

Category 6 Cable for High-Power PoE Applications

Future-proof your installations with the
GenSPEED[®] EfficienC[™] Max Category 6 cable.

Exceeds Proposed PoE++ IEEE 802.3bt Standards

The EfficienC Max Category 6 cable goes beyond the proposed IEEE 802.3bt standard of 49 W to up to **100 W*** for even more coverage of high-wattage equipment.

Large-Gauge Conductors for High-Powered Applications

The 22 AWG conductors provide reduced heat generation, higher maximum current carrying capabilities and improved attenuation performance. According to TIA TSB-184:2009, minimizing the cabling temperature rise is recommended as it:

- Reduces the impact on the transmission performance (e.g., insertion loss) of the cabling
- Minimizes the need for auxiliary mechanical cooling in cable raceways and pathways
- Allows operation in higher ambient temperatures without exceeding the cable temperature rating
- Permits greater cable density and use of larger cable groups and bundles
- Reduces the overall cost of delivering power by minimizing the resistive heating loss [power dissipated in the cabling]

Cable Temperature Rating Beyond Standard Requirements

General Cable's EfficienC Max cable is rated to 90°C and constructed of 100% fluoropolymer insulation to offer higher protection against increased operating temperatures and:

- Surpasses the industry standard of 60°C
- Prevents material degradation from elevated temperatures over extended periods
- Reduces impact of high-powered non-standard PoE applications

**100 W value calculated assuming 50 V circuit per TIA TSB-184:2009 test method.*



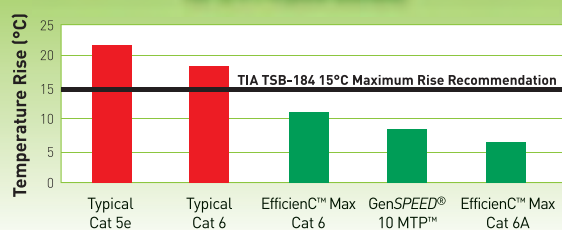
22 AWG
Conductors
for Increased
Heat Capacity

Cable
Temperature
Rated to 90°C

Supports up to
100 W*
to PoE Devices



Temperature Rise Over Ambient at 1000 mA/Pair
for a 91-Cable Bundle



EfficienC Max Performance

Legacy cabling solutions do not typically have the ability to carry loads of 1000 mA per pair or greater without exceeding the TIA TSB-184:2009 recommended 15°C max heat rise figures. General Cable's **EfficienC Max** line of products is designed for use in higher current loads while meeting this TIA guidance.

In a 91-cable bundle, typical category 5e and category 6 cabling fails to meet the maximum recommended heat rise of 15°C at 1000 mA.

EfficienC Max Cat 6 offers a low-cost solution of efficient power delivery with performance exceeding the TIA recommended heat rise figures without having to incur Category 6A pricing.

EfficienC™ Max Category 6 Plenum Cable

FEATURES & BENEFITS

- 100% fluoropolymer insulation construction
- Performance guaranteed to 350 MHz
- Guaranteed 7% Insertion Loss improvement over Category 6 industry standard, substantially increasing headroom of ACR and PSACR
- TRU-Mark® print legend contains footage markings from 1000' to 0'
- Made in U.S.A.

APPLICATIONS

- IEEE 802.3: 1000 BASE-T, 100 BASE-TX, 10 BASE-T, PoE, PoE+
- ANSI/TIA 854: 1000 BASE-TX
- Digital Video
- Broadband and Baseband Analog Video
- CDDI, Token Ring, ATM
- Supports the growth of higher-wattage devices (IT/IP, IoT, and IoE)
- Compatible with new higher-speed, higher-power USB 3.1 SuperSpeed

STANDARD COMPLIANCES

- ANSI/TIA 568-C.2
- TIA TSB-184:2009
- NEC/CEC Type CMP (NFPA 262) for Plenum
- RoHS Compliant Directive 2011/65/EU
- UL 444
- ANSI/TIA 862 (Building Automation)
- ICEA S-116-732
- ICEA S-102-700
- ISO/IEC 11801 Ed. 2.0 (Class E)



CONSTRUCTION

Conductors

- 22 AWG solid bare annealed copper

Insulation

- Fluoropolymer

Color Code

- Pair 1: Blue-White/Blue
- Pair 2: Orange-White/Orange
- Pair 3: Green-White/Green
- Pair 4: Brown-White/Brown

Separator

- Divider

Rip Cord

- Applied longitudinally under jacket

Jacket

- Low-smoke, flame-retardant PVC

PHYSICAL DATA

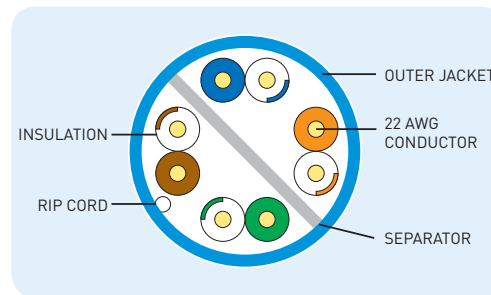
Nominal Cable Diameter (in)	0.220
Nominal Cable Weight (lbs/1000 ft)	29.0
Minimum Bend Radius (in)	1.0
Maximum Pulling Force (lbs)	32
Temperature Rating (°C)	
Installation:	0 to +60
Operation:	-20 to +90

PART NUMBERS

Standard Packaging: 1000' Pull-Pac® II

Jacket Color	Part Number
Blue	8133800
White	8133801
Yellow	8133802
Gray	8133803
Red	8133804
Orange	8133805
Green	8133806

EfficienC™ Max Cat 6 CROSS-SECTION



ELECTRICAL CHARACTERISTICS

	Max.	Nom.
DC Resistance Ohms/100 m (328 ft) @ 20° C	9.38	6.5
DC Resistance Unbalanced Individual Pair %	4.00	< 1
Delay Skew ns/100 m	45	35
Nom. Velocity of Propagation % Speed of Light	74	
Characteristic Impedance Frequency (f): 1-350 MHz	Ohms 100 ± 15	

ELECTRICAL PERFORMANCE

Frequency MHz	PSACR* (min)	ACR* (min)	Insertion Loss (max)	PSNEXT (min)	NEXT (min)	PSACRF (min)	ACRF (min)	Return Loss (min)	TCL (min)
1	70.4	72.4	1.9	72.3	74.3	64.8	67.8	20.0	40.0
4	59.8	61.8	3.5	63.3	65.3	52.8	55.7	23.0	40.0
10	51.8	53.8	5.5	57.3	59.3	44.8	47.8	25.0	40.0
16	47.2	49.2	7.0	54.2	56.2	40.7	43.7	25.0	38.0
20	44.9	46.9	7.9	52.8	54.8	38.8	41.7	25.0	37.0
31.25	40.0	42.0	9.9	49.9	51.9	34.9	37.9	23.6	35.1
62.5	31.1	33.1	14.3	45.4	47.4	28.9	31.8	21.5	32.0
100	23.9	25.9	18.4	42.3	44.3	24.8	27.8	20.1	30.0
150	16.7	18.7	23.0	39.7	41.7	21.3	24.3	18.9	28.2
200	10.8	12.8	27.0	37.8	39.8	18.8	21.8	18.0	27.0
250	5.7	7.7	30.6	36.3	38.3	16.8	19.8	17.3	26.0
350	—	—	37.0	34.1	36.1	13.9	16.9	16.3	—
400	—	—	40.0	33.3	35.3	12.8	15.8	15.9	—
500	—	—	45.5	31.8	33.8	10.8	13.8	15.2	—

Note: Values are expressed in dB per 100 m (328 ft.) length @ 20°C. Results beyond 350MHz are for reference only.
*PSACR & ACR not specified in ANSI/TIA 568-C.2