

QuakeMate

Technical Datasheet

Educational Earthquake Shake Table

Provided by QuakeLogic Inc. | Roseville, California



QuakeMate™ is a single-axis, electromechanical earthquake shake table designed for **educational and instructional use**. The system enables repeatable simulation of seismic motion for demonstrating **structural dynamics, resonance, seismic response, and failure mechanisms** in classroom and laboratory environments. QuakeMate operates as a **fully standalone system** with integrated controls and does not require a computer or external software.

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GENERAL SPECIFICATIONS

Parameter	Specification
Degrees of Freedom	1 (Horizontal)
Motion Type	Sinusoidal / user-controlled frequency variation
Maximum Payload	30 kg
Frequency Range	0–30 Hz, adjustable
Maximum Test Duration	Up to 8 minutes per recorded sequence
Mounting Interface	Pre-drilled anchor holes
Load Attachment	Washers and bolts (included)
Floor Plate System	1/8 in (3.2 mm) plywood plates (included)

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POWER SPECIFICATIONS



Parameter	Specification
Input Voltage	110–120 VAC or 220–240 VAC
Frequency	50 / 60 Hz
Power Consumption	< 500 W (typical)
Power Interface	Standard grounded AC outlet

Key Applications & Technical Specifications

Key Applications

- Earthquake engineering education
- Structural dynamics and resonance demonstrations
- STEM classroom experiments
- Small-scale structural testing and model validation

Motion Performance

- **Maximum Acceleration:** 4 g
- **Maximum Velocity:** 800 mm/sec
- **Stroke (Displacement):** ± 20 mm
- **Maximum Payload Capacity:** 30 kg

The system supports realistic seismic motion simulation with adjustable vibration cycles to replicate earthquake waveforms. Users can create custom and predefined shake patterns for comprehensive structural testing and educational demonstrations.

Mechanical & Electrical Features

Tabletop System

Compact, lightweight, and portable design perfect for classroom environments. Durable construction ensures long-term educational use with repeated testing cycles.

Floor Plate System

Includes 1/8" plywood plates for structural modeling. Washers and bolts included for adjustable mass loading to simulate various structural conditions.

Electrical Specifications

Compatible with both 110V and 220V AC power sources. Operates on standard classroom electrical supply for convenient setup anywhere.

Control & Operation



Operating Modes

Manual / Record / Playback



Sequence Recording

Up to 8 minutes



Sequence Memory

Non-volatile (retained when powered off)



Frequency Display

LED display (cycles per second / Hz)



User Interface

Start button, rate slider, mode selector



Standalone Operation

Yes (no PC required)

Environmental Conditions

Parameter: Operating Temperature

Specification: 0°C to 40°C

Parameter: Storage Conditions

Specification: Dry, indoor environment

Parameter: Duty Cycle

Specification: Intermittent educational use

Parameter: Noise Level

Specification: Low / classroom-friendly

User Experience & Safety

QUAKEMATE is engineered for safety and ease of use. Its quiet, low-risk design is classroom-friendly, suitable for all educational levels.

Intuitive controls allow for rapid setup and quick experiments. The compact, portable design offers convenient transport and storage.

Documentation

User manual and educational project ideas included.

Student Safety

Low-risk design for hands-on student operation.



Easy Setup

Intuitive controls for quick installation and immediate use.



Portable Design

Compact for easy storage and transport.



Built to Last

Durable for repeated classroom use.

1

Optimized for **Educational Demos**

2

Controlled Motion for Classrooms

3

No Hazardous Materials

4

Not for Structural Testing





Included Items

QuakeMate™ shake table

Integrated control box

Washers and anchor bolts

1/8 in plywood floor plates

User manual with setup instructions and student project ideas

Typical Applications



Earthquake engineering education



Structural resonance demonstrations



STEM and physics laboratories



Design-build-test competitions



Outreach and science museum demonstrations

QuakeLogic Inc.

Advanced Seismic & Structural Testing Solutions

 Roseville, California, USA

 <https://products.quakelogic.net>



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