

# The EndoProbe Increases Safety and Reproducibility in Small-gauge Retinal Procedures

Surgical technique is critical to success in vitreo-retinal surgery. Access to proper instrumentation and the best technology plays an integral part in ensuring safety, efficiency and outcome.

The introduction of microincision vitrectomy has been amongst the most significant developments in vitreoretinal surgery and has had a profound impact on current practice patterns. Equipment manufacturers have responded to the various challenges presented to them by surgeons who have demanded

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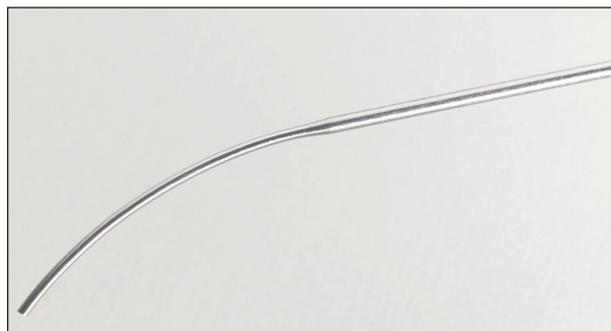
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innovative technology to meet such advancements. The technology that is used to deliver laser during retinal procedures has been no exception.

## DESIGN

The IRIDEX laser consoles are designed carefully to recognize when a specific probe has been connected. The console calibrates to ensure that the precise amount of power that has been set is delivered to the tip of the probe.



**Figure 1.** The 23-gauge Stepped Angled EndoProbe offers a 45° angle for greater reach to the periphery during a PRP.

The EndoProbe (IRIDEX Corporation) comes in 6 models: Straight, Angled, Stepped Angled, Illuminated, Adjustable & Intuitive, and Aspiration. The Straight EndoProbe affords the surgeon direct access and is easily inserted and extracted through the sclerotomy. Its tapered tip allows for easier insertion and better visualization during a procedure. The Angled EndoProbe's optimized angle is designed specifically for treating peripheral retina. It is well suited for wide-angle viewing systems and its angle nicely negotiates the curvature of the lens in phakic eyes. The Stepped Angled Probe is perfect for microincision surgery. Like the Angled EndoProbe, the Stepped Angled Probe has the optimized angle for working around the lens and in the periphery, but the tip is tapered (20 gauge tapers to 24 gauge at the tip;



"My endophotocoagulation probe of choice is the Stepped Angled EndoProbe, which I have found to be particularly efficient and safe. The narrow beam provides an appreciable improvement in laser spot consistency and allows the probe to be held further from the retina while maintaining excellent laser uptake. The laser handle is well designed and the curvature of the probe is ideal for phakic patients."

– Pouya N. Dayani, MD  
Retina-Vitreous Associates Medical Group, Los Angeles



**Figure 2.** The tighter cone angle on the Stepped Angled EndoProbe increases treatment distance from the retina and decreases laser power density, creating a safer procedure.

23 gauge tapers to 27 gauge at the tip; and 25 gauge tapers to 30 gauge at the tip [Figure 1]).

Ergonomically, the EndoProbe is advantageous to use because the handle fits comfortably in the surgeon's hand. Although the probes are disposable, they are constructed of aluminum and do not have the lightweight, lesser quality feel of plastic. The handpiece is beveled, which helps to navigate the angle of the probe in the eye.

## FEATURES

The cone angle on the Stepped Angled EndoProbe is tighter than standard laser probes. The resulting decreased beam divergence and the high-grade glass fibers allow for a narrower beam and laser spots that are more consistent and reproducible. This in return results in a reduction in the number of overall spots delivered and allows one to hold the probe further from the retina and to use lower powers. The Stepped Angle design coupled with the more narrow cone angle, allow the appropriate application of laser, while keeping the tip safely away from the retina (Figure 2). Such advances may reduce the risk of creating iatrogenic retinal holes or breaks associated with laser photocoagulation.

## QUALITY-CONTROL TESTING

Unlike many single-use instruments, IRIDEX probes undergo rigorous testing during the manufacturing process. Calibration and energy output are thoroughly tested prior to final packaging and sterilization—and not on a random basis, but for each probe. This virtually eliminates probe-to-probe variances and ensures consistent performance from one probe to the next. This process and attention to detail helps to ensure errors are caught before shipping, reducing wasted time in the operating room and administrative hassles afterward. IRIDEX is proud to distribute products that exceed industry standards.

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## ILLUMINATION

Delivering the required light through small-diameter cannulas to allow for proper illumination and visualization of the peripheral retina presents a challenge in small-gauge retina surgery. The laser fiber optic of the illuminated EndoProbe is surrounded by a large number of illumination fibers that, in the small-gauge probes, are flush with the probe needle, and spread to provide a wider cone of light.

## SUMMARY

The design and function of the EndoProbe handpieces are such that a surgeon can utilize laser in microincision retinal surgery in a manner that is precise, safe, and consistent, even when illumination is required. The quality of the instrumentation is superior, overcoming many of the challenges of small-gauge surgery. ■