

# Product: 2413

## Category 6+ Enhanced Cable, 4 Pair, U/UTP, CMP

### Product Description

Category 6+ Enhanced Premise Horizontal Cable (350MHz), 4 Pair, 23 AWG Solid Bare Copper Conductors, U/UTP, Plenum-CMP, Flamarrest® PVC-LS Jacket

### Technical Specifications

#### Product Overview

| | |
|---|---|
| Suitable Applications: | Premise Horizontal Cable, Ethernet 1000BASE-T, Ethernet 100BASE-TX, Ethernet 10BASE-T, PoE++, PoE+, PoE |
| Patent: | This product has one or more applicable patents. More information on patents can be found at https://www.belden.com/patents. |

#### Construction Details

**Conductor**

| Size | Stranding | Material | No. of Pairs |
|---|---|---|---|
| 23 AWG | Solid | BC - Bare Copper | 4 |

**Insulation**

| Material | Color Code |
|---|---|
| PO+FEP - Polyolefin + Fluorinated Ethylene Propylene | White/Blue Stripe & Blue, White/Orange Stripe & Orange, White/Green Stripe & Green, White/Brown Stripe & Brown |

**Outer Jacket**

| Separator | Material | Material Trade Name | Nom. Diameter | Ripcord |
|---|---|---|---|---|
| Dielectric Tape (Patented) | PVC - Polyvinyl Chloride | Flamarrest® | 0.224 in (5.69 mm) | Yes |

| | |
|---|---|
| Overall Cable Diameter (Nominal): | 0.224 in (5.69 mm) |

#### Electrical Characteristics

**Electricals**

| Max. Conductor DCR | Max. Capacitance Unbalance |
|---|---|
| 78 Ohm/km (24 Ohm/1000ft) | 330 pF/100m |

**Delay**

| Frequency | Max. Delay | Max. Delay Skew | Nom. Velocity of Prop. |
|---|---|---|---|
| 100 MHz | 537.6 ns/100m | 35 ns/100m | 72% |

**High Frequency**

| Frequency [MHz] | Max. Insertion Loss (Attenuation) | Min. NEXT [dB] | Min. PSNEXT [dB] | Min. ACR [dB] | Min. PSACR [dB] | Min. ACRF (ELFEXT) [dB] | Min. PSACRF (PSELFEXT) [dB] | Min. RL (Return Loss) [dB] | Max./Min. Input Impedance (unFitted) [Ohm] | Max./Min. Fitted Impedance [Ohm] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.0 dB/100m | 79.3 | 77.3 | 77.3 | 75.3 | 70.8 | 67.8 | 20.0 | 100 ± 15 | 102 ± 15 |
| 4 | 3.7 dB/100m | 70.3 | 68.3 | 66.5 | 64.5 | 58.8 | 55.8 | 23.6 | 100 ± 15 | 100 ± 15 |
| 8 | 5.3 dB/100m | 65.8 | 63.8 | 60.5 | 58.5 | 52.7 | 49.7 | 25.3 | 100 ± 15 | 100 ± 15 |
| 10 | 5.9 dB/100m | 64.3 | 62.3 | 58.4 | 56.4 | 50.8 | 47.8 | 26.0 | 100 ± 15 | 100 ± 15 |
| 16 | 7.4 dB/100m | 61.2 | 59.2 | 53.8 | 51.8 | 46.7 | 43.7 | 26.0 | 100 ± 15 | 100 ± 15 |
| 20 | 8.3 dB/100m | 59.8 | 57.8 | 51.4 | 49.4 | 44.8 | 41.8 | 26.0 | 100 ± 15 | 100 ± 15 |
| 25 | 9.4 dB/100m | 58.3 | 56.3 | 49.0 | 47.0 | 42.8 | 39.8 | 25.5 | 100 ± 15 | 100 ± 15 |
| 31.25 | 10.5 dB/100m | 56.9 | 54.9 | 46.4 | 44.4 | 40.9 | 37.9 | 25.0 | 100 ± 15 | 100 ± 15 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 62.5 | 15.1 dB/100m | 52.4 | 50.4 | 37.3 | 35.3 | 34.9 | 31.9 | 23.5 | 100 ± 15 | 100 ± 15 |
| 100 | 19.3 dB/100m | 49.3 | 47.3 | 30.0 | 28.0 | 30.8 | 27.8 | 22.5 | 100 ± 15 | 100 ± 15 |
| 155 | 24.5 dB/100m | 46.4 | 44.4 | 21.9 | 19.9 | 27.0 | 24.0 | 21.6 | 100 ± 22 | 100 ± 15 |
| 200 | 28.2 dB/100m | 44.8 | 42.8 | 16.6 | 14.6 | 24.8 | 21.8 | 21.0 | 100 ± 22 | 100 ± 15 |
| 250 | 31.8 dB/100m | 43.3 | 41.3 | 11.5 | 9.5 | 22.8 | 19.8 | 20.5 | 100 ± 32 | 100 ± 15 |
| 300 | 35.2 dB/100m | 42.1 | 40.1 | 6.9 | 4.9 | 21.3 | 18.3 | 20.1 | 100 ± 32 | 100 ± 15 |
| 350 | 38.4 dB/100m | 41.1 | 39.1 | 2.7 | 0.7 | 19.9 | 16.9 | 19.8 | 100 ± 32 | 100 ± 15 |
| 400 | 41.5 dB/100m | 40.3 | 38.3 | | | 18.8 | 15.8 | 19.5 | 100 ± 32 | 100 ± 15 |
| 450 | 44.3 dB/100m | 39.5 | 37.5 | | | 17.7 | 14.7 | 19.2 | 100 ± 32 | 100 ± 15 |
| 500 | 47.1 dB/100m | 38.8 | 36.8 | | | 16.8 | 13.8 | 19.0 | 100 ± 32 | 100 ± 15 |
| 550 | 49.7 dB/100m | 38.2 | 36.2 | | | 16.0 | 13.0 | 18.8 | 100 ± 32 | 100 ± 15 |

**Voltage**

| UL Voltage Rating |
|---|
| 300 V (CMP), 300 V (CL3P) |

## Mechanical Characteristics

**Temperature**

| UL Temperature | Operating | Installation | Storage |
|---|---|---|---|
| 90°C | -20°C To +75°C | 0°C To +50°C | -20°C To +75°C |

**Bend Radius**

| Stationary Min. | Installation Min. |
|---|---|
| 1.0 in (25 mm) | 2.25 in (57.2 mm) |

| | |
|---|---|
| Max. Pull Tension: | 25 lbs (11 kg) |
| Bulk Cable Weight: | 26 lbs/1000ft |

## Standards and Compliance

| | |
|---|---|
| Environmental Suitability: | Plenum, Indoor |
| Sustainability: | Product Lens™, Environmental Product Declaration (EPD) Available |
| Flammability / Reaction to Fire: | NFPA 262, UL 910 (Plenum), FT6, IEC 60332-1-2 |
| CPR Compliance: | CPR Euroclass: Eca; CPR UKCA Class: Eca |
| NEC / UL Compliance: | Article 800, CMP, CMP-LP (0.5A), CL3P-LP (0.5A) |
| CEC / C(UL) Compliance: | CMP |
| ICEA Compliance: | S-116-732 |
| IEEE Compliance: | IEEE 802.3bt Type 1, Type 2, Type 3, Type 4 |
| NEMA Compliance: | ANSI/NEMA WC-66 |
| Data Category: | Category 6 |
| TIA/EIA Compliance: | ANSI/TIA-568.2-D Category 6 |
| Third Party Performance Verification: | Category 6 |
| ISO/IEC Compliance: | ISO/IEC 11801-1, IEC 61156-5 |
| European Directive Compliance: | EU CE Mark, EU Directive 2015/863/EU (RoHS 2 amendment), REACH, EU Directive 2011/65/EU (RoHS 2), EU Directive 2012/19/EU (WEEE), REACH: 2020-01-16 |
| UK Regulation Compliance: | UKCA Mark |
| APAC Compliance: | China RoHS II (GB/T 26572-2011) |
| Non-Plenum Number: | 2412 |

## Product Notes

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| Notes: | Electrical values are expected performance based on cable testing and representative performance within a typical Belden system. Values above 350 MHz are for Engineering Information Only. Print Includes Descending Footage/Meter Markings from Max. Put-Up Length to 0. |

## History

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|---|---|
| Update and Revision: | Revision Number: 0.602 Revision Date: 12-12-2023 |

## Part Numbers

**Variants**

| Item # | Color | Putup Type | Length | UPC |
|---|---|---|---|---|
| 2413 0101000 | Black | Reel | 1,000 ft | 612825061762 |

| | | | | |
|---|---|---|---|---|
| 2413 010A1000 | Black | Reel-in-Box | 1,000 ft | 612825061755 |
| 2413 010U1000 | Black | UnReel | 1,000 ft | 612825131502 |
| 2413 0102500 | Black | Reel | 2,500 ft | 612825061748 |
| 2413 D151000 | Blue | Reel | 1,000 ft | 612825061601 |
| 2413 D15A1000 | Blue | Reel-in-Box | 1,000 ft | 612825061618 |
| 2413 D15U1000 | Blue | UnReel | 1,000 ft | 612825061793 |
| 2413 D152500 | Blue | Reel | 2,500 ft | 612825061625 |
| 2413 0081000 | Gray | Reel | 1,000 ft | 612825061717 |
| 2413 008A1000 | Gray | Reel-in-Box | 1,000 ft | 612825061724 |
| 2413 008U1000 | Gray | UnReel | 1,000 ft | 612825061809 |
| 2413 0051000 | Green | Reel | 1,000 ft | 612825061663 |
| 2413 005A1000 | Green | Reel-in-Box | 1,000 ft | 612825061687 |
| 2413 005U1000 | Green | UnReel | 1,000 ft | 612825062226 |
| 2413 0052500 | Green | Reel | 2,500 ft | 612825061670 |
| 2413 0035000 | Orange | | | 612825381068 |
| 2413 0035000 | Orange | | | 612825381068 |
| 2413 0031000 | Orange | Reel | 1,000 ft | 612825061694 |
| 2413 003A1000 | Orange | Reel-in-Box | 1,000 ft | 612825061700 |
| 2413 003U1000 | Orange | UnReel | 1,000 ft | 612825062202 |
| 2413 012A1000 | Pink | Reel-in-Box | 1,000 ft | 612825061786 |
| 2413 007A1000 | Purple | Reel-in-Box | 1,000 ft | 612825061779 |
| 2413 002A1000 | Red | Reel-in-Box | 1,000 ft | 612825061731 |
| 2413 0091000 | White | Reel | 1,000 ft | 612825061571 |
| 2413 009A1000 | White | Reel-in-Box | 1,000 ft | 612825061588 |
| 2413 009U1000 | White | UnReel | 1,000 ft | 612825061816 |
| 2413 0092500 | White | Reel | 2,500 ft | 612825061595 |
| 2413 0041000 | Yellow | Reel | 1,000 ft | 612825061632 |
| 2413 004A1000 | Yellow | Reel-in-Box | 1,000 ft | 612825061649 |
| 2413 004U1000 | Yellow | UnReel | 1,000 ft | 612825062219 |
| 2413 0042500 | Yellow | Reel | 2,500 ft | 612825061656 |

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