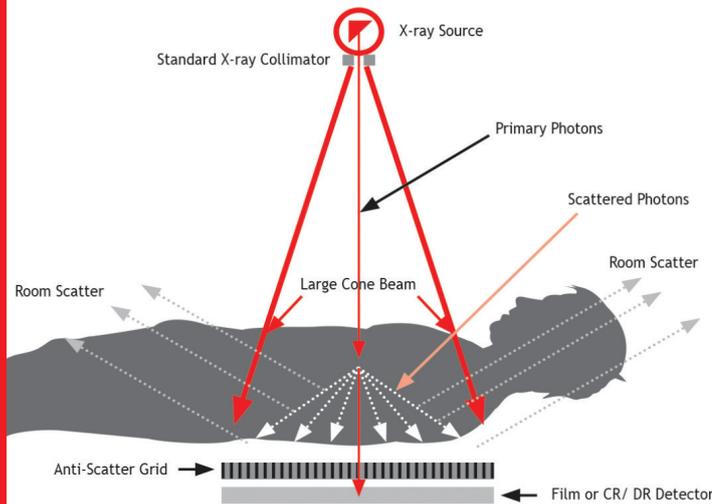


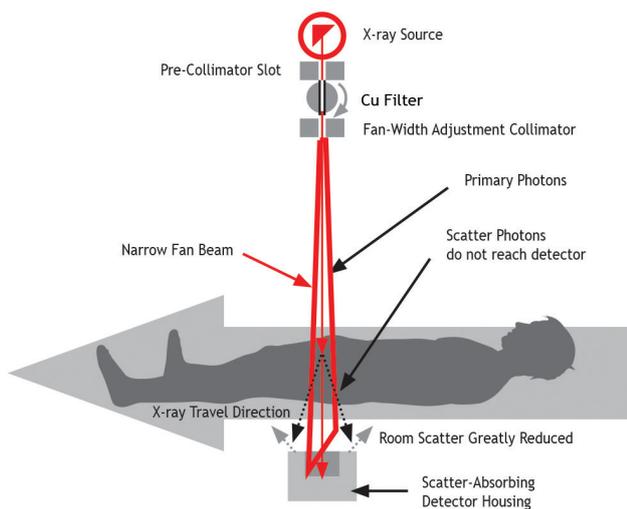
Lodox X-ray Technology: An Explanation¹

Conventional, Computed and Digital X-ray Systems



- Conventional, CR and flat panel detector-based DR systems use a wide cone-beam of X-rays which spread over the desired field-of-view in all directions (i.e. length and width).
- This wide beam results in a large number of scattered X-ray photons, which reduce the number of primary X-rays that reach the detector, and degrade the image quality by causing noise on the image.
- Therefore most systems employ a post-patient anti-scatter grid to reduce the number of scattered X-rays which would otherwise reach the detector or film.
- The result is an increase in overall patient radiation exposure in order to counteract the negative effects of scattered radiation from the cone-beam, and the absorption of radiation by the grid.
- This higher radiation exposure and the wide cone of X-rays also causes relatively high amounts of scattered radiation throughout the room.
- The geometric design of conventional, CR and DR systems limits the maximum possible field-of-view to approximately 400mm/16" square.

The Lodox Linear Slot Scanning Radiography System



- Lodox LSSR scanning system is a unique technology employing our proprietary X-ray beam controlling mechanism, and linear scanning technique.
- The Lodox X-ray beam is highly collimated by a narrow slit and a fan-width adjustment collimator into a laser-like fan beam of primary X-ray photons which spreads out in only one direction (i.e. width).
- The narrow beam and high quality primary photons reduce the number of X-rays scattered by the body, so no post-patient anti-scatter grid is required.
- In addition, the detector is fitted into a scatter-absorbing housing, which is designed to eliminate almost all remaining scatter before detection, increasing the signal to noise ratio in the detected image.
- The inherently higher image quality means that a significantly lower patient exposure is required to achieve diagnostic-quality images.
- The lower exposure and collimated, narrow fan-beam also significantly reduce scattered radiation throughout the room.
- The X-ray tube, X-ray fan beam, collimating slit and detector all move together along a linear scanning path, collecting X-ray information to produce X-ray images of 100mm/4" square up to 1800mm/70" x 680mm/27".

Full-body, high-speed digital radiology with low radiation emission and scatter

Xmplar-dr Product Specifications

Image Quality	>16000 grey levels; 60µm fundamental pixel size; up to 5 lp/mm
Maximum Image Size	1800mm x 680mm (70" x 26")
Throughput	35mm/s - 140mm/s; 12.98s for a full scan at normal speed
Duration of Examination	<15 seconds from 'end of scan' until image available on screen 28 seconds between successive scans (provided X-ray tube heat <20%)
Positioning	C-arm allows imaging angles from 0° - 90° i.e. AP (or PA) to lateral Table can be tilted from 0 to 340 mm, allowing Trendelenburg angles to 0° - 10°
Output Typical Entrance Dose	Average instantaneous X-ray exposure time of 22ms Chest AP ±0.115 mGy Maximum scattered radiation measured 1 metre from the focal spot in any direction is 0.2 mGy per hour @ 145 kV 250 mA (worst case technique factors)
Detector	Proprietary ultra-low noise TDI CCD detector using Gadox light conversion
Trolley/Gurney	200kg/440lbs weight capacity (with optional extra of 300kgs/660lbs bariatric trolley) Automatic shift to lateral, AP and oblique angles
Machine Dimensions	1500kg/3306lbs; LxWxH: 2 810mm x 1 586mm x 2 271mm (110.6" x 89.6" x 88.6")
Digital Viewing Station	High Luminance, High Contrast, 23" Monitor; 1920 x 1 080 pixels Imaging software allowing image recall, database access, zoom, pan, rotate, lucid™ image enhancement, anatomical measurement capability and window/level control.
CXR Chair	150kg weight capacity (only Xmplar-dr), Image area 436 mm x 670 mm
Ambient Environment	10° C - 25° C, 40% - 75% relative humidity, 700hPa - 1060hPa atmospheric pressure, dust free non-corrosive atmosphere
Compliance	US FDA Pre-Market Clearance (510k) No. K013999 Accession # 0310920 EU CE-Mark ISO 13485-2003 ISO 9001:2000 For more information on other accreditations, please visit www.lodox.com



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These specifications are current and subject to change. Lodox Systems reserves the right to revise these specifications to ensure a well engineered product.

