

2413F Multi-Conductor - Enhanced Category 6 Nonbonded-Pair ScTP Cable



For more Information
please call

1-800-Belden1



General Description:

CAT6+, 4-Pair, F/UTP-Foil Shielded, Plenum-CMP, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Polyolefin Insulation, Patented X-Spline, Overall Beldfoil Shield, PVC Jacket

Usage (Overall)

Suitable Applications: Networking Horizontal Cable, HDBaseT, 1000Base-T (Gigabit Ethernet), 100Base-T (Fast Ethernet), 10Base-T (Ethernet), 100BaseVG, ANYLAN, 155ATM, 622ATM, ANSI.X3.263 FDDI TP-PMD, NTSC/PAL Component or Composite Video, AES/EBU, Digital Video, RS-422, Noisy Environments, 250 MHz Category 6

Physical Characteristics (Overall)

Conductor

AWG:

| # Pairs | AWG | Stranding | Conductor Material |
|---------|-----|-----------|--------------------|
| 4 | 23 | Solid | BC - Bare Copper |

Total Number of Conductors: 8

Insulation

Insulation Material:

| Insulation Material |
|--------------------------------------|
| FEP - Fluorinated Ethylene Propylene |

Outer Shield

Outer Shield Material:

| Outer Shield Trade Name | Type | Outer Shield Material | Coverage (%) |
|-------------------------|------|------------------------------|--------------|
| Beldfoil® | Tape | Aluminum Foil-Polyester Tape | 100.000 |

Outer Shield Drain Wire AWG:

| AWG | Stranding | Drain Wire Conductor Material |
|-----|-----------|-------------------------------|
| 24 | Solid | TC - Tinned Copper |

Outer Jacket

Outer Jacket Material:

| Outer Jacket Trade Name | Outer Jacket Material |
|-------------------------|---------------------------------------|
| Flamearrest® | LS PVC - Low Smoke Polyvinyl Chloride |

Outer Jacket Diameter:

| Nom. Dia. (in.) |
|-----------------|
| 0.285 |

Outer Jacket Ripcord: Yes

Overall Cable

Overall Cabling Fillers: Patented Central X-Spline

Overall Cabling Separator Material: Polyester Tape

Pair

Pair Color Code Chart:

| Number | Color |
|--------|--------------------------------|
| 1 | White/Blue Stripe and Blue |
| 2 | White/Orange Stripe and Orange |

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| | |
|---|------------------------------|
| 3 | White/Green Stripe and Green |
| 4 | White/Brown Stripe and Brown |

Mechanical Characteristics (Overall)

| | |
|-----------------------------------|-----------------|
| Storage Temperature Range: | -20°C To +75°C |
| Installation Temperature Range: | +5°C To +50°C |
| Operating Temperature Range: | -20°C To +75°C |
| Bulk Cable Weight: | 49 lbs/1000 ft. |
| Max. Recommended Pulling Tension: | 25 lbs. |
| Min. Bend Radius/Minor Axis: | 1 in. |
| Min. Bend/Installation: | 3 in. |

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

| | |
|---------------------------------------|---------------------------|
| NEC/(UL) Specification: | CMP |
| CEC/C(UL) Specification: | CMP |
| EU Directive 2011/65/EU (ROHS II): | Yes |
| EU CE Mark: | Yes |
| EU Directive 2000/53/EC (ELV): | Yes |
| EU Directive 2002/95/EC (RoHS): | Yes |
| EU RoHS Compliance Date (mm/dd/yyyy): | 12/09/2011 |
| EU Directive 2002/96/EC (WEEE): | Yes |
| EU Directive 2003/11/EC (BFR): | Yes |
| CA Prop 65 (CJ for Wire & Cable): | Yes |
| MII Order #39 (China RoHS): | Yes |
| Telecommunications Standards: | Category 6 - TIA 568.C.2 |
| Other Specification: | UL Verified to Category 6 |

Applicable Patents:

| Country | Patent |
|---------|---------|
| US | 6074503 |
| US | 7663061 |

Flame Test

| | |
|-------------------|---|
| UL Flame Test: | NFPA 262 Plenum Flame Test (UL910)(FT6) |
| C(UL) Flame Test: | FT6 |
| CSA Flame Test: | FT6 |

Plenum/Non-Plenum

| | |
|--------------------|-------|
| Plenum (Y/N): | Yes |
| Non-Plenum Number: | 2412F |

Electrical Characteristics (Overall)

Nom. Mutual Capacitance:

| Capacitance (pF/ft) |
|---------------------|
| 14.000 |

Maximum Capacitance Unbalance:

| Capacitance (pF/ft) |
|---------------------|
| 66.000 |

Nominal Velocity of Propagation:

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VP (%)

72.000

Maximum Delay:

Delay (ns/100 m)

537.000

Max. Delay Skew:

Delay Skew (ns/ft)

30.000

Maximum Conductor DC Resistance:

DCR @ 20°C (Ohm/100 m)

8.200

Max. Operating Voltage - UL:

Voltage

300 V RMS

Maximum DCR Unbalanced:

DCR Unbalance @ 20°C (%)

3.000

Electrical Characteristics-Premise (Overall)

Premise Cable Electrical Table 1:

| Freq. (MHz) | Max. Attenuation (dB/100 m) | Min. NEXT (dB) | Min. PSNEXT (dB) | Min. ACR (dB) | Min. PSACR (dB) | Min RL (dB) |
|-------------|-----------------------------|----------------|------------------|---------------|-----------------|-------------|
| 1 | 2.000 | 75.3 | 73.3 | 73.3 | 72.3 | 20.000 |
| 4 | 3.700 | 66.3 | 64.3 | 62.6 | 61.6 | 23.000 |
| 8 | 5.200 | 63.3 | 61.3 | 58.1 | 57.1 | 24.500 |
| 10 | 5.800 | 61.8 | 59.8 | 56.0 | 55.0 | 25.000 |
| 16 | 7.400 | 58.6 | 56.6 | 51.2 | 50.2 | 25.000 |
| 20 | 8.300 | 57.1 | 55.1 | 48.8 | 47.8 | 25.000 |
| 25 | 9.300 | 55.5 | 53.5 | 46.3 | 45.2 | 24.300 |
| 31.25 | 10.400 | 54.0 | 52.0 | 43.6 | 42.6 | 23.600 |
| 62.5 | 15.000 | 49.1 | 47.1 | 34.1 | 33.1 | 21.500 |
| 100 | 19.300 | 45.8 | 43.8 | 26.5 | 25.5 | 20.800 |
| 200 | 28.300 | 40.9 | 38.9 | 12.6 | 11.6 | 18.700 |
| 250 | 32.100 | 39.3 | 37.3 | 7.2 | 6.2 | 18.000 |
| 300 | 35.600 | 38.1 | 36.1 | 2.5 | 1.5 | 17.500 |
| 350 | 38.900 | 37.1 | 35.1 | | | 17.000 |
| 400 | 42.000 | 36.3 | 34.3 | | | 16.600 |
| 450 | 45.000 | 35.5 | 33.5 | | | 16.200 |
| 500 | 47.900 | 34.8 | 32.8 | | | 15.900 |
| 550 | 50.600 | 34.2 | 32.2 | | | 15.600 |

Premise Cable Electrical Table 2:

| Freq. (MHz) | Input (Unfitted) Imp. (Ohms) | Fitted Impedance | Min. ELFEXT (dB) | Min. PSELFEXT (dB) |
|-------------|------------------------------|------------------|------------------|--------------------|
| 1 | 100 ± 15 | 100 ± 15 | 70.8 | 67.8 |
| 4 | 100 ± 15 | 100 ± 15 | 58.8 | 55.8 |
| 8 | 100 ± 15 | 100 ± 15 | 52.7 | 49.7 |
| 10 | 100 ± 15 | 100 ± 15 | 50.8 | 47.8 |
| 16 | 100 ± 15 | 100 ± 15 | 46.7 | 43.7 |
| 20 | 100 ± 15 | 100 ± 15 | 44.8 | 41.8 |
| 25 | 100 ± 15 | 100 ± 15 | 42.8 | 39.8 |
| 31.25 | 100 ± 15 | 100 ± 15 | 40.9 | 37.9 |
| 62.5 | 100 ± 15 | 100 ± 15 | 34.9 | 31.9 |
| 100 | 100 ± 15 | 100 ± 15 | 30.8 | 27.8 |
| 200 | 100 ± 22 | 100 ± 15 | 24.8 | 21.8 |
| 250 | 100 ± 32 | 100 ± 15 | 22.8 | 19.8 |
| 300 | 100 ± 32 | 100 ± 15 | 21.3 | 18.3 |
| 350 | 100 ± 32 | 100 ± 15 | 19.9 | 16.9 |
| 400 | 100 ± 32 | 100 ± 15 | 18.8 | 15.8 |
| 450 | 100 ± 32 | 100 ± 15 | 17.7 | 14.7 |

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| | | | | |
|-----|----------|----------|------|------|
| 500 | 100 ± 32 | 100 ± 15 | 16.8 | 13.8 |
| 550 | 100 ± 32 | 100 ± 15 | 16.0 | 13.0 |

Premise Cable Electrical Table 4:

| Frequency (MHz) | Min. TCL (dB) | Min. ELTCTL (dB) |
|-----------------|---------------|------------------|
| 1.000 | 40.000 | 35.000 |
| 4.000 | 40.000 | 23.000 |
| 8.000 | 40.000 | 17.000 |
| 10.000 | 40.000 | 15.000 |
| 16.000 | 38.000 | 10.900 |
| 20.000 | 37.000 | 9.000 |
| 25.000 | 36.000 | 7.100 |
| 31.250 | 35.100 | 5.100 |
| 62.500 | 32.000 | |
| 100.000 | 30.000 | |
| 200.000 | 27.000 | |
| 250.000 | 26.000 | |

Notes (Overall)

Notes: Jacket sequentially marked at 2 ft. intervals Third party Verified to ANSI/TIA-568-C.2, Category 6. Values above 350 MHz are for Engineering Information Only.

Put Ups and Colors:

| Item # | Putup | Ship Weight | Color | Notes | Item Desc |
|---------------|----------|-------------|-------------|-------|--------------------------|
| 2413F D15A500 | 500 FT | 27.500 LB | BLUE | | CAT6+ 4PR F/UTP CMP RIB |
| 2413F D151000 | 1,000 FT | 44.000 LB | BLUE | | CAT6+ 4PR F/UTP CMP REEL |
| 2413F 0021000 | 1,000 FT | 44.000 LB | RED | | CAT6+ 4PR F/UTP CMP REEL |
| 2413F 0031000 | 1,000 FT | 44.000 LB | ORANGE | | CAT6+ 4PR F/UTP CMP REEL |
| 2413F 0041000 | 1,000 FT | 44.000 LB | YELLOW | | CAT6+ 4PR F/UTP CMP REEL |
| 2413F 0051000 | 1,000 FT | 44.000 LB | GREEN, DARK | | CAT6+ 4PR F/UTP CMP REEL |
| 2413F 0081000 | 1,000 FT | 44.000 LB | GRAY | | CAT6+ 4PR F/UTP CMP REEL |
| 2413F 009A500 | 500 FT | 27.500 LB | WHITE | | CAT6+ 4PR F/UTP CMP RIB |
| 2413F 0091000 | 1,000 FT | 44.000 LB | WHITE | | CAT6+ 4PR F/UTP CMP REEL |
| 2413F 0101000 | 1,000 FT | 44.000 LB | BLACK | | CAT6+ 4PR F/UTP CMP REEL |

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