

## “Automation for Digitizing Bound Documents”

DL-mini the leading and Most Technologically Advanced, Reliable and Cost-Effective Robotic Book Scanners and associated Software. 4DigitalBooks offers the Most Reliable Page Turning Process that Accepts all Books including the most challenging ones.

DL-Mini Robotic Book Scanner is suitable for use in Scanning Recent and Old Bound Documents including Books, Magazines, Documents, Newspapers, and much more, with lifetime reliability suitable for 24 hours - 7 days operation.

- It can scan at 300, 400 and 600 DPI.
- The DL Mini Does Not Require a Full Time Operator, therefore enabling lowest project costs and highest staff productivity.
- The DL Mini handles different varieties of bound documents with Soft or Hard Covers and it offers the largest scanning surface of any automatic scanner.



### DL mini E-600

1x i2S Extra CopiBook  
600 Digital Camera  
156 Mega-Pixels Camera  
300, 400 & 600 dpi  
Resolution  
1300 to 1500 Pages  
Productivity per day

### DL mini 2E-600

2x i2S Eagle CopiBook  
400 Digital Camera  
71 Mega-Pixels Camera  
300 & 400 dpi Resolution  
Up to 1000 Pages  
Productivity per day

### DL mini E-400

1x i2S Eagle Digital  
Camera  
71 Mega-Pixels Camera  
300 & 400 dpi Resolution  
1300 to 1500 Pages  
Productivity per day

### DL mini C-400

2x Canon EOS 5DS R  
Digital Camera  
50 Mega-Pixels Camera  
300 & 400 dpi Resolution  
1300 to 1500 Pages  
Productivity per day

### Using the DL Mini operators can scan bound documents:

- Small: 2x A6 (101.6 mm x 152.4 mm)
- Large: 2 x A3 (304.8 mm x 431.8 mm)
- Accepts any Book with Thickness up to 10 cm
- Paper Weight from 20 g/m<sup>2</sup>, to 200 g/m<sup>2</sup>

### DL Mini Maintenance:

- DL-mini has No Consumables
- Duty Cycle is 24 Hours per Day, 7 Days per Week
- Recommended Maintenance Once Per Year
- Full Remote Access Capability for Technical Support and Diagnosis



## 4DigitalBook DL-Mini Unique Propositions

- Automatic and manual book scanner in ONE
- Automatic: no operator in front of the machine saves labor costs
- Manual: for scanning all exceptions in a book: lose sheets, inserts, foldouts, covers ...
- Up to A3 page format for books (2xA3)
- Up to A2 format scanning surface (for single pages)
- Full visibility deep in the binding captures all text close to the binding
- All types of books, magazines, bound newspapers, registers
- Respects full safety of the book, the binding and the pages
- Suitable for old and sensitive books
- High image quality up to 600 dpi optical
- Pages presented under the glass removes page curvature
- LED lights 6000 °K, no variation over time
- Most reliable page turning method - less operator interventions
- Intelligent automatic retry solves difficulties without operator
- 3 speed settings depending on fragility of document
- Max speed up to 2.000 pages per hour / 33 pages per minute
- Average productivity 10.000 pages per working shift (300, 400 dpi)
- One DL-mini is comparable to 3x Manual Scanners with 3x Operators

Auto and Manual in 1

Large Page Format A3

Old and Recent Books

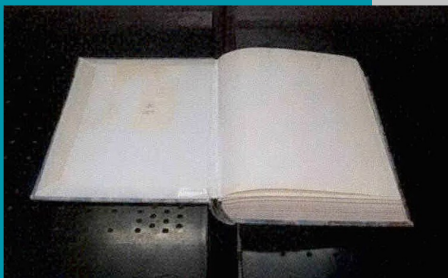
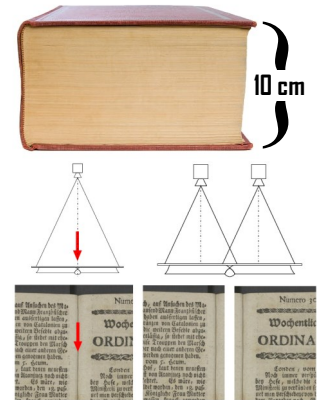
Constant Image Quality

Reliable Page Turning

High Speed 3x

## 4DigitalBook DL-Mini Automatic Mode = Highest Automation

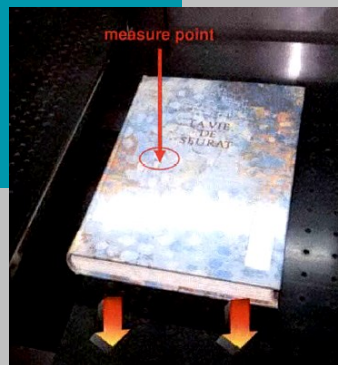
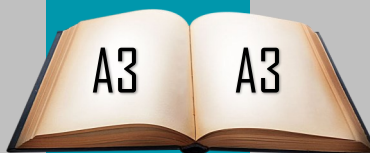
- Automatic Detection of Double Pages
- Automatic Retries of Page Pickup - insures only One Page Turn at a Time
- Automatic Book Cradle accepts any Book Thickness up to 10 cm
- Automatic Book Centering to the Scanner, Preserving Relaxed Back of the Book
- Automatic Measure of Book Thickness and Page Size (user has just to put the book inside)
- Automatic Follow-up of Page Border for Best Page Pickup
- Automatic Book Holding by Distributed Low Pressure on Plates
- Automatic Page Pickup by Distributed Low Pressure Arm
- Automatic Page Flattening under the Glass can be: with Selected Pressure or Without Pressure
- Automatic RGB Camera Calibration with 24 Patch Target, for Building ICC Profile
- Automatic Light Correction for Regular Intensity of Light over the whole Scanning Surface
- Automatic Arm with Variable Geometry has 2 Modes of Page Pickup



Minimum:  
A6 Page Size  
2 x A6 Open Book



Maximum:  
A3 Page Size  
2 x A3 Open Book



## Image Output Option



Left & Right on One Image



Left & Right on Two Images

## 4DigitalBook DL-Mini Automatic Safety = Highest Book Safety

- Checking for Proper Page Pickup to **Avoid** wrong manipulation of Page
- Checking for Proper Page Release to **Avoid Pulling** on the Page
- Checking for Page Collision to **Avoid folding or Crunching** a Page
- Checking for **End of Book** to **Stop** the Process
- Checking for Book Exceptions to **Stop the Process** before the Exception
- Checking for Proper **Loading of Book** before **Starting** an Automatic Process
- Checking for **Closed Operator Door** before **Starting** an Automatic Process



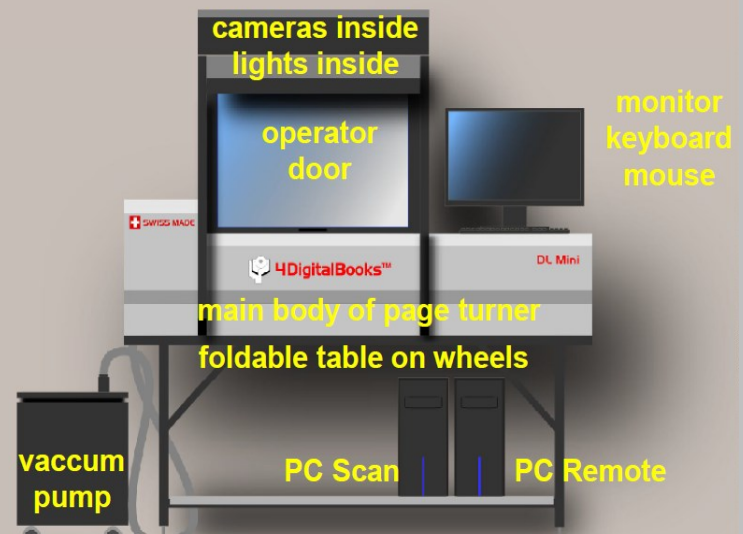
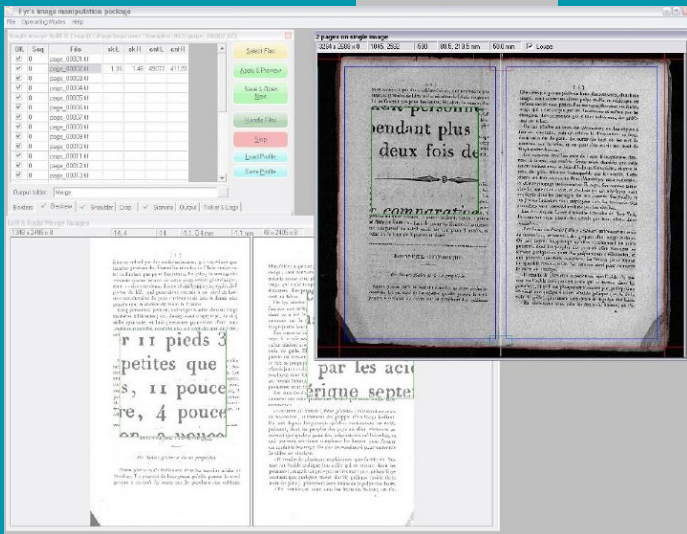
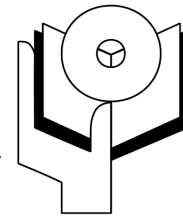
## 4DigitalBook DL-Mini Acceptable Books & Pages Specifications

- **Document Types:** books, magazines, bound newspapers, registers
- **Challenging Books:** smaller books that close spontaneously books bound with multiple paper thickness
- **Precious Books:** no forces pulling up pages from the binding / no friction on pages / no local forces holding the cover or the pages
- **Book Weight:** maximum 10 kg
- **Book Thickness:** maximum 100 mm
- **Book Covers:** soft and rigid
- **Page Size:** minimum A6 (105 x 148 mm) / maximum A3 (297 x 420 mm)
- **Scanning Surface:** maximum A2 (600 x 420 mm)
- **Paper Weight:** minimum 20 g/m<sup>2</sup>, max. 200 g/m<sup>2</sup>
- **Wavy Pages or Covers:** maximum amplitude 10 mm
- **Similar Books:** using presets to store book parameters for faster operation



## 4DigitalBook DL-Mini Delivery Includes "Complete Ready to Use"

- Scanner, Camera(s) and LED lights
- Page Turner with Vacuum Pump and Pipes
- PC-Scan Computer with i7 CPU, 8 GB RAM, Windows 10 PRO
- 24" Monitor, Keyboard, Mouse, Foot Switch
- 1 TB ultra fast Local Storage
- Page Improver Scanning Software
- PC-Remote Computer (for Canon cameras only)
- Robust Table on Wheels





## Page Improver Software

Page Improver is a bundled software with the DL-Mini for automatic image processing of scanned pages and a fundamental production tool for digitization of book and bound documents. It is the ideal complement to any book scanner, reducing substantially operator interventions on image processing and thus simplifying the scan process.

It is designed for fast processing of sequential images of scanned pages from books, magazines and newspaper's, and also from loose objects such as maps, documents and drawings. It produce a set of typical treatments that are necessary to prepare pages for OCR and online publishing.

Key features includes the ability to automatically flow evolution of pages as they shift and rotate under the camera during the scanning process. Detecting precise position of binding and the dimensions of the pages to split pages and crop the outer boarders is done with an extraordinary precision.

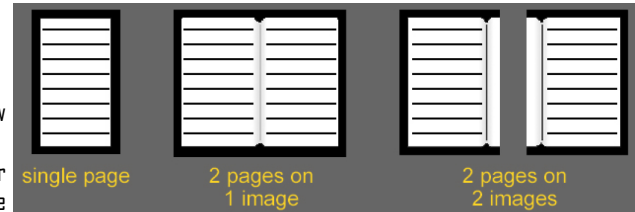
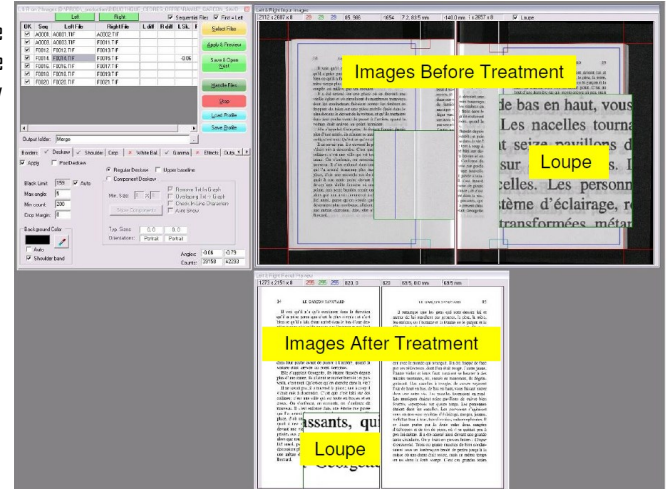
Image enhancements includes in the Page Improver:

- **Split:** Separates left and right pages in to two images depending on the position of the binding.
- **Crop:** Takes away black boarders and artifacts associated to visible binding.
- **Deskew:** Corrects page rotation to reach horizontal text lines alignments.
- **Clarify:** Clarifies page background by removing darkness of aged paper (if required) and corrects characters thickness along with contrast of photos.
- **Unbleed:** Removes print artifacts that appears in transparence from rear side of the pages.
- **Resize:** Resizes pixel matrix and corrects DPI factors which allows scanning at fixed resolution, but still providing lower or higher resolutions on required pages.
- **Oversample:** Improves aspect of text by smoothing edges and removing stairs artifact when converting image to B&W Bitonal.
- **Threshold:** Coverts images to B&W Bitonal for monographs or books that includes only text and line art images or gravures.
- **Join:** Assembles two images (left and right pages) into a dual image page.

Page Improver has a page navigation, image treatment setup widow, input preview and output preview pans with lens.

Page Improver can be used in "Attended Mode" allowing monitoring page by page outputs or "Unattended Mode" for batch processing that allows fine tuning image treatments on page level while batch mode runs the same setting on the entire set of pages.

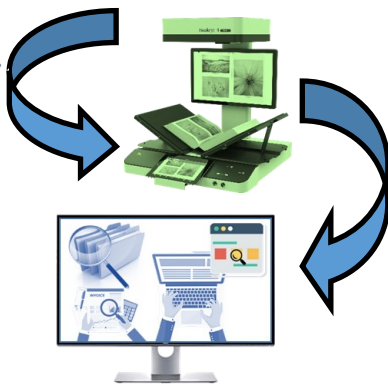
Presets profiles can be stored with all preconfigured setting for a book that represents a typical collection, and then can be used on the remaining collection.



## ABTec Solutions Value-Added Services



Converting the Content of your Library "any type of media" to Digital format.



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Performing Full OCR on all content regardless of the language.



SaaS Cloud Host it for you "if you do not have the required infrastructure" and manage it.

"ABTec Solutions is a Strategy-Led Digital Management Consulting Partner with One Ambition - To help you Digitally

Shine"



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No Matter the Size or Budget of your Project, We've Got YOU Covered