

## 10GX Cable



10GX Cable Series

Belden's new line of 10GX cables are designed to address the needs of demanding networking arenas that require both high density connections and superb mechanical and electrical performance.

This new series is intended for use in horizontal cable installations in data centers, high speed Local Area Networks (LANs), server farms, storage area networks (SANs), network access nodes (NANs), campus backbones, metropolitan area networks (MANs) and short distance backbone connections - anywhere there is a high concentration of data traffic.

By redesigning our earlier 10GX cable's internal cross-web construction and removing the filler, Belden's engineers have attained a smaller diameter cable (only .295 in.) than could previously be made. The use of this new RoundFlex Technology means higher density connections in the rack. What's more, the smaller diameter and greater flexibility provides for easier handling during installation.

### Alien Crosstalk

Still another major bonus to the redesigned cross-web is that it keeps Alien Crosstalk - crosstalk between neighboring cables - to the same impressively low level that was offered by its 10GX predecessor. To allow for the data rates of 10 Gb/s that are typical in data centers and the like, signals must be transmitted at frequencies up to a minimum of 500 MHz, in contrast to Cat. 6 transmissions that only run to 200 MHz.

However, to achieve satisfactory communication at these high frequencies over UTP copper requires significant changes in the way the channel components are designed - the cable being no exception.

Overcoming Alien Crosstalk has been one of the most difficult demands of the Augmented Category 6 Standard. Patent-pending RoundFlex Technology successfully attacks the problem by improving control of the electrical performance with improved positioning of the pairs. The resulting level of Alien Crosstalk suppression is fully compatible with Belden's guaranteed performance specs for its 10GX systems.

### 10GX® Enabling Technologies

The new, 4-pair, 23 AWG UTP copper 10GX cables represent the latest advance in Belden's evolving IBDN 10GX family of cabling products. The company's RoundFlex, MatriX IDC, X-Bar, FlexPoint and X-Pair technologies, taken together, comprise five strong pillars of enabling technology that support a complete 10GX system from Belden.

They permit the building of a channel that goes well beyond expectations for leading edge 10 Gb/sec system performance, exceeding all parameters specified in the proposed Augmented Cat. 6 Standard. All performance characteristics - including Alien Crosstalk (ANEXT), NEXT, FEXT, Insertion Loss and Return Loss - in the new line have been set to guarantee channel transmission performance up to 625 MHz.

The new cables are compatible with all existing Belden 10GX components. The series is currently available in the Nonbonded-Pair configuration, in plenum and non-plenum designs. The series will be available in the near future in Bonded-Pair configurations as well.

# DATA Sheet

## 10GX Cable

### Features & Benefits

- The unique, patent pending, RoundFlex cross-web design in 10GX cables separates pairs and maintains stability in pair position, thus improving ANEXT, NEXT and impedance performance
- Smaller cable diameter than previously available (.295 in.)
- Guaranteed electrical performance that goes well beyond the Augmented Cat. 6 proposal
- Strong signal strength due to improved noise attenuation
- Maximized bandwidth and signal-to-noise margin for mission-critical applications
- Truly backward compatibility with Cat. 6 and Cat. 5e components to protect your cabling investment
- Easy to install, due to a more-round cross-section
- Availability in Bonded-Pair design, as well as Non-bonded
- Availability in CMR, CMP, and LSZH
- Matching tip and ring color code for ease of installation

### Application

- The 10GX Cable Series is intended to be used for horizontal cable installations of high speed Local Area Networks (LANs), data centers, server farms, storage area networks (SANs), network access nodes (NANs), campus backbones, metropolitan area networks (MANs) and for short distance backbone connections where there is a high concentration of data traffic.
- Specific applications include:  
All UTP Ethernet protocols with data rates up to 10 Gb/s (e.g. 10Gbase-T, 1000Base-T, 100Base-TX, 100Base-T4, 100Base-T2 and 10 Base-T)
- Broadband video (77 channels at 550 MHz).

### Technical Specifications

#### Physical Characteristics

##### Construction

- > Conductors: 23 AWG solid copper
- > Insulation:
  - Plenum: 100% FEP
  - Non-Plenum: PE
  - Color coding as per ANSI/TIA/EIA-568-B.
- > Cable Core:
  - Unique cross-web
  - Four twisted pairs construction
  - Rip Cord.
- > Jacket:
  - Plenum: LSPVC
  - Non-Plenum: PVC
  - LSZH: Low Smoke & Fume Zero Halogen Polymer Alloy.

### Transmission characteristics

- Values up to 625 MHz are minimum guaranteed values
- DC Resistance @ 20°C, max.: 7.4 ohms/100 m
- DC Resistance Unbalance, max.: 3%
- Mutual Capacitance, max.: 5.7 nF/100 m
- Capacitance Unbalance Pair to Ground, max.: 50 pF/100
- Nominal Velocity of Propagation (NVP):
  - Plenum: 72% @ 10 MHz ;
  - Non-Plenum: 68% @ 10 MHz
  - Propagation Delay (Skew), max.: 35 ns/100 m.

## 10GX Cable

### Mechanical Characteristics

- > Minimum Recommended Installation Temperature: 5°C (40°F)
- > Temperature Rating: 60°C (140°F).

Description	Nominal O.D.	Min. Bend Radius	Weight (Cable only)
10GX® Cable, 4-pair, 23 AWG, CMR	7.55mm (0.295 in.)	32.00mm (1.26 in.)	5.9 kg/100m (40.0 lb/kft)
10GX Cable 4-pair 23 AWG, CMP	7.55mm (0.295 in.)	31.48mm (1.24 in.)	5.6 kg/100m (38.0 lb/kft)

### Qualifications

- > Meets or exceeds proposed Augmented Category 6 requirements as per Augmented Category 6 cabling draft 7 of TSB-155, ANSI/TIA/EIA-568-B.2-1 Category 6, and ISO/IEC 11801 Ed2: 2002 Class E channels
- > Meets or exceeds Category 6 requirements per ANSI/TIA/EIA-568-B
- > Exceeds the Category 5e requirements per ANSI/TIA/EIA-568-A.5 or ANSI/TIA/EIA-568-B
- > Exceeds the Category 5 requirements per ANSI/TIA/EIA-568-A, CSA T529-95 and ISO/IEC 11801-1995
- > Exceeds the Category 5 requirements per NEMA Standard WC 63.1-1996
- > Exceeds the Category 5 requirements of ICEA S-90-661-1997
- > Non-Plenum: ITS/ETL Certified as CMR, and listed as NEC Type CMR per UL Standard 444
- > Plenum: ITS/ETL Certified as CMP, and listed as NEC Type CMP per UL Standard 444
- > LSZH: ISO/IEC 332-1, 754-2 and 1034-2.

## 10GX Cable

Belden offers (6) series of Augmented Category 6 cables.

- > 10GX CMR Cable with Bonded-Pair technology: 10GX32 series
- > 10GX CMR Cable with Nonbonded-pair technology: 10GX12 series
- > 10GX CMP Cable with Bonded-Pair technology: 10GX33 series
- > 10GX CMP Cable with Nonbonded-pair technology: 10GX13 series

- > 10GX LSZH Cable with Bonded-Pair technology: 10GX44 series
- > 10GX LSZH Cable with Nonbonded-pair technology: 10GX24 series

The 10GX Cables are available on a standard wooden spool.

Alternative colors and packaging are also available, subject to Minimum Order Quantities.

Please check with customer service for availability.

### For More Information

For any other product information call: 1-800-BELDEN-1 or visit us at [www.Belden.com](http://www.Belden.com).

All information is subject to change without notice, since Belden reserves the right to change its products as progress in engineering and manufacturing methods or other circumstances may warrant.

## Ordering Information

### 10GX Cable, CMR 4-pair, 23 AWG, Augmented Category 6

COLOR	LENGTH	PACKAGING	N° OF PACK PER PALLET	TOTAL PER PALLET	ORDERING NUMBER
					Non-Bonded 10GX12
White	305 m (1000 ft.)	16N Spool	18 spools/pallet	5,490 m (18,000 ft.)	24816395
Blue	305 m (1000 ft.)	16N Spool	18 spools/pallet	5,490 m (18,000 ft.)	24816995

### 10GX Cable, CMP 4-pair, 23 AWG, Augmented Category 6

COLOR	LENGTH	PACKAGING	N° OF PACK PER PALLET	TOTAL PER PALLET	ORDERING NUMBER
					Non-Bonded 10GX13
White	305 m (1000 ft.)	16N Spool	18 spools/pallet	5,490 m (18,000 ft.)	24817395
Blue	305 m (1000 ft.)	16N Spool	18 spools/pallet	5,490 m (18,000 ft.)	24817995

### 10GX Cable, LSZH 4-pair, 23 AWG, Augmented Category 6

COLOR	LENGTH	PACKAGING	N° OF PACK PER PALLET	TOTAL PER PALLET	ORDERING NUMBER
					Non-Bonded 10GX24
Purple	305 m (1000 ft.)	16N Spool	18 spools/pallet	5,490 m (18,000 ft.)	24818095

Bonded-Pair cables will be available in the near future.

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