



Plastic Fiber

The easy solution
for tough environments



It's easy...
...with LiteWire



Somerset, 7th May 2009



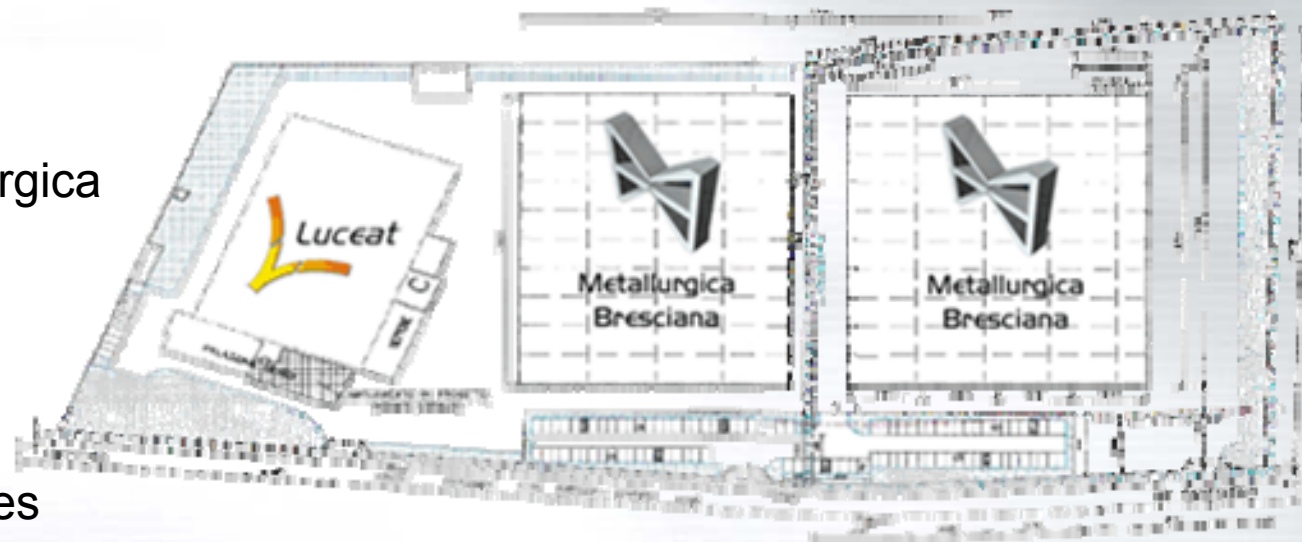
The Company



Luceat belongs to an industrial group led 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**

The company



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

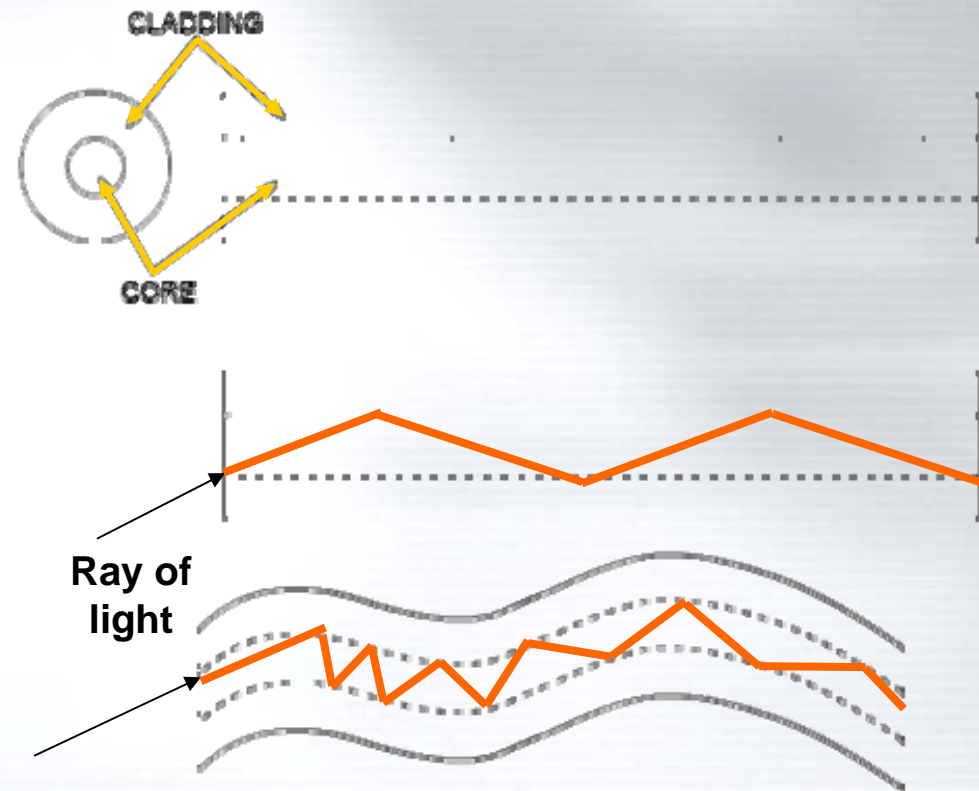


Plastic fiber:

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.





Tough environments



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?



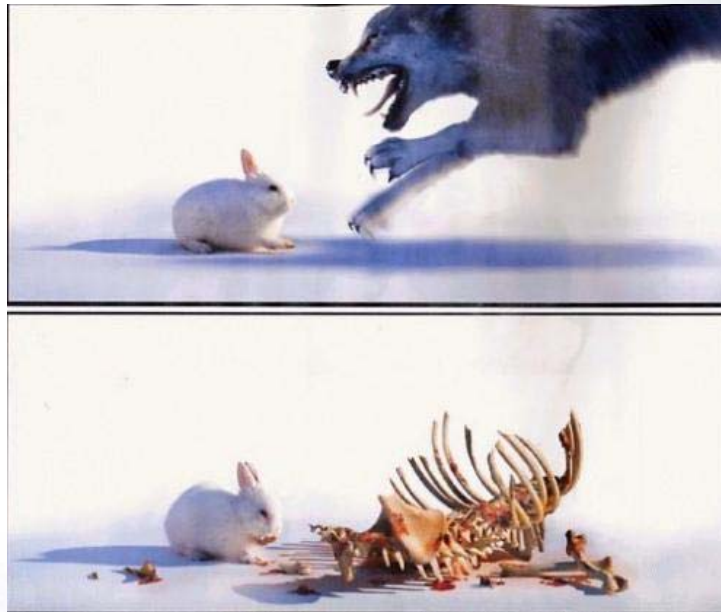
Yes it happens!

WELCOME TO THE TOUGH ENVIROMENTS WORLD





PLASTIC FIBER IS READY TO MEET THE UNEXPECTED



IT ALWAYS WORKS ON THE FIRST GO



- **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

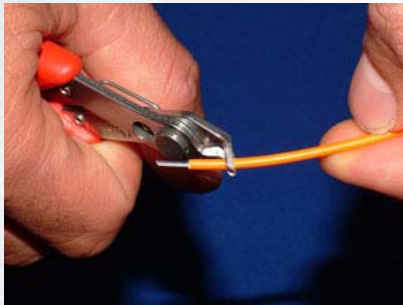
- **Rugged**

- 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



Differences between LiteWire and standard fiber optic?

How to conectorize a LiteWire Plastic Fiber

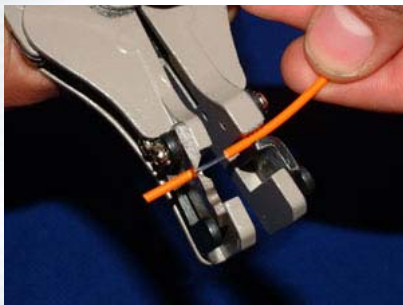


1st step:
Cut the cable

3rd step:
Crimp connector



Overall time < 30 seconds!



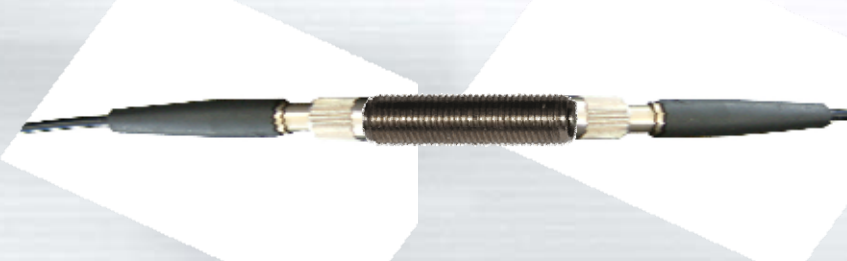
2nd step:
Remove
jacketing



4th step:
Polish on
sand paper



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 radiious
 - Resistant to over 1million bending cycles
 - **Easy to terminate**
 - **Use common tools**
- Minimized installation costs
Maintenance-free



LiteWire Cables and Devices



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

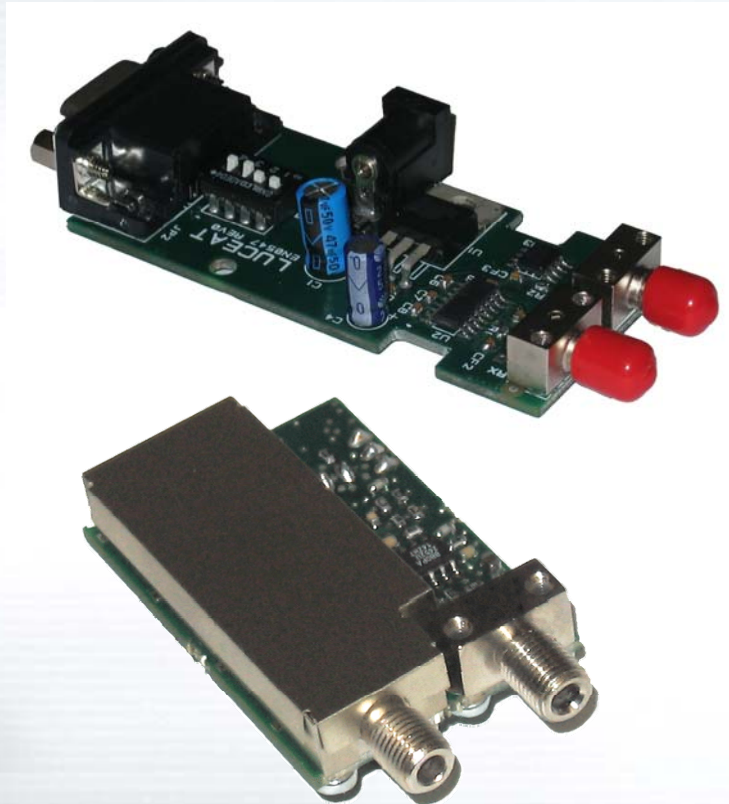


Technical specifications:

- Fully compliant to IEEE standard:
 - 802.1W RSTP
 - 802.1P QoS
- Fully configurable POF ports
1 to 3 100Mbps
- 100m transmission length @100Mps
- 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)



Custom Solutions



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



LiteWire Special Cables



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

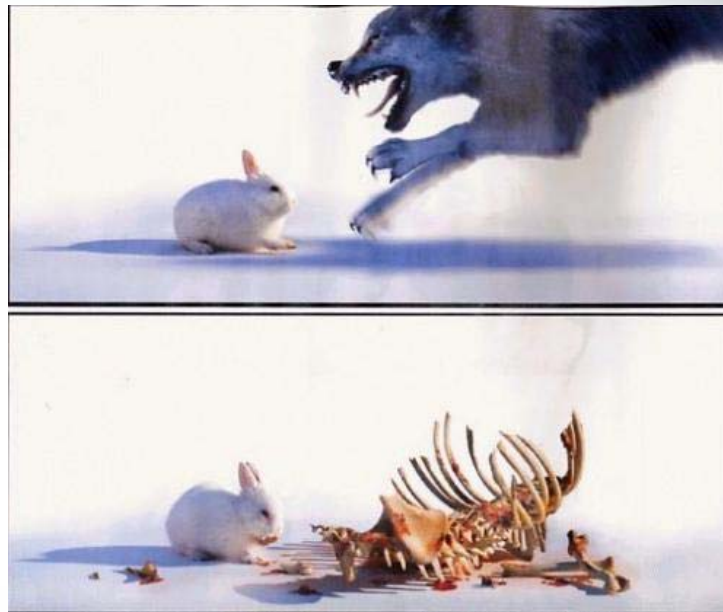
Two *steel armourings* protect plastic fiber and data transmission from mice and rodents in general



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