Legal Metrology in Cuba

1. Organizational structure in LM	The National Bureau of Standards (NC) through the Metrology Directorate (DIME): 1. Lead and develop the national metrology strategy. 2. It is the National Regulatory Authority in Metrology. 3. Establishes provisions, regulations and procedures, among others, for: a) the planning, elaboration, approval, control, edition and updating of the Cuban normative documents in the field of metrology; b) the use of legal units of measure; c) the traceability and appropriate use of the national standards of the legal units of measurement and of the instruments and systems of measurement; d) the requirement of traceability and certification that the reference materials must satisfy to obtain uniformity and credibility in the measurements; e) the organization of legal metrological control; f) the organization and execution of the metrological supervision; g) the organization of the metrological assurance of production and services, organization, control and dissemination of official time, including information to users; h) the requirements to be met by the verification, calibration and testing laboratories, in the manufacture, rental and sale of instruments and measurement systems subject to legal metrological control; i) disclose the infringements and the measures imposed in the matter of metrology; once they have become firm, through the means deemed appropriate. 4. Define, together with the superior organizations and organizations for business management, the scope of the Metrology service function that corresponds to them 5. Directs the National Metrology Service (SENAMET). The SENAMET is in charge of guaranteeing the uniformity and reliability of the measurements carried out in the country for the protection of national interests; their integration and functions are established in the Regulations. Legal metrological control is exercised by the SENAMET and includes: 1. The use of units of measurement. 2. The measurement methods. 3. Prepackaged Products 4. Instruments and measurement systems 5. The results of the measurements and the conditions under which they are obtained, expressed and used in the fields of application established by the NC. It is the responsibility of SENAMET to impose the control mark and deliver the verification certificate, in accordance with the provisions established for this purpose by the aforementioned. SENAMET is made up of the DIME, the National Research Institute of Metrology (INIMET), the National Institutes of Metrology designated CENTIS (Center for Isotopes) and CPHR (Center for Protection and Hygiene of Radiations), 13 provincial laboratories belonging to the ONN and 30 laboratories authorized to exercise legal metrology in the national territory. The Metrology Advisory Committee of the National Council for Standardization, Metrology, Quality and Accreditation is the collegiate body to advise and coordinate on Metrology. The NC Director of Metrology serves as the Executive Secretary. INIMET, CENTIS and CPHR are registered with the BIPM as metrology institutes; they are responsible for the custody, conservation and maintenance of the national standards of the measurement units. The approval, registration, use, care, conservation and the period of validity of the national standards are carried out in accordance with the regulations established by the NC. The SENAMET is responsible for guaranteeing specialized training in Metrology.
2. Units	The units of the International System of Units (SI) are applied in the Republic of Cuba
3. Law on metrology	Decree Law No. 8 on Standardization, Metrology, Quality and Accreditation of the Republic of Cuba was approved in April 2020.

4. List of MIs within the field of Legal Metrology or scope of state regulation

The General Provision DG-01:2014 revision 3 "Measuring instruments subject to Legal Metrological Control according to the fields of application where they will be used", establishes the regulated fields of application in the country, where they are:

- Measuring instruments used in commercial transactions.
- Instruments used in health care services.
- Measuring instruments used for technical and road safety.
- Tanks and instruments for the control and storage of oil and its derivatives used in fiscal transfers and custody.

The Legal Character of a measuring instrument is the attribute by means of which, when meeting the requirements of administrative, metrological and technical regulations, it is officially recognized to be used legally in approved applications.

The instruments used in these fields are subject to type approval, metrological supervision and mandatory verification, which are carried out by SENAMET entities.

5. Type approval

5.1 Legal and technical requirements for type approval

Requirements for type approval (TA) are set in a normative documents of NC, based primarily on OIML documents and recommendations MIs, intended to be used in measurements in the field of LM and given in the List of MIs (see 6.3).

5.2 Bodies, responsible for type approval

The NC is responsible for the type approval processes*,* and makes decisions (resolutions) on type approval of MIs and RMs and issue of certificates of type approval of MIs and RMs.

5.3 Bodies, responsible for testing for type approval

Type approval is carried out by the DIME and tests are carried out on samples of instruments produced in the country by entities approved and registered by the NC.

5.4 Recognition of OIML certificates

Cuba is a full OIML member and utilizer member in the OIML-CS certification system.
Cuba recognizes the approval type certificates of the issuing authorities registered in the OIML-CS certification system.

6. Verification

6.1 Legal and technical requirements for initial and periodic verification

Verification (conformity assessment) is established in the current Decree Law No 8 as part of the metrological control. The NC establishes the regulated fields of application that are subject to legal metrological control.
The general provision DG 01: 2014 establishes the verification intervals of the measuring instruments according to their field of use and the measurements instruments subject to type approval.
The result of the verification is a verification certificate and the imposition of the control mark.

6.2 Bodies for verification

SENAMET laboratories carry out the verification of instruments and measurement systems*.*

6.3 RVIs for 20 categories of MIs

1. The list of instruments to which verification is carried out is established in General Provision DG 01: 2014.
2. In the Republic of Cuba the following RVIs (in years) are currently valid for the following 20 categories of MIs:

1. electronic electricity meters	10
2. Diaphragm gas meter for households	6
3. mechanical water meters for households	10
4. non-automatic weighing instruments	1
5. automatic weighing instruments	1
6. truck scales	1
7. Length measuring instruments	2
8. Capacity serving measures	Initial verification
9. Mobile truck tanks	1
10. Mobile railway tanks	5
11. Automatic level meters that are used in stationary tanks	2
12. Tanks for the control and storage of oil and its derivatives used in fiscal transfers and custody	5
13. Fuel dispensers	1
14. Taximeters	1
15. Dosing meters and dose rate of ionizing radiation	2

	16. Clinical glass thermometers. — Initial verification 17. Electronic clinical thermometers — 1 18. Speed measuring instruments (e.g. speed radars) — 1 19. Breath alcohol analyzers — 0,5 20. Mechanical static testing machine for construction materials — 1
	6.4 Other national requirements for verification MIs in the field of LM are subject to registration upon their state verification in accordance with the rules of metrological test.
7.Conformity assessment for MIs	***7.1 Brief description of the system*** In Cuba, the MIs described in the List of MIs (see 6.3) are subject to conformity assessment (approval type, verification and metrological supervision) ***7.2 Bodies for assessment of conformity with the type*** SENAMET laboratories are in charge of carrying out this activity.
8.Prepackages	***8.1 Legal requirements for controlling prepackages*** State regulation applies to measurements, made in determining the quantity of prepackages. NC sets the requirements for determining the quantity of prepackages to products manufactured in the country, imported products must comply with the regulations established in the country.
	8.2 Documents, setting requirements for prepackages NC OIML R 87:2018 “Amount of product in prepackages”. NC OIML R 79:2018 “Requirements for the labeling of products”. PDIM - 09:2019 “Execution of the Metrological Control to Prepackaged Products”
	8.3 Bodies, involved in control of prepackages In conducting state metrological supervision of compliance with requirements for prepackages – Inspectorates of state metrological supervision of NC.
	8.4 Other national requirements for prepackages -
9. Metrological supervision	Metrological Supervision is exercised by the NC state inspectors designated for this purpose on the fields of application established by it and is executed ex officio or at the request of the interested party. DG-09:2011. General layout. Arrangements for metrological monitoring PDIM-10:2020 "Execution of metrological supervision in the regulated metrological area". The scope of metrological supervision is to the following activities: a. the manufacture, verification, evaluation and model approval of instruments and measurement systems b. the correct use of instruments and measurement systems; c. the operation of metrological verification laboratories and test laboratories for the evaluation of models of measurement instruments and systems; d. the operation of maintenance and repair workshops for instruments and measurement systems subject to legal metrological control; e. the importation and commercialization of instruments and measurement systems subject to legal metrological control; f. quantity of prepackaged and non-prepackaged products; g. the operation of metrological standards calibration laboratories; h. use of the International System of Units; i. compliance with the Metrological Traceability Policy; and j. all other legal metrological aspects that the Bureau regulates. The instruments and measurement systems subject to Legal Metrological Control are defined by the Bureau through the General Provision 01 (DG 01) in force.
10. Legal metrology practitioners	The NC establishes and approves the competence requirements of Legal metrology practitioners in documents PDIM-5:2020. Procedure for authorizing and registering metrology laboratories and measurement points to carry out verifications on instruments and measurement systems. There is a National Registry of these practitioners. The total number of practitioners of the Republic of Cuba, involved in testing for type approval of MIs and RMs, metrological examination, and verification of MIs in LM, amounts to about 400.
11. Sanctions	Violations are classified as very serious, serious and minor, examples: – Failure to comply with current regulations on the use of meters used for billing or collection. – Use instruments and measurement systems without having their model approved, not verified or NOT SUITABLE FOR USE in the fields of application regulated by Legal Metrology. – Failure to use the legal system of measurement units.

	– Alter the result of measurements in commercial transactions or certifications. – Use instruments and measurement systems, in legal measurements that do not comply with the established regulations on metrological traceability. – Failure to register prepackaged products, in the administrative registers or records for matters so provided in this Decree-Law. – Exercise Legal Metrology functions without authorization. If the offender is a repeat offender, the amount of the fine imposed can be tripled.