

~~2.12.5 Accommodation and environmental conditions~~

~~2.12.5.1 Calibrations should be performed under the following conditions:~~

- ~~a) Ambient temperature of $(23 \pm 1)^\circ\text{C}$.~~
- ~~b) Ambient relative humidity between 30 % and 50 %.~~
- ~~c) Mains voltage within $\pm 10\%$ of nominal, with less than 3 % THD.~~

~~2.12.5.2 These requirements may be relaxed to the point that their combined influence will not exceed 25 % of the error budget.~~

~~2.12.6 Reporting the results~~

~~The calibration report should denote the following:~~

- ~~a) Test parameters (function, amplitude [range and applied], and frequency),~~
- ~~b) DMM correction,~~
- ~~c) Test uncertainty and description of how the uncertainty was calculated,~~
- ~~d) Ambient (or instrument) temperature and humidity with tolerances, and~~
- ~~e) Brief description of the standard used to perform the calibration.~~

2.13 Watt/watthour meters

2.13.1 Scope

This section contains specific technical criteria that a laboratory should meet to be competent to calibrate power frequency wattmeters (WMs) and watthour meters (WHMs).

2.13.2 References

- a) "Code for Electricity Metering," ANSI C-12.
- b) Ramboz, J. D., and McAuliff, R. C., "A Calibration Service for Wattmeters and Watthour Meters," *NBS Tech Note 1179*, July 1983.
- c) Oldham, N. M., Laug, O. B., Waltrip, B. C., and Palm, R. H., "The NIST Digitally Synthesized Power Calibration Source," *NIST Tech Note 1281*, Aug. 1990.

2.13.3 Equipment

The laboratory should have the necessary power/energy calibrator to calibrate all of the ranges of the test WMs and WHMs. This calibrator should be calibrated to an uncertainty smaller (by a factor of 2 or more)

than the desired test WM/WHM uncertainty. The test WM/WHM should be connected to the calibrator in accordance with the calibrator or test WM/WHM specifications.

2.13.4 Assuring the quality of test and calibration results

The laboratory should periodically calibrate at least one control WM/WHM over the range normally used by the laboratory to calibrate test WM/WHMs.

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- c) Mains voltage within ± 10 % of nominal, with less than 3 % THD.

2.13.5.2 These requirements may be relaxed to the point that their combined influence will not exceed 25 % of the error budget.

2.13.6 Reporting the results

The calibration report should denote the following:

- a) Test parameters (function, amplitude [range and applied], and frequency),
- b) WM/WHM correction,
- c) Test uncertainty and description of how the uncertainty was calculated,
- d) Ambient (or instrument) temperature and humidity with tolerances, and
- e) Brief description of the standard used to perform the calibration.

~~**2.14 Phase meters**~~

~~**2.14.1 Scope**~~

~~This section contains specific technical criteria that a laboratory should meet to be deemed competent to calibrate digital phase meters (DPM) with voltage and/or current inputs.~~

~~**2.14.2 References**~~

~~Turgel, R. S., "NBS 50 kHz Phase Angle Calibration Standard," *NBS Tech Note 1220*, 1986.~~