

SPECIFICATION
VersaLAN[®] INDOOR/OUTDOOR
4 PAIR #23 AWG F/UTP CAT 6 CMR/CMX

Design Number:
LT57979

DESCRIPTION

SCREENED TWISTED PAIR (F/UTP) CATEGORY 6 CABLE FOR USE IN HORIZONTAL CABLING SYSTEMS PER ANSI/TIA-568-C AND ISO/IEC 11801:2002 CLASS E. VERSALAN CMR/CMX OUTDOOR CATEGORY 6 CABLE IS DESIGNED FOR RESIDENTIAL INDOOR/OUTDOOR LAN APPLICATIONS. CATEGORY 6 COMPLIANCE ENSURES THIS CABLE WILL SUPPORT 1000BASE-T GIGABIT ETHERNET. THE CABLE EXCEEDS THE GRADE 2 REQUIREMENTS SPECIFIED IN THE ANSI/TIA/EIA-570-B; "RESIDENTIAL TELECOMMUNICATIONS STANDARD". CMR/CMX-OUTDOOR CABLE IS SPECIALLY DESIGNED TO RESIST CRACKING AFTER LONG-TERM UV EXPOSURE, MAKING IT IDEAL FOR INSTALLATION RUNS THAT REQUIRE THE CABLE TO BE EXPOSED TO THE ELEMENTS. WHILE THIS GEL-FREE CABLE CAN GET WET, IT IS NOT SUITABLE FOR EXTENDED EXPOSURE TO WATER. IT IS NOT SUITABLE FOR DIRECT BURIAL. PRINT INCLUDES DESCENDING FOOTAGE MARKERS FROM 1000 TO 0 ON EACH 1000 FT REEL. SEE BELDEN.COM/P FOR ANY/ALL APPLICABLE PATENT DETAILS.

THE CABLE IS ALSO 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 ALSO RATED FOR OUTDOOR CMX LIMITED USE SUITABLE FOR USE IN DWELLINGS AND IN RACEWAYS. THE CABLE IS UL (USA) & cUL (CANADA) LISTED FOR THIS APPLICATION BY PASSING UL 1666 VERTICAL TRAY & 1581 VERTICAL WIRE FLAME TESTS.

SUPPORTED APPLICATIONS

IEEE 802.3 10BASE-T (ETHERNET), 100BASE-T (FAST ETHERNET), AND 1000BASE-T (GIGABIT ETHERNET), 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 (WHITE CONDS HAVE INTEGRAL STRIPE TO MATCH THEIR MATE)

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

BARRIER: OVERALL POLYESTER TAPE, 25% OVERLAP

DRAIN: #24 AWG SOLID TINNED COPPER

SCREEN (SHIELD): OVERALL ALUMINUM/POLYESTER TAPE, ALUM SIDE FACING IN, 25% OVERLAP, 100% COVERAGE, LIGHTLY BONDED TO JACKET

JACKET: MATERIAL: UV-RESISTANT OUTDOOR GRADE PVC
 NOMINAL WALL: .030" (.76 mm)
 NOMINAL CABLE OD: .296" (7.52 mm)
 COLOR: BLACK

LISTINGS: UL TYPE CMR/CMX OUTDOOR; cUL CMG
 UL OR ETL VERIFIED CAT 6

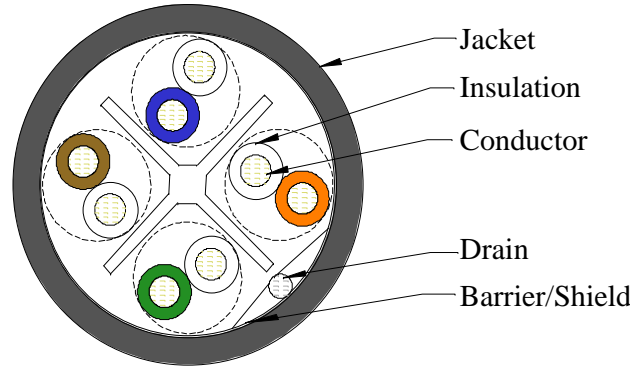


TABLE 1

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

PHYSICAL & ENVIRONMENTAL CHARACTERISTICS

CABLE WEIGHT w/reel: 45 bs/1000ft (67 kg/km)

BEND RADIUS: 3" (76 mm) MIN (10 x CABLE OD)

PULLING TENSION: 25 lbf (110 N) MAX

OPERATING TEMP.: -40°C to +75°C (-40°F to +167°F)

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

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

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

- CABLE HAS BEEN TESTED AND LISTED AS UL 444 SUNLIGHT RESISTANT COMPLIANT. THIS DESIGNATION REQUIRES THE CABLE TO RESIST 720 HOURS OF HARSH UV AND HEAT, AND IS MORE THAN TWICE THE EXPOSURE TIME OF THE STANDARD 300 HOURS REQUIRED.

- CABLE PASSES -40°C COLD BEND PER UL1581.

- CABLE PASSES IEEE 1202 FLAME TEST.



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| Rev | Description | Date | Init. |
|----------------|-------------------------|---------------|-------|
| A | UPD DESC WITH SQ FT MKS | 06/27/16 | JS |
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ELECTRICAL CHARACTERISTICS (REF TABLE 3)

STANDARDS: EXCEEDS ANSI/TIA-568-C.2 CAT 6,
 ICEA S-90-661-1997 CAT 6 &
 ISO/IEC 11801:2002 CAT 6
 HORIZONTAL CABLE

CONDUCTOR DCR: 7.8 Ω/100m (23.8 Ω/Mft) MAX

DCR UNBALANCE: 3% MAX

MUTUAL CAPACITANCE: 46 pF/m NOM

CAPACITANCE UNBALANCE PAIR/GROUND: 66 pF/100m MAX

CHARACTERISTIC IMPEDANCE: 100 Ω ± 15% (1-300 MHz)

INPUT IMPEDANCE: 100 Ω ± 15% (1-100 MHz)
 100 Ω ± 22% (>100-200 MHz)
 100 Ω ± 32% (>200 MHz)

RETURN LOSS (RL): 20 + 5 log₁₀(f) dB MIN (1-10 MHz)
 25 dB MIN (>10-20 MHz)
 25 - 7 log₁₀(f/20) dB MIN (>20 MHz)

INSERTION LOSS

(ATTENUATION): $1.808\sqrt{f} + .017f + \frac{.20}{\sqrt{f}}$ dB/100m MAX

NEAR END CROSSTALK (NEXT): 44.3 - 15 log₁₀(f/100) dB/100m MIN

POWER SUM NEAR END CROSSTALK (PS-NEXT): 42.3 - 15 log₁₀(f/100) dB/100m MIN

EQUAL LEVEL FAR END CROSSTALK (ELFEXT): 30 - 20 log₁₀(f/100) dB/100m MIN

POWER SUM EQUAL LEVEL FAR END CROSSTALK (PS-ELFEXT): 28 - 20 log₁₀(f/100) dB/100m MIN

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

DELTA DELAY (SKEW): 30 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP): 68%

WHERE f = FREQUENCY IN MHZ from .772 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 | min | min | min | min | min |
| .772 | 1.7 | 1.8 | 86 | 76.0 | 74.2 | 80 | 74.0 | 72.2 | - | - | - |
| 1.0 | 1.9 | 2.0 | 82 | 74.3 | 72.3 | 75 | 72.3 | 70.3 | 70.0 | 68.0 | 20.0 |
| 4.0 | 3.6 | 3.8 | 73 | 65.3 | 61.5 | 65 | 63.3 | 59.5 | 58.0 | 56.0 | 23.0 |
| 8.0 | 5.0 | 5.3 | 69 | 60.8 | 55.5 | 61 | 58.8 | 53.5 | 51.9 | 49.9 | 24.5 |
| 10.0 | 5.6 | 6.0 | 67 | 59.3 | 53.3 | 60 | 57.3 | 51.3 | 50.0 | 48.0 | 25.0 |
| 16.0 | 7.1 | 7.6 | 66 | 56.2 | 48.6 | 58 | 54.2 | 46.6 | 45.9 | 43.9 | 25.0 |
| 20.0 | 7.9 | 8.5 | 64 | 54.8 | 46.3 | 56 | 52.8 | 44.3 | 44.0 | 42.0 | 25.0 |
| 25.0 | 8.9 | 9.5 | 63 | 53.3 | 43.8 | 54 | 51.3 | 41.8 | 42.0 | 40.0 | 24.3 |
| 31.25 | 10.0 | 10.7 | 62 | 51.9 | 41.2 | 53 | 49.9 | 39.2 | 40.1 | 38.1 | 23.6 |
| 62.5 | 14.4 | 15.4 | 58 | 47.4 | 32.0 | 49 | 45.4 | 30.0 | 34.1 | 32.1 | 21.5 |
| 100.0 | 18.5 | 19.8 | 54 | 44.3 | 24.5 | 45 | 42.3 | 22.5 | 30.0 | 28.0 | 20.1 |
| 155.0 | 23.6 | 25.2 | 52 | 41.4 | 16.3 | 43 | 39.4 | 14.3 | 26.2 | 24.2 | 18.8 |
| 200.0 | 27.1 | 29.0 | 50 | 39.8 | 10.8 | 42 | 37.8 | 8.8 | 24.0 | 22.0 | 18.0 |
| 250.0 | 30.7 | 32.8 | 49 | 38.3 | 5.5 | 40 | 36.3 | 3.5 | 22.0 | 20.0 | 17.3 |
| 300.0 | 34.0 | 36.4 | 48 | 37.1 | 0.7 | 39 | 35.1 | - | 20.5 | 18.5 | 16.8 |
| 350.0 | 37.2 | 39.8 | 47 | 36.1 | - | 38 | 34.1 | - | 19.1 | 17.1 | 16.3 |
| 400.0 | 40.2 | 43.0 | 46 | 35.3 | - | 37 | 33.3 | - | 18.0 | 16.0 | 15.9 |
| 500.0 | 45.7 | 48.9 | 45 | 33.8 | - | 36 | 31.8 | - | 16.0 | 14.0 | 15.2 |
| 550.0 | 48.4 | 51.8 | 44 | 33.2 | - | 35 | 31.2 | - | - | - | 14.9 |

SWEEP TESTED TO 550 MHZ; VALUES ABOVE 250 MHZ ARE FOR ENGINEERING INFORMATION ONLY.



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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.