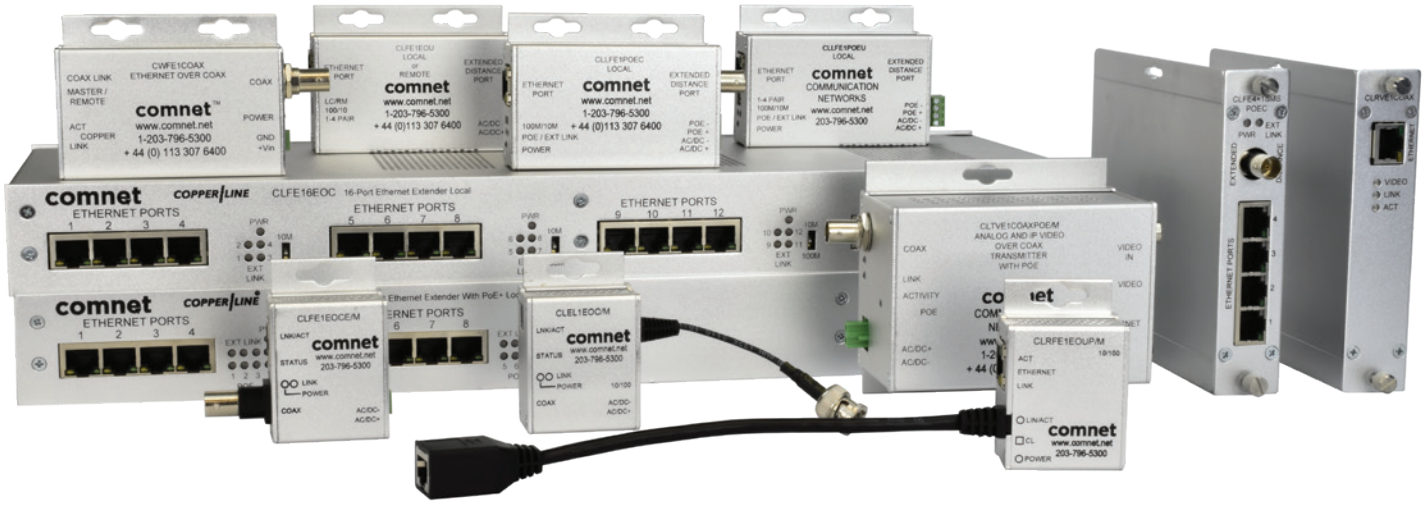
comnet
Communication Networks



COPPERLINE®

Ethernet over Copper Transmission Extenders

Ethernet Transmission over Coaxial or UTP Cable

Fiber Optic and Ethernet Network Solutions

COPPERLINE® FROM COMNET

Ethernet over Copper

CopperLine® is an advanced and unique technology that extends Ethernet networks beyond the 100-meter limitation encountered when using UTP for IP Video and Ethernet-based applications. CopperLine® is a cost-saving alternative that enables you to use existing coaxial and UTP cables for significantly greater Ethernet transmission distances.

Choose CopperLine®:

- Longest Available Transmission Distances
- All CLFE(X)EOC Coax and CLFE(X)EOU UTP Models Support Pass-Through PoE
- All CL(L,R)FE(X)POEC and CL(L,R)FE(X)POEU Models Support PoE+ Power Injection and Pass-Through Power
- Fixed Data Rate at Maximum Specified Distance
- Consumes Less than 1 Watt per Port
- Price and Performance – CopperLine®

CopperLine® Features

- Extends Ethernet networks beyond 100 m limitations for CCTV and IT projects
- Cost-effective
- Extends standard Ethernet:
  - » 10BaseT up to 3,000 ft (914 m) and 100BaseT up to 2,000 ft (610 m) over UTP
  - » 10BaseT up to 5,000 ft (1,524 m) and 100BaseT up to 2,000 ft (610 m) over Coax
- Switch-selectable LAN rate optimizes the best possible rate/distance design for each application
- High data rate – ideal for high bandwidth requirements of Mega-pixel cameras or multiple IP cameras
- Compatible with any LAN device – fully transparent to Ethernet networks and higher layer protocols
- Easy to install – no IP address programming or other networking setup required
- Indicating LEDs for link status and data rate
- Very low power – remote units can share power supply with camera
- Now form- and fit-compatible with all ComNet Products
- Lifetime Warranty
- Designed and made in the USA using a unique state-of-the-art data transmission technology

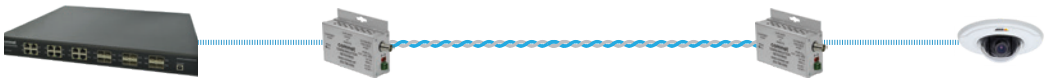
AGENCY COMPLIANCE

RoHS Low Power Consumption

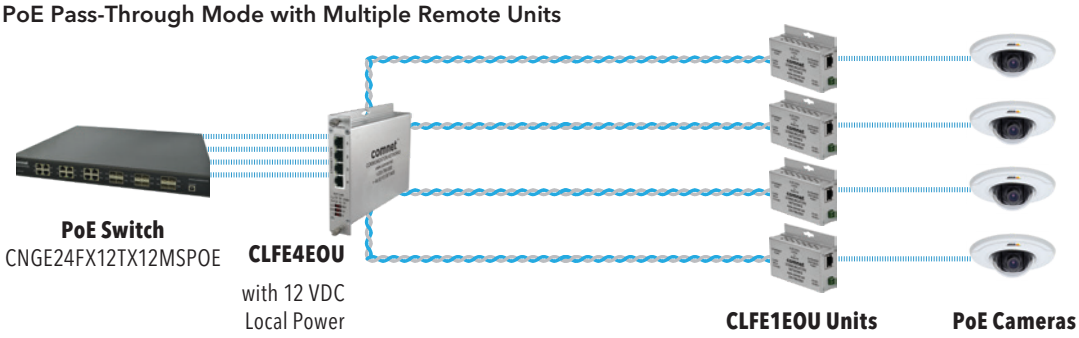
Ethernet-over-Copper Extenders with Pass-Through PoE

The ComNet CopperLine® Ethernet over copper line supports up to sixteen channels of 10/100Mbps Ethernet with Pass-through PoE over twisted pair cable (CAT-5, UTP), or over coaxial cable. The single channel units may be powered by a PoE switch or the included power supply. Four, eight, and sixteen channel units operate from local power. These units provide the ultimate flexibility for extending a powered device (PD) over long distance UTP or coax. DIP switches are provided for user-selection of local or remote, 10 or 100Mbps, and 1 pair or 4 pair (UTP) settings.

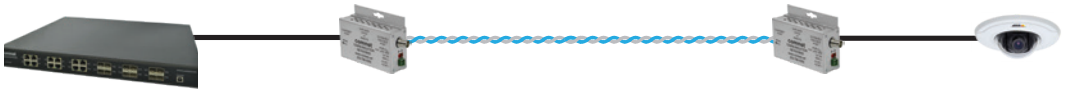
PoE Pass-Through Mode



PoE Pass-Through Mode with Multiple Remote Units



Non-PoE Mode



CopperLine® Ethernet over Unshielded Twisted Pair (UTP)

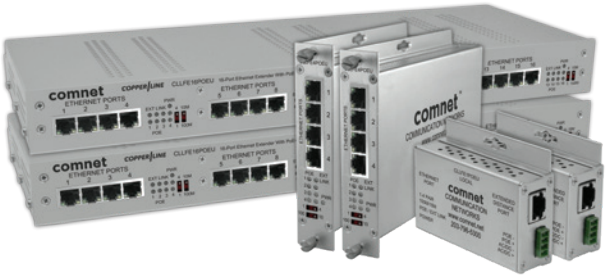
Model	Ports	Function
CLFE1EOU	1	1 channel Ethernet over UTP with Pass-through PoE
CLFE4EOU	4	4 channel Ethernet over UTP with Pass-through PoE
CLFE8EOU	8	8 channel Ethernet over UTP with Pass-through PoE
CLFE16EOU	16	16 channel Ethernet over UTP with Pass-through PoE

CopperLine® Ethernet over Coaxial Cable

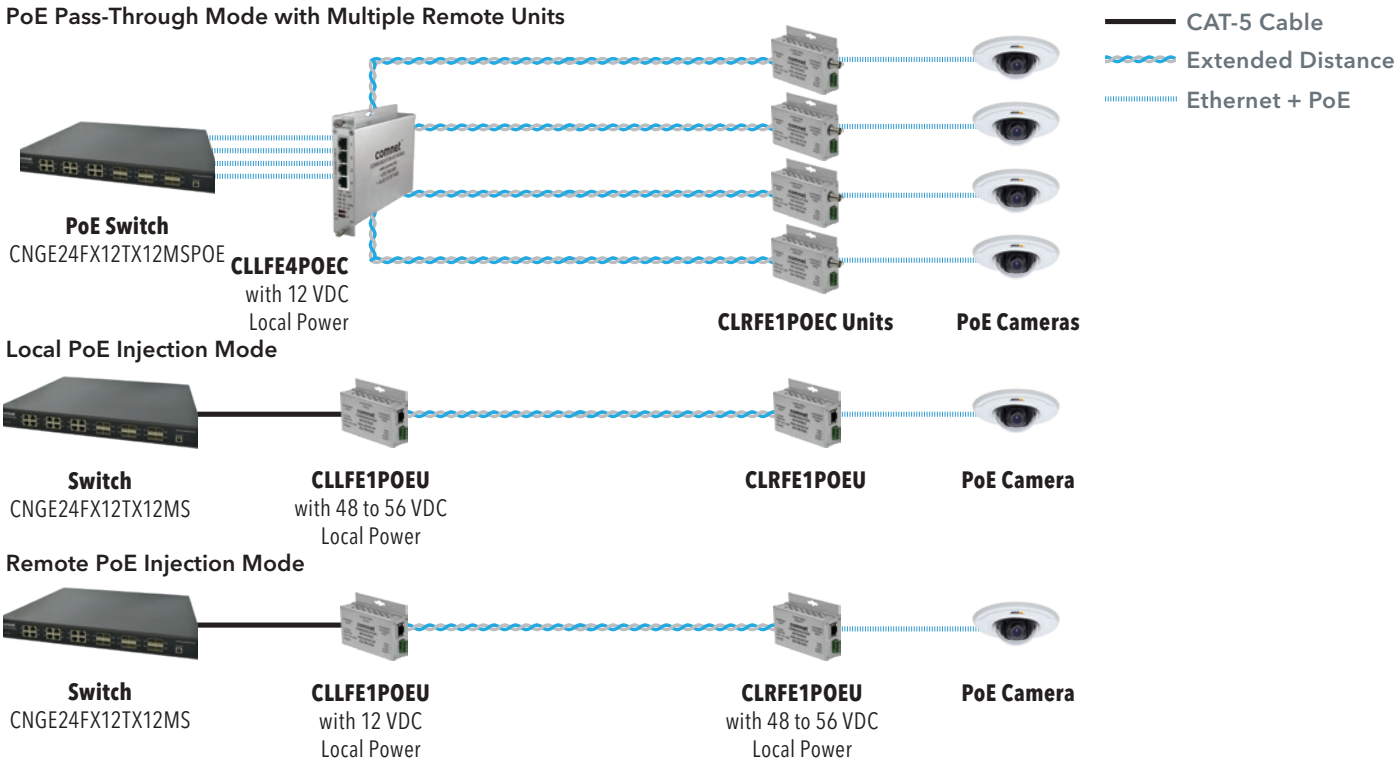
Model	Ports	Function
CLFE1EOC	1	1 channel Ethernet over Coaxial Cable with Pass-through PoE
CLFE4EOC	4	4 channel Ethernet over Coaxial Cable with Pass-through PoE
CLFE8EOC	8	8 channel Ethernet over Coaxial Cable with Pass-through PoE
CLFE16EOC	16	16 channel Ethernet over Coaxial Cable with Pass-through PoE

COPPERLINE® FROM COMNET

Ethernet-over-Copper Extenders With 30 Watt PSE PoE+



The ComNet CopperLine® Ethernet over copper line has a completely new look and is now form and fit compatible with all ComNet products. With a greater focus on providing PoE power to devices on the network, the CL(L,R)FE(X)POE(C,U) line can act as power sourcing equipment (PSE) or pass through power from a different source. Available in one, four, eight and sixteen port models, the CL(L,R)FE(X)POE(C,U) line can transmit 10/100Mbps Ethernet with PoE+ Power Injection or Pass-through PoE+ over twisted pair cable (CAT-5, UTP) or over coax. You can connect this series directly to a PoE+ switch, or it can source PoE+ power with a 48 to 56 Volt input to either the Local or Remote ends. The CL(L,R)FE(X)POE(C,U) line can provide great flexibility for extending the distance of a powered device over longer copper media distances.



CopperLine® Ethernet over Unshielded Twisted Pair (UTP) with PSE PoE and Pass-through PoE

Local Model	Remote Model	Function
CLLFE1POEU	CLRFE1POEU	1 channel Ethernet over UTP with Pass-through PoE and PSE PoE
CLLFE4POEU	CLRFE4POEU	4 channel Ethernet over UTP with Pass-through PoE and PSE PoE
CLLFE8POEU	n/a	8 channel Ethernet over UTP with Pass-through PoE and PSE PoE
CLLFE16POEU	n/a	16 channel Ethernet over UTP with Pass-through PoE and PSE PoE

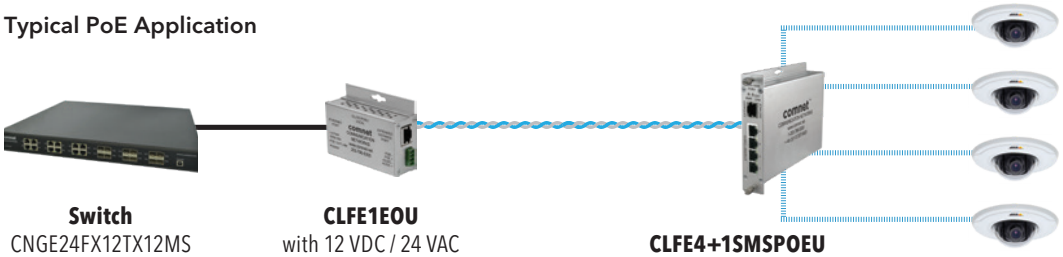
CopperLine® Ethernet over Coaxial Cable with PSE PoE and Pass-through PoE

Local Model	Remote Model	Function
CLLFE1POEC	CLRFE1POEC	1 channel Ethernet over Coaxial Cable with Pass-through PoE and PSE PoE
CLLFE4POEC	CLRFE4POEC	4 channel Ethernet over Coaxial Cable with Pass-through PoE and PSE PoE
CLLFE8POEC	n/a	8 channel Ethernet over Coaxial Cable with Pass-through PoE and PSE PoE
CLLFE16POEC	n/a	16 channel Ethernet over Coaxial Cable with Pass-through PoE and PSE PoE

10/100 Mbps 4+1 Ethernet Self-Managed Switches with 30 Watt Power over Ethernet (PoE+)

The ComNet CLFE4+1SMS[POE](C,U) is a five-port Ethernet over coaxial cable/UTP self-managed switch with uplink management functionality and features four copper ports operating at 10/100 Mbps and is designed to combine four electrical ports into a single electrical CAT-5, UTP or coax CopperLine® port that forwards this data to the next network device. No programming required to use this product. The CLFE4+1SMS comes pre-programmed; preventing network video flooding with DIP switch selection of the fifth electrical port as uplink or as an unmanaged switch. When paired with a 48 to 56 VDC power supply, Ports 1–4 of the CLFE4+1SMSPOE can supply up to thirty watts of PoE to each port and incorporate PoE+ features based on the IEEE 802.3af/at standard.

Typical PoE Application



** For non-PoE applications, use the CLFE4+1SMS(C,U) with a 12 VDC Power Supply*

CopperLine® Self-Managed Switch – Ethernet over Unshielded Twisted Pair (UTP)

Model	Function
CLFE4+1SMSU	4 Port 10/100 Mbps Ethernet Self-Managed Switch, UTP CopperLine® Uplink Port
CLFE4+1SMSPOEU	4 Port 10/100 Mbps Ethernet Self-Managed Switch, PoE+, UTP CopperLine® Uplink Port

CopperLine® Self-Managed Switch – Ethernet over Coaxial Cable

Model	Function
CLFE4+1SMSC	4 Port 10/100 Mbps Ethernet Self-Managed Switch, Coaxial CopperLine® Uplink Port
CLFE4+1SMSPOEC	4 Port 10/100 Mbps Ethernet Self-Managed Switch, PoE+, Coaxial CopperLine® Uplink Port

Commercial Managed Transport System with 30 W PoE+

The ComNet CTS24+2 commercial grade managed Ethernet transport system provides up to 24 ports of 10/100 Ethernet and two ports of 10/100/1000TX or 100/1000FX transmission. The system includes a chassis with optional PoE supplies of 400 or 1000 Watts. Up to three 8 channel modules can be ordered to populate the system. These modules are offered in conventional CAT5/6 10/100 Mbps Ethernet, optical SFP supporting 100FX, or CopperLine® interfaces of either Coax or UTP.

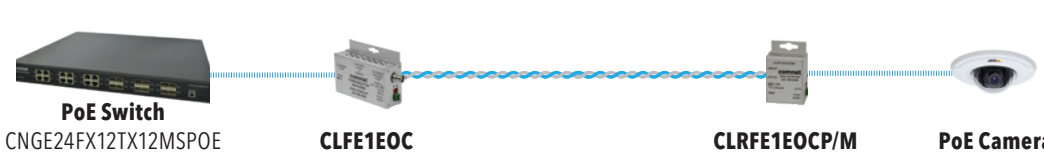
Model	Function
CTS24+2	CTS Commercial Grade Modular Ethernet Managed Switch Chassis with Power Supply
CTS24+2POE	CTS Commercial Grade Modular Ethernet Managed Switch Chassis with 400 W Power Supply
CTS24+2POE1	CTS Commercial Grade Modular Ethernet Managed Switch Chassis with 720 W Power Supply
CTS8FETX	8 Channel 10/100 TX Module with RJ-45 Interface
CTS8FESFP	8 Channel 100 FX Module with SFP Interface (SFPs sold separately)
CTS8EOC	8 Channel CopperLine® Module with BNC Coaxial Cable Interface
CTS8EOU	8 Channel CopperLine® Module with RJ-45 UTP Cable Interface
CTS24+2SFP	CTS Chassis with 24 100 FX SFP Ports and Power Supply
CTS24+2EOCPOE	CTS Chassis with 24 CopperLine® Ports with BNC Coaxial Cable Interface and 400 W PoE Power Supply
CTS24+2TXPOE	CTS Chassis with 24 10/100 TX RJ-45 Standard Ports and 400 W PoE Power Supply
CTS24+2EOUPOE	CTS Chassis with 24 CopperLine® Ports with RJ-45 UTP Cable Interface and 400 W PoE Power Supply

COPPERLINE® FROM COMNET

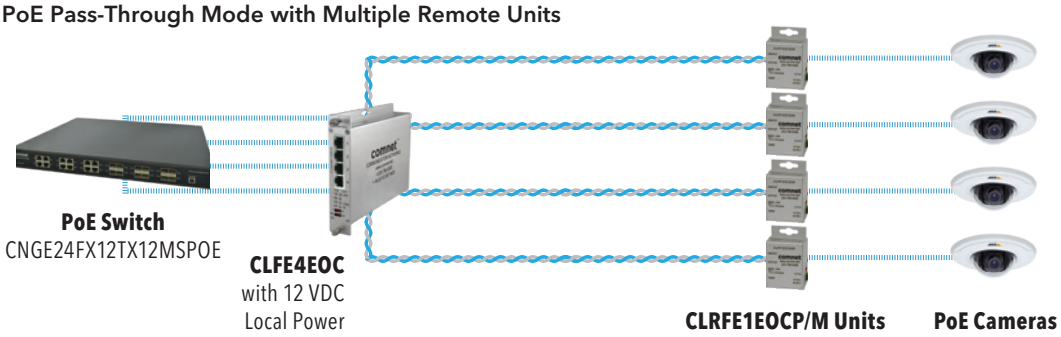
Mini Ethernet-over-Coax Extender Remote Units Powered by External or PoE Source

These Ethernet-over-coax minis are an ultra-small form factor addition to the ComNet CopperLine® product family. These miniature remote units provide 10/100 Mbps Ethernet data with or without Pass-through PoE power over extended distance coaxial cable. Available in both standard and PoE applications, the mini CopperLine® CLRFE1EOC/M units will allow extended distance over copper to be used in applications where space is extremely limited. Automatically configured as remote units, and with user configurable selection of 10 Mbps or 100 Mbps speed these units are simple to install and fully compatible with most CopperLine® products.

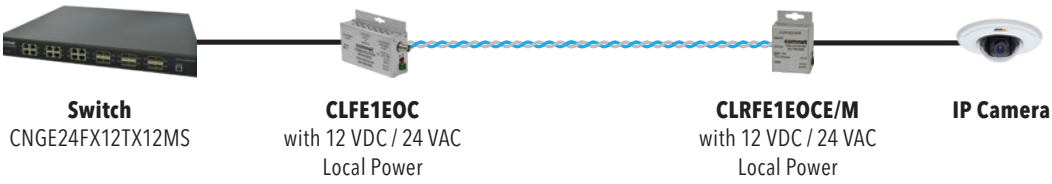
PoE Pass-Through Mode



PoE Pass-Through Mode with Multiple Remote Units



Non-PoE Mode



CopperLine® Mini Ethernet-over-Coax Extender Remote Units

Model	Function
CLRFE1EOCE/M	Miniature CopperLine® Single Channel Ethernet over Coax External Power, Remote
CLRFE1EOCP/M	Miniature CopperLine® Single Channel Ethernet over Coax PoE Powered, Remote
CLRFE1EOUP/M	Miniature CopperLine Single Channel Ethernet over UTP

10/100 Mbps Ethernet Repeater with 60 W Pass-Through PoE++

The ComNet CNFE1RPT can be used to double the distance to 656 feet (200 meters) or multiple units can be combined in series with each unit providing an additional 328 feet (100 meters) of full unrestricted 10/100 Mbps bandwidth. They are powered by pass-through PoE and require no local power. Low power consumption ensures for maximum power to the remote PD device.

Model	Function
CNFE1RPT	Tube 1 Channel 10/100 Mbps Ethernet Repeater with 60 W PoE Pass-Through
CNFE1RPT/PD	Tube, 1 Channel 10/100 Mbps Ethernet Repeater with 60 W PoE Pass-Through
CNFE1RPT/M	Mini, 1 Channel 10/100 Mbps Ethernet Repeater with 60 W PoE Pass-Through
CNFE1RPT/PD/M	Mini, 1 Channel 10/100Mb Ethernet Repeater with 60 W PoE Pass-Through

Simultaneous Analog and IP Video up to 500 m over COAX

The ComNet CL(T,R)VE1COAX[POE][/M] allows you to combine composite analog baseband video and 10/100T(X) Ethernet on a single RG59 coaxial cable and transmit it up to 500 meters. This model is for applications where the addition of IP Video to an existing analog video system is required. The CLTVE1COAXPOE[/M] models can provide power to the camera via PoE.

Model	Function
CLTVE1COAX/M	Medium Size Surface Mount Analog and IP Video over COAX Transmitter
CLTVE1COAXPOE/M	Medium Size Surface Mount Analog and IP Video over COAX Transmitter with POE
CLRVE1COAX/M	Medium Size Surface Mount Analog and IP Video over COAX Receiver
CLRVE1COAX	ComFit 1 Channel Analog and IP Video over COAX Receiver
CLRVE2COAX	ComFit 2 Channel Analog and IP Video over COAX Receiver

Small Form-Factor Pluggable Copper Range Extender Modules

The ComNet CopperLine® CL-SFP is a small form-factor pluggable Ethernet extender module that improves bandwidth and distance of existing copper networks. It helps avoid installation costs of new fiber lines on site by allowing full 10 Mbps or 100 Mbps Ethernet bandwidth to be extended over 2-wire twisted pair or coaxial cable.
Housed in a small form-factor pluggable (SFP) module enclosure, it is designed for plug-and-play installation into any 100BASE-FX Ethernet unit with an MSA-compliant port. These must be used in pairs, with a CL-SFP module installed at both ends of the connection, or a CopperLine® unit installed at one end.

Model	Function
CL-SFP1	10 Mbps Copper Range Extending SFP
CL-SFP3	100 Mbps Copper Range Extending SFP

CAT-5 Cable
Extended Distance

CopperLine® Accessories

Model	Function
CLSETUP	IP Camera Setup and PoE Tester
CLESP	Single Port Ethernet Voltage Transient & Surge Protector
CLRJ2COAX	RJ-45 Plug-to-Coax (BNC) – for use with CL-SFP(X) only
CLRJ2COAXCAB	RJ-45 Plug-to-Coax (BNC) Cable Assembly – for use with CL-SFP(X) only

Complete Product Documentation

The complete CopperLine® product line is listed on ComNet's website, along with data sheets and intruction manuals.

Scan this QR Code or visit: http://www.comnet.net/comnet-products/copperline/

COPPERLINE®

Design Assistance

The ComNet Technical Support and Design Center provides pre-sale and post-sale support for Ethernet transmission network and fiber optic system design. The department is staffed by some of the most highly experienced, regarded and recognized experts in the industry.
Our direct Design Center phone number is 1-888-678-9427 or you can call 1-203-796-5300 in the US or +44 (0) 2036 300 695 throughout Europe and ask for the Design Center, or contact us by Email at designcenter@comnet.net

Lifetime Warranty

We're so confident in the long-term reliability of our products, we back them with a no-questions asked Lifetime Warranty.

Delighting the Customer

ComNet's Customer Care Center is here to provide solutions. Staffed by experienced, knowledgeable, and courteous representatives, the ComNet Customer Care team is there to help. Customer Care representatives are available to answer your questions concerning pricing, product availability, order status, shipping dates, returns, warranty claims and so much more.

Product Training and Education

ComNet offers a full curriculum of fiber optic and Ethernet product training designed to educate you to make the right choices when selecting transmission equipment for your projects. Available on-line or in-person, ComNet training qualifies for CEU credit.

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