



# 5e LAN™

## 4 Pair #24 AWG UTP Category 5e Cable

### DESCRIPTION

UNSHIELDED TWISTED PAIR (UTP) CATEGORY 5e CABLE FOR USE IN HORIZONTAL CABLING SYSTEMS AS DESCRIBED IN ANSI/TIA/EIA 568-B. THE CABLE CONSISTS OF #24 AWG SOLID BARE COPPER INSULATED CONDUCTORS, ASSEMBLED INTO FOUR TIGHTLY TWISTED PAIRS, WITH A RIPCORD, UNDER AN OVERALL JACKET. PRINT INCLUDES DESCENDING FOOTAGE MARKERS FROM 1000 TO 0 ON EACH 1000 FT REEL OR BOX. THIS PRODUCT AND/OR ITS MANUFACTURE IS COVERED BY US PATENT NOS. 5424491 & 5563377 (PL).

THE PLENUM RATED CABLE IS FOR USE IN AIR HANDLING DUCTS AND SPACES IN ACCORDANCE WITH ARTICLE 800 OF THE NATIONAL ELECTRICAL CODE (NEC). THE CABLE IS UL (USA) & cUL (CANADA) LISTED FOR THIS APPLICATION BY PASSING NFPA 262 (UL 910 - STEINER TUNNEL) TEST.

THE RISER NON-PLENUM RATED CABLE IS FOR USE AS A VERTICAL RUN IN A SHAFT AND FOR GENERAL PURPOSE COMMUNICATIONS USE IN ACCORDANCE WITH ARTICLE 800 OF THE NEC. THE CABLE IS ETL (USA) & cETL (CANADA) LISTED FOR THIS APPLICATION BY PASSING UL 1666 RISER CABLE FLAMMABILITY TEST.

### 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, ATM UP TO 155 Mbps. REFERENCED ELECTRICALS ARE SWEEP TESTED TO 100MHz.

### INDUSTRY APPROVALS

**STANDARDS:** TIA/EIA 568-B.2 CAT 5e HORIZONTAL CABLE

**LISTINGS:** PL – UL/cUL TYPE CMP  
NP – c(ETL)us TYPE CMR

**PERFORMANCE:** ETL VERIFIED TO TIA/EIA CAT 5e

### CONSTRUCTION

**PRIMARIES:** CONDUCTOR: 24 AWG (.5 mm)  
SOLID BARE COPPER  
INSULATION:  
PL – DUAL INSULATION, FEP ON ALL 4 PAIRS  
NP – THERMOPLASTIC POLYOLEFIN

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

**COLOR CODE:** SEE TABLE 1

**CABLE ASSEMBLY:** 4 PAIRS CABLED TOGETHER

**JACKET:** PL – NO LEAD PLENUM RATED THERMOPLASTIC  
NP – NO LEAD FLAME RETARDANT THERMOPLASTIC

JACKET COLOR: SEE TABLE 2  
NOMINAL CABLE OD: PL – .180" (4.57 mm)  
NP – .183" (4.65 mm)

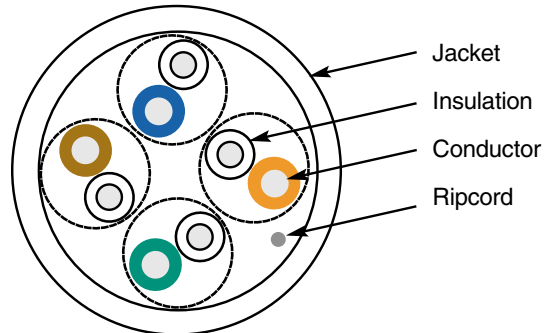


TABLE 1

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

TABLE 2

PLENUM		NON-PLENUM	
PART NUMBER	JACKET COLOR	PART NUMBER	JACKET COLOR
M57545	GRAY	M57552	DEC 068 GRAY
M57546	BLUE	M57553	BLUE
M57547	WHITE	M57554	WHITE
M57548	PINK	M57555	PINK
M57550	YELLOW	M57556	YELLOW
M57551	LIME GREEN	M57557	GREEN
M57723	BROWN	M58007	VIOLET
M57761	VIOLET	M58008	RED
M57887	RED	M58009	ORANGE
M57924	ORANGE	M58010	BLACK
M57936	BLACK	M58234	LIME GREEN
M58069	KELLEY GREEN	M58312	DK. BROWN

### PHYSICAL CHARACTERISTICS

**CABLE WEIGHT:** PL: 23 lbs/1000ft (34 kg/km)  
NP: 20 lbs/1000ft (30 kg/km)

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

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

**OPERATING TEMP.:** PL: -20°C to +60°C (-4°F to +140°F)  
NP: -34°C to +60°C (-30°F to +140°F)

**STORAGE TEMP.:** PL: -20°C to +75°C (-4°F to +167°F)  
NP: -34°C to +75°C (-30°F to +167°F)

**INSTALLATION TEMP.:** PL: 0°C to +60°C (+32°F to +140°F)  
NP: -20°C to +60°C (-4°F to +140°F)

\*THE INSTALLATION TEMPERATURE REFERS TO THE TEMPERATURE OF THE CABLE WHILE BEING INSTALLED OR PULLED. DO NOT INSTALL PLENUM CABLE BELOW 0°C (+32°F).

PL = PLENUM  
NP = NON-PLENUM

**MOHAWK / CDT**  
A DIVISION OF  
CABLE DESIGN TECHNOLOGIES

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### ELECTRICAL CHARACTERISTICS (REF TABLE 3)

<b>CONDUCTOR DCR:</b>	9.38 Ω/100m (28.6 Ω/Mft) MAX
<b>DCR UNBALANCE:</b>	5% MAX
<b>MUTUAL CAPACITANCE:</b>	46 pF/m (14 pF/ft) NOM
<b>CAPACITANCE UNBALANCE PAIR/GROUND:</b>	132 pF/100m (400 pF/Mft) MAX
<b>CHARACTERISTIC IMPEDANCE:</b>	100 Ω ± 15% (1-100 MHz)
<b>INPUT IMPEDANCE:</b>	100 Ω ± 15% (1-100 MHz)
<b>RETURN LOSS (RL):</b>	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 MHz)

**INSERTION LOSS: (ATTENUATION)**  $1.967\sqrt{f} + .023f + \frac{.050}{\sqrt{f}}$  dB/100m MAX

**NEAR END CROSSTALK (NEXT):** 36.3 - 15 log<sub>10</sub>(f/100) dB/100m MIN

**POWER SUM NEAR END CROSSTALK (PS-NEXT):** 32.3 - 15 log<sub>10</sub>(f/100) dB/100m MIN

**EQUAL LEVEL FAR END CROSSTALK (ELFEXT):** 23.8 - 20 log<sub>10</sub>(f/100) dB/100m MIN

**POWER SUM EQUAL LEVEL FAR END CROSSTALK (PS-ELFEXT):** 20.8 - 20 log<sub>10</sub>(f/100) dB/100m MIN

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

**DELTA DELAY (SKEW):** 25 ns/100m MAX

**NOMINAL VELOCITY OF PROPAGATION (NVP):** 72% PLENUM  
68% NON-PLENUM

WHERE f = FREQUENCY IN MHz from .772 to 100 MHz.

TABLE 3

### REFERENCE ELECTRICAL CHARACTERISTICS

FREQ (MHz)	ATTENUATION (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	max	avg	min	min	avg	min	min	min	min	min
.772	1.6	1.8	5.5	79	68.0	66.2	70	64.0	62.2	-	-	-
1.0	1.8	2.0	6.3	77	66.3	64.3	68	62.3	60.3	63.8	60.8	20.0
4.0	3.8	4.1	13	68	57.3	53.2	57	53.3	49.2	51.7	48.7	23.0
8.0	5.4	5.8	18	64	52.8	47.0	54	48.8	43.0	45.7	42.7	24.5
10.0	6.0	6.5	20	62	51.3	44.8	52	47.3	40.8	43.8	40.8	25.0
16.0	7.6	8.2	25	60	48.3	40.1	50	44.3	36.1	39.7	36.7	25.0
20.0	8.6	9.3	28	58	46.8	37.5	48	42.8	33.5	37.7	34.7	25.5
25.0	9.7	10.4	32	57	45.3	34.9	47	41.3	30.9	35.8	32.8	24.3
31.25	10.9	11.7	36	56	43.9	32.2	46	39.9	28.2	33.9	30.9	23.6
62.5	15.8	17.0	52	52	39.4	22.4	42	35.4	18.4	27.8	24.8	21.5
100.0	20.5	22.0	67	48	36.3	14.3	38	32.3	10.3	23.8	20.8	20.1

\*ACR - MINIMUM ATTENUATION TO CROSSTALK RATIO

Mohawk/CDT reserves the right to change specification in the interest of product enhancement.



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