

FMT

Medical Sensors, Cables and Accessories



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:	PPTV 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
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(Theoretical value at 587nm wavelength)

Structural Properties

Active Diameter:	Ø2.5mm, Ø3.5 mm, Ø 4.8mm (Other diameters available upon request)
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(Fiber Bundle Diameter)

Working Length:	1800, 2500, 3000mm (Other lengths available upon request)
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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)

(Long term)

Re-processing

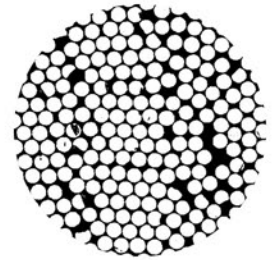
Cleaning & Disinfection:	Manual Cleaning & Disinfection
Autoclaving:	@ 134°C, 3 bar, 10 min. > 100 cycles
Transportation and Storage:	- 20°C ... + 60°C



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).

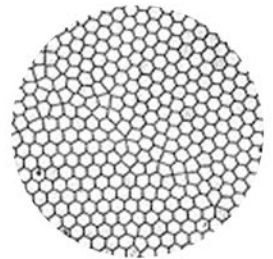


Bonded/Glued

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
Lenght (mm)		P/N	
Bundle Ø(mm)			
1800	3.5	ULSC3518S	ULSC3518HP
	4.8	ULSC4818S	ULSC4818HP
2300	2.5	ULSC2523S	ULSC2523HP
	3.5	ULSC3523S	ULSC3523HP
3000	4.8	ULSC4823S	ULSC4823HP
	2.5	ULSC2530S	ULSC2530HP
3000	3.5	ULSC3530S	ULSC3530HP
	4.8	ULSC4830S	ULSC4830HP

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

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

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
- LA208  Schott, Zeiss
- LA209  Heine
- LA210  Volpi, Schölly

Instrument End / Light Output ▼

- Karl Storz, Aesculap, RFQ, Olympus  LA100
- Wolf, HSW, Medicon Dyonics (Snap) Ø9.0 mm  LA101
- Wolf, HSW, Medicon Dyonics (Clip) Ø9.0 mm  LA102
- ACMI, British Standard, Welch Allyn, Stryker (Snap) Ø7.5 mm  LA103
- Olympus new WA  LA104
- ACMI, British Standard Welch Allyn (Clip) Ø7.5 mm  LA105
- Storz, Olympus Heatshield  LA106
- Stryker Headlamp  LA107



Light Source Cables adapters can be purchased separately.

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