

RI Saturn 5 Active™

# Directional Laser System



CooperSurgical®  
Fertility Solutions

# RI Saturn 5 Active™ Laser System

The Saturn 5 Active is a moveable laser designed for assisted hatching, zona thinning and biopsy techniques in the ART laboratory.

Using Biopsy Mode, users can draw a straight or curved line along a sample, select the number, frequency and size of holes, then ablate along the chosen path without moving the holding pipette.

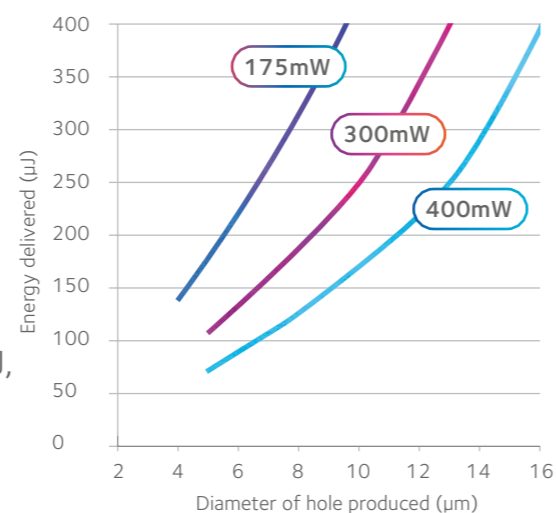


Clinics carrying out trophectoderm biopsies using the Saturn 5 Laser system have indicated that it reduces procedure time, lowers the incidence of blastocyst collapse, and lessens the need to mechanically separate the biopsied cells.<sup>1</sup>

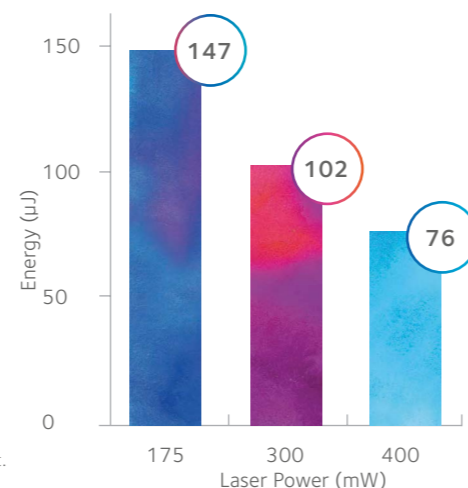
## Energy Delivered vs Hole Diameter Using RI Saturn 5 Active™ Laser (400mW)

By employing a higher laser power, the Saturn 5 Laser applies less total energy to make a specified hole size, in comparison to lower power laser systems.<sup>2</sup>

A study has shown that the energy that was needed to be delivered to make an 8µm hole at 400mW was 76µJ. At 300mW the energy was 102µJ. At 175mW the energy needed was 147µJ, almost twice the amount as at 400mW. At all diameters of hole, the lower power laser needed to deliver more energy than the higher power.<sup>2</sup>



The higher laser power of the Saturn 5 minimizes the amount of surplus energy delivered to the samples, reducing the potential for damage.<sup>2</sup> Therefore, the Saturn 5 system can help embryologists improve the safety of their laser procedures, compared to lower powered laser systems.



1. Lloyd S, Doshi A, Harper J, Application note. A new method of biopsying TE cells using the latest Saturn 5 Active™ Laser System, offers several potential ways to improve your procedures - Available on request.  
2. RI White Paper. In comparison of different power levels used by laser systems in the IVF laboratory - Available on request.

## Key Features

- **Fast biopsies** – Biopsy Mode provides excellent accuracy while laser drilling along a straight or curved line
- **Minimal laser energy** – highest laser power combined with a very short pulse time, which helps minimize the sample damage<sup>2</sup>
- **Intuitive software** – RI Viewer™ software package with streamlined user interface. Optional programmable foot pedal controls software and laser functions
- **Versatile** – Compatible with all popular brands of micromanipulators and inverted microscopes



## Microscope Compatibility

**Nikon** Ti2, Ti-S, Ti-U, Ti-E, TE200/300, Diaphot 200/300

**Leica** DMI8

**Olympus** X50, IX51, IX53, IX70, IX71, IX73, IX81, IX83

**Zeiss** Axio Observer

## Applications\*

The following procedures can be performed quickly and with excellent accuracy using the RI Saturn 5 Active™ Laser.

### Blastomere Biopsy, Polar Body Biopsy, Blastocyst Collapsing (for vitrification)

The directional laser allows the embryo to stay in the desired position and focus so that ablations can be made wherever required without additional manipulation. Our Biopsy Mode also allows for effective drilling along a predetermined line.

### Assisted Hatching

Accurate ablations can be made without the need to hold the embryo, making it very quick, with no additional consumable costs.

### Embryo Biopsy

The directional laser allows a series of ablations to be made across the trophectoderm cells without needing to move the embryo. This supports accuracy and safety.



\*The applicability of procedures is dependent on the regulations of the country into which the device is sold.

# Specifications

Pilot laser	630–650nm spot targeting solid state diode laser – red pilot beam guarantees the position of the invisible ablation laser. It is impossible for the pilot and ablation lasers to be out of alignment with each other.
Objective	Custom designed objective for optimum laser transmission, crystal clear imaging and minimal laser pulse times. Tested and proven not to exhibit astigmatism with Saturn 5 Laser Systems. A 40x objective is available.
Ablation laser	1480nm / 400mW solid state diode laser. Pulse length range 0.005–2.0ms / 5–2000 $\mu$ s. Class 1 laser product. Tested and proven not to exhibit thermal lensing
Laser unit dimensions (WxDxH)	220mm x 180mm x 34mm
Fluorescence compatibility	Compatible with epi-fluorescence on selected microscopes
Operation software	RI Viewer™ imaging software included, with digital laser targeting
PC system requirements	Operating systems: Windows 11, Windows 10, Windows 8.1, Windows 8, Windows 7 (SP1)
Mains input	100–240VAC, 50–60Hz



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