

Standards

USES:

- A Laboratory Standard
- For Calibrating Working Standards
- Standard for Quality Factor
- Verification & Calibration of LCR Meters
- Reference Standard
- Working Standard
- Inductance Measurement Functions
- Verification of Calibration of Multimeters
- For Calibrating Instrumentation

FEATURES:

- Stable within $\pm 0.01\%$ per year
- Low, known temperature coefficient
- Minimized connection errors
- Toroidal-free from external fields
- Six Different Inductance Values available



Series 1482 Inductor

Primary Inductance Standard

Introduction

The 1482 is an accurate, highly stable standard of self inductance for use as a low-frequency reference of working standard in the laboratory. Records extending over 25 years, including those of inductors that traveled to national laboratories in several countries for calibration, show long-term stability well within $\pm 0.01\%$.

Description

Each inductor is a uniformly wound toroid on a ceramic core. It has a negligible external magnetic field and hence essentially no pickup from external fields. The inductor is resiliently supported in a mixture of ground cork and silica gel, after which the whole assembly is cast with a potting compound into a cubical aluminum case.

Sizes of 1 mH and above have three terminals, two for inductor leads and the third connected to the case, to provide either a two- or three-terminal standard. The 100 μH size has three additional terminals for the switching used to minimize connection errors.

HIPOT • LCR METERS • MEGOHMMETERS • MILLIOHMMETERS • DECADES • STANDARDS

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IET LABS, INC.

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534 Main Street, Westbury, NY 11590 (516)334-5959 • (800) 899-8438 • Fax (516)334-5988

**Formerly manufactured by QuadTech
& GenRad (General Radio)**

Series 1482 Precision Inductor

Inductance Range: See Table Below.

Accuracy of Adjustment: See Table Below.

Calibration: A certificate of calibration is provided with each unit, giving measured values of inductance at 100, 200, 400, and 1000Hz, with temperature and method of measurements specified. These values are obtained by comparison, to a precision, typically, of better than $\pm 0.005\%$, with working standards whose absolute values, determined and maintained in terms of reference standards periodically certified by the National Institute of Standards and Technology, are known to an accuracy typically $\pm(0.02\%+0.1\mu\text{H})$ at 100Hz, $\pm(0.1\%+0.1\mu\text{H})$ for the 1482-B

Stability: Inductance change is less than $\pm 0.01\%$ per year.

DC Resistance: See table for representative values. A measured value of resistance at a specified temperature is given on the certificate of calibration.

Low-Frequency Storage Factor Q: See table for representative values of Q at 100Hz (essentially from DC resistance). An individual value of Q, calculated from the measured DC resistance, is given on each certificate of calibration.

Temperature Coefficient of Inductance: Approximately 30ppm/°C. Minute temperature corrections may be computed from DC resistance changes. A 1% increase in resistance, produced by temperature increase of 2.54°C corresponds to 0.0076% increase in inductance.

Resonant Frequency: See table for representative values. A measured value is given on the certificate of calibration.

Maximum Input Power: For a rise of 20°C, 3W; for precise work, a rise of 1.5°C, 200mW. See table for corresponding current limits.

Terminals: Jack-top binding posts of ¼-in spacing with removable ground strap.

Mechanical: Lab-bench cabinet.

Dimensions: (w x h x d): 6.5 x 6.5 x 8in (166 x 166 x 204mm).

Weight: 11.5lb (5.3kg) net, 13lb (6kg) shipping.

Description	Nominal Inductance	Adjustment Accuracy (Percent)	*Resonant Frequency (kHz)	*DC Resistance W	*Q at 100Hz	Milliamperes rms for:	
						200mW	3W
1482-B	100 μH	± 0.25	900	0.083	0.76	1550	6010
1482-E	1mH	± 0.1	500	0.84	0.75	490	1890
1482-H	10mH	± 0.1	220	8.2	0.77	156	600
1482-L	100mH	± 0.1	70	81	0.78	50	192
1482-P	1H	± 0.1	15	616	1.02	18	70
1482-T	10H	± 0.1	5	6400	0.98	5.6	22

*Representative values. Actual values given on certificate.

Ordering Information

1482 Standard Inductor

Catalog Number	Item
1482-9702	1482-B Standard Inductor, 100 μH
1482-9705	1482-E Standard Inductor, 1mH
1482-9708	1482-H Standard Inductor, 10mH
1482-9712	1482-L Standard Inductor, 100mH
1482-9716	1482-P Standard Inductor, 1H
1482-9720	1482-T Standard Inductor, 10H

Includes:

Calibration Certificate Traceable to NIST

Optional Accessories:

Calibration Data



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