

LW139.141-75D6

DuoBase System



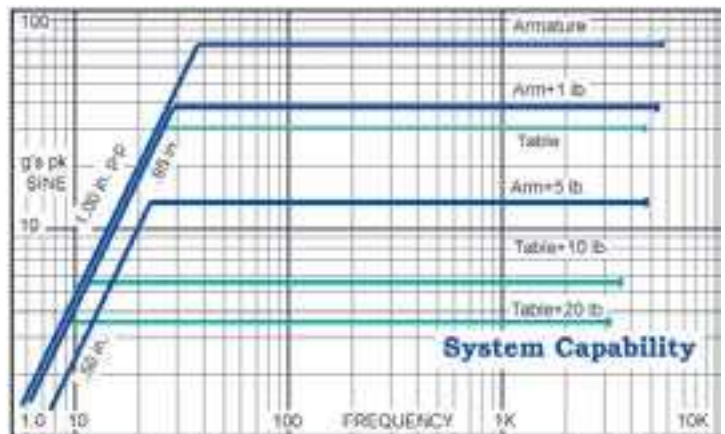
The LW139.141-75D6 Flexure Table system combines our ET-139 permanent magnet field shaker and PA141 amplifier together with our 6 inch square Flexure suspension Table. This combination provides a large mounting surface with increased load carrying capacity for larger or heavier than normal test specimens not requiring the force of a larger shaker system. The unique flexure suspension table guidance eliminates the requirement for the oil found in slip table systems. This oil-less design allows operation at other than the horizontal orientation, and adds increased suspension guidance reducing the effects of heavy and off-center loads on the shakers armature suspension system. The Table flexures are fully rated for 1 inch p-p operation, and the shaker can be uncoupled from the table for operation in its normal vertical orientation with specimens mounted directly to the shakers armature.

The air cooled PA-141 amplifier is direct coupled to the shaker to give the maximum performance at low and high frequencies. Dual meters display the system operating levels and complete shaker and user interlocks help protect the system from accidental abuse.

General Specifications

Sine Force:	75 lbs force pk
Random Force:	28 lbf rms random
Shock Force:	75 lbf pk shock
Frequency Range:	DC to 6,500 Hz
Max. Acceleration:	
Horizontal, w/Slip Table	20 g pk, bare table 5.5 g pk, 10 lb. load 3.2 g pk, 20 lb. load
Vertical, w/o Slip Table	75 g pk, bare table 38 g pk, 1 lb. load 13 g pk, 5 lb. load
Max. Displacement:	1.0 inch pk-pk, bare table
Cooling:	Amplifier: forced air Shaker: cooling vacuum
Power Requirements:	3,000 VA @ 100-125*, 200-240V, 1Ø, 50/60 Hz.

*Consult factory for low line voltage operation.



System Components*

- DB-139 Electrodynamic Shaker w/6" sq Flexure Table Base
- PA-141-139 Amplifier & Field Supply
- CB-152-139 Cooling Blower
- Interconnect Cables and Hoses

System Options*

- VL-144x 2 Ch. Sine, Random and Shock Controller
- VL-145x 1 Ch. Sine and Random Digital Controller
- SC-121 Sine Servo Controller
- SG-135 Manual Controller
- HE-139 Head Expander
- Amplifier Cabinet

*See individual components for more detailed specifications and options.



ET-139 Electrodynamic Shaker



- 75 pounds pk sine force
- 1.0 inch stroke
- 3.25 inch diameter table
- Payloads up to 7 lbs.
- Low stray magnetic field
- Frequency range DC-6,500 Hz.
- Trunnion mounting base
- Through-hole design

The ET-139 is our most powerful permanent magnet shaker. It is an excellent choice for modal testing due to its compact size and long stroke. A large armature makes the shaker ideal for general vibration testing of components and subassemblies. The standard trunnion allows operation in any position from vertical to horizontal. A unique, all flexure, armature suspension design provides excellent axial compliance with high lateral stiffness. There are no rolling or sliding components to wear out and/or produce unwanted noise and distortion. The shaker body's through-hole design allows operation with modal stingers as well as tension wire set ups.

General Specifications¹

Performance

Sine force	
Natural cooling	40 lbf pk
With blower	75 lbf pk
Random force	
Natural cooling	28 lbf rms
With blower	50 lbf rms
Shock force	
	150 lbf pk
Max displacement	
Continuous pk-pk	1.0 in
Between stops	1.03 in

Physical

Armature weight	1.0 lb
Suspension stiffness	60 lb/in
Dimensions	10.4" H x 7.4" W x 6.5" D
Shaker weight	28 lbs

Options

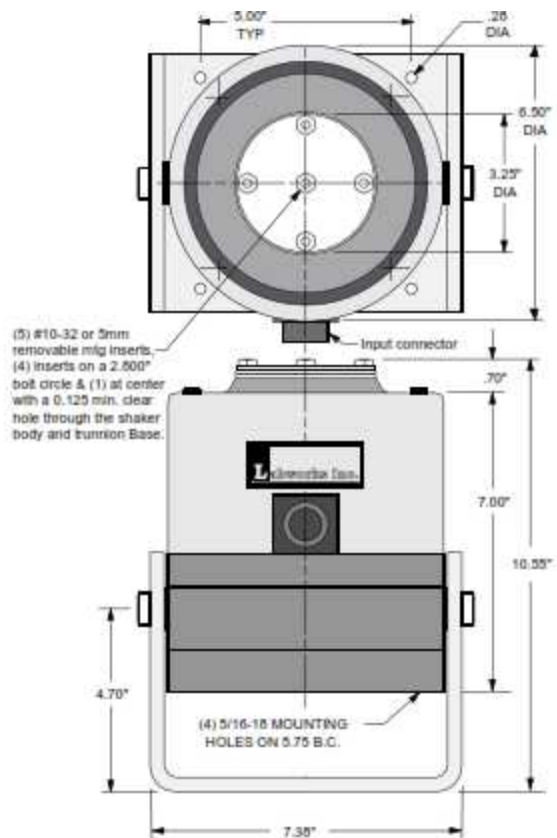
- Vibration isolation mounts. Modal stingers and mounts.
- Cooling vacuum recommended continuous for operation above 35 lbf.

■ DB-139 Duobase Flexure Table

¹ Please see systems ratings for additional specifications

² Load dependent.

Specifications subject to change.

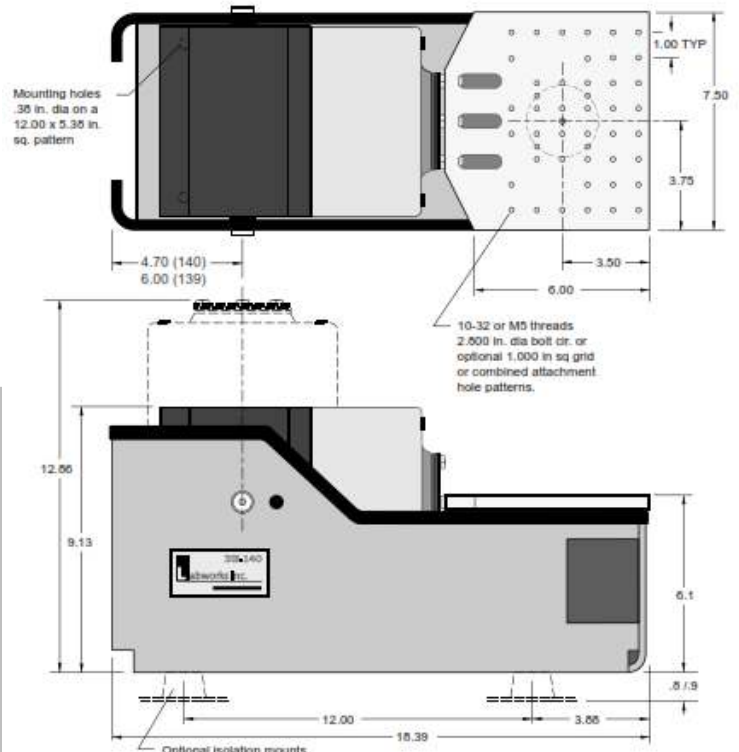


DB-140/DB-139 DuoBase Shaker

- Large mounting surface
- 1.0 inch p-p stroke
- Horizontal and vertical testing
- Lightweight magnesium table



The DB-140 and -139 flexure tables offer a larger mounting surface with high-load carrying capability for applications where lower acceleration levels are needed with large or heavy loads. The flexure tables suspension systems utilize highly damped, oversized linear flexures and dynamic absorbers to provide support and guidance without the use of heavy granite surface plates or oil. Since no oil is used, the complete base system can be rotated into the vertical position to facilitate vertical axis guided testing. Base mounting holes are provided on the bottom as well as the rear of the base to facilitate vertical flexure table operation. The shaker can also be disconnected from the table, rotated to the vertical position, and then used as a normal vertical shaker without the additional weight of the table. Rotating the base with the shaker in this position also allows horizontal operation without the flexure table. These bases are supplied with removable carrying handles..



General Specifications¹

Moving Element Weights	
Flexure Table weight	2.8 lbs
Shaker Armature weight	1.0 lb
Total Moving Element Weight	3.8 lbs
Maximum Recommended Loads	
Table vertical/horizontal	40 lbs
Table mounting CG moment	20 in-lb
Shaker Only Vertical	15 lbs
Table Mounting Surface (in.)	6 L x 7.5 W
Max. Bare Table Acceleration*	29 gpk(140) / 20 gpk(139)
Bare Table Resonance Freq.	3000 Hz
Maximum Useable Freq.	4500 Hz
Displacement	1 inch pk-pk
Table Mounting Hole Pattern	Same as shaker
Complete Base + Shaker Wt.	100 lb (140) / 70 lb (139)
Overall Dimensions (in.)	18.4 L x 9.1 H x 7.5 W

Options

- Additional Mounting Holes
- SI-DB140 / SI-DB139 Isolation Mounts

¹Please see appropriate Shaker or System data sheet for performance specifications.



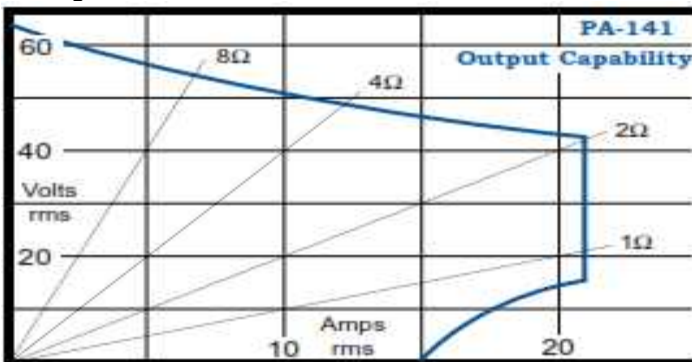
PA-141 Linear Power Amplifier



- Output: 50V, 1000 VA
- Direct coupled linear output
- Voltage and current source mode
- External interlock circuitry
- Optional shaker field supplies



The Labworks PA-141 Linear Power Amplifier has two operational modes. The amplifier can be used as either a wide-band, highly damped voltage source, or as a high impedance current source. Optional, internal DC field power supplies can be supplied for use with Labworks ET-140 and ET-127 Shakers. These options provide the convenience of a single chassis, as well as fully integrated power-up and cooling interlocks.



General Specifications*

Output voltage	50 V rms
Output current	20 A rms
Max. cont. dissipation	900 W
Frequency response	
DC input: DC to 10 KHz	-6 dB
AC input: 1.0 to 10 KHz	-6 dB
Max. voltage gain	36 dB
Cooling	2-speed fan, automatic
Input impedance	10 kΩ
Volts, pk	19 segment ± 5 %
Amps, rms	19 segment ± 5 %
Interlock circuit	
External, user	F.O. switch or TTL
Shaker, internal, optional	cooling
Optional field power	1000 W max
Input power	2000 VA (3000 w/field)
Voltage	208 or 230 Vac, 1∅
Frequency	48 to 62 Hz
Dimensions	7" H x 19" W x 17" D
Weight	48 lbs

*Specifications subject to change. Call factory for latest specifications.