



RENZ FOR QUALITY




MEDICAL FIBER LIGHT GUIDES

Cold Light Cables -BlueLine ...

... in modern Endoscopy Surgery

In modern Endoscopy Surgery there has been a lot of technical advancement and sophistication just in the last couple of years. 3 CCD cameras, XENON light sources, High-Tech Insufflators have made their way into a multitude of operation theaters of today. With all this technical refinement of Endoscopy equipment it is very frequently overlooked that also a Cold Light Cable of the same quality standard is both essential and indispensable in order to get the best visual results and to guarantee a long lifetime especially of the telescopes in daily use.

The RfQ Fiber Light Guides  -BlueLine are designed and manufactured for the special demands and endoscopic requirements when using intraoperatively XENON light sources which are exposing all standard light cables in use to very high thermic energies which affect adversely the functionality and durability of a standard cable.

Features and advantages of RfQ -Blue Line Fiber-Light guides

- Stability and resistance to highest thermic and energetic Xenon light loads when compared to standard cables
- Full adaptability to connect the Fiber-Light guides to all types of marketable cold-light-sources as well as to all existing brands of telescopes

The RfQ Fiber Light Guide *BlueLine* is made to withstand and to shield against very high thermic energies especially with the use of Xenon light sources by their patented design of fusing fiber light guides in the *BlueLine* cables. This allows avoiding any type of inside glue or cement for compacting the fiber elements.

In addition to these already highlighted features all RfQ *BlueLine* Fiber-Light guides provide a much more efficient light transmission by offering the Endoscopy surgeon 20% more light in the operating field.

There is much better compliance to all necessary and required processes of disinfection and sterilisation because all parts and components of the RfQ *BlueLine* Fiber-Light guides are fully autoclavable and are complying with all international standards of medical hygiene and product maintenance.

All parts at the sides of 'light input' / 'light output' and all available connecting adaptors are made of stainless steel exclusively.

RfQ *BlueLine* Fiber-Light guides are manufactured of:

- circular wire helix of stainless steel
- a braided hose
- silicone cladding with interior breakage protection

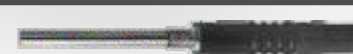
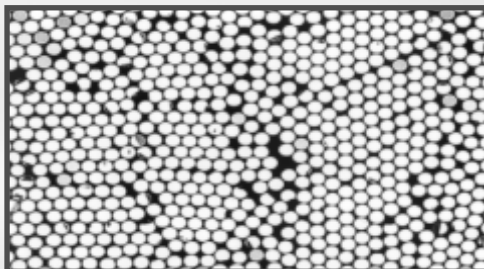


The RfQ *BlueLine* fiber-light-guides consists of about 3800 single fibers. The single fiber have a diameter of 70µm. The numeric aperture amounts to 0,54. The angle is 65°.

Recommendation

Fiber Light Guides (Standard)
(Light Input glewed)


be careful with Xenon



Black Handle



Tube Colour (only grey)

Fiber Light Guides  *BlueLine*
(Light input fused)

specially for Xenon



Blue Handle (or orange)



Tube Colours

Fiber Light G. **LED-WhiteLine**
(Light input fused)

specially for LED



White Handle



Tube Colours

Recommendation

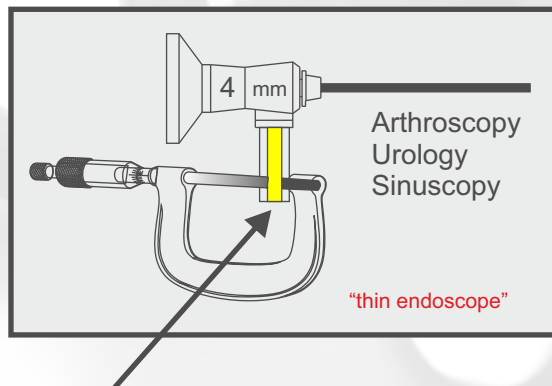
What kind of light-guides and under what circumstances?

The most users of the fibre light-guides have still an opinion that the cable with a wide diameter (called "a thick cable") is able to provide more light than a "thin" one. It will be explained as following:

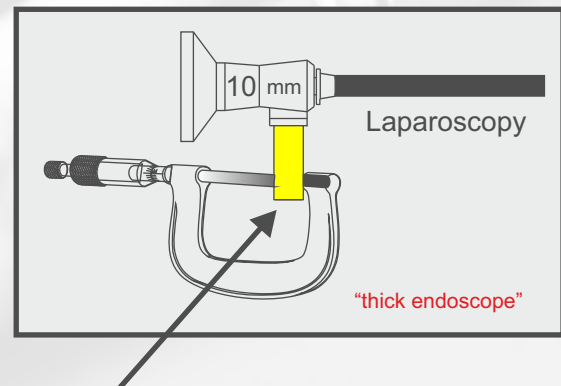
"There runs more light through a thick cable because there are more glass fibres inside".

But this opinion is wrong and can be even grave!

The choise of the fibre light-guide depends on the aim, you need it for. The following sketch shows that for the thin endoscopes the thin light-guides are to use, for the thick endoscopes thick ones. Under "thick" we mean a light-guide with diameter of 4,9 mm, under "thin" - a light-guide with diameter of 3,5 mm. A thin endoscope has a "thin" light entry, a thick one - a "thick" light entry. The light-guides should correspond to the particular endoscopes.

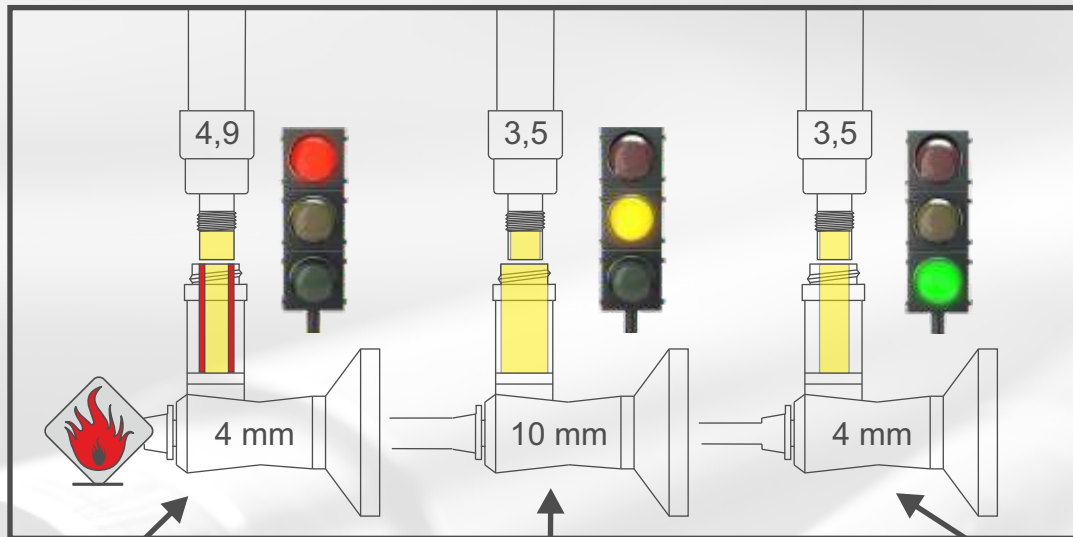


3,5 mm Ø recommended



4,9 mm Ø recommended

Combined Sketch



You use a thick light-guide with diameter of 4,9 mm. You use the thin optics with diameter of 3,5 mm of light entry.

Circumstances: This combination must be chosen in no way. The cause is the connecting piece of the endoscopes can become very hot because the light gets to the metal. The result is a possible overheating. Therefore the risk arises that you destroy your endoscope like burning out at the light entry of the endoscope. In addition a patient can be put at risk because the end of the optic possible becomes hot under circumstances. (Please, pay especially attention to the light sources with high energy power).

You use a thin light-guide with diameter of 3,5 mm. You use the thick optics with diameter of 4,9 mm of light entry.

Circumstances: This combination may be chosen but it is not to be recommended because normally the light output by laparoscopy is not enough by using of a thin light-guide.


You use a thin light-guide with diameter of 3,5 mm. You use the thin optics with diameter of 3,5 mm of light entry.

Circumstances: This combination is optimal, because a light-guide corresponds to the endoscope exactly. Naturally this combination may be also used by equal light-guide's diameters of the larger measurements. Please take into account that standard and softline light-guides can be burned in the light sources with high energy power.

Coloured Fiber Light Guides

What are the fiber-light-guides coloured for ?

The matter is very simple and logical as well.

As you know different light-guides have to be used by different endoscopes. For employees who work in the OP-room or in the central sterilisation ward it is rather difficult to identify visually, if a light-guide has a diameter of 2.5, 3.5 or 4.9 mm. Nowadays it is possible to settle this problem visually. It means you define once-in-a time that e.g. the tube of “thin” light-guides used for arthroscopy or urology will be red-coloured. The tubes of “thick” light-guides for laparoscopy get a green colour. So you always have a right light-guide for a proper optic. Another possibility would be to supply each ward of the hospital with an individual colour. E.g. surgical ward can be provided with a red colour, urology ward with a yellow once and endoscopy with a green once. The different colours are available for both standard and RfQ-  BlueLine® light-guides.

As you can see coloured light-guides are not only a gag, but also a practical addition to the current systems of quality assurance.



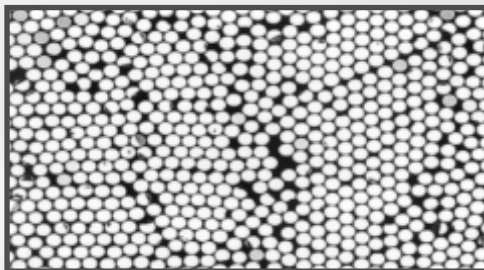
Connector System

	Light Input (Projector)	Light Output (Endoscope)	
	00-21110-70 RfQ / Storz / Aesculap	00-21010-71 RfQ / Storz / Aesculap	
	00-21110-74 Wolf	00-21010-76 Wolf Snap	
	00-21116-62 Olympus ACMI	00-21010-74 Wolf Clip	
	00-21116-63 Olympus new (switch)	00-21010-67 ACMI / British / Codman	
	00-21110-66 ACMI / British / Codman	00-21010-95 Olympus new	
	00-21119-60 Volpi / Schöilly	00-21010-71 Olympus old	
	00-21119-62 Fuji	00-21013-07 Schott / Zeiss	
	00-21113-03 Heine	00-21013-74 Stryker Headlamp	
	00-21110-72 Winter & Ibe		
	00-21113-06 Schott / Zeiss		
	00-21010-10 MLW		
	00-21119-65 Pentax		
	00-21113-07 Zeiss OP-Mikroscope		

Standard

Fiber Light Guides Standard
(Light Input glewed)

be careful with Xenon



Black Handle



Tube Colour (only grey)




Standard-Fiber Light Guide
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Standard-Fiber Light Guide


3,5 mm ø x 1800 mm long
3,5 mm ø x 2300 mm long
3,5 mm ø x 2500 mm long
3,5 mm ø x 3000 mm long
3,5 mm ø x 4000 mm long
3,5 mm ø x 5000 mm long
4,9 mm ø x 1300 mm long
4,9 mm ø x 1800 mm long
4,9 mm ø x 2300 mm long
4,9 mm ø x 2500 mm long
4,9 mm ø x 3000 mm long
4,9 mm ø x 3500 mm long
4,9 mm ø x 4000 mm long
4,9 mm ø x 5000 mm long
Y-Typ 1800mm 2xProj./1xEndo
Y-Typ 1800mm 1xProj./2xEndo
Y-Typ 2300mm 2xProj./1xEndo
Y-Typ 2300mm 1xProj./2xEndo
angeled Proj. / different lengths
angeled Endo. / different length.

00-21110-60
00-21110-61
00-21110-64
00-21110-63
00-21110-62
00-21110-98
00-21210-59
00-21210-66
00-21110-67
00-21110-69
00-21210-63
00-21210-65
00-21210-62
00-21210-64
00-21110-68
00-21110-57
00-21210-61
00-21210-60
on request
on request



The logical consequence - The High Performance Light Cable -BlueLine

The -Blue-Line® cables are particularly effective in XENON cold-light sources. These light sources focus the light at a very small focal point that has the size of the light entry area of the -Blue-Line® cable. Under these conditions, the adhesive-free light entry area of the -Blue-Line® cable absorbs the maximum possible light intensity.

Fiber Light Guides  BlueLine

(Light input fused)

specially for Xenon



Blue Handle (or orange)



Tube Colours

Fiber Light Guide  -BlueLine	2,5 mm ø x 1800 mm long	00-22430-30
Fiber Light Guide  -BlueLine	2,5 mm ø x 2300 mm long	00-22430-40
Fiber Light Guide  -BlueLine	2,5 mm ø x 2500 mm long	00-22430-45
Fiber Light Guide  -BlueLine	2,5 mm ø x 3000 mm long	00-22430-50
Fiber Light Guide  -BlueLine	2,5 mm ø x 4000 mm long	00-22430-60
Fiber Light Guide  -BlueLine	2,5 mm ø x 5000 mm long	00-22430-70
Fiber Light Guide  -BlueLine	3,5 mm ø x 1800 mm long	00-22330-30
Fiber Light Guide  -BlueLine	3,5 mm ø x 2300 mm long	00-22330-40
Fiber Light Guide  -BlueLine	3,5 mm ø x 2500 mm long	00-22330-45
Fiber Light Guide  -BlueLine	3,5 mm ø x 3000 mm long	00-22330-50
Fiber Light Guide  -BlueLine	3,5 mm ø x 3500 mm long	00-22330-55
Fiber Light Guide  -BlueLine	3,5 mm ø x 4000 mm long	00-22330-60
Fiber Light Guide  -BlueLine	3,5 mm ø x 5000 mm long	00-22330-70
Fiber Light Guide  -BlueLine	4,9 mm ø x 1800 mm long	00-22230-30
Fiber Light Guide  -BlueLine	4,9 mm ø x 2300 mm long	00-22230-40
Fiber Light Guide  -BlueLine	4,9 mm ø x 2500 mm long	00-22230-45
Fiber Light Guide  -BlueLine	4,9 mm ø x 3000 mm long	00-22230-50
Fiber Light Guide  -BlueLine	4,9 mm ø x 3500 mm long	00-22230-55
Fiber Light Guide  -BlueLine	4,9 mm ø x 4000 mm long	00-22230-60
Fiber Light Guide  -BlueLine	4,9 mm ø x 5000 mm long	00-22230-70

Fiber Light Guides **BlueLine**
(Light input fused)

specially for Xenon



Blue Handle (or orange)



Tube Colours

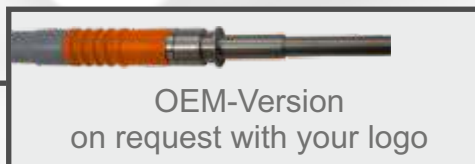
Fiber Light Guide **BlueLine**
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Y-Typ 1800mm 2xProj./1xEndo
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Y-Typ 2300mm 2xProj./1xEndo
Y-Typ 2300mm 1xProj./2xEndo
Y-Typ 3000mm 2xProj./1xEndo
Y-Typ 3000mm 1xProj./2xEndo
3,5 ø x diff. length Proj. 90°
3,5 ø x diff. length Endo. 90°
4,9 ø x diff. length Proj. 90°
4,9 ø x diff. length Endo. 90°
1,9 ø x different length (spec.)
Special length to 800 cm

00-22230-72
00-22230-68
00-22230-73
00-22230-69
on request
00-22230-71
on request
on request
on request
on request
on request
on request



RfQ-Version



OEM-Version
on request with your logo



LED-WhiteLine



The next step - The High Performance Light Cable LED-WhiteLine

Fiber Optic Light Cables of the new “**LED-WhiteLine**” have been designed and are fabricated for the use with state-of-the-art LED Light Sources.

By enhancing the transmission effectiveness of an already well-established and first-choice fiber optic light cable the light output and illumination - when operated with a LED light source together with a modern HD telescope - can be visibly and measurably increased.

Get yourself in touch with our new “**LED-WhiteLine**” !

LED-WhiteLine

Tube Colour selected ?

Fiber Light G. **LED-WhiteLine**
(Light input fused)

especially for LED



White Handle



Tube Colours

Fiber Light G. LED-WhiteLine
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Fiber Light G. LED-WhiteLine
Fiber Light G. LED-WhiteLine
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Fiber Light G. LED-WhiteLine
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Fiber Light G. LED-WhiteLine
Fiber Light G. LED-WhiteLine
Fiber Light G. LED-WhiteLine
Fiber Light G. LED-WhiteLine
Fiber Light G. LED-WhiteLine

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