

Optical design and manufacturing for medical products

Healthcare solutions

Flex delivers a multidisciplinary approach that merges expertise with the latest technologies, leveraging years of success in bio-lab equipment, optical precision, miniaturized solutions, high-resolution imaging, smart illumination, opto-mechanics, lasers, and more. We help you optimize both medical performance and cost with confidence as you navigate the complexities of today's rapidly evolving optics market for medical devices.

From diagnostics equipment to surgical tools, optics have become an integral part of medical device design and manufacturing. Advances in cameras and image analysis have further extended the applications of cameras into medical diagnostics such as miniaturized digital microscopes for hematology and point-of-care diagnostics. Smaller footprints, better sensitivity, and high-resolution imaging capabilities are driving the greater adoption of cameras for different medical diagnostics applications.

Harnessing the principles of optics empowers designers to craft devices with enhanced imaging capabilities, facilitate minimally invasive procedures, and ultimately contribute to improved patient.

Comprehensive solutions for medical products

- Miniaturized solutions
- Bio-lab equipment
- Electro-optic design
- Sensor selection
- Opto-mechanical design
- Lens design, barrel design
- Firmware support for image correction, image acquisition
- Active alignment
- Illumination sources selection
- Laser systems design
- Power analysis
- Thermal analysis
- Tolerance analysis (error budget)
- Prototype manufacturing
- Supply chain
- New product introduction
- Mass production

Serving various medical markets



Diagnostics



Lab equipment



Hematology



ENT



Diabetes management



Ophthalmic



Pathology



Surgery



Cardiology



Dermatology/Aesthetic

Healthcare product experience



- Light source collimator design
- Disposable fiber optic for surgical application
- Miniaturized IoT throughput imaging system and image processing



- Digital laryngoscope design
- Lateral flow strips optical scanner, IoT
- Smart optical solutions for mini cameras



- Spectrometer imaging system
- Point-of-care optical system
- Point-of-care optical blood analyzer



- Aesthetic laser for skin treatment – system modification
- Optical calibration tool for ophthalmic system
- Dental CO2 laser systems system

Partner with Flex and stay ahead of the curve

As optics technology advances, our competitive edge and strategic optical applications continue to grow. Partnering with the healthcare solutions team at Flex can help you reach the full potential of optics and related technologies to address emerging challenges and seize new opportunities in patient care.

Our cross-industry expertise and 35 years' experience in the design, development, and manufacture of medical products help you navigate increasing complexity across the value chain while optimizing operations. Our comprehensive portfolio of product lifecycle services enables you to deliver medical products at scale with increased quality, productivity, and speed. With 21 medical manufacturing sites in four region and 13 countries, our global footprint gives you the ability to quickly adjust to changing regional, trade, and manufacturing dynamics.



Let's collaborate to create the extraordinary optics for medical devices

For more information, visit flex.com/healthcare



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Flex (Reg. No. 199002645H) is the manufacturing partner of choice that helps a diverse customer base design and build products that improve the world. Through the collective strength of a global workforce across 30 countries and responsible, sustainable operations, Flex delivers technology innovation, supply chain, and manufacturing solutions to various industries and end markets.