80K Cavitation Vacuum RF Machine - Official Clinical Overview & Technical Datasheet

DEVICE IDENTIFICATION AND INTENDED USE

The 80K Cavitation Vacuum RF Machine is a Class IIb medical aesthetic device engineered for non-invasive body contouring, cellulite reduction, and dermal tightening. The system integrates three primary energy modalities: Ultrasonic Cavitation (40kHz ± 5kHz), Vacuum Suction, and Multipolar Radiofrequency (1MHz). This tri-modal architecture enables simultaneous or sequential treatment of adipose tissue, fibrous septae, and dermal collagen matrices.

INTERNAL HARDWARE TOPOLOGY

The platform utilizes a dual-channel ultrasonic generator delivering pulsed or

continuous cavitation waves. The RF module incorporates four independent electrodes with closed-loop impedance monitoring to prevent thermal hotspots. A high-torque rotary vacuum pump generates adjustable negative pressure between -25 kPa and -75 kPa. All subsystems are governed by a real-time operating system (RTOS) on a 10.4-inch capacitive touchscreen. Critical power components are isolated via a medical-grade AC/DC converter with EMI filtration.

EPIDERMAL PROTECTION MECHANISMS

- Real-time thermistor feedback within the handpiece (cutoff at 43 ° C on epidermis)
- Automatic RF power rollback if contact is lost or impedance exceeds 150 Ohm
- Vacuum interlock that deactivates suction if a leak is detected or if the handpiece is stationary for >3 seconds
- Cavitation duty cycle limiter preventing transducer overheating

TREATMENT ADVANTAGES

1. Synergistic Lipolysis: Cavitation disrupts adipocyte membranes; RF tightens overlying skin.
2. Mechanotransduction: Vacuum mechanically stretches septae to reduce

dimpling.

3. Large Treatment Windows: 35mm and 50mm cavitation probes; RF roller with 4 electrodes.

4. Shortened Protocols: 20–30 minutes per area (abdomen, flanks, thighs, arms).

5. Zero Downtime: No anesthesia, no incisions, patients resume normal activity immediately.

SPECIFICATION MATRIX

Parameter	**Specification**
Ultrasonic Frequency	40 kHz (±5 kHz) continuous/pulsed
Ultrasonic Intensity	0 – 2.2 W/cm² (adjustable)
RF Frequency	1 MHz (Multipolar, 4 electrodes)
RF Output Power	0 – 150 W (effective, impedance adaptive)
Vacuum Pressure	-25 kPa to -75 kPa (regulated)
Vacuum Flow Rate	≥ 12 L/min
Display	10.4 inch capacitive touchscreen, 1024x768
Power Supply	AC 110-240V, 50/60Hz, 300W (max)
Dimensions (Main Unit)	430mm (W) x 480mm (D) x 1100mm (H)

Weight	≈ 28 kg (complete with handpieces)
Operating Conditions	+10 ° C to +30 ° C, 30% – 75% RH non-condensing

REGULATORY COMPLIANCE

The device carries CE marking (MDR 2017/745) and complies with IEC 60601-1, IEC 60601-2-2 (RF surgical and therapy equipment), and IEC 60601-2-83 (for lipolysis). EMC to IEC 60601-1-2. The system is manufactured under ISO 13485:2016 certified processes. Optional FDA 510(k) filing documentation available for cleared models.