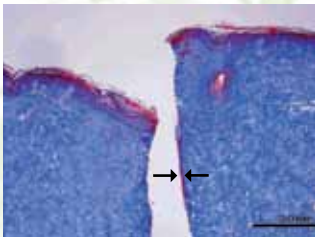




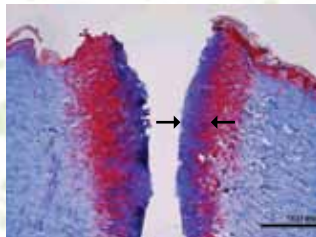
Pulsed plasma discharge
along the exposed edge of
the electrode

THE PULSE OF PRECISION.

THE PRECISION OF A SCALPEL AND THE BLEEDING CONTROL OF TRADITIONAL ELECTROSURGERY WITHOUT THE EXTENSIVE COLLATERAL TISSUE DAMAGE^{1, 2, 3, 6, 7}



PEAK PlasmaBlade



Traditional Electrosurgery

THE PEAK PLASMA BLADE...

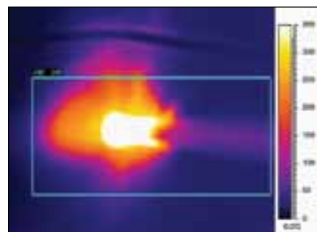
The PEAK[®] Surgery System balances a unique radiofrequency power source—the PULSAR[®] Generator—with a family of disposable devices—the PEAK PlasmaBlades[®]—to address a broad range of surgical applications.



The PEAK Surgery System consists of the PULSAR Generator, optional PULSAR Wireless Footswitch, PULSAR Cart, and PEAK PlasmaBlades.



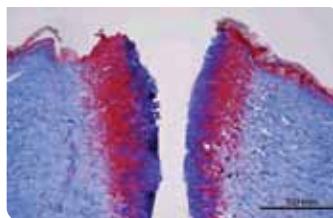
PlasmaBlade Avg temp 40 - 170 C^{1,2}



Electrosurgery Avg temp 200 - 350 C^{1,2}



PlasmaBlade Cut

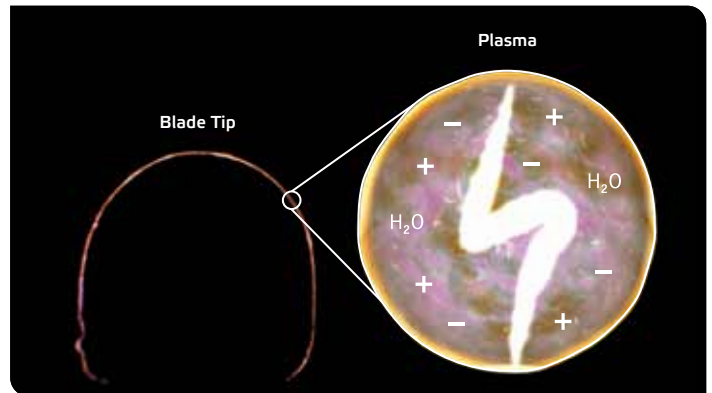


Electrosurgery Cut

PEAK Technology Overview

The PEAK Surgery System strikes a unique balance between precision cutting and bleeding control. Using novel **Pulsed Plasma Technology** along with a proprietary **TPS (Thermal Protection Shield) Insulation Technology** allows a surgeon to:

- Cut precisely through any type of tissue
- Significantly reduce collateral thermal damage
- Maintain superior performance in both wet and dry fields



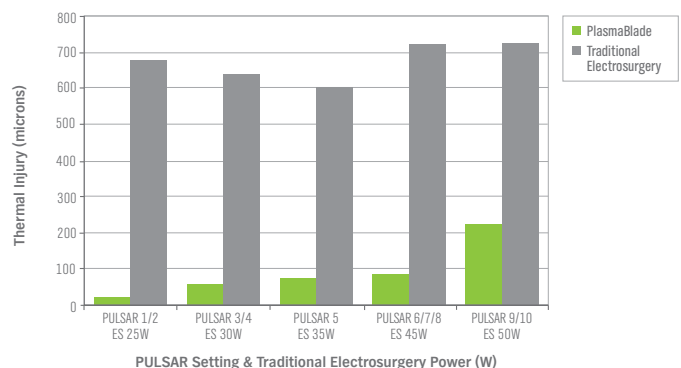
Plasma discharge along the exposed active electrode edge. Device tip is 99.5% insulated.

Plasma acts as a conductive medium which allows energy to transfer to target tissue at much lower power levels.

What is plasma?

Plasma is an electrically conductive cloud created when the RF energy contacts tissue. It is comprised of water vapor and charged particles called ions (positive and negative charges) from the breakdown of the tissue. This conductive cloud or “plasma” allows the energy to cross at much lower levels. This use of lower energy via plasma leads to lower operating temperatures and less thermal damage.

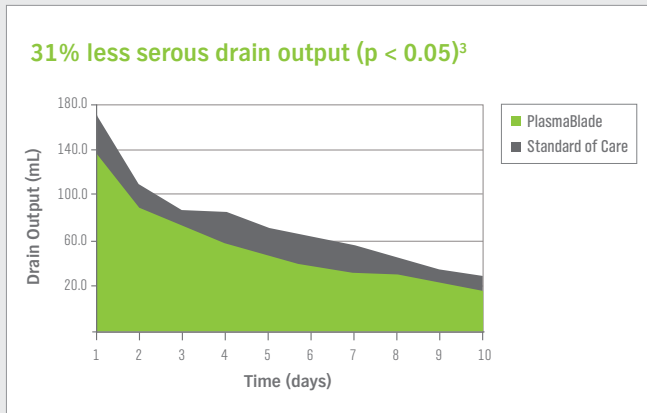
PlasmaBlade Thermal Injury Depth vs. Traditional Electrosurgery⁹



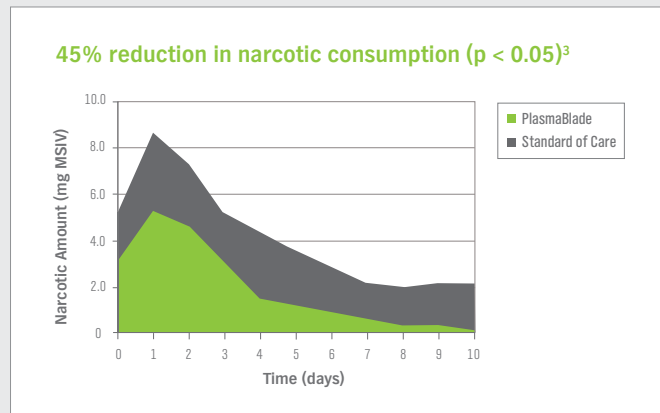
■ Cut mode incisions made with the PlasmaBlade demonstrated an average 92% reduction in thermal injury depth compared to traditional electrosurgery.

...CLINICAL AND ECONOMIC OUTCOMES

PRECISE Clinical Outcomes



- 74% reduction in acute thermal damage ($p < 0.05$)⁷
- 53% improvement in diet volume ($p < 0.05$)³
- 36% improvement in activity level ($p = 0.09$)³
- 57% reduction in hemoglobin drop ($p = 0.07$)³



- 23% reduction in estimated blood loss ($p < 0.05$)⁴ compared to traditional electrosurgery.
- Equivalent inflammatory response (CD3+ and CD68+ cells) to the scalpel at 3 and 6 weeks post incision⁷
- Equivalent healed incision strength and skin scar width to scalpel⁷

PlasmaBlade Economic Benefits

- **12% operating room time savings ($p < 0.05$)^{*4}**
 - > 24 min x \$35/min = \$840 Cost Savings⁸
 - **Displacement of single purpose devices (ultrasonic scalpel, bipolar coagulator)**
 - **99.5% insulated device reduces chance of inadvertent patient tissue injury**
 - **Non-sharp technology eliminates risk of scalpel injury to OR staff and surgeon**
 - > Each incident may cost a facility up to \$4,838 depending on infection status⁵
 - **Because of the lower temperature associated with the PlasmaBlade, it may reduce the possibility of surgical smoke associated with traditional electrosurgery, which can obscure the operating field.^{1, 2}**
- ^{*}Average OR cost per minute (non-surgery specific).



Selected References**

- ¹ Data generated by internal testing in chicken breast at PEAK Surgical, Inc. Temperature profile report ETR-00023 available upon request.
- ² Loh S, Chang E, Huang EJ, Carlson GA, Gurtner GC. Comparison of Surgical Incisions with the PEAK PlasmaBlade, Traditional Electrosurgery, and a Standard Scalpel. *Journal of Plastic and Reconstructive Surgery*. 2009; 124(6):1849-1859. Chronic wound healing study conducted in living porcine model.
- ³ Rosenberg HL, Vose JG, Atmodjo DY, et al. A Randomized Controlled Trial of the PEAK PlasmaBlade in Abdominoplasty Compared to Scalpel and Traditional Electrosurgery. *Presentation at the American College of Surgeons Annual Meeting*, 2009. Chicago, Illinois.
- ⁴ Farless B, Carter J, Vose JG. Two Retrospective Reviews of Unilateral Total Knee Arthroplasty with the PEAK PlasmaBlade compared to Scalpel and Traditional Electrosurgery. *Texas Health Research and Education Institute Institutional Review Board*; study completed December 2010. Summary report VR-00083 available upon request.
- ⁵ Vose JG, Berkowitz JM. Reducing Scalpel Injuries in the Operating Room. *Journal of the AORN*. 2009; 90(6):867-872.
- ⁶ Chang EI, Carlson GA, Vose JG, Huang EJ, Yang GP. Comparative Healing of Rat Fascia Following Incision with Three Surgical Instruments. *J Surg Res* 2011, 167: e47-54. Chronic wound healing study conducted in living rat model.
- ⁷ Ruidiaz ME, Messmer D, Huang EJ, Atmodjo DY, Vose JG, Rosenberg HL, Kummel AC, Gurtner GC. Comparative Healing of Human Cutaneous Surgical Incisions Created by the PEAK PlasmaBlade, Conventional Electrosurgery, and a Standard Scalpel. study conducted in abdominoplasty procedures, *Journal of Plastic and Reconstructive Surgery*. 2011; 128(1): 104-111. Chronic wound healing study conducted in subjects undergoing abdominoplasty.
- ⁸ Bozic KJ, Katz P, Cisternas M, Ono L, Ries MD, Showstack J. Hospital resource utilization for primary and revision total hip arthroplasty. *J Bone Joint Surg Am*. Mar 2005;87-A(3):570-576.
- ⁹ Data generated by internal testing in porcine skin at PEAK Surgical, Inc. Thermal damage study report ETR-00127, available upon request.

**Performance has not been specifically established in all surgical procedures.



The PEAK PlasmaBlade Family

The PULSAR Generator features:

- “Plug-n-play” user-friendly interface
- Simple 1 to 10 numeric set points
- Dual output control – Power & Voltage
- 460 KHz to 4 MHz operating frequency
- 350 to 4500 Volts, 0.5 to 50 Watts
- Tissue impedance feedback and auto-adjust
- Patient Return Electrode (pad) Monitoring (REM) System

CUT	SET POINT	COAG
<ul style="list-style-type: none"> • 59% less bleeding than scalpel² • Equivalent healed scar width to scalpel incisions⁷ • 74% less thermal damage than traditional electrocautery³ 	1	<ul style="list-style-type: none"> • Equivalent hemostasis to traditional electrocautery¹ • 50% less thermal damage compared to traditional electrocautery¹
	2	
	3	
	4	
	5	
<ul style="list-style-type: none"> • Equivalent hemostasis to traditional electrocautery¹ • 50% less thermal damage¹ 	6	
	7	
	8	
	9	
	10	

PRODUCT	CATALOGUE NUMBER	DESCRIPTION
PEAK PlasmaBlade 4.0	PS200-040	4.0mm wide spatula tip
PEAK PlasmaBlade PLUS	PS210-030P	3.0mm wide spatula tip; variable length shaft with CoagCap
PEAK PlasmaBlade Needle	PS200-001	Ultra-fine needle point tip
PEAK PlasmaBlade EXT	PS215-040	15cm extended shaft, 4.0mm spatula tip
PEAK PlasmaBlade 3.0S	PS210-030S	3.0mm wide spatula tip, variable length shaft, integrated suction
PULSAR Wireless Footswitch	PS100-200	
PULSAR Cart	PS100-300	
PULSAR Generator	PS100-100	

Highly insulated electrode (99.5%)

Bendable shaft

Rotating tip

Ergonomic handpiece



PlasmaBlade 4.0

PlasmaBlade PLUS

PlasmaBlade Needle

PlasmaBlade EXT

PlasmaBlade 3.0S

For more information or to schedule a demonstration, please contact **PEAK Surgical Customer Service at 888-792-PEAK** or visit www.peak surgical.com

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LBL-00012 Rev K