

# Part Number: 2200ENH

## Cat 6A Cable, F/UTP, LSZH, 4 Pair, AWG 23, Indoor CPR Eca

### Product Description

Category 6A (500MHz), 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, CPR Euroclass Eca

### Technical Specifications

#### Product Overview

| | |
|---|---|
| Environmental Space: | Indoor - Euroclass Eca |
| Suitable Applications: | Horizontal and building backbone cable; Support current and future Category 6A and 6 applications, such as: 10GBase-T (10 Gigabit Ethernet), 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 |
| Conductor Size: | 23 AWG |

**Insulation**

| Element | Type | Material | Nominal Diameter |
|---|---|---|---|
| Individual pair | Dielectric | Polyethylene | 1.18 mm |

| | |
|---|---|
| Bonded-Pair: | No |

**Color Chart**

| Number | Color |
|---|---|
| Pair 1 | White/Blue & Blue |
| Pair 2 | White/Orange & Orange |
| Pair 3 | White/Green & Green |
| 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 | outside aluminum foil |

**Outer Jacket Material**

| Material | Nominal Diameter | Diameter +/- Tolerance | Ripcord |
|---|---|---|---|
| LSZH / FRNC | 7.2 mm | 0.3 mm | Yes |

#### Construction and Dimensions

| | |
|---|---|
| Min Elongation at Breakof Conductors: | 10 % |
| Min Elongation at Breakof Insulation: | 100 % |

**Cabling**

| Description |
|---|
| 4 pairs twisted together |

| | |
|---|---|
| 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 Ohm |

**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 |
|---|---|
| 45 ns/100m | 67 % |

**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. PSANEXT | Min. PSAACRF | Min. TCL [dB] | Min. ELTCTL [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 MHz | 2.1 dB/100m | 75.3 dB | 72.3 dB | 73.2 dB | 70.2 dB | 68 dB | 65 dB | 20 dB | 67 dB | 67 dB | 40 dB | 35 dB |
| 4 MHz | 3.8 dB/100m | 66.3 dB | 63.3 dB | 62.5 dB | 59.5 dB | 56 dB | 53 dB | 23 dB | 67 dB | 66.2 dB | 34 dB | 23 dB |
| 10 MHz | 5.9 dB/100m | 60.3 dB | 57.3 dB | 54.4 dB | 51.4 dB | 48 dB | 45 dB | 25 dB | 67 dB | 58.2 dB | 30 dB | 15 dB |
| 16 MHz | 7.5 dB/100m | 57.2 dB | 54.2 dB | 49.8 dB | 46.8 dB | 43.9 dB | 40.9 dB | 25 dB | 67 dB | 54.1 dB | 28 dB | 10.9 dB |
| 31.2 MHz | 10.5 dB/100m | 52.9 dB | 49.9 dB | 42.4 dB | 39.4 dB | 38.1 dB | 35.1 dB | 23.6 dB | 67 dB | 48.3 dB | 25.1 dB | 5.1 dB |
| 62.5 MHz | 15 dB/100m | 48.4 dB | 45.4 dB | 33.4 dB | 30.4 dB | 32.1 dB | 29.1 dB | 21.5 dB | 65.6 dB | 42.3 dB | 22 dB | |
| 100 MHz | 19.1 dB/100m | 45.3 dB | 42.3 dB | 26.2 dB | 23.2 dB | 28 dB | 25 dB | 20.1 dB | 62.5 dB | 38.2 dB | 20 dB | |
| 125 MHz | 21.5 dB/100m | 43.8 dB | 40.8 dB | 22.3 dB | 19.3 dB | 26.1 dB | 23.1 dB | 19.4 dB | 61 dB | 36.3 dB | 19 dB | |
| 200 MHz | 27.6 dB/100m | 40.8 dB | 37.8 dB | 13.2 dB | 10.2 dB | 22 dB | 19 dB | 18 dB | 58 dB | 32.2 dB | 17 dB | |
| 250 MHz | 31.1 dB/100m | 39.3 dB | 36.3 dB | 8.3 dB | 5.3 dB | 20 dB | 17 dB | 17.3 dB | 56.5 dB | 30.2 dB | 16 dB | |
| 300 MHz | 34.3 dB/100m | 38.1 dB | 35.1 dB | 3.9 dB | 0.9 dB | 18.5 dB | 15.5 dB | 17.3 dB | 55.3 dB | 28.7 dB | | |
| 500 MHz | 45.3 dB/100m | 34.8 dB | 31.8 dB | -10.4 dB | -13.4 dB | 14 dB | 11 dB | 17.3 dB | 52 dB | 24.2 dB | | |

| | |
|---|---|
| High Freq Table Note: | Limits below 4MHz are for information only. |
| 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: | Eca |
| CENELEC Compliance: | EN 50173-1 Ed. 3:2011 |
| Data Category: | Category 6A |
| ANSI Compliance: | ANSI/TIA/EIA 568-C.2 (2009) |
| IEEE Specification: | PoE: IEEE 802.3bt Type 1, Type 2, Type 3, Type 4 |

## Applicable Environmental and Other Programs

| | |
|---|---|
| EU RoHS Compliance Date (yyyy-mm-dd): | 2018-01-03 |

## 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

| | |
|---|---|
| Patent: | https://www.belden.com/resources/patents |

## History

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| Revision Number: | 1 |

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