

FARO

# Actionable Metrology Software Solutions Just Got Easier

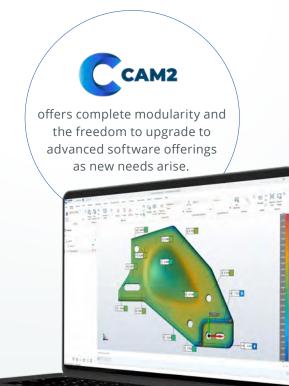
FARO® CAM2® is the brand's powerful, intuitive, and application-focused 3D measurement software platform. Tested and certified by NIST and PTB, CAM2 features a versatile portfolio of software offerings, each one tailored to meet specific manufacturing measurement needs, while enabling users to fulfill their quality assurance and inspection tasks.

This level of modularity means users can avoid the challenges associated with purchasing additional software beyond their workflow requirements. In other words, scanning software for scanning devices and probing software for probing devices. Or a combined probing and scanning software for hybrid devices like the FaroArm® with LLP (Laser Line Probe).

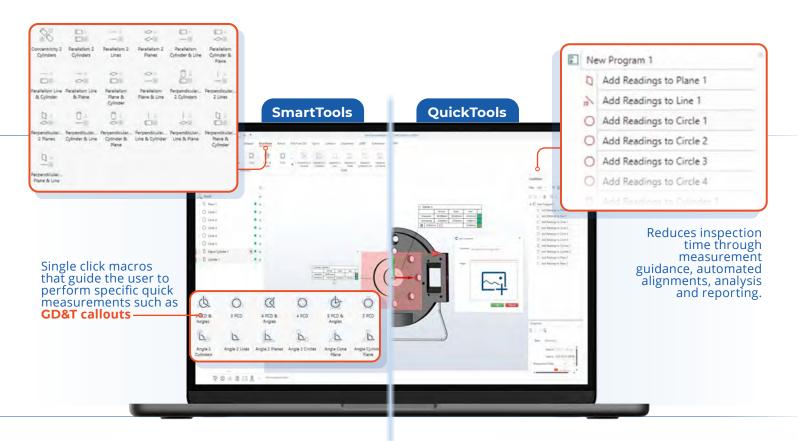
## Satisfy Your Metrology Needs, Streamline Your Applications

CAM2 streamlines industrial metrology applications including: dimensional controls, incoming parts and first article inspections, part-to-CAD comparisons, assemblies, repeat part measurements, and Geometric Dimensioning and Tolerancing (GD&T). CAM2 not only improves and increases the efficiency of measurement routines; it also provides an effective and smooth correlation between quality assurance and production operations, offering a powerful set of tools to fully control and optimize manufacturing processes.

Built around customer application needs and designed to streamline daily measurement operations, CAM2 takes quality assurance (QA), quality control (QC), and inspection software to the next level via optima ease of use, interactivity, flexibility, and targeted, actionable intelligence through the available add-on for Repeat Part Management (RPM).



# **CAM2 Features**



#### **Home Tab**

Each edition has its own unique left to right workflow.

#### **SmartConstruct**

Simplify feature construction by selecting the required features and CAM2 will suggest possible constructions to choose from.

## **Auto-recognize Features**

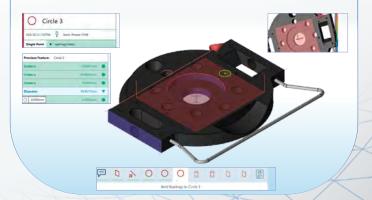
Reduce time spent interacting with the mouse and software. Simply start probing the features and CAM2 will auto recognize the geometry based upon the number and position of the readings taken. \*Applies to (FaroArms, Laser Trackers, and the 6Probe).

#### **RPM Add-on**

Further enhances the benefit of QuickTools through monitoring of measurement data to calculate statistical process control metrics and process trends so that manufacturing processes can be refined to prevent nonconformant products.

#### What is RPM?

The Repeat Part Management (RPM) add-on comes with Control Station, Control Server and Control Center. Control Station runs the inspection programs (QuickTools) defined in and transferred from compatible editions of CAM2 Probe Professional, CAM2 Scan Professional, and CAM2 Expert. Control Server is the database while Control Center provides insights into data and provides statistical process control (SPC) analysis.



# **CAM2 Editions**



This is FARO's starter edition, designed exclusively for probing arms and intended for QA and 3D inspection tasks. It is compatible with FARO's **Gage** and **FaroArm** series.



This software is intended for probing devices only, and is the advanced probing edition in the CAM2 portfolio. It's ideal for QA and 3D inspection tasks. It supports FARO's **Gage**, **FaroArm** and **Vantage Laser Tracker** with **6Probe** and its uses include guided build, geometry position, and orientation functionalities as well as programming inspection routines. The various supported CAD formats allow the analysis to CAD models. It also supports the ability to combine the Tracker and Arm to a TrackArm solution with no need to leapfrog around a part, ensuring improved line of sight.



This is CAM2's flagship edition that combines the capabilities of CAM2 Probe Professional and CAM2 Scan Professional, compatible with FARO Gage, FaroArms, FAROBlu® Laser Line Probes, FARO Vantage Laser Trackers, FARO 6Probe, FARO 8-Axis and FARO Leap ST Handheld 3D Scanner. Offered as a top-tier software product, Expert allows for easy and intuitive management of QA and 3D inspection tasks for compatible FARO probing and scanning devices. Use Expert for geometry and orientation, press form and trim, analysis to CAD model, and programming inspection routines. It is the go-to software tool when both scanning and probing are required.



This is the software edition designed for scanning devices like the FARO **Leap ST**. Offering fast, accurate point cloud capture. With reliable alignment to CAD, precise feature extraction, powerful analysis tools, and robust reporting, it streamlines inspections and quality control. This solution boosts efficiency, precision, and workflow, enabling users to make datadriven decisions and enhance product quality.



Is ideal for offline programming and analysis tasks. In addition to programming inspection routines and analysis to CAD model, Analyst is also well suited for measurement result review.

# **CAM2 Applications**

CAM2 distinguishes itself as an adaptable market-leading software platform designed to streamline 3D measurement applications and meet customer needs. These applications can be grouped into three applications:

## Press, Form and Trim

Components comprising of freeform surfaces, trimmed, punched, formed, or pierced edges, are typically verified against CAD models. Probing and scanning tools capture both contact and non-contact measurements.

#### **Example applications:**

- Injection Molding / Composites / Cast Components
- Body-In-White / Pressed Panels / Metal Stampings



## **Guided Build** and Confirm

Assembly and inspection of large parts, fixtures, tooling, and set-ups often use inspection devices and software as both an assembly and verification tool. CAD models or 2D drawings are used in this process. In these cases, like GD&T, the FARO Laser Tracker and FaroArm are the most used tools for these applications.

#### **Example applications:**

- Aerospace Wing / **Fuselage Assembly** Fixtures
- **Automotive Panel** Welding / Assembly Fixtures



## Geometry **Position and** Orientation

Components and assemblies with geometric features manufactured through machining or fabrication and verified against 2D drawings or CAD models. The FARO Gage and Quantum X FaroArm are typically used for small-tomedium sized components, and the FARO Vantage Laser Tracker for the larger components and assemblies. Leap ST is designed for larger-sized parts.

#### **Example applications:**

- Machine Components
- Heavy Machinery Components or Assemblies
- Wind Turbine Hubs





# **Hardware Compatibilities**

CAM2 offers multiple software solutions with varying hardware compatibility. Select the CAM2 edition and hardware that best addresses your inspection and measurement tasks.















| Edition               | Gage<br>FaroArm | FaroArm  | 8-Axis   | Laser Line<br>Probes | Vantage Laser<br>Tracker | 6Probe   | Leap ST  |
|-----------------------|-----------------|----------|----------|----------------------|--------------------------|----------|----------|
| Probe<br>Essentials   | <b>~</b>        | <b>~</b> | •        | _                    | _                        | _        | _        |
| Probe<br>Professional | <b>~</b>        | <b>~</b> | <b>✓</b> | _                    | •                        | <b>✓</b> | _        |
| Scan<br>Professional  | _               | _        | _        | _                    | _                        | _        | <b>✓</b> |
| Expert Expert         | <b>~</b>        | <b>~</b> | <b>✓</b> | •                    | <b>~</b>                 | <b>✓</b> | <b>✓</b> |
| Analyst               | _               | _        | _        | _                    | _                        | _        | _        |

# **Feature Comparison Chart**

| Feature                        | Probe<br>Essentials | Probe<br>Professional | Scan<br>Professional | Expert   | Analyst    |
|--------------------------------|---------------------|-----------------------|----------------------|----------|------------|
| Single Device Connection       | ✓                   | <b>*</b>              | <b>✓</b>             | *        | _          |
| Multiple Device Connection     | _                   | <b>*</b>              | _                    | *        | _          |
| Device Relocation              | _                   | <b>*</b>              | _                    | *        | _          |
| Basic Feature Probing          | ✓                   | <b>✓</b>              | _                    | <b>✓</b> | _          |
| Advance Feature Probing        | _                   | <b>✓</b>              | _                    | <b>*</b> | _          |
| Basic Feaure Constructions     | <b>✓</b>            | <b>~</b>              | <b>✓</b>             | *        | <b>~</b>   |
| Advanced Feature Constructions | _                   | <b>*</b>              | <b>✓</b>             | *        | <b>*</b>   |
| CAD Import                     | _                   | <b>*</b>              | <b>✓</b>             | <b>*</b> | <b>*</b>   |
| Coordinate Systems             | <b>✓</b>            | <b>*</b>              | <b>✓</b>             | *        | *          |
| Feature Alignments             | _                   | <b>✓</b>              | <b>✓</b>             | <b>*</b> | <b>*</b>   |
| Datum Alignments               | _                   | <b>~</b>              | <b>✓</b>             | *        | <b>~</b>   |
| Point Cloud Capture            | _                   | _                     | <b>✓</b>             | <b>*</b> | _          |
| Point Cloud Alignments         | _                   | _                     | <b>✓</b>             | <b>✓</b> | <b>*</b>   |
| Feature Extraction             | _                   | _                     | <b>✓</b>             | <b>*</b> | <b>*</b>   |
| Basic GD&T                     | ✓                   | <b>✓</b>              | <b>✓</b>             | <b>✓</b> | <b>✓</b>   |
| Advanced GD&T                  | ✓                   | <b>✓</b>              | <b>✓</b>             | <b>*</b> | ✓          |
| QuickTools Automations         | _                   | <b>✓</b>              | _                    | <b>*</b> | ✓*         |
| Report Generation              | ✓                   | <b>✓</b>              | <b>✓</b>             | <b>*</b> | ✓          |
| Repeat Part Management Add-on  | _                   | <b>✓</b>              | _                    | •        | <b>*</b> * |

\* denotes 'creation' not' execution'

# **Specifications**

| Hardware                        | Probe Essentials*                                   | Probe Professional**                                 | Scan Professional / Expert / Analyst***                 |  |  |
|---------------------------------|---|--|---|--|--|
| Processor (Intel Mobile)        | 12 <sup>th</sup> Gen Low Performance i5<br>or above | 12 <sup>th</sup> Gen High Performance<br>i7 or above | 12 <sup>th</sup> Gen Extreme Performance i9<br>or above |  |  |
| RAM                             | 16 GB   | 32 GB  | 64 GB   |  |  |
| Hard Drive                      | 500 GB SSD  | 512 GB SSD   | 1 TB NVME   |  |  |
| Graphics - Open CL 1.1 or later | NVIDIA Quadro T500                                  | NVIDIA RTX 2000                                      | NVIDIA RTX 5000   |  |  |
| USB Port                        | 1 (if using portlock license)                       |  |   |  |  |
| Virtual Machine (VM) Install    | Supported   |  |   |  |  |
| Remote Desktop Accessibilty     | Supported   |  |   |  |  |

<sup>\*</sup>For Point Probe Measurements | \*\* For Point Probe Measurements with Large CAD, Moderate Point Cloud Scanning | \*\*\*For Leap ST / Intensive Point Cloud Scanning | Note: A 4K display monitor is currently not recommended.

| Supported NV                           | IDIA Graphics Cards a                      | Win11 x64 / Win10 x64                         |        |  |
|--|--|---|--------|--|
| Quadro RTX                             | Quadro                                     |   |        |  |
|  | P6000, P5000, P40                          | 000, P2000, P2200 and P5000                   |        |  |
| 4000 F000 6000 and 8000                | M520, M6000, M5000, M4000, M2000 and M2200 |   | 551.52 |  |
| 4000, 5000, 6000 and 8000              | K5200, K4200, K2200, K620 and K420         |   |        |  |
|  | K5000, K4000, K2000 and K6000              |   |        |  |
| Supported Operating                    | Systems                                    | Languages                                     |        |  |
| Microsoft Windov                       | vs® 11                                     | Chinese   English   French   German   Italian |        |  |
| Microsoft Windows® 10 (v1607 or later) |  | Japanese   Portuguese   Spanish               |        |  |

Note: CAM2 supports 64-bit Operating Systems only

## **CAD File Formats**

| Vendor                        | File Type  | Extensions   | Supported Versions                                  |  |  |
|-------------------------------|------------|--|---|--|--|
|                               | IGES       | .igs; .iges  | Versions 5.1, 5.2, 5.3                              |  |  |
| Open Format                   | PRC        | .prc   | All versions  |  |  |
|                               | STEP       | .stp; .stpz  | AP 203 E1/E2, AP 214, AP 242                        |  |  |
|                               | STL        | .stl   | _   |  |  |
|                               | VDA-FS     | .vda   | All versions  |  |  |
|                               | ACIS       | .sab; .sat   | Up to 2023  |  |  |
|                               | CATIA V4   | .model; .session; .dlv; .exp                               | Up to 4.2.5   |  |  |
| 3D Systems                    | CATIA V5   | CATproduct; .CATPart; .CATDrawing; .CATShape; .cgr; .3dxml | Up to V5-V6 R2024                                   |  |  |
|                               | CATIA V6   | .3dxml   | Up to V5-V6 R2024                                   |  |  |
|                               | Solidworks | .sldasm; .sldport  | From 97 up to 2024                                  |  |  |
| Autodesk Inventor AutoCAD® 3D |            | .ipt; .iam   | Up to 2024  |  |  |
|                               |            | .dwg; .dxf   | Up to AutoCAD® 2025                                 |  |  |
| PTC                           | Creo       | .asm; .neu; .prt; .xas; .xpr                               | Pro/Engineer 19.0 to Crep 10.0                      |  |  |
| Siemens                       | I-deas     | .mf1; .arc; .unv; .pkg                                     | Up to 13.x (NX 5), NX I-deas 6                      |  |  |
|                               | JT         | .jt  | Up to v10.9   |  |  |
|                               | NX         | .prt   | UG11 to UG18, UG, NX, NX5 to NX12, NX1847 to NX2312 |  |  |
|                               | Parasolid  | .x_b; .x_t; .xmt; .xmt_txt                                 | Up to v36.1   |  |  |
|                               | Solid Edge | .asm; .par; .pwd; .psm                                     | V19 - 20, ST - ST10, 2019 to 2024                   |  |  |
| Rhinoceros                    | Rhino 3D   | .3dm   | Versions 4 to 8                                     |  |  |

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