



**Part Number: 2148A**

**Category 6A Indoor/Outdoor CMR/CMX Cable**

**Product Description**

Category 6A Enhanced (625MHz), 4-Unbonded-Pair, Riser-CMR-CMX Outdoor, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, PO Insulation, Patented EquiSpline™ & EquiBlock™ Technologies, Ripcord, PVC Jacket

**Technical Specifications**

**Product Overview**

Environmental Space:	Indoor/Outdoor
Suitable Applications:	OSP-Outdoor, 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

**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**

<b>Material</b>	
PO - Polyolefin	
Bonded-Pair:	N/A

**Color Chart**

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

**Outer Jacket Material**

Material	Nominal Diameter	Ripcord
PVC - Polyvinyl Chloride	0.300 in	Yes

**Electrical Characteristics**

**Conductor DCR**

Max. Conductor DCR	Max. DCR Unbalance	Max DCR Unbalanced Between Pairs [%]
82 Ohm/km	3 %	5 %

**Capacitance**

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

**Delay**

Frequency [MHz]	Max. Delay	Max. Delay Skew	Nominal Velocity of Propagation (VP) [%]
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100 MHz	537.6 ns/100m	45 ns/100m	65 %
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## High Freq

Frequency [MHz]	Max. Insertion Loss (Attenuation)	Min. NEXT [dB]	Min. PSNEXT [dB]	Min. PSACR [dB]	Min. PSACRF (PSELFEXT) [dB]	Min. RL (Return Loss) [dB]	Max./Min. Input Impedance (unFitted)	Min. PSANEXT	Min. PSAACRF	Min. TCL [dB]	Min. ELTCTL [dB]
1 MHz	2.1 dB/100m	75.3 dB	75.3 dB	73.2 dB	74.8 dB	20.0 dB	100 +/-15	77.0 dB	77.0 dB	40.0 dB	35.0 dB
4 MHz	3.8 dB/100m	66.3 dB	66.3 dB	62.5 dB	62.8 dB	23.0 dB	100 +/-15	77.0 dB	76.2 dB	40.0 dB	23.0 dB
8 MHz	5.3 dB/100m	61.8 dB	61.8 dB	56.4 dB	56.7 dB	24.5 dB	100 +/-15	77.0 dB	70.1 dB	40.0 dB	16.9 dB
10 MHz	5.9 dB/100m	60.3 dB	60.3 dB	54.4 dB	54.8 dB	25.0 dB	100 +/-15	77.0 dB	68.2 dB	40.0 dB	15.0 dB
16 MHz	7.5 dB/100m	57.2 dB	57.2 dB	49.8 dB	50.7 dB	25.0 dB	100 +/-15	77.0 dB	64.1 dB	38.0 dB	10.9 dB
20 MHz	8.4 dB/100m	55.8 dB	55.8 dB	47.4 dB	48.8 dB	25.0 dB	100 +/-15	77.0 dB	62.2 dB	37.0 dB	9.0 dB
25 MHz	9.4 dB/100m	54.3 dB	54.3 dB	45.0 dB	46.8 dB	24.3 dB	100 +/-15	77.0 dB	60.2 dB	36.0 dB	7.0 dB
31.25 MHz	10.5 dB/100m	52.9 dB	52.9 dB	42.4 dB	44.9 dB	23.6 dB	100 +/-15	78.1 dB	58.3 dB	35.1 dB	5.1 dB
62.5 MHz	15.0 dB/100m	48.4 dB	48.4 dB	33.4 dB	38.9 dB	21.5 dB	100 +/-15	73.6 dB	52.3 dB	32.0 dB	
100 MHz	19.1 dB/100m	45.3 dB	45.3 dB	26.2 dB	34.8 dB	20.1 dB	100 +/-15	70.5 dB	48.2 dB	30.0 dB	
200 MHz	27.6 dB/100m	40.8 dB	40.8 dB	13.2 dB	28.8 dB	18.7 dB	100 +/-15	66.0 dB	42.2 dB	27.0 dB	
250 MHz	31.1 dB/100m	39.3 dB	39.3 dB	8.3 dB	26.8 dB	18.0 dB	100 +/-15	64.5 dB	40.2 dB	26.0 dB	
300 MHz	34.3 dB/100m	38.1 dB	38.1 dB	3.9 dB	25.3 dB	17.5 dB	100 +/-32	63.3 dB	38.7 dB	25.2 dB	
350 MHz	37.2 dB/100m	37.1 dB	37.1 dB		23.9 dB	17.0 dB	100 +/-32	62.3 dB	37.3 dB	24.6 dB	
400 MHz	40.1 dB/100m	36.3 dB	36.3 dB		22.8 dB	16.6 dB	100 +/-32	61.5 dB	36.2 dB	24.0 dB	
450 MHz	42.7 dB/100m	35.5 dB	35.5 dB		21.7 dB	16.2 dB	100 +/-32	60.7 dB	35.1 dB	23.5 dB	
500 MHz	45.3 dB/100m	34.8 dB	34.8 dB		20.8 dB	15.9 dB	100 +/-32	60.0 dB	34.2 dB	23.0 dB	
550 MHz	47.7 dB/100m	33.2 dB	31.2 dB		20.0 dB	15.6 dB	100 +/-32	59.4 dB	33.4 dB	22.6 dB	
600 MHz	50.1 dB/100m	32.6 dB	30.6 dB		19.2 dB	15.4 dB	100 +/-32	58.8 dB	32.6 dB	22.2 dB	
625 MHz	51.2 dB/100m	32.4 dB	30.4 dB		18.9 dB	15.2 dB	100 +/-32	58.6 dB	32.3 dB	22.0 dB	
750 MHz	56.7 dB/100m	31.2 dB	29.2 dB		17.3 dB	14.7 dB	100 +/-32	57.4 dB	30.7 dB	21.2 dB	
860 MHz	61.2 dB/100m	30.3 dB	28.3 dB		16.1 dB	14.3 dB	100 +/-32	56.5 dB	29.5 dB	20.7 dB	

Segregation class according EN50174-2: a

## Voltage

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

## Temperature Range

Installation Temp Range:	-20°C To +75°C
UL Temp Rating:	90°C
Storage Temp Range:	-40°C To +75°C
Operating Temp Range:	-40°C To +75°C

## Mechanical Characteristics

Cold Bend Test:	-40°C Compliance Per UL 1581
Bulk Cable Weight:	41 lbs/1000ft
Max Recommended Pulling Tension:	25 lbs
Min Bend Radius During Installation:	3.0 in
Min Bend Radius/Minor Axis:	2.5 in

## Standards

NEC/(UL) Specification:	CMR, CMX-Outdoor
CEC/C(UL) Specification:	CMR
ISO/IEC Compliance:	11801 ed 2.2 (2011) Class EA
Data Category:	Category 6A
ANSI Compliance:	S-116-732-2013 Category 6A, ANSI/NEMA WC-66 Category 6A
Telecommunications Standards:	ANSI/TIA-568-C.2 Category 6A
IEEE Specification:	IEEE 802.3bt Type 1, Type 2, Type 3, Type 4
Other Specification:	Outdoor Use ANSI/ICEA S56434, Broadband Outdoor Use ANSI/ICEA S99689, Indoor/Outdoor Use ANSI/ICEA S100685, Verified Channel/Category 6A

## Applicable Environmental and Other Programs

EU Directive 2000/53/EC (ELV):	Yes
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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):	2015-03-31
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes

## Suitability

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

## Flammability, LSOH, Toxicity Testing

UL Flammability:	UL 1666 Riser
CSA Flammability:	FT4
ISO/IEC Flammability:	60332-1
IEEE Flammability:	1202 Vertical Tray
UL voltage rating:	300 V RMS

## Plenum/Non-Plenum

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

## Part Number

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

Item #	Color	UPC
2148A 0101000	Black	612825379430

Patent:	<a href="https://www.belden.com/resources/patents">https://www.belden.com/resources/patents</a>
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## Product Notes

Notes:	Values above 625 MHz are for Engineering Information Only. Print Includes Descending Footage/Meter Markings from Max. Put-Up Length to 0.
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## History

Update and Revision:	Revision Number: 0.206 Revision Date: 08-22-2019
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