

LW161.141-25 Modal Test System

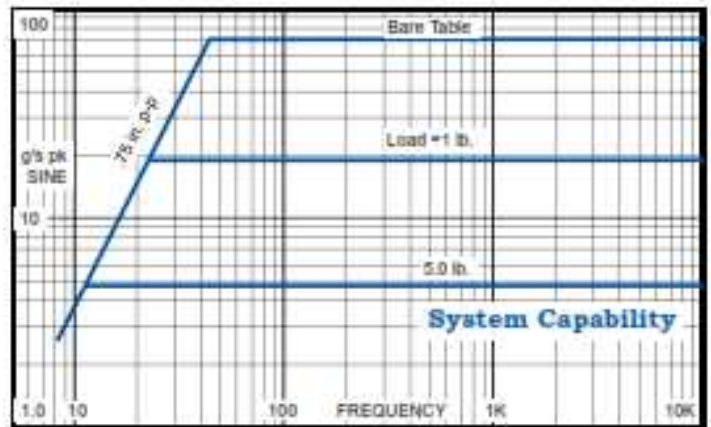


The LW161.141-25 is a compact high performance modal test system which makes full use of our smaller MT-161 modal test shaker performance. The thruster's full 75 inch stroke capability, low suspension spring rate and light-weight armature makes this system ideal for most smaller modal test applications. The thruster body features a through hole, and a single collet or thread load attachment to accommodate both tension wire and stinger modal testing. The PA-141 amplifier is direct coupled to the shaker to give the maximum performance at DC through high frequencies, and can be easily switched from voltage source mode to current source mode for force input testing. The amplifiers voltage-proportional-to-current output signal facilitates served force test operation. Dual bar graphs display the system operating levels and internal and external interlocks help protect the system from accidental abuse..

General Specifications

Sine Force:	25 lbs force pk
Random Force:	11 lbf rms random
Shock Force:	27 lbf pk shock
Frequency Range:	DC to 10,000 Hz
Max. Acceleration:	70 g pk, bare table 18.5 g pk, 1 lb. load 4.7 g pk, 5 lb. load
Max. Displacement:	0.75 inch pk-pk, bare table
Cooling:	Amplifier: forced air Shaker: natural convection
Power Requirements:	2200 VA @100-150, 220, or 240V, 1Ø, 50/60 Hz.

*Consult factory for low line voltage operation.



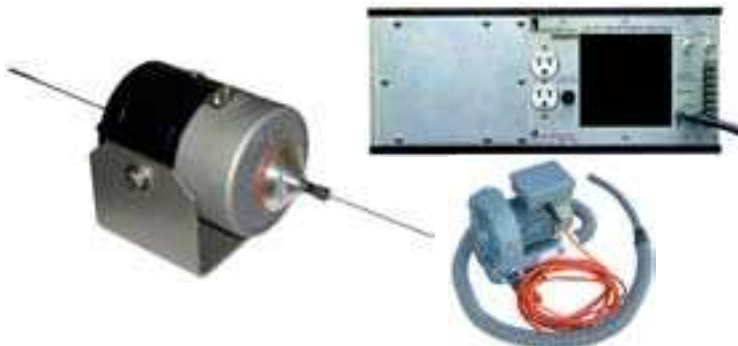
System Components*

- MT-161-4 Electrodynamic Shaker
- PA-141 Linear Power Amplifier
- CB-152-161 Cooling Vacuum and Hose Assembly
- MS-129-161 Modal Stinger Kit
- Interconnect Cables and Hoses

System Options*

- VL-144 2 Ch. Sine, Random and Shock Controller
- VL-145 1 Ch. Digital Controller
- SC-121 Sine Servo Controller
- SG-135 Manual Sine Controller

*See individual components for more detailed specifications and options



Standard trunnion allows shaker operation in any position from vertical to horizontal. The hook-up requirements on the PA-138 are simple, making the system portable.

MT-161 Modal Thruster



- 25 pounds pk sine force
- .75 inch stroke
- .005_i± to .125_i± dia. Collet, #10-32, M5x.75 & 5/16-18 Thds.
- Stinger and Wire Through-Hole
- Low stray magnetic field
- Frequency range² DC-10,000 Hz.
- Trunnion mounting base

General Specifications

Performance

Sine force	
Natural cooling	13 lbf pk
With blower	50 lbf pk
Max displacement	
Continuous pk-pk	.70 in
Between stops	.75 in
Max velocity	120 ips pk
Max Acceleration	200 gpk (resonant load)
Frequency Range ²	DC-10,000 Hz
Fundamental Resonance ²	9,000-10,000 Hz
Stray magnetic fields	<10 gauss @ 1.5"
Cooling @>13lbf	30 cfm /22 in H ₂ O

Physical

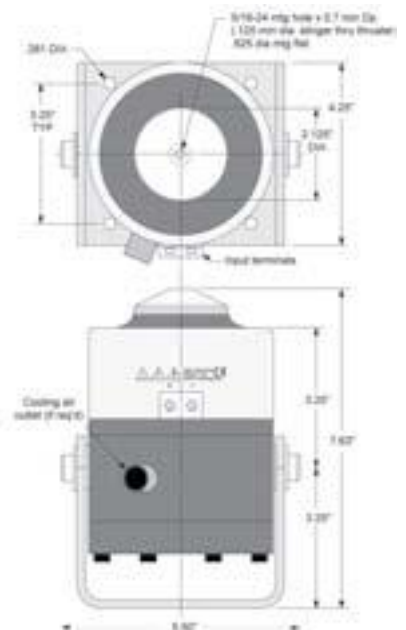
Armature weight	0.35 lb
Suspension stiffness	15 lb/in
Dimensions	7.13" H x 4.8" W x 4.25" D
Shaker weight	11 lbs

The MT-161 thruster's compact size, long stroke and lightweight armature make it well suited for all types of modal testing. The thruster has a compression collet and features a central through-hole suitable for modal stinger and pre-tensioned wire testing applications. The standard shaker trunnion allows the shaker to be operated in any axis from vertical to horizontal. The trunnion base also facilitates bolting the shaker in place for rigid applications or the use of adjustable mounting feet.

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

Options

- Vibration isolation mounts. Modal stingers and mounts.
- Cooling blower required for operation above 13 lbf.



¹ Please see systems ratings for additional specifications.
² Load dependent.
 Specifications subject to change.

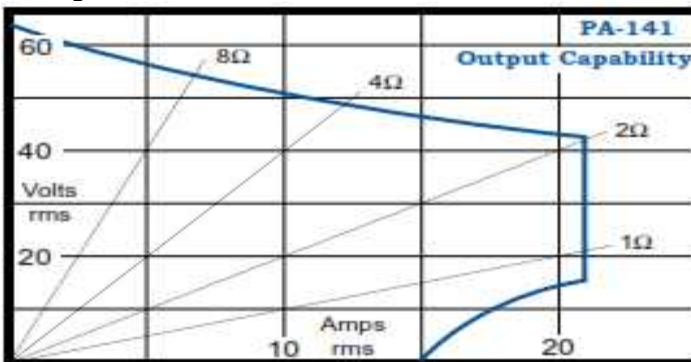
PA-141 Linear Power Amplifier



- 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.

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

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

MS-129-XXX* Modal Stinger Kit



Rod Collet Chuck:	#10-32 x Collet
Collets:	.03, .06 and .125 in.
Threaded stingers (1 ea.):	
3/16 in. Dia. Stainless steel	3 in. and 10 in. long
1/4 in. Dia. Stainless steel	3 in. and 10 in. long
Rod stingers (3 ea.):	
.062 in. Dia.	11 in. long
.093 in. Dia.	11 in. long

*Specify Labworks Inc. shaker model number.