

## 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, Flam arrest® 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
Flam arrest®	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

## 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.