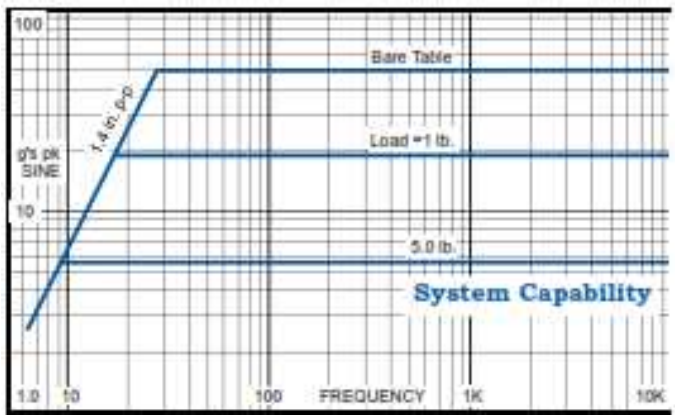
LW160.151-30 Modal Test System

The LW160.151-30 system utilizes the Labworks MT-160 thruster and convection cooled PA-151 linear power amplifier to form our most popular convection cooled permanent magnet field modal test system. The thruster's full 1.4 inch stroke capability, low suspension spring rate and light weight armature makes this system ideal for most 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 convection cooled PA-151 amplifier is direct coupled to the shaker to give the maximum performance at both low and high frequencies and can be easily switched from voltage source mode to current source mode for force input testing applications. The amplifiers standard voltage-proportional-to- current amplifier signal output facilitates servoed 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:	30 lbs force pk
Random Force:	15 lbf rms random
Shock Force:	38 lbf pk shock
Frequency Range:	DC to 10,000 Hz
Max. Acceleration:	50 g pk, bare table 19 g pk, 1 lb. load 5.4 g pk, 5 lb. load
Max. Displacement:	1.4 inch pk-pk, bare table
Cooling:	Amplifier: natural convection Shaker: natural convection
Power Requirements:	300 VA @95-125, 190-250V 1Ø, 50/60 Hz.



System Components*

- MT-160 Electrodynamic Shaker
- PA-151 Linear Power Amplifier
- MS-129-160 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 Controller
- SG-135 Manual Sine Servo Controller
- Amplifier Rack Mount Brackets

*See individual components for more detailed specifications and options.

MS-129

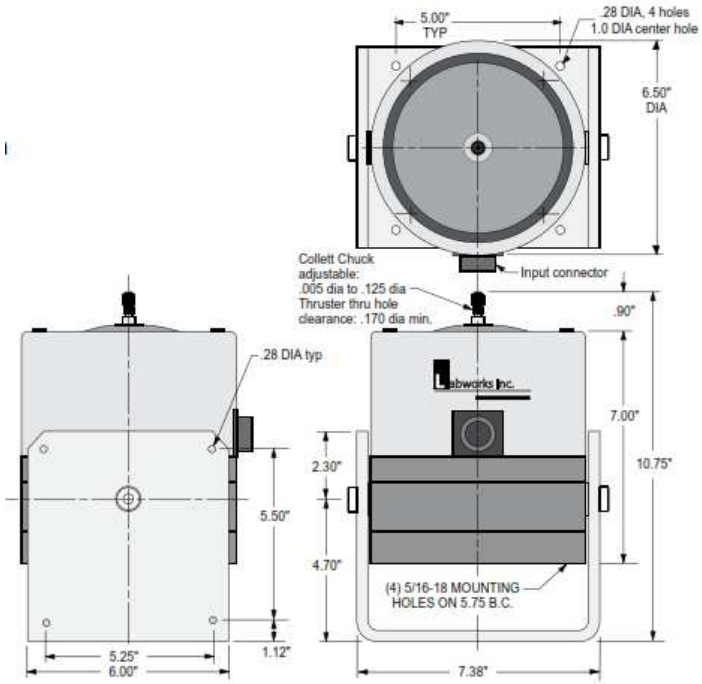
MT-160 Modal Thruster

- 60 pounds pk sine force
- 1.5 inch stroke
- .005” to .125” dia. Collet
- Stinger and Wire Through-Hole
- Low stray magnetic field
- Frequency range[2] DC-8,000 Hz.
- Trunnion mounting base

General Specifications

Performance	
Sine force	
Natural cooling	30 lbf pk
With blower	60 lbf pk
Max displacement	
Continuous pk-pk	1.50 in
Between stops	1.53 in
Max velocity	120 ips pk
Max Acceleration	200 gpk (resonant load)
Frequency Range2	DC-8,000 Hz
Fundamehntal Resonance2	5,000-6,000 Hz
Stray magnetic fiels	<15 gauss @ 1.5”
Cooling @>13lbf	37 cfm /30 in H_2o
Physical	
Armature weight	0.60 lb
Suspension stiffness	20 lb/in
Dimensions	10.8" H x 7.4" W x 6.5" D
Shaker weight	28 lbs

The MT-160 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 as well as easily mounted in wire tensioning tripods. The trunnion base also facilitates bolting the shaker in place for rigid applications or the use of adjustable mounting feet.



Options

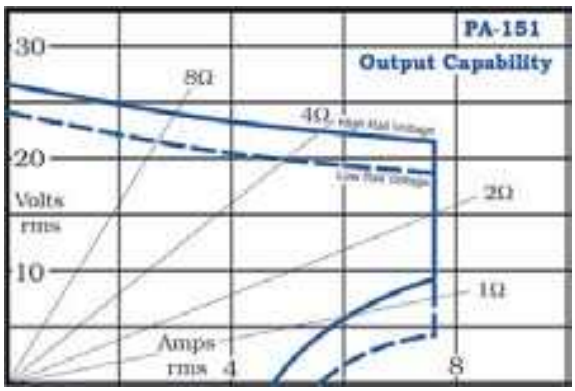
- Vibration isolation mounts. Modal stingers and mounts.
- Cooling blower required for operation above 30 lbf.

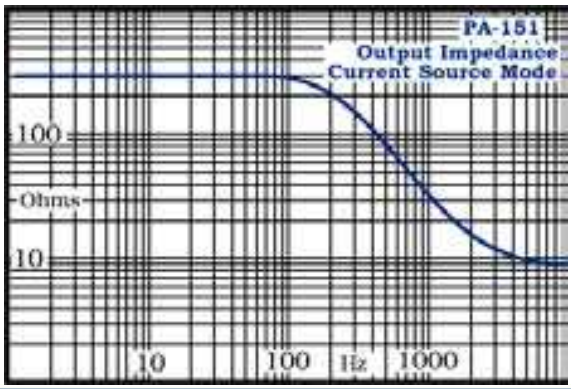
Please see systems ratings for additional specifications.
Load dependent.
Specifications subject to change.

PA-151 Linear Power Amplifier

- **Output: 25V or 20V, 180 VA**
- **Direct coupled linear output**
- **Output voltage and current meters**
- **Voltage and Current source modes**
- **Convection cooling, no fans**
- **Light weight, desktop amplifier**

The Labworks PA-151 Linear Power Amplifier is a high quality, convection-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-151 Amplifiers feature protection from both over current and over temperature insuring long term reliability. The amplifier circuitry uses soft start technology for load protection and has external interlock capabilities as well as output voltage and current bar graphs. A voltageproportional-to-output-current signal output is provided for modal test and other applications requiring force monitoring. A unique dynamic output drive circuit provides high random peak output current for increased random and shock vibration system performance





General Specifications*

Output voltage	25 or 20 V rms
Output current	7.5 A rms
Max. cont. dissipation	180 W
Frequency response	
Voltage Source: DC to 10 KHz	-1 dB
Current Source: DC to 2 KHz	-2 dB @ 4Ω
Max. voltage gain	28 dB
Max. current gain	22 A/V
Cooling	Natural convection
Input impedance	10 kΩ
Meters	
Volts	9 segment bar graph
Amps	9 segment bar graph
Interlock circuit	
External, user	F.C. switch or TTL, F.C.
Input power	300 VA max
Voltage	100-120, 200-240 V,1Ø
Frequency	48 to 62 Hz
Dimensions	3.5" H x 17" W x 13" D
Weight	19 lbs

1 Switch selectable internal rail voltage allows impedance matching to load requirements
2 Specifications subject to change. Call factory for latest specifications.

Amplifier Options

- Rack panel cabinet
- BNC signal cables