



**ModelMaker MMDx - MMCx**  
Digital handheld laser scanners

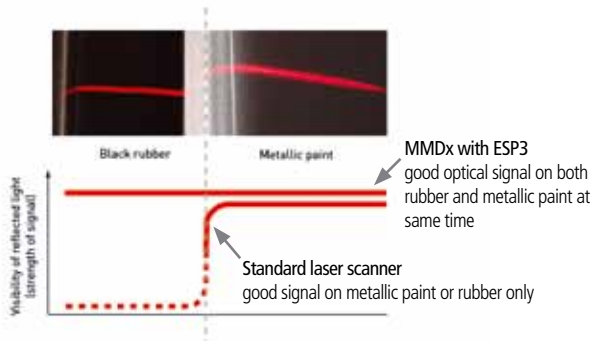
# Groundbreaking performance

## The digital handheld scanner

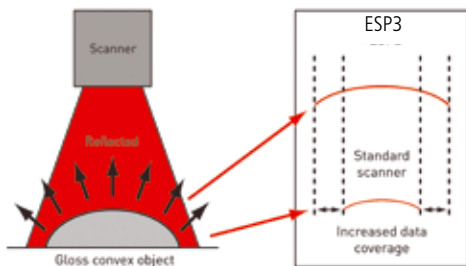
The unmatched accuracy, usability and performance of the digital ModelMaker scanner make it the perfect tool for all inspection, reverse engineering, and other 3D data capture applications. The ModelMaker MMDx/MMCx scanners are again a leap forward in 3D digitizing, as both models feature Enhanced Sensor Performance of the 3rd generation (ESP3) making it suitable to scan any material.

## Scan any material

Through Enhanced Scanning Performance (ESP3), the ModelMaker scanner adapts its laser power to suit the surface characteristics of the object. During scanning, it automatically tracks changes in surface conditions – both color and reflectivity – and adapts laser power and sensor settings accordingly in real-time. As a result, ModelMaker is able to accurately and efficiently handle parts with any surface color and texture, without requiring re-scanning or spraying.



ModelMaker scanners also feature an intelligent anti-reflection filter to provide accurate measurements when scanning very shiny or polished materials. The functionality filters out all reflective laser light that is scattered in many directions.



Thanks to ESP3, ModelMaker is able to scan the steep sides of convex surfaces, often a challenge due to poor light reflection.



MMCx80 entry-level digital ModelMaker scanner

## Best-in-class productivity

Featuring high frame rates and laser stripes up to 200mm, the digital MMDx/MMCx provides the ultimate in scanning productivity. The scanners' digital cameras benefit from a true (non-interpolated) resolution of over 1.000 points per stripe, providing optimum resolution for scanning freeform surfaces and features efficiently.

## Easy to use

Weighing around 390g and featuring a comfortable stand-off distance, ModelMaker scanners are optimized for ergonomic use.

## Localizer compatibility

Nikon Metrology ModelMaker laser scanners are compatible with all major brands of portable CMM equipment:

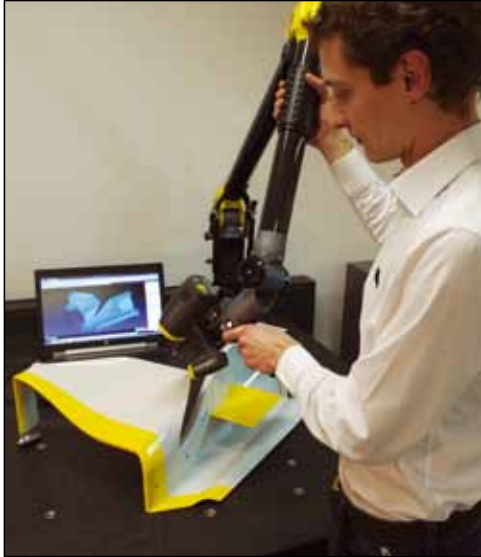
- Nikon Metrology MCA 7-axis (v2.2 and v2.5) and MCA II 7-axis
- Nikon Metrology K-Series K600 and K610
- Faro articulated arms
- Hexagon (Romer/Cimcore) articulated arms

## The right tool for the right job

The ModelMaker is available in 2 performance variants and 3 stripe widths to match your specific productivity and resolution needs.

|         | Scan rate | Productivity | Accuracy |
|---------|-----------|--------------|----------|
| MMDx50  | ••••      | ••           | ••••     |
| MMDx100 | ••••      | •••          | •••      |
| MMDx200 | ••••      | ••••         | ••       |
| MMCx80  | ••        | ••           | ••       |
| MMCx160 | ••        | •••          | •        |

# Intuitive scanning - one click analysis



## Total solution

ModelMaker scanners seamlessly interact with Focus software for data acquisition and inspection processing. It is a total solution that tightly integrates hardware and software to guarantee smooth and error-free operation.

## Scanning and application software

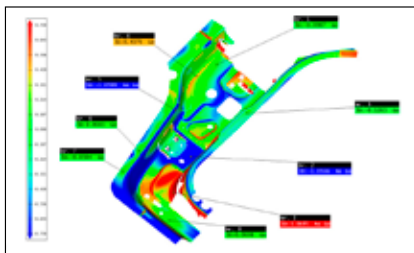
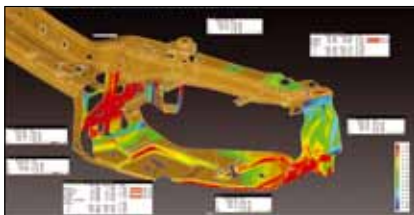
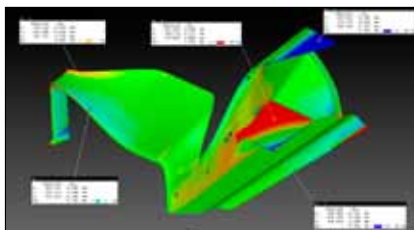
Focus 10 supports intuitive inspection using an articulated arm or Optical CMM with tactile and/or scanning probes. The software is specifically designed to easily control data flows with minimum user interaction. For the first time, customers can complete handheld data acquisition and inspection jobs from within Focus without compromising performance.

The point cloud builds up in real-time as it is being acquired seamlessly followed by inspection of the specimen geometry against CAD or another scan.

The inspection toolbox of Focus 10 includes advanced analysis functionality such as detailed part-to-CAD comparison, feature extraction, gap & flush inspection and GD&T.

Alternatively the Nikon Metrology handheld scanners can be used directly in 3rd party inspection software, such as PolyWorks, Rapidform, Geomagic, etc. (through the Nikon Metrology API).

For reverse engineering applications users can select from a broad offering of 3<sup>rd</sup> party packages, which tightly integrate all Nikon Metrology handheld scanners.



## Focus 10 Handheld scanning features

- Real-time point cloud rendering
- Point cloud filtering, and (polygon) meshing tools
- Fuse command intelligently and automatically processes point cloud data into an accurate, high quality polygon mesh
- Tactile measurements complement laser scanning, and both can be performed directly in Focus
- Remote software interaction using articulated arm and K-Scan probe
- Automatic sensor intensity adaptation to scan surfaces with varying color or high reflectivity
- Import/export of all standard CAD formats (IGES, STL, CATIA, UG, Pro-E, STEP, VDA)
- Scripting support for scanning automation

## Applications

- Fast & accurate 3D scanning
- Part-to-CAD inspection: First article inspection against CAD model
- Inspection of geometric features
- Gap-and-flush inspection
- Reverse engineering: from concept studio clay to class A surfaces
- Input for rapid prototyping

# Specifications

## ModelMaker benefits

- High scanning speed and accuracy save time and money
- Optimized for hard-to-scan surfaces
- Designed for use under all shop floor or field conditions
- Extreme temperature stability
- Quick and easy plug-and-play setup
- Calibration data stored on on-board memory
- Part of a total Nikon Metrology scanning solution
- Compatible with all major brands of portable localizers/point cloud software

## Technical specifications

|  | MMDx50  | MMDx100 | MMDx200 | MMCx80  | MMCx160 |
|--|---|---------|---------|---------|---------|
| Stripe width (Y) (mm)                          | 50  | 100     | 200     | 80      | 160     |
| Start measuring range (mm)                     | 95  | 100     | 110     | 100     | 110     |
| Measuring range (Z) (mm)                       | 50  | 100     | 150     | 100     | 150     |
| Accuracy (1 $\sigma$ ) ( $\mu$ m) <sup>1</sup> | 7   | 10      | 16      | 23      | 35      |
| Data rate at full FOV (Hz)                     | 50  |         | 60      | 30      |         |
| Max. data rate (Hz)                            | 150   |         |         | 30      |         |
| Enhanced Sensor Performance                    | ESP3  |         |         | ESP3    |         |
| Points per stripe                              | 1.000   |         |         | 800     |         |
| Temperature compensation                       | Yes   |         |         | No      |         |
| Sensor weight (g)                              | 400   | 390     |         | 400     |         |
| Laser power                                    | Class 2   |         |         | Class 2 |         |
| Localiser compatibility                        | Nikon Metrology MCA 7-axis (v2.2 and v2.5) and MCA II 7-axis<br>Nikon Metrology K-Series K600 and K610<br>Romer / Cimcore Infinite 1.0 and 2.0<br>Faro Platinum / Titanium / Fusion |         |         |         |         |

<sup>1</sup> Typical values are 30% better than listed accuracy



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