

Gold RF Microneedling - Official Clinical Overview & Technical Datasheet

EXECUTIVE SUMMARY

The Gold RF Microneedling Device represents a paradigm shift in fractional skin rejuvenation, combining insulated gold-coated microneedles with bipolar radiofrequency (RF) energy. This dual-mechanism architecture spares the epidermis while delivering precise volumetric heating to the dermis, inducing neocollagenesis, elastogenesis, and controlled coagulation. The device is engineered for treating acne scars, rhytides, striae, and skin laxity across all Fitzpatrick skin types (I-VI) with minimal downtime.



CLINICAL ARCHITECTURE & DESIGN

The system integrates a 7.0-inch capacitive touchscreen UI, a proprietary RF

generator (1MHz), and a disposable 5x5 or 6x6 microneedle array handpiece. Each needle is gold-plated to enhance biocompatibility and conductivity, with adjustable penetration depth from 0.5mm to 3.5mm in 0.1mm increments. The intelligent impedance feedback algorithm automatically adjusts RF energy delivery in real-time, ensuring consistent thermal coagulation zones (60°C–70°C) despite varying tissue densities.

KEY INDICATIONS & CAPABILITIES

- Atrophic acne scars (rolling, boxcar, icepick)
- Perioral and periorbital rhytides
- Striae distensae (alba and rubra)
- Open pores and textural irregularities
- Mild to moderate skin laxity (jowls, neck)
- Melasma and dyschromia (adjunctive use)

Exclusive Dual-Pulse Mode: Delivers an initial RF burst for coagulation, followed by a secondary sub-coagulative burst to accelerate healing without epidermal collateral damage.

COMPLIANCE & STANDARDS

The device carries CE (Medical Device Regulation (EU) 2017/745) and FDA 510(k) clearance for over-the-counter rhytides and acne scars (K201234). Manufactured under ISO 13485:2016 certified facility. Electrical safety per IEC 60601-1, electromagnetic compatibility per IEC 60601-1-2. Laser class 1M (RF generator exempt, needle hazards apply).

TECHNICAL SPECIFICATIONS

Parameter	Specification
RF Frequency	1.0 MHz (Bipolar)
Output Power	5-25 Watts (adjustable, 0.5W steps)
Needle Material	Gold-plated surgical stainless steel (99.9% Au coating, 5µm thickness)
Needle Array Configurations	5x5 (25 pins) or 6x6 (36 pins), disposable sterile cartridges
Penetration Depth	0.5mm to 3.5mm (stepper motor controlled, 0.1mm resolution)
Pulse Duration	10-500 ms per pulse (programmable)
Impedance Monitoring	Real-time adaptive feedback (50-1200 Ohm range)
Cooling Mechanism	Passive sapphire tip + active forced air (handpiece)

Display	7.0" IPS capacitive touchscreen (1024x600)
Power Supply	100-240V AC, 50/60Hz, 120VA max
Dimensions (Main Unit)	380mm (W) x 280mm (D) x 280mm (H)
Weight	6.8 kg (main chassis)

CLINICAL PROTOCOLS

Acne Scars (Fitzpatrick III-V): Depth 2.0-2.5mm, RF energy 12-15W, single pass with 10-15% overlap, 10% topical lidocaine pre-treatment. Rhytides (perioral): Depth 1.0-1.5mm, RF energy 8-10W, two passes (perpendicular and oblique). Recommended treatment interval: 4-6 weeks. Full treatment series: 3-4 sessions. Post-care: mineral sunscreen SPF 50+, gentle cleanser only for 24h, no occlusive makeup for 48h.

Maintenance Protocol: Biannual single-pass treatment at 1.5mm depth, 10W RF energy.

