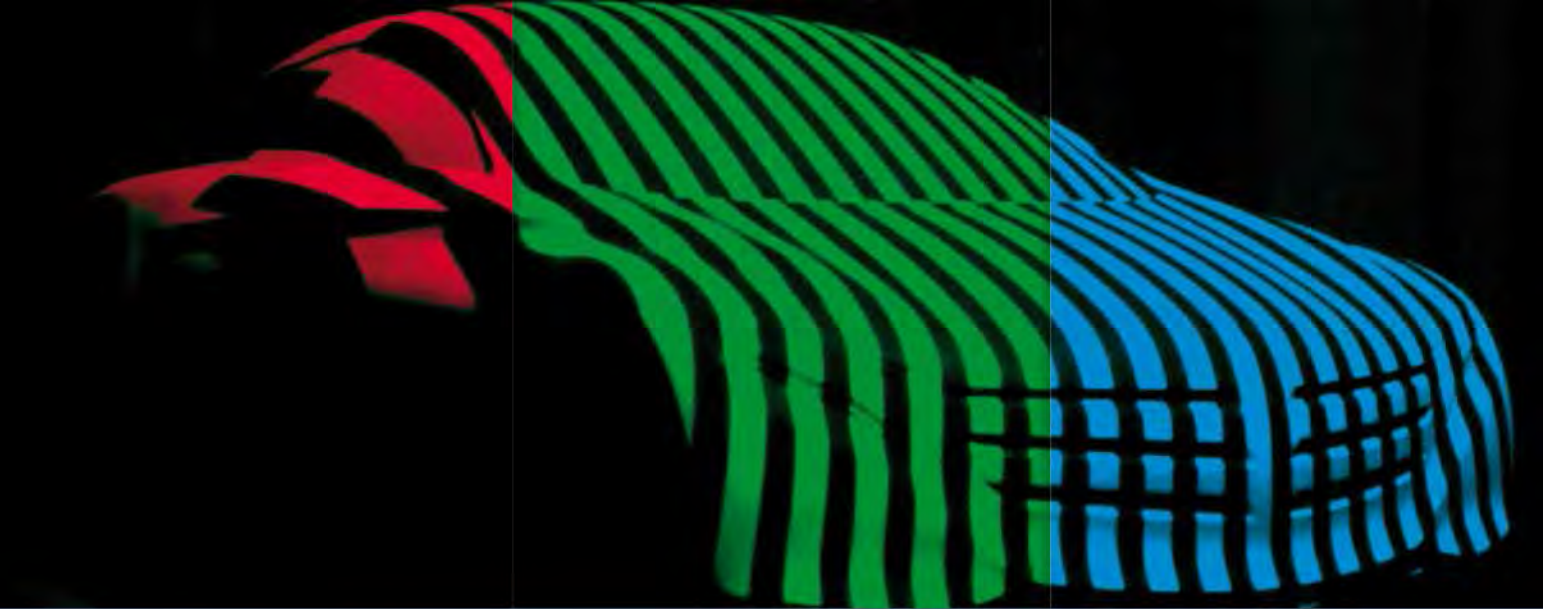


smartSCAN^{3D}

The flexible system series for precise 3D digitisation and measuring

smartSCAN^{3D}
smartSCAN^{3D}-HE





smartSCAN^{3D} Series

Precise optical measurement technology for a broad user spectrum together with a versatile range of applications - this is the Breuckmann **smartSCAN^{3D}** series.



Miniaturised Projection Technique

smartSCAN^{3D} Series

Using the patented miniaturised projection technique (MPT) as underlying principle of operation allows for scanning times of less than 1 second. Compared to the tactile measuring approach recording only individual surface points, this technique captures the complete surface of the measuring object. As a result, entire objects as well as fragile or easily deformed items, even when featuring very complex surface geometries, are being measured at high speed and accuracy.

Furthermore, flexibility is of key essence; the **smartSCAN^{3D}** product range grows in line with your projects and can be easily expanded at any time. To enable precise accuracy and high quality measuring data, the systems are fitted with low-noise CCD cameras and light sensitive quality lenses. Using variCOLOUR Projection Technology, a broad colour spectrum of long-life LED projection lights is available to chose from, allowing you to customise the 3D data acquisition even more precisely to your particular project requirements and object surfaces.

smartSCAN^{3D} Series

Thanks to their modular design and being equipped with either black-and-white or colour cameras in various resolutions and configurations, the **smartSCAN^{3D}** systems are easily adjusted to perfectly meet the specific requirements of your projects. The asymmetrical arrangement of the cameras allows objects to be digitised at three different triangulation angles. Thanks to using carbon fibre components, all sensors are characterised by a high level of mechanical and thermal stability, thus ensuring reliable performance even in very demanding measuring conditions. The scanning results are available in multiple standard formats, making them compatible with an extensive range of software programmes for further processing.

In addition to the multi-faceted project tasks in industrial engineering and technology, the application spectrum of contact-free three-dimensional object digitisation and measurement also covers measurements of the human body as well as a vast variety of applications in arts and culture. There are virtually no limits with regard to the dimensions of the scanning objects: The project spectrum extends from the smallest injection nozzle all the way up to complete vehicles – and the application range continues to grow!



smartSCAN^{3D}

The ideal systems for your introduction into 3D metrology: In comparison with a high-end laser scanner, the **smartSCAN^{3D}** systems not only deliver a significantly higher level of data quality and resolution, they also offer a much easier handling - and all that at a very attractive price.

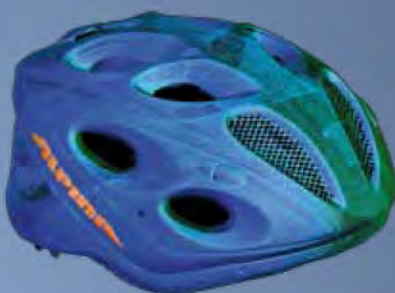


Digitisation of a sculpture

smartSCAN^{3D}

Both the one and two camera system of the **smartSCAN^{3D}** series provide a very high level of adherence to detail for all your digitisation tasks, and even under extreme temperature conditions operate in a solid and reliable manner. The flexible system configuration is adjustable to perfectly address the requirements of your application; in order to meet future or increasing requirements, you can easily upgrade to a higher resolution or extend the system from one to two cameras.

Breuckmann's **smartSCAN^{3D}** systems are the 3D scanners of choice for typical digitisation tasks, such as the precise data acquisition for reverse engineering, rapid prototyping, documentation and 3D modelling. They are, however, not only deployable in industrial related applications; 3D scanning projects increasingly also constitute an integral part in many areas of research, education and science, as well as for the digital archiving of works of art or archaeological findings.



*Deviations to CAD data
(false colour map)*



3D model of the measuring object



*The smartSCAN^{3D} with
projection unit and colour cameras*



smartSCAN^{3D}-HE

Breuckmann's high-end measuring system for your ambitious and demanding 3D scanning tasks: The **smartSCAN^{3D}-HE** combines highest standard of accuracy and resolution with maximum flexibility.

smartSCAN^{3D}-HE

Using black-and-white or colour cameras at different resolution levels, the **smartSCAN^{3D}-HE** is precisely adjusted to best meet your task requirements. Thanks to the swift exchange of measurement fields, measuring objects irrespective of their size and complexity are digitised within a matter of seconds and subsequently available as highly precise, three-dimensional data sets for further processing.

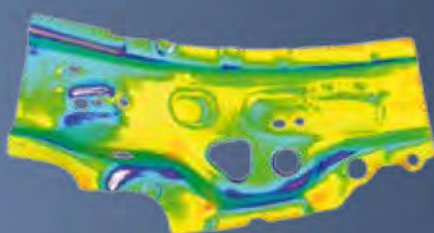
Because of its compact design and low weight, this system is ideal for inspection projects as well as on-site high-resolution digitisation and measurement tasks. Application areas of the **smartSCAN^{3D}-HE** are primarily found in the technical engineering context, such as quality inspection and quality assurance, demanding reverse engineering projects, automotive design and serial production.

The **smartSCAN^{3D}-HE** is easy to use both in the conventional measuring laboratory as well as on-site in a workshop or an industrial production environment. For automated digitisation processing, the system is easily mounted onto a robot and additionally equipped with an automatic turn / tilt unit. This system is certified according to the VDI/VDE guideline 2634/2.

The **smartSCAN^{3D}-HE** provides you with the ideal support for all your projects; it will assist you to optimise your production process and will discover potential for new developments. This will make your product not only to stand its ground in a very dynamic, international market environment - it will even take it one step ahead of your competition!



3D scan data



Deviations to CAD data
(false colour map)



Orientation and location tolerance
(elongated holes, circles, rectangles)



smartSCAN³⁰-HE

1.25 NA 20x
made in Germany

smartSCAN

breuckmann

smart

smartSCAN^{3D}

The flexible system series for precise 3D digitisation and measuring

TECHNICAL SPECIFICATIONS

	smartSCAN ^{3D}	smartSCAN ^{3D} -HE
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Image Processing

Host computer	Workstation	Workstation Professional
Computer interface	IEEE 1394B (FireWire [®])	
Operating system	Microsoft Windows 7 (64 Bit Edition)	
System software	OPTOCAT for Windows 64 Bit From precision calibration to data acquisition all the way to a complete 3D model (with or without index markers)	
Data interface	ASC, BRE, STL, PLY, VRML	

Sensor

Principle of operation	Miniaturised Projection Technique (MPT)	
Field of view (FOV)	From 30 mm to 1500 mm *	
Light source	LED white, green, blue, red	
Sensor weight	4.0 kg	
Imaging	1 or 2 high resolution CCD colour cameras	2 high resolution CCD cameras, b/w or colour
Camera resolution	0.8 / 2.0 / 5.0 Megapixel	1.4 / 4.0 Megapixel
Acquisition time	< 1 sec.	

Accessories

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

* Customised FOVs on request

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