

# Sunex

Excellence in Optical Design and Manufacturing

## Medical Camera Modules

25+ year track record of success in taking customer concepts from design through mass production.





# Sunex Medical Camera Modules

Sunex's expertise in endoscope lenses goes back to the mid-90s when our founder and CEO designed the optical stack for one of the first disposable Laparoscopes.

Since then, we have been designing and manufacturing many optical systems for medical devices that were introduced into the market, including dental cameras, various endoscopes, and stereographic vision systems for robotic surgery.

## Single-use Endoscopes

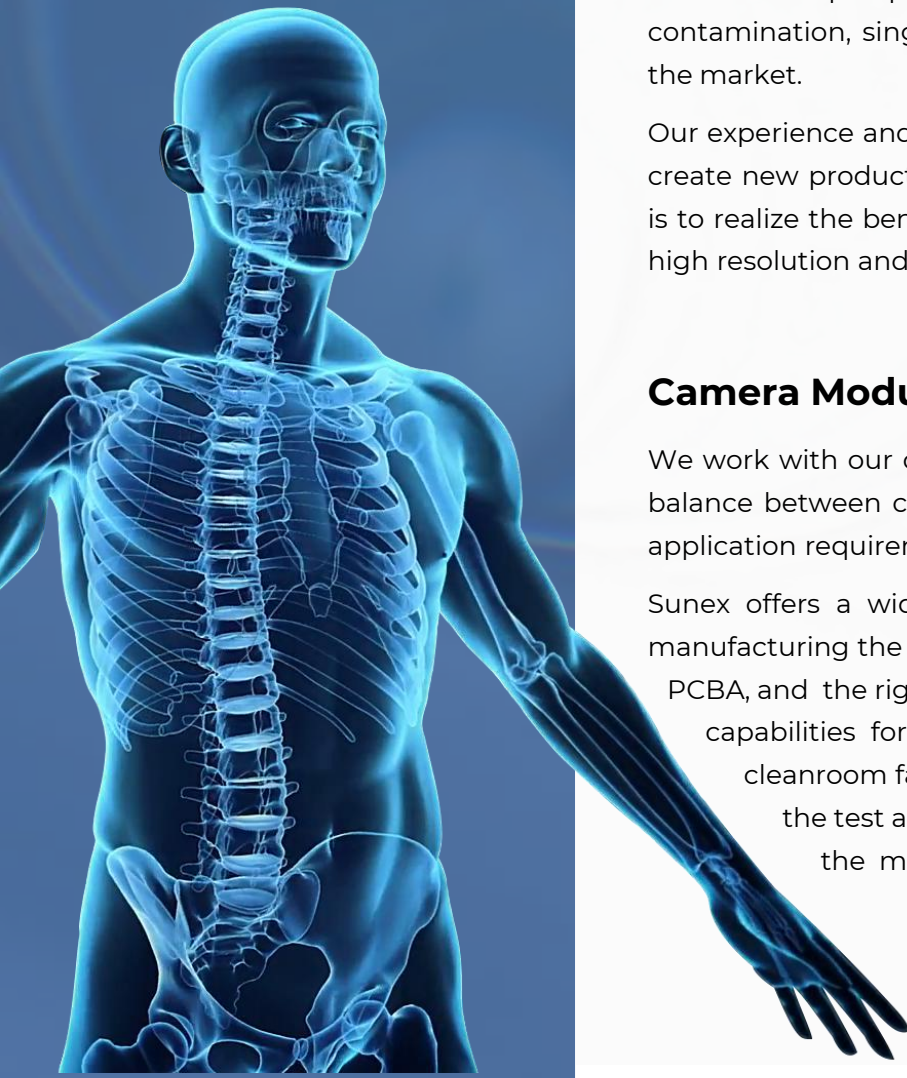
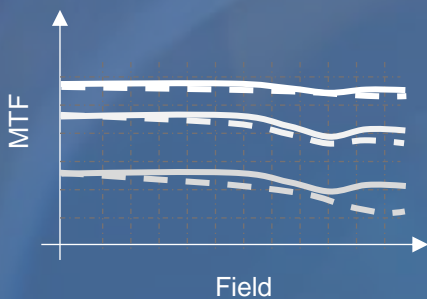
With the increase in minimally invasive surgery, the pressure to reduce cost per procedure, and the call for reduction of cross-contamination, single-use or disposable endoscopes have entered the market.

Our experience and engineering know-how allow our customers to create new products and novel solutions, especially when the goal is to realize the benefits of single-use for medical devices requiring high resolution and best-in-class imaging quality.

## Camera Module Capabilities

We work with our customers and partner network to find the best balance between cost and performance to meet the often unique application requirements.

Sunex offers a wide range of services, including designing and manufacturing the lens and the optomechanical components, the PCBA, and the right cabling solution. Sunex has the expertise and capabilities for high-volume manufacturing in state-of-the-art cleanroom facilities, automated 6-axis active alignment, and the test and quality control processes required to support the most demanding medical imaging applications.



Type	Format	Class	FOV	F/#	TTL	Features
Dental Camera	1/4"	3MP	67	14.8	6.25	Hybrid Design, very large F/#
Ophthalmoscope	1/2.5"	5MP	55	5.6	11.3	All glass, narrow FOV
Endoscope	1/4"	2MP	140	8.2	7.6	Hybrid Design, wide FOV
Endoscope	1/3"	VGA	85	1.7	6.0	Short TTL, unibody design
Endoscope	1/5"	5MP	90	6.0	4.9	High resolution, short TTL
Endoscope	1/2.5"	8MP	140	6.0	11.2	Hybrid Design, 4K, wide FOV
Endoscope	1/3"	8MP	195	3.2	12.5	Hybrid, 4K, SuperFisheye FOV

Table only shows a selection. Additional lens and module options are available.

## Fast Prototyping

In specific cases, prototyping is used as the first steppingstone toward mass production. Besides the lens performance, exploring various mechanical design solutions is often part of these early efforts. Staying within the required dimensions while accommodating additional working channels and features is crucial for a successful product.

Sunex can produce prototypes with short lead times to verify the design before transitioning further on the path to mass production using state-of-the-art fabrication processes for glass and plastic optical elements and all mechanical components.

## Designed for Mass Production

Often it is not the challenge to create a design “that works” but to find a solution that can scale to mass production, meeting price targets, optical performance, mechanical constraints, and quality requirements. Sunex has over two decades of design and manufacturing experience, and all our lenses and modules are designed for high-volume manufacturability.

Helping to save lives with Medical

Camera Modules



Consulting – Design – Manufacturing - Support

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