

# ET-139 *Electrodynamic Transducer*



## GENERAL DESCRIPTION

The ET-139 shaker's compact size, long stroke and lightweight armature make it equally well suited for modal as well as general vibration testing. The shaker has a large 3.25 inch diameter mounting surface and a rugged suspension system which minimizes test fixture requirements and related fixture guidance problems. The shaker trunnion allows the shaker to be operated in any axis from vertical to horizontal and is easily positioned for modal applications. It also facilitates bolting the shaker in place either with or without vibration isolation mounts.

Reliability is assured through the use of the latest composite materials in the unique, all flexure, armature suspension design. The design provides excellent axial compliance with high lateral stiffness and has no rolling or sliding components to wear out and/or produce unwanted noise and distortion. When combined with a Labworks linear power amplifier, the system is unmatched for reliability, performance, and cost.

- 75 POUNDS PK SINE FORCE
- 1.0 INCH STROKE
- 3.25 INCH DIAMETER TABLE
- 75g ACCELERATION, BARE TABLE
- TRUNNION MOUNTING BASE

**L**abworks Inc.

2950 airway ave., a-16  
costa mesa, ca 92626  
phone: (714) 549-1981  
fax: (714) 549-8041  
info@labworks-inc.com  
www.labworks-inc.com



Through-Hole Design for Modal Testing  
(shown with optional Stinger Kit)

# STANDARD FEATURES

- AIR COOLED
- PERMANENT MAGNET DESIGN
- HIGH LATERAL STIFFNESS  
ARMATURE SUSPENSION



2950 airway ave.  
a-16, costa mesa, ca 92626 ph: (714) 549-1981  
www.labworks-inc.com fax: (714) 549-8041  
e-mail: info@Labworks-inc.com

## ET-139 SPECIFICATIONS<sup>1</sup>

### PERFORMANCE

Sine force	
Natural cooling	35 lbf pk
With blower	75 lbf pk
Random force	
Natural cooling	25 lbf rms
With blower	50 lbf rms
Shock force	150 lbf pk, 50 msec
Max displacement	
Continuous pk-pk	1.0 in
Between stops	1.03 in
Maximum velocity	70 ips pk
Acceleration <sup>1,2</sup>	
Bare table	75 g pk
1 lb load	35 g pk
5 lb load	12 g pk
Maximum acceleration	
Resonant	120 g pk
Peak shock	150 g pk

### PHYSICAL

Armature weight	1.0 lb
Suspension stiffness	60 lb/in
Rated armature current	
Natural cooling	11 A rms
With blower	22 A rms
Frequency range <sup>2</sup>	DC-6,500 Hz
Fundamental resonance <sup>2</sup>	4,000-5,000 Hz
Stray magnetic field	
Measured 1.5" above table	<15 gauss
Measured 1.0" from body	<20 gauss
Cooling	100 CFM/15 in H <sub>2</sub> O
Dimensions	10.4" H x 7.4" W x 6.5" D
Shaker weight	28 lbs

### OPTIONS

Cooling blower: Required for operation above 40 lbf. Recommended for continuous operation above 35 lbf pk.

Vibration isolation mounts.  
Modal stingers and mounts.

<sup>1</sup> Please see systems ratings for additional specifications.

<sup>2</sup> Load dependent.

Specifications subject to change. Consult factory for latest specifications.

