Calypso - the Easy Way to Create Part Programs



We make it visible.

Visual Metrology[™]



Imagine measuring software that returns exactly the information you want within the shortest possible time; measuring software whose results can be understood by everyone involved in the manufacturing process; measuring software that frees you from time-consuming, routine activities. Imagine CALYPSO! You select the tolerances from the drawing or the CAD model according to the requirements of the workpiece. You define the measuring elements to be evaluated. The integrated assistant helps you select the necessary references and, before you know it, your measuring plan is ready.

This method of creating and maintaining measuring plans – Visual MetrologyTM – is the basis of CALYPSO. The advantages are at your finger tips: create a measuring plan without programming a single line! No time-consuming, structural programming. No difficult code or text editing. Concentrate on what's really important – the actual measuring task.



procedures

Intelligence through meaningful suggestions

"Test the roundness and the diameter of the bore" is the task defined in the CAD model or the drawing. This command is all CALYPSO needs to execute the measurement. "Scan a helix with stylus 4", and CALYPSO knows exactly how to deliver the best result. Use your expertise in metrology in exactly the same way.

With meaningful suggestions for any metrology challenge, CALYPSO offers you the experience of many users. You can follow these recommendations or modify them based on your own experience.

Speaks the language of metrology experts

Do your customers expect results with ever shorter turnaround times, while the number of design changes constantly increases?

CALYPSO prevents quality checks from slowing down the entire process. Measuring plans can be easily created with CALYPSO. Should your measuring tasks change, the measuring plan can be easily adapted to the new requirements.

Adjusts to your tasks

You can use CALYPSO with different types of CMMs. CALYPSO's strengths and advantages are completely independent of the CMM.

Batch measurements or an automated environment? CALYPSO allows your measuring plans to run in a single-button operation or in a completely automated environment suitable for volume production.

Do you need to program a structural component several times on a workpiece? With CALYPSO you can create a process for structural components and use the same process over and over... without having to program a single command!

Highlights

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CAD

- Direct interface to CAD
- Fast nominal value generation
- Accept dimensional and position tolerance
- Self-explaining offline programming
- Reliable measurement procedures through simulations

Programming

- Automatic stylus calibration
- Flexible adjustment of the measurement procedure

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• Measure from the program library





Calypso. A software for all tasks



Measurement

- The third generation in scanning
- Make tolerances visible
- Fast manual measurements (when needed)

Evaluation

- Results at a glance
- Customer-specific display of results
- Fast protocol output

Software that you can use for all measuring strategies and tasks? Unthinkable until now. With CALYPSO we revolutionize software programming for metrology.

Whether for single point or scanning; manual or CNC; on a coordinate measuring machine or offline, touch or optical; standard geometric forms or free-form surfaces – no matter which measuring strategy you prefer: CALYPSO allows you to complete all your measuring tasks with one software. It is amazingly simple – a click of a mouse is all that is needed. All measuring programs are intuitively created with CALYPSO; select the same features that are used in your design drawing. CALYPSO's easy-to-use programming interface is unparalleled. There is no difficult learning curve as with previous software.

CALYPSO employs the latest programming technology. This means faster and more reliable programming, saving both time and money. See for yourself!

From a CAD model to a finished measuring program in no time



The time you need to create a finished measuring procedure from a CAD model is considerably influenced by the amount of time you invest programming the measurement and creating a collisionfree measuring procedure. CALYPSO frees you from these tasks. Optimizing your measuring plan and generating travel paths for collision-free measurements are a thing of the past. Customers created executable measuring plans up to 75% faster with CALYPSO than with conventional measuring programs.

And with VAST Navigator, your measurement procedures run up to 15-65% faster.



Conventional software

Calypso

1 Prepare CAD files

CALYPSO easily reads popular file formats, such as IGES, VDAFS, DXF, STEP and formats from different CAD manufacturers such as CATIA V4/V5 and ProE, for example. Multiple conversions, often leading to tolerance inaccuracies, or reworking the workpiece geometries are unnecessary.

2 Define nominal geometry

So easy: load CAD files, select features in the CAD window – automatically receive nominal values.

6 Define tolerance

Characteristic input are the magic words. This function allows you to extract all size and position tolerances directly from the CAD model and assign them to the associated features.

What this means for you: time savings of up to 50%!

4 Program measurement

As soon as you have defined a feature, CALYPSO creates a measurement strategy. The strategy can be modified at any time and transferred to similar features. With CALYPSO, you can forget the words "travel path". CALYPSO moves the stylus around the workpiece and correctly approaches the features – one thing less for you to think about.

6 Adjust to CMM

By the time you have the part on your measuring machine for the first time, CALYPSO proves that the rapidly-created measurement procedures can be quickly adjusted. Changes to nominal values? Modified devices? Quickly make a few changes in CALYPSO and continue measuring. If you need to examine single characteristics for the manufacturing progress checks, you can let CALYPSO measure them without any extra programming.



The fast and easy way to correct results. Measuring plans

You want to measure, not program. CALYPSO simplifies a large part of your daily routine.

You know how it is. The moment your measuring program finishes, you notice the drill holes are not where they are in the CAD model. During the first measurement you discover that the measuring strategy was not the best. You try to determine the correct speed and point density. During the run, you perform a quick in-between measurement that provides you with important data.

Changes to the nominal geometry

Adjust the incorrectly-programmed features with a few steps and continue measuring. CALYPSO guarantees that the measurement strategy and the stylus movements match the modified features.

Changes to a measurement

You can easily change the strategy used for a feature. With CALYPSO, you can immediately evaluate the effects the changes have on the measuring result. There is no need to run the entire procedure again.





Calibrating procedures

CALYPSO offers special calibrating procedures when absolute accuracy is a must – procedures that enable you to significantly reduce deviations when evaluating roundness and distances. multi-sensor capable – from measuring single points to scanning to optical measurements. With this software, you can use almost the entire sensor portfolio from Carl Zeiss. You use the ideal measuring system for every task – with one and the same measuring machine.

The ideal system for every task: CALYPSO is completely

Optimal settings

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CALYPSO also helps in the search for the smallest deviations by setting the measurement parameters to their optimum values which guarantees optimum measuring results.

For quick measurements in between

With CALYPSO, it is possible to interrupt a measurement procedure to measure another part. The interrupted measurement can then be continued, requiring measurement of only the elements which had not yet been completed.

Quickly measure a distance or determine a diameter – fast, manual measurements are a part of everyday measuring activities. CALYPSO does not require extensive training; CALYPSO interactively leads you to the right result. You can't measure any faster manually!



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Scanning without limitations

Carl Zeiss is not only a pioneer in scanning, but also plays a leading role in scanning software. CALYPSO - because not every software is always as fast as the measuring method.

Most software packages are often only capable of displaying the contour by using mathematical adjustments. CALYPSO, on the other hand, determines the actual contour – for form inspections of standard geometric elements as well as digitizing design models. CALYPSO is also designed to work with VAST Navigator – our third generation scanning technology.

Third generation of scanning

VAST Navigator from Carl Zeiss is unparalleled technology when it comes to speed and accuracy. No unnecessary stops, optimum approach, and travel paths – VAST Navigator allows you to easily measure in one pass. Tangential approach is standard in the third generation of scanning. The transition from travel path to probing, previously a procedure with many interruptions, is now a smooth process.

The integrated assistant in CALYPSO determines the optimal scanning speed based on the required accuracy. For optimum workpiece measurement, CALYPSO provides you with numerous scanning methods such as scanning an unknown contour, scanning according to nominal data, and self-centering scanning. You can't measure any faster.



Making tolerance visible

Scanning is the most reliable method, especially when workpieces have to be inspected for their fitting behavior. CALYPSO displays the type of form deviation so precisely that you can see possible deviations or use existing tolerances.



Can your software do this?

The right method - every time

CALYPSO implicitly uses the correct calculation procedure for all size, shape and position evaluations (Gaussian best fit, Chebyshev, minimum circumscribed element, maximum inscribed element, tangential element). This avoids errors that are very difficult to find.

The user guidance in CALYPSO also avoids unnecessary errors – even when material conditions for shape and position tolerances are used. CALYPSO helps you when compiling the missing evaluations of element sizes.

Filter functions

CALYPSO offers the standard procedures common with form testers from filtering measurement points, to eliminating all known outliers, to Fournier analysis.

These procedures are available the moment they are needed during the evaluation.

Calibration procedures

When it comes to maximum accuracy, CALYPSO offers special calibration procedures.

Standardized protocol outputs

CALYPSO has an interface for QDAS and DMIS output formats. You can also precisely monitor your batch measurements.

Measurements on another CMM

Running a measurement program on different CMMs is no problem with CALYPSO. The measurement strategy for a form element is quickly adjusted to the current CMM with only a few steps.



Solid foundation – flexible options



CALYPSO

CALYPSO is the standard software for all standard geometric forms with integrated CAD interpreter.

CALYPSO Planner

With CALYPSO Planner, you can generate measurement procedures directly from the available CAD model data. Since the measuring plan can be easily exported to DMIS format, you can also create measurement programs offline with CALYPSO Planner.

CALYPSO Simulation

With CALYPSO Simulation, you can simulate the measurement procedure and make stylus collisions with the workpiece visible. This allows you to virtually optimize the procedure and reduce time-consuming, expensive programming errors to a minimum.

The right program for each requirement

Turbine blades. Measure with Blade^{Pro}.

CALYPSO and Blade work hand-in-hand for turbine blade measurements: CALYPSO does the measuring, while Blade performs the evaluation. The specific parameters and analysis procedures you need for the evaluation of complex components are already stored in the software.

Curves. Measure with Curve.

Free-form surfaces are a challenge for every measuring machine and every software. Curve provides you with accurate results.

Whether turbo loaders, camshafts or screw compressors – Curve reliably solves your measuring task in a familiar measuring environment.

Erosion module. Measure with EDM.

Determining offset and rotation when replacing worn-out electrodes requires a lot of time and experience. EDM turns expensive measurements into a process that takes a few minutes. Your erosion machine is available sooner; scrap due to best-fit problems is a thing of the past.

Evaluation of turbine blade measurements with Blade^{PRO}

Gears and bevels. Measure with Gear^{Pro}.

Gear Pro uses the most sophisticated technologies to measure and evaluate gears and bevels. You can view the evaluation of the results in a 3D gear tooth cutting and forming model.



Curve measurements with the Curve option

Automation with AutoRun

Integration in a CIM environment

FACS (Flexible Automation and Control System) is the ideal solution – particularly when you need to take samples from current production. This software merges different metrology solutions into a uniform user interface. Building on three standard solutions, you can individually adjust FACS to meet your needs.

Variable control of the measurement procedure

Integration with FACS

Time is money. PCM enables you to rationalize and streamline your measurement procedures. For example, you can inspect several variations of a workpiece with just one measurement procedure, or logically design an automated measurement.

Measure with a push of a button

Even users who are not familiar with CALYPSO can carry out automated surface measurements with AutoRun. Particularly practical for everyday use: you can even have several measurements automatically processed in a defined sequence.



Determining measuring uncertainty

With OVCMM (Offline Virtual Coordinate Measuring Machine), you can automatically determine the measuring uncertainty of each characteristic for the first time. The uncertainty is displayed as a direct comparison next to the actual measuring data in the protocol.



Determination of measuring uncertainty with OVCMM



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