

FMT

Medical Sensors, Cables and Accessories



EN ISO
9001:2008 / 13485:2003

Universal LIGHT SOURCE CABLES

REV.00 14.09.2015
YMC EDITION



UNIVERSAL LIGHT SOURCE CABLES

FMT light source cables are designed to deliver maximum light when coupled to a medical fiber optic light source. They are compatible with virtually all endoscopes, medical instruments, and microscopes. Cables can be used with Halogen, Xenon or LED based cold light sources.

Universal cables have threaded stainless steel ferrules at the both ends of the cable. Ferrules bear metric threads to accept various stainless steel adapters allowing versatile use of universal cable. Different adapter options make it possible to connect the universal cable to different brand light sources and the different instruments. Each end of the cable has to be fitted with a thread on adapter to properly function. This gives the versatility of creating a custom cable by simply changing the adapters on each end.

The silicone sheathed light cable with its rugged metal spiral core ensures high mechanical stability and reprocessing allowing long lifetimes in the medical environment.

The cables can be manufactured with bundle diameters ranging from 2.5 mm to 4.8 mm to match the bundle of the instrument being used to provide optimal lighting. All of light source cables are hermetically sealed and cables can be sterilized in autoclave at 134°C. Gas and chemical disinfection is also possible.

FMT light source cables have an active diameter of the cable on the light entry and light exit of Ø2.5, Ø 3.5 or Ø4.8 mm and a total length of 1800 mm (6 ft), 2300 mm (7.5 ft) or 3000 (10 ft) mm (variable special lengths up to 5000 mm (16.4 ft) upon request).

■ Features

- Biocompatible and durable silicone sheathing with stainless steel spiral enforcement enables high mechanical stability and repeated reprocessing for long term use
- Temperature resistant at the light input end and 20% higher light transmission (HP and EHP Series)
- Threaded light source side ferrule for connection to common light sources via connector ferrule
- Threaded instrument side ferrule enables connection to different endoscopes
- 120mm anti-kink protection silicon bend reliefs at the both ends
- Internal polyester braided sleeve to help prevent stretching
- Adaptors to suit almost all common light sources and instruments
- High white light transmission with low color shift
- Fully autoclavable
- Serial Numbered for traceability
- Features SCHOTT PURAVIS® fiber
- Warranted for 12 months

■ Technical Specifications

Material Properties

| | |
|-------------------------|---|
| Handle Sleeve: | PP TV 25 (Talcum reinforced Polypropylene) |
| Sheathing Cover: | Biocompatible Silicone , Color: Grey |
| Connector: | SUS 316 Grade Stainless Steel |
| Sheathing: | Silicone covered metal spiral sheathing with braided hose |
| Minimum Bending Radius: | 50 mm |

Optical Data

| | |
|----------------------------------|--|
| Fiber Optical Material: | PURAVIS™ GOF 85 High Purity Optical Glass by Scott (without lead,arsenic, antimony Fully RoHS compliant) |
| Single Fiber Diameter: | Ø50 µm ±4 µm |
| Transmission of Light Cable: | > 60 % at 546 nm (typical > 65 %) |
| Effective Acceptance Angle (2α): | ≥ 70° (for V(λ) and 1m length) |

(Theoretical λ= 587 nm)

| | |
|---------------------|------|
| Numerical Aperture: | 0.64 |
|---------------------|------|

(Theoretical value at 587nm wavelength)

Structural Properties

| | |
|------------------|---|
| Active Diameter: | Ø2.5mm, Ø3.5 mm, Ø 4.8mm (Other diameters available upon request) |
| Working Length: | 1800, 2500, 3000mm (Other lengths available upon request) |

Operating Conditions

| | |
|--|--|
| Operational Temperature: | +10°C ... +40°C |
| Maximum Allowed Temperature for Optical End Surface: | 350°C @ input end (Light source ferrule) (hot-fused End) 150°C @ input end (Light source ferrule) (epoxied End) 150°C @ output end (Endoscope ferrule) (epoxied End) |

Re-processing

| | |
|-----------------------------|--------------------------------------|
| Cleaning & Disinfection: | Manual Cleaning & Disinfection |
| Autoclaving: | @ 134°C, 3 bar, 10 min. > 100 cycles |
| Transportation and Storage: | - 20°C ...+ 60°C |

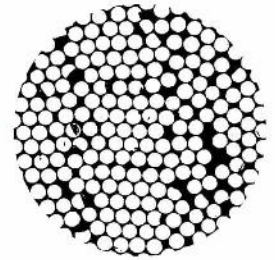


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Standard Light Source Cables (Bonded or Glued):

Optical fibers at the light source and instrument ends of the cable are bonded by high temperature epoxy. Standard cables are generally used with Halogen light sources. They are inappropriate for use with high energetic Xenon light sources which require the "High Performance" cable given the high light energy transmitted.

Standard cables must not be processed with thermolabile sterilization processes (plasma sterilization).

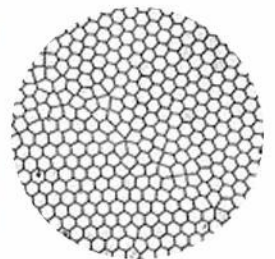


Bonded/Glued

High Performance Light Source Cables (Hot Fused):

Optical fibers at the light source end of the cable are terminated by a process combining heat with pressure. Fibers made of multi component glass are welded and embedded into a stainless steel ferrule. Fibers fused at the light source end increase the cable's ability to withstand high temperatures and light intensities which standard epoxy-bonded cables simply cannot tolerate. The fused glass fibers on the light source end provide 20% more light transmission.

The high temperature resistance of the hot fused light source end enables usage with high intensity Xenon light sources.



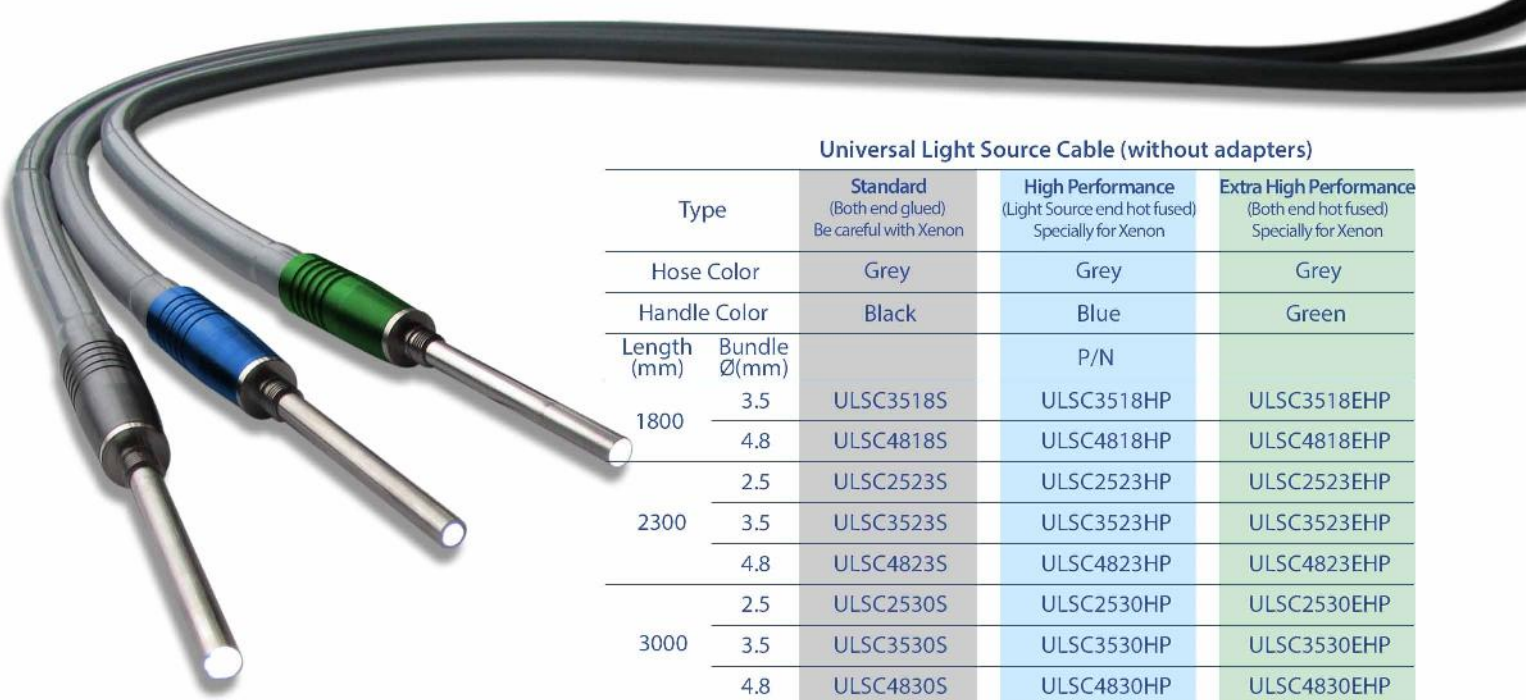
Hot fused

Extra High Performance Light Source Cables (Hot Fused):

Optical fibers at the light source and instrument ends of the cable are terminated by a process combining heat with pressure. Fibers made of multi component glass are welded and embedded into a stainless steel ferrule. No epoxy or glue is used for compacting the optical fibers. The fused glass fibers on the light source and instrument ends provide more than 20% light transmission.

High Performance and Extra High Performance cables can be processed with low temperature plasma sterilization.

All FMT light source cables are fully compatible with the universal adapter system.



Universal Light Source Cable (without adapters)

| Type | | Standard (Both end glued) Be careful with Xenon | High Performance (Light Source end hot fused) Specially for Xenon | Extra High Performance (Both end hot fused) Specially for Xenon |
|--------------|--------------|---|---|---|
| Hose Color | | Grey | Grey | Grey |
| Handle Color | | Black | Blue | Green |
| Length (mm) | Bundle Ø(mm) | P/N | | |
| 1800 | 3.5 | ULSC3518S | ULSC3518HP | ULSC3518EHP |
| | 4.8 | ULSC4818S | ULSC4818HP | ULSC4818EHP |
| | 2.5 | ULSC2523S | ULSC2523HP | ULSC2523EHP |
| 2300 | 3.5 | ULSC3523S | ULSC3523HP | ULSC3523EHP |
| | 4.8 | ULSC4823S | ULSC4823HP | ULSC4823EHP |
| | 2.5 | ULSC2530S | ULSC2530HP | ULSC2530EHP |
| 3000 | 3.5 | ULSC3530S | ULSC3530HP | ULSC3530EHP |
| | 4.8 | ULSC4830S | ULSC4830HP | ULSC4830EHP |

Universal light source cables ends require adaptors to fit standard light source ports or instruments. In case of needs of cables with adapters, required adapters must be selected and added to do part number to complete the order code. Please see the below example.

ULSC 35 23 HP / LA201 - LA102

35 mm Bundle Diameter 2.3m Length High Performance (Light Source Side Hot Fused) Light Source Side Adapter for Wolf Ø9.0mm Instrument Side Adapter for Wolf (Clip) Ø9.0mm

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Adapters for light cables



Light Source End / Light Input

LA200



Karl Storz, Aesculap, Wisap, RFQ

LA201



Wolf, HSW, Medicon, Dyonics Ø9.0 mm

LA202



Olympus, ACMI

LA203



ACMI, British Standard, Welch Allyn, Codman, Stryker Ø7.5 mm

LA204



Olympus High Intensity

LA205



Fuji

LA206



Pentax

LA207



Machida

Instrument End / Light Output



LA100

Karl Storz, Aesculap, RFQ, Olympus



LA101

Wolf, HSW, Medicon, Dyonics (Snap) Ø9.0 mm



LA102

Wolf, HSW, Medicon, Dyonics (Clip) Ø9.0 mm



LA103

ACMI, British Standard, Welch Allyn, Stryker (Snap) Ø7.5 mm



LA104

Olympus new WA

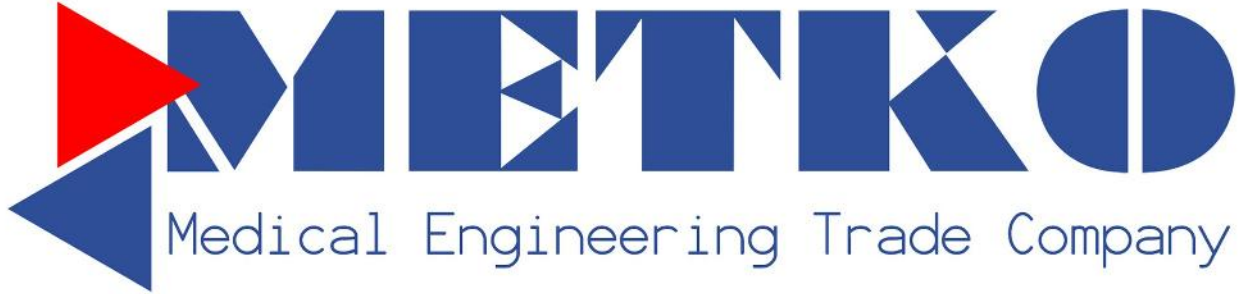


LA105

ACMI, British Standard, Welch Allyn (Clip) Ø7.5 mm



Light Source Cables adapters can be purchased separately.



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