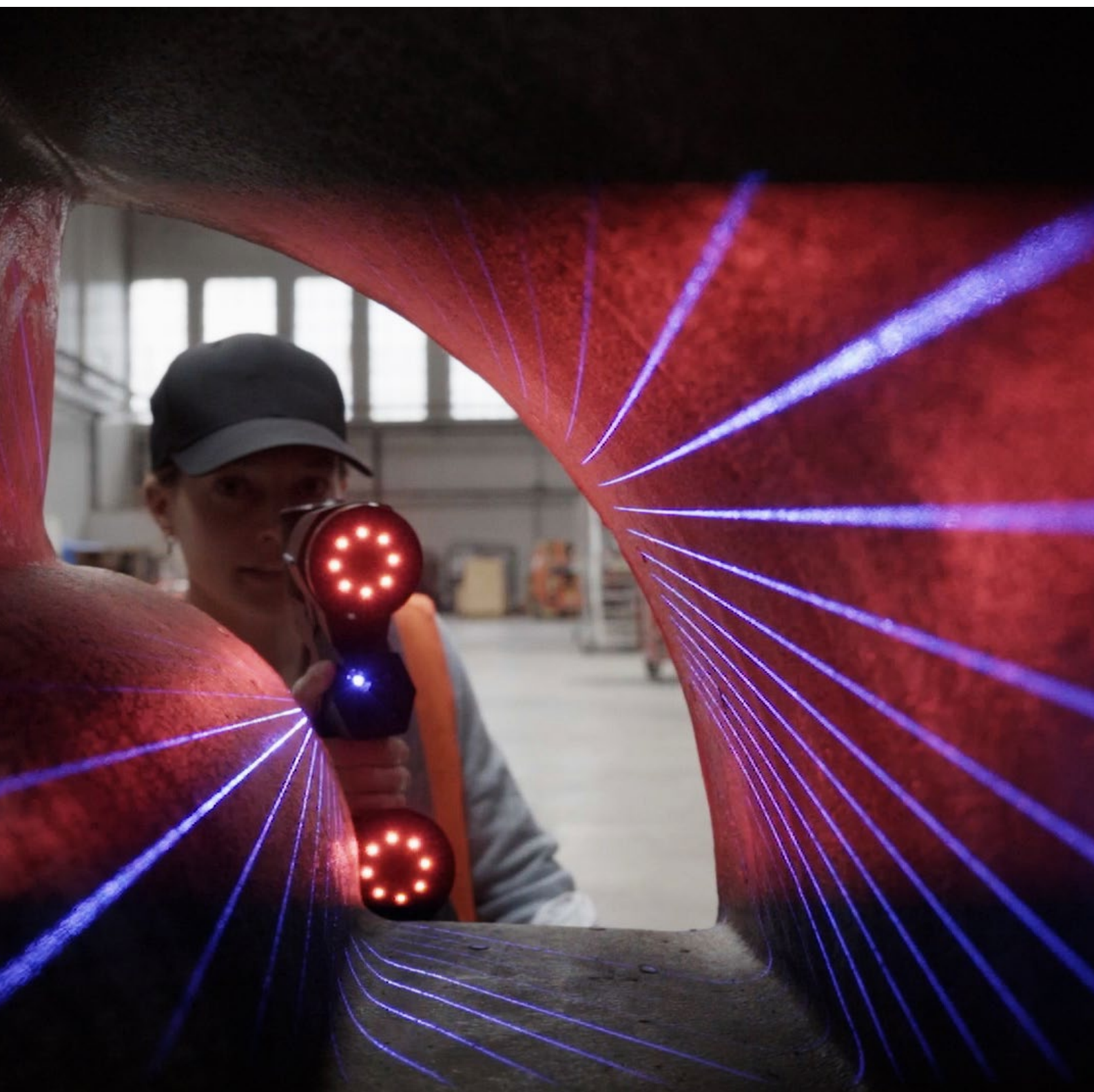


# Handheld 3D scanners

Scan where you want | Inspection in your hands







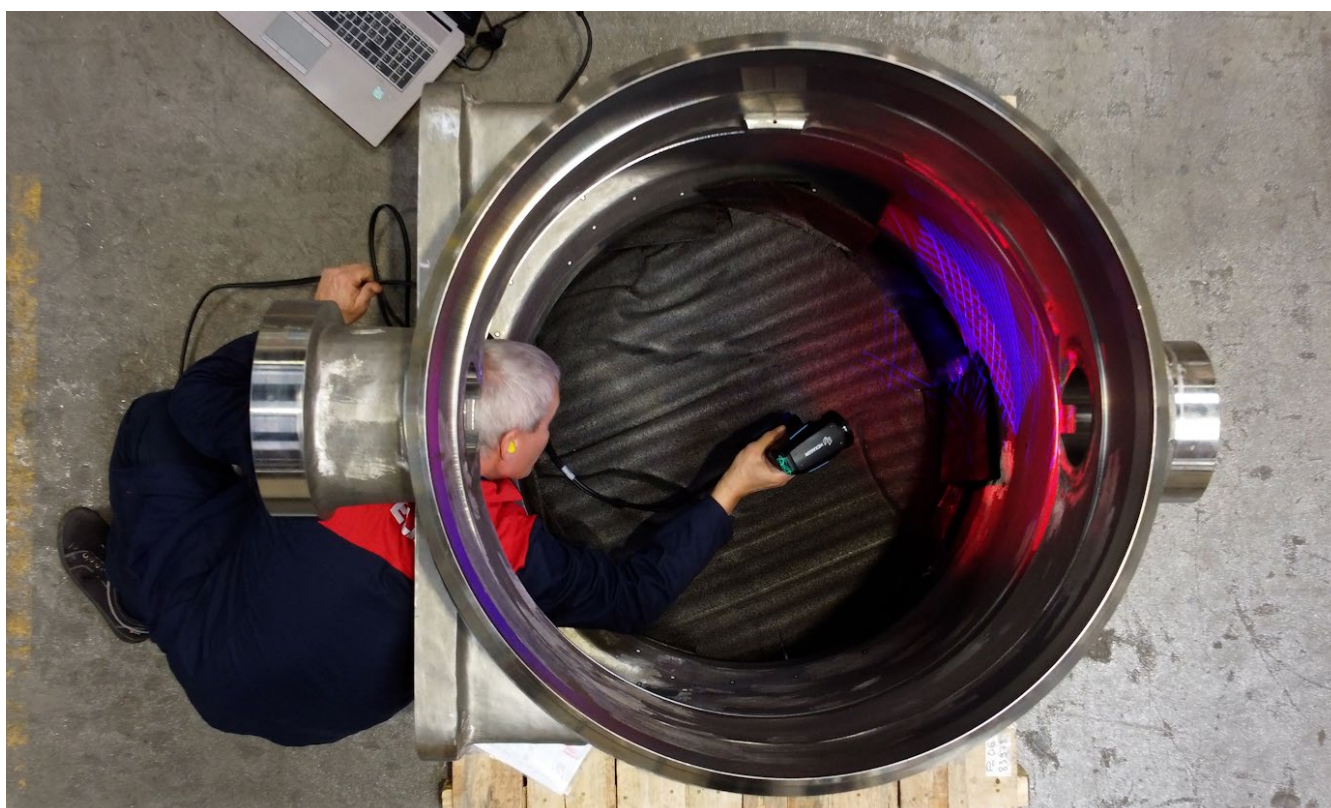
# Handheld 3D scanners

## The easiest way to scan, whatever needs to be scanned

Handheld 3D scanners are a key product category for modern manufacturing inspection applications, with a reputation built on portability, ease of use and investment value.

Hexagon's line of handheld 3D scanners builds on this reputation by delivering market-leading improvements to every standard feature in the category, while also introducing unique new technology solutions to known customer challenges. From portability to productivity, usability to performance, Hexagon handheld 3D scanners have entered the market as the new market leader.

Whether taking the first steps into 3D scanning for inspection or taking scanning into wholly new inspection areas, handheld 3D scanners at this level of quality can transform quality processes, delivering the data demanded by modern smart manufacturing workflows with a clear path to return on investment.



# ATLASCAN Max | MARVELSCAN

## Meet Hexagon's range of handheld 3D scanners

Boasting unparalleled portability and precision, these portable devices are set to redefine your understanding of 3D scanning and data capture.

Building on Hexagon's rich heritage of shaping smart change across diverse industries and applications, our handheld 3D scanners are designed to meet an array of scanning needs. From detailed inspections, reverse engineering, and fast prototyping to expansive geographical and architectural surveys, our novel range of 3D scanners morph challenges into solutions.





## Complete freedom of movement

### Accessibility meets portability meets connectivity

- Scan where needed without restrictions – ATLASCAN Max and MARVELSCAN can reach into hidden areas and see inside deep cavities from just the right angle, with no line-of-sight limitations.
- A lightweight scanner makes it straightforward for the inspection process to take place at the measurement object instead of bringing the part to the quality room.
- Break free from cables and referencing hardware with complete wireless connectivity provided by the Wireless Scanning Module option.

## Scan the way that's needed

### The right type of scanning for every application

- High-quality scanning without part fixturing – even a moving part is no barrier to perfect measurement results thanks to Dynamic Scanning.
- Challenging conditions with environmental vibration are no obstacle to accurate scanning results – measure in every part of production.
- Reduce errors and effort by scanning without on-part targets – MARVELSCAN can use a built-in photogrammetry system to align measurement against background targets.

## Productivity features

### Seamless scanning that adapts to workflows

- Change scanning modes directly from the scanner at the touch of your fingertip, with options for larger-scale measurements, higher-definition feature inspection, hard-to-reach areas and multiple holes and slots.
- Data collected with different scanning modes is seamlessly combined within the same point-cloud/mesh.
- Instant LED visual feedback on the scanner lets the user know when they reach the perfect scanning range.

# Features and benefits in your hands

Meeting user challenges with innovative  
technology solutions

## Freedom of movement

Reach into hidden areas and cavities, get the right inspection angle without line-of-sight restrictions, scan at height, at distance, on the shop floor or in the field

## Galaxy mode

Thanks to the dual-camera system and built-in software algorithm, volumetric accuracy can be simply controlled by scanning the rectangle scale bar to allow quick changes during an inspection task

## Unstable measurement

Even challenging environment conditions with extreme noise and vibration are no problem for Dynamic Scanning

## 3 scan modes

Standard, Fine and Line scanning modes let you tailor your scanner performance to the application at hand, for greater efficiency or resolution as needed

## Change modes on-the-fly

Switch between scanning modes during measurement, directly from the handset, allowing you to fine-tune performance not just to the application but individual sections of the application

## Truly handheld scanning

Take the part in your hand and the scanner in the other for a very quick scan process that requires no complex part fixturing thanks to Dynamic Scanning

## Large standoff

Collect data from further away from the part, making it easier to access internal inspection areas such as tooling cavities, as well enabling automation system integration with lower collision risk

## Instant visual feedback

Know you're scanning correctly without returning to the control computer with built-in LED feedback system on the handset



## Built-in photogrammetry

The MARVELSCAN boasts a unique photogrammetry system that powers its target-free scanning functionality, and allows for standalone photogrammetry inspection

## Hole Flash Capture technology

Rapid simultaneous inspection of multiple circular and slotted features speeds up the workflow for a key industrial inspection challenge

## Multi-size target recognition

Maximise efficiency by using different target sizes (3/6/12 /16mm) for different applications during the scanning process.

## Lightweight ergonomic design

Fits perfectly in the hand and light enough to take anywhere and use comfortably for long inspection projects

## Combine scanning mode results

Data collected with different scanning modes is seamlessly combined within the same point-cloud/mesh for ease of analysis and reporting

## Wireless Scanning Module

Set yourself free from movement limiting cables and referencing hardware with the option of full wireless functionality

## Automation ready

Both the ATLASCAN Max and MARVELSCAN are ready for straightforward third-party integration within automated inspection systems

## VDI/VDE certification

Results are certified in line with the VDI/VDE 2634-3 to assure reliability and comparability of measurement





# 3-in-1 workflow

## The patented MARVELSCAN solution

A unique photogrammetry system lets the MARVELSCAN offer 3 distinct inspection workflows from a single device.



### 3D scanning

Using on-part targets, MARVELSCAN allows for high-productivity 3D scanning inspection, including Dynamic Scanning of unfixtured objects.



### Target-free 3D scanning

With its built-in photogrammetry system, the MARVELSCAN can inspect with no need for targets placed on the part by using a specially installed target wall for referencing.

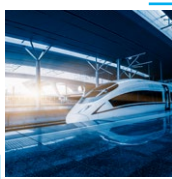


### Photogrammetry

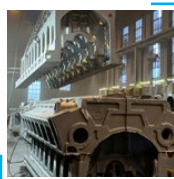
By using the MARVELSCAN's photogrammetry system as a standalone photogrammetry tool to augment 3D scanning, measurement accuracy is significantly increased for larger parts.



## Typical industry sectors



Railway



General  
manufacturing



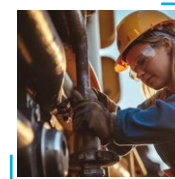
Industrial  
equipment



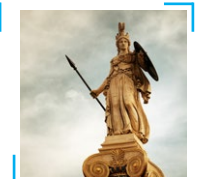
Aerospace



Automotive



Marine



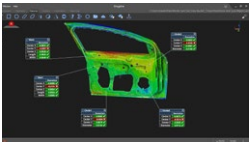
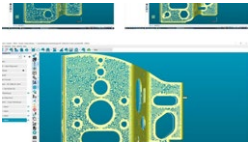
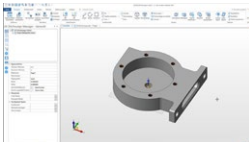
Non-  
manufacturing



# Metrology software

## Driving the tools of high-end inspection

Hexagon is the largest software developer in the metrology industry and offers a wide range of individually customisable software packages. Hardware solutions from Hexagon support this with a foundation of cross-platform compatibility, designed for perfect functionality with both the many advanced platforms developed in-house and the best third-party programs on the market.

|             |                                                                                   |                                                                                   |                                                                                    |
|-------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|             |  |  |  |
| Hexagon     | Inspire                                                                           | PC-DMIS                                                                           | DESIGNER                                                                           |
| Third-party | PolyWorks®                                                                        | Metrologic                                                                        | Geomagic/Oqton                                                                     |
|             |                                                                                   |                                                                                   | and more                                                                           |

## Nexus

ne::us®

## Centralised manufacturing within an open and integrated digital reality platform

Nexus is Hexagon's new digital reality platform for manufacturers. It connects people, technologies and data to accelerate innovation and bring ideas to life faster than ever before.



### Break silos and put data to work

By connecting data across functions, Nexus enables collaboration and breaks down barriers between different engineering disciplines.



### Build on Hexagon's manufacturing expertise

Nexus simplifies access to world-leading manufacturing expertise from Hexagon and its partner ecosystem.



### Experience the freedom of an open platform

Reimagine operations with an open platform that meets users where they are – starting with the technology they already own and integrating innovation at their own pace.

## Nexus delivers

- **Speed:** faster time to market through fluid collaboration and automated data sharing
- **Efficiency:** time and cost savings due to increased visibility and faster decision making across disciplines
- **Productivity:** unlock further improvements in productivity through faster feedback loops across the entire product lifecycle
- **Optimal data sharing:** only share the data needed to solve a particular problem

| Learn more at [nexus.hexagon.com](https://nexus.hexagon.com)

# Specifications

|                                      |                                              | ATLASCAN Max                                                                                                                                                                | MARVELSCAN                                                                 |
|--------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Measurement rate                     | Standard/line                                | 3 000 000 pts/s                                                                                                                                                             | 2 100 000 pts/s                                                            |
|                                      | Fine                                         | 1 680 000 pts/s                                                                                                                                                             | 900 000 pts/s                                                              |
| Scanning area                        |                                              | up to 600 x 550 mm (line mode 300 mm)                                                                                                                                       |                                                                            |
| Light source                         |                                              | 26 blue laser lines + single blue laser line + 14 blue laser lines                                                                                                          | 22 blue laser lines + single blue laser line + 5 parallel blue laser lines |
| Resolution                           |                                              | Up to 0.01 mm                                                                                                                                                               | Up to 0.02 mm                                                              |
| Accuracy                             |                                              | up to 0.02 mm                                                                                                                                                               |                                                                            |
| With target                          | Volumetric accuracy - Standard               | 0.02 + 0.04 mm/m                                                                                                                                                            |                                                                            |
|                                      | Volumetric accuracy + scale bar <sup>1</sup> | 0.02 + 0.03 mm/m                                                                                                                                                            |                                                                            |
|                                      | Hole accuracy <sup>2</sup>                   | up to 0.03 mm                                                                                                                                                               |                                                                            |
|                                      | Hole volumetric accuracy <sup>2</sup>        | 0.03 + 0.04 mm/m                                                                                                                                                            |                                                                            |
|                                      | Volumetric accuracy + photogrammetry         | -                                                                                                                                                                           | 0.02 + 0.02 mm/m                                                           |
| Target-free                          | Volumetric accuracy - Standard               | -                                                                                                                                                                           | 0.05 + 0.020 mm/m                                                          |
|                                      | Hole volumetric accuracy                     | -                                                                                                                                                                           | 0.06 + 0.020 mm/m                                                          |
| Built-in photogrammetry <sup>3</sup> | Volumetric accuracy                          | 0.020 mm/m                                                                                                                                                                  |                                                                            |
|                                      | Average deviation                            | 0.007 mm                                                                                                                                                                    |                                                                            |
|                                      | Depth of field                               | 600-2500 mm                                                                                                                                                                 |                                                                            |
| Stand-off distance                   | Standard/line                                | 325                                                                                                                                                                         | 300                                                                        |
|                                      | Fine                                         | 200                                                                                                                                                                         | 150                                                                        |
| Depth of field                       | Standard/line                                | 450                                                                                                                                                                         | 450                                                                        |
|                                      | Fine                                         | 200                                                                                                                                                                         | 150                                                                        |
| Depth of field at furthest range     |                                              | 550                                                                                                                                                                         |                                                                            |
| Weight                               |                                              | 1 kg                                                                                                                                                                        | 1.3 kg                                                                     |
| Dimensions                           |                                              | 295 x 135 x 75 mm                                                                                                                                                           | 300 x 150 x 75 mm                                                          |
| Connection standard                  |                                              | USB3.0                                                                                                                                                                      |                                                                            |
| Working temperature                  |                                              | -10°C to 40°C                                                                                                                                                               |                                                                            |
| Working humidity (non-condensing)    |                                              | 10 % to 90 %                                                                                                                                                                |                                                                            |
| Export format                        |                                              | .stl, .ply, .obj, .txt, .xyz, .asc. etc.customisable                                                                                                                        |                                                                            |
| Compatible software                  |                                              | Hexagon (Inspire, PC-DMIS, DESIGNER)<br>Third-party software (PolyWorks, Geomagic/Qqton, Metrologic and any other software that can import point clouds or STL file format) |                                                                            |

<sup>1</sup> Rectangle scale bar for Galaxy mode

<sup>2</sup> Hole Flash Capture mode

<sup>3</sup> Scale bar is included in standard MARVELSCAN package



# Service and support

## World-class products to rely on

Drawing on decades of research and development experience, handheld 3D scanning technology from Hexagon's Manufacturing Intelligence division is built on a long history of outperforming technological innovation. Deriving quality from experience to drive productivity is what keeps Hexagon in front and able to deliver first-class solutions for industries around the world.

Along with the assurance of five years of serviceability, owners of Hexagon handheld 3D scanner systems benefit from a minimum 12-month factory warranty as standard – our guarantee that our technology will always meet the needs of our users.

## World-class support delivered locally

The international presence of Hexagon guarantees comprehensive aftersales support and services across the globe. With the largest dedicated service team of any metrology equipment manufacturer and an emphasis on locally delivered solutions, Hexagon is unmatched from service, repair, certification and calibration through operator training and software maintenance and upgrades.

## World-class service made simple

Hexagon offers a wide range of support services extending well beyond the point of purchase. Delivered by experienced and skilled engineers at ISO-certified laboratories, local Hexagon Precision Centres or even on-site to minimise downtime, our after-sales portfolio is the most complete on the market.

- Maintenance and warranty plans that ensure equipment availability
- Trouble-free usage and minimal downtime
- Preferred hotline access at no additional cost
- Access to professional advice whenever needed





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](https://hexagon.com) and follow us [@HexagonAB](https://twitter.com/HexagonAB).