



**Product:** [7860ENH](#)

Cat 6 Cable, F/UTP, LSZH, 4 Pair bonded, AWG 23, Indoor CPR Dca

### Product Description

Cat. 6 (250MHz), 4-Pair, F/UTP Foil shielded, Premise Horizontal Cable, 23 AWG solid bare copper conductors, Polyethylene insulation, Beldfoil® shield, AWG 26 solid tinned copper drainwire, LSZH jacket

### Technical Specifications

#### Product Overview

|                        |   |
|------------------------|---|
| Suitable Applications: | Horizontal and building backbone cable; Support current and future Category 6 and 5e applications, such as: 1000Base - T (Gigabit Ethernet), 100 Base - T, 10 Base - T, FDDI, ATM |
|------------------------|---|

#### Physical Characteristics (Overall)

##### Conductor

| Element         | AWG | Stranding | Material         | No. of Pairs |
|-----------------|-----|-----------|------------------|--------------|
| Individual pair | 23  | Solid     | BC - Bare Copper | 4            |

|                        |   |
|------------------------|---|
| Conductor Count:       | 8 |
| Total Number of Pairs: | 4 |

##### Insulation

| Element         | Type       | Material     | Nominal Diameter |
|-----------------|------------|--------------|------------------|
| Individual pair | Dielectric | Polyethylene | 1.35 mm          |

|              |     |
|--------------|-----|
| Bonded-Pair: | Yes |
|--------------|-----|

##### Color Chart

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

##### Outer Shield Material

| Type | Material           | Coverage [%] | Drainwire Material  | Drainwire AWG | Drainwire Position |
|------|--------------------|--------------|---------------------|---------------|--------------------|
| Tape | Aluminum/Polyester | 100 %        | Solid tinned copper | 26            | Over foil          |

|                          |  |
|--------------------------|--|
| Outer Shield Table Note: | Aluminum facing outside in contact with drain wire |
|--------------------------|--|

##### Outer Jacket Material

| Material    | Nominal Diameter | Diameter +/- Tolerance |
|-------------|------------------|------------------------|
| LSZH / FRNC | 7.3 mm           | 0.3 mm                 |

#### Construction and Dimensions

|                                       |       |
|---------------------------------------|-------|
| Min Elongation at Breakof Conductors: | 10 %  |
| Min Elongation at Breakof Insulation: | 100 % |
| Min Elongation at Breakof Jacket:     | 100 % |
| Min Tensile Strength of Jacket:       | 9 MPa |

#### Electrical Characteristics

## Conductor DCR

| Max. Conductor DCR | Max DCR Unbalanced Between Pairs [%] | Max. DCR Unbalanced Within Pair [%] |
|--------------------|--------------------------------------|-------------------------------------|
| 95 Ohm/km          | 4 %                                  | 2 %                                 |

## Capacitance

| Max. Capacitance Unbalance | Max. Mutual Capacitance |
|----------------------------|-------------------------|
| 1,600 pF/m                 | 56 pF/m                 |

## Impedance

| Nominal Characteristic Impedance |
|----------------------------------|
| 100 Ohm                          |

## Delay

| Max. Delay Skew | Min. Velocity of Propagation |
|-----------------|------------------------------|
| 40 ns/100m      | 60 %                         |

## High Freq

| Frequency [MHz] | Max. Insertion Loss (Attenuation) | Min. NEXT [dB] | Min. PSNEXT [dB] | Min. ACR [dB] | Min. PSACR [dB] | Min. ACRF (ELFEXT) [dB] | Min. PSACRF (PSELFEXT) [dB] | Min. RL (Return Loss) [dB] | Min. TCL [dB] | Min. ELTCTL [dB] |
|-----------------|-----------------------------------|----------------|------------------|---------------|-----------------|-------------------------|-----------------------------|----------------------------|---------------|------------------|
| 1 MHz           | 2.1 dB/100m                       | 75.3 dB        | 72.3 dB          | 73.2 dB       | 70.2 dB         | 70 dB                   | 67 dB                       | 20 dB                      | 40 dB         | 35 dB            |
| 4 MHz           | 3.8 dB/100m                       | 66.3 dB        | 63.3 dB          | 62.4 dB       | 59.4 dB         | 58 dB                   | 55 dB                       | 23 dB                      | 34 dB         | 23 dB            |
| 10 MHz          | 6 dB/100m                         | 60.3 dB        | 57.3 dB          | 54.3 dB       | 51.3 dB         | 50 dB                   | 47 dB                       | 25 dB                      | 30 dB         | 15 dB            |
| 16 MHz          | 7.6 dB/100m                       | 57.2 dB        | 54.2 dB          | 49.6 dB       | 46.6 dB         | 45.9 dB                 | 42.9 dB                     | 25 dB                      | 28 dB         | 10.9 dB          |
| 20 MHz          | 8.5 dB/100m                       | 55.8 dB        | 52.8 dB          | 47.3 dB       | 44.3 dB         | 44 dB                   | 41 dB                       | 25 dB                      | 27 dB         | 9 dB             |
| 31.2 MHz        | 10.7 dB/100m                      | 52.9 dB        | 49.9 dB          | 42.1 dB       | 39.1 dB         | 40.1 dB                 | 37.1 dB                     | 23.6 dB                    | 25.1 dB       | 5.1 dB           |
| 62.5 MHz        | 15.5 dB/100m                      | 48.4 dB        | 45.4 dB          | 32.9 dB       | 29.9 dB         | 34.1 dB                 | 31.1 dB                     | 21.5 dB                    | 22 dB         |                  |
| 100 MHz         | 19.9 dB/100m                      | 45.3 dB        | 42.3 dB          | 25.4 dB       | 22.4 dB         | 30 dB                   | 27 dB                       | 20.1 dB                    | 20 dB         |                  |
| 155 MHz         | 25.3 dB/100m                      | 42.4 dB        | 39.4 dB          | 17.1 dB       | 14.1 dB         | 26.2 dB                 | 23.2 dB                     | 18.8 dB                    | 18.1 dB       |                  |
| 200 MHz         | 29.1 dB/100m                      | 40.8 dB        | 37.8 dB          | 11.6 dB       | 8.6 dB          | 24 dB                   | 21 dB                       | 18 dB                      | 17 dB         |                  |
| 250 MHz         | 33 dB/100m                        | 39.3 dB        | 36.3 dB          | 6.3 dB        | 3.3 dB          | 22 dB                   | 19 dB                       | 17.3 dB                    | 16 dB         |                  |

High Freq Table Note: Limits below 4 MHz are for information only. Reference standard: ISO/IEC 61156-5 ed. 2.0 (2009)

General Electrical Parameters Notes: Reference standard: ISO/IEC 61156 - 5 ed. 2.0 (2009)

Coupling Attenuation Class: Type II

Segregation class according EN50174-2: c

## Transfer Impedance

| Frequency [MHz] | Description | Transfer Impedance |
|-----------------|-------------|--------------------|
| 1 Mhz           | Grade 2     | Max. 50 mOhm/m     |
| 10 Mhz          |             | Max. 100 mOhm/m    |
| 30 Mhz          |             | Max. 200 mOhm/m    |
| 100 Mhz         |             | Max. 1000 mOhm/m   |

## Current

| Max. Recommended Current [A] |
|------------------------------|
| 1.5 A                        |

## Voltage

| Voltage Rating [V] |
|--------------------|
| 72 V               |

## Temperature Range

|                          |                |
|--------------------------|----------------|
| Installation Temp Range: | 0°C To +50°C   |
| Operating Temp Range:    | -30°C To +60°C |

## Mechanical Characteristics

|                                      |          |
|--------------------------------------|----------|
| Bulk Cable Weight:                   | 50 kg/km |
| Max Recommended Pulling Tension:     | 80 N     |
| Min Bend Radius During Installation: | 58 mm    |
| Min Bend Radius During Operation:    | 29 mm    |

## Standards

|                     |  |
|---------------------|--|
| ISO/IEC Compliance: | ISO/IEC 11801 Ed. 2.2:2002/A2:2010/C1:2011 |
|---------------------|--|

|                     |  |
|---------------------|--|
| CPR Euroclass:      | Dca-s2,d1,a1                                     |
| CENELEC Compliance: | EN 50173-1 Ed. 3:2011                            |
| Data Category:      | Category 6                                       |
| ANSI Compliance:    | ANSI/TIA 568.2-D (2018)                          |
| IEEE Specification: | PoE: IEEE 802.3bt Type 1, Type 2, Type 3, Type 4 |

## Applicable Environmental and Other Programs

|                                       |                        |
|---------------------------------------|------------------------|
| Environmental Space:                  | Indoor - Euroclass Dca |
| EU RoHS Compliance Date (yyyy-mm-dd): | 2005-01-01             |

## Flammability, LS0H, Toxicity Testing

|  |               |
|--|---------------|
| ISO/IEC Flammability:                              | IEC 60332-1-2 |
| Burning Load:                                      | 745 kJ/m      |
| Amount of Halogen acc. to IEC 60754-1 & EN50267-1: | Zero          |

## Part Number

### Variants

| Item #         | Color  | Length  |
|----------------|--------|---------|
| 7860ENH.03500  | Black  | 500 m   |
| 7860ENH.K3500  | Black  | 500 m   |
| 7860ENH.011000 | Blue   | 1,000 m |
| 7860ENH.01500  | Blue   | 500 m   |
| 7860ENH.K11000 | Blue   | 1,000 m |
| 7860ENH.K1500  | Blue   | 500 m   |
| 7860ENH.K1305  | Blue   | 305 m   |
| 7860ENH.001000 | Gray   | 1,000 m |
| 7860ENH.002000 | Gray   | 2,000 m |
| 7860ENH.002100 | Gray   | 2,100 m |
| 7860ENH.00305  | Gray   | 305 m   |
| 7860ENH.00500  | Gray   | 500 m   |
| 7860ENH.00B100 | Gray   | 100 m   |
| 7860ENH.K01000 | Gray   | 1,000 m |
| 7860ENH.K0305  | Gray   | 305 m   |
| 7860ENH.K0500  | Gray   | 500 m   |
| 7860ENH.02500  | Purple | 500 m   |
| 7860ENH.04500  | Yellow | 500 m   |

|         |   |
|---------|---|
| Patent: | <a href="https://www.belden.com/resources/patents">https://www.belden.com/resources/patents</a> |
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## History

|                      |  |
|----------------------|--|
| Update and Revision: | Revision Number: 0.237 Revision Date: 09-17-2019 |
|----------------------|--|

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