

## 2413 Multi-Conductor - Enhanced Category 6 Nonbonded-Pair Cables



For more Information  
please call

1-800-Belden1

**General Description:**

CAT6+ (350 MHz), 4-Pair, U/UTP-Unshielded, Plenum-CMP, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Dual FRPO/FEP Insulation, Tape Separator, Ripcord, Flamarrest® Jacket

**Usage (Overall)****Suitable Applications:**

Premise Horizontal Cable, Gigabit Ethernet, 100BaseTX, 100BaseVG  
ANYLAN, 155 ATM, 622 ATM, 250MHz 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                                                  |
|----------------------------------------------------------------------|
| FRPO/FEP - Flame Retardant Polyolefin/Fluorinated Ethylene Propylene |

**Outer Shield****Outer Shield Material:**

| Outer Shield Material |
|-----------------------|
| Unshielded            |

**Outer Jacket****Outer Jacket Material:**

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

**Outer Jacket Diameter:**

| Nom. Dia. (mm) |
|----------------|
| 5.715          |

**Outer Jacket Ripcord:**

Yes

**Overall Cable****Overall Cabling Separator Material:**

Patented Dielectric Tape

**Overall Nominal Diameter:**

5.715 mm

**Pair****Pair Color Code Chart:**

| Number | Color                        |
|--------|------------------------------|
| 1      | White/Blue Stripe & Blue     |
| 2      | White/Orange Stripe & Orange |
| 3      | White/Green Stripe & Green   |
| 4      | White/Brown Stripe & Brown   |

**Mechanical Characteristics (Overall)****Storage Temperature Range:**

-20°C To +75°C

**2413 Multi-Conductor - Enhanced Category 6 Nonbonded-Pair Cables**

|                                   |               |
|-----------------------------------|---------------|
| Installation Temperature Range:   | +5°C To +50°C |
| Operating Temperature Range:      | 0°C To +75°C  |
| Bulk Cable Weight:                | 40.181 Kg/Km  |
| Max. Recommended Pulling Tension: | 177.928 N     |
| Min. Bend Radius/Minor Axis:      | 19.050 mm     |
| Min. Bend/Installation:           | 57.150 mm     |

**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                                 |
| Other Standards:                      | ISO/IEC 11801 ed 2.1 (2008) Class E |
| 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): | 10/13/2005                          |
| 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            |

**Applicable Patents:**

| Country | Patent  |
|---------|---------|
| US      | 5563377 |
| US      | 6570095 |
| US      | 6998537 |
| US      | 7179999 |
| CANADA  | 2144694 |
| US      | 7977575 |

**Flame Test**

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

**Suitability**

|                        |     |
|------------------------|-----|
| Suitability - Indoor:  | Yes |
| Suitability - Outdoor: | No  |

**Plenum/Non-Plenum**

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

**Electrical Characteristics (Overall)****Nom. Mutual Capacitance:**

| Capacitance (pF/m) |
|--------------------|
| 49.215             |

**Maximum Capacitance Unbalance:**

| Capacitance (pF/m) |
|--------------------|
| 1082.730           |

## 2413 Multi-Conductor - Enhanced Category 6 Nonbonded-Pair Cables

Maximum Capacitance Unbalance (pF/100 m): 330

Nominal Velocity of Propagation:

VP (%)  
72

Maximum Delay:

Delay (ns/100 m)  
537 @ 100MHz

Max. Delay Skew:

Delay Skew (ns/100 m)  
35.000

Maximum Conductor DC Resistance:

DCR @ 20°C (Ohm/100 m)  
7.800

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           | 75.3             | 73.3          | 73.3            | 20.000      |
| 4           | 3.700                       | 66.3           | 66.3             | 62.6          | 62.6            | 23.000      |
| 8           | 5.200                       | 61.8           | 61.8             | 56.6          | 56.6            | 24.500      |
| 10          | 5.800                       | 60.3           | 60.3             | 54.5          | 54.5            | 25.000      |
| 16          | 7.400                       | 57.2           | 57.2             | 49.9          | 49.9            | 25.000      |
| 20          | 8.300                       | 55.8           | 55.8             | 47.5          | 47.5            | 25.000      |
| 25          | 9.300                       | 54.3           | 54.3             | 45.1          | 45.1            | 24.300      |
| 31.25       | 10.400                      | 52.9           | 52.9             | 42.5          | 42.5            | 23.600      |
| 62.5        | 15.000                      | 48.4           | 48.4             | 33.4          | 33.4            | 21.500      |
| 100         | 19.300                      | 45.3           | 45.3             | 26.0          | 26.0            | 20.800      |
| 155         | 24.600                      | 42.4           | 42.4             | 17.9          | 17.9            | 19.500      |
| 200         | 28.300                      | 40.8           | 40.8             | 12.5          | 12.5            | 18.700      |
| 250         | 32.100                      | 39.3           | 39.3             | 7.2           | 7.2             | 18.000      |
| 300         | 35.600                      | 38.1           | 36.1             | 0.5           | 0.5             | 17.500      |
| 350         | 38.900                      | 37.1           | 35.1             | -1.7          | -3.7            | 17.000      |
| 400         | 42.000                      | 36.3           | 34.3             | -5.7          | -7.7            | 16.600      |
| 450         | 45.000                      | 35.5           | 33.5             | -9.5          | -11.5           | 16.200      |
| 500         | 47.900                      | 34.8           | 32.8             | -13.0         | -15.0           | 15.900      |
| 550         | 50.600                      | 34.2           | 32.2             | -16.4         | -18.4           | 15.600      |

Premise Cable Electrical Table 2:

| Freq. (MHz) | Input (Unfitted) Imp. (Ohms) | Fitted Impedance | Min. ACRF (dB) | Min. PSACRF (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             |
| 155         | 100 ± 22                     | 100 ± 15         | 27.0           | 24.0             |
| 200         | 100 ± 22                     | 100 ± 15         | 24.8           | 21.8             |

## METRIC MEASUREMENT VERSION

## 2413 Multi-Conductor - Enhanced Category 6 Nonbonded-Pair Cables

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

## Notes (Overall)

**Notes:** Jacket sequentially marked at 2 ft./1m intervals. Third party verified to ANSI/TIA-568-C.2, Category 6. Values above 350 MHz are for Engineering Information Only.

## Reference (Overall)

## Previous Part Number:

24567415, 24567715, 24567736T, 24567615T, 25067545, 25067545T, 25067515T, 24567745T, 24567715T, 25067845, 25067845T, 25067836, 25067836T, 24567815, 24567815T, 2456705T, 24567145, 24567145T, 24567115, 24567115T, 24567345, 24567345T, 24567336, 24567336T, 24567315, 24567315T, 24567445T, 24567436, 24567436T, 24567415T, 24567A15T, 24567945, 24567945T, 24567936T, 24567915, 24567915T

## Put Ups and Colors:

| Item #        | Putup  | Ship Weight | Color       | Notes | Item Desc                |
|---------------|--------|-------------|-------------|-------|--------------------------|
| 2413 D15A1000 | 305 MT | 13.608 KG   | BLUE        |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 D15U1000 | 305 MT | 12.701 KG   | BLUE        |       | CAT6+ 4PR U/UTP CMP BOX  |
| 2413 D151000  | 305 MT | 12.701 KG   | BLUE        |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 D152500  | 762 MT | 29.484 KG   | BLUE        |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 002A1000 | 305 MT | 13.608 KG   | RED         |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 003A1000 | 305 MT | 13.608 KG   | ORANGE      |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 003U1000 | 305 MT | 12.701 KG   | ORANGE      |       | CAT6+ 4PR U/UTP CMP BOX  |
| 2413 0031000  | 305 MT | 12.701 KG   | ORANGE      |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 004A1000 | 305 MT | 13.608 KG   | YELLOW      |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 004U1000 | 305 MT | 12.701 KG   | YELLOW      |       | CAT6+ 4PR U/UTP CMP BOX  |
| 2413 0041000  | 305 MT | 12.701 KG   | YELLOW      |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 0042500  | 762 MT | 29.484 KG   | YELLOW      |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 005A1000 | 305 MT | 13.608 KG   | GREEN, DARK |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 005U1000 | 305 MT | 12.701 KG   | GREEN, DARK |       | CAT6+ 4PR U/UTP CMP BOX  |
| 2413 0051000  | 305 MT | 12.701 KG   | GREEN, DARK |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 0052500  | 762 MT | 29.484 KG   | GREEN, DARK |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 007A1000 | 305 MT | 13.608 KG   | VIOLET      |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 008A1000 | 305 MT | 13.608 KG   | GRAY        |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 008U1000 | 305 MT | 12.701 KG   | GRAY        |       | CAT6+ 4PR U/UTP CMP BOX  |
| 2413 0081000  | 305 MT | 12.701 KG   | GRAY        |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 009A1000 | 305 MT | 13.608 KG   | WHITE       |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 009U1000 | 305 MT | 12.701 KG   | WHITE       |       | CAT6+ 4PR U/UTP CMP BOX  |
| 2413 0091000  | 305 MT | 12.701 KG   | WHITE       |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 0092500  | 762 MT | 29.484 KG   | WHITE       |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 010A1000 | 305 MT | 13.608 KG   | BLACK       |       | CAT6+ 4PR U/UTP CMP RIB  |
| 2413 010U1000 | 305 MT | 12.701 KG   | BLACK       |       | CAT6+ 4PR U/UTP CMP BOX  |
| 2413 0101000  | 305 MT | 12.701 KG   | BLACK       |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 0102500  | 762 MT | 29.484 KG   | BLACK       |       | CAT6+ 4PR U/UTP CMP REEL |
| 2413 012A1000 | 305 MT | 13.608 KG   | PINK        |       | CAT6+ 4PR U/UTP CMP RIB  |

Revision Number: 8    Revision Date: 01-07-2014

© 2014 Belden, Inc  
All Rights Reserved.

Although Belden makes every reasonable effort to ensure their accuracy at the time of this publication, information and specifications described herein are subject to error or omission and to change without notice, and the listing of such information and specifications does not ensure product availability.

Belden provides the information and specifications herein on an "AS IS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Belden be liable for any damages (including consequential, indirect, incidental, special, punitive, or

## 2413 Multi-Conductor - Enhanced Category 6 Nonbonded-Pair Cables

exemplary damages) whatsoever, even if Belden has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

All sales of Belden products are subject to Belden's standard terms and conditions of sale. Belden believes this product to be in compliance with EU RoHS (Directive 2002/95/EC, 27-Jan-2003). Material manufactured prior to the compliance date may be in stock at Belden facilities and in our Distributor's inventory. The information provided in this Product Disclosure, and the identification of materials listed as reportable or restricted within the Product Disclosure, is correct to the best of Belden's knowledge, information, and belief at the date of its publication. The information provided in this Product Disclosure is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. This Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product. Belden declares this product to be in compliance with EU LVD (Low Voltage Directive 73/23/EEC), as amended by directive 93/68/EEC.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)