



ellman®

# Surgitron® DUAL RF™ 90

4.0 MHz Radiofrequency Technology

# The Technology

As pioneers of high frequency RF technology, Ellman created unparalleled surgical precision, versatility and safety. The Surgitron Dual 90 device's 4 megahertz (MHz) technology creates very little heat when cutting/coagulating tissue, resulting in minimal lateral thermal damage to surrounding tissues. The high frequency is up to eight times greater than traditional electrosurgery units, making Surgitron the ideal choice for your soft tissue cutting and coagulation needs. With over 55 years of experience, Ellman is your trusted worldwide brand for quality surgical products.

## The Features

- Exceptional precision and control through two distinct frequencies – Monopolar (4.0 MHz) and Bipolar (1.7 MHz)
- 73% less thermal spread as compared to Bovie® 1250 and Valleylab® ForceFX™ in porcine tissue<sup>3</sup>
- Easy operation with clear setting display via Digital Control Panel
- Reliable, consistent energy emission through Solid State Circuitry

## The Benefits

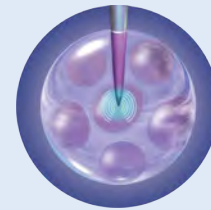
- Precision – sculpt precise incisions in very thin, delicate mobile or tension-free tissues (e.g. eyelid skin, earlobe, labia, etc.)<sup>2</sup>
- Less burning or charring of tissues<sup>1</sup>
- Enhanced readability of histologic specimens<sup>8</sup>
- Excellent cosmetic results with minimal scar tissue<sup>4,5</sup>
- Quick recovery<sup>6</sup>
- Decreased post-operative pain<sup>7</sup>

## The Return

- With versatility across procedures, Surgitron technology is a proven workhorse that will deliver years of reliable, cost-effective performance in both hospital and office environments

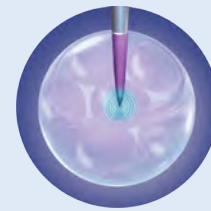
## HIGH FREQUENCY

How Our Technology Works



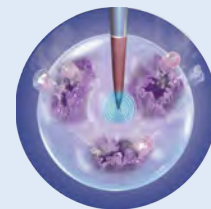
### STEP 1

High frequency Radiowave energy.



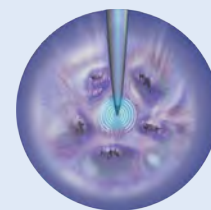
### STEP 2

Targeted tissue/cell readily absorbs energy due to high water content.



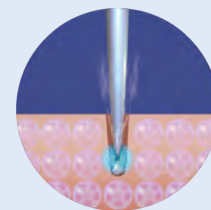
### STEP 3

Intracellular pressure increases as water molecules expand.



### STEP 4

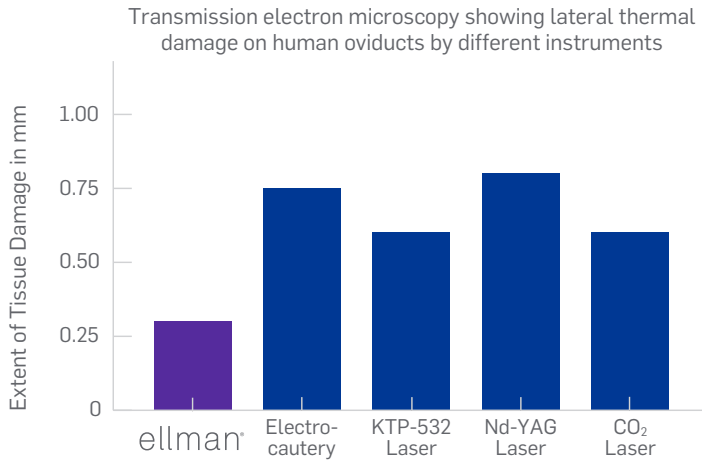
Volatilization results in cell conversion to vapor. Process emits steam which aids in coagulation.



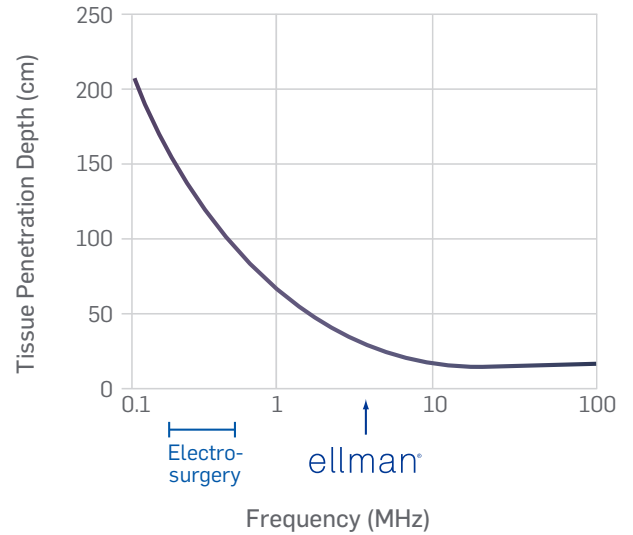
### STEP 5

Cellular interaction enables precise dissection with tissue preservation.

# 4.0 MHz Minimizes Lateral Thermal Spread & Maximizes Precision



Source: Olivar, AC, et al, Ann Clin Lab Sci. 1999 Oct-Dec; 29(4): p281-5.



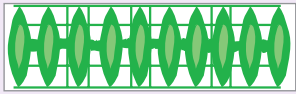
Source: Golio, JM, et al, "RF and Microwave Applications and Systems," The RF and Microwave Handbook, p21-2.

## Five Distinct Waveforms for Optimal Clinical Outcomes



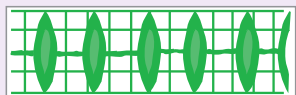
### Cut

Micro-smooth cutting • Negligible lateral heat • Ideal for skin incision and biopsy • Best cosmetic results <sup>6,7</sup>



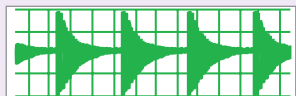
### Blend

Cutting with hemostasis • Ideal for subcutaneous tissue dissection and planing • Especially useful in vascular areas while producing minimal amounts of lateral heat and tissue damage



### Coag

Coagulation / Shrinkage • Ideal for hemostasis with controlled penetration



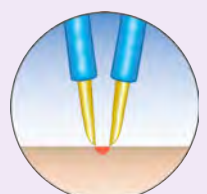
### Fulguration

Ideal for intentional tissue destruction



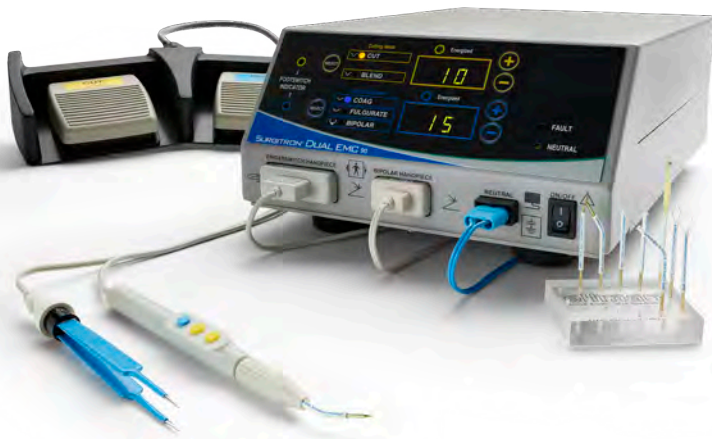
### Bipolar

Pinpoint, micro-coagulation • Ideal for coagulation in and around critical anatomy



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4.0 MHz Radiofrequency Technology



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	Specifications
<b>Output Frequency</b>	4.0MHz Monopolar 1.7MHz Bipolar
<b>Output Power</b>	Cut 90 W Blend 65 W Coag 45 W Fulgurate 35 W Bipolar 90 W
<b>Electrical</b>	100-240 VAC, 50/60 Hz
<b>Weight</b>	18 lbs (8.2 kg)
<b>Dimensions</b>	5" (12.7 cm) H x 9" (22.9 cm) W x 13" (33 cm) D

#### Clinical Citations

1. High frequency RF surgery minimizes burning of tissue, unlike laser or conventional electrosurgery.. Olivar, AC, et al, Ann. Clin. Lab Sci. (1999); 29 (4): p281-5.
2. Niamtu, J. Chapter 4B, "Radiowave Surgery in Oral and Maxillofacial Surgery", in Distraction Osteogenesis of the Facial Skeleton, 2007, p30-37.
3. Data on file.
4. Botero, G.E.S, J Otol Head Neck Surgery (1996); vol 24 (1), p69.
5. Aferzon, M, Derm Surgery (2002); vol 28, p735-738.
6. With less tissue destruction, healing is accelerated and patients can recover quickly. Bridenstine, J.B., Derm Surgery (1998); vol 24, p397-400.
7. High frequency RF surgery causes less trauma. Ericsson, E, et al, The Laryngoscope (2007); vol 117, p654.
8. Minimal Heat Dissipation. Silverman, EB, et al, Veterinary Surgery (2007); vol 36, p50-56.