

## 传像素光纤 Imaging Fiber

### 产品介绍 Product Descriptions

该成果为面向内窥的光纤柔性成像系统。多芯成像光纤是一种通过特殊的制备工艺，将上万根光纤有序排列而成的微结构光纤，每个纤芯以“像素”的形式传输图像信息，实现长距离柔性高清传输。

The outcome is a fiber-optic flexible imaging system. Multi-core imaging fiber is a micro-structured fiber through a special preparation process, tens of thousands of optical fibers arranged in an orderly manner, each core in the form of “pixels” to transmit image information and achieve long-distance flexible high-definition transmission.

### 技术优势 Technical Advantages

中国科学院上海光机所一直致力于多芯成像光纤以及内窥成像系统研究。当前研究所可提供覆盖紫外、可见光、近红外一区、近红外二区不同波段，三千至十万纤芯不同类型的多芯成像光纤及其成像系统，满足各种应用需求，可根据不同应用需求提供成熟可靠的柔性内窥解决方案。

The Shanghai Institute of Optics and Fine Mechanics, CAS, has been committed to the research of multi-core imaging fibers and endoscopic imaging systems. Currently, the institute can provide different types of multi-core imaging fibers and their imaging systems covering different wavelength bands of UV, VIS, NIR-I, NIR-II, and different types of fiber cores ranging from 3,000 to 100,000 cores, which can satisfy a variety of application requirements with reliable and flexible endoscopic solutions.

### 应用场景 Applications

多芯成像光纤内窥系统可广泛应用于：无创诊断、原位活检等生物医疗领域，发动机燃烧诊断等工业领域，光遗传学、脑科学等科研领域。

Multi-core imaging fiber optic endoscopy system can be widely used in biomedicine (non-invasive diagnosis and in-situ biopsy), industry (engine combustion diagnosis) and scientific research (optogenetics and brain science).

### 技术指标 Specifications

Imaging wavelength	UV / VIS / NIR
Numerical Aperture	0.5
Resolution	180 lp/mm
Number of Cores	3,000 / 5,000 / 10,000 / 20,000 / 50,000
Fiber Diameter	200μm / 300μm / 500μm / 800μm / 1000μm
Minimum Bending Radius	0.5cm / 2cm / 5cm / 10cm / 20cm
Typical Fiber Length	1m / 5m / 10m / 20m
Properties of imaging system	
Field of View	50 x 50mm <sup>2</sup>
Working Distance	50mm - ∞

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