HEXAGON

SmartScan VR800

Get the full picture | Focus on what matters

The SmartScan VR800 fundamentally changes the conversation on structured light scanning. With a patented dual stereo camera plus mechanical optical zoom projection unit setup, the need for multiple base lengths, complex lens changing and frequent recalibration are now a thing of the past.

Get the resolution and coverage needed the moment it is required, no hand tools required. With the VR800, simply change the settings through the software to alter the size of the measurement area or the resolution of the measurement results. The system is also set up for automated inspection system integration.

Focused measurement

Multi-camera processing allows for near-simultaneous measurement data and part orientation capture with **Smart Snap**, massively reducing data weight and processing times when combining scans.

Variable resolution

Vary the measurement area and resolution of each camera pair in a matter of seconds thanks to the digital projector's mechcanical zoom lens.

Smart workflows

Change the data resolution across a constant measurement volume with **Smart Resolution** to get more detail where it matters most.

Adapt measurement volume and resolution while maintaining 5 million data points with **Smart Zoom** ensure high-speed data processing.

Multi-camera setup

Dual stereo camera setup with four 20 MP cameras end the hassle of changing lenses for different resolutions and fields of view.

Ergonomic design

Compact design protects optics while embedded controller and convenient handle allow for easy repositioning.

Robust construction

Custom carbon-fibre frame delivers unmatched measurement stability and reliable results in shop floor conditions.

Best-in-class accuracy

SmartScan VR800 offers unmatched accuracy values in its class. Each scanner passes our acceptance test based on VDI/VDE2634 Part 3 before delivered to the customer.

Photogrammetry add-on

Combine the scanner with a DPA add-on camera system to extend the measurement volume for the measurement of larger parts.

Automation ready

Ready for fully automated robotic inspection thanks to rigid design and high-speed measurement.

Quick setup

Fast warm-up, integrated controller, no interchangeable lenses and a single-position calibration check process make it simple to get right into measurement.

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Technical specifications

Scanner configuration

Accuracy

Configuration	Large base	Small base
Measurement volume [1] [2]	800	320
SSE	28 μm	9 μm
LME	48 μm	18 μm
PS	8 μm	3 μm
PF	10 μm	6 μm

[1] Values apply to all measurement volumes related to a base.
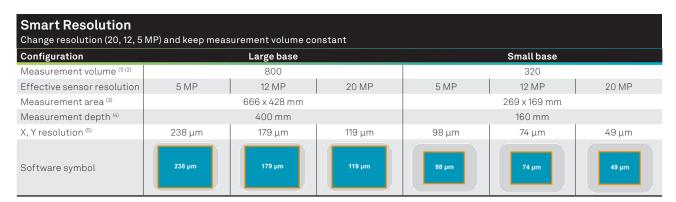[2] Naming of measurement volume represents the measurement diagonal of the measurement area.

Measurement specifications

Smart Zoom
Change resolution and keep output constant at 5 MP

Configuration	Large base			Small base		
Measurement volume [2]	800	660	430	320	250	160
Measurement area [3]	666 x 443 mm	544 x 372 mm	357 x 238 mm	269 x 169 mm	214 x 140 mm	137 x 89 mm
Measurement depth [4]	400 mm			160 mm		
X, Y resolution [5]	238 μm	179 μm	119 μm	98 μm	74 μm	49 μm
Software symbol	238 μm	179 μm	119 μm	98 μm	74 μm	49 μm

[3] Lateral expansion (X x Y) in the centre of the measurement volume.
[4] Depth of the measurement volume (Z).
[5] The values for the lateral resolution have been calculated based on the ratio of the measurement area and the number of pixels of the camera chip.

Smart Resolution
Change resolution (20, 12, 5 MP) and keep measurement volume constant

Configuration	Large base			Small base		
Measurement volume [1] [2]	800			320		
Effective sensor resolution	5 MP	12 MP	20 MP	5 MP	12 MP	20 MP
Measurement area [3]	666 x 428 mm			269 x 169 mm		
Measurement depth [4]	400 mm			160 mm		
X, Y resolution [5]	238 μm	179 μm	119 μm	98 μm	74 μm	49 μm
Software symbol	238 μm	179 μm	119 μm	98 μm	74 μm	49 μm

Defining accuracy

Having a reliable basis for the stated accuracy of our structured light scanning systems is vital. That is why we measure every scanner against our defined Scanner Acceptance Test. Based on VDI/VDE Guideline 2634 Part 3, this Scanner Acceptance Test uses four clear quality parameters to ensure users have full confidence in the accuracy of their Hexagon structured light scanner.

Sphere spacing error [SSE]
Global quality parameter. Deviation from distance of fitted spheres to calibrated distance.

Length measuring error [LME]
Global quality parameter. The deviation of the nearest points along the centre axis.

Probing error form [PF]
Local quality parameter. Deviation from the surface to a fitted sphere.

Probing error size [PS]
Local quality parameter. Deviation from the fitted sphere radius to the calibrated radius.

Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Manufacturing Intelligence division provides solutions that use data from design and engineering, production and metrology to make manufacturing smarter.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at hexagon.com and follow us @HexagonAB.