

2149A Multi-Conductor - Category 6 Indoor/Outdoor CMR/CMX F/UTP Cable



For more Information
please call

1-800-Belden1



General Description:

CAT6 (300 MHz), 4 Pair, F/UTP-Foil Shielded, Indoor/Outdoor CMR-CMX Outdoor, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Polyolefin and FEP Insulation, Patented X-Spline, Overall Beldfoil® Shield with Drain Wire, Ripcord, UV-Resistant PVC Jacket

Usage (Overall)

Suitable Applications:

Networking Horizontal Cable, HDBaseT, 1000Base-T (Gigabit Ethernet), 100Base-T (Fast Ethernet), 10Base-T (Ethernet), 100BaseVG, ANYLAN, 155ATM, 622ATM, ANSI.X3.263 FDDI TP-PMD, NTSC/PAL Component or Composite Video, AES/EBU, Digital Video, RS-422, Noisy Environments, 250 MHz Category 6, Outdoor

Physical Characteristics (Overall)

Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
4	23	Solid	BC - Bare Copper

Insulation

Insulation Material:

Insulation Material
1 x PO - Polyolefin
2 x FEP - Fluorinated Ethylene Propylene

Outer Shield

Outer Shield Material:

Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100.000

Outer Shield Drain Wire AWG:

AWG	Stranding	Drain Wire Conductor Material
24	Solid	TC - Tinned Copper

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Outer Jacket Diameter:

Nom. Dia. (in.)
0.296

Outer Jacket Ripcord: No

Overall Cable

Overall Cabling Fillers: Patented Central X-spline

Overall Cabling Separator Material: Polyester

Pair

Pair Color Code Chart:

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

Mechanical Characteristics (Overall)

Storage Temperature Range: -40°C To +75°C

Installation Temperature Range: -20°C To +75°C

Operating Temperature Range: -40°C To +90°C

Bulk Cable Weight: 41 lbs/1000 ft.

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Max. Recommended Pulling Tension:	45 lbs.
Min. Bend Radius/Minor Axis:	2.500 in.
Min. Bend/Installation:	3 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CMR, CMX-Outdoor, UL444
CEC/C(UL) Specification:	CMG
EU Directive 2011/65/EU (ROHS II):	Yes
IEEE Specification:	POE per IEEE 802.3af & POE+ per IEEE 802.3at-2009
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):	12/08/2011
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, ISO/IEC 11801:2011 Amendment 2.2 Class E
ANSI Specification:	ANSI/TIA 568-C.2 Category 6, ICEA S-116-732-2013 Category 6, ANSI/NEMA WC-66 Category 6
Other Specification:	ANSI/ICEA S-56-434 Outdoor Use, ANSI/ICEA S-100-685 Indoor/Outdoor Use, ANSI/ICEA S-99-689 Broadband Outdoor

Applicable Patents:

Country
www.belden.com/p

Flame Test

UL Flame Test:	UL1666 Vertical Riser
C(UL) Flame Test:	FT4
CSA Flame Test:	FT4
IEC Flame Test:	60332-1
IEEE Flame Test:	1202

Suitability

Suitability - Indoor:	Yes
Suitability - Outdoor:	Yes - CMX - Outdoor
Suitability - Aerial:	Yes - When supported by messenger wire
Suitability - Hazardous Locations:	No
Sunlight Resistance:	Yes
Oil Resistance:	Yes

Plenum/Non-Plenum

Plenum (Y/N):	No
Plenum Number:	2413F
Non-Plenum Number:	2412F

Electrical Characteristics (Overall)

Nom. Mutual Capacitance:

Capacitance (pF/ft)
14.000

Maximum Capacitance Unbalance:

Capacitance (pF/ft)
330.000

Nominal Velocity of Propagation:

VP (%)
68.000

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Maximum Delay:

Description	Delay (ns/100 m)
@ 100 MHz	537.000

Max. Delay Skew:

Delay Skew (ns/100 m)
45.000

Maximum Conductor DC Resistance:

DCR @ 20°C (Ohm/100 m)
9.380

Max. Operating Voltage - UL:

Voltage
300 V RMS

Maximum DCR Unbalanced:

DCR Unbalance @ 20°C (%)
5.000

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	74.3	20.000
4	3.700	66.3	66.3	62.6	63.6	23.000
8	5.200	63.3	63.3	56.6	57.6	24.500
10	5.800	61.8	61.8	54.5	55.5	25.000
16	7.400	58.6	58.6	49.9	50.9	25.000
20	8.300	57.1	57.1	47.5	48.5	25.000
25	9.300	55.5	55.5	45.1	46.1	24.300
31.25	10.400	54.0	54.0	42.5	43.5	23.600
62.5	15.000	49.1	49.1	33.4	34.4	21.500
100	19.300	45.8	45.8	26.0	27.0	20.800
200	28.300	40.8	40.8	12.5	18.9	18.700
250	32.100	39.3	39.3	7.2	8.2	18.000
300	35.600	38.1	36.1	2.5	1.5	17.500
350	38.900	37.1	35.1			17.000
400	42.000	36.3	34.3			16.600
450	45.000	35.5	33.5			16.200
500	47.900	34.8	32.8			15.900
550	50.600	34.2	32.2			15.600

Premise Cable Electrical Table 2:

Freq. (MHz)	Input (Unfitted) Imp. (Ohms)	Fitted Impedance	Min. ELFEXT (dB)	Min. PSELFEXT (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
200	100 ± 22	100 ± 15	24.8	21.8
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

Premise Cable Electrical Table 4:

Frequency (MHz)	Min. TCL (dB)	Min. ELTCTL (dB)
1.000	40.000	35.000
4.000	40.000	23.000
8.000	40.000	17.000
10.000	40.000	15.000
16.000	38.000	10.900
20.000	37.000	9.000

ENGLISH MEASUREMENT VERSION

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25.000	36.000	7.100
31.250	35.100	5.100
62.500	32.000	
100.000	30.000	
200.000	27.000	
250.000	26.000	
300.000	25.200	
350.000	24.600	
400.000	24.000	
450.000	23.500	
500.000	23.000	
550.000	22.600	

Notes (Overall)

Notes: Data Above 300 MHz for Engineering Information Only, -40C Cold Bend Compliance Per UL1581, Third party Verified to ANSI/TIA-568-C.2, Category 6, Print Includes Descending Footage / Meter Markings Reference T/8-36 for Sag and Span Aerial

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
2149A 0101000	1,000 FT	45.000 LB	BLACK		CAT6 4PR F/UTP CMR/CMX REEL

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