

Industrial, Ruggedized & Hybrid Composite Fiber Cable

Ruggedized Loose-Tube · Hybrid Fiber+Copper | Industrial Automation · Security · Renewables

PRODUCT OVERVIEW

Mirabel Energy USA industrial and hybrid composite fiber cables are designed for the demanding environments encountered in manufacturing automation, process control, security systems, renewable energy sites, and industrial communications infrastructure. Ruggedized loose-tube designs provide moisture protection without gel, with reinforced strength members and heavy-duty jackets rated for continuous flex, chemical exposure, and temperature extremes. Hybrid composite cables combine fiber optic strands with copper conductors in a single jacket — enabling simultaneous data transmission and power delivery (including PoE) over a single cable run. This configuration is widely adopted for IP surveillance cameras, industrial IoT sensors, outdoor access control, and renewable energy monitoring systems where conduit space is limited and running separate fiber and power cables is impractical.

Single Jacket Fiber + Copper	Up to 90W PoE Ready	-40°C to 85°C Temp Range	Continuous Flex Flex Rating
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APPLICATIONS

- Industrial automation and factory floor fiber communications
- IP video surveillance — fiber data + PoE copper in single run
- Renewable energy site (solar/wind) monitoring and control fiber
- Outdoor access control and perimeter security systems
- Process control, SCADA, and industrial IoT sensor networks
- Oil and gas facility instrumentation and communications cabling

KEY SPECIFICATIONS

- Ruggedized loose-tube: gel-free moisture block, aramid strength members
- Hybrid composite: 2–12 OS2/OM4 fibers + 2–8 copper conductors, single jacket
- PoE+ (30W) and PoE++ (90W) rated copper pairs in hybrid constructions
- Heavy-duty TPE or PUR outer jacket — oil, chemical, and UV resistant
- Continuous flex versions available for robotic and drag-chain applications
- Operating temperature: -40°C to 85°C (standard) / -55°C to 85°C (extreme cold)
- Flame-retardant and LSZH options for enclosed industrial spaces
- Available with and without overall shield (OS) for EMI-sensitive environments

TECHNICAL SPECIFICATIONS

Parameter	Ruggedized Loose-Tube	Hybrid Fiber+Copper
Fiber Count	4–48	2–12 fibers
Copper Pairs	None	2–8 pairs (PoE rated)
Jacket Material	TPE / PUR	TPE / PUR
Operating Temp.	-40°C to 85°C	-40°C to 85°C
Flex Rating	Static / Flex	Static / Continuous flex
EMI Shielding	Optional OS	Optional OS
Water Blocking	Gel-free dry-block	Gel-free dry-block

PART / ORDER INFO Custom fiber+copper configurations available Gel-free Continuous flex grades	STOCKING LOCATIONS Reno, NV · Houston, TX Project-phased delivery available	OEM REPRESENTATIVE GCP Energy LLC — Salt Lake City, UT portal.gcpenergy.us
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