

2148A Multi-Conductor - Category 6A Indoor/Outdoor CMR/CMX Cable



For more Information
please call

1-800-Belden1



General Description:

CAT6A Enhanced (625 MHz), 4 Pair, U/UTP-Unshielded, Indoor/Outdoor CMR-CMX Outdoor, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Polyolefin Insulation, Patented EquiSpline™ & EquiBlock™ Technologies, Ripcord, UV-Resistant PVC Jacket

Usage (Overall)

Suitable Applications: Premise Horizontal Cable, 10 Gigabit Ethernet, Wireless, Wi-Fi, 100Base TX, 100Base VG ANYLAN, 155ATM, 622ATM, NTSC/PAL Component or Composite Video, AES/EBU Digital Audio AES51, RS-422, Noisy Environments, PoE, PoE Plus, Outdoor

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
PO - Polyolefin

Separator

Separator Material: Patented EquiSpline Central Member

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Outer Jacket Diameter:

Nom. Dia. (mm)
7.620

Outer Jacket Ripcord: Yes

Overall Cable

Overall Cabling Separator Material: Patent Pending EquiBlock Barrier Tape

Pair

Pair Color Code Chart:

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

Mechanical Characteristics (Overall)

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

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

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Operating Temperature Range:	-40°C To +90°C
UL Temperature Rating:	90C
Bulk Cable Weight:	61.016 Kg/Km
Max. Recommended Pulling Tension:	177.928 N
Min. Bend Radius/Minor Axis:	63.500 mm
Min. Bend/Installation:	76.200 mm

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	CMR, CMX-Outdoor, UL444
NEC Articles:	800
CEC/C(UL) Specification:	CMG
EU Directive 2011/65/EU (ROHS II):	Yes
IEEE Specification:	POE per 802.3af & POE+ per 802.3at-2009 (Cat 6 & Cat 6A)
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):	03/31/2015
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:	ISO/IEC 11801:2011 Amendment 2.2 Class EA, TIA 568-C.2
ANSI Specification:	ANSI/ICEA S-56-434 Outdoor Use, ANSI/ICEA S-100-685 Indoor/Outdoor Use, ANSI/ICEA-116-732-2013 Category 6A and ANSI/ICEA Broad Band Outdoor Use S-99-689

Applicable Patents:

Country
www.belden.com/p

Flame Test

UL Flame Test:	UL1666 Riser
C(UL) Flame Test:	FT4
CSA Flame Test:	FT4

Suitability

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

Plenum/Non-Plenum

Plenum (Y/N):	No
Plenum Number:	10GX13 / 10GX33 / 10GXS13 / 10GXS33

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Non-Plenum Number: 10GX12 / 10GX32 / 10GXS12 / 10GXS32

Electrical Characteristics (Overall)

Nom. Mutual Capacitance:

Capacitance (pF/m)
55.777

Maximum Capacitance Unbalance (pF/100 m): 45

Nominal Velocity of Propagation:

VP (%)
65.000

Maximum Delay:

Delay (ns/100 m)
537.000

Typical Delay Skew:

Delay Skew (ns/m)
98.430

Max. Delay Skew:

Delay Skew (ns/100 m)
45.000

Maximum Conductor DC Resistance:

DCR @ 20°C (Ohm/100 m)
7.900

Max. Operating Voltage - UL:

Voltage
300 V RMS

Maximum DCR Unbalanced:

Description	DCR Unbalance @ 20°C (%)
Conductor-to-Conductor	3.000
Pair-to-Pair	5.000

Electrical Characteristics-Premise (Overall)

Premise Cable Electrical Table 1:

Freq. (MHz)	Max. Attenuation (dB/100 m)	Min. PSNEXT (dB)	Min. PSACR (dB)	Min RL (dB)
1	2.100	75.3	73.2	20.000
4	3.800	66.3	62.5	23.000
8	5.300	61.8	56.5	24.500
10	5.900	60.3	54.4	25.000
16	7.500	57.2	49.8	25.000
20	8.400	55.8	47.4	25.000
25	9.400	54.3	45.0	24.300
31.25	10.500	52.9	42.4	23.600
62.5	15.000	48.4	33.4	21.500
100	19.100	45.3	26.2	20.100
200	27.600	40.8	13.2	18.700
250	31.100	39.3	8.3	18.000
300	34.300	38.1	3.9	17.500
350	37.200	37.1	0	17.000
400	40.100	36.3		16.600
450	42.700	35.5		16.200
500	45.300	34.8		15.900
550	47.700	31.2		15.600
600	50.100	30.6		15.400
625	51.200	30.4		15.200
750	56.700	29.2		14.700
860	61.200	28.3		14.300

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Premise Cable Electrical Table 2:

Freq. (MHz)	Input (Unfitted) Imp. (Ohms)	Fitted Impedance	Min. PSACRF (dB)
1	100 ± 15	105 ± 10	74.8
4	100 ± 15	100 ± 15	62.8
8	100 ± 15	100 ± 15	56.7
10	100 ± 15	100 ± 15	54.8
16	100 ± 15	100 ± 15	50.7
20	100 ± 15	100 ± 15	48.8
25	100 ± 15	100 ± 15	46.8
31.25	100 ± 15	100 ± 10	44.9
62.5	100 ± 15	100 ± 10	38.9
100	100 ± 15	100 ± 10	34.8
200	100 ± 15	100 ± 10	28.8
250	100 ± 15	100 ± 10	26.8
300	100 ± 32	100 ± 10	25.3
350	100 ± 32	100 ± 10	23.9
400	100 ± 32	100 ± 10	22.8
450	100 ± 32	100 ± 10	21.7
500	100 ± 32	100 ± 10	20.8
625	100 ± 32	100 ± 10	18.9
750	100 ± 32	100 ± 10	17.3
860	100 ± 32	100 ± 10	16.1

Premise Cable Electrical Table 4:

Frequency (MHz)	Min. PSANEXT (dB)	Min. PSAACRF (dB)	Min. TCL (dB)	Min. ELTCTL (dB)
1.000	77.000	77.000	40.000	35.000
4.000	77.000	76.200	40.000	23.000
8.000	77.000	70.100	40.000	16.900
10.000	77.000	68.200	40.000	15.000
16.000	77.000	64.100	38.000	10.900
20.000	77.000	62.200	37.000	9.000
25.000	77.000	60.200	36.000	7.000
31.250	78.100	58.300	35.100	5.100
62.500	73.600	52.300	32.000	
100.000	70.500	48.200	30.000	
200.000	66.000	42.200	27.000	
250.000	64.500	40.200	26.000	
300.000	63.300	38.700	25.200	
350.000	62.300	37.300	24.600	
400.000	61.500	36.200	24.000	
450.000	60.700	35.100	23.500	
500.000	60.000	34.200	23.000	
550.000	59.400	33.400	22.600	
600.000	58.800	32.600	22.200	
625.000	58.600	32.300	22.000	
750.000	57.400	30.700	21.200	
860.000	56.500	29.500	20.700	

Notes (Overall)

Notes: Values above 625MHz for Engineering Information Only, Third party channel verified to and meets component requirements for TIA 568-C.2 Category 6A Horizontal Cable, -40C cold bend per UL1581, Print Includes Descending Footage / Meter Markings, Reference T/8-36 Sag & Span Aerial

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
2148A 0101000	1,000 FT	45.000 LB	BLACK		CAT6A 4PR U/UTP CMR/CMX REEL

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