Acoustic Wave Therapy (AWT) Machine - Official Clinical Overview & Technical Datasheet

EXECUTIVE SUMMARY

This document provides a comprehensive technical and clinical overview of the Acoustic Wave Therapy (AWT) Machine, a premium-class radial pressure wave generator designed for aesthetic and rehabilitative medicine. The device utilizes high-intensity, focused acoustic pulses to mechanically stimulate soft tissue, promoting neovascularization, collagen reorganization, and cellulite reduction. This datasheet outlines its clinical architecture, safety compliance, treatment protocols, and complete technical specifications for procurement, integration, and daily operation in medical aesthetic practices.

CLINICAL ARCHITECTURE & DESIGN

The AWT Machine operates via an electro-pneumatic ballistic generator, accelerating a projectile within a handpiece to create low-frequency acoustic waves (1 – 21 Hz). These radial waves propagate through soft tissue up to a depth of 6 cm, inducing mechanotransduction. Key design features include an ergonomic shock-transmitting handpiece with interchangeable 15mm, 25mm, and 36mm applicator tips, a 10-inch capacitive touchscreen control interface, and a silent high-efficiency compressor. The internal architecture separates the pneumatic generation module from the power supply and EMI shielding, ensuring stable output across extended duty cycles.

KEY INDICATIONS & CAPABILITIES

- Cellulite reduction (Stage I–III, Nurnberger-Muller scale)
- Soft tissue remodeling and localized adipose fibrosis
- Plantar fasciitis and chronic tendonopathy adjunct therapy
- Post-liposuction fibrosis and scar tissue modulation
- Improved local microcirculation and lymphatic drainage
- Skin tightening via fibroblast activation

COMPLIANCE & STANDARDS

The AWT Machine holds full medical device compliance. The system is certified under applicable international standards including IEC 60601-1 (Medical Electrical Equipment General Requirements), IEC 60601-1-2 (EMC), and ISO 13485 for manufacturing quality management. The device is registered for clinical use in select global territories; practitioners must verify local registration status prior to procurement.

TECHNICAL SPECIFICATIONS

- Output Type: Radial pressure wave
- Max Positive Output Pressure: Up to 5.0 bar
- Pulse Rate: 1–21 Hz
- Energy Flux Density: 0.03 – 0.54 mJ/mm²
- Penetration Depth: Effective up to 6 cm
- Handpiece: Pneumatic ballistic, shock-dampened grip
- Applicator Tips: 15mm, 25mm, 36mm (autoclavable, medical-grade aluminum)
- User Interface: 10-inch high-brightness resistive touchscreen
- Acoustic Noise: < 72 dBA at maximum output
- Cooling: Passive thermal dissipation + integrated fan
- Power Supply: AC 100–240V, 50/60Hz, 250VA
- Dimensions (W x D x H): 450mm x 420mm x 320mm

- Weight: 12.5 kg (unit only)

- Operating Environment: +10°C to +30°C, 30%–75% RH non-condensing

Parameter	Specification
Max Output Pressure	5.0 bar
Pulse Rate Range	1 – 21 Hz
Energy Flux Density	0.03 – 0.54 mJ/mm²
Effective Penetration Depth	Up to 6 cm
Applicator Tip Sizes	15mm / 25mm / 36mm
Power Supply	AC 100–240V, 50/60Hz, 250VA
Unit Weight	12.5 kg
Dimensions (WxDxH)	450mm x 420mm x 320mm

CLINICAL PROTOCOLS

Standard treatment protocol for cellulite reduction: Apply coupling gel to target area. Select 15mm or 25mm tip based on treatment depth. Initiate at 2–3 bar, 12 Hz, 2000 pulses per zone. Progress to 3.5–4.5 bar based on patient tolerance. Typical session: 2000–4000 pulses per thigh, 6–8 sessions at 7-day intervals. For soft tissue fibrosis: 36mm tip, 3.0–4.0 bar, 8 Hz, 1500–2000 pulses per scar site, 4 sessions spaced 14 days. Always avoid bony prominences, eyes, thyroid, gravid

uterus, malignant tissues, and thrombotic regions.

Contraindications include pregnancy, pacemaker presence, acute inflammation, anticoagulation therapy, and epiphyseal plates in pediatric patients. Post-treatment erythema is expected and resolves within 24–72 hours. AWT is a non-thermal, non-ablative acoustic therapy with no required downtime.