Product: 2413FS

Category 6+ Enhanced Cable, 4 Pair, F/UTP, CMP

Product Description

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

Technical Specifications

Product Overview

Suitable Applications:	Premise Horizontal Cable, Ethernet 1000BASE-T, Ethernet 100BASE-TX, Ethernet 10BASE-T, Surveillance, PoE++, PoE+, PoE, Noisy Environments
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
FEP - Fluorinated Ethylene Propylene	White & Blue, White & Orange, White & Green, White & Brown

Outer Shield

Shield Type	Material	Coverage	Drainwire Type
Tape	Polyester + Bi-Laminate (Alum+Poly)	100%	26 AWG (7x34) TC

Outer Jacket

Separator	Material	Material Trade Name	Nom. Diameter	Ripcord
Center Member (Patented X-Spline®)	PVC - Polyvinyl Chloride	Flamarrest®	0.255 in (6.48 mm)	No

Overall Cable Diameter (Nominal):	0.255 in (6.48 mm)

Electrical Characteristics

Electricals

Max. Conductor DCR	Max. Capacitance Unbalance
93.8 Ohm/km (28.6 Ohm/1000ft)	330 pF/100m

Delay

Frequency	Max. Delay	Max. Delay Skew	Nom. Velocity of Prop.
100 MHz	537.6 ns/100m	45 ns/100m	72%

High Frequency

Frequency [MHz]	Max. Insertion Loss (Attenuation) [dB/100m]	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]	Min. PSANEXT [dB]	Min. PSAACRF [dB]	Min. TCL [dB]	Min. ELTCTL [dB]
1	2.1	74.3	72.3	72.2	70.2	67.8	64.8	20.0	100 ± 15	105 ± 10	67.0	67.0	40.0	35.0
4	3.8	65.3	63.3	61.5	59.5	55.8	52.8	23.0	100 ± 15	105 ± 10	67.0	66.2	40.0	23.0
8	5.3	60.8	58.8	55.4	53.4	49.7	46.7	24.5	100 ± 15	105 ± 10	67.0	60.1	40.0	16.9

10	5.9	59.3	57.3	53.4	51.4	47.8	44.8	25.0	100 ± 15	105 ± 10	67.0	58.2	40.0	15.0
16	7.5	56.2	54.2	48.8	46.8	43.7	40.7	25.0	100 ± 15	105 ± 10	67.0	54.1	38.0	10.9
20	8.4	54.8	52.8	46.4	44.4	41.8	38.8	25.0	100 ± 15	105 ± 10	67.0	52.2	37.0	9.0
25	9.4	53.3	51.3	44.0	42.0	39.8	36.8	24.3	100 ± 15	105 ± 10	67.0	50.2	36.0	7.0
31.25	10.5	51.9	49.9	41.4	39.4	37.9	34.9	23.6	100 ± 15	105 ± 10	67.0	48.3	35.1	5.1
62.5	15.0	47.4	45.4	32.4	30.4	31.9	28.9	21.5	100 ± 15	105 ± 10	65.6	42.3	32.0	
100	19.1	44.3	42.3	25.2	23.2	27.8	24.8	20.1	100 ± 15	105 ± 10	62.5	38.2	30.0	
200	27.6	39.8	37.8	12.2	10.2	21.8	18.8	18.0	100 ± 22	100 ± 10	58.0	32.2	27.0	
250	31.1	38.3	36.3	7.3	5.3	19.8	16.8	17.3	100 ± 32	100 ± 10	56.5	30.2	26.0	
300	34.3	37.1	35.1	2.9	0.9	18.3	15.3	16.8	100 ± 32	100 ± 10	55.3	28.7	25.2	
350	37.2	36.1	34.1			16.9	13.9	16.3	100 ± 32	100 ± 10	54.3	27.3	24.6	
400	40.1	35.3	33.3			15.8	12.8	15.9	100 ± 32	100 ± 10	53.5	26.2	24.0	
450	42.7	34.5	32.5			14.7	11.7	15.5	100 ± 32	100 ± 10	52.7	25.1	23.5	
500	45.3	33.8	31.8			13.8	10.8	15.2	100 ± 32	100 ± 10	52.0	24.2	23.0	

Voltage

UL Voltage Rating
300 V (CMP)

Mechanical Characteristics

Temperature

UL Temperature	Operating	Storage
105°C	-20°C To +75°C	-20°C To +75°C

Bend Radius

Stationary Min.	Installation Min.
1.0 in (25 mm)	2.55 in (64.8 mm)

Max. Pull Tension:	25 lbs (11 kg)
Bulk Cable Weight:	37 lbs/1000ft (55 kg/km)

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
NEC / UL Compliance:	Article 800, CMP
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
APAC Compliance:	China RoHS II (GB/T 26572-2011)
Non-Plenum Number:	2412FS

Product Notes

Notes:	Electrical values are expected performance based on cable testing and representative performance within a typical Belden system. Values above 300 MHz are for Engineering Information Only. Shield is Bonded to Jacket Inner Wall for Electrical Stability. Print Includes Descending Footage Markings from Max. Put-Up Length to 0.

History

Update and Revision:	Revision Number: 0.108 Revision Date: 01-22-2025

Part Numbers

Variants

Item #	Color	Putup Type	Length
2413FS 0101000	Black	Reel	1,000 ft
2413FS 010A1000	Black	Reel-in-Box	1,000 ft
2413FS 010Z1000	Black	ReelTuff Box	1,000 ft
2413FS D151000	Blue	Reel	1,000 ft
2413FS D15A1000	Blue	Reel-in-Box	1,000 ft
2413FS D15Z1000	Blue	ReelTuff Box	1,000 ft
2413FS 0081000	Gray	Reel	1,000 ft
2413FS 0051000	Green	Reel	1,000 ft
2413FS 0031000	Orange	Reel	1,000 ft
2413FS 0071000	Purple	Reel	1,000 ft
2413FS 0021000	Red	Reel	1,000 ft
2413FS 0091000	White	Reel	1,000 ft
2413FS 009A1000	White	Reel-in-Box	1,000 ft
2413FS 009Z1000	White	ReelTuff Box	1,000 ft
2413FS 0041000	Yellow	Reel	1,000 ft

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