



**Product:** [2413](#)

CAT6+ Horizontal, 4pr, UTP, LS-PVC Jkt, CMP

## Product Description

CAT6+ (350MHz), 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

## Technical Specifications

### Product Overview

Suitable Applications:	Premise Horizontal Cable, Gigabit Ethernet, 100BaseTX, 100BaseVG ANYLAN, 155 ATM, 622 ATM, 250MHz Category 6
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### Physical Characteristics (Overall)

#### Conductor

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

Conductor Count:	8
Total Number of Pairs:	4

#### Insulation

Material
PO/FEP - Polyolefin / Fluorinated Ethylene Propylene

Bonded-Pair:	N/A
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#### Color Chart

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

#### Outer Jacket Material

Material	Material Trade Name	Nominal Diameter	Ripcord	Separator Material
PVC-LS - Polyvinyl Chloride (Low Smoke)	Flamarrest®	0.224 in	Yes	Patented Dielectric Tape

### Electrical Characteristics

#### Conductor DCR

Max. Conductor DCR	Max. DCR Unbalance
78 Ohm/km	3 %

#### Capacitance

Max. Capacitance Unbalance	Nom. Mutual Capacitance
330 pF/100m	17 pF/ft

#### Delay

Frequency [MHz]	Max. Delay	Max. Delay Skew	Nominal Velocity of Propagation (VP) [%]
100 MHz	537.6 ns/100m	35 ns/100m	72 %

## High Freq

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)	Max./Min. Fitted Impedance
1 MHz	2.0 dB/100m	79.3 dB	77.3 dB	77.3 dB	75.3 dB	70.8 dB	67.8 dB	20.0 dB	100 ± 15	102 ± 15
4 MHz	3.7 dB/100m	70.3 dB	68.3 dB	66.5 dB	64.5 dB	58.8 dB	55.8 dB	23.6 dB	100 ± 15	100 ± 15
8 MHz	5.3 dB/100m	65.8 dB	63.8 dB	60.5 dB	58.5 dB	52.7 dB	49.7 dB	25.3 dB	100 ± 15	100 ± 15
10 MHz	5.9 dB/100m	64.3 dB	62.3 dB	58.4 dB	56.4 dB	50.8 dB	47.8 dB	26.0 dB	100 ± 15	100 ± 15
16 MHz	7.4 dB/100m	61.2 dB	59.2 dB	53.8 dB	51.8 dB	46.7 dB	43.7 dB	26.0 dB	100 ± 15	100 ± 15
20 MHz	8.3 dB/100m	59.8 dB	57.8 dB	51.4 dB	49.4 dB	44.8 dB	41.8 dB	26.0 dB	100 ± 15	100 ± 15
25 MHz	9.4 dB/100m	58.3 dB	56.3 dB	49.0 dB	47.0 dB	42.8 dB	39.8 dB	25.5 dB	100 ± 15	100 ± 15
31.25 MHz	10.5 dB/100m	56.9 dB	54.9 dB	46.4 dB	44.4 dB	40.9 dB	37.9 dB	25.0 dB	100 ± 15	100 ± 15
62.5 MHz	15.1 dB/100m	52.4 dB	50.4 dB	37.3 dB	35.3 dB	34.9 dB	31.9 dB	23.5 dB	100 ± 15	100 ± 15
100 MHz	19.3 dB/100m	49.3 dB	47.3 dB	30.0 dB	28.0 dB	30.8 dB	27.8 dB	22.5 dB	100 ± 15	100 ± 15
155 MHz	24.5 dB/100m	46.4 dB	44.4 dB	21.9 dB	19.9 dB	27.0 dB	24.0 dB	21.6 dB	100 ± 22	100 ± 15
200 MHz	28.2 dB/100m	44.8 dB	42.8 dB	16.6 dB	14.6 dB	24.8 dB	21.8 dB	21.0 dB	100 ± 22	100 ± 15
250 MHz	31.8 dB/100m	43.3 dB	41.3 dB	11.5 dB	9.5 dB	22.8 dB	19.8 dB	20.5 dB	100 ± 32	100 ± 15
300 MHz	35.2 dB/100m	42.1 dB	40.1 dB	6.9 dB	4.9 dB	21.3 dB	18.3 dB	20.1 dB	100 ± 32	100 ± 15
350 MHz	38.4 dB/100m	41.1 dB	39.1 dB	2.7 dB	0.7 dB	19.9 dB	16.9 dB	19.8 dB	100 ± 32	100 ± 15
400 MHz	41.5 dB/100m	40.3 dB	38.3 dB			18.8 dB	15.8 dB	19.5 dB	100 ± 32	100 ± 15
450 MHz	44.3 dB/100m	39.5 dB	37.5 dB			17.7 dB	14.7 dB	19.2 dB	100 ± 32	100 ± 15
500 MHz	47.1 dB/100m	38.8 dB	36.8 dB			16.8 dB	13.8 dB	19.0 dB	100 ± 32	100 ± 15
550 MHz	49.7 dB/100m	38.2 dB	36.2 dB			16.0 dB	13.0 dB	18.8 dB	100 ± 32	100 ± 15

## Voltage

<b>UL Voltage Rating</b>
300 V RMS

## Temperature Range

Installation Temp Range:	0°C To +50°C
UL Temp Rating:	90°C
Storage Temp Range:	-20°C To +75°C
Operating Temp Range:	-20°C To +75°C

## Mechanical Characteristics

Bulk Cable Weight:	26 lbs/1000ft
Max Recommended Pulling Tension:	25 lbs
Min Bend Radius During Installation:	2.25 in
Min Bend Radius/Minor Axis:	1.0 in

## Standards

NEC/(UL) Specification:	CMP
CEC/C(UL) Specification:	CMP
ISO/IEC Compliance:	11801 ed 2.2 (2011) Class E
CPR Euroclass:	Eca
Data Category:	Category 6
ANSI Compliance:	S-116-732-2013 Category 6, ANSI/NEMA WC-66 Category 6
Telecommunications Standards:	ANSI/TIA-568.2-D Category 6
IEEE Specification:	IEEE 802.3bt Type 1, Type 2, Type 3, Type 4
Other Standards:	C(UL)US CMP 90C OR (UL) CMP-LP (0.5A) OR CL3P-LP (0.5A)
Third Party Performance Verification:	Category 6

## Applicable Environmental and Other Programs

Environmental Space:	Plenum
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
EU Directive 2003/96/EC (BFR):	Yes

EU Directive 2011/65/EU (ROHS II):	Yes
EU Directive 2012/19/EU (WEEE):	Yes
EU Directive 2015/863/EU:	Yes
EU Directive Compliance:	Yes
EU CE Mark:	Yes
EU REACH SVHC Compliance (yyyy-mm-dd):	2017-07-10
EU RoHS Compliance Date (yyyy-mm-dd):	2005-10-13
MII Order #39 (China RoHS):	Yes

### Suitability

Suitability - Aerial:	No
Suitability - Burial:	No
Suitability - Hazardous Locations:	No
Suitability - Indoor:	Yes
Suitability - Non-Halogenated:	No
Suitability - Oil Resistance:	No
Suitability - Outdoor:	No
Suitability - Sunlight Resistance:	No

### Flammability, LSOH, Toxicity Testing

C(UL) Flammability:	FT6
UL Flammability:	NFPA 262 Plenum (UL 910)
CSA Flammability:	FT6
ISO/IEC Flammability:	IEC 60332-1-2
UL voltage rating:	300 V RMS

### Plenum/Non-Plenum

Plenum (Y/N):	Yes
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### Part Number

Non-Plenum Number:	2412
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### 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

Patent: <https://www.belden.com/resources/patents>

## Product Notes

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

Update and Revision: Revision Number: 0.377 Revision Date: 04-30-2020

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