CALIPRI

THE POWER OF

3

With the non-contact CALIPRI measurement device, you can measure any gap profile or body contour completely and accurately as well as evaluate all relevant quality parameters based on needs.

Behind the **3 laser lines** of CALIPRI lies the secret of this versatile, precise and easy-to-handle optical measurement device.

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3

nextSENSE

CALIPRI

MULTIFUNCTIONAL AND COST-CUTTING MEASUREMENT

USER-INDEPENDENT AND REPRODUCIBLE RESULTS

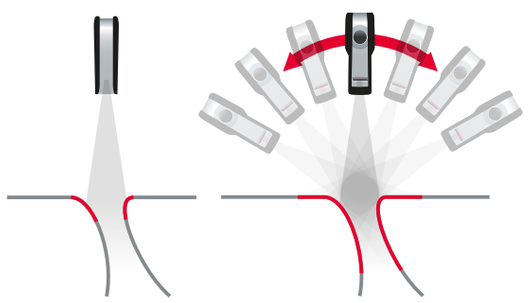
EASY AND FAST MEASUREMENT

HIGHLY ACCURATE GAP AND FLUSH MEASUREMENT IN BODY ASSEMBLY.

COMPLETE RECORDING.
ABSOLUTE ACCURACY IN JUST A FEW SECONDS.

The recording of the complete gap profile with CALIPRI delivers reliable measurement values in comparison to conventional measurement systems. The result is free of assumptions due to the depth of the gap contour being measured. The required measurement process takes only a few seconds. This means far less expenditure of time and greater accuracy.

The measurement is carried out on a non-contact basis. When measuring, the user moves the sensor by hand over the gap. The intelligent image processing system continually records segments of the gap contour from various viewing directions and combines them. CALIPRI automatically evaluates the quality of the recorded segments, eliminating the inappropriate ones. Through the recording from several perspectives, the depth of the gap contour is recorded as well.

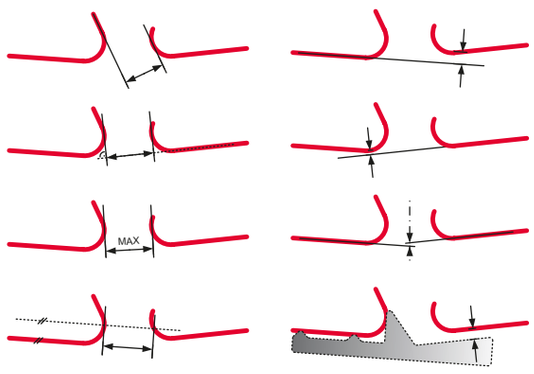


The CALIPRI method ensures that the complete gap contour is recorded. Once the entire profile line of the gap to be measured has been recorded, the data will be analyzed and the resulting measurement values will be displayed.

FLEXIBLE EVALUATION.
CLEAR EVALUATION ALGORITHMS WITH A MAXIMUM OF ADAPTABILITY.

Flexible measurement instructions allow for compatibility and traceability to gauge, inline results and CAD data. The parameters of the selected evaluation algorithm can be adapted to user requirements and the specific measurement situation within a few seconds.

The evaluation possibilities are manifold. Depending on the aim of the measurement, users require different modes of calculating gap, flush and radiuses. The completely recorded gap profiles allow for different modes of calculating gap measurements, delivering values that are comparable to other systems. The intuitive graphic user interface guides the user throughout, from the entry of the measurement object (e.g. body type) to the selection of the desired evaluation method and, on request, to the adaptation of the parameters.



Gap, flush and radiuses can be calculated with a broad range of different evaluation algorithms directly from the measurement data.

SPEED-OPTIMIZED MEASUREMENT SYSTEM FOR PRODUCTION LINES.

UTILIZING PLATFORMS.
NEEDS-BASED VERSIONS WITH TRACEABLE RESULTS.

The use on different platforms facilitates the continuous deployment of one and the same measurement device in all process steps. As a portable device or in the production line, CALIPRI thus increases both process reliability and quality in the production process. Measurement data and test plans can be exchanged between the CALIPRI systems and the user's quality assurance system.

The platforms are compatible. The traceability and compatibility of the measurement results is guaranteed through cross-system evaluation algorithms and the same type of measurement profile record. Depending on the application situation, you can choose between the portable system carried on the body and the stationary version for measurements directly in the production line.

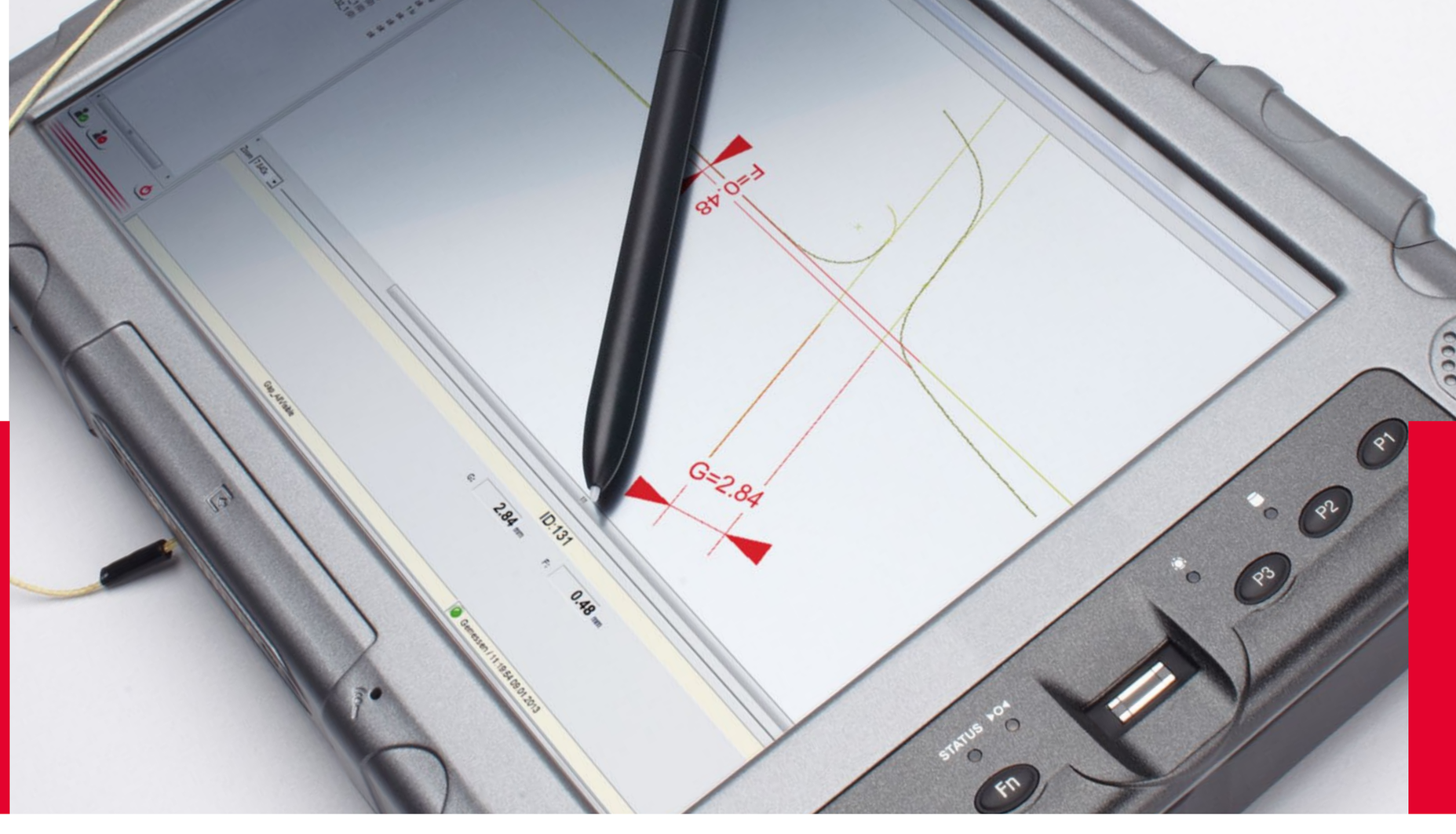
According to task, two different sensors are available. The portable solution features absolute mobility and great flexibility. As an alternative, we offer the speed optimized sensor for inline measurements.

ACCURATE MEASURING.
REPRODUCIBLE MEASUREMENT RESULTS FREE OF USER INFLUENCES.

CALIPRI automatically compensates for any tilts and twists of the sensor. Thus the measurement results are reproducible and free of operator influences. Ergonomically designed handheld sensors and intuitive operation allow for an effortless measurement and reduce training costs substantially.

The measurement is performed hands-free. The distance and angle of the sensor to the measured object do not have to be kept exactly the same throughout the measurement process. Acoustic signals as well as the graphic display help, independent of the experience of the user, to attain quick and reproducible results. Typical measurement errors, when measuring with gauges – e.g. due to tilted scanning, undefined measuring force or lopsided application of the device – are ruled out with CALIPRI.

The hands-free CALIPRI measurement system requires only minimal training and leads to accurate measurement results independent of the user.

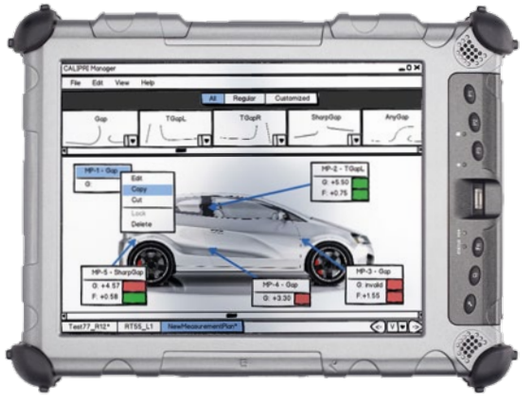


FLEXIBLE EVALUATIONS AND INTUITIVE TEST PLANS FOR ALL YOUR MEASUREMENT TASKS.

CREATING MEASUREMENT PLANS.
TEST PLANS INDEPENDENT OF PLATFORM IN JUST A FEW STEPS.

Test/measurement plans can be created simply and intuitively. The graphic user interfaces guide throughout, from the selection of the measurement object to the entry of the desired evaluation to the assignment of tolerances. The prepared measurement plans can be exchanged comfortably between CALIPRI platforms and processed.

The creation of test plans is user-friendly. Measurement points can be defined, evaluation algorithms selected and tolerances fixed in just a few steps. Measurement points can be intuitively transferred between measurement plans. The visualization of the measurement locations shows the user the object to be measured with the respective measurement points and guides him intuitively through the defined measurement cycle. The results are colored according to the stored limits. Subsequently, the measurement values are transmitted to the quality assurance system of the user. The entire work flow is automated and safe for transmission.



The platform-independent CALIPRI software constitutes the core of the test plan concept. Depending on the version, a high-performance tablet or desktop PC is included in the scope of delivery.

MEASURING ANY PROFILE.
ANALYSIS OF A BROAD RANGE OF DIFFERENT BODY CONTOURS WITH OPTIONAL SOFTWARE.

With the ANALYZER option, profiles of any kind (design lines, column profiles, etc.) can be analyzed according to the user's wishes. Intuitively simple, a measurement profile is visualized, measured as you like and compared to reference profiles or stencils.

The software can be expanded by modules. All profile data that have been recorded with a CALIPRI can be comfortably examined with the ANALYZER. In the process, the profiles can be moved, rotated or mirrored. In addition, measurement tools such as length gauge and angle gauge are available. "Magnetic" stencils, which position themselves exactly on a profile by pressing a button, are especially helpful. An additional reference profile can be opened for comparison with other profile data. If the ANALYZER is activated in addition to the CALIPRI software, all currently measured profiles will be displayed on the ANALYZER in real time. PDF files for documentation can be created from all profiles and measurement data.

Any profile contours can be measured with the optional ANALYZER, independent of the preset evaluation algorithms. The desired geometrical dimensions can be calculated from the measurement data in a user-friendly way and exported as a report.

THE PORTABLE CALIPRI

TECHNICAL DATA

Accuracy:
Accuracy: < +/- 80 µm
Repeatability: < +/- 35 µm

Resolution:
0.01 mm

Range:
50 x 50 mm

Display:
Computer unit: 10.4 inch TFT XGA
Sensor: 2.3 inch FSTN LCD

Dimensions (W x H x D):
Sensor: 86 x 72 x 188 mm
Computer unit: 284.4 x 209.5 x 40.7 mm
Measuring case: 445 x 125 x 345 mm

Weight:
Sensor: 530 g
Computer unit: 2,500 g

Rechargeable battery:
Lithium-ion, warm swap
Running time: approx. 3.5 h per battery

Communication:
WLAN 802.11
10/100/1000 MBit Ethernet
Bluetooth V2.1

Operating system:
Microsoft® Windows® 7

Output formats:
DXF, XML, CSV, PDF

Ambient conditions:

Temperature – storage:
-20° C to +65° C

Impact resistance: 100 G

Protection class: IP 54

Laser:
Red, 660 nm, 2M class

Compliance:
CE

SCOPE OF DELIVERY

The scope of delivery of the ready-to-use measurement system includes:

+ **sensor**
+ **sensor cable**
+ **portable computer unit (tablet PC)**
+ **carrying strap**
+ **self-test and calibration device**
+ **hard protective case with foam rubber cushion for all components**
+ **user manual**
+ **installed measurement software of your choice**

THE INLINE VERSIONS

The CALIPRI models for inline measurements meet demands for ever tighter gaps and 100% tests in the production line. With the speed-optimized systems, test plans and car body numbers can be selected directly by the PLC and measurement data automatically exported. The profile recording is done according to the tried-and-tested CALIPRI method. Our experienced service team is happy to support you with the integration of the CALIPRI inline systems in your production line.

INLINE OPERATOR

Intuitive inline measurement system for production workers.

Owing to the extreme simplification of the sensor, this robust system requires only minimal training for users. Installation in your production line is quick and uncomplicated. It's even possible to install the system during ongoing operations.

INLINE ROBOT

Fully automated measurements by dint of the robot-guided system.

Through the robot measurement, the influence of the operator on the measurement point is dispensed with. A manipulation-proof measurement at rapid speed is made possible. The CALIPRI method simplifies the operation of the robot by automatic correction of tilts and twist.

Version	PORTABLE Tablet PC USB sensor Carrying strap	INLINE OPERATOR Desktop PC Ethernet Sensor Computer cabinet	INLINE ROBOT Desktop PC Ethernet Sensor Robot
Profile recording according to the CALIPRI method	✓	✓	✓
Application for structural work and assembling	✓	✓	✓
Training in days	2	1	x
Automatic test plan selection and body number detection (by PLC)		✓	✓
Manual input of the body number	✓		
Online export of the measurement data (by PLC)		✓	✓
Long sensor cable possible		✓	✓
Display and input option on the sensor	✓		
Flexible system, interfaces and output formats adaptable by the customer	✓		