2.12.5  Accommodation and environmental conditions

2.12.5.1  Calibrations should be performed under the following conditions:

a)  Ambient temperature of (23 ±1) °C.

b)  Ambient relative humidity between 30 % and 50 %.

c)  Mains voltage within ±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.


2.13.3  Equipment

The laboratory should have the necessary power/energy calibrator to calibrate all of the ranges of the test WM 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.

2.13.5 Accommodation and environmental conditions

2.13.5.1 Calibrations should be performed under the following conditions:

a) Ambient temperature of (23 ± 1) °C.
b) Ambient relative humidity between 30 % and 50 %.
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