

# LW140.141-110D6

## DuoBase System



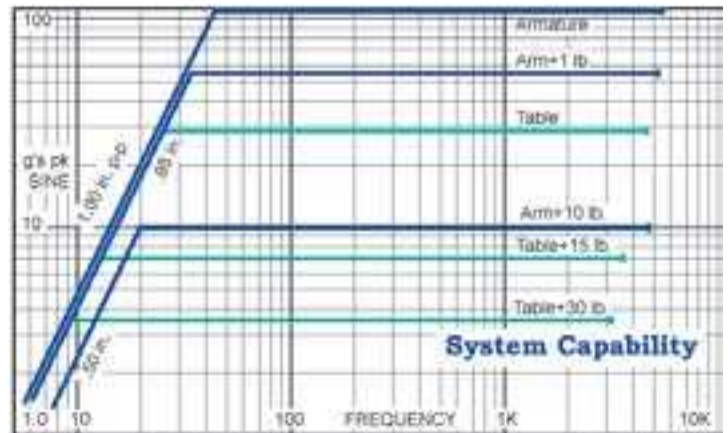
The LW140.141-110D6 Flexure Table system combines Our ET-140 shaker and PA-141 amplifier Together with Our 6 inch Square Flexure Suspension Table. This combination Provides a large mounting surface with Increased load carrying capacity for larger or heavier than normal test specimens not requiring the 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

<b>Sine Force:</b>	110 lbs force pk
<b>Random Force:</b>	45 lbf rms random
<b>Shock Force:</b>	110 lbf pk shock
<b>Frequency Range:</b>	DC to 6,500 Hz
<b>Max. Acceleration:</b>	
Horizontal, w/Slip Table	29 g pk, bare table 5.8 g pk, 15 lb. load
Vertical, w/o Slip Table	3.2 g pk, 30 lb. load 110 g pk, bare table 55 g pk, 1 lb. load 10 g pk, 10 lb. load
<b>Max. Displacement:</b>	1.0 inch pk-pk, bare table
<b>Cooling:</b>	Amplifier: forced air Shaker: cooling vacuum
<b>Power Requirements:</b>	3300 VA @ 100-125*, 200-240V 1Ø, 50/60 Hz.

\*Consult factory for low line voltage operation.



### System Components\*

- ET-140 Electrodynamic Shaker
- PA-141 Linear Power Amplifier
- DB-140 - DuoBase
- FS-140 Integrated Field Supply
- CB-152-140 Cooling Vacuum
- 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-140 Head Expander
- Amplifier Cabinet

\*See individual components for more detailed specifications and options.



# ET-140 Electrodynamic Shaker



- 110 pounds pk sine force
- 1.0 inch stroke
- 3.25 inch diameter table
- Payloads up to 25 lbs
- Low stray magnetic field
- Frequency range DC-6,500 Hz.
- Trunnion mounting base
- Through-hole design

The ET-140 shaker's compact size, long stroke and lightweight armature make it well suited for modal as well as general vibration testing. Features include a rugged suspension system which minimizes test fixture requirements and related fixture guidance problems. The standard trunnion allows operation in any position from vertical to horizontal. It also facilitates bolting the shaker in place either with or without vibration isolation mounts. The shaker body's through-hole design allows operation with modal stingers as well as tension wire set ups.

## General Specifications<sup>1</sup>

### Performance

Sine force	110 lbf pk
Random force	75 lbf rms
Shock force	225 lbf pk
Max displacement	
Continuous pk-pk	1.0 in
Between stops	1.03 in

### Physical

Armature weight	1.0 lb
Suspension stiffness	90 lb/in
Dimensions	11.5" H x 7.4" W x 6.5" D
Shaker weight	56 lbs

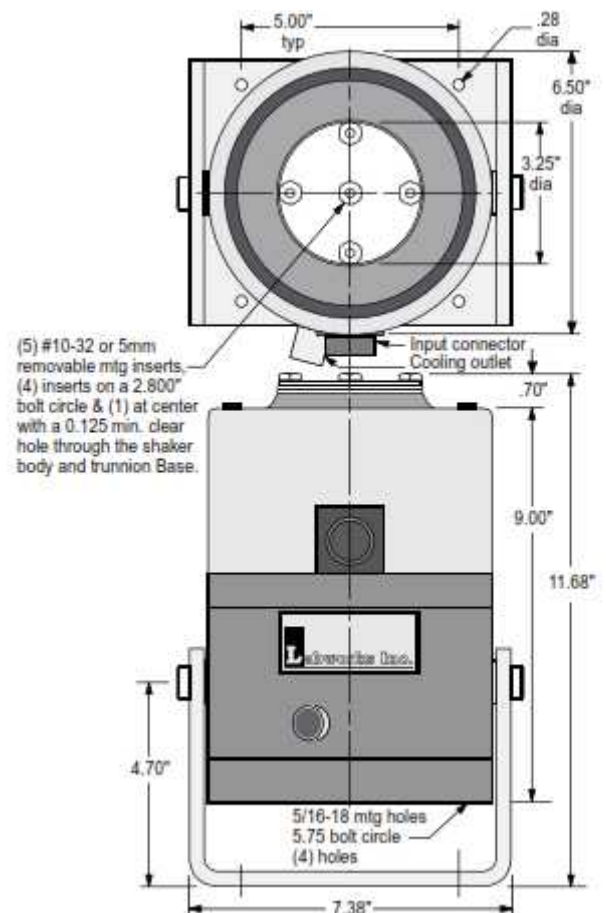
### Options

- Vibration isolation mounts.
- Modal stingers and mounts.
- DB-140 Duobase Flexure Table

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

<sup>2</sup> Load dependent.

Specifications subject to change.

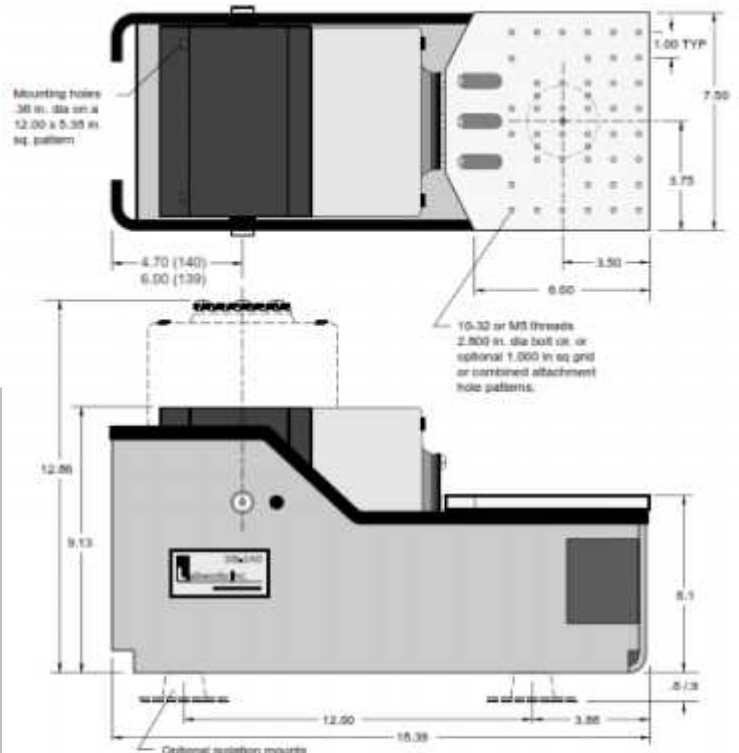


# DB-140/DB-139 DuoBase Shaker

- 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 Specifications<sup>1</sup>

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

<sup>1</sup>Please see appropriate Shaker or System data sheet for performance specifications.





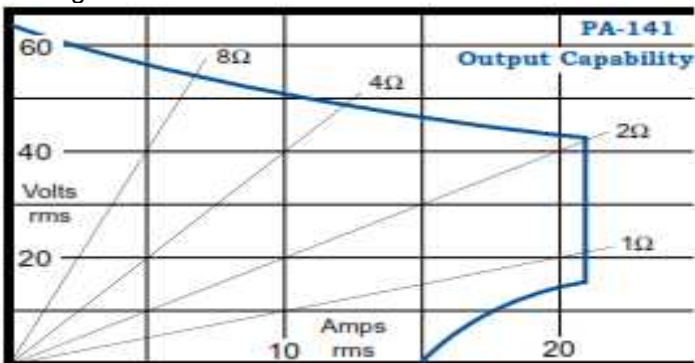
# PA-141 Linear Power Amplifier



- 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\*

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

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

# CB-152

Delux, Long Life, Quiet,  
Cooling Vacuum



Std: LW140-110	Opt: ET-139
LW139-75	ET-126
LW126-25	ET-132
LW160-60	ET-160
LW161-25	ET-161

## General Specifications

<b>Blower Type:</b>	Suction (vacuum turbine)
<b>Flow @ Pressure:</b>	35 cfm @ 30" H <sub>2</sub> O
<b>Motor:</b>	250 W, Brushless
<b>Power:</b>	115/230 Vac, 50 or 60 Hz (Specify)
<b>Intake:</b>	.75" and .63" dia.
<b>Noise Level:</b>	< 71 dB @ 1 M
<b>Hose Length:</b>	7.5', flexible vacuum
<b>Blower Weight:</b>	30 lbs.
<b>Minimum Blower Life:</b>	> 25,000 Hrs
<b>Dimensions:</b>	11H x 9.5W x 11L in.