

Category 6A STP Cable CMR/CMP (U/FTP)



Product Description

Superior Essex offers Shielded Twisted Pair (STP) Category 6A cables in both plenum and riser versions. The cable has guaranteed performance out to 600 MHz and meets all applicable TIA 568-B.2-1 requirements. In addition, the cable meets or exceeds TIA/EIA 568-B.2-10 Draft Specification for Augmented Category 6 (CAT 6A) cables required for 10GBASE-T applications. The cable consists of four (4) balanced 23 AWG copper pairs. Each pair is wrapped with a mylar-backed aluminum foil with the drain wire in the center of all four pairs. The wrapped pairs are then jacketed with a flexible PVC jacket appropriate for either plenum or riser applications.

Features

- Individually foil shielded pairs
- Exceeds Draft Specification TIA/EIA-568-B.2-10 for Augmented Cat 6 (Cat 6A) Cable Performance
- Exceeds both TIA 568-B.2-1 and ISO/IEC 11801 for Category 6
- Riser and plenum rated designs

Benefits

- Protects against EMI/RFI and provides exceptional NEXT, PSNEXT, ELFEXT, and Electrical Performance performance
- Meets 10GBASE-T Application Requirements for both Insertion Loss and Return Loss and Exceeds Requirements for Alien and Internal Crosstalk Performance
- Assures compliance for all current networking applications
- UL 1666 and NFPA 262 (UL 910) fire rating options help to reduce additional expensive materials required to meet building safety codes.

Applications

- 10GBASE-T and legacy applications 10BASE-T through 1000BASE-T Ethernet
- ATM and Token Ring

Part Numbers and Physical Characteristics

| Part # | Listing | Pair Count | Nom. Dia. inches (mm) | Approx. Weight lbs/kft (kg/km) | Package |
|-----------|---------|------------|-----------------------|--------------------------------|------------|
| 6S-220-XA | Riser | 4 | 0.31 (7.9) | 40 (60) | 1,000 Reel |
| 6S-220-XB | Plenum | 4 | 0.29 (7.4) | 46 (69) | 1,000 Reel |

Jacket Color Cross-Reference Table

| Replace "X" with | Color |
|------------------|--------|
| 2 | Blue |
| 3 | Gray |
| 4 | White |
| 5 | Green |
| 6 | Yellow |
| 9 | Red |
| D | Orange |

Cable Construction

| | |
|----------------------|---|
| Configuration: | 4 copper pairs each surrounded by Aluminum/Mylar foil with center drain wire and jacket |
| Conductor: | 23 AWG Solid Copper |
| Insulation Material: | Riser – PE; Plenum – FEP |
| Insulation Colors: | Pair 1 – White/Blue; Pair 2 – White/Orange; Pair 3 – White/Green; Pair 4 – White/Brown |
| Drain Wire: | Tinned Copper |
| Jacket Material: | Plenum – Plenum Grade Low Smoke PVC; Riser – Riser Grade PVC |
| Jacket Color: | Blue, Gray, White, Yellow, Orange, Green, Red |
| Fire Listings: | Plenum – NFPA 262 UL CMP; FT6 Riser – UL 1666, UL CMR, c(UL) FT-4 |

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Electrical

| Frequency MHz | Attenuation (dB/100m) @ 20°C Maximum | | | NEXT (dB/100m) Minimum | | | ACR (dB/100m) Minimum | | | PS-NEXT (dB/100m) Minimum | | |
|---------------|--------------------------------------|------------|----------------|------------------------|------------|----------------|-----------------------|------------|----------------|---------------------------|------------|----------------|
| | TIA 568-B.2-10 | | Superior Essex | TIA 568-B.2-10 | | Superior Essex | TIA 568-B.2-10 | | Superior Essex | TIA 568-B.2-10 | | Superior Essex |
| | Specified | Guaranteed | Typical | Specified | Guaranteed | Typical | Calculated | Guaranteed | Typical | Specified | Guaranteed | Typical |
| 1 | 2.1 | 2.1 | 2.1 | 74.2 | 74.2 | 74.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 | 72.2 |
| 4 | 3.8 | 3.8 | 3.7 | 65.2 | 65.2 | 74.2 | 61.4 | 61.4 | 70.5 | 63.2 | 63.2 | 72.2 |
| 8 | 5.3 | 5.3 | 5.2 | 60.7 | 60.7 | 74.2 | 55.4 | 55.4 | 69.0 | 58.7 | 58.7 | 72.2 |
| 10 | 5.9 | 5.9 | 5.8 | 59.2 | 59.2 | 74.2 | 53.3 | 53.3 | 68.4 | 57.2 | 57.2 | 72.2 |
| 16 | 7.4 | 7.4 | 7.4 | 56.2 | 56.2 | 74.2 | 48.7 | 48.7 | 66.8 | 54.2 | 54.2 | 71.2 |
| 20 | 8.3 | 8.3 | 8.2 | 54.7 | 54.7 | 72.7 | 46.4 | 46.4 | 64.4 | 52.7 | 52.7 | 69.7 |
| 25 | 9.3 | 9.3 | 9.2 | 53.3 | 53.3 | 71.3 | 43.9 | 43.9 | 62.0 | 51.3 | 51.3 | 68.3 |
| 31.25 | 10.5 | 10.5 | 10.4 | 51.8 | 51.8 | 69.8 | 41.3 | 41.3 | 59.4 | 49.8 | 49.8 | 66.8 |
| 62.5 | 14.9 | 14.9 | 14.8 | 47.3 | 47.3 | 65.3 | 32.3 | 32.3 | 50.5 | 45.3 | 45.3 | 62.3 |
| 100 | 19.1 | 19.1 | 18.9 | 44.2 | 44.2 | 62.2 | 25.1 | 25.1 | 43.3 | 42.2 | 42.2 | 59.2 |
| 200 | 27.5 | 27.5 | 27.3 | 39.7 | 39.7 | 57.7 | 12.2 | 12.2 | 30.4 | 37.7 | 37.7 | 54.7 |
| 250 | 31.1 | 31.1 | 30.7 | 38.3 | 38.3 | 56.3 | 7.2 | 7.2 | 25.5 | 36.3 | 36.3 | 53.3 |
| 300 | 34.2 | 34.2 | 33.9 | 37.1 | 37.1 | 55.1 | 2.8 | 2.8 | 21.2 | 35.1 | 35.1 | 52.1 |
| 350 | 37.2 | 37.2 | 36.8 | 36.1 | 36.1 | 54.1 | -1.1 | -1.1 | 17.2 | 34.1 | 34.1 | 51.1 |
| 400 | 40.1 | 40.1 | 39.6 | 35.2 | 35.2 | 53.2 | -4.7 | -4.7 | 13.6 | 33.2 | 33.2 | 50.2 |
| 500 | 45.2 | 45.2 | 44.8 | 33.8 | 33.8 | 51.8 | -11.4 | -11.4 | 7.0 | 31.8 | 31.8 | 48.8 |
| 600 | | 50.1 | 49.5 | | 32.6 | 50.6 | | -17.4 | 1.1 | | 30.6 | 47.6 |

| Frequency MHz | PS-ACR (dB/100m) Minimum | | | Return Loss (dB/100m) Minimum | | | ELFEXT (ACRF) (dB/100m) Minimum | | | PS-ELFEXT (PSACRF) (dB/100m) Minimum | | |
|---------------|--------------------------|------------|----------------|-------------------------------|------------|----------------|---------------------------------|------------|----------------|--------------------------------------|------------|----------------|
| | TIA 568-B.2-10 | | Superior Essex | TIA 568-B.2-10 | | Superior Essex | TIA 568-B.2-10 | | Superior Essex | TIA 568-B.2-10 | | Superior Essex |
| | Calculated | Guaranteed | Typical | Specified | Guaranteed | Typical | Specified | Guaranteed | Typical | Specified | Guaranteed | Typical |
| 1 | 70.2 | 70.2 | 70.2 | 20.0 | 20.0 | 20.6 | 67.7 | 67.7 | 73.7 | 64.7 | 64.7 | 70.7 |
| 4 | 59.4 | 59.4 | 68.5 | 23.0 | 23.0 | 23.7 | 55.7 | 55.7 | 61.7 | 52.7 | 52.7 | 58.7 |
| 8 | 53.4 | 53.4 | 67.0 | 24.5 | 24.5 | 25.3 | 49.7 | 49.7 | 55.7 | 46.7 | 46.7 | 52.7 |
| 10 | 51.3 | 51.3 | 66.4 | 25.0 | 25.0 | 25.8 | 47.7 | 47.7 | 53.7 | 44.7 | 44.7 | 50.7 |
| 16 | 46.7 | 46.7 | 63.8 | 25.0 | 25.0 | 25.8 | 43.7 | 43.7 | 49.7 | 40.7 | 40.7 | 46.7 |
| 20 | 44.4 | 44.4 | 61.4 | 25.0 | 25.0 | 25.8 | 41.7 | 41.7 | 47.7 | 38.7 | 38.7 | 44.7 |
| 25 | 41.9 | 41.9 | 59.0 | 24.3 | 24.3 | 25.1 | 39.8 | 39.8 | 45.8 | 36.8 | 36.8 | 42.8 |
| 31.25 | 39.3 | 39.3 | 56.4 | 23.6 | 23.6 | 24.3 | 37.8 | 37.8 | 43.8 | 34.8 | 34.8 | 40.8 |
| 62.5 | 30.3 | 30.3 | 47.5 | 21.5 | 21.5 | 22.2 | 31.8 | 31.8 | 37.8 | 28.8 | 28.8 | 34.8 |
| 100 | 23.1 | 23.1 | 40.3 | 20.1 | 20.1 | 20.7 | 27.8 | 27.8 | 33.7 | 24.8 | 24.8 | 30.8 |
| 200 | 10.2 | 10.2 | 27.4 | 18.0 | 18.0 | 18.5 | 21.7 | 21.7 | 27.7 | 18.7 | 18.7 | 24.7 |
| 250 | 5.2 | 5.2 | 22.5 | 17.3 | 17.3 | 17.8 | 19.8 | 19.8 | 25.8 | 16.8 | 16.8 | 22.8 |
| 300 | 0.8 | 0.8 | 18.2 | 16.8 | 16.8 | 17.3 | 18.2 | 18.2 | 24.2 | 15.2 | 15.2 | 21.2 |
| 350 | -3.1 | -3.1 | 14.2 | 16.3 | 16.3 | 16.8 | 16.9 | 16.9 | 22.9 | 13.9 | 13.9 | 19.9 |
| 400 | -6.7 | -6.7 | 10.6 | 15.9 | 15.9 | 16.4 | 15.7 | 15.7 | 21.7 | 12.7 | 12.7 | 18.7 |
| 500 | -13.4 | -13.4 | 4.0 | | 15.2 | 15.7 | 13.8 | 13.8 | 19.8 | 10.8 | 10.8 | 16.8 |
| 600 | | -19.4 | -1.9 | | | 15.1 | | 12.2 | 18.2 | | 9.2 | 15.2 |

| Input Impedance (Ohms) Guaranteed | Delay Skew (ns/100m) Maximum | Velocity of Propagation (%) Nominal | DC Resistance (Ohms/100m) Maximum | Resistance Unbalance (%) Maximum |
|---|------------------------------|-------------------------------------|-----------------------------------|----------------------------------|
| 100+/-15 @ 1-100MHz 100+/-22 @ 100-300MHz 100+/-32 @ 350-600MHz | 25 | Plenum - 77 ; Riser - 74 | 9.38 | 3% |



Standards Compliance:
 UL 444, UL Listed CMP (NFPA 262), UL Listed CMR (UL 1666), ISO/IEC 11801, ANSI/TIA 568-B.2-10, RoHS Compliant.