

stereoSCAN^{3D}

The preminent system series for highest precision in 3D metrology

TECHNICAL SPECIFICATIONS

stereoSCAN^{3D} / stereoSCAN^{3D}-HE

Image Processing

Host computer	Professional Workstation
Computer interface	IEEE 1394A (FireWire®)
Operating system	Microsoft Windows 7 (64 Bit Edition)
System software	OPTOCAT for Windows 3D alignment supports all essential navigation strategies (with or without index marks) 3D post-processing for generation of polygon meshes
Software module "Inspection"	included
Software module "Edge detection"	included
Data interface	BRE, STL, PLY, VRML

Sensor

Principle of operation	Miniaturised Projection Technique (MPT)
Field of View (FOV)	S, M, L
Light source	100 W halogen / 120 W discharge lamp
Sensor weight	6.0 kg
Imaging	2 professional, high-resolution digital CCD cameras, black-white or colour
Camera resolution	from 1.4 megapixels
Acquisition time	< 1 sec.

Accessories

Turntable	Manual turntable (included) Motorised turntable or turn / tilt table
Tripod	Measuring tripod for industrial application
Calibration	Carbon fibre calibration tools

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stereoSCAN^{3D}-HE
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Individual measuring projects with stereoSCAN^{3D} or naviSCAN^{3D}

Highest Level of Precision and Versatility



Flexible Scanning: the stereoSCAN^{3D} ...

stereoSCAN^{3D} / naviSCAN^{3D}

Depending on the specific requirements of your measuring or digitisation project, either the **stereoSCAN^{3D}** (standard resolution up to 2 MPixel) or the **stereoSCAN^{3D}-HE** (high-resolution cameras with more than 2 MPixel) at different configurations is called into action. For projects demanding particularly powerful lighting performance, the projection unit can be optionally equipped with a high-performance projector (HPP).

The alignment of the individual images is carried out on the basis of the object contour itself or with the aid of reference markers or reference spheres. Thanks to these different alignment options, the **stereoSCAN^{3D}** can be swiftly and conveniently adjusted to the individual measuring situation. In combination with photogrammetry or an external tracking device, even large-size measuring objects can be captured without problem.

stereoSCAN^{3D} / naviSCAN^{3D}

Flexible scanning is the signature feature of the **stereoSCAN^{3D}**: a swift exchange of the lenses or the repositioning of the camera modules and the system is adjusted to perfectly suit your individual scanning task. The configuration for measuring fields ranging from a few millimetres up to one metre is also quickly and easily accomplished.

Finally, combining the system with a robot and a turntable allows for fully automated and highly precise digitisation and inspection even of very large scale measuring parts, enabling the data to be promptly evaluated and ready for further processing.

With measuring parts increasing in size, the **stereoSCAN^{3D}** combined with a **naviTRACK-duo** plus a tactile measuring sensor is extended to become Breuckmann's highly precise and portable **naviSCAN^{3D}** system able to generate exact three-dimensional data even of metre-long or metre-high objects.



... converts into a Breuckmann **naviSCAN^{3D}** for capturing large-size objects.

Technical data are subject to change without notice

stereoSCAN^{3D} 11-10-EN

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stereoSCAN^{3D} series

Three-dimensional metrology at highest level using our patented miniaturised projection technique in a two-camera-system and, thanks to its outstanding mechanical and thermal stability, being universally employable – this is Breuckmann's **stereoSCAN^{3D}** series.



Variable scanning positions for each digitisation project.

stereoSCAN^{3D} series

Whenever the scanning of most delicate structures or smallest deviations at maximum level of accuracy is required, the **stereoSCAN^{3D}** is called into action.

Especially in the application of very demanding metrological tasks, the asymmetrical positioning of the cameras ensures optimum flexibility and reliability: thanks to the implementation of three different triangulation angles, even the data of object areas which are very difficult to access are captured at high accuracy and true-to-detail.

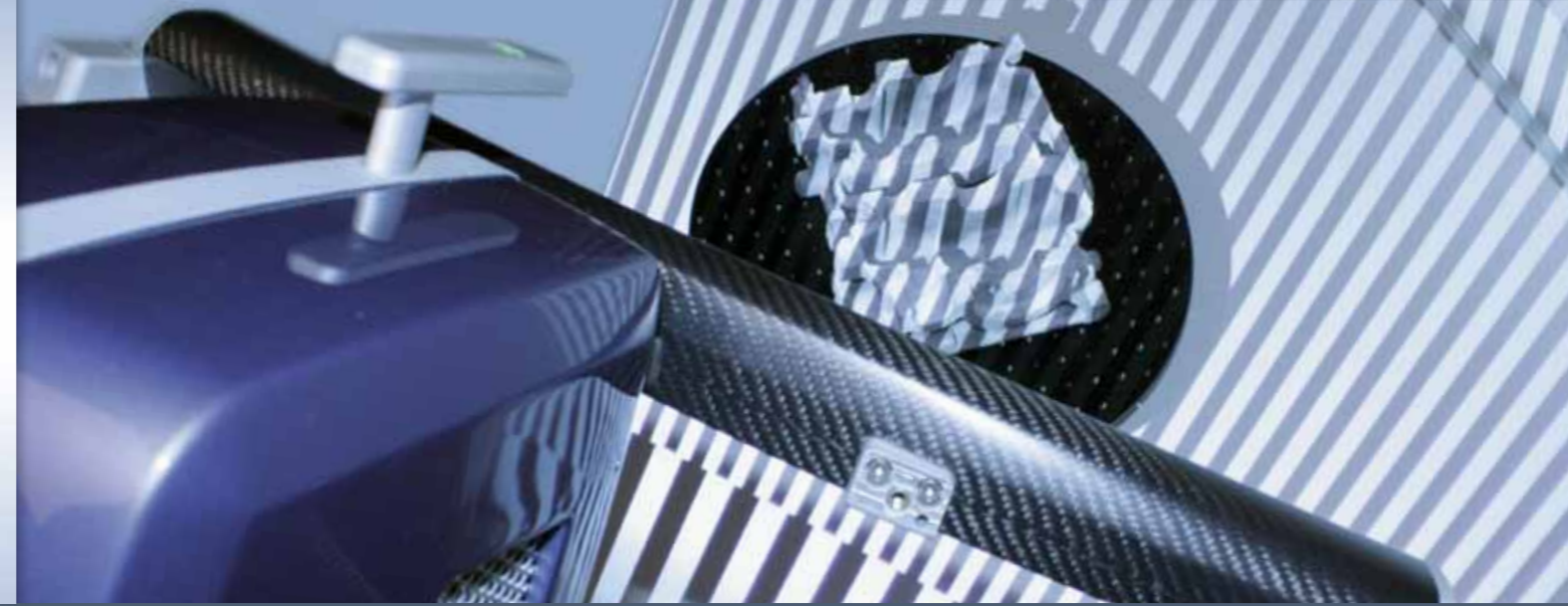
Because of the optical digitisation process used by Breuckmann systems, the object is captured within a matter of seconds. Instead of individual surface points, the object is being recorded in its entirety, accomplishing precise and comprehensive 3D data acquisition of even very complex object geometries. The scanning process begins instantaneously, thus avoiding the need of time-consuming preparation with anti-reflection spray.

Thanks to the entirely contact-free scanning process, even hot surfaces as well as fragile or easily deformable parts can be digitised directly without problem.

stereoSCAN^{3D} series

The sturdy carbon fibre double structure of the sensor base allows for variable scanning positions – depending on your digitisation project, the **stereoSCAN^{3D}** will even work standing on its head for you! Thanks to this extraordinary stability, the system delivers highly true-to-detail and precise 3D data not only in a protected laboratory environment, but also in real life, under rough and demanding industrial production conditions. The scan results are available in standard formats (STL, PLY, VRML) for further processing.

Would you like to learn more about the fringe projection technique used by Breuckmann systems? Our website (www.breuckmann.com) gives a detailed description of the scanning process, together with demonstrative and interesting application videos.



stereoSCAN^{3D} / stereoSCAN^{3D}-HE

A broad spectrum of measuring tasks and digitisation projects with a common goal: high resolution three-dimensional data acquisition of object surfaces, together with efficient data evaluation for further processing.

stereoSCAN^{3D} / stereoSCAN^{3D}-HE

To achieve this objective, the **stereoSCAN^{3D}** and the **stereoSCAN^{3D}-HE** are in particular used by innovative industrial enterprises, such as:

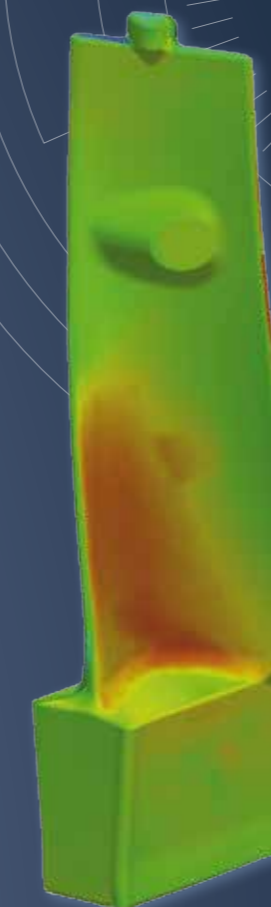
- automotive industry and suppliers,
- aviation and aerospace industry,
- electronics industry,
- casting industry
- tool and mould making industry,
- plastics industry.

Typical applications besides quality control and first sample inspection is the digitisation of design models, tools and moulds. Also in the contexts of inspection and measuring of free-form areas, comparison with CAD data or reference objects, rapid prototyping and reverse engineering, Breuckmann **stereoSCAN^{3D}** systems are regularly called into action.

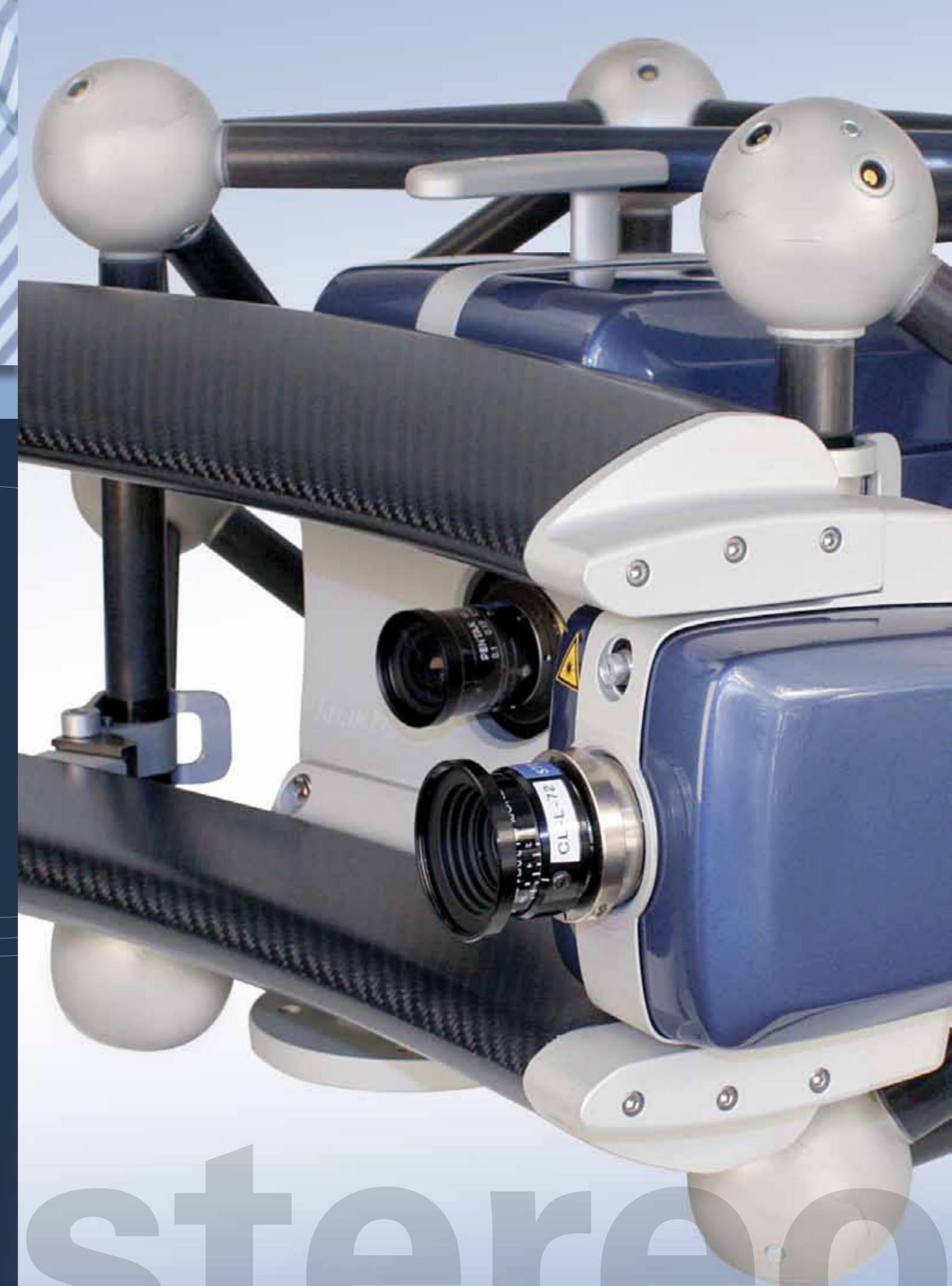
Last but not least, also for purposes of digital archiving, e.g. of prototype reference models, the **stereoSCAN^{3D}** provides the ideal solution to generate precise data for the optimisation and production phase.

The achievable time saving for your measuring or digitisation project by using a system of the **stereoSCAN^{3D}** series will not only contribute towards the optimisation of your quality assurance, but will also facilitate to accelerate the production of your prototypes as well as to reduce the overall lead times.

Your customers – and your competitors – will be impressed!



Inspection of a turbine blade, deviations to CAD data (false colour map)



stereo