



# ModelMaker MMD - MMC

Fast  
Compact  
Accurate  
Versatile



The digital handheld laser scanner

# Groundbreaking performance

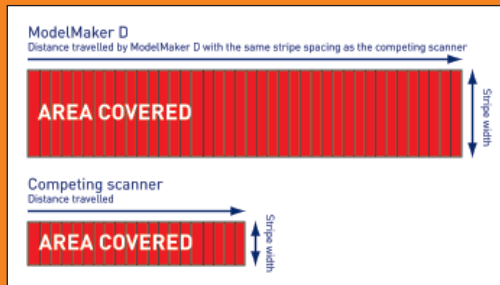
## THE DIGITAL SCANNER

The unmatched accuracy, usability and performance of the ModelMaker scanner range make it the perfect data capture tool for all inspection, reverse engineering, and other 3D data capture applications.

The ModelMaker - featuring true digital camera technology - is a leap forward in 3D laser scanning, as it introduces groundbreaking innovations, such as second-generation Enhanced Sensor Performance (ESP2), plug-and-scan and twin-pod casing.

## BEST-IN-CLASS PRODUCTIVITY

With a maximum frame rate of 80 stripes per second and the world's largest stripe width of up to 200mm, the ModelMaker's digital technology provides the ultimate in scanning productivity. The digital camera benefits from a true (non-interpolated) resolution of 1000 points per stripe, providing the user with the optimum resolution for efficient scanning of freeform surfaces and features.



## IMPROVED SYSTEM SIMPLICITY & PORTABILITY

The ModelMaker plugs directly in your Windows-based PC via an ethernet connection and requires no additional controller box. Only one compact cable is used to connect the ModelMaker, the articulated arm and the PC. Optionally, the scanner can be battery operated.

## INTELLIGENT PATCH GENERATION

Intelligent Patch Generation (IPG) creates an optimal polygon mesh in real-time, while accurately capturing edges, features and 3D geometry.

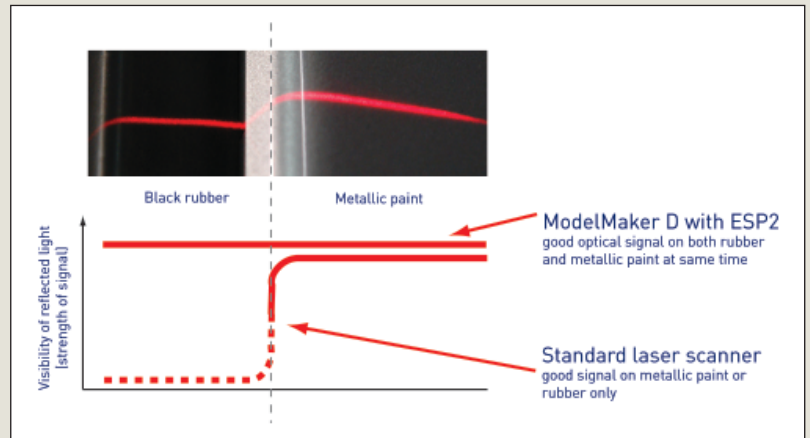
## LOCALISER COMPATIBILITY

Metris ModelMaker laser scanners are compatible with all large brands of portable CMM equipment:

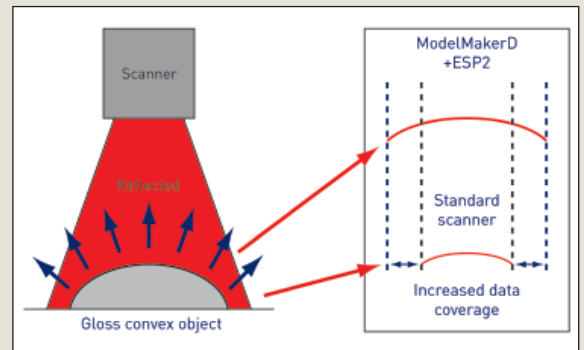
- Metris MCA articulated arms (6 and 7-axis)
- Metris K-Scan Optical CMMs
- Faro articulated arms (6 and 7-axis)
- Cimcore articulated arms (6 and 7-axis)

## SCAN ANY MATERIAL

The ModelMaker with ESP2 adapts its laser power to suit the optical characteristics of the scanned object. While scanning, it tracks changes in surface conditions - color and reflectivity - and adapts laser power and sensor settings in real-time. Therefore, the scanner is able to accurately and efficiently deal with any surface color and texture, without requiring re-scanning or spraying the specimen in a uniform color.



Another advantage of ESP2 is ModelMaker's capability to scan steep sides of convex surfaces. This firmly increases data coverage and avoids re-scanning of particular surface areas. Standard laser scanners often face difficulty with steep convex surfaces because of poor light reflection.

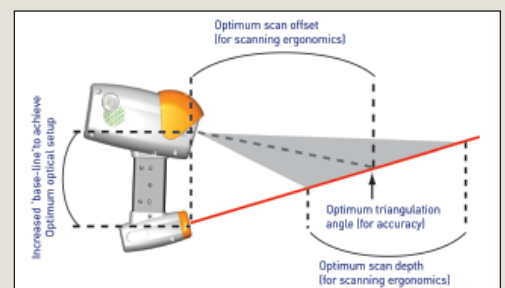


## IMPROVED USABILITY

Weighing only 395 grams and featuring a long stand-off distance, the ModelMaker is optimized for ergonomic use. The revolutionary twin -pod casing offers distinct advantages that increase scanning performance:

- Heat-emitting electronics are isolated from the sensor, reducing warm up time and establishing accuracy stability in a large temperature range.

- Shock-absorbent plastic casing is electrically and electromagnetically insulated to guarantee error-free results.



# Intuitive scanning - one click analysis



## TOTAL SOLUTION

ModelMaker scanners are supplied with Metris data capture and processing software for inspection and reverse engineering. It is in fact the only laser stripe scanning solution that incorporates hardware and software from the same vendor. This is the best guarantee that everything works smooth and error free.

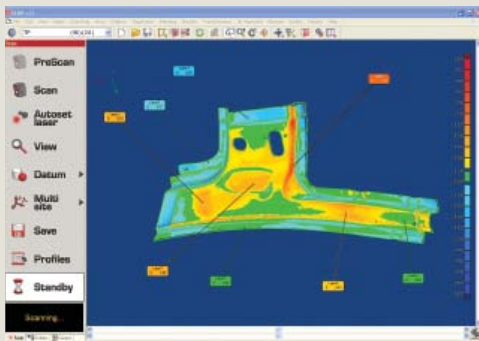
## APPLICATION SOFTWARE

To guarantee the highest data quality and accuracy possible, KUBE algorithms have been specifically designed for processing laser stripe data. The KUBE software package consists of the basic scanning software and an inspection module that are seamlessly integrated:

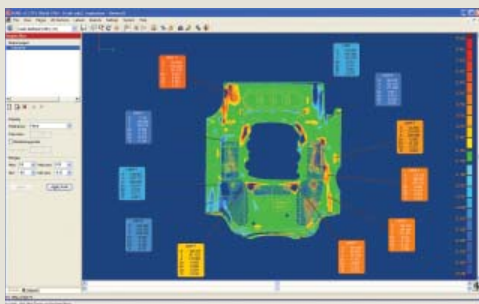
- **KUBE SCAN** is the most user-friendly data acquisition software available for 3D scanning, featuring patented real-time rendering and a localizer-driven menu. KUBE SCAN additionally includes basic point cloud filtering, advanced datuming, coordinate system creation and meshing tools.
- **KUBE INSPECT+** is an easy-to-use module that features basic surface inspection functionality. This software is typically used for on-line inspection applications where visual inspection results are immediately evaluated. KUBE INSPECT+ imports IGES and STL CAD files. In addition, CATIA, UG, Pro-E, STEP and VDA importers are available.

For advanced inspection functionality, Metris recommends Focus Inspection, its own world-class inspection software that imports KUBE projects with a single click. Alternatively, other 3rd party inspection software can be used.

For reverse engineering applications, KUBE and Focus Reverse Engineering offer powerful dataprocessing tools, such as mesh creation, hole filling, noise reduction, feature enhancement, polygon reduction, etc.



The menu on the left is navigated using the localizer arm



KUBE scan data for part-to-CAD inspection analysis

## KUBE INCLUDES

- Intuitive interface
- Patented real-time rendering and instant surface inspection
- Menu navigation with articulated arm and K-Scan probe
- Touch probe and scanner datuming
- Point cloud filtering and optimization
- Part-to-CAD inspection
- Import/export of all standard CAD formats
- Polygon mesh generation and mesh tools
- Gap-and-flush inspection
- Macro support for scanning automation

## 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.

- MMC40: Standard performance and high resolution for detailed scanning
- MMC80: Standard performance and optimal trade-off between accuracy and productivity
- MMC160: Standard performance and optimized for productivity
- MMD50: High performance and high resolution for detailed scanning
- MMD100: High performance and optimal trade-off between accuracy and productivity
- MMD200: High performance and optimized for productivity



# Applications & Specifications

## APPLICATIONS

- Fast & accurate 3D scanning
- Part-to-CAD inspection: 1st 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

## MODELMAKER D BENEFITS

- Faster and more accurate scanning saves time and money
- Light and small ergonomic scanner
- Optimized for hard-to-scan surfaces
- Compatible with all major brands of portable localizers
- One-stop-shop for a total scanning solution
- Extremely temperature stable
- Fast and easy plug-and-play setup
- Designed for use in all shop floor conditions
- Portable out-of-the-box system
- No control box – Plug-and-Scan
- No calibration files on disk – Stored on on-board memory

## TECHNICAL SPECIFICATIONS

	MMD50	MMD100	MMD200	MMC40	MMC80	MMC160
Stripe width (Y) (mm)	50	100	200	40	80	160
Start measuring range (mm)	100	100	55	100	100	55
Measuring range (Z) (mm)	50	100	150	50	100	150
Accuracy (2σ) (μm)	16	23	37	24	35	55
Max data rate (real pts/sec) <sup>1</sup>	81.920			24.000		
Points per stripe <sup>1</sup>	1.024			800		
Max speed (stripes/sec)	80			30		
Temperature compensation	Yes			No		
Sensor weight (g)	395			410		
Laser power Class	Class 2M					
Localiser compatibility	Metris MCA (6 and 7 axis) Metris K-Scan (all variants) Romer/Cimcore Infinite/Stinger (6 and 7 axis) Faro Platinum/Titanium/Fusion/Quantum (6 and 7 axis)					

<sup>1</sup> Metris points-per-second and points-per-stripe specifications state real scan points only. No interpolation techniques are used to oversample the point clouds.

All specifications are subject to change without notification

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