

Professional Thermage Alternative Platform - Official Clinical Overview & Technical Datasheet

DEVICE IDENTIFICATION & EXECUTIVE OVERVIEW

This document outlines the clinical architecture, performance characteristics, and operational specifications of the Professional Thermage Alternative Platform (PTAP), a non-invasive monopolar radiofrequency (RF) system engineered for dermal remodeling and collagen induction. Positioned as a high-efficiency alternative to legacy thermage-based protocols, this platform delivers equivalent volumetric heating with enhanced epidermal protection and reduced patient burden.



INTERNAL HARDWARE TOPOLOGY & ENERGY DELIVERY

The PTAP integrates a Class 1 RF generator capable of continuous or pulsed emission at $6.78 \text{ MHz} \pm 0.1 \text{ MHz}$, synchronized with a real-time impedance feedback loop. The system topology consists of:

- 100 W peak RF power output with closed-loop temperature control ($35\text{--}45 \text{ }^\circ\text{C}$ cutaneous threshold)
- Contact-based capacitive coupling with four discrete treatment tips (1.5 cm^2 , 3.0 cm^2 , 4.5 cm^2 , and ocular-safe 0.8 cm^2 variants)
- Multi-layer impedance sensing ($50\text{--}300 \text{ } \Omega$ range) enabling automatic fluence adaptation to dermal hydration gradients

EPIDERMAL PROTECTION MECHANISMS

Proprietary sapphire contact cooling (pre-, parallel-, and post-pulse) maintains surface temperature $\leq 10 \text{ }^\circ\text{C}$ during energy delivery, allowing bulk dermal heating to $55\text{--}65 \text{ }^\circ\text{C}$ without ablative injury. Integrated thermal sensors (sampling at 100 Hz) trigger automatic energy rollback at epidermal thresholds above $42 \text{ }^\circ\text{C}$. This design achieves pain scores ≤ 3 on the 0–10 visual analog scale in 92% of treated patients ($n = 215$, unpublished internal study).

TREATMENT ADVANTAGES & INDICATIONS

- Collagen denaturation followed by neocollagenesis (peak effect at 3 – 6

months)

- Indications: skin laxity of the face, neck, abdomen, and thighs; periorbital rhytids; cellulite textural improvement

- Contraindications: active implants, pregnancy, local infection, collagen vascular disorders

- Mean treatment time: 25 minutes (full face) vs. 60+ minutes for legacy thermage protocols

Parameter	Specification
RF Frequency	6.78 MHz (± 0.1 MHz)
Output Power	0–100 W (adjustable in 1 W steps)
Treatment Tip Sizes	0.8 cm ² (ocular), 1.5 cm ² , 3.0 cm ² , 4.5 cm ²
Cooling Type	TEC + Sapphire contact + air + water circulation
Surface Cooling Temp	≤ 10 °C (active cooling phase)
Max Dermal Temp	65 °C (measured at 2–3 mm depth)
Impedance Range	50–300 Ω with auto- adjust
Pulse Duration	100 ms – continuous (CW)
Skin Types	Fitzpatrick I – VI (with cooling adaptation)
Touchscreen	10.1" industrial capacitive, IP64 rated

Power Supply	110–240 V AC, 50/60 Hz, 500 VA
Dimensions (main unit)	42 x 36 x 28 cm (W x D x H)
Weight	12.5 kg (27.5 lb)

SPECIFICATION MATRIX – PROFESSIONAL THERMAGE ALTERNATIVE PLATFORM

| Parameter | Specification |

|-----|-----|

| RF Frequency | 6.78 MHz (± 0.1 MHz) |

| Output Power | 0–100 W (adjustable in 1 W steps) |

| Treatment Tip Sizes | 0.8 cm² (ocular), 1.5 cm², 3.0 cm², 4.5 cm² |

| Cooling Type | TEC + Sapphire contact + air + water circulation |

| Surface Cooling Temp | ≤ 10 °C (active cooling phase) |

| Max Dermal Temp | 65 °C (measured at 2–3 mm depth) |

| Impedance Range | 50–300 Ω with auto- adjust |

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REGULATORY COMPLIANCE & STANDARDS

CE 0476 (Medical Device Regulation (EU) 2017/745), ISO 13485:2016 certified manufacturing, IEC 60601- 1 (Ed. 3.1), IEC 60601- 2- 2 (RF surgical equipment), IEC 60601- 1- 11 (home healthcare environments – for professional use only). FDA 510(k) clearance pending (submission K240123). The platform undergoes 100% electrical safety and power calibration prior to shipment.



CLINICAL PROTOCOLS & MAINTENANCE SUMMARY

- Standard protocol: 3 passes, 5–8 J/cm³ volumetric energy, 1.5 cm tip for laxity, 3.0 cm tip for body contours

- Ocular protocol: 0.8 cm tip, maximum 4 J/cm³, mandatory corneal shields
- Handpiece durability: 10,000+ treatment pulses per tip (validated in bench testing)
- Calibration interval: biannual (certified service centers) or after 500 treatment hours
- Consumables: single- patient use coupling gel (aqueous, hypoallergenic) and sterile tip covers