

	<b>COOMET Recommendation</b>	<b>COOMET R/GM/15:2007</b>
	<b>The rules of completion of the form of calibration certificates issued by National Metrology Institutes within the scope of the CIPM MRA</b>	
<i>Approved at the 17<sup>th</sup> COOMET Committee Meeting (Minsk, Belarus, April 24 – 25, 2007)</i>		

## 1 FIELD OF APPLICATION

This recommendation lays down the form and rules for filling in calibration certificates issued by those National Metrology Institutes (in the following referred to as NMIs) which have signed the "Mutual Recognition Arrangement for National Measurement Standards and for Calibration and Measurement Certificates issued by National Metrology Institutes" (CIPM MRA). These rules must be observed when standards and measuring instruments (in the following referred to as "calibration items") of customers – also from other countries - are calibrated.

The form of the calibration certificate was drafted in agreement with the requirements of the International Standard ISO/IEC 17025.

The form of the calibration certificate regulated by this document may be used only by those NMIs

- whose calibration and measuring capabilities (CMC) have been included in *Annex C* of the CIPM MRA and which are contained in the KCDB BIPM database ([www.kcdb.bipm.org](http://www.kcdb.bipm.org));
- whose quality management systems (QMS) have been recognised by the quality forum of COOMET with respect to their agreement with the International Standard ISO/IEC 17025;
- which have been authorised to use the CIPM MRA logo ([www.bipm.org/en/cipm-mra/logo](http://www.bipm.org/en/cipm-mra/logo)).

Application of the recommended certificate form ensures the uniformity of the calibration certificates issued by the NMIs and contributes to their mutual recognition.

## 2 REQUIREMENTS FOR CALIBRATION CERTIFICATES

The calibration certificate is issued on matt white paper (A4 format).

The calibration certificate contains inscriptions and explanations in two languages – Russian and English – the letters for designations of the fields to be filled in being larger in the Russian language.

All information in the calibration certificate must be clear and unambiguous. Corrections are not permitted.

- 2.1 The calibration certificate issued by the NMI contains the following:
  - 2.1.1 The title "Calibration Certificate";
  - 2.1.2 the name and address of the NMI which has *carried out the calibration*;
  - 2.1.3 the number of the certificate;
  - 2.1.4 the date of the calibration;
  - 2.1.5 the number of pages and an identification on each page of the certificate;
  - 2.1.6 unambiguous identification of the calibrated item, its description and its condition;
  - 2.1.7 identification of the customer;
  - 2.1.8 identification of the calibration procedure, designation, status and identification of the standards used during calibration as well as proof of traceability;
  - 2.1.9 the calibration results, including the measurement uncertainty;

- 2.1.10 date of issue, official position, first name, surname and signature of the person who approved the calibration certificate and of the person who performed the calibration;
  - 2.1.11 explanations regarding pursuing of the measurement, compliance with the CIPM MRA and restrictions for reproduction of the certificate;
  - 2.1.12 environmental conditions under which the calibration was performed as well as other factors which have an influence on the calibration results.
- 2.2 Additional information may be included according to clause 3.3.5.

### **3 REQUIREMENTS FOR FILLING IN THE CALIBRATION CERTIFICATE**

- 3.1 The calibration certificate is drawn up on two or more pages. The forms of the first page and of the second and following pages of the calibration certificate is shown in *Annex 1*. A pattern of the completed certificate is shown in *Annex 2*.

*Note:* The designations below the lines in the mentioned forms of *Annex 1* only serve for information and are not contained in the completed certificate.

- 3.2 The first page of the calibration certificate contains the following information:
- 3.2.1 Complete name, abbreviated designation and logo of the NMI which issued the certificate, as well as logos of CIMP MRA and COOMET and, where appropriate, other logos.
  - 3.2.2 Title of the document "calibration certificate" and certificate number composed of the designation of the state, the number assigned to the NMI in the respective state as well as a consecutive number in accordance with the system for the registration of certificates at the respective NMI.

*Example:* UA 01 No. 01234, where: UA – Ukraine, 01 – National Science Centre "Institute for Metrology" (NSC IM), 01234 – number of the certificate in accordance with the registration system of certificates at the NSC IM.

- 3.2.3 Page number and total number of pages of the certificate.
- 3.2.4 Designation of the calibration item and its identification.  
A complete name of the calibration item, its designation and series number (works number, inventory number) must be indicated. These data must comply with the data given in the instrument passport.

- 3.2.5 Information about the customer.  
The country, the name of the organisation (of the company), the postal address etc. are indicated. The complete name of the organisation must be indicated, without abbreviations and abbreviated designations which may, however, be stated in addition.

- 3.2.6 Method of calibration.  
The description of the calibration procedure and/or its identification are indicated. If the calibration procedure is described in a document accessible to the customer, reference to this document can be made.

- 3.2.7 Declarations and restrictions
  - Declaration regarding traceability to units of the International System of Units SI;
  - Declaration regarding compliance with the CIPM MRA;
  - Restriction which indicates that the calibration certificate shall not be reproduced except in full. Any publication extracts from the calibration certificate requires written approval of the issuing NMI.

- 3.2.8 Date of issue, official position, first name, surname and signature of the person who has approved the calibration certificate.

*Note:* The person in the NMI who approves the calibration certificate must be authorised in accordance with the distribution of responsibilities within the NMI.

- 3.2.9 The NMI stamp is applied only by wet print to the original of the certificate.
- 3.2.10 Address of the NMI. Country, postal address, phone, fax, e-mail, website are indicated.
- 3.3. The second page and the following pages of the calibration certificate must contain the following:
- 3.3.1 - The title of the document "calibration certificate";  
- the certificate number;  
- the page number and the total number of pages of the certificate.
- 3.3.2 Designation of the standards with the aid of which the calibration was performed as well as their status, identification and proof of traceability.
- Note:* Proof of the traceability of the measurement results with indication of all standards (for example: their belonging to an institute or country) used for the dissemination of a unit must be furnished in the calibration certificate if this is required for the interpretation of the calibration results.
- 3.3.3 Environmental conditions under which the calibration was performed as well as other factors which have an influence on the calibration results.
- 3.3.4 Calibration results
- In the calibration certificate, the metrological characteristics which have been detected on the basis of the results of the calibration (measurement range or conversion function, possibly in the form of equations, formulas or tables) and the expanded measurement uncertainty in the form of absolute or relative values are stated.
- The following note must follow, concerning the value indicated for the expanded uncertainty: "The expanded uncertainty is obtained by multiplying the combined standard uncertainty by a coverage factor  $k = 2$  corresponding to a confidence interval of approximately 95 % assuming a normal distribution. The evaluation of uncertainty is conducted according to the "Guide to the expression of uncertainty in measurement" (GUM)".
- 3.3.5 Additional information which is given at the request of the customer or for ensuring correct interpretation of the calibration results and which contains the following:
- 3.3.5.1. Condition of the calibration item
- Brief specification of the components of the calibration item and of its technical characteristics. The condition of the calibration item is described on the basis of the results obtained from its visual check and its testing.
- 3.3.5.2. Statements regarding repairs or readjustments
- When a calibration item has been repaired or adjusted, the certificate must contain the information about the adjustment or repair carried out. The calibration results before and after adjustment or repair, if available, shall be reported.
- 3.3.5.3. The calibration certificate shall not contain any recommendation on the calibration interval except where this has been agreed in writing with the customer.
- 3.3.6 Official position, first name, surname and signature of the person who has performed the calibration are stated at the end of all information regarding the calibration results and at the end of the additional information (on the last page of the certificate).

**Annexes:**

1. Forms for the first page and the following pages of the calibration certificate

CIPM MRA  
logo

The other  
logo

КОOMET  
logo

The other  
logo

# Сертификат калибровки

## Calibration certificate

Номер сертификата  
Certificate number

Дата калибровки  
Date when calibrated

Страница из  
Page of

Объект калибровки  
Item calibrated

Наименование эталона / средства измерения / идентификация  
Description of measurement standard / measuring instrument / identification

Заказчик  
Customer

Информация о заказчике, адрес  
Name of the customer, address

Метод калибровки  
Method of calibration

Наименование метода / идентификация  
Name of the method / identification

*Все измерения имеют прослеживаемость к единицам Международной системы SI, которые воспроизводятся национальными эталонами НМИ. В сертификате приведены результаты калибровки согласующиеся с возможностями, содержащимися в Приложении С соглашения МРА, разработанном МКМВ. В рамках МРА все участвующие НМИ взаимно признают действительность своих сертификатов калибровки и измерений в отношении измеренных значений, диапазонов и неопределенностей измерений, указанных в Приложении С (подробности см. <http://www.bipm.org>). Данный сертификат может быть воспроизведен только полностью. Любая публикация или частичное воспроизведение содержания сертификата возможны с письменного разрешения НМИ, выдавшего сертификат.*

*All measurements are traceable to the SI units which are realized by national measurement standards of NMI. This certificate is consistent with the capabilities that are included in Appendix C of the MRA drawn up by the CIPM. Under the MRA, all participating NMIs recognize the validity of each other's calibration and measurement certificates for the quantities, ranges and measurement uncertainties specified in Appendix C (for details see <http://www.bipm.org>). This certificate shall not be reproduced, except in full. Any publication extracts from the calibration certificate requires written approval of the issuing NMI.*

Утверждающая подпись  
Authorising signature

Ф.И.О и должность \ Name and function

Дата выдачи  
Date of issue

# Сертификат калибровки

Calibration certificate

Номер сертификата  
Certificate number

\_\_\_\_\_

Страница \_\_\_\_\_ из \_\_\_\_\_  
Page \_\_\_\_\_ of \_\_\_\_\_

Калибровка выполнена с помощью  
Calibration is performed by using

Наименование эталонов и их статус / идентификация / доказательство прослеживаемости  
Description of the reference measurement standards / identification / evidence of traceability

Условия калибровки  
Calibration conditions

Условия окружающей среды и другие влияющие факторы  
Environmental conditions and other influence parameters

Результаты калибровки, включая неопределенность  
Calibration results including uncertainty

*Расширенная неопределенность получена путем умножения стандартной неопределенности на коэффициент охвата  $k = 2$ , соответствующего уровню доверия приблизительно равному 95 % при допущении нормального распределения. Оценивание неопределенности проведено в соответствии с «Руководством по выражению неопределенности измерений» (GUM).*

*The expanded uncertainty is obtained by multiplying the combined standard uncertainty by a coverage factor  $k = 2$  corresponding to a confidence interval of approximately 95 % assuming a normal distribution. The evaluation of uncertainty is conducted according to the "Guide to the expression of uncertainty in measurement" (GUM).*

Дополнительная информация  
Additional information

состояние объекта калибровки / регулировка и/или ремонт объекта калибровки до его калибровки /  
рекомендуемый межкалибровочный интервал по требованию заказчика  
condition of the item of calibration / adjustments or repair of the item of calibration\_before calibrated /  
recommended recalibration period, if requested by the customer

Подпись лица, выполнившего калибровку  
Signature of the person who has performed calibration

\_\_\_\_\_  
Ф.И.О и должность / Name and function