

DARKSCAN DUO SENSITOMETER & DENSITOMETER



Sensitometer & Scanning Densitometer – Combined in one device for quality assurance of X-Ray film processing according to International Standard IEC 61223-2-1 and German Standard DIN 6868-2

- Automatic or manual measurements of 21 grey steps
- Storage of up to 25 films with 21 measurements each
- Speed Index (SI) and Contrast Index (CI)
- Integrated operator's guidance
- Serial PC interface
- Software for PC documentation

DARKSCAN DUO SENSITOMETER & DENSITOMETER

Quality assurance of X-Ray film processing

General description

DARKSCAN DUO is a high quality Sensitometer combined with a high quality Densitometer in one housing only. This combination with its integrated operator's guidance is ideal for the daily routine of X-Ray film constancy tests according to International Standard IEC 61223-2-1 and German Standard DIN 6868-2. The combination of Sensitometer and Densitometer in one housing gives you some advantages like just one power supply (batteries or rechargeable batteries) only, less maintenance charges and less required space.

The Sensitometer is suitable for blue and green X-Ray films. The exposition for blue and green films is manually adjustable in 5 steps. The step wedge with 21 steps has an optical step wedge constant of 0.15. The exposition homogeneity of each step is almost constant. The maximum tolerance is $\pm 0.01 \log(H)$.

The Scanning Densitometer permits the measurement of single grey steps in the mode "manual" and up to 21 grey steps in the mode "automatic". In the mode "automatic" all optical densities of a 21 step grey scale are measured automatically when pulling the film at a constant speed beneath a measuring orifice. A bedstop helps the operator to control the moving of film. Optical densities are measured with a repeat accuracy ΔD of ± 0.01 . The memory can store grey values of 25 film strips each with 21 grey steps.

Standard parameter like minimum Density (D_{min}), Light Speed (LS), Light Contrast (LC), Contrast Index (CI), and Speed Index (SI) are automatically calculated and displayed on the integrated display.

Via a serial interface the device can be connected to a PC. The software "DARKSCAN FOR WINDOWS" offers all features for a clearly laid out and conforming to standards documentation.

DARKSCAN DUO REF is available for the acceptance test according to German Standard DIN V 6868-55. Its Reference Sensitometer is provided with a more precise 21-step wedge. All Reference Sensitometers are calibrated for minimum tolerance in the DKD (Deutscher Kalibrierdienst) certified calibration laboratory of Medset Medizintechnik GmbH.

General Data

Sensitometer

- Specification: According to IEC 61223-2-1
- Exposure color: Selectable blue or green
- Peak wavelength: Blue (460 ± 10) nm; Green (510 ± 10) nm
- Exposure H [lx.s]: 5 steps selectable for each exposure color
- Exposure homogeneity of each step: $\pm 0.01 \log(H)$
- Step wedge: 21 steps
- Step wedge constant: $0.15 \pm 5\%$
- Reference Sensitometer: According to DIN V 6868-55, provided with step wedge constant of $0.15 \pm 1\%$, Calibration: Every two years at Medset

Densitometer

- Specification: According to IEC 61223-2-1
- Spectral characteristic of light source: According to ANSI PH 2.19-1976 (DIN 4512-3)
- Diameter of aperture size: 3 mm
- Measuring range: $D=0-4.5$
- Measuring accuracy: $\pm 2.0\%$ for $D \leq 3$; $\pm (1.5-2)\%$ for $D > 3$
- Measuring modes: "automatic" and "manual"
- Memory capacity: Up to 25 film strips each with 21 grey steps
- Repeat accuracy: $\Delta D = \pm 0.01$
- Calculation and display of: D_{min} , LS, LC, CI, and SI

Other Data

- Dimensions: (240 x 165 x 60) mm
- Weight: 800 g (without batteries)
- Working temperature: $15^\circ\text{C} - 35^\circ\text{C}$
- Integrated operator's guidance
- Data transfer to PC via RS-232 interface
- Multi-lingual (available languages: German, English, French)

Parts to be delivered

- 1 DARKSCAN DUO or DARKSCAN DUO REF
- 4 Pins for film positioning
- 1 Calibrating strip with $D \approx 2.8$
- 4 Mignon Alkaline batteries (1.5 V)
- 1 Instruction for use, English
- 1 Power supply
- OPTIONAL: • Interface cable for PC
• Software DARKSCAN FOR WINDOWS

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