European Instruments

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UKAS Balance / Scale Application Form (Please complete prior to visit)

SUBMITTER (address to appear on certificate):	**CLIENT** (If different from submitter):

CALIBRATION METHOD

We will calibrate your equipment in accordance with our UKAS accreditation, 0438.

We will carry out tests for Repeatability, Linearity & Eccentricity over the instruments whole range only.

We will carry out an As Found 5 point linearity calibration followed by a Post Adjustment calibration where we will activate the adjustment routine (calibration function) using the internal calibration mechanism (if equipped) or externally applied UKAS certified weight (see note iii below).

We will issue a UKAS Certificate that will detail the Uncertainty of Measurement.

Prior to visit please ensure:

i) Equipment is located in its normal place of use,

ii) Any pre weighing checks carried out before use have been completed

iii) Please ensure the manufacturers instructions are available for any adjustments that may be required

Additional Requirements

Please indicate below if you have any additional requirements including:

i) Additional test requirements i.e. tests carried out in each range for multiple range instruments (additional charges will apply for more than one set of test results).

ii) Alternative calibration types i.e. full As Found prior to adjustment or As found only (additional charges will apply for more than one set of test results).

iii) Please indicate if you have your own calibration weight to be used for the adjustment routine.

iv) Any acceptance limits that you would like applied to these tests. **Note:** See 'About Your Calibration' section for UKAS requirements on the decision rule to be applied.

If you have any other calibration requirements please contact our Technical Manager before the visit

CALIBRATION LABEL- If you would like us to identify a RECAL due date on the equipment label please state which month: _____

CUSTOMER ACCEPTANCE

The requirements of the calibration have been confirmed by:

Customer Name: _____ email: _____

Signature: _____ Date: _____

(For electronic submissions type " I CONFIRM" followed by your name e.g. I CONFIRM ANDREW SMITH 3/7/2013)

Internal Use Only :

Contract No: _____ Date Contract carried out (mmm/yy): _____

About Your UKAS Calibration

European Instruments want you to be very happy with every aspect of the service we provide, including how we perform the UKAS calibration. The following guide explains how we will perform your calibration in more detail, so you can make informed choices on what you want.

If you have any questions regarding the calibration of your equipment please contact our Technical Manager, who will be pleased to talk to you. It is really helpful for us if we can do this before the visit, as this will ensure your visit take place smoothly on the day.

To discuss the requirements of your visit please contact our Technical Manager, who can be reached by emailing sales@ei.co.uk or

by telephone 01865 750375

Calibration Method – Tests Performed

When calibrating your equipment we will perform the following tests:

Linearity

This test confirms traceability back to International Standards. This is of critical importance, which is why it is important to use a UKAS calibration laboratory as all calibration reference standards used are verified.

Selecting at least 10 test points in the instrument's range we apply our reference standards to the equipment and compare the value displayed by the instrument against the certified value of the weight and the difference is noted. The maximum difference is determined from all the test points taken and then reported on the certificate.

If you wish this test can be limited.

eg. If you have a balance that has a capacity of 200g, but you only use it up to 50g. Then we can limit the calibration by only selecting test points between 0 and 50g. You need to tell us before the calibration if you want this done.

Repeatability

This test tells you how well your equipment is performing and its capability to repeat the same result under the same conditions. The test result is very much dependant on where the equipment is being used eg environment, work surface. The test is performed by taking ten repetitive readings at near capacity of the range under test. The maximum difference is reported on the certificate.

Eccentricity

When weighing you should always weigh in the centre of the pan, since if you perform a weighing in the corners it could give less accurate results. A reference weight of at least a 1/3 of the range under test is weighed in the centre of the pan and then again in the corners. The maximum difference between a corner reading and centre reading is then reported

Uncertainty of Measurement

Once the above tests have been performed the data will be used to calculate the uncertainty of measurement. This is calculated in accordance with UKAS requirements and takes into account:

1) The stated uncertainty of the largest reference weight(s) used

2) The drift of the weight(s) used

3) The standard deviation calculated when performing the repeatability test

4) The readability of the equipment for digital rounding effect

5) The readability of the instrument for digital rounding at zero

6) Air buoyancy correction (usually 1 part per million of the range)

The uncertainty of weighing can be calculated by taking the values described above and also using eccentric and linearity errors. This is not currently a UKAS requirement and therefore we do not quote this.

Further Notes on the calibration tests performed

The class of the reference weights we use are applicable to the instrument under test

Limits

If you want us to apply limits to your calibration, please indicate the limits required on the application form.

Decision Rule

For UKAS calibrations it is a requirement to understand the way limits are applied and what decision rule is used:

- The binary statement for simple acceptance decision rule (reference ILAC G8 section 4) will be adopted by the laboratory where the acceptance band will equal the tolerance band with zero guard bands (shared risk) where the uncertainty of measurement, at the 95% confidence level, will be considered to assure that the TUR ≥ 1 (reference ILAC G8 section 6). Where the TUR is lower than 1, no statement of conformity is possible.
- Where other decision rules are required, please discuss with the laboratory.

Calibration Type

There 3 main types of calibration

- 5 point As Found + Post Adjustment
- As Found only
- As Found and Post Adjustment

To understand what type you want you need to understand what we mean by an adjustment. After a period of time (even between service visits) it is possible that the equipment will start weighing less accurately. To correct this our an engineers can activate an adjustment routine, which can be done using an internal adjustment mechanism on the equipment or using an external UKAS certified weight. The calibration type you choose determines when we perform this adjustment, if at all.

5 point As Found + Post Adjustment

The engineer will take 5 linearity readings (including the zero point) spread across the range. The engineer will then activate the adjustment routine to ensure your equipment is weighing as well as it possibly can and then perform the calibration tests. We believe that most customers want their weighing equipment to perform as well as possible after our visit, which is why we perform this type by default. If you want another type of calibration then let us know by selecting one of the Alternative Calibration Types shown on the form.

As Found Only

No adjustment is performed, we simply perform the calibration tests as we find it and report it on your certificate

Note: If after the As Found calibration tests have been performed and you determine the equipment should be adjusted and calibration tests repeated there will be an additional charge – 50% of the unit calibration cost.

As Found + Post Adjustment

The engineer will perform the calibration tests as he finds the equipment and records the results. Performs an adjustment. Then repeats the calibration tests and records the results. Customers will select this option if they will find it useful to know how well the equipment was performing prior to the adjustment being performed. There is an extra charge to perform this type of calibration.

Note: The additional charge for this service is 50% of the unit calibration cost.

Calibration Label

An important part of the calibration process is to identify the equipment with a label to show the date when the calibration tests were performed. On this label there is space to put a “recal due”. If you would like us to complete this please let us know what month / year you would like to enter. UKAS do not define calibration intervals.

Please note when the equipment is due for calibration, we will complete the visit in the specific month required as it is not critical to have the equipment done specifically by the date of last calibration.

Still not sure then please contact us:

email: sales@ei.co.uk

tel: 01865 750375

web: www.ei.co.uk