

LARS Technical Memorandum #092773 T-15

TECHNICAL MANUAL FOR THE MEASUREMENTS
HIGH INTENSITY MERCURY EMISSION SOURCE

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Operation

The high intensity mercury emission source is used for calibration of the near infrared spectrum (.4 to 2.5 μ m). Electrically, the lamp uses 110-120 VAC as the primary power source. The lamp must be in a vertical position to operate properly. Figure 1 shows mirror usage to facilitate using the lamp in the vertical position.

To achieve a good signal-to-noise ratio, the lamp source should be as close as possible to the instrument to be calibrated. Also, the room lights should be turned off during calibration.

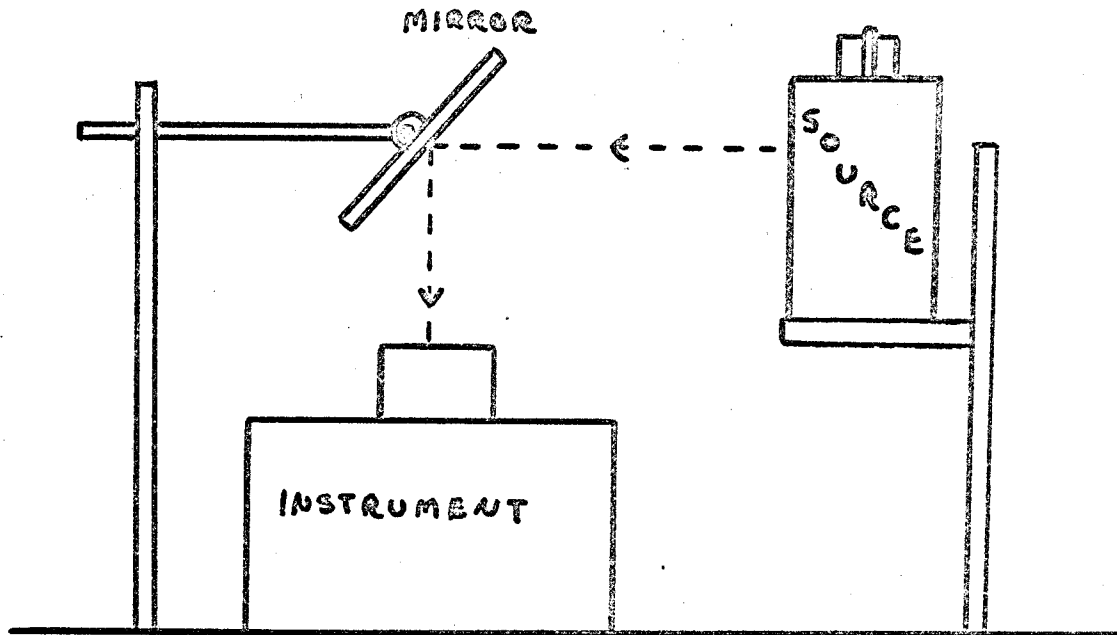


Figure 1. Calibration set up showing the use of a mirror to reflect the mercury emission spectra onto the instrument being calibrated.

The mercury emission source provides the following spectral lines:

	reference
.4358	1
.5461	1
.5780	2
.6907	1
1.0140	2
1.1287	2
1.3622	2
1.5295	2
1.7091	2
1.8131	2
1.9701	2
2.3254	2

1. American Institute of Physics Handbook, 2nd Edition, Table
2. Plyer and Peters, Wavelengths for Calibration of Prism Spectrometers, J. Research NBS, Vol. 45, No. 6, Dec., 1950.

Parts List

1 Lamp	Mercury Vapor Lamp	GE H 100 A4/T
1 Transformer	Autotransformer	GE 9T64Y52
1 Lamp base	Admedium Porcelain	GE 5787-7
1 Chassis	Bud Case w/Handle	CC-1092
1 Lamp support	7" x 6" aluminum plate	
1 Back plate	covered w/aluminum foil	
1 Fuse holder	Little fuse	342001
1 Terminal block	Cinch	6-164
1 Fan	Ventilation	

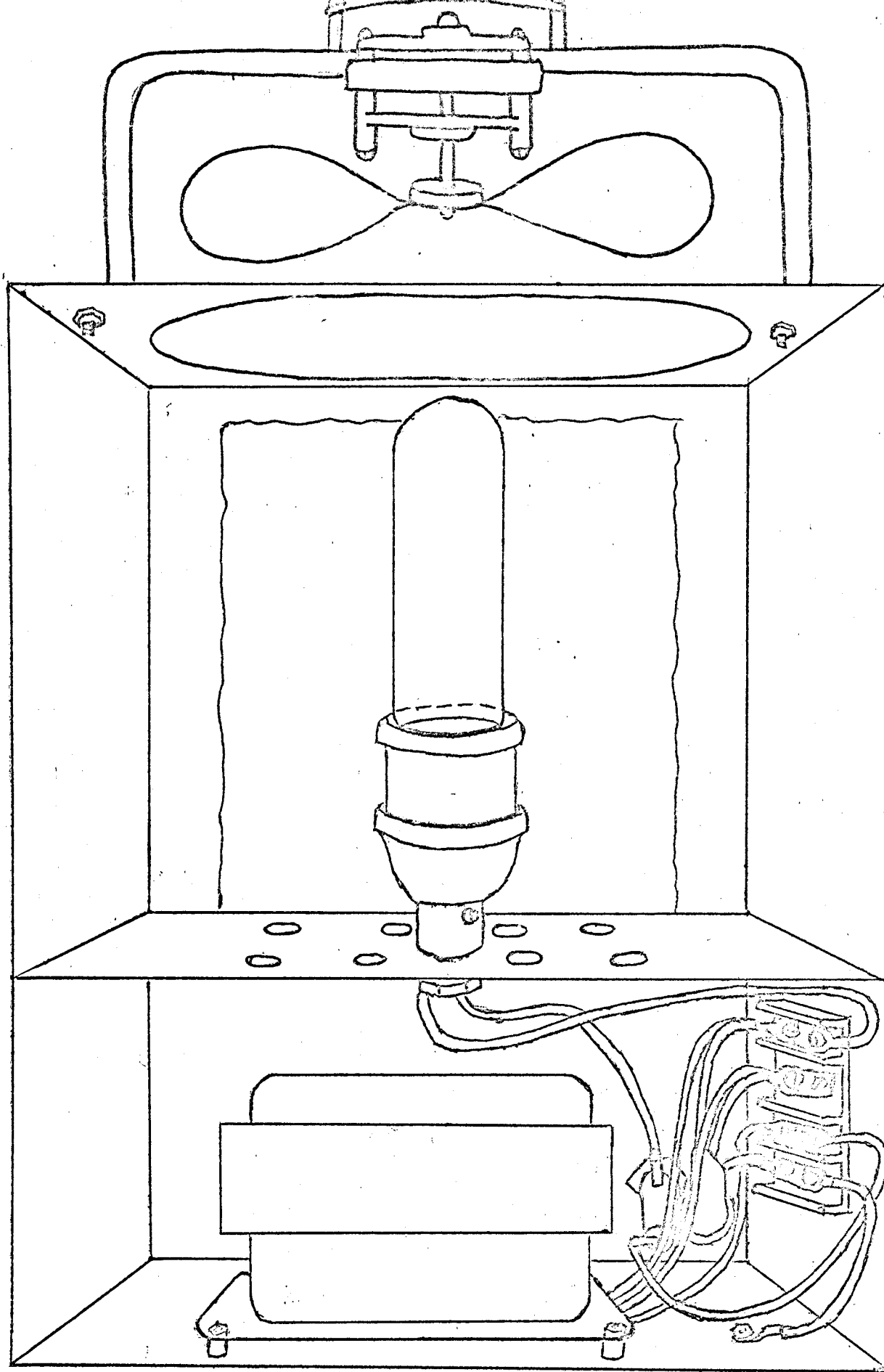


FIG. 2 MERCURY EMISSION SOURCE (FRONT VIEW)

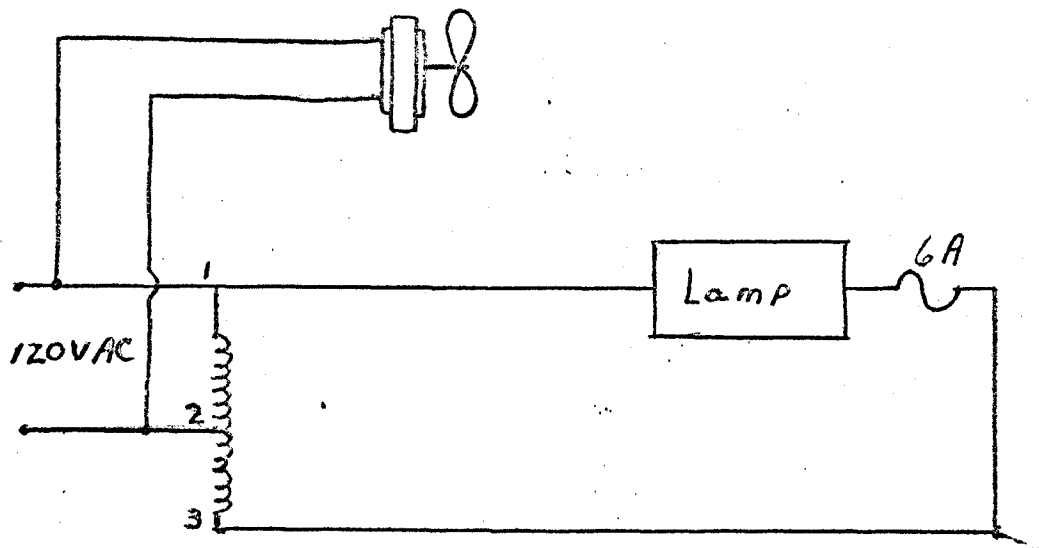


FIG.3 MERCURY EMISSION SOURCE
(CIRCUIT DIAGRAM)