Plastic Fiber
The easy solution for tough environments

It’s easy...
...with LiteWire

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The Company
Luceat belongs to an industrial group leaded by Metallurgica Bresciana S.p.A., one of the leading Italian manufacturers of specialty cables for telecommunications, aerospace, military and naval applications.

Luceat and Metallurgica Bresciana operate within the same facilities, maximizing synergies. Luceat manufactures Plastic Optical Fiber, which Metallurgica Bresciana uses to make cables for any application – ranging from telecommunications to industrial automation, from video surveillance to home networking.
Luceat has two main activities:

POF manufacturing

Development and manufacturing of POF-based datacomm systems
2000: Luceat S.p.A. Foundation
3 M€ invested in R&D
2004: Luceat starts selling POF-based solutions

2005: World records with **commercial devices**:
- greatest distance (video transmission over 300m)
- greatest distance * bandwidth (100Mbps over 100m)
Introduction to plastic fiber
Plastic fiber:
It’s made of
• a PMMA core
• a PF external cladding

Due to total reflection, light propagates inside the fiber even when it’s bended.
Does it ever happen that...

...unexpected EMI hamper your devices through copper cables?
...you need to secure your devices from lightning and ground loops?
...you operate with explosives and flammable materials?
...you have little time and your shielded cable doesn't fit into the conduit?
...you need to save weight and you have no clue what to throw away?
...the data flow dramatically slows down and can't keep a constant speed?
...after your installation devices have problems?
...cables brake after continuous bending or oxidize due to humidity?
...fiber optic must be a “contorsionist” to follow all bends and twists without braking?
...you have to splice fiber optic in no time and you don't have a fusion?
WELCOME TO THE TOUGH ENVIRONMENTS WORLD
PLASTIC FIBER IS READY TO MEET THE UNEXPECTED

IT ALWAYS WORKS ON THE FIRST GO
Plastic Fiber

- **Electrical insulator & lightning resistant**
  - Can be used near flammable or explosive materials
  - Can be laid beside power lines
  - Protects devices from lightning and ground loops

- **Immune to EMI**
  - No interference on the signal from external noise or EMI sources (e.g. power lines)
  - No EMI emission (prevents eavesdropping, zeroes EMI pollution)

- **Small & weight saving**
  - (Simplex Cable: 2.2mm- 6kg/km)
  - a 24-fibre cable can have an external diameter of 13mm

- **Rugged**
  - Ideal for use in tough environments; Customizable coating for overall crush and abrasion resistance; high wear resistance
  - All-weather proof
  - Resistant to humidity; doesn't oxidize; 100 years lifetime
How to connectorize a LiteWire Plastic Fiber

1st step: Cut the cable

2nd step: Remove jacketing

3rd step: Crimp connector

4th step: Polish on sand paper

Overall time < 30 seconds!

Differences between LiteWire and standard fiber optic?

How to splice a LiteWire Plastic Fiber: 2 connectors and an adapter
Plastic fiber

- Devices use visible light
  - Basic assembly tools
  - No certification needed
  - Easy to find failures (easy remote diagnostic)

- Plastic fiber is flexible
  - Resilient to tension and mechanical shocks
  - Flexible to tight bending radius
  - Resistant to over 1 million bending cycles

- Easy to terminate
  - Minimized installation costs

- Use common tools
  - Maintenance-free
Devices for Analogue video transmission over POF

- Analogue video transmitter and receiver
  Transmission distance up to 300m

- Repeater for distances up to 600m

- Micro camera for industrial vision
  with built-in POF transmitter
Devices for Ethernet in factory automation

Technical specifications:

- Fully compliant to IEEE standard:
  - 802.1W RSTP
  - 802.1P QoS
- Fully configurable POF ports
  1 to 3 100Mbps
- 100m transmission length @100Mbps
- No minimum distance
- Compliant to Real-time Ethernet
- IGMP
- Security IP/MAC
- SNMP V3
- VLAN ID tag/untag option per port basis
- Enable/disable option for huge frame size
- Broadcast storm protection with percent control
- Redundancy – Ring Topology (self-recovering < 300ms)
Tailor made solution to your problems for

- Open a new market
- Enhance the performances
- Complement the product range
- Enhance profits margins
- Solve a technical problem
**PUR jacket for factory environments**
Polyurethane allows a very flexible jacket with a high wear resistance, protective against dirt, factory oils etc.

**ANTIRODENT jacket, for outdoors installations**
Two *steel armourings* protect plastic fiber and data transmission from mice and rodents in general.

**HYBRID cables for multiple use**
- **POF** for signal transmission
- **Copper** for power supply, RS 485 etc.

Shielding, anti-rodent armouring, Polyurethane jackets and other features are also possible.
Thank you