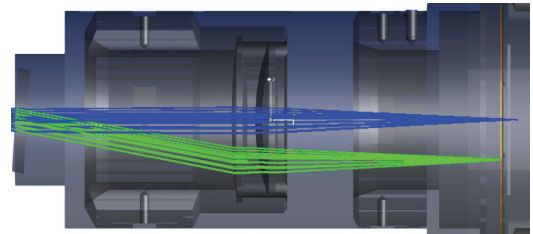


Accelerating Time to Market for Surgical Imaging Device with Enhanced Real-time Analysis

Translating a feasibility prototype for **real-time tissue-viability imaging** into a **sterilizable, surgeon ready device**, in under a year.

A medical-device startup needed to transform an early prototype into a next-generation surgical imaging platform, one that delivers real-time insight into tissue viability for safer, more precise resections. They engaged Forj Medical for multidisciplinary expertise across optical design, opto-mechanics, imaging electronics, and medical system architecture.



Imaging System Stray Light Analysis

THE CHALLENGE

- **Miniaturize** the prototype into a surgical-grade camera head with user controls
- **Sterilization-compatible** cables, connectors & an ingress-rated lens focus mechanism
- **Precision system tolerances** for high-performance imaging
- **Significant stray light** to resolve from the initial prototype design
- **Specialized, OEM-compatible materials**, sourced without adding scale risk
- **Seamless integration** with the OEM's existing control & imaging architecture

THE SOLUTION

- **Custom imaging cell with a movable, sealed focus ring** to protect internal components
- **Custom silicone-overmolded cable** for superior strain relief & compatibility
- **Anodized coating** on all components to survive repeated sterilization
- **Stray light eliminated** via system-level analysis, coatings, apertures, geometry
- **IP67 testing** + patient-isolated, low-latency electrical design
- **DFM from day one**, cost-effective precision parts, scalable assembly



THE RESULT

Rapid innovation, applied

< 1 yr

to clinical-study & commercial-launch readiness

2

critical milestones de-risked early

IP67

sealed & sterilization-ready

✓

met rigorous imaging performance & quality benchmarks