Dragon
The versatile V-shape scanning studio

Dragon (A1+)
Digitizing to perfection

Valuable, old books deserve special attention to put their beauty in its true light. Heightened and waved surfaces, special inks and colors and especially gold grounds and gildings require more than standard illumination.

The book2net Dragon meets the requirements for the most flexible and individual system design possible for the gentle scanning of special historical collections in A1 to A4 format with a small opening angle.

Freely selectable setting parameters allow individual scanning positions as well as standardized, productive workflows.

■ Highlights
- Dual CMOS area sensor technology
- Variable scan areas: A1 - A4
- Selectable options: M70 (400 ppi at A1 color)/M150 (600 ppi at A1 color)
- Special lenses optional
- Book cradle opening angle: 110° standard (optional 90°, 100°, 120°)
- V-shape glass plate: 110° standard (optional 90°, 100°, 120°)
- PLC control (glass plate/cameras/illumination unit)
- Flexible camera position
- LED light angle adjustable (homogeneous to sided light)
- Calibration settings can be preset and saved

■ LED illumination unit

Professional UV/IR and ozone free lighting system. With a light exposure of less than 2,500 lux and a service life of over 50,000 operating hours, the highest conservation and ecological requirements are met.

The Fresnel lenses specially developed for the book2net lighting units are a major technological advantage over classic lighting units. They ensure perfect light distribution and illumination.

Unwanted and annoying gradients and reflection effects that otherwise occur in very light or very dark surfaces and also with shiny materials are avoided.

Two operating modes:

Flash: The lamps light up slightly for the scan and then reduce their intensity again immediately after the scan. A heating up of the room, often annoying with permanent light, is avoided and at the same time the service life of the light units is extended considerably.

Continuous light: On request, it is possible to work with a constant light level, whereby the "brightening effect", if it is perceived as annoying, is omitted.

■ Book cradle
- 110° opening angle (standard)
  (optional 90°, 100°, 120°)
- Height adjustment up to 15 cm
  (optional up to 25 cm)
- Spine exemption up to 10 cm in width
  (optional 20 cm)
- Spine exemption up to 8 cm in depth
- Profile lifting column for precise height adjustment
- Load capacity up to 180 kg
- Variable coating on requirement
- Preservation Approved

■ Sustainability

With our book2net Dragon system you get an outstanding and flexible system at an economical overall price. As with all systems in the book2net series, in addition to costeffectiveness, the highest value is placed on taking ecological aspects into account during production and using sustainable, resourcesaving materials and technologies.

■ book2net HD cameras

The heart of book2net scanning technology are our M70 and M150 HD cameras, with which all book2net scanning systems are equipped according to requirements. They set new quality standards in the field of digitization and are characterized by first-class image quality, flexible handling and incredible scanning speed. Thanks to their electronic shutter, they are also durable and maintenance free.

The Dragon starts, where other scanning systems reach their limits

Perfect color and quality combined with maximum versatility

Positioning the cameras on slide rails enables format-filling images of the highest quality. Special lenses can be used as an option for special tasks.

Standardized format changes from A1 to A4 are possible in just a few simple steps. The angle adjustment of the camera position guarantees exact scanning results in the book fold and overlap area. Fine adjustment using the 3-axis camera support system ensures distortion-free, parallel and perpendicular alignment to the original. Our LED light concept (UV/IR free) ensures outstanding illumination.

On request, the opening angle of the book cradle can be adjusted and combined with a corresponding v-shaped glass plate.

■ Control center consisting of EIZO 27" monitor and controller

The focus is on ergonomics and ease of use. The possibility of placing a display in the user's field of view was a customer request that we were happy to implement. Ease of use is increased and both the scan preview and the scan results can be checked immediately in full screen mode.

Optionally, MICROBOX supplies this equipment together with a workstation based on the latest and most modern components of Microsoft® and Intel; a PC optimized for fast transfer rates to ensure scan and process speeds of less than 3.5 seconds.

■ Color management

Color accurate directly from the camera: the true color management is unique. Directly from the camera, it is possible to generate color accurate scans according to the color spaces sRGB, Adobe 1998 RGB, ECI RGB V1 and ECI RGB V2 and thus easily meet all requirements of digitization guidelines, specifications and standards.

The great advantage of True Color: Unlike the creation of an ICC profile, which is calculated by a 'calibration software' using a 24-bit color scan from an X-Rite Color Checker, True-Color takes advantage of the fact that all calculations and adjustments are carried out in the internal imaging area of the camera with a color and analysis depth of 48 bits. Colors are matched even more precisely and signal noise is minimized.

The result: METAMORFOZE, FADGI and ISO / TS 19264-1: 2017 compliant scan results.

True to scale & gentle
...tailored to your needs

Starting from the surface of the layout section up to the spine support we have taken particular care in the development of the book cradle. With a scanning area of 635 x 880 mm (> A1!), the book2net Dragon offers the possibility of digitizing a wide range of books.

The reduced opening angle of 110° will enable you to handle fragile books and precious manuscripts that cannot be fully opened for conservation reasons.

Given the fact that every book is unique and differs concerning its thickness, a precise height compensation of the book cradle is mandatory to ensure that your collection will be captured true to scale. The book2net Dragon allows adjustments to all elements of the book cradle to obtain a perfect scanning result.

The adjustable book cradle with a book spine exemption of up to 20 cm in width and 8 cm in depth relieves the spines and can be provided with different coatings as required.

The special coating of the support surfaces prevents any abrasion of sensitive bindings. The coating can be selected according to the desired requirements (artificial leather, felt or anodized metal in black).

■ V-shaped glass plate

The V-shaped glass plate of the book2net Dragon offers highest ease of use. A precise pressure control is always guaranteed thanks to the precise fine adjustment, even for manual operation.

- V-shaped glass plate (110° standard / optional 90°, 100°, 120°)
- Non-reflective glass (museum glass optional)
- Gentle on originals
- PLC-controlled processes
- Self-opening and self-closing
- Book size-dependant traverse paths
- Sensitive, fully electronic pressure control
- Integrated motion monitoring

■ Motor-driven 'Butterfly' system

- V-shaped, particularly gentle motorized book folding pressure in 'butterfly' style with four pressure fingers
- Individually adaptable to any book size
- Automatic opening and closing
- Synchronized with the scanning process
- Removable at any time
- If necessary also to use via foot switch

■ Precision-guided linear drive

Controller module 1

Controller module to optimize the traverse paths of the glass plate, including the automated adaption to the book size.

The glass plate lifts up as far as needed for a comfort-able turning of the pages. This provides the highest degree of efficiency and reduces the process times.

Controller module 2

- Program 1: fully automatic sequence of the entire process (automated pressure procedure and triggering of the scans according to programmed time intervals)
- Program 2: semi-automatic sequence (automatic pressure procedure and manual triggering of the scans)
- Program 3: manual sequence (all individual functions are being controlled manually)

Scanner specifications

Technical data

Sensor	Dual CMOS area sensor technology
Optics	Schneider-Kreuznach precision lenses
Shutter	No shutter mechanics
Illumination	Cold-light LED-technology with integrated Light- Control-System (LCS)
Resolution	M70 (400 ppi at A1 color) / M150 (600 ppi at A1 color)
Depth of field	8 cm at A1 / 12 cm at A2
Scanning time	0.3 seconds (A1 color at 400 ppi)
Processing time	3.5 seconds (scanning + imaging + storage)
Layout section	635 mm x 880 mm
Book opening angle	110° (optional 90°, 100°, 120°)
PC interface	USB 3.0
Software	EasyScan / bookScan professional scan software with extended functions for job management, imaging and postprocessing
Color depths	48 bit color; 24 bit color, 16 bit gray, 8 bit gray; 1 bit b/w
File formats	TIFF, JPEG, JPEG 2000, PNG, PDF, PDF-A, multipage PDF and multipage TIFF, RAW
Output	sRGB, Adobe 1998 RGB, eciRGB V1/V2, ProPhoto and according to ICC standard
Dimensions	2000 cm x 2100 cm x 2000 cm (w x d x h)
Weight	approx. 250 kg
Connection values	100 V - 240 V, 47 Hz - 63 Hz
Energy consumption	Standby 69-75 W, in operation 69-125 W
Safety standard	CE EMV

Maintenance possible via remote service.
Subject to technical modifications.

Dragon in use

- The National Library of Poland
- The Mohammed Bin Raschid Library

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