



**PART # M58762**

# VersaLAN™ Category 5e I/O CM

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

## DESCRIPTION

THIS I/O (INDOOR/OUTDOOR) CABLE IS SUITABLE FOR USE IN BUILDINGS IN WET LOCATIONS AND SUITABLE FOR USE OUTDOORS IN DUCT AND FOR AERIAL LASHING. IT IS FULLY WATER BLOCKED AND HAS A BLACK SUNLIGHT RESISTANT JACKET. IT IS NOT SUITABLE FOR DIRECT BURIAL. THIS PRODUCT AND/OR ITS MANUFACTURE IS COVERED BY US PATENT NO. 5424491.

THE CABLE IS NEC RATED FOR GENERAL PURPOSE COMMUNICATIONS USE IN ACCORDANCE WITH ARTICLE 800 OF THE NATIONAL ELECTRICAL CODE (NEC). THE CABLE IS UL (USA) & cUL (CANADA) LISTED FOR THIS APPLICATION BY PASSING UL 1581 VERTICAL TRAY FLAME TEST.

THIS CABLE COMPLIES WITH THE EU-RoHS DIRECTIVE 2002/95/EC (RESTRICTIONS ON HAZARDOUS SUBSTANCES) REGULATIONS.

## 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, 550 MHz BROADBAND VIDEO AND STANDARDS UNDER DEVELOPMENT SUCH AS ATM AT 622 Mbps & 1.2 Gbps.

## CONSTRUCTION

**PRIMARIES:** CONDUCTOR: 24 AWG (.5 mm) SOLID BARE COPPER  
INSULATION: THERMOPLASTIC POLYOLEFIN

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

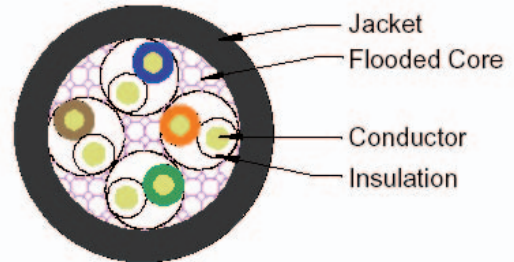
**CABLE ASSEMBLY:** 4 PAIRS CABLED TOGETHER

**COLOR CODE:** SEE TABLE 1 (WHITE CONDS HAVE INTEGRAL STRIPE TO MATCH THEIR MATE)

**JACKET:** MATERIAL: BLACK FR POLYOLEFIN  
NOMINAL WALL: .040" (1.02 mm)  
NOMINAL DIAMETER: .251 (6.38 mm)

**NOTE:** CABLE FLOODED FOR MOISTURE PROTECTION

**LISTINGS:** UL/cUL TYPE CM-LS



**TABLE 1**

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

## PHYSICAL CHARACTERISTICS

**CABLE WEIGHT:** 38 lbs/1000ft (57 kg/km)  
**BEND RADIUS:** 2.5" (61 mm) MIN (10 x CABLE OD)  
**OPERATING TEMP.:** -20°C to +60°C (-4°F to +140°F)  
**STORAGE TEMP.:** -40°C to +75°C (-40°F to +167°F)  
**INSTALLATION TEMP.\*:** -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.

## FLAME & SMOKE CHARACTERISTICS

**FLAME TESTS:** UL 1581 VERTICAL TRAY, IEEE 383, IEC 332-1, UL VW-1, CSA FT1  
**LIMITED SMOKE:** -LS PER UL 1685  
**SMOKE DENSITY:** IEC 1034  
**COMBUSTION GASSES:** IEC 754-2

Sold by:



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### ELECTRICAL CHARACTERISTICS (REF TABLE 2)

<b>STANDARDS:</b>	EXCEEDS TIA/EIA 568-B.2 CAT 5e AND ISO/IEC 11801 CAT 5 HORIZONTAL CABLE	<b>INSERTION LOSS:</b>	$1.97 \sqrt{f} + .013f + \frac{.050}{\sqrt{f}}$ dB/100m MAX
<b>VOLTAGE RATING:</b>	300 VOLTS	<b>NEAR END CROSSTALK (NEXT):</b>	$40.3 - 15 \log_{10}(f/100)$ dB/100m MIN
<b>CONDUCTOR DCR:</b>	8.9 $\Omega$ /100m (27.1 $\Omega$ /Mft) MAX	<b>POWER SUM NEAR END CROSSTALK (PS-NEXT):</b>	$38.3 - 15 \log_{10}(f/100)$ dB/100m MIN
<b>DCR UNBALANCE:</b>	3% MAX	<b>EQUAL LEVEL FAR END CROSSTALK (ELFEXT):</b>	$27.8 - 20 \log_{10}(f/100)$ dB/100m MIN
<b>MUTUAL CAPACITANCE:</b>	51.5 pF/m (15.7 pF/ft) NOM	<b>POWER SUM EQUAL LEVEL FAR END CROSSTALK (PS-ELFEXT):</b>	$24.8 - 20 \log_{10}(f/100)$ dB/100m MIN
<b>CAPACITANCE UNBALANCE PAIR/GROUND:</b>	66 pF/100m (200 pF/Mft) MAX	<b>PROPAGATION DELAY:</b>	$534 + 36 / \sqrt{f}$ ns/100m MAX
<b>CHARACTERISTIC IMPEDANCE:</b>	100 $\Omega \pm 15\%$ (1-400 MHz)	<b>DELTA DELAY (SKEW):</b>	25 ns/100m MAX
<b>INPUT IMPEDANCE:</b>	100 $\Omega \pm 15\%$ (1-100 MHz) 100 $\Omega \pm 22\%$ (>100-200 MHz)	<b>NOMINAL VELOCITY OF PROPAGATION (NVP):</b>	65%
<b>RETURN LOSS (RL):</b>	20 + 5 $\log_{10}(f)$ dB MIN (1-10 MHz) 25 dB MIN (>10-20 MHz) 25 - 7 $\log_{10}(f / 20)$ dB MIN (>20 MHz)	WHERE $f$ = FREQUENCY IN MHz from .772 to 250 MHz, except for ELFEXT and PS-ELFEXT from 1 to 250 MHz.	

TABLE 2

### 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	max	avg	min	min	avg	min	min	min	min	min
.772	1.6	1.8	5.5	82	72.0	72.2	75	70.0	68.2	-	-	-
1.0	1.8	2.0	6.2	80	70.3	70.3	73	68.3	66.3	67.8	64.8	20.0
4.0	3.6	4.0	12.2	70	61.3	59.3	63	59.3	55.3	55.8	52.8	23.0
8.0	5.2	5.7	17.4	66	56.8	53.1	59	54.8	49.1	49.7	46.7	24.5
10.0	5.8	6.4	19.4	64	55.3	50.9	58	53.3	46.9	47.8	44.8	25.0
16.0	7.3	8.1	24.7	62	52.2	46.1	56	50.2	42.1	43.7	40.7	25.0
20.0	8.3	9.1	27.7	60	50.8	43.7	54	48.8	39.7	41.8	38.8	25.0
25.0	9.3	10.2	31.0	59	49.3	41.1	52	47.3	37.1	39.8	36.8	24.3
31.25	10.4	11.4	34.8	58	47.9	38.5	51	45.9	34.5	37.9	34.9	23.6
62.5	15.1	16.4	50	54	43.4	29.0	47	41.4	25.0	31.9	28.9	21.5
100.0	19.6	21.0	64	50	40.3	21.3	43	38.3	17.3	27.8	24.8	20.1
155.0	25.0	26.6	81	48	37.4	12.9	41	35.4	8.9	24.0	21.0	18.8
200.0	28.8	30.5	93	46	35.8	7.3	40	33.8	3.3	21.8	18.8	18.0
250.0	32.8	34.4	105	45	34.3	1.9	38	32.3	-	19.8	16.8	17.3
300.0	36.5	38.0	116	44	33.1	-	37	31.1	-	-	-	16.8
350.0	40.0	41.4	126	43	32.1	-	36	30.1	-	-	-	16.3
400.0	43.2	44.6	136	42	31.3	-	35	29.3	-	-	-	15.9

VALUES ABOVE 250 MHz ARE FOR ENGINEERING INFORMATION ONLY.

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



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