



US-9136PE

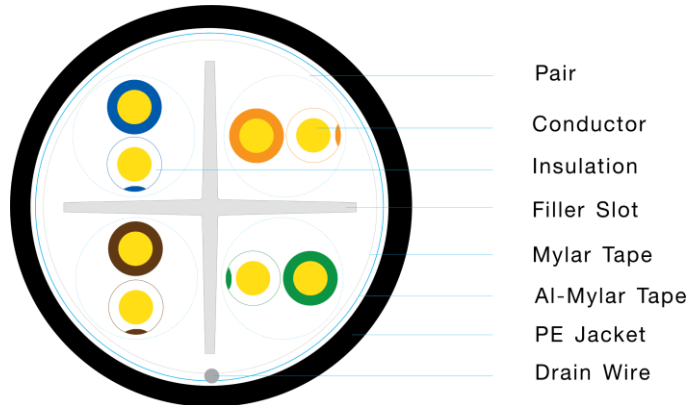


## CAT6 F/UTP ULTRA Outdoor (600MHz) w/Cross Filler, 23AWG

### Scope of Applications

This specification covers the general requirements for FTP cable used for outdoor installation. LINK Ultra Category 6 F/UTP outdoor cables compliant ISO/IEC 11801 Class E and ANSI/TIA-568.2-E requirements for category 6 performance. These cables are characterized up to 600MHz, Powersum NEXT tested certified.

### Drawing



### Technical Standards

- ANSI/TIA-568.2-E Category 6
- ANSI/TIA-568.2-D Category 6
- ANSI/TIA-568-C.2 Category 6
- ISO/IEC 11801:2017 class E
- EN 50173-1 Category 6
- EN 50288-5-1
- IEC 61156-5
- ICEA S-102-700 Category 6
- ASTM D4566-98
- UL 444 / NEC Article 800
- CSA 22.2 No.214
- RoHS Compliant

## Cable Construction

|                                       |                         |                                  |
|---------------------------------------|-------------------------|----------------------------------|
| <b>Conductor</b>                      | <b>Material</b>         | Solid bare copper                |
|                                       | <b>No. of Conductor</b> | 4 Pairs (8 wires)                |
|                                       | <b>Diameter</b>         | 23 AWG                           |
| <b>Insulation</b>                     | <b>Material</b>         | High-Density Polyethylene (HDPE) |
|                                       | <b>Diameter</b>         | 1.10 ±0.02 mm                    |
| <b>Insulated Conductor Color Code</b> | <b>Pair 1</b>           | White-Blue / Blue                |
|                                       | <b>Pair 2</b>           | White-Orange / Orange            |
|                                       | <b>Pair 3</b>           | White- Green / Green             |
|                                       | <b>Pair 4</b>           | White-Brown / Brown              |
| <b>Ripcord</b>                        |                         | Under Jacket                     |
| <b>Filler Slot (Cross Filler)</b>     | <b>Material</b>         | FRPE                             |
| <b>Mylar Tape</b>                     | <b>Thickness</b>        | 0.025 mm                         |
| <b>Drain wire</b>                     | <b>Material</b>         | Tinned annealed copper           |
|                                       | <b>Diameter</b>         | 26 AWG                           |
| <b>Shield</b>                         | <b>Material</b>         | Al-Mylar Tape 100% coverage      |
| <b>Jacket</b>                         | <b>Material</b>         | UV Proof, PE                     |
|                                       | <b>Thickness</b>        | 0.55 ±0.02 mm                    |
|                                       | <b>Color</b>            | White                            |
| <b>Cable Diameter</b>                 |                         | 7.2 ±0.2mm                       |
| <b>Marking</b>                        |                         | White every meter                |
| <b>Flame Rating</b>                   |                         | CMX                              |

## Electrical Characteristic

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| <b>Impedance</b>                                 | 100 ± 5 Ohms, 1 MHz to 600 MHz |
| <b>Mutual Capacitance</b>                        | ≤ 5.6 nF Max / 100m            |
| <b>Capacitance, Unbalance</b>                    | ≤ 160 pF Max / 100m            |
| <b>DC Resistance</b>                             | ≤ 6.658-ohm Max./100m          |
| <b>DC Resistance, Unbalance</b>                  | ≤ 5% Max.                      |
| <b>Dielectric Strength</b>                       | ≤ 1 kV/min                     |
| <b>Insulated Resistance</b>                      | ≥ 5000 MΩ/km                   |
| <b>AC leakage current through overall jacket</b> | ≤ 10mA (1.5 kV AC)             |
| <b>Spark Test</b>                                | 2.5 kV DC                      |
| <b>Propagation Delay</b>                         | ≤ 536 ns/100m Max @600MHz      |
| <b>Delay Skew</b>                                | ≤ 30 ns Max                    |
| <b>NVP</b>                                       | 74%                            |

## Physical Properties

|                            |                        |                    |
|----------------------------|------------------------|--------------------|
| Tensile Strength           |                        | 110 N (25 lbf)     |
| Ultimate Breaking Strength |                        | >400 N (90lbf)     |
| Tensile Strength of Jacket |                        | 9.7MPa (1400 PSI)  |
| Min. Bending Radius        |                        | 8 X Cable Diameter |
| Temperature                | Installation/Operation | -40°C to 75°C      |
|                            | Storage                | -40°C to 80°C      |



## PERFORMANCE CHARACTERISTIC (meet or exceed ANSI/TIA-568.2-E Category 6)

| Frequency (MHz) | Insertion Loss (dB/100m) | NEXT (dB) |      | ACR-N (dB) |      | PS NEXT (dB) |      | PS ACR-N (dB) |      | ACR-F (dB) |      | PS ACR-F (dB) |      | RL (dB) |      |
|-----------------|--------------------------|-----------|------|------------|------|--------------|------|---------------|------|------------|------|---------------|------|---------|------|
|                 | Max.                     | min       | nom  | min        | nom  | min          | nom  | min           | nom  | min        | nom  | min           | nom  | min     | nom  |
| 0.772           | 1.8                      | 79.0      | 82   | 77.2       | 80.2 | 77.0         | 79.0 | 75.2          | 77.2 | 70.0       | 73   | 67.0          | 69   | -       | -    |
| 1               | 2.0                      | 78.0      | 81.0 | 76.0       | 79.3 | 76.0         | 78.0 | 73.5          | 75.8 | 69.0       | 72.0 | 66.0          | 68.0 | 20.0    | 28.0 |
| 4               | 3.8                      | 69.8      | 72.8 | 66.0       | 69.0 | 67.0         | 69.0 | 62.7          | 65.0 | 56.5       | 59.5 | 53.5          | 55.5 | 23.0    | 31.0 |
| 8               | 5.3                      | 65.4      | 68.4 | 60.1       | 62.8 | 63.4         | 65.4 | 57.1          | 58.8 | 51.0       | 53.1 | 48.0          | 50.0 | 24.5    | 32.5 |
| 10              | 6.0                      | 63.8      | 66.8 | 57.8       | 61.1 | 61.2         | 63.2 | 54.5          | 56.8 | 48.5       | 51.5 | 46.4          | 48.4 | 25.0    | 33.0 |
| 16              | 7.6                      | 60.0      | 63.0 | 52.4       | 55.7 | 58.9         | 60.9 | 49.9          | 52.2 | 45.0       | 48.0 | 42.2          | 44.2 | 25.0    | 33.0 |
| 20              | 8.5                      | 59.0      | 61.0 | 50.5       | 53.3 | 57.0         | 59.0 | 48.0          | 49.8 | 42.5       | 45.5 | 40.1          | 42.1 | 25.0    | 33.0 |
| 25              | 9.5                      | 57.5      | 60.5 | 48.0       | 51.3 | 56.8         | 58.8 | 44.9          | 47.2 | 41.0       | 44.0 | 37.7          | 39.7 | 24.3    | 32.3 |
| 31.25           | 10.7                     | 56.0      | 59.0 | 45.3       | 46.2 | 54.0         | 56.0 | 42.8          | 44.7 | 38.5       | 41.5 | 35.6          | 37.6 | 23.6    | 31.6 |
| 62.5            | 15.4                     | 50.5      | 53.5 | 35.1       | 38.4 | 52.2         | 54.2 | 33.0          | 35.0 | 33.0       | 36.0 | 29.5          | 31.5 | 21.5    | 29.5 |
| 100             | 19.8                     | 47.5      | 50.5 | 27.7       | 30.9 | 49.8         | 51.8 | 25.6          | 27.8 | 28.5       | 31.5 | 25.8          | 27.8 | 20.1    | 28.1 |
| 200             | 24.7                     | 44.4      | 47.4 | 15.4       | 18.0 | 45.0         | 47.0 | 12.3          | 13.9 | 22.5       | 25.5 | 21.7          | 23.7 | 18.0    | 26.0 |
| 250             | 28.9                     | 42.9      | 45.9 | 10.9       | 13.1 | 43.2         | 45.2 | 6.5           | 8.6  | 21.2       | 24.2 | 18.0          | 20.0 | 17.3    | 25.3 |
| 300             | 32.8                     | 41.5      | 43.5 | 4.9        | 6.5  | 40.7         | 42.7 | 1.9           | 4.0  | 18.5       | 21.5 | 15.6          | 17.6 | 16.8    | 24.8 |
| 350             | 36.4                     | 39.5      | 42.5 | 1.0        | 3.1  | 38.5         | 40.5 | -             | -    | 17.5       | 20.5 | 14.5          | 16.5 | 16.3    | 24.3 |
| 400             | 39.7                     | 38.5      | 41.5 | -          | -    | 37.5         | 39.5 | -             | -    | 16.5       | 19.5 | 13.7          | 15.7 | 15.9    | 23.9 |
| 450             | 42.9                     | 38.0      | 41.0 | -          | -    | 36.5         | 38.5 | -             | -    | 15.5       | 18.5 | 12.8          | 14.8 | 15.5    | 23.5 |
| 500             | 46.0                     | 37.5      | 40.5 | -          | -    | 35.5         | 37.5 | -             | -    | 14.5       | 17.5 | 11.5          | 13.5 | 15.2    | 23.2 |
| 550             | 48.9                     | 36.7      | 39.7 | -          | -    | 34.5         | 36.5 | -             | -    | 13.5       | 16.5 | 10.7          | 12.7 | 14.9    | 22.9 |
| 600             | 51.1                     | 36.5      | 39.5 | -          | -    | 34.5         | 36.5 | -             | -    | 13.0       | 15.0 | 10.0          | 12.0 | 14.7    | 22.7 |

## Applications

- 2.5G/5G BASE-T (IEEE 802.3bz)
- 10G BASE-T (IEEE 802.3an 10Gigabit Ethernet) \*\*limited distance
- 1000 BASE-T (IEEE 802.3ab Gigabit Ethernet)
- 1000 BASE-TX (TIA/EIA-854)
- 100 BASE-TX (IEEE 802.3u Fast Ethernet)
- 10 BASE-T (IEEE 802.3i Ethernet)
- 52/155/622Mbps and 1.2Gbps ATM
- 4/16 Mbps Token Ring
- IEEE 802.3af (PoE), IEEE 802.3at (PoE+), IEEE 802.3bt (Type4)
- TP-PMD, TPDDI, ISDN, CDDI, VoIP
- EtherCAT Industrial standard, HDBaseT 2.0 standard
- Baseband, Broadband
- Digital and analog for data, video, and audio application

## Order Information

| Part number | Description                                              | Color | Length | Package |
|-------------|----------------------------------------------------------|-------|--------|---------|
| US-9136PE   | Category 6, 4 Pairs, F/UTP Cable, 23AWG, Outdoor, 600MHz | Black | 305 m  | Roll    |

\*Other jacket color available on request

Specifications subject to change without notice.

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