

**MASTER SPECIFICATION**  
**AdvanceNet® CABLE**  
**4 PAIR #23 AWG UTP CATEGORY 6e+ NON-PLENUM**

Design Number:  
**LT41193**

**DESCRIPTION**

UNSHIELDED TWISTED PAIR (UTP) ADVANCENET CABLE FOR USE IN HORIZONTAL CABLING SYSTEMS PER ANSI/TIA-568-C AND ISO/IEC 11801 ed 2.2 (2011) CLASS E. THE CABLE EXCEEDS ANSI/TIA-568-C.2 AND ISO/IEC 11801 ed 2.2 (2011) CATEGORY 6 ELECTRICAL CHARACTERISTICS. THE CABLE CONSISTS OF #23 AWG SOLID BARE COPPER INSULATED CONDUCTORS, ASSEMBLED INTO FOUR TIGHTLY TWISTED PAIRS, WITH A FLEXWEB® CORE SEPARATOR AND A RIPCORD, UNDER AN OVERALL JACKET. PRINT INCLUDES DESCENDING FOOTAGE MARKERS FROM 1000 TO 0 ON EACH 1000 FT REEL OR BOX. SEE BELDEN.COM/P FOR ANY/ALL APPLICABLE PATENT DETAILS.

THE CABLE IS RISER (NON-PLENUM) RATED FOR USE AS A VERTICAL RUN IN A SHAFT AND FOR GENERAL PURPOSE COMMUNICATIONS USE IN ACCORDANCE WITH ARTICLE 800 OF THE NATIONAL ELECTRICAL CODE (NEC). THE CABLE IS ETL (USA) & cETL (CANADA) LISTED FOR THIS APPLICATION BY PASSING UL 1666 RISER CABLE FLAMMABILITY TEST. THE CABLE ALSO PASSES THE CSA FT4 VERTICAL FLAME TEST - CABLES IN CABLE TROUGH FROM CLAUSE 4.11.4 OF CSA C22.2 NO. 0.3.

**SUPPORTED APPLICATIONS**

IEEE 802.3 10BASE-T (ETHERNET), 100BASE-T (FAST ETHERNET), AND 1000BASE-T (GIGABIT ETHERNET), IEEE 802.3af POE, IEEE 802.3at-2009 POE+, ANSI.X3.263 FDDI TP-PMD, IEEE 802.5 4 AND 16 Mbps TOKEN RING, 550 MHz BROADBAND VIDEO AND ATM UP TO 2.4 Gbps.

**CONSTRUCTION**

**PRIMARIES:** CONDUCTOR: 23 AWG (.6 mm) SOLID BARE COPPER  
 INSULATION: THERMOPLASTIC POLYOLEFIN

**PAIR ASSEMBLY:** 2 PRIMARIES TWISTED IN VARIED LAYS

**COLOR CODE:** SEE TABLE 1

**CABLE ASSEMBLY:** 4 PAIRS CABLED TOGETHER WITH A FLEXWEB CORE SEPARATOR

**JACKET:** NO LEAD FLAME RETARDANT THERMOPLASTIC  
 JACKET COLOR: SEE TABLE 2  
 NOMINAL CABLE OD: .231" (5.87 mm)

**LISTING:** C(UL)US OR C(ETL)US TYPE CMR  
 UL OR ETL VERIFIED CAT 6

**PHYSICAL CHARACTERISTICS**

**CABLE WEIGHT w/reel:** 27 lbs/1000ft (40 kg/km)

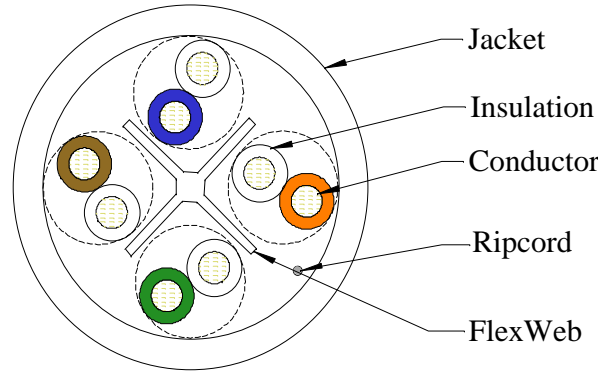
**BENDING RADIUS:** 1" (25.4 mm) MIN (4 x CABLE OD)

**PULLING TENSION:** 25 lbf (110 N) MAX

**OPERATING TEMP.:** -20°C to +75°C (-4°F to +167°F)

**STORAGE TEMP.:** -20°C to +75°C (-4°F to +167°F)

**\*INSTALLATION TEMP.:** 0°C to +50°C (+32°F to +122°F)



**TABLE 1**

| PAIR NUMBER | PAIR COLOR CODE |        |
|-------------|-----------------|--------|
| 1           | WHITE-BLUE      | BLUE   |
| 2           | WHITE-ORANGE    | ORANGE |
| 3           | WHITE-GREEN     | GREEN  |
| 4           | WHITE-BROWN     | BROWN  |

**TABLE 2**

| MOHAWK PART NUMBER | MOHAWK DESIGN NUMBER | JACKET COLOR  |
|--------------------|----------------------|---------------|
| M56889             | LT39986              | WHITE         |
| M57202             | LT41072              | BLUE          |
| M57203             | LT41073              | PINK          |
| M57204             | LT41074              | YELLOW        |
| M57205             | LT41075              | GRAY          |
| M57206             | LT41076              | GREEN         |
| M57207             | LT41077              | RED           |
| M57208             | LT41078              | ORANGE        |
| M57209             | LT41079              | BLACK         |
| M57210             | LT41080              | VIOLET        |
| M57979             | LT46679              | PASTEL VIOLET |
| M58699             | LT54362              | DK. BROWN     |

\* THE INSTALLATION TEMPERATURE REFERS TO THE TEMPERATURE OF THE CABLE WHILE BEING INSTALLED OR PULLED.



**MOHAWK**  
 Cabling Excellence for Open Architecture

(978) 537-9961 Fax: (978) 537-4358  
 (800) 422-9961 www.mohawk-cable.com

This document is the property of Mohawk. The information contained herein is considered proprietary and not to be reproduced by any means without written consent of Mohawk.

| Rev            | Description                    | Date        | Init.                            |
|----------------|--------------------------------|-------------|----------------------------------|
| AZ             | ADJUST DIAMETER                | 08/19/15    | JS                               |
| BA             | ADJUST ELECTRICALS             | 12/11/15    | JS                               |
| BB             | UPDATE FOOTER                  | 02/03/17    | JS                               |
| BC             | UPDATE DESC, APPS, TEMPS, STDS | 09/15/17    | JS                               |
| Date: 09/26/97 |                                | Page 1 of 2 |                                  |
| Orig:          |                                | Review:     |                                  |
|                |                                |             | Design Number:<br><b>LT41193</b> |

**MASTER SPECIFICATION**  
**AdvanceNet® CABLE**  
**4 PAIR #23 AWG UTP CATEGORY 6e+ NON-PLENUM**

Design Number:  
**LT41193**

**ELECTRICAL CHARACTERISTICS** (REF TABLE 3)

**STANDARDS:** EXCEEDS ANSI/TIA-568-C.2 CAT 6,  
 ICEA S-116-732-2013 CAT 6,  
 ISO/IEC 11801 ed 2.2 (2011) CLASS E &  
 IEC 61156-5 CAT 6 HORIZONTAL CABLE

**CONDUCTOR DCR:** 9.38 Ω/100m (28.6 Ω/Mft) MAX

**DCR UNBALANCE:** 5% MAX

**MUTUAL CAPACITANCE:** 56 pF/m MAX

**CAPACITANCE UNBALANCE PAIR/GROUND:** 330 pF/100m MAX

**CHARACTERISTIC IMPEDANCE:** 100 Ω ± 15% (1-250 MHz)

**INPUT IMPEDANCE:** 100 Ω ± 15% (10-100 MHz)  
 100 Ω ± 22% (>100-250 MHz)

**RETURN LOSS (RL):** 20 + 5 log<sub>10</sub>(f) dB MIN (1-10 MHz)  
 25 dB MIN (>10-20 MHz)  
 25 - 7 log<sub>10</sub>(f/20) dB MIN (20-100 MHz)  
 25 - 7 log<sub>10</sub>(f/20) + 0.7 dB MIN (>100 MHz)

**INSERTION LOSS:**  $1.76\sqrt{f} + .017f + \frac{.20}{\sqrt{f}}$  dB/100m MAX

**NEAR END CROSSTALK (NEXT):** 76 - 15 log<sub>10</sub>(f/.772) + 5 dB/100m MIN

**POWER SUM NEAR END CROSSTALK (PS-NEXT):** 74 - 15 log<sub>10</sub>(f/.772) + 5 dB/100m MIN

**EQUAL LEVEL FAR END CROSSTALK (ELFEXT):** 70 - 20 log(f/.772) + 5 dB/100m MIN

**POWER SUM EQUAL LEVEL FAR END CROSSTALK (PS-ELFEXT):** 67 - 20 log(f/.772) + 5 dB/100m MIN

**PROPAGATION DELAY:** 534 + 36 / √f ns/100m MAX

**DELTA DELAY (SKEW):** 45 ns/100m MAX

**NOMINAL VELOCITY OF PROPAGATION (NVP):** 70%

WHERE f = FREQUENCY IN MHz from .772 to 250 MHz, except for ELFEXT and PS-ELFEXT from 1 to 250 MHz.

**TABLE 3**

**REFERENCE ELECTRICAL CHARACTERISTICS**

| FREQ (MHz) | INSERTION LOSS (dB/100m) |      | NEXT (dB/100m) |      | ACR (dB/100m) | PS-NEXT (dB/100m) |      | PS-ACR (dB/100m) | ELFEXT (dB/100m) | PS-ELFEXT (dB/100m) | RL (dB) |
|------------|--------------------------|------|----------------|------|---------------|-------------------|------|------------------|------------------|---------------------|---------|
|            | avg                      | max  | avg            | min  |               | min               | avg  |                  |                  |                     |         |
| .772       | 1.6                      | 1.8  | 90             | 81.0 | 79.2          | 83                | 79.0 | 77.2             | -                | -                   | -       |
| 1.0        | 1.8                      | 2.0  | 88             | 79.3 | 77.3          | 81                | 77.3 | 75.3             | 72.8             | 69.8                | 20.0    |
| 4.0        | 3.5                      | 3.7  | 79             | 70.3 | 66.6          | 72                | 68.3 | 64.6             | 60.7             | 57.7                | 23.0    |
| 8.0        | 4.9                      | 5.2  | 75             | 65.8 | 60.6          | 68                | 63.8 | 58.6             | 54.7             | 51.7                | 24.5    |
| 10.0       | 5.6                      | 5.8  | 73             | 64.3 | 58.5          | 66                | 62.3 | 56.5             | 52.8             | 49.8                | 25.0    |
| 16.0       | 7.1                      | 7.4  | 70             | 61.3 | 53.9          | 63                | 59.3 | 51.9             | 48.7             | 45.7                | 25.0    |
| 20.0       | 7.9                      | 8.3  | 69             | 59.8 | 51.5          | 62                | 57.8 | 49.5             | 46.8             | 43.8                | 25.0    |
| 25.0       | 8.8                      | 9.3  | 67             | 58.4 | 49.1          | 60                | 56.4 | 47.1             | 44.8             | 41.8                | 24.3    |
| 31.25      | 10.0                     | 10.4 | 66             | 56.9 | 46.5          | 59                | 54.9 | 44.5             | 42.9             | 39.9                | 23.6    |
| 62.5       | 14.3                     | 15.0 | 61             | 52.4 | 37.4          | 54                | 50.4 | 35.4             | 36.8             | 33.8                | 21.5    |
| 100.0      | 18.4                     | 19.3 | 58             | 49.3 | 30.0          | 51                | 47.3 | 28.0             | 32.8             | 29.8                | 20.8    |
| 200.0      | 27.0                     | 28.3 | 54             | 44.8 | 16.5          | 47                | 42.8 | 14.5             | 26.8             | 23.8                | 18.7    |
| 250.0      | 30.5                     | 32.1 | 52             | 43.3 | 11.2          | 45                | 41.3 | 9.2              | 24.8             | 21.8                | 18.0    |
| 300.0      | 33.9                     | 35.6 | 51             | 42.1 | 6.5           | 44                | 40.1 | 4.5              | 23.3             | 20.3                | 17.5    |
| 350.0      | 37.0                     | 38.9 | 50             | 41.1 | 2.3           | 43                | 39.1 | 0.3              | 21.9             | 18.9                | 17.0    |
| 400.0      | 40.0                     | 42.0 | 49             | 40.3 | -             | 42                | 38.3 | -                | 20.8             | 17.8                | 16.6    |
| 450.0      | 43.0                     | 45.0 | 48             | 39.5 | -             | 41                | 37.5 | -                | 19.7             | 16.7                | 16.2    |
| 500.0      | 45.5                     | 47.9 | 48             | 38.8 | -             | 41                | 36.8 | -                | 18.8             | 15.8                | 15.9    |
| 550.0      | 48.2                     | 50.6 | 47             | 38.2 | -             | 40                | 36.2 | -                | 18.0             | 15.0                | 15.6    |
| 600.0      | 50.7                     | 53.3 | 47             | 37.6 | -             | 40                | 35.6 | -                | 17.2             | 14.2                | 15.4    |
| 650.0      | 53.2                     | 55.9 | 46             | 37.1 | -             | 39                | 35.1 | -                | 16.5             | 13.5                | 15.1    |

SWEEP TESTED TO 650 MHz; VALUES ABOVE 250 MHz ARE FOR ENGINEERING INFORMATION ONLY.



**MOHAWK**  
 Cabling Excellence for Open Architecture

(978) 537-9961 Fax: (978) 537-4358  
 (800) 422-9961 www.mohawk-cable.com

This document is the property of Mohawk. The information contained herein is considered proprietary and not to be reproduced by any means without written consent of Mohawk.

| Rev            | Description                    | Date        | Init.                             |
|----------------|--------------------------------|-------------|-----------------------------------|
| AZ             | ADJUST DIAMETER                | 08/19/15    | JS                                |
| BA             | ADJUST ELECTRICALS             | 12/11/15    | JS                                |
| BB             | UPDATE FOOTER                  | 02/03/17    | JS                                |
| BC             | UPDATE DESC, APPS, TEMPS, STDS | 09/15/17    | JS                                |
| Date: 09/26/97 |                                | Page 2 of 2 |                                   |
| Orig:          |                                | Review:     |                                   |
|                |                                |             | <b>Design Number:<br/>LT41193</b> |

Mohawk reserves the right to change any specification in the interest of product enhancement.  
 This cable complies with the EU-RoHS directive 2002/95/EC (restrictions on hazardous substances) regulations.