

## 10GX33 Multi-Conductor - Enhanced Category 6A Bonded-Pair Cable



For more Information  
please call

1-800-Belden1

**Description:**

23 AWG Solid Bare Copper Bonded-Pair Conductors, FEP Insulation, Patented H-spline Center Member, Rip Cord, Flamarrest® Jacket.

**Usage (Overall)****Suitable Applications:**

Premise Horizontal Cable, 10 Gigabit Ethernet, 100BaseTX, 100BaseVG  
 ANYLAN, 155ATM, 622ATM, NTSC/PAL Component or Composite Video,  
 AES/EBU Digital Audio, AES51, RS-422, Noisy Environments, PoE

**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                  |
|--------------------------------------|
| FEP - Fluorinated Ethylene Propylene |

**Outer Shield****Outer Shield Material:**

| Outer Shield Material |
|-----------------------|
| Unshielded            |

**Outer Jacket****Outer Jacket Material:**

| Outer Jacket Trade Name | Outer Jacket Material                 |
|-------------------------|---------------------------------------|
| Flamarrest®             | LS PVC - Low Smoke Polyvinyl Chloride |

**Outer Jacket Ripcord:**

Yes

**Overall Cable**

**Overall Cabling Separator Material:**

Patented RoundFlex H-Spline Center Member

**Overall Nominal Diameter:**

0.295 in.

**Pair****Pair Color Code Chart:**

| Number | Color                        |
|--------|------------------------------|
| 1      | White/Blue Stripe & Blue     |
| 2      | White/Orange Stripe & Orange |
| 3      | White/Green Stripe & Green   |
| 4      | White/Brown Stripe & Brown   |

**Mechanical Characteristics (Overall)**

**Storage Temperature Range:**

-20°C To +75°C

**Installation Temperature Range:**

+5°C To +50°C

**Operating Temperature Range:**

-20°C To +60°C

## 10GX33 Multi-Conductor - Enhanced Category 6A Bonded-Pair Cable

Bulk Cable Weight: 40 lbs/1000 ft.

Max. Recommended Pulling Tension: 45 lbs.

Min. Bend Radius/Minor Axis: 2 in.

Min. Bend/Installation: 3.100 in.

## Applicable Specifications and Agency Compliance (Overall)

## Applicable Standards &amp; Environmental Programs

NEC/(UL) Specification: CMP

CEC/C(UL) Specification: CMP

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): 08/20/2008

EU Directive 2002/96/EC (WEEE): Yes

EU Directive 2003/11/EC (BFR): Yes

CA Prop 65 (CJ for Wire &amp; Cable): Yes

MII Order #39 (China RoHS): Yes

Telecommunications Standards: Category 6A - TIA 568.C.2

## Applicable Patents:

| Country | Patent  |
|---------|---------|
| US      | 5606151 |
| US      | 5734126 |
| US      | 6074503 |
| US      | 7772494 |
| US      | 7838773 |
| US      | 8030571 |

## Flame Test

UL Flame Test: NFPA 262 Plenum Flame Test (UL910)(FT6)

C(UL) Flame Test: FT6

CSA Flame Test: FT6

## Suitability

Suitability - Outdoor: No

Suitability - Burial: No

## Plenum/Non-Plenum

Plenum (Y/N): Yes

Non-Plenum Number: 10GX32

## Electrical Characteristics (Overall)

## Nom. Mutual Capacitance:

| Capacitance (pF/ft) |
|---------------------|
| 17.000              |

Maximum Capacitance Unbalance (pF/100 m): 90

## Nominal Velocity of Propagation:

| VP (%) |
|--------|
| 68.000 |

## Maximum Delay:

| Delay (ns/100 m) |
|------------------|
| 538 @ 100MHz     |

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### Max. Delay Skew:

| Delay Skew (ns/100 m) |
|-----------------------|
| 30.000                |

### Nom. Conductor DC Resistance:

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 7.500                    |

### Max. Operating Voltage - UL:

| Voltage   |
|-----------|
| 300 V RMS |

### Maximum DCR Unbalanced:

| DCR Unbalance @ 20°C (%) |
|--------------------------|
| 2.000                    |

## 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           | 2.100                       | 75.3           | 73.3             | 73.3          | 71.3            | 20.000      |
| 4           | 3.800                       | 66.3           | 64.3             | 62.5          | 60.5            | 23.000      |
| 8           | 5.300                       | 61.8           | 59.8             | 56.4          | 54.4            | 24.500      |
| 10          | 5.900                       | 60.3           | 58.3             | 54.4          | 52.4            | 25.000      |
| 16          | 7.500                       | 57.2           | 55.2             | 49.8          | 47.8            | 25.000      |
| 20          | 8.400                       | 55.8           | 53.8             | 47.4          | 45.4            | 25.000      |
| 25          | 9.400                       | 54.3           | 52.3             | 45.0          | 43.0            | 25.000      |
| 31.25       | 10.500                      | 52.9           | 50.9             | 42.4          | 40.4            | 25.000      |
| 62.5        | 15.000                      | 48.4           | 46.4             | 33.4          | 31.4            | 25.000      |
| 100         | 19.100                      | 45.3           | 43.3             | 26.2          | 24.2            | 25.000      |
| 200         | 27.600                      | 40.8           | 38.8             | 13.2          | 11.2            | 21.000      |
| 250         | 31.100                      | 39.3           | 37.3             | 8.3           | 6.3             | 20.500      |
| 300         | 34.300                      | 38.1           | 36.1             | 3.9           | 1.9             | 20.100      |
| 350         | 37.200                      | 37.1           | 35.1             | N/A           | N/A             | 19.800      |
| 400         | 40.100                      | 36.3           | 34.3             | N/A           | N/A             | 19.500      |
| 450         | 42.700                      | 35.5           | 33.5             | N/A           | N/A             | 18.900      |
| 500         | 45.300                      | 34.8           | 32.8             | N/A           | N/A             | 18.400      |
| 550         | 47.700                      | 34.2           | 32.2             | N/A           | N/A             | 18.000      |
| 600         | 50.100                      | 33.6           | 31.6             | N/A           | N/A             | 17.600      |
| 625         | 51.200                      | 33.4           | 31.4             | N/A           | N/A             | 17.400      |
| 750         | 56.700                      | 32.2           | 30.2             | N/A           | N/A             | 16.500      |
| 860         | 61.200                      | 31.3           | 29.3             | N/A           | N/A             | 15.800      |

Premise Cable Electrical Table 2:

| Freq. (MHz) | Input (Unfitted) Imp. (Ohms) | Fitted Impedance | Min. ACRF (dB) | Min. PSACRF (dB) |
|-------------|------------------------------|------------------|----------------|------------------|
| 1           | 100 ± 15                     | 100 ± 15         | 70.8           | 68.8             |
| 4           | 100 ± 15                     | 100 ± 10.4       | 58.8           | 56.8             |
| 8           | 100 ± 15                     | 100 ± 8          | 52.7           | 50.7             |
| 10          | 100 ± 15                     | 100 ± 7.3        | 50.8           | 48.8             |
| 16          | 100 ± 15                     | 100 ± 5.7        | 46.7           | 44.7             |
| 20          | 100 ± 15                     | 100 ± 5          | 44.8           | 42.8             |
| 25          | 100 ± 15                     | 100 ± 5          | 42.8           | 40.8             |
| 31.25       | 100 ± 15                     | 100 ± 5          | 40.9           | 38.9             |
| 62.5        | 100 ± 15                     | 100 ± 5          | 34.9           | 32.9             |
| 100         | 100 ± 15                     | 100 ± 5          | 30.8           | 28.8             |
| 200         | 100 ± 22                     | 100 ± 5          | 24.8           | 22.8             |
| 250         | 100 ± 32                     | 100 ± 5          | 22.8           | 20.8             |
| 300         | 100 ± 32                     | 100 ± 5          | 21.3           | 19.3             |
| 350         | 100 ± 32                     | 100 ± 5          | 19.9           | 17.9             |
| 400         | 100 ± 32                     | 100 ± 5          | 18.8           | 16.8             |
| 450         | 100 ± 32                     | 100 ± 5          | 17.7           | 15.7             |
| 500         | 100 ± 32                     | 100 ± 5          | 16.8           | 14.8             |
| 550         | 100 ± 32                     | 100 ± 5          | 16.0           | 14.0             |

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|     |          |         |      |      |
|-----|----------|---------|------|------|
| 600 | 100 ± 32 | 100 ± 5 | 15.2 | 13.2 |
| 625 | 100 ± 32 | 100 ± 5 | 14.9 | 12.9 |
| 750 |          |         | 13.3 | 11.3 |
| 860 |          |         | 12.1 | 10.1 |

**Premise Cable Electrical Table 4:**

| Frequency (MHz) | Min. PSANEXT (dB) | Min. PSAACRF (dB) | Min. TCL (dB) | Min. ELTCTL (dB) |
|-----------------|-------------------|-------------------|---------------|------------------|
| 1.000           | 67.000            | 67.000            | 48.000        | 43.000           |
| 4.000           | 67.000            | 67.000            | 48.000        | 41.000           |
| 8.000           | 67.000            | 61.100            | 48.000        | 24.900           |
| 10.000          | 67.000            | 59.200            | 48.000        | 23.000           |
| 16.000          | 67.000            | 55.100            | 46.000        | 18.900           |
| 20.000          | 67.000            | 5.200             | 45.000        | 17.000           |
| 25.000          | 67.000            | 51.200            | 44.000        | 15.000           |
| 31.250          | 67.000            | 49.300            | 43.100        |                  |
| 62.500          | 66.600            | 43.300            | 40.000        |                  |
| 100.000         | 63.500            | 39.200            | 38.000        |                  |
| 200.000         | 59.000            | 33.200            | 35.000        |                  |
| 250.000         | 57.500            | 31.200            | 34.000        |                  |
| 300.000         | 56.300            | 29.700            | 33.200        |                  |
| 350.000         | 55.300            | 28.300            | 32.600        |                  |
| 400.000         | 54.500            | 27.200            | 32.000        |                  |
| 450.000         | 53.700            | 26.100            | 31.500        |                  |
| 500.000         | 53.000            | 25.200            | 31.000        |                  |
| 550.000         | 52.400            | 2.400             |               |                  |
| 600.000         | 51.800            | 23.600            |               |                  |
| 625.000         | 51.600            | 23.300            |               |                  |
| 750.000         | 50.400            | 21.700            |               |                  |
| 860.000         | 49.500            | 20.500            |               |                  |

**Notes (Overall)**

**Notes:** Jacket sequentially marked at 2 ft/1m. intervals. 0.295" cable dimension per TIA 6@1 equivalent diameter. Third party channel verified to TIA/EIA-568-C.2, Category 6A

**Put Ups and Colors:**

| Item #         | Putup    | Ship Weight | Color  | Notes | Item Desc                 |
|----------------|----------|-------------|--------|-------|---------------------------|
| 10GX33 D151000 | 1,000 FT | 43.000 LB   | BLUE   | C     | CAT6A 4PRB U/UTP CMP REEL |
| 10GX33 0041000 | 1,000 FT | 43.000 LB   | YELLOW | C     | CAT6A 4PRB U/UTP CMP REEL |
| 10GX33 0081000 | 1,000 FT | 43.000 LB   | GRAY   | C     | CAT6A 4PRB U/UTP CMP REEL |
| 10GX33 0091000 | 1,000 FT | 43.000 LB   | WHITE  | C     | CAT6A 4PRB U/UTP CMP REEL |

**Notes:**

C = CRATE REEL PUT-UP.

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