

PowerCat 6 500 Cable >

The Molex PowerCat 6-500 is a premium Category 6 U/UTP cable that is ideal for supporting high speed Gigabit Ethernet networks. This cable is key component of the Molex PowerCat 6 end-to-end solution.

Molex PowerCat 6 500 Cable is intended for high speed data applications including IEEE 802.3 1000BASE-T, 100BASE-TX, 10BASE-T

FEATURES AND ADVANTAGES

Specified to 350MHz and tested to 500MHz

ETL verified to TIA-568.2-D Category 6 standard

Electrical performance characteristics, including balance, guaranteed across entire frequency range

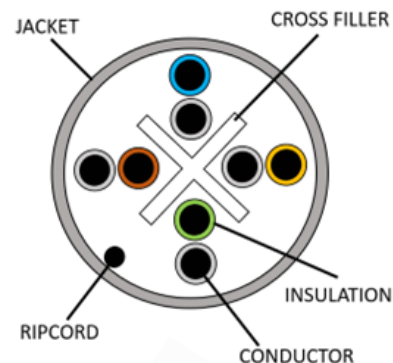
Cross filler provides improved electrical performance

1000 feet to 0 foot markers

Robust box design minimizes tangles during installation

RoHS compliant

23 AWG Copper Conductors



SPECIFICATIONS

Commercial Standards

North American:

TIA-568.2-D Category 6

International:

ISO/IEC 11801

Fire Propagation Tests

Riser:

UL 1666, CMR, CMG, IEC 332-1, C(UL)

Plenum: NFPA 262, CMP

Mechanical Characteristics:

Riser

Conductor: Bare Copper Wire 23 AWG

Cable Diameter in. (mm): 0.230 (5.84)

Nominal Cable Weight lb./kft. (kg/km):

25 (11.34)

Sheath: PVC

Max Installation Tension lb. (N):

25 (110)

Min. bend radius in. (mm):

1.0 (25.4)

Plenum

Conductor: Bare Copper Wire 23 AWG

Insulation: Thermoplastic Ø 0.040 inches (1.016 mm)

Conductor size: 0.225 (5.72)

Cable Diameter in. (mm): 0.210 (5.4)

Sheath: Plenum rated PVC halogen

Nominal Cable Weight lb./kft. (kg/km):

26lbs/kft (38.70kg/km)

Max Installation Tension lb. (N):

25 (110)

Min. bend radius in. (mm): 1.0 (25.4)

Pulling tension: 110 N (25 lbf)

Color Code

Pair 1: White/Blue

Pair 2: White/Orange

Pair 3: White/Green

Pair 4: White/Brown

Electrical Characteristics

Mutual Capacitance: 5.1nF/100m nom

DC resistance unbalance: Max 5% at 20°C

DC Resistance max: 9.38Ω/100m Max.

Skew: 45ns/100m Max. Pair to Ground

Pair-to-Ground Unbalance : 330 pF/100m Max.

Nominal Velocity of Propagation NVP):

Riser and Plenum: 68% nominal

Temperature Rating

Installation: 0 °C to + 50 °C

Operation: -20 °C to +60 °C

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SPECIFICATIONS (CONT.)

PoE

Our PowerCat 6 system is suitable for PoE applications as defined below:

IEEE 802.3bt from Type 1 to Type 4, and CISCO UPoE+

Notes:

For new installations of PoE Type 3 / Class 5 and above that wish to be eligible for the Molex 25 year Application Assurance Warranty, we require Category 6A cable to be used throughout.

To confirm your PoE / RP3 cabling design is eligible for the Molex 25 year Application Assurance Warranty, your design must be verified and validated with the Molex PoE Calculator. Read more

<https://www.molexces.com/poe-calculator>

Molex recommends that the PoE feature on an individual switch port are power disabled prior to unplugging the associated powered Device.

Molex recommends that the full range of PowerCat 6 products be used in a system to maximize cabling and PoE performance. Details on Molex requirements for Warranty can be found at

<https://www.molexces.com/about-us/our-warranty/>

Freq MHz	RL (dB)		Insertion Loss (dB/100)		PS NEXT (dB)		NEXT (dB)		ACR (dB @ 100m)	
	Min	Typical	Min	Typical	Min	Typical	Min	Typical	Min	Typical
1	20.0	20.0	2.0	2.0	72.3	77.3	74.3	79.3	72.3	77.3
4	23.0	23.6	3.8	3.8	63.3	68.3	65.3	70.3	61.5	66.5
10	25.0	26.0	6.0	5.9	57.3	62.3	59.3	64.3	53.3	58.4
16	25.0	26.0	7.6	7.5	54.2	59.2	56.2	61.2	48.7	53.7
20	25.0	26.0	8.5	8.4	52.8	57.8	54.8	59.8	46.3	51.4
31.25	23.6	25.0	10.7	10.6	49.9	54.9	51.9	56.9	41.2	46.3
62.5	21.5	23.5	15.4	15.3	45.4	50.4	47.4	52.4	32.0	37.1
100	20.1	22.5	19.8	19.7	42.3	47.3	44.3	49.3	24.5	29.6
150	18.9	21.6	24.7	24.5	39.7	44.7	41.7	46.7	16.9	22.1
200	18.0	21.0	29.0	28.8	37.8	42.8	39.8	44.8	10.8	16.0
250	17.3	20.5	32.8	32.6	36.3	41.3	38.3	43.3	5.5	10.7
300		20.1		36.2		40.1		42.1		6.0
350		19.8		39.5		39.1		41.1		1.6
400*		19.5		42.7		38.3		40.3		
450*		19.2		45.7		37.5		39.5		
500*		19.0		48.6		36.8		38.8		

*Molex PowerCat 6-500 cable is guaranteed between 1 MHz and 350 MHz; any values above 350 MHz should be marked as reference only and not a part of the product guarantee.

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SPECIFICATIONS (CONT.)

FREQ MHz	ACRF (dB/100 m)		PSACRF (dB/100 m)		LCL/TCL (dB)	EL TCTL (dB)
	Min.	Typical	Min.	Typical	Min.	min.
1	67.8	72.8	64.8	69.8	40.0	35.0
4	55.8	60.8	52.8	57.8	40.0	23.0
10	47.8	52.8	44.8	49.8	40.0	15.0
16	43.7	48.7	40.7	45.7	38.0	10.9
20	41.8	46.8	38.8	43.8	37.0	9.0
31.25	37.9	42.9	34.9	39.9	35.1	
62.5	31.9	36.9	28.9	33.9	32.0	
100	27.8	32.8	24.8	29.8	30.0	
150	24.3	29.3	21.3	26.3	28.2	
200	21.8	26.8	18.8	23.8	27.0	
250	19.8	24.8	16.8	21.8	26.0	
300		23.3		20.3	25.2	
350		21.9		18.9	24.6	
400*		20.8		17.8	24.0	
450*		19.7		16.7	23.5	
500*		18.8		15.8	23.0	

*PSACR is guaranteed for Molex 6-500 cable to 250 MHz. ACR and PSACR for the TIA specification are provided as calculation reference only.

ORDERING INFORMATION

Order No	SAP No	Description
CAA-0181R-02	181700025	PowerCat 6-500 Riser Cable 1000ft Box white
CAA-0181R-08	181700023	PowerCat 6-500 Riser Cable 1000ft Box Lt gray
CAA-0181R-BL	181700024	PowerCat 6-500 Riser Cable 1000ft Box Lt blue
CAA-0181P-02	181700030	PowerCat 6-500 Plenum Cable 1000ft Box white
CAA-0181P-08	181700028	PowerCat 6-500 Plenum Cable 1000ft Box Lt gray
CAA-0181P-BL	181700031	PowerCat 6-500 Plenum Cable 1000ft Box Lt blue

NOTE: Standard Lengths: 1,000 feet (305 meters). Specifications subject to change without notice. Other colors available, lead time may vary

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