

Digital Scanning & Microfilm Equipment - DS & ME

For all Book & Large Format Document & Micrographic Scanning

**The SOLE Authorized Australasian Distributor for the METIS-MICROTEK-
QIDENUS-SMA and UNIONOVO Range of Book and Large Format plus Fragile
Document Scanners plus the ScanPro 3000 - 2000 and 1100 and the SunRise plus
the Wicks & Wilson range of Micrographic Scanners**

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Why is the SMA Electronic Document GmbH MASTER Series of Scanners the BEST OPTION for Sensitive or Delicate and Fragile Book plus Large Document Original Material Scanning Applications?

The SMA Electronic Document GmbH Master Series of Large Format Scanners are designed for use with Original Material consisting of Sensitive or Delicate and Fragile Books plus Large Documents starting at 432 x 300 mm or 17.01 x 11.81 inches in size up to 1270 x 914 mm or 50.00 x 36.00 inches in size irrespective of weight or format.

The SMA Electronic Document GmbH Master Series of Large Format Scanners is the ONLY Sensitive or Delicate and Fragile Books plus Large Documents Scanner manufactured that do not suffer deterioration of Image Quality due to several important factors:

1. The distortion of the Image Quality due to the image sensor being located at some distance from the original material which causes image degradation. The SMA Master Series unique design minimises the distance from the scanner head to the Vacuum Sealed Camera Box inside the scanner unit that includes the Lens and CCD Array Assembly thus providing constant excellent image quality without distortions caused by distance from the original material as is the general practice with other equipment suppliers in the Scanning Industry.

2. The distortion of the Image Quality caused by ambient lighting either natural or from some other source e.g. Overhead Lighting with reflections and other characteristics being introduced to the digital images produced with the result that less than maximum quality digital images are produced.

The SMA Master Series is the **ONLY** Sensitive or Delicate and Fragile Books plus Large Documents Scanner - World Wide that can operate independently without any ambient light effect contaminating the digital images produced.

One can operate the SMA Master Series of Large Format Scanners that are designed for use with original material e.g. Fragile Books plus Large Documents in either a specialised scanning environment or out on the street with 100% daylight at midday without causing any detrimental effect to the extremely high quality digital images produced or to the original material being scanned.

Why is this so?

The SMA Master Series unique design in effect provides an almost contact imaging process where the Sensitive or Delicate and Fragile Books plus Large Documents original material is positioned extremely close to the flat [full width] Scanner Head which is separated only by the thickness of the scanner glass. The SMA Master Series then transfers the digital image to the Vacuum Sealed Camera Boxes inside the uniquely designed scanner unit thus providing the minimum / shortest optical distance possible.

Why is this important?

What is the result of this Closed System of an almost contact imaging process of utilising a flat [full width] Scanner Head to capture the Sensitive or Delicate and Fragile Books plus Large Document original material and transferring the digital image to the Vacuum Sealed Camera Box inside the scanner unit?

The image does not have to pass through any great distance of separation from the original material to the scanner head utilised by most of the equipment suppliers in the Scanning Industry that can and does cause distortions to the resultant image output [that must be compensated for]. The SMA Master Series flat full width Scanner Head is uniquely designed to have the shortest optical path possible from the Sensitive or Delicate and Fragile Books plus Large Document original material to the digital image take-up Vacuum Sealed Camera Boxes inside the scanner unit.

Lighting:

A special LED light illuminator **without any Ultraviolet - UV or Infrared – IR radiation** guarantees that no harm occurs to the Sensitive or Delicate and Fragile Books plus Large Document original material and provides uniform illumination with the SMA Master Series Scanning Process.

The special LED light illuminator **without any Ultraviolet - UV or Infrared – IR radiation** took more than TWO [2] years to develop and it is one of its kind!

Archivists and Librarians have always known that Ultraviolet - UV or Infrared – IR radiation is harmful to old, fragile and sacred original material. In a perfect world they would like to scan their original material with a Scanner that is Ultraviolet - UV or Infrared – IR radiation free. The SMA MASTER Series supports this principle 100%.

Now to prove this:

Attached is a data sheet regarding the LED's that SMA utilizes in the SMA MASTER Series Scanners. On page 8 (Relative Spectral Emission) the Data Sheet shows that these LED's only work within the 400 and 750 nm spectrum.

UV light exists only in a spectrum of up to 400 nm and IR light only between 780 nm and 1 millimetre. Consequently the LED's used in the SMA MASTER Series of Scanners work within the "Ultraviolet - UV and Infrared – IR **radiation free zone**".

The illuminator is located inside the SMA Master Series scan head and is simply moved across the Sensitive or Delicate and Fragile Books plus Large Document original material.

The SMA Master Series does not have to be adjusted to, or to compete with variable and constantly changing internal operating environments, e.g. overhead lighting or sunlight coming in via windows as with most other equipment suppliers in the Scanning Industry.

The SMA Scanner Head has its own inbuilt **Ultraviolet - UV and Infrared - IR FREE** - LED light source with a minimum life span of 50,000 hours under the scanner units closed glass environment which then transfers the digital image to the Vacuum Sealed Camera Box inside the scanner unit which includes the Lens and CCD Array Assembly. This unique design thus eliminates distortions caused by distance of up to 1.5 metres from the original material or the competition with overhead lighting which occurs with most other book and large document original material scanners from equipment suppliers in the Scanning Industry. This elimination of external light sources via the SMA Closed Lighting System also saves the operator from eye strain and from having to work in a lighting condition that may not be conducive to the appropriate local Occupational, Health and Safety requirements for lighting.

In addition to the care taken with the SMA Scanner Head with its own inbuilt **Ultraviolet - UV and Infrared - IR FREE** - LED light source additional protection is provided by a specially designed membrane filter [No technical details are available as this process is an SMA designed process and is its own Intellectual Property and thus not available to Third Parties due to its confidential nature] that sits between the LED's and the glass plate.

This membrane filter then eliminates any potential damage to the original material by any light output during the scanning process.

This SMA specially designed membrane filter is - so to speak - a "double protection" to filter out even the slightest emission of any type should there be any, thus providing an ultimate protection to the original material being scanned.

Further to the SMA Master Series producing higher quality digital images than other types of Large Format Scanners the SMA Master Series makes the Safety and Health of the operator of the equipment as a matter of high priority.

As there is no external light source with the SMA Master Series the operators eyes are not exposed to the harmful effects of the constant light emitted from overhead light sources irrespective of their type. In addition persons and other processes carried out in close proximity of the SMA Master Series are unaffected by the intrusion of light emitted by overhead light sources which occurs with most other Book plus Large Document original material scanners from equipment suppliers in the Scanning Industry.

Quality:

The SMA Master Series of Sensitive or Delicate and Fragile Books plus Large Documents Scanners produce superior image quality with no corner Lens Distortion induced drop off due to the Scanner Array in some scanners head being from around a half [½] a metre or more up to 1.5 metres in distance from the original material.

The Scan Master models for A 2, A 1 and A 0 original material scan optically at 1200 x 600 DPI but output the image at 1200 x 1200 DPI.

Interpolation of the digital image takes place - **but only in one direction**. As a result the image produced is a much improved image over an image scanned at 600 DPI. If a book or document original material is scanned at 600 DPI then the output is at 600 x 600 DPI **true optical resolution**.

This output at 600 x 600 DPI **true optical resolution** is already unique for SMA as none of the Large Format and Book equipment suppliers in the Scanning Industry provides this 600 x 600 DPI true optical resolution output with their scanners. This same 600 x 600 DPI true optical resolution output applies for the SMA Master Series Models – A2 - A1 and A0 size scanners.

Soft on sensitive or fragile Documents and Books:

The SMA Master Series of Scanners are superior to any other Books and Large Document original material Scanners in terms of being able to adjust the pressure when placing the original material against the scanner glass.

This ability to adjust the pressure on the original material allows the operator to make certain that no damage is caused during the scanning process due to too much pressure being applied to the surface of the original material of Sensitive or Delicate and Fragile Books plus Large Documents.

The SMA Master Series of Scanners uses proximity sensors inside the book cradle that can be adjusted to guarantee that no damage is caused during the scanning process to Sensitive or Delicate and Fragile Books plus Large Documents.

The closer the operator adjusts the proximity sensors inside the book cradle towards the original material the lower the pressure becomes. This technology used with the SMA Master Series of Scanners is much more successful in providing greater sensitivity than the mechanical solution previous fitted to the original earlier model SMA21 - A2 Book Scanner. The SMA Master Series of Scanner technology is miles ahead of other Books and Large Document original material Scanners on the market who in many instances utilize **Brute Force** to hold sensitive or fragile documents and books in place for the scanning process.

Book Cradle:

All of the SMA SCAN MASTER Series of Book Scanners is equipped with **a pull-out book cradle**.

This concept is UNIQUE from equipment suppliers in the Scanning Industry.

The availability of a pull-out book cradle makes life significantly easier for the operator and also makes sure that the book is being treated carefully and with a minimal of operator effort while preparing it for the scanning process.

The book plates of the Book Cradle are built like spring loaded sandwiches.

Every plate has an **inbuilt, threaded proximity sensor**.

Based on this thread setting the distance of how much this “sandwich” is being compressed can be adjusted by simply turning the proximity sensor.

When the threaded proximity sensor is turned to the [right](#) it travels inbound and gets closer to the upper part of the sandwich. As a result lesser pressure will activate the proximity sensor and stops the book cradle movement towards the glass with the result that a limited decreased pressure will be applied to the original material being scanned.

When the threaded proximity sensor is turned to the [left](#) the distance between the proximity sensor and sandwich plate increases. As a result the book cradle will provide more pressure before it comes to a full stop against the glass. Since the sensor is threaded adjustment process the increase or decrease in pressure on the original material being scanned can be adjusted steplessly.

The **SCAN MASTER 1** has the following book cradles available:

1. 10 cm [manual](#),
2. 35 cm [motorized](#) and
3. 50 cm [motorized](#).

SPECIAL NOTE: Some SMA Master Series Scanner installations have original material that is so fragile that it cannot have any pressure placed against the surface of the original material and thus cannot be placed up against the scanner glass.

With these sensitive and delicate documents, spacers which are slightly thicker than the thickness of the sensitive and delicate document original material are placed at the edges of the document original material so that only the spacers and not the actual delicate document original material come in contact with the glass.

The delicate document remains as close to being flat as possible but has no pressure applied to its surface during the scanning process.

These are some of the reasons the SMA Master Series of Sensitive or Delicate and Fragile Books plus Large Document original material Scanners are the most suitable units to carry out the scanning of Archival and Sensitive or Delicate Original material for all types from 432 x 300 mm or 17.01 x 11.81 inches and up to 1270 x 914 mm or 50.00 x 36.00 inches in size irrespective of weight or format.

An American Archive Institution who installed an SMA ScanMaster 0 unit found that their scanning time to scan a book was halved with the use of the SMA ScanMaster 0 unit when compared to the standard overhead lighting type legacy unit with a scanner head some distance from the original material with the well-known book scanner unit they previously had installed.

They scanned exactly the same book with their legacy scanner (which their production staff were familiar with) and then with the SMA ScanMaster 0 machine (one hour after it was installed).

In addition the image quality was observed to be of a magnitude higher than their current legacy unit with the standard overhead lighting type with a scanner head some distance from the original material with the well-known book scanner unit they previously had installed.

Should you have any queries or require additional information related to the above material please contact [Laurie Varendorff @ Admin@Microfilm.net.au](mailto:Laurie.Varendorff@Admin@Microfilm.net.au) and Laurie will provide you with a response to your queries.