

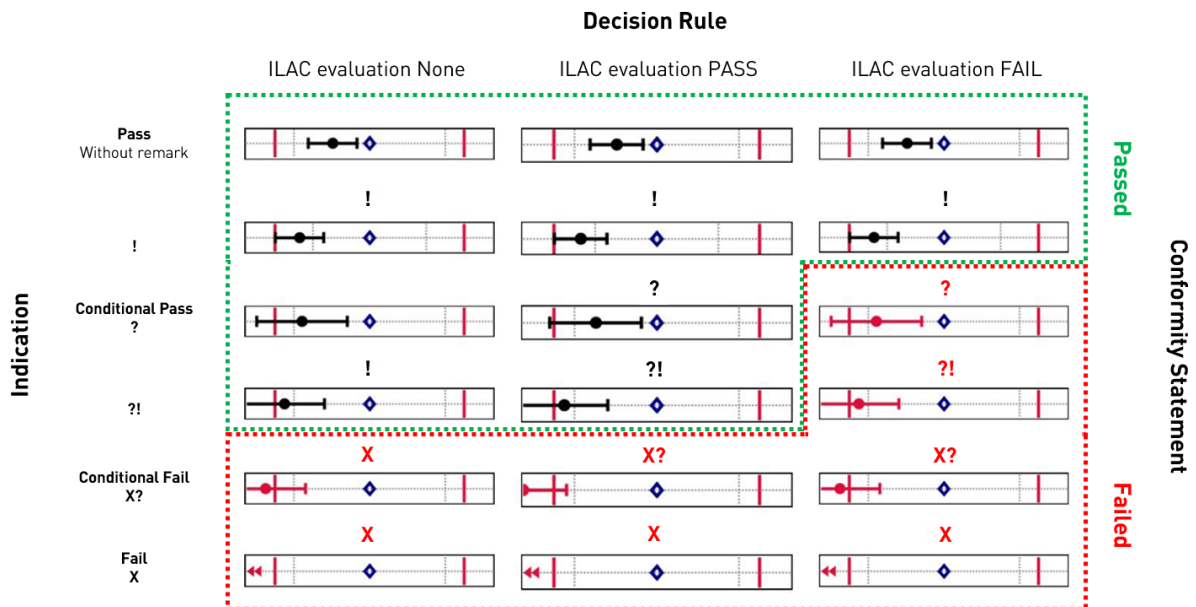
esz Calibration Certificate Explanation of Terms and Legend

Glossary

- **%TOL:** position of the measured value within the tolerance field in %
- **Deviation:** difference between measured value and nominal value
- **Deviation type:** the following types of deviation are possible:
 - **A:** absolute (measurement unit)
 - **D:** in decibels (dB)
 - **R:** relative (%)
- **Issue date:** Shown in the footer of the calibration certificate, this date represents the creation date of this revision of the report.
- **Rem.:** indication per measurement; six results are possible for the column "Remark":
 - **Pass** - without remarks
>95% probability of being within specification (ILAC-G8:09/2019 Fig. 5, Pass)
 - **!**
Intervention threshold exceeded, >95% probability of being within specification
 - **Conditional Pass** - ?
with a probability of >50% to 95% of being within the specification, taking into account the measurement uncertainty (MU) (ILAC-G8:09/2019 Fig. 5, Conditional Pass)
 - **?!**
over the intervention threshold exceeded but with a probability of >50% to 95% of being within the specification, taking into account the MU
 - **Conditional Fail** - X?
with a probability of >50% to 95% of being outside the specification, taking into account the MU (ILAC-G8:09/2019 Fig. 5, Conditional Fail)
 - **Fail** - X
>95% probability of being outside the specification (ILAC-G8:09/2019 Fig. 5, Fail)
- **DAkKS:** Deutsche **Akk**reditierungsstelle (German Accreditation Body)
- **DGUV:** tested according to DIN EN 50678 (VDE 0701) or DIN EN 50699 (VDE 0702) in accordance with DGUV Vorschrift 3
- **Intervention/warning threshold:** set to 80% of specification per default and adaptable to customer requirements

¹ The basis of the identification is a non-binary conformity statement with a guard band as described in ILAC-G8:09/2019 4.2.3. The guard band corresponds to the applied measurement uncertainty.

- **Approval date:** date of confirmation of the calibration results and the conformity assessment by the authorized person
- **ILAC: International Laboratory Accreditation Cooperation**
- **ILAC evaluation:** applied / defined (binary) decision rule for the conformity statement; the values appear in accordance (black) or not in accordance (marked **red**) with the specifications



- **PASS:** standard decision rule according to the QM system of esz AG. Measurement results according to ILAC-G8:09/2019 Fig. 5, Pass and Conditional Pass are assessed as conforming to the specifications. Cases according to ILAC-G8:09/2019 Fig. 5, Conditional Fail and Fail are not considered to comply with the specifications.
- **None:** decision rule according to ILAC evaluation "PASS" but without risk marking, i.e. question marks do not show during calibration and in the calibration certificate.
- **FAIL:** decision rule according to DIN EN ISO 14253-1:2018-5.2 (on customer request). Measurement results according to ILAC-G8:09/2019 Fig. 5, Pass are assessed as conforming to the specifications. Cases according to ILAC-G8:09/2019 Fig. 5, Conditional Pass, Conditional Fail and Fail are not considered to comply with the specifications.
- **Date of Calibration:** date or date range on which the calibration occurred.
- **Calibration Label:** sticker attached to the device under test, providing an explicit reference to the calibration certificate
- **Calibration Certificate Number:** located on the first page of the calibration certificate, this number is a unique identification for this calibration certificate.

- **Nominal value:** either generated by the measurement standard (e.g. a calibrator or a fixed procedure) and measured with the test object or set by the test object when calibrating objects which generate values
- **Calibration Mark:** unique identification of the calibration. This mark consists of the calibration certificate number, an identifier of the laboratory ("D-K-15019" for accredited calibration certificates or "esz AG" for factory calibration certificates) and the (month-specific) calibration date. It is written in the header of the calibration certificate
Examples: 405364-01-D-K-15019-2021-01 or 405364-02-esz AG-2021-01
- **Calibration Certificate:** report according to the requirements of DIN EN ISO/IEC 17025:2018 Section 7.8. At esz AG calibration & metrology, this applies not only to accredited calibration certificates, but also in particular to the result reports of factory calibrations.
- **Statement of Conformity:** statement whether given results meet specified requirements or not ("Passed" or "Failed")², meaning that measurements comply with specifications (successful conformity assessments per measurement step).
The definition of the specifications according to the manufacturer's data or application requirements was agreed on at the time the order was placed.
- **LWL:** optical waveguide
- **MU:** measurement uncertainty
- **Measured value:** value of a measurand displayed or generated by the object to be calibrated
- **Next calibration:** date for the next calibration agreed within the order placement. The definition and compliance to intervals for recalibrations lie within the user's responsibility
- **PTB: Physikalisch-Technische Bundesanstalt** (the National Metrology Institute of Germany)
- **Specification:** definition of the properties of a device by the user:
 - **%rdg:** Percent of measured value
 - **D:** Digit
 - **FS:** Full Scale
 - **ppm:** parts per million (10^{-6})
 - **ppb:** parts per billion (10^{-9})
 - **rdg:** reading
- **TUR: Tolerance Uncertainty Ratio.** Relationship between tolerance field and measurement uncertainty (also specification measurement uncertainty ratio)

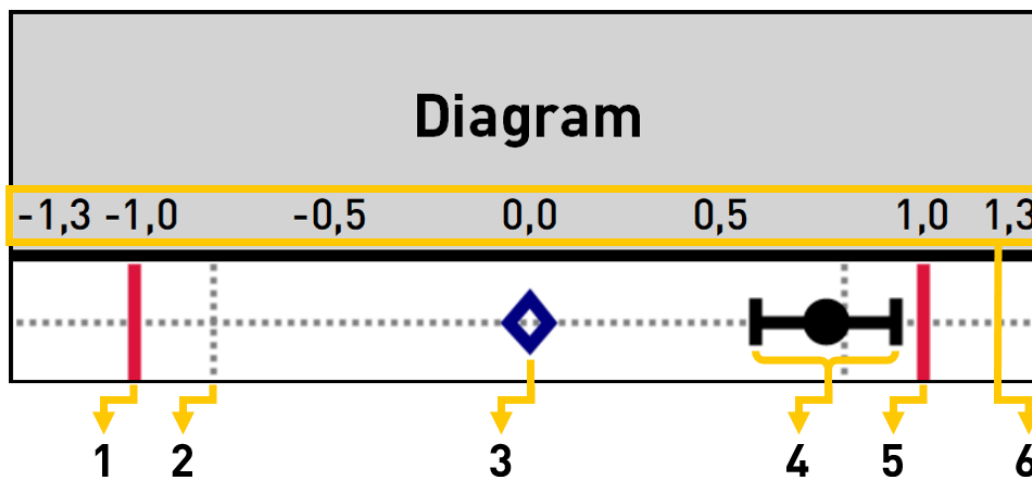
² DIN EN ISO/IEC 17000:2004

- Calibration equipment and standards:** documentation of the traceability of the present calibration by specifying the calibration standards used, including information on the calibration status of the standards and their traceability. If applicable, the traceability to national standards is included.

This documentation fulfils the requirement of DIN EN ISO/IEC 17025:2018 section 7.8.4.1c) for indication of traceability and is mandatory in the case of a factory calibration certificate. For an accredited calibration certificate, this may be omitted, since the accreditation of esz AG calibration & metrology by DAkkS already provides proof of traceable calibration.

- Diagram:** used in calibration expert for the visualization of conformity tests

Legend Diagram



- 1: Lower specification limit
- 2: Intervention/warning threshold
- 3: Nominal value
- 4: Measured value incl. measurement uncertainty
- 5: Upper specification limit
- 6: Standardized tolerance field