CREO MEDICAL

CROMA

Advanced Energy Platform

Powered by kamaptive™ technology

The Next Generation Energy Platform

At Creo Medical we believe that energy has the power to transform lives and improve our world.

Kamaptive™ Technology

Our revolutionary Kamaptive Technology and medical devices are developed to significantly improve patient outcomes, by bringing Laparoscopic tools into Therapeutic Endoscopy.

Kamaptive Technology seamlessly combines energy from the full electromagnetic spectrum, providing the CROMA energy platform with unrivaled capability. Kamaptive is the power behind optimization and advanced control of energy while delivering superior usability.

Powered by kamaptive™ technology

CROMA Advanced Energy Platform

Our innovative Kamaptive Technology combines multiple energy sources within our CROMA Energy Platform to optimize without compromise and provide unrivaled capability to Therapeutic Endoscopy.

CROMA automatically optimizes the energy and delivers both advanced bipolar radiofrequency for precise, superior dissection across various tissue types, and microwave energy for precise and on-demand coagulation. These output to a wide range of miniature endoscopic devices – providing the desired tissue effect accurately and safely, and improving clinical and economic outcomes.

Advanced Bipolar RF

enables a smooth cut with
clean margins and minimal bleeding

- Closed-loop technology and proprietary waveform
- Lower voltage than standard monopolar
- Focused energy, adapted based on tissue response

Microwave

enables precise, on-demand reproducible effects for both ablations and hemostasis

- 5.8 GHz super high frequency
- Better control of the thermal energy and depth of penetration

The CROMA Energy Platform precisely controls **Advanced Bipolar RF** and **Microwave** energy to enable a suite of flexible, miniature endoscopic devices to deliver:

- unrivaled **usability and safety**[1-7]
- **optimal tissue effect**[1-7]
- **improved clinical and economic outcomes**[7]
- **expanded capabilities** in therapeutic endoscopy

Dissection

Advanced bipolar RF with **adaptive technology** which modifies the energy applied based on the tissue response, enabling a smooth cut with clean margins and minimal bleeding.

Coagulation

Super High Frequency Microwave 5.8 GHz enables better control of the thermal energy and depth of penetration for the protection of underlying tissue structure, reproducible and on-demand effects for coagulation.

Ablation

Super High Frequency Microwave 5.8 GHz allows ablation in more vascular structures (heat sink effect) and the use of patented waveforms provide controlled reproducible results.

Device Portfolio for Therapeutic Endoscopy

Portfolio

CROMA delivers advanced bipolar RF and controlled super high frequency microwave energy through a single accessory port for a suite of miniature endoscopic devices, providing precise resection, dissection, coagulation and ablation capabilities.

Speedboat™ Technology

Speedboat™ Inject

The **first multimodal endoscopic device with advanced bipolar RF blade and microwave coagulation**[8]

Speedboat™ Slim

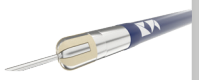
SpydrBlade™ Technology

SpydrBlade™ Flex

The **only flexible endoscopic scissors with advanced bipolar RF blades & microwave coagulation**[8]

SlypSeal™ Technology

SlypSeal™ Flex



The **only non-stick endoscopic microwave haemostasis device**[8]

MicroBlate™ Technology

MicroBlate™ Fine

The **smallest diameter microwave device for the ablation (coagulation) of soft tissue**[8]

MicroBlate™ Flex

The **most flexible microwave probe for the ablation (coagulation) of soft tissue**[8]

CROMA Advanced Energy Platform Specifications

The CROMA Electrosurgical System including Speedboat RS2 Surgical Accessory is intended for use in the cutting of soft tissue using radiofrequency current, the coagulation (hemostasis, cauterization) of soft tissue using microwave energy, and the delivery and injection of solutions for endoscopic surgical procedures within the gastrointestinal tract.

Product code	7-EMR-050
Power requirements	
AC Voltage Range	100-120 / 220-240 V
AC Frequency	50-60 Hz
Output, RF (Bio Med Only)	
Power Capability	200 W
Maximum Voltage	460 V peak
Output, RF (Treatment Mode)	
Power Capability	35 W (Maximum)
Maximum Voltage	460 V peak
Output, Microwave (Treatment Mode)	
Power Capability	62 W Nominal
Output Frequency	5,800 MHz ± 1 MHz
Dimensions	165 mm (H) x 400 mm (W) x 458 mm (D)
Weight	35 Lb / 16 Kg
Patient circuit classification to IEC 60601-1:2005	Type CF. This is Defibrillator Proof.

Technology Overview

MONOPOLAR		The Difference Between Cutting and Coagulation is The Rate and the Duration in which the Tissue Temperature Rises	ADVANCED BIPOLAR	MICROWAVE
≤2000 V	VOLTAGE	**Lowering the voltage & providing less current reduces the potential for unwanted tissue damage.** **Advanced Bipolar** Fixed distance with a short, focused pathway for targeted energy delivery enabling a lower voltage <460 V. Adjusts voltage/current based on tissue impedance, to maintain power density for a smooth cut. **Microwave** Electromagnetic wave instead of electrical current, creates a homogeneous energy field at 20 V and penetrates tissue regardless of resistive changes, controlling temperature and thermal damage.	460 V	20 V
200 KHz to 3.3 MHz	FREQUENCY	**A higher frequency and shorter wavelength provides control and depth penetration, and is not limited by heat sink effect.** **Advanced Bipolar** High frequency energy delivery with adaptive technology to provide a smooth, precise cut with coagulation. **Microwave** 5.8 GHz super high frequency penetrates less with more power, allowing for controlled depth of penetration creating greater efficiency and precision on targeted tissue.	200 KHz to 3.3 MHz	5.8 GHz
Electrical Conduction Throughout body – path of least resistance	ENERGY DELIVERY & PATHWAY	**Focusing the energy delivery ensures accurate treatment of the intended area and reduces the potential for unpredictable energy delivery.** **Advanced Bipolar** In radiofrequency, voltage pushes current from one electrode to the other, causing electricity to travel rapidly through tissue for focused and targeted energy delivery. Advanced bipolar RF provides adaptive tissue technology which automatically adjusts the voltage and current based on the specific tissue to be treated. **Microwave** Microwave uses electromagnetic radiation, meaning energy radiates out from a central point and is not pushed from one point to another. Its energy naturally declines as it travels through tissue delivering a very controlled and finite energy field.	**Electrical Conduction** Between electrodes, focused at the device	**Electromagnetic Radiation** Homogeneous energy field focused around device
	THERMAL EFFECT	**Targeting the temperature & energy delivery minimizes unwanted thermal damage.** **Advanced Bipolar** Designed to balance high quality cut and coagulation to minimize bleeding with optimal thermal margin and reducing unwanted thermal damage. **Microwave** Rotation of water molecules to generate heat within the field, as opposed to sending current into the body. The heat radiates evenly throughout targeted tissue for controlled penetration to coagulate the underlying vessel without compromising delicate tissue structures.		
Resistive Heating Through oscillation of ions in tissue molecules Rapid temperature rise >200 °C	TEMPERATURE	**Controlling and maintaining the specific temperature level achieves the desired effect.** **Advanced Bipolar** Enabling a smooth cut with clean margins and minimal bleeding, closed-loop technology and proprietary waveform, lower voltage than standard monopolar focused energy, adapted based on tissue response. Typically, temperatures can range from 100-200 °C for cutting. **Microwave** Electromagnetic wave instead of electrical current, creates a homogeneous energy field and penetrates tissue regardless of resistive changes, reducing heat sink effect, controlling temperature and thermal damage.	**Resistive Heating** Through oscillation of ions in tissue molecules Rapid temperature rise >200 °C	**Frictional Heating** Through rotation of water molecules Controlled temperature rise 60–90 °C

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8. Data on file. Products may not be approved or be available in your territory. Please contact your local sales representative for more information.

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Anything is possible with the right approach