

Light Sources

Optimal Lighting for Industrial Endoscopy



Light up the darkness

Cold light for illuminating cavities



In 1960, Dr. Karl Storz invented the cold light source. Since that time, light has been generated outside of the endoscope and transmitted through fiber-optic light guides to minimize the heat generated at the tip of the endoscope.

To ensure that the light generated by the light source is used as effectively as possible, most KARL STORZ cold light sources are equipped with a complex, computer-calculated condenser system that precisely focuses the light generated by the lamp on to the light guide cable fibers. The result is a considerable further increase in illumination.

Bright light is a key determinant of image quality. Powerful, high quality light sources are therefore essential for quality endoscopic images.

The suitability of a light source depends entirely on the type of endoscope used. For this reason, we offer various light sources with different light output levels, as well as portable battery powered units, ensuring that you have the right product for your application.

These units range from 5 W LED to 300 W XENON in performance.

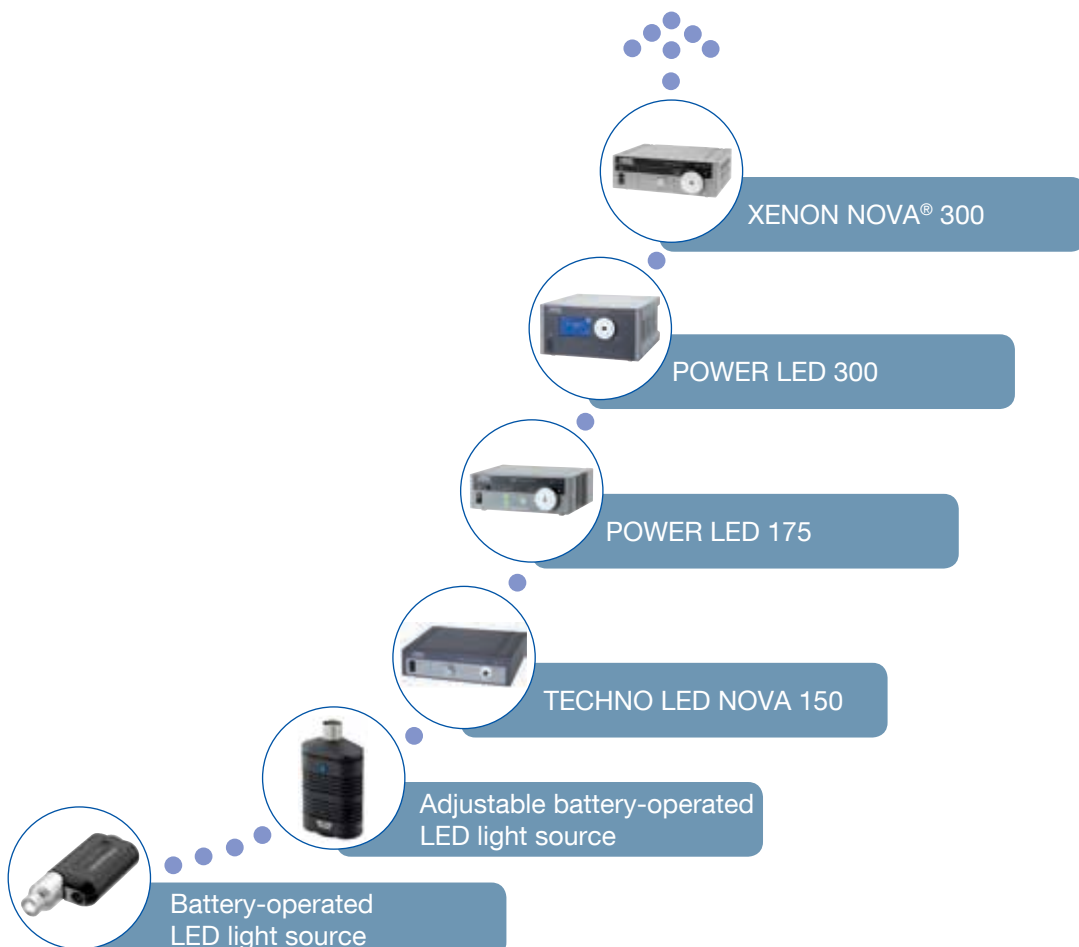


A light source, sometimes also referred to as a light projector, LED light source or cold light source, is a standalone unit that generates light through the use of powerful lamps or LEDs. The light is focused on to a fiber-optic or liquid light guide cable that connects directly to the endoscope or borescope which subsequently transmits light through its own integral fiber optics and projects the light into the inspection cavity. Light source types include LED (light emitting diode), halogen, Xenon, Sol-Arc and incandescent lamps.

The first cold light source from 1960



Light output



Light sources with LED technology

Economical, durable, and efficient



LED technology is rapidly becoming the modern day benchmark for illumination. KARL STORZ have recognized this and have developed a new range of LED light source units offering high performance, quality, durability and economy. The economy is due to the longevity of the lamp units. For example, at an average of 30,000 hours operating life, the KARL STORZ LED units offer years of trouble-free performance (as well as the inherent cost saving of replacement bulbs).

For our customers, this longevity pays. At an average of 30,000 hours*, the operating life of KARL STORZ light sources exceeds the standard life of high-performance light sources.

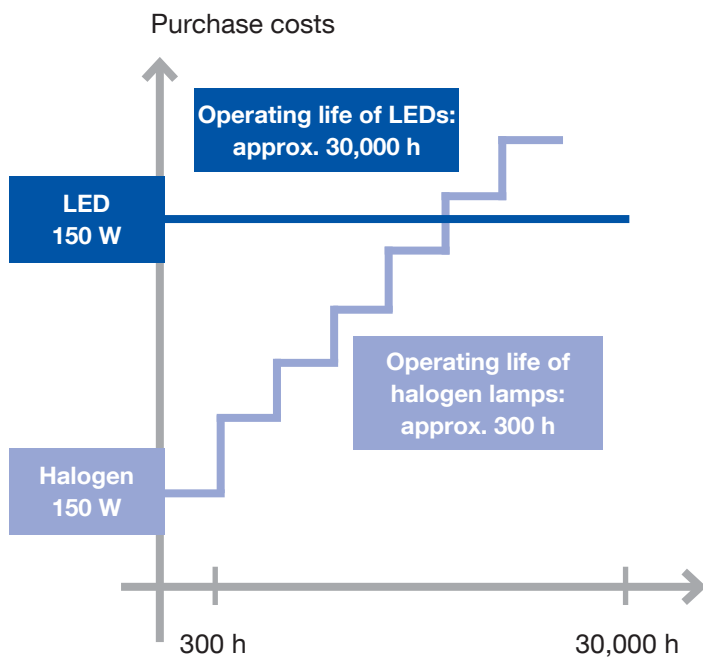
** 250 work days per year at 10 hours each equals an operating life of approx. 10-12 years.*

Why LEDs?

LEDs offer definite advantages over conventional lamps:

- Purchase costs are quickly justified due to the long life (30,000 hours) and minimal power consumption
- Extremely economical
- Ultra low maintenance
- Clear return on investment
- High energy efficiency with 90% reduced power consumption over conventional bulb types
- Ready to go, instantly (full light intensity available as soon as the unit is powered on)
- Environmentally friendly

LED light sources – a reliable investment



The chart above shows the total cost of ownership of LED versus halogen light sources. Frequent replacements of halogen lamps result in high costs for materials, purchasing, and the installation and removal of replacement lamps.

Portable light sources

Battery-operated LED light sources



The battery-operated LED light source is available in a conventional battery version or with a rechargeable battery. It features extraordinarily high light intensity of more than 100,000 Lux and produces purest white light. This unit also has a boost mode, which will increase the light intensity above normal operating levels for a short duration. Major advantages are the long life of an LED (up to 50,000 hours) and the run time of more than 120 minutes. The battery-operated LED light source is compatible with almost all KARL STORZ endoscopes and is directly attached to the light connector. Therefore, no light cable is needed.



11301 D4

Battery Light Source LED for Endoscopes,
with fast screw thread, boost mode
for temporary increase in brightness,
burning time > 120 min, brightness
> 110 lm / > 150 klx, weight approx. 150 g
ready for use, suitable for wipe disinfection



11301 DE

Battery Light Source LED for Endoscopes,
rechargeable, with click connection, boost
mode for temporary increase in brightness,
color temperature 5500 K, lithium-ion
batteries, charging time 60 min, burning time
at 100% brightness 40 min, weight approx.
150 g, suitable for wipe disinfection

Technical data

- Lamp type LED
- Color temperature 5,500 K
- Weight 150 g
- Run time approx. 120 minutes
- Designed in accordance with CE guidelines, RoHS-compliant
- Compliant with standards EN 60601-1, EN 60601-2-18

**Now with
boost mode**



Accessories



11301 DG

Charging Unit, for two LED battery light sources, with fixed integrated power supply and adaptor for EU, UK, USA and Australia, power supply 110-240 VAC, 50/60 Hz, suitable for surface disinfection, for use with: 11301 DE/DF Battery Light Source LED



11301 DH

Holder, for mounting on a surface, for use with Charging Units 11301 DG, 8546 LE/LE1 and 8401 XDL



121306 P

Photo Battery, lithium, 3 V, CR 123 A, for use with Battery Insert LED 8548 LD1 and Battery Light Sources (11301 D1/D3/D4)



094129

Battery Charger Li-Ion, for charging Rechargeable Battery Box 094124 or LED Battery Light Source 11301 DE/DF, for use with Mains Cord 094127 (EU connection only), power supply 100-240 VAC, 50/60 Hz



094127

Mains Cord, for Battery Charger 094129, length 150 cm

Portable light sources

Adjustable battery-operated LED light source



The universal design of the newly developed, battery-operated, high-performance LED light source allows it to be connected to all KARL STORZ borescopes, flexoscopes, and autoscopes (with diameters of up to 4.2 mm).

The new LED light source can be individually adapted for optimal viewing and is therefore equally well suited for both left-handed and right-handed users. The very powerful 3 Watt light source features infinitely adjustable intensity control. At maximum light intensity, even large inspection cavities can be easily illuminated.

Special features

- Very bright, portable LED light source with excellent output and coupling efficiency
- Infinitely adjustable control of light intensity
- Average LED life of up to 25,000 hours
- Intuitive operation
- High-quality design for industrial use
- Exchangeable and rechargeable lithium-ion batteries (4 included)
- 60 minutes of operating time at 100% light intensity
- Fast and safe rechargeable battery replacement (<30 sec.)
- Charger for worldwide use
- CE declaration of conformity

LED TECHNOLOGY

Technical data

- Lamp type LED, 3 Watt
- Color temperature 5700 K
- Weight 126.8 g
- Run time approx. 60 minutes
- Meets the requirements of CE directive, ROHS conformity
- Compliant with standards EN 50581; IEC 62471; 2006/95 EC (93/68EEC)



81 3010 10

Set Variable LED Light Source

including:

Variable LED Light Source

4x RCR 123 A Rechargeable, 3 V, for LED light source

Charger Unit, for RCR 123 A rechargeable batteries

User Manual

Light sources – tabletop units

TECHNO LED NOVA 150



The compact, high-performance cold light source TECHNO LED NOVA 150 delivers cold, white light that generates virtually no heat. The device is energy-efficient, noiseless, and does not require lamp changes since the LED module has a life of up to 30,000 hours. Its international power supply enables worldwide use.



SL 150

TECHNO LED NOVA 150,
high-performance LED cold light fountain
with one KARL STORZ light outlet,
power supply 100-240 VAC, 50/60 Hz
color temperature: approx. 6400 K
including:
Mains Cord (Schuko)
Mains Cord (USA)

Technical data

- Lamp type High-performance LED
- Color temperature 6,400 K
- Light intensity Infinitely adjustable
- Dimensions 305 × 84.5 × 238 mm (w × h × d)
- Weight 2.3 kg
- Designed in accordance with CE guidelines, RoHS-compliant
- Complies with standards IEC 61010-1, UL 61010-1, Can/CSA-C22.2. no. 61010-1, IEC 62471, IEC 61326-1

LED TECHNOLOGY

Accessories



1973290

Fuse, 5.0 x 20 mm, T1, 600 A



400 FUS

Mains Cord, with 90° angled connector plug, straight unit connector, US plug, length 250 cm

Light sources – tabletop units

POWER LED 175



The POWER LED 175 is a high-performance LED cold light source. It has a life of 30,000 hours and therefore does not require lamp changes. The POWER LED 175 features cutting-edge LED technology and guarantees excellent, bright light. Its international power supply enables worldwide use.



20161401-1 Cold Light Fountain Power LED 175 SCB,
with integrated KARL STORZ SCB,
high-performance LED lamp and
one KARL STORZ light outlet,
power supply 110-240 VAC, 50/60 Hz
including:
Mains Cord
SCB Connecting Cable

LED TECHNOLOGY

Technical data

- Lamp type High-performance LED
- Color temperature 6,500 K
- Light intensity Infinitely adjustable
- Dimensions 305 × 110 × 233 mm (w × h × d)
- Weight 4 kg
- Designed in accordance with CE guidelines, RoHS-compliant
- Complies with standards IEC 60601-1, IEC 60601-2-18, UL 60601-1, CAN/CSA C22.2. no. 601.1-M90, IEC 60601-1-2

Accessories



400 FUS

Mains Cord, with 90° angled connector plug, straight unit connector, US plug, length 250 cm

Light sources – tabletop units

POWER LED 300



The POWER LED 300 is a high-performance LED cold light source and is the first light source to combine the light intensity of 300 Watt light sources with the benefits of LED technology. At 30,000 hours (approx. 10-12 years at an average daily consumption), the service life of the POWER LED 300 is approx. 60 times longer than comparable Xenon light sources. As a result, the frequent replacement of lamps is no longer necessary.



Making use of the latest LED technology, the LED Laser hybrid technology ensures excellent bright light at a homogenous color temperature of 6,000 Kelvin throughout the entire operating life. Economy and ecology go hand in hand as the POWER LED 300 only consumes approx. one-third of the energy of a comparable Xenon light source.



The touch display of the POWER LED 300 provides a modern and user-friendly interface. Thanks to its universal power adaptor, it can be used anywhere in the world.

LED TECHNOLOGY

Specifications

- Lamp type high-performance Laser light LED
- Color temperature 6,000 K
- Light intensity infinitely variable
- Dimensions 305 × 155 × 313 mm (w × h × d)
- Weight 8.6 kg
- Designed in acc. with CE guidelines acc. to MDD 93/42/EEC
- Standards compliance IEC 60601-1, IEC 60601-1-6, ANSI/AAMI ES606001-1, CAN/CSA-C22.2 No. 60601-1



TL 300

Cold Light Fountain Power LED 300, with integrated KARL STORZ-SCB, high-performance LED module and one KARL STORZ light outlet, power supply 100-240 VAC, 50/60 Hz, including:
Mains Cord

Accessories



400 FUS

Mains Cord, with 90° angled connector plug, straight unit connector, US plug, length 250 cm,

Light sources – tabletop units

XENON NOVA® 300



The 300 W XENON lamp with optimized KARL STORZ condenser system generates very high light intensity and is therefore particularly suitable for inspections that require the illumination of larger cavities. With infinitely adjustable brightness control, the light can be easily optimized for any inspection situation. The cold light source is equipped with an international power supply.



20134001

Cold Light Source XENON NOVA® 300,
with one 300 Watt Xenon lamp and
one KARL STORZ light outlet,
power supply 100-125/220-240 VAC,
50/60 Hz,
including:
Mains Cord

Technical data

- Lamp type XENON lamp, 300 Watt
- Color temperature 6,000 K
- Light intensity Infinitely adjustable
- Dimensions 305 × 110 × 270 mm (w × h × d)
- Weight 4 kg
- Designed in accordance with CE guidelines, RoHS-compliant
- Complies with standards IEC 60601-1, IEC 60601-2-18, UL 60601-1, CAN/CSA C22.2. no. 601.1-M90, IEC 60601-1-2

Accessories



20133028

XENON Spare Lamp, 300 W, 15 V



400 FUS

Mains Cord, with 90° angled connector plug, straight unit connector, US plug, length 250 cm

Light cables for cold light sources



For each endoscope, there is an optimal light cable. For example, large-diameter endoscopes should be used with light cables with a large cross-section (active diameters), so that the high light output can be fully passed on. Therefore, it is important to choose a suitable light cable.

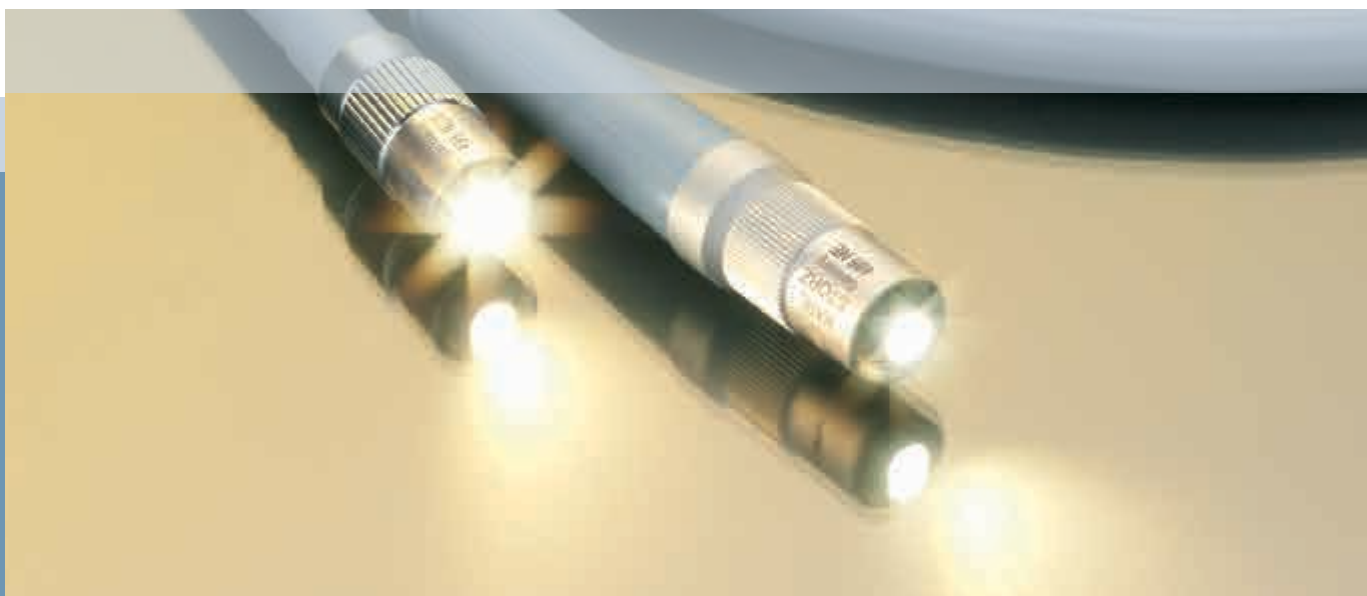


High performance fluid light cable, active diameter 5 mm, in robust industrial design, designed for heavy-duty industrial use with extra robust kink protector, steel housing, protective metal sleeve for the quartz rod component of the light plug, tubing diameter 9 mm.

81594 SB **High-Performance Fluid Light Cable,**
active diameter 5 mm, length 250 cm

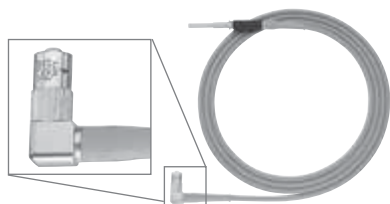
81594 SA **High-Performance Fluid Light Cable,**
active diameter 5 mm, length 350 cm





Fiber optic light guide, suitable for virtually all KARL STORZ endoscopes up to 6.5 mm in diameter, active diameter 3.5 mm

- 81594 GW **Fiber Optic Light Guide**, active diameter 3.5 mm, length 180 cm
- 81594 GV **Fiber Optic Light Guide**, active diameter 3.5 mm, length 250 cm
- 81594 GU **Fiber Optic Light Guide**, active diameter 3.5 mm, length 350 cm



Fiber optic light guide, suitable for virtually all KARL STORZ endoscopes, active diameter 3.5 mm. To optimize the connection between the endoscope and the light cable, the light connector is angled 90°.

- 81594 GW1 **Fiber Optic Light Guide**, active diameter 3.5 mm, length 180 cm
- 81594 GV1 **Fiber Optic Light Guide**, active diameter 3.5 mm, length 250 cm

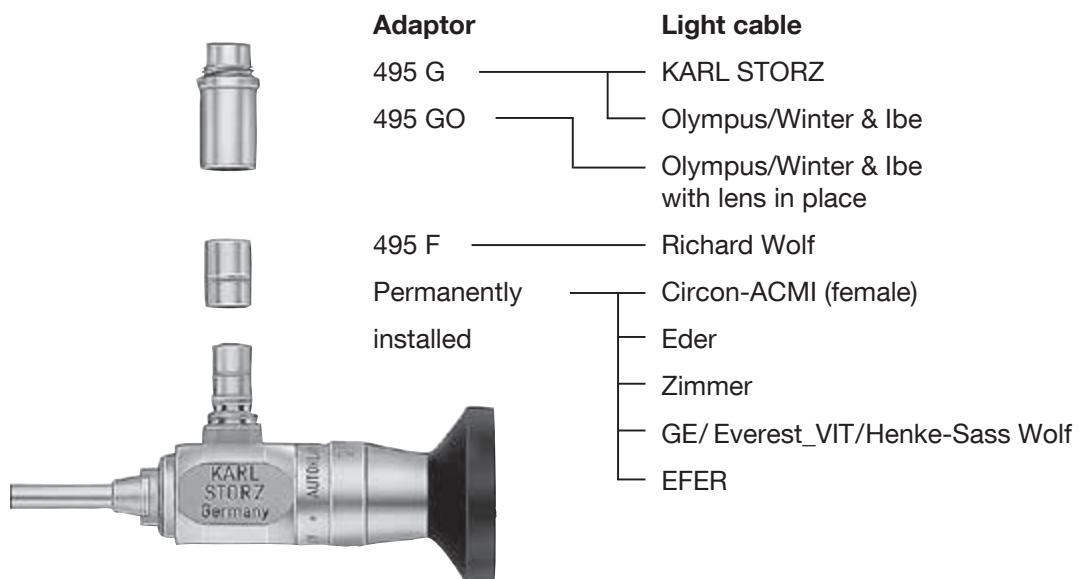
Fiber optic light guide for endoscopes, diameter 8 mm or more, active diameter 5 mm. Much higher luminous intensity is achieved thanks to the adaptation to the larger fiberglass cross-section of the 8 mm borescopes.

- 81594 GC **Fiber Optic Light Guide**, active diameter 5 mm, length 180 cm
- 81594 GB **Fiber Optic Light Guide**, active diameter 5 mm, length 250 cm
- 81594 GA **Fiber Optic Light Guide**, active diameter 5 mm, length 350 cm

Adaptors



HOPKINS® telescopes with
universal connector for light
cables



Adaptors

Third-party device	I KF LK	= Instrument = Cold light source = Light cable	KARL STORZ				Special applications
			Light cable	Cold light source	Older instrument	New instrument	
Aesculap	KF		495 PWS				Only required for KARL STORZ flexoscopes as well as light cables with distal connection 7 mm, with Adaptors 495 S/495 PWS
Circon-ACMI	I		495 W				
	I – female		495 KM				Circon-ACMI connector to Circon-ACMI connector 495 Y
	KF		495 PA				
	LK – female			495 C	495 K		
	LK – male					495 Y	
American Optical	LK			495 AO			
Downs	KF		495 PA				
Dyonics	KF		495 Q				
Effner	KF		495 Q				
Fort	KF		495 KF				
	LK			495 KA			
Fuji	KF		495F U				
	LK			495 ZU			
Heine-Optotechnik	I		495 U				
	KF		495 O				
	LK			495 B	495 J	495 J	
Homoth	KF		495 KH				
KLI	LK			495 C			
	KF		495 PA				
Lumatec	KF		495 LU				
Machida	KF		495 SM				
MLW	I		495 KN				KARL STORZ light cable to FRIEDEL MLW bronchoscope
	KF		495 KL				
	LK				495 KD	495 KD	
Olympus	KF (technology)		81495 OT				
	LK			495 D			
Pentax	KF		495 T				
	LK			495 D			
Pilling	I		495 SP				
	KF		495 R				
	LK				495 PKS	495 PKS	
Richards	LK			495 LR	495 JR	495 JR	
HSW	I		495 V				
	KF		495 Q				
	LK			495 E	495 N	495 N	
Schott	KF		495 SCH				
Stryker	I		495 ST				
	KF		495 PA				
Thackray	KF		495 BT				
Richard Wolf/EFER	I		495 X				
	KF		495 Q				
	LK			495 E	495 M	495 F	
Olympus/ Winter & Ibe	KF		495 S		495 GO	495 GO	495 S: When using KARL STORZ flexoscopes with integrated fiber-optic light cable or KARL STORZ light cables with distal connection diameter 7 mm, the adaptor 495 PWS is needed in addition to the adaptor 495 S .
	LK with lens in place						
Zeiss	KF		495 ZE				
	LK			495 ZF	495 ZJ	495 ZJ	
	Surgical microscope		495 ZM				
	Surgical microscope, 14 mm diameter		495 ZS				
	Cap 303477		495 ZK				
Screw Base	Cap 303484		495 ZK 1				
	KF		495 STR				
Schöilly	I		495 G				
	KF		495 STR				
Volpi	KF		495 STR				
Eltrotec	KF		495 STR				
ITI	KF		495 PA				
Lenoy	KF		495 PA				
	I		495 G				
	KF – ELSV60		81495 OT				
GE/Everest_VIT	KF – ELSV24		495 PA				

Accessories



495 PW

Adaptor, to connect KARL STORZ Light Cable to KARL STORZ Light Cable

81010171

Potential Equalization Cable, length 10 m,
one side POAG plug, other side battery clamp





KARL STORZ adaptor series 487

The adaptors below can be used with the KARL STORZ cold light projectors TECHNO LIGHT® 270, TECHNO ARC 60, TECHNO PACK® X, and XENON NOVA® 300.

Item no.:	Adaptor , for KARL STORZ light source
487 A	in combination with ACMI light cable
487 M	in combination with Machida light cable
487 O	in combination with Olympus light cable
487 OES	in combination with Olympus OES flexible endoscopes
487 P	in combination with Pilling light cable
2108191	in combination with KARL STORZ light cable
487 W	in combination with Wolf light cable
487 WI	in combination with Winter-IBE light cable
487 Z	in combination with Zeiss light cable

KARL STORZ Industrial Group

**Measurement
Systems and
Documentation***

Videoscopes*

**Portable
Systems***



Product groups



At KARL STORZ, we are constantly advancing all of our products. For that reason, please understand that changes may be made to the scope of supply, design, equipment, and technology. Therefore, the information, illustrations, and descriptions contained herein cannot be made the basis for any claims whatsoever.

*For an up-to-date overview of the individual product groups, please refer to the product brochures of the KARL STORZ Industrial Group.

Notes

Notes



Your Focus – Our Scope

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