



## Minolta 3D Laser Scanners

### ***Minolta Brand***

Minolta scanners have been designed and manufactured using ISO9000 series quality systems. It is widely used by universities and medical companies that prefer a reliable and trusted company to backup their product with support and services for the long term.

### ***Certified Accuracy***

Minolta scanners have been independently tested by certified measurement laboratories to far exceed stated accuracy by up to 10 times. Konica Minolta's stated accuracy is a ***conservative*** guarantee of performance, unlike other brands which state accuracy at the limits of the scanner.

### ***Consistent & Reliable Performance for Scientific Applications***

ISO9000 series manufacturing systems guarantee that every Konica Minolta scanner produced will perform to specification. For medical, research and inspection applications this is crucial.

***Every*** scanner produced is tested and verified by Konica Minolta before shipping

Users will have confidence that if their research is repeated by others using the same methodology, the same results will be achieved, resulting in high scientific confidence in results.

ISO9000 manufacturing systems also guarantee reliability in Minolta scanners, resulting in less down-time compared to other scanners.

### ***Lens Manufacturing Technology***

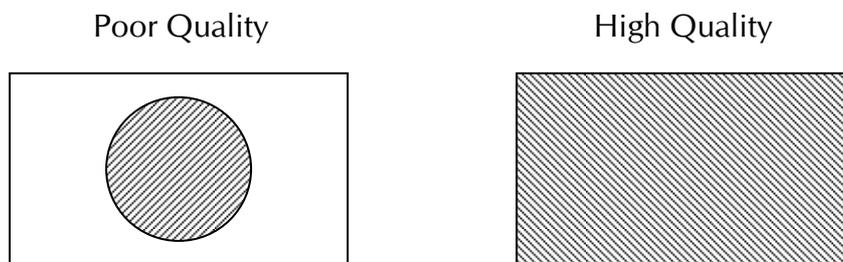
Optical lenses are extremely difficult to produce to the quality levels required for accurate 3D scanning. Konica Minolta is only one of a handful of manufacturers in the world with the technology and knowledge to produce high quality lenses with ***manufacturing consistency***.

Such is their knowledge that Sony Corporation recently purchased Konica Minolta's lense manufacturing technology for use in Sony digital cameras.

Optical scanners, regardless of laser or white light technologies rely significantly on the quality of lenses for their accuracy. Think of the scanners lenses in the same way as your eyes.

Lower quality lenses in 3D scanners can result in the data only being accurate in the centre area of the scan area, NOT the entire lense area. Therefore, accuracy claims need to be validated for the ENTIRE field of view of optical scanners.

The two images below illustrate the result on accuracy with poor quality lenses. The striped line area shows the area where scanned data is accurate. The rectangular area represents the field of view seen by the scanner for a scan. For average lenses, the accuracy is concentrated in the centre of the rectangular scan area. For high quality lenses, the entire rectangular area produces truly accurate scan data.



With Konica Minolta scanners you can be assured that the lenses for every scanner are optically true.

### ***Low Running & Staff Training Costs***

No maintenance fees are associated with the Minolta scanners.

The simple point-and-scan style of scanning, with **automatic focussing and automatic laser power adjustment** results in rapid training for new staff and even students. No need for specially trained staff to operate the scanner. Even TAFE students use the scanner.

### ***Simple Self Calibration***

The Minolta scanners calibrate internally each time they are turned on.

The higher accuracy 9i also has a separate calibration frame where the scanner calibrates automatically at the click of a mouse button.

### ***Ease of Use & Ergonomics***

Minolta scanners are point-and-scan. That's it. No need to worry about distances, laser power, light intensity or other settings. If you can use a digital camera you can use the Minolta.

You don't need to worry about how you support or hold the object being scanned. 2.5 seconds is all you need to scan, and then you can move the object for another scan image. The Minolta 910 and 910FW scanners also have a **0.3 second scan time**, making it possible to scan children and animals.

Missed an area? You can always go back to rescan the object and use the supplied software to place the new data in place.

Because the Minolta is point and shoot, users do not need to worry how they hold the scanner or how fast they move the scanner. This eliminates the user from having to continually bend and twist when scanning, reducing fatigue.

The software supplied is also very simple to use, and can also be driven directly from within Geomagic using supplied plugins.

### ***Interchangeable Lenses***

The 910 and 9i model scanners come with three lenses that can be changed by simply screwing in and out within 30 seconds.

The three lenses are just like camera lenses, allowing users a variety of scanning resolutions and fields of view with the one scanner. Detail up to 0.17mm to an independently tested accuracy of 0.005mm is achieved with the zoom lens, and the wide angle lens provides a field of view of up to 1.2 metres x 0.9 metres.

This allows the Minolta to scan items from as small as mobile phones to as large as car bodies **within a few minutes**.

### ***Turntable for Unattended Automatic Scanning***

With an electronic or manual turntable, 360 degree scans of an object are done with a single mouse click and automatically aligned. Simple.

### ***Industrial Design & Education***

For smooth shapes developed in foam or plasticine, the Minolta is ideal for fast data gathering. You do not need ultra high resolution or accuracy for concept models. For plastic parts, the Minolta can scan with certified accuracy plastic mouldings for design studies with its high resolution lens.

Even students use the 910 scanner, rather than just watching. Motivate the students and get them interested, **improving class attendance**.

## ***Customised Design-Personal Wear Products & Body Scans***

Product design is heading toward customised design. That means designs to fit an individual. Medical products also require customised design for improved performance eg. Face masks that reduce air leakage.

The Minolta can scan people's bodies, faces and heads to help students design products with improved human factors and ergonomic details. Safety glasses to fit Asian and Caucasian faces, helmets, feet, body wear are now quickly and easily designed.

**The Minolta is USA FDA approved for body scanning with Class 1 laser FDA certification.**

## ***Data Output***

Raw data from the Minolta scanner is polygon mesh eg. STL. The data is able to be directly imported by CAD and CAM software packages for further design work or for direct cutting from the scan data.

For automatic generation of NURBS surfaces Geomagic software is recommended due to the improved plugin support and functionality.

Geomagic and similar software now align data from multiple scans perfectly, making the Minolta scanner a truly high speed scanning tool. These software packages to align multiple scans and the use of optical scanners are industry standard for car manufacturers such as GM, Ford, BMW, Audi, Renault, Honda, Toyota and many others.

## ***Sample of Users***

University of New South Wales  
University of Melbourne  
TAFE Design Centre – Enmore, New South Wales  
TAFE – Geelong Product Design, Victoria  
Advanced Moulding Technologies Pty Ltd  
Princess Margaret Hospital for Children

Carnegie Mellon University, USA  
Harvard Graduate School of Design, USA  
Nanyang Technological University School of Mechanical & Production Engineering, Singapore  
Toyota Motor Corporation, Japan (over 50 units installed)  
General Motors, USA

Plus many more manufacturing, medical, heritage and design institutions. There are thousands of Minolta 3D scanners in use today.