

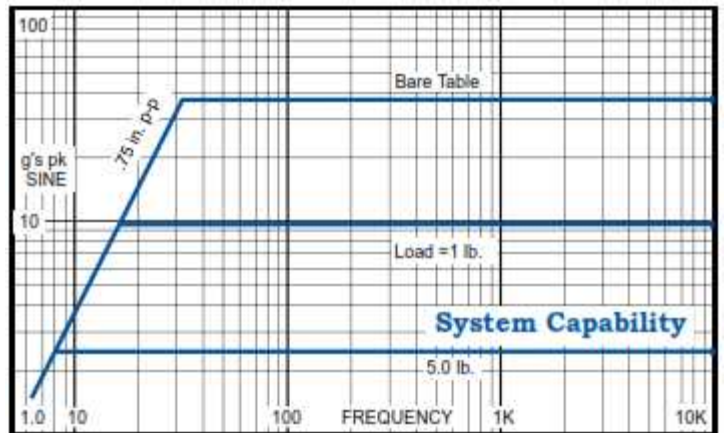
LW161.138-13 Modal Test System



The LW161.138-13 modal test system makes full use of our smaller MT-161 modal test shakers natural convection cooled 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 not requiring the MT-161's full force. 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 servoed 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:	13 lbs force pk (17 w/blower)
Random Force:	8.0 lbf rms random
Shock Force:	21 lbf pk shock
Frequency Range:	DC to 10,000 Hz
Max. Acceleration:	37 g pk, bare table 9.6 g pk, 1 lb. load 2.4 g pk, 5 lb. load
Max. Displacement:	0.75 inch pk-pk, bare table
Cooling:	Amplifier: forced air Shaker: natural convection
Power Requirements:	2,200 VA @ 100, 120, 220, or 240V, 1Ø, 50/60 Hz.



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.

System Components*

- MT-161-1 Electrodynamic Shaker
- PA-138 Linear Power Amplifier
- 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.

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

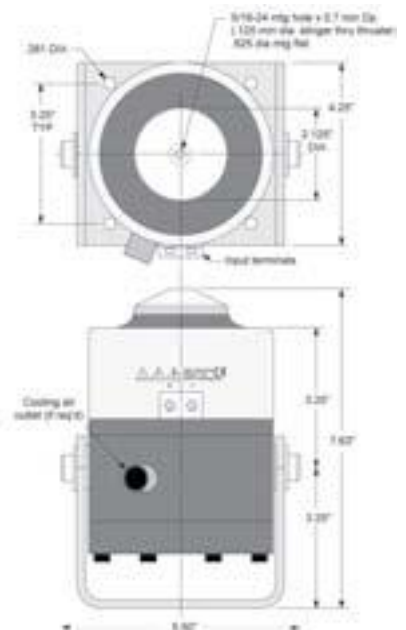
The MT-161 thruster's compact size, long stroke and lightweight armature make it well suited for all types of modal testing. The thruster has a compression collet and features a central through-hole suitable for modal stinger and pre-tensioned wire testing applications. The standard shaker trunnion allows 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-138 Linear Power Amplifier

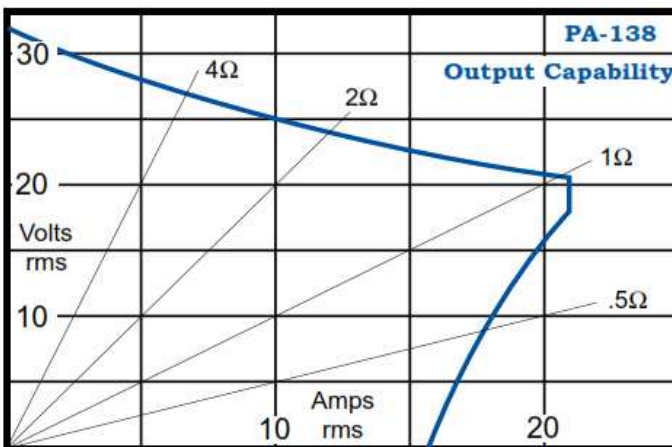


- Output: 25V, 500 VA
- Direct coupled linear output
- Output voltage and current meters
- Voltage and current source modes
- Small size, high power



The Labworks PA-138 Linear Power Amplifier is a high quality, air-cooled, direct-coupled audio amplifier primarily intended for use with small vibration systems. Although this amplifier has been designed to directly drive low impedance loads, it can be used in any application requiring continuous duty, high quality, audio power.

PA-138 Amplifiers feature protection from both over current and over temperature insuring long term reliability. The amplifier has full interlock capabilities as well as peak voltage and RMS current bar graphs to monitor output.



General Specifications*

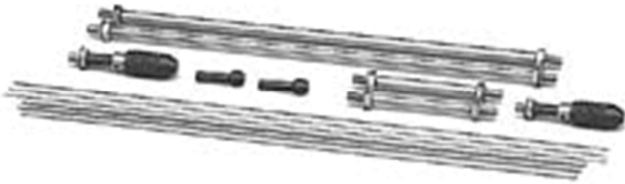
Output voltage	25 V rms
Output current	20 A rms
Max. cont. dissipation	450 W
Frequency response	
Voltage source: DC to 10 KHz	-0.6 dB
Current source: DC to 2 KHz	-2 dB @ 4Ω
Max. voltage gain	30 dB
Cooling	2-speed fan, automatic
Input impedance	10 kΩ
Meters	
Volts, pk	19 segment ± 5 %
Amps, rms	19 segment ± 5 %
Interlock circuit	
External, user	F.O. switch or TTL
Input power	1000 VA max
Voltage	100, 120, 220, 240 V, 1∅
Frequency	48 to 62 Hz
Dimensions	3.5" H x 19" W x 13" D
Weight	24 lbs

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

Amplifier Options

- Rack panel cabinet
- BNC signal cables

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.