5 | 30.9 | 28.2 | 18.4  | 10.3 |     |
|          |         |                | PSELFEXT (dB/100m)       | 63.0         | 60.8                   | 48.7                               | 42.7 | 40.8                                          | 36.7 | 34.7 | 32.8 | 30.9 | 24.8  | 20.8 |     |
|          |         |                | RL (dB)                  | ---          | 19.0                   | 20.8                               | 21.7 | 22.0                                          | 22.0 | 22.0 | 21.3 | 20.6 | 18.5  | 17.1 |     |
|          |         |                |                          |              |                        |                                    |      |                                               |      |      |      |      |       |      |     |

## Category 5E 360MHz UTP

## TIA/EIA Cat5E 360 MHz Four-pair Network Cable



- Precision Cat5E Electrical Characteristics
- 360MHz Bandwidth
- 24 Gage Solid Copper Conductors
- Meets or Exceeds TIA/EIA-568-B.2 Standards
- UL Rated for Permanent Installation

### Mechanical Specifications

| Part #                               | # of Pairs | Nominal OD | Conductors      | Insulation           | Jacket     | UL Type | Approx. Weight |
|--------------------------------------|------------|------------|-----------------|----------------------|------------|---------|----------------|
| 244CAT5E360                          | 4          | .210"      | 24 AWG Solid BC | PE                   | PVC        | CMR     | 27 lbs/Mft     |
| Category 5E Four-pair 360MHz         |            |            |                 |                      |            |         |                |
| 244CAT5E360P                         | 4          | .180"      | 24 AWG Solid BC | Plenum Thermoplastic | Plenum PVC | CMP     | 23.5 lbs/Mft   |
| Category 5E Four-pair 360MHz: Plenum |            |            |                 |                      |            |         |                |

### Electrical Specifications

| Part #             | DCR Max | DCR Unbal. Max           | Mutual Capac. Max | Char. Imped. | Prop. Delay (Skew) Max | Vel. of Prop. (Non-plenum, Plenum) | Standards                                     |      |      |      |       |      |      |      |      |      |      |       |  |
|--------------------|---------|--------------------------|-------------------|--------------|------------------------|------------------------------------|-----------------------------------------------|------|------|------|-------|------|------|------|------|------|------|-------|--|
| 244CAT5E360 Series | 28.6 Ω  | 5%                       | 17 pF/ft          | 100 Ω        | 18 ns/100m             | 69%, 72%                           | Exceeds TIA/EIA-568-B.2 Cat 5e, ISO/IEC 11801 |      |      |      |       |      |      |      |      |      |      |       |  |
|                    |         | Freq. (MHz)              | 0.772             | 1            | 4                      | 8                                  | 10                                            | 16   | 20   | 25   | 31.25 | 62.5 | 100  | 155  | 200  | 250  | 300  | 360   |  |
|                    |         | Insertion Loss (dB/100m) | 1.8               | 2.0          | 4.1                    | 5.8                                | 6.5                                           | 8.2  | 9.3  | 10.4 | 11.7  | 17.0 | 22.0 | 28.1 | 32.4 | 36.9 | 41.0 | 45.6  |  |
|                    |         | PSNEXT (dB)              | 70.0              | 68.3         | 59.3                   | 54.8                               | 53.3                                          | 50.3 | 48.8 | 47.3 | 45.9  | 41.4 | 38.3 | 35.5 | 33.8 | 32.3 | 31.2 | 30.0  |  |
|                    |         | PSACR (dB/100m)          | 68.2              | 66.3         | 55.2                   | 49.0                               | 46.8                                          | 42.1 | 39.5 | 36.9 | 34.2  | 24.4 | 16.3 | 7.4  | 1.4  | -4.6 | -9.8 | -15.6 |  |
|                    |         | PSELFEXT (dB/100m)       | 63.0              | 60.8         | 48.7                   | 42.7                               | 40.8                                          | 36.7 | 34.7 | 32.8 | 30.9  | 24.8 | 20.8 | 16.9 | 14.7 | 12.8 | 11.2 | 9.6   |  |
|                    |         | RL (dB)                  | ---               | 20.0         | 23.0                   | 24.5                               | 25.0                                          | 25.0 | 25.0 | 24.3 | 23.6  | 21.5 | 20.1 | 18.8 | 18.0 | 17.3 | 16.8 | 16.2  |  |
|                    |         |                          |                   |              |                        |                                    |                                               |      |      |      |       |      |      |      |      |      |      |       |  |

## Category 6 UTP

## TIA/EIA Cat6 250 MHz Four-pair Network Cable



- Precision Cat6 Electrical Characteristics
- 250MHz Bandwidth
- 23 Gage Solid Copper Conductors
- Meets or Exceeds TIA/EIA-568-B.2 Standards
- UL Rated for Permanent Installation

### Mechanical Specifications

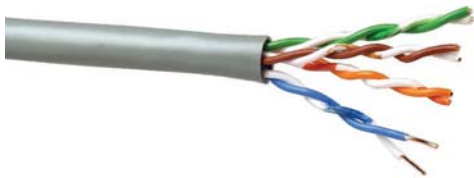
| Part #                              | # of Pairs | Nominal OD | Conductors      | Insulation           | Jacket                         | UL Type | Approx. Weight |
|-------------------------------------|------------|------------|-----------------|----------------------|--------------------------------|---------|----------------|
| 234CAT6                             | 4          | .240"      | 23 AWG Solid BC | Polyolefin           | PVC with Central Spacer        | CMR/MPR | 27 lbs/Mft     |
| Category 6 Four-pair 250MHz         |            |            |                 |                      |                                |         |                |
| 234CAT6P                            | 4          | .220"      | 23 AWG Solid BC | Plenum Thermoplastic | Plenum PVC with Central Spacer | CMP     | 28 lbs/Mft     |
| Category 6 Four-pair 250MHz: Plenum |            |            |                 |                      |                                |         |                |

### Electrical Specifications

| Part #              | DCR Max | DCR Unbal. Max | Mutual Capac. Max        | Char. Imped. | Prop. Delay (Skew) Max |      |      |      |      | Vel. of Prop. (Non-plenum, Plenum) |      |       |      |      | Standards                                               |      |      |  |  |
|---------------------|---------|----------------|--------------------------|--------------|------------------------|------|------|------|------|------------------------------------|------|-------|------|------|---------------------------------------------------------|------|------|--|--|
| 234CAT6<br>234CAT6P | 28.6 Ω  | 3%             | 17 pF/ft                 | 100 Ω        | 18 ns/100m             |      |      |      |      | 69%, 72%                           |      |       |      |      | Meets or Exceeds TIA/EIA-568-B.2-1 Cat 6, ISO/IEC 11801 |      |      |  |  |
|                     |         |                | Freq. (MHz)              | 0.772        | 1                      | 4    | 8    | 10   | 16   | 20                                 | 25   | 31.25 | 62.5 | 100  | 155                                                     | 200  | 250  |  |  |
|                     |         |                | Insertion Loss (dB/100m) | 1.8          | 2.0                    | 3.8  | 5.3  | 6.0  | 7.6  | 8.5                                | 9.5  | 10.7  | 15.4 | 19.8 | 25.2                                                    | 29.0 | 32.8 |  |  |
|                     |         |                | PSNEXT (dB)              | 74.0         | 72.3                   | 63.3 | 58.8 | 57.3 | 54.3 | 52.8                               | 51.3 | 49.9  | 45.4 | 42.3 | 39.5                                                    | 37.8 | 36.3 |  |  |
|                     |         |                | PSACR (dB/100m)          | 72.2         | 70.3                   | 59.5 | 53.5 | 51.3 | 46.7 | 44.3                               | 41.8 | 39.2  | 30.0 | 22.5 | 14.3                                                    | 8.8  | 3.5  |  |  |
|                     |         |                | PSELFEXT (dB/100m)       | 67.0         | 61.8                   | 52.7 | 46.7 | 44.8 | 40.7 | 38.7                               | 36.8 | 34.9  | 28.8 | 24.8 | 20.9                                                    | 18.7 | 16.8 |  |  |
|                     |         |                | RL (dB)                  | ---          | 20.0                   | 23.0 | 24.5 | 25.0 | 25.0 | 25.0                               | 24.3 | 23.6  | 21.5 | 20.1 | 18.8                                                    | 18.0 | 17.3 |  |  |
|                     |         |                |                          |              |                        |      |      |      |      |                                    |      |       |      |      |                                                         |      |      |  |  |

## Low-skew UTP

## Four-pair Cable for Analog Video Transmission



- Low 2ns Skew
- For RGB Analog Video Transmission
- 23 Gage Solid Copper Conductors
- Cost Effective
- UL Rated for Permanent Installation

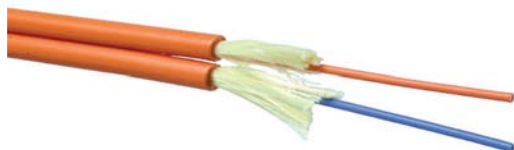
### Mechanical Specifications

| Part #                         | # of Pairs | Nominal OD | Conductors      | Insulation           | Jacket     | UL Type | Approx. Weight |
|--------------------------------|------------|------------|-----------------|----------------------|------------|---------|----------------|
| 234ULS                         | 4          | .228"      | 23 AWG Solid BC | Polyethylene         | PVC        | CMR     | 24 lbs/Mft     |
| Low Skew Four-pair UTP: Riser  |            |            |                 |                      |            |         |                |
| 234ULSP                        | 4          | .228"      | 23 AWG Solid BC | Plenum Thermoplastic | Plenum PVC | CMP     | 25 lbs/Mft     |
| Low Skew Four-pair UTP: Plenum |            |            |                 |                      |            |         |                |

### Electrical Specifications

| Part #            | DCR Max | DCR Unbal. Max | Mutual Capac. Max        | Char. Imped. | Prop. Delay (Skew) Max | Vel. of Prop. (Non-plenum, Plenum) |     |     |     |     |      |       |      |      |  |
|-------------------|---------|----------------|--------------------------|--------------|------------------------|------------------------------------|-----|-----|-----|-----|------|-------|------|------|--|
| 234ULS<br>234ULSP | 28.6 Ω  | 5%             | 17 pF/ft                 | 100 Ω        | 2.0 ns/100m            | 69%, 72%                           |     |     |     |     |      |       |      |      |  |
|                   |         |                | Freq. (MHz)              | 0.772        | 1                      | 4                                  | 8   | 10  | 16  | 20  | 25   | 31.25 | 62.5 | 100  |  |
|                   |         |                | Insertion Loss (dB/100m) | 1.7          | 1.9                    | 3.9                                | 5.5 | 6.2 | 7.9 | 8.9 | 10.0 | 11.3  | 16.3 | 21.2 |  |

## Multi-mode Breakout Fiber



## Indoor/Outdoor Breakout Optical Fiber

- Distribution Type Construction
- 62.5 Multi-mode Fiber Elements
- Individual Kevlar Fillers and Tube Jackets for Additional Strength
- Overall Jacket
- UL Rated for Permanent Installation

| Fiber Specifications                    |                                                                                           |                     |                    |             |                        |           |                        |           |                                      |                |                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------|---------------------|--------------------|-------------|------------------------|-----------|------------------------|-----------|--------------------------------------|----------------|-----------------|
| Type                                    | Mode Field Diameter                                                                       |                     |                    |             | Cladding Diameter      |           |                        |           | Maximum Attenuation                  |                |                 |
| Multi-mode                              | 62.5 μ                                                                                    |                     |                    |             | 125 μ                  |           |                        |           | 3.50 dB/km @ 850nm/1.00db/km @1300nm |                |                 |
| Mechanical Specifications               |                                                                                           |                     |                    |             |                        |           |                        |           |                                      |                |                 |
| Part #                                  | Fiber Buffer                                                                              | Outer Jacket        | Number of Elements | Nominal OD  | Maximum Tension        |           | Minimum Bend Radius    |           | Maximum Vertical Rise                | Approx. Weight | UL Type         |
|                                         |                                                                                           |                     |                    |             | Installation (Pulling) | Operating | Installation (Pulling) | Operating |                                      |                |                 |
| FMB**R                                  | PVC Tight Buffer Coating (.9mm OD) with Kevlar Filler & PVC Tube Jacket (2.5mm OD)        | PVC (Orange)        | 2 (Duplex)         | .113"x.241" | 225 lbs                | 112 lbs   | 2"                     | 1.0"      | 11,200'                              | 8 lbs/Mft      | OFNR<br>OFN FT4 |
|                                         |                                                                                           |                     | 4                  | .325"       | 450 lbs                | 250 lbs   | 6.5"                   | 3.3"      | 5000'                                | 40 lbs/Mft     |                 |
|                                         |                                                                                           |                     | 6                  | .377"       | 600 lbs                | 250 lbs   | 7.54"                  | 3.8"      | 3509'                                | 57 lbs/Mft     |                 |
|                                         |                                                                                           |                     | 8                  | .445"       | 600 lbs                | 250 lbs   | 8.9"                   | 4.5"      | 2564'                                | 78 lbs/Mft     |                 |
|                                         |                                                                                           |                     | 12                 | .567"       | 788 lbs                | 270 lbs   | 11.34"                 | 5.7"      | 2097'                                | 129 lbs/Mft    |                 |
| Multi-mode Breakout Fiber: Riser Rated  |                                                                                           |                     |                    |             |                        |           |                        |           |                                      |                |                 |
| FMB**P                                  | Plenum PVC Tight Buffer Coating (.9mm OD) with Kevlar Filler & PVC Tube Jacket (2.5mm OD) | Plenum PVC (Orange) | 2 (Duplex)         | .113"x.241" | 225 lbs                | 112 lbs   | 2"                     | 1.0"      | 11,200'                              | 8 lbs/Mft      | OFNP<br>OFN FT6 |
|                                         |                                                                                           |                     | 4                  | .272"       | 450 lbs                | 250 lbs   | 5.44"                  | 2.7"      | 6667'                                | 30 lbs/Mft     |                 |
|                                         |                                                                                           |                     | 6                  | .323"       | 600 lbs                | 250 lbs   | 6.46"                  | 3.2"      | 4545'                                | 44 lbs/Mft     |                 |
|                                         |                                                                                           |                     | 8                  | .400"       | 600 lbs                | 250 lbs   | 8.0"                   | 4.0"      | 3077'                                | 65 lbs/Mft     |                 |
|                                         |                                                                                           |                     | 12                 | .523"       | 788 lbs                | 270 lbs   | 10.46"                 | 5.2"      | 1728'                                | 125 lbs/Mft    |                 |
| Multi-mode Breakout Fiber: Plenum Rated |                                                                                           |                     |                    |             |                        |           |                        |           |                                      |                |                 |

## Multi-mode Distribution Fiber



## Indoor/Outdoor Distribution Optical Fiber

- Distribution Type Construction
- 62.5 Multi-mode Fiber Elements
- Kevlar Filler for Strength
- Overall Jacket
- UL Rated for Permanent Installation

| Fiber Specifications                        |                                                                      |                     |                    |                   |                        |           |                        |                                      |                       |                |                 |
|---------------------------------------------|----------------------------------------------------------------------|---------------------|--------------------|-------------------|------------------------|-----------|------------------------|--------------------------------------|-----------------------|----------------|-----------------|
| Type                                        | Mode Field Diameter                                                  |                     |                    | Cladding Diameter |                        |           |                        | Maximum Attenuation                  |                       |                |                 |
| Multi-mode                                  | 62.5 μ                                                               |                     |                    | 125 μ             |                        |           |                        | 3.50 dB/km @ 850nm/1.00db/km @1300nm |                       |                |                 |
| Mechanical Specifications                   |                                                                      |                     |                    |                   |                        |           |                        |                                      |                       |                |                 |
| Part #                                      | Fiber Buffer                                                         | Outer Jacket        | Number of Elements | Nominal OD        | Maximum Tension        |           | Minimum Bend Radius    |                                      | Maximum Vertical Rise | Approx. Weight | UL Type         |
|                                             |                                                                      |                     |                    |                   | Installation (Pulling) | Operating | Installation (Pulling) | Operating                            |                       |                |                 |
| FMD**R                                      | PVC Tight Buffer Coating with Overall Kevlar Filler (.9mm OD)        | PVC (Orange)        | 2                  | .187"             | 180 lbs                | 56 lbs    | 3.74"                  | 1.9"                                 | 2987'                 | 15 lbs/Mft     | OFNR<br>OFN FT4 |
|                                             |                                                                      |                     | 4                  | .220"             | 225 lbs                | 91 lbs    | 4.4"                   | 2.2"                                 | 3832'                 | 19 lbs/Mft     |                 |
|                                             |                                                                      |                     | 6                  | .235"             | 225 lbs                | 91 lbs    | 4.7"                   | 2.4"                                 | 3467'                 | 21 lbs/Mft     |                 |
|                                             |                                                                      |                     | 8                  | .245"             | 315 lbs                | 104 lbs   | 4.9"                   | 2.5"                                 | 3617'                 | 23 lbs/Mft     |                 |
|                                             |                                                                      |                     | 12                 | .275"             | 405 lbs                | 135 lbs   | 5.5"                   | 2.8"                                 | 3600'                 | 30 lbs/Mft     |                 |
| Multi-mode Distirbtion Fiber: Riser Rated   |                                                                      |                     |                    |                   |                        |           |                        |                                      |                       |                |                 |
| FMD**P                                      | Plenum PVC Tight Buffer Coating with Overall Kevlar Filler (.9mm OD) | Plenum PVC (Orange) | 2                  | .150"             | 180 lbs                | 56 lbs    | 3"                     | 1.5"                                 | 4978'                 | 9 lbs/Mft      | OFNP<br>OFN FT6 |
|                                             |                                                                      |                     | 4                  | .180"             | 225 lbs                | 91 lbs    | 3.6"                   | 1.8"                                 | 5200'                 | 14 lbs/Mft     |                 |
|                                             |                                                                      |                     | 6                  | .195"             | 225 lbs                | 91 lbs    | 3.9"                   | 2.0"                                 | 4853'                 | 15 lbs/Mft     |                 |
|                                             |                                                                      |                     | 8                  | .205"             | 315 lbs                | 104 lbs   | 4.1"                   | 2.1"                                 | 4622'                 | 18 lbs/Mft     |                 |
|                                             |                                                                      |                     | 12                 | .215"             | 405 lbs                | 135 lbs   | 4.5"                   | 2.3"                                 | 4909'                 | 22 lbs/Mft     |                 |
| Multi-mode Distribution Fiber: Plenum Rated |                                                                      |                     |                    |                   |                        |           |                        |                                      |                       |                |                 |

## Single-mode Breakout Fiber

## Indoor/Outdoor Breakout Optical Fiber



- Breakout Type Construction
- 8.3m Single-mode Fiber Elements
- Individual Kevlar Fillers and Tube Jackets for Added Strength
- Overall Jacket
- UL Rated for Permanent Installation

| Fiber Specifications                     |                                                                                           |                     |                    |                   |                        |                            |                        |           |                       |                |                 |
|------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|--------------------|-------------------|------------------------|----------------------------|------------------------|-----------|-----------------------|----------------|-----------------|
| Type                                     |                                                                                           | Mode Field Diameter |                    | Cladding Diameter |                        | Maximum Attenuation        |                        |           |                       |                |                 |
| Single Mode                              |                                                                                           | 8.3 μ               |                    | 125 μ             |                        | ≤ 0.70 dB/km @ 1310/1550nm |                        |           |                       |                |                 |
| Mechanical Specifications                |                                                                                           |                     |                    |                   |                        |                            |                        |           |                       |                |                 |
| Part #                                   | Fiber Buffer                                                                              | Outer Jacket        | Number of Elements | Nominal OD        | Maximum Tension        |                            | Minimum Bend Radius    |           | Maximum Vertical Rise | Approx. Weight | UL Type         |
|                                          |                                                                                           |                     |                    |                   | Installation (Pulling) | Operating                  | Installation (Pulling) | Operating |                       |                |                 |
| FSB**R                                   | PVC Tight Buffer Coating (.9mm OD) with Kevlar Filler & PVC Tube Jacket (2.5mm OD)        | PVC (Yellow)        | 2 (Duplex)         | .113"x.241"       | 225 lbs                | 112 lbs                    | 2"                     | 1.0"      | 11,200'               | 8 lbs/Mft      | OFNR<br>OFN FT4 |
|                                          |                                                                                           |                     | 4                  | .325"             | 450 lbs                | 250 lbs                    | 6.5"                   | 3.3"      | 5000'                 | 40 lbs/Mft     |                 |
|                                          |                                                                                           |                     | 6                  | .377"             | 600 lbs                | 250 lbs                    | 7.54"                  | 3.8"      | 3509'                 | 57 lbs/Mft     |                 |
|                                          |                                                                                           |                     | 8                  | .445"             | 600 lbs                | 250 lbs                    | 8.9"                   | 4.5"      | 2564'                 | 78 lbs/Mft     |                 |
|                                          |                                                                                           |                     | 12                 | .567"             | 788 lbs                | 270 lbs                    | 11.34"                 | 5.7"      | 2097'                 | 129 lbs/Mft    |                 |
| Single-mode Breakout Fiber: Riser Rated  |                                                                                           |                     |                    |                   |                        |                            |                        |           |                       |                |                 |
| FSB**P                                   | Plenum PVC Tight Buffer Coating (.9mm OD) with Kevlar Filler & PVC Tube Jacket (2.5mm OD) | Plenum PVC (Yellow) | 2 (Duplex)         | .113"x.241"       | 225 lbs                | 112 lbs                    | 2"                     | 1.0"      | 11,200'               | 8 lbs/Mft      | OFNP<br>OFN FT6 |
|                                          |                                                                                           |                     | 4                  | .272"             | 450 lbs                | 250 lbs                    | 5.44"                  | 2.7"      | 6667'                 | 30 lbs/Mft     |                 |
|                                          |                                                                                           |                     | 6                  | .323"             | 600 lbs                | 250 lbs                    | 6.46"                  | 3.2"      | 4545'                 | 44 lbs/Mft     |                 |
|                                          |                                                                                           |                     | 8                  | .400"             | 600 lbs                | 250 lbs                    | 8.0"                   | 4.0"      | 3077'                 | 65 lbs/Mft     |                 |
|                                          |                                                                                           |                     | 12                 | .523"             | 788 lbs                | 270 lbs                    | 10.46"                 | 5.2"      | 1728'                 | 125 lbs/Mft    |                 |
| Single-mode Breakout Fiber: Plenum Rated |                                                                                           |                     |                    |                   |                        |                            |                        |           |                       |                |                 |

## Single-mode Distribution Fiber

## Indoor/Outdoor Distribution Optical Fiber



- Distribution Type Construction
- 8.3m Single-mode Fiber Elements
- Kevlar Filler for Strength
- Overall Jacket
- UL Rated for Permanent Installation

| Fiber Specifications                         |                                                                       |                     |                    |                |                        |           |                        |                            |                       |                |                 |
|----------------------------------------------|-----------------------------------------------------------------------|---------------------|--------------------|----------------|------------------------|-----------|------------------------|----------------------------|-----------------------|----------------|-----------------|
| Type                                         |                                                                       | Mode                |                    | Field Diameter | Cladding Diameter      |           |                        | Maximum Attenuation        |                       |                |                 |
| Single Mode                                  |                                                                       |                     |                    | 8.3 μ          | 125 μ                  |           |                        | ≤ 0.70 dB/km @ 1310/1550nm |                       |                |                 |
| Mechanical Specifications                    |                                                                       |                     |                    |                |                        |           |                        |                            |                       |                |                 |
| Part #                                       | Fiber Buffer                                                          | Outer Jacket        | Number of Elements | Nominal OD     | Maximum Tension        |           | Minimum Bend Radius    |                            | Maximum Vertical Rise | Approx. Weight | UL Type         |
|                                              |                                                                       |                     |                    |                | Installation (Pulling) | Operating | Installation (Pulling) | Operating                  |                       |                |                 |
| FSD**R<br><br>* =Number of Elements          | PVC Tight Buffer Coating with Overall Kevlar Filler ( .9mm OD)        | PVC (Yellow)        | 2                  | .187"          | 180 lbs                | 56 lbs    | 3.74"                  | 1.9"                       | 2987'                 | 15 lbs/Mft     | OFNR<br>OFN FT4 |
|                                              |                                                                       |                     | 4                  | .220"          | 225 lbs                | 91 lbs    | 4.4"                   | 2.2"                       | 3832'                 | 19 lbs/Mft     |                 |
|                                              |                                                                       |                     | 6                  | .235"          | 225 lbs                | 91 lbs    | 4.7"                   | 2.4"                       | 3467'                 | 21 lbs/Mft     |                 |
|                                              |                                                                       |                     | 8                  | .245"          | 315 lbs                | 104 lbs   | 4.9"                   | 2.5"                       | 3617'                 | 23 lbs/Mft     |                 |
|                                              |                                                                       |                     | 12                 | .275"          | 405 lbs                | 135 lbs   | 5.5"                   | 2.8"                       | 3600'                 | 30 lbs/Mft     |                 |
| Single-mode Distribution Fiber: Riser Rated  |                                                                       |                     |                    |                |                        |           |                        |                            |                       |                |                 |
| FSD**P<br><br>* =Number of Elements          | Plenum PVC Tight Buffer Coating with Overall Kevlar Filler ( .9mm OD) | Plenum PVC (Yellow) | 2                  | .150"          | 180 lbs                | 56 lbs    | 3"                     | 1.5"                       | 4978'                 | 9 lbs/Mft      | OFNP<br>OFN FT6 |
|                                              |                                                                       |                     | 4                  | .180"          | 225 lbs                | 91 lbs    | 3.6"                   | 1.8"                       | 5200'                 | 14 lbs/Mft     |                 |
|                                              |                                                                       |                     | 6                  | .195"          | 225 lbs                | 91 lbs    | 3.9"                   | 2.0"                       | 4853'                 | 15 lbs/Mft     |                 |
|                                              |                                                                       |                     | 8                  | .205"          | 315 lbs                | 104 lbs   | 4.1"                   | 2.1"                       | 4622'                 | 18 lbs/Mft     |                 |
|                                              |                                                                       |                     | 12                 | .215"          | 405 lbs                | 135 lbs   | 4.5"                   | 2.3"                       | 4909'                 | 22 lbs/Mft     |                 |
| Single-mode Distribution Fiber: Plenum Rated |                                                                       |                     |                    |                |                        |           |                        |                            |                       |                |                 |