

METIS SYSTEMS

HIGH QUALITY SCANNERS



Technical Specifications DRS A0

ENG v.0310-1.1

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INTRODUCTION

It's the last born in the DRS family and benefit from all the technology developed by Metis in previous DRS systems with important additions, some of which are unique and may not be found in any other system. For example, a new patented technology for lighting, which is the result of years of research and development in Metis, was introduced for the first time in the DRS A0 resulting in unprecedented image quality and above all in the ability to adapt to the most diverse and different types of originals. DRS A0 system can indeed meet the most difficult and different reproduction needs thanks to the innovative lighting system, the sophisticated book/map cradle and also due to the extremely flexible scan size and resolution.

Furthermore the DRS A0 unique lighting technology may not be properly described by words, it must be seen in action in order to fully appreciate it and understand the important and epochal technological advancement that have been introduced by Metis. The DRS A0 set a new and much higher level as the Top reference for the entire reproduction market.

The DRS A0 is a versatile and technologically advanced scanner designed by Metis in order to completely fulfill the typical needs for high quality reproduction of primary cultural entities (such as archives, museums, libraries, collections); in fact average need is not usually restricted to a specific format or a unique kind of original and the DRS A0 is the only available solution capable of acquiring at best all of them. So far the optimal reproduction of different type of originals (very dissimilar in nature or format such as books and maps) required different scanners. In the DRS A0 METIS has succeeded for the first time, to integrate everything needed to perfectly reproduce without compromise all kind of originals as parchments, paper, papyrus, books, manuscripts, maps and drawings of small or large format but also paintings, prints, atlases and all kind of documents, ancient and fragile and even 3D originals with a high thickness. And the results are always significantly higher than any other existing solution.

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HIGH QUALITY SCANNERS

DRS A0 TECHNICAL SPECIFICATIONS

Maximum scanning format : 90x125cm

Sensor : Tri-linear CCD, 3x12 (36 bit)

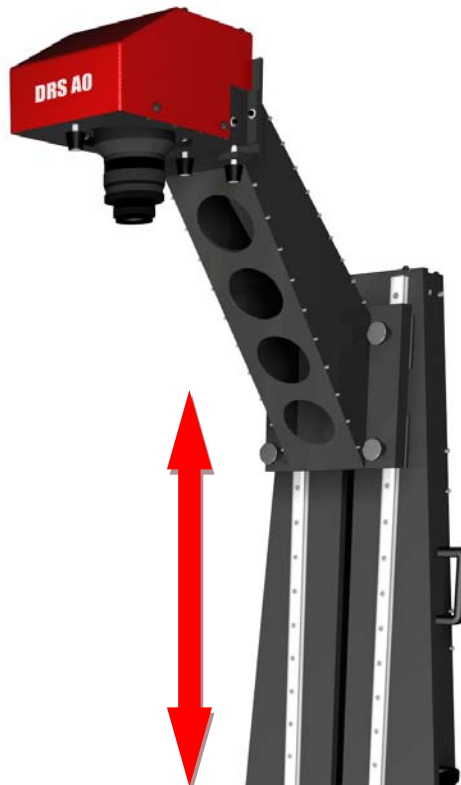
High DOF (Depth Of Field) : user adjustable

Lens Focusing : quick and software supported

Optical Resolution (native) : 400-800PPI (up to 1600x800PPI optical)

Adjustable Resolution : up to 1600 PPI

Magnification level : optical resolution may be automatically adjusted (camera height is motorized and computer controlled) in order to always deliver perfect images and maintain exact aspect ratio and geometrical accuracy. Furthermore adjusting the magnification allows to increase the optical resolution up to 600 PPI on the 60x125cm format and up to 800PPI on the 45x125cm format !



METIS SYSTEMS

HIGH QUALITY SCANNERS

Zenithal and centered point of view : The DRS A0 system implements a Zenithal point of view perfectly perpendicular and centred respect to the image plane (DRS A0 Scan Area). This is an essential point in order to ensure proper and natural viewing perspective of the originals but also uniformity over the full scan area. In fact general image uniformity (even light uniformity) is strongly affected by the point of view position and only centred and Zenithal point of view are allowed for professional high level reproductions.

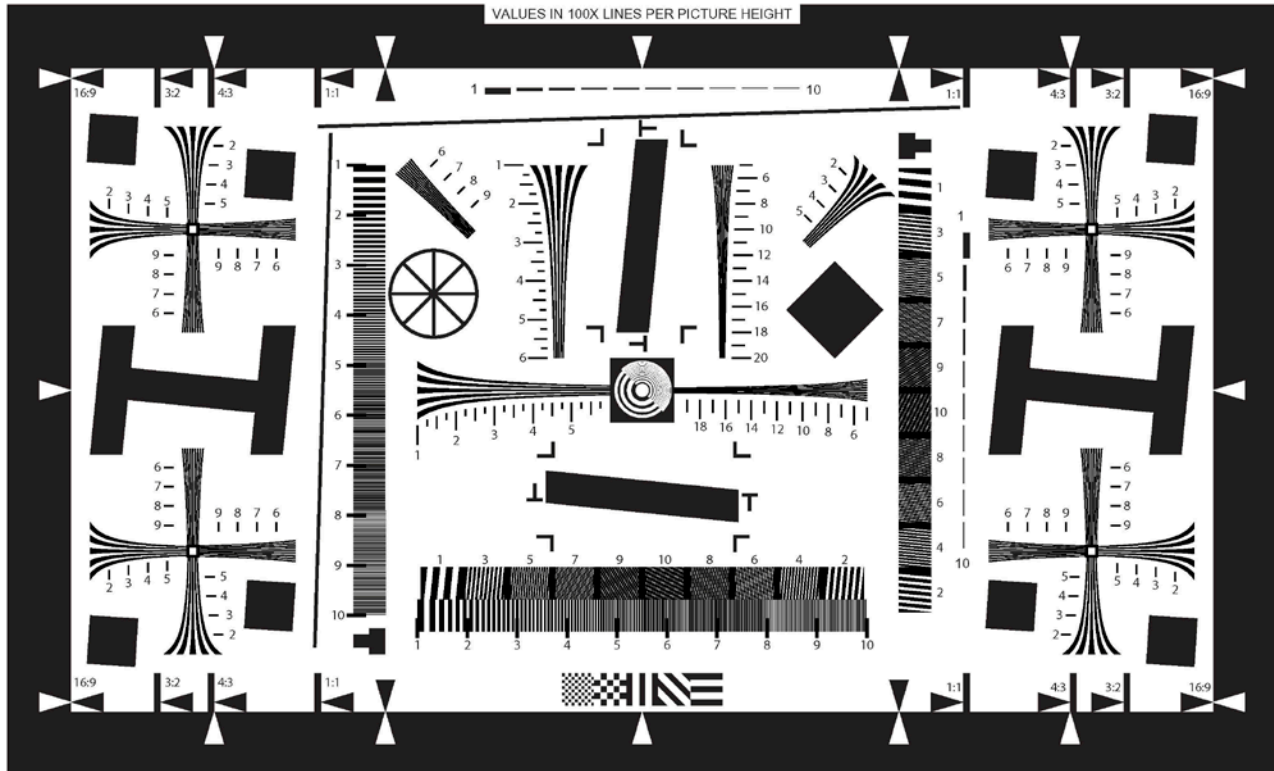
MTF 10% (l/p=line pairs) : 5.5-5.9 l/p at 300PPI ; 7-7.9 l/p at 400PPI

High geometric accuracy (generally error is < 2-3/1000 but can be set lower on request)

Free of aberrations on the images !

Low noise on the images even at faster acquisition speed !

ISO 12233 and other Targets can be used in order to check MTF, aberrations and even geometric accuracy

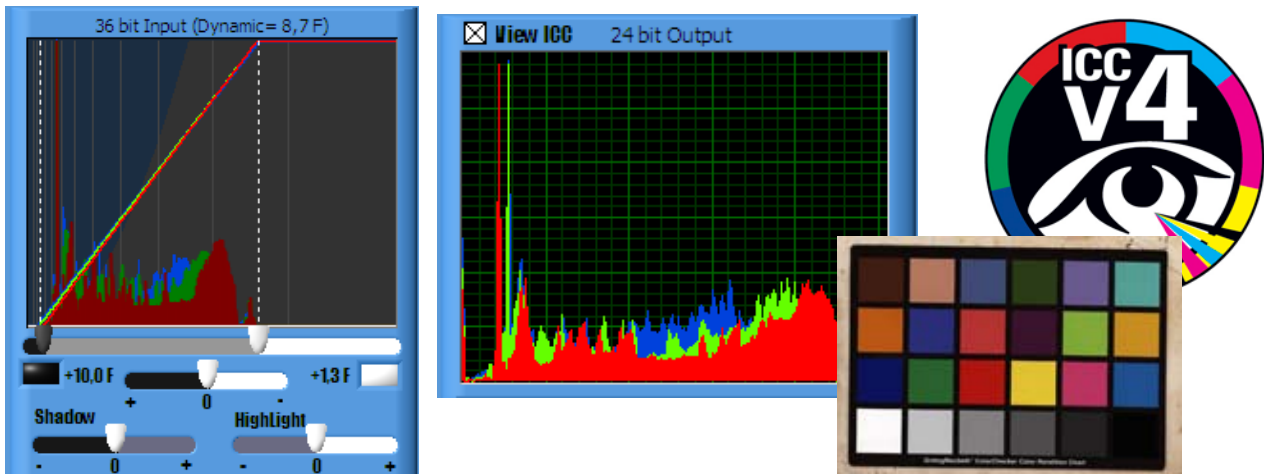


Drawn by Stephen H. Westin ©Cornell University This test chart is for use with ISO 12233 Photography - Electronic still picture cameras - Resolution measurements Chart Serial No. 27_91/11_07. Printed by metis systems srl

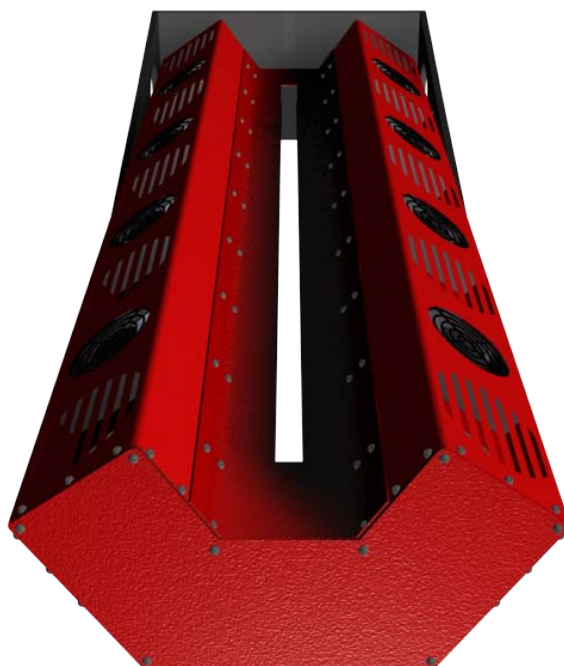
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HIGH QUALITY SCANNERS

High Color Fidelity : typical ΔE is <3-4 (measured in the sRGB and Adobe 1998 color spaces); Full ICC Color Profiles support.



Lighting : Metis new (patent pending) SynchroLight lighting with high CRI (Color Rendering Index > 90), free of IR/UV and active only during scan. The special design of the lighting includes also the following benefits : special patented lighting technology (completely automatized) allow obtaining thousands of different light schematics including fine variations of light angles and intensity; furthermore special and unique tools were designed in order to help the user finding the best suitable light schematic very quickly and without the need for rescanning the image several times.



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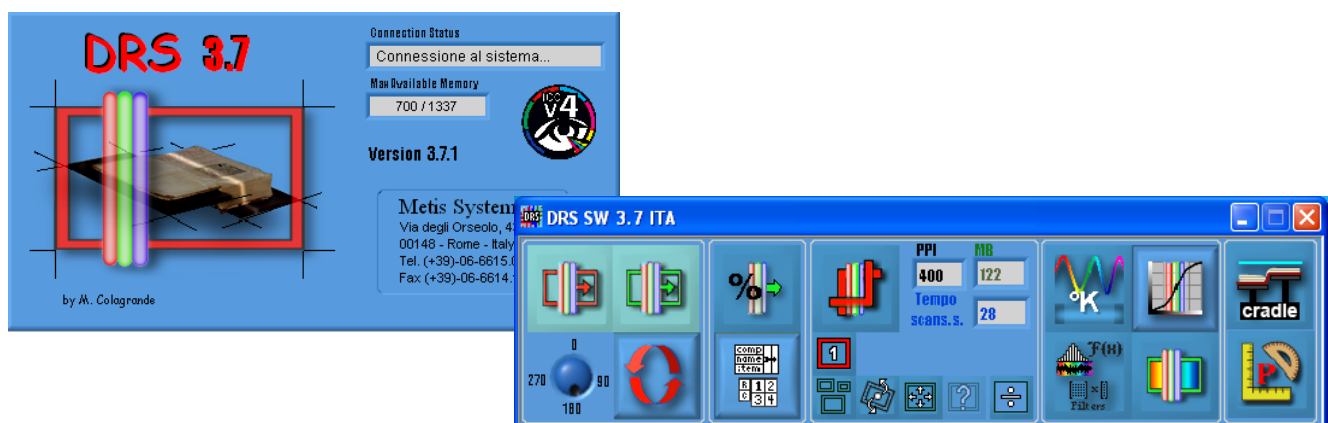
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Book Cradle : completely electronic, motorized and automated, accept books up to the A0 format and 50 cm thick. It's the larger Book Cradle available in the market (furthermore is completely electronic providing incomparable accuracy and automatization respect to all competitors).It can be highly customized by the user and integrate sensors for automatically detecting the book weight and pressure against the glass with an accuracy of just a few grams. The book cradle can be operated and highly adjusted on customer needs manually or even automatically through software.

Removable Glass : In the DRS A0 the glass is fixed in order to maintain a high level of geometrical accuracy but can also be removed easily for operating without glass. Furthermore it's also possible to work with the glass but without contact.

3 foot pedals allow to control the book cradle and the acquisition process. Foot pedals may also be programmed for specific tasks in order to avoid the need for interfacing the mouse or keyboard during the digitization.

Acquisition Software : DRS 3.7.1 or greater for Windows. This is very powerful software with a user friendly interface (icon based) and plenty of tools which allows to maximize productivity and image quality. DRS Software is currently available in English, French and Italian and may easily localized in order to support more languages.



High ergonomy thanks to an attentive design and also to the extremely high level of automatization in the software and hardware.

METIS SYSTEMS

HIGH QUALITY SCANNERS

Performances stable during time : it's not required to recalibrate the system often (as in many other scanners) in order to maintain high and stable results. Color quality and reliability over time (but also sharpness, resolution, geometric accuracy) is extremely stable in the DRS A0 system thanks to specific technology and solutions adopted by Metis.

High uniformity : high resolution and lighting uniformity is provided over the full scan area thanks to the proprietary DRS A0 design (no compromises were allowed).

CameraLink Professional Interface : in order to connect the DRS A0 system to the PC, a professional CameraLink interface have been adopted by Metis. This is the fastest and more reliable imaging interface today existing and is generally used in the industrial/scientific market where reliability and performances are not an option.

System size (cm): Height 225, Width 182, Depth 155

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HIGH QUALITY SCANNERS

DRS A0 PRODUCTIVITY

DRS A0 productivity have been measured from page to page (averaging the time required for 10 consecutive scans) including the following steps : automatic image scanning, automatic image processing, automatic page split, automatic file naming, basic filters, automatic saving, automatic book cradle opening, operator time in order to turn a page, operator time to issue a foot pedal/pc command to close the book cradle and start a new scan, time for the book cradle to close and be ready for next scan. Because operator times and processing times are sometimes overlapped there may be just a slight difference on small size scans.

DRS A0 have been set by default when measuring the productivity times by delivering always high quality images without any defect.

Anyway real productivity may change respect to measured value (may improve also) depending on original type, current PC configuration, DRS software settings and also on operator speed of course (the time required to turn a page or change an original is mandatory). For these reasons the following tables and times must be considered indicative only of the DRS A0 productivity.

Scan time can be further reduced respect to the following measured data by using the “Turbo” option in the DRS Software (image quality is anyway slightly affected).

Furthermore a special DRS A0 version with a much faster CCD (but more limited resolution) may be available on request.

METIS SYSTEMS

HIGH QUALITY SCANNERS

Best production times as measured on the DRS A0 (in seconds) :

DRSA0 at native resolution and 24bit color (time measured on 10 consecutive scan)	A2 300PPI		A2 400PPI		A0 300PPI		A0 400PPI	
	Scan Time	Total Time	Scan Time	Total Time	Scan Time	Total Time	Scan Time	Total Time
Scan+Save TIFF+ include book cradle/operator times	30s	<37s	40s	<47s	43s	<55s	57s	<70s

Best production times converted from seconds to page per hour :

DRSA0 at native resolution and 24bit color (time measured on 10 consecutive scan)	A2 300PPI (1xA2 or 2xA3)		A2 400PPI (1xA2 or 2xA3)		A0 300PPI (1xA0 or 2xA1)		A0 400PPI (1xA0 or 2xA1)	
	A3/hour	A2/hour	A3/hour	A2/hour	A1/hour	A0/hour	A1/hour	A0/hour
Scan+Save TIFF+ include book cradle/operator times	~200	~100	~150	~75	~120	~60	~100	~50