KODAK DIRECTVIEW DR 5100 SYSTEM

Digital radiography for chest and other upright examinations

HEALTH IMAGING

A BETTER VIEW OF LIFE.

KODAK DIRECTVIEW DR 5100 SYSTEM

DIGITAL RADIOGRAPHY FOR CHEST AND OTHER

The Kodak DirectView DR 5100 system brings the advantages of digital radiography to chest and other upright examinations. Kodak's direct digital technology and proprietary image processing provide DR images of outstanding quality. Designed for high-volume imaging, this versatile system can be used with ambulatory and non-ambulatory patients—from tall adults to small children.

FOUR MAJOR SYSTEM COMPONENTS

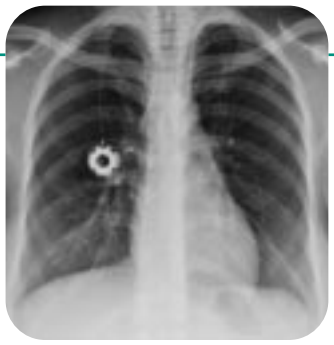
The DR 5100 system consists of four major components:

- Kodak DirectView DR system operator console
- Digital image capture device
- Chest and x-ray tube stands
- X-ray generator and controller

THE "DIRECT" DIFFERENCE IN IMAGE QUALITY

This system uses direct digital image capture technology, which employs an amorphous selenium single-piece detector array to convert x-rays directly into electronic signals. Since light is not used in the conversion, the signal profile and resolution are highly precise, yielding excellent image quality.

UPRIGHT EXAMINATIONS



110 kVp, 5.9 mAs

120 kVp, 14 mAs

- Single-piece x-ray detector is 14 x 17 inches (35 x 43 cm) for full-field imaging.
- Images are processed automatically with Kodak DirectView PTS software, which is based on a proprietary technique known as perceptual tone scaling. PTS image processing software analyzes the image data and creates a look-up table (LUT) uniquely derived to optimize grayscale for both hard- and soft-copy images. It also applies examination-specific nonlinear edge enhancement. This robust image processing method minimizes the need to reprocess images, allowing radiographers and radiologists to spend less time adjusting images.
- Optional Kodak DirectView EVP software takes image quality and diagnostic confidence to a new level. This technological breakthrough extends image latitude without loss of detail contrast.

PRODUCTIVITY AND CONVENIENCE GO HAND IN HAND

- This system delivers images quickly, providing an opportunity for faster diagnoses. A preview image for QC is available in 10 seconds or less. Images can be routed automatically to multiple destinations.
- Servo-linked x-ray tube and bucky minimize patient positioning and provide consistent, accurate source-to-detector alignment—automatically. Bucky is fully counterbalanced for ease of vertical movement.
- Single integrated console is used to control both x-ray generator and detector, and to access patient data from a HIS/RIS. The console includes Exam Tutor software for display of exam views and tracking their completion.
- The design of the user interface is consistent with that of the Kodak DirectView CR systems. The touch-screen-based user interface greatly simplifies crosstraining and use, reduces keyboard dependence, and saves time.
- Automatic exposure control automatically terminates exposure, simplifying operations and providing more consistent images.
- Standard DICOM 3.0 compliance for print and storage (option available for work list) facilitates image routing and reduces costs.

PRACTICAL VERSATILITY EXPANDS IMAGING OPTIONS

- A 57-inch (145-cm) range of vertical motion accommodates a wide range of patients from tall adults to small children, standing or seated.
- The detector rotates for auto-collimated portrait or landscape orientation at the push of a button. Rotation and movement are designed for silent and smooth operation.

SPACE-SAVING DESIGN AIDS SITING AND INSTALLATION

- Single integrated console eliminates the need (and space requirements) for a second console.
- The compact generator stands just over four feet high and is paired with a timing and distribution unit of the same dimensions.
- Ambient room air cooling requires no space, a benefit over DR systems which use a water cooling method.

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PRODUCT SPECIFICATIONS

DIGITAL IMAGE CAPTURE DEVICE

- Full-field direct detector array
  - Amorphous selenium x-ray detector
  - Single-piece amorphous silicon TFT array
- 14 x 17-inch (35 x 43-cm) active image
- 2560 x 3072 detector element matrix
- 139-µm detector element pitch
- 3.6 cy/mm detector Nyquist frequency
- MTF
  - 98% at 1.0 cy/mm
  - 90% at 2.0 cy/mm
  - 71% at 3.0 cy/mm
- DQE
  - Greater than 0.44 at 1.0 cy/mm
  - Greater than 0.37 at 2.0 cy/mm
  - Greater than 0.26 at 3.0 cy/mm
- Sharpness of 100-speed extremity film-screen system
- Dynamic range—14-bit data captured (linearly)

OPERATOR CONSOLE

- Controls detector array and x-ray generator
- Patient demographics can be entered via a touch screen, keyboard, or optional HIS/RIS connectivity
- Programmable x-ray technique for each exam
- Kodak DirectView PTS (perceptual tone scaling) software for optimizing x-ray image display via exam-specific algorithms
- Anatomically Programmed Radiography (APR)—operator programmable
- Automatic Exposure Control (AEC)—operator adjustable
- Exam Tutor software for tracking exam completion
- Preview image within 10 seconds after exposure (cycle time: 38 seconds or less)
- Automatic Kodak black surround/ masking software
- DICOM 3.0 print and storage service class network output
  - Multiple destination routing
- 18-inch (46-cm) touch-screen, flat-screen monitor

CHEST STAND

- Servo-linked to x-ray tube
- Fully counterbalanced
- Centered radiation field
- 57-inch (145-cm) range of vertical motion
  - 18 to 75 inches (46 to 191 cm) from floor to center of detector
- Portrait and landscape orientation of detector array
  - Auto-collimation for both orientations
- One-touch vertical lock release for bucky
- Grid
  - 10:1; 103 lines per inch (40 lines per cm)
  - Interspace material: aluminum
  - Focal distance of either 72 inches (183 cm) or 2 meters (79 inches) depending on SID selection (see SID distance info in "X-Ray Tube and Stand" section)
- Overhead lateral arm and handhold supports included

X-RAY TUBE AND STAND

- Select from fixed 72-inch (183-cm) or 2-meter (79-inch) source-to-image detector (SID) distance
- 400,000 heat unit x-ray tube
  - 0.6/1.2-mm unit focal spots
  - 12-degree target angle
  - 9000-rpm operation, rapid acceleration starter

X-RAY GENERATOR

- 80-kW high-frequency output
  - 1000 mA at 80 kVp
  - 800 mA at 100 kVp
  - 630 mA at 125 kVp
  - 500 mA at 150 kVp
- 380 to 480 VAC, 50/60 Hz
- ±10% line regulation
- 100 kVA

OPTIONS

- Kodak DirectView EVP software
- Kodak DICOM work list management service class user software
- HIS/RIS connectivity
- Non-Kodak DICOM connections
- Dose area product meter
  - Diamentor chamber integrated into operator console for patient exposure readout

REGULATORY

- FDA, CE, MDD, UL, CUL, CSA, and CCC
- Complies with 21 CFR Chapter I, Subchapter J
- Class 1 Laser Product in accordance with IEC 60825-1

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