CAD PRO® Advantage

X-Ray Film Digitizer for Mammography Priors, Digitized Film CAD

The VIDAR Advantage

The **CAD PRO®** *Advantage* film digitizer was specifically designed and engineered for use in mammography CAD (computer-aided diagnosis) systems. CAD systems incorporate advanced pattern recognition and image analysis, requiring a film digitizer that meets the highest standards of image quality and reliability. These advanced systems enable radiologists to improve their ability to detect early stage cancers in an efficient manner.

By meeting these rigorous requirements, CAD PRO *Advantage* is an ideal fit for mammography facilities transitioning to digital technology. It provides the ability to quickly digitize film-based prior studies and, when coupled with the appropriate software, uses the DICOM MG standard to identify the specific mammography view contained on each film. Prior studies are correctly displayed on the mammography reporting workstation alongside the newly acquired digital mammography study.

In order to read a new mammography study, Radiologists and mammographers may require up to two years of prior studies. The ongoing transition to digital technology in mammography has forced radiologists to view both film-based priors and new digital images for the same returning patient read, until now.

Responding to Marketplace Needs

VIDAR created an innovative design for the CAD PRO *Advantage* in the important areas of image quality, film feeding and transport, and system speed. We worked closely with major CAD systems providers, mammography-certified radiologists and technologists, engineering consultants and quality assurance experts to ensure that the CAD PRO meets the exacting needs of the mammography marketplace.

The CAD PRO's advanced technology has enabled CAD systems providers to improve radiologists' confidence in accurately detecting breast abnormalities. Likewise, the CAD PRO *Advantage* is able to bridge the gap in the transition to digital mammography – allowing for the digitization of film-based prior studies so that radiologists can view these priors, with their specific hanging protocols, on the mammography reading workstation. Radiologists and mammographers have limited time for reading studies, and the need to move from digital workstation to light box and back is cumbersome and time-consuming, and creates a less-than-ideal clinical and diagnostic environment.

Technology Advantage and Innovation

The CAD PRO *Advantage* offers unmatched spatial and contrast resolution, allowing radiologists to be confident that the image data received from the film digitizer is an exact representation of the original film. VIDAR's Automatic Digitizer Calibration prompts the film digitizer to calibrate automatically before every film digitized and user intervention is not needed to maintain image quality. The CAD PRO includes a closed-loop quality assurance system to ensure the digitizer sub-system meets all FDA/MQSA requirements. This combination of imaging technologies results in no variation in image quality from one digitized film to another, and ensures excellent grayscale reproduction for every image.

Meeting Customer Requirements

VIDAR, as part of its commitment to technology leadership, worked relentlessly to develop an innovative film feeder design for use with software dedicated to high-volume applications. The CAD PRO *Advantage* offers a modular 50-sheet feeder, whose advanced design eliminates film jams, double feeds, and film pick-up problems that occur with other digitizers. The continuously loading SmartFeeder® is the anchor of the film digitizer's reliability. Most importantly, the CAD PRO's feeder is designed for continuous case loading. This allows the user to add cases without interrupting the digitizing process.

The CAD PRO *Advantage* can digitize a four-film study in less than 120 seconds, which is 2X the speed of other high-resolution digitizers, further increasing productivity. Reliability is ensured due to the recent addition of an LED light source which improves repeatability of the device as well as longevity, and lowers the total cost of ownership. The CAD PRO's modular design allows easy access for maintenance cleaning and light source field replacement, minimizing downtime.

VIDAR's clinically proven technology and unique product designs continue to set the standard for excellence in a number of market segments including PACS, teleradiology, telemedicine, mammography, and oncology. VIDAR's film digitizers are the choice of all major medical image solution providers, and more than 100 systems solution providers worldwide.

VIDAR systems corporation
The Image of Reliability

CADPRO® Advantage

Film Size	Nominal Resolution	Pixels	Spot Size (µm)	DPI	Line pairs per mm	Digitizing Speed
24cm x 18cm	5K x 4K	5376 x 4032	44	570	11	20 Seconds
24cm x 30cm	5K x 7K	5376 x 6720	44	570	11	33 Seconds

Clinical Optical Density Range .05 to 4.2

Bit Depth 32-bit mapped to 16-bit (65,536) or 12-bit (4,096) Grayscale Output

MTBF ≥50,000 hours

Film Sizes 18cm x 24cm and 24cm x 30cm
Thickness: 0.006" to 0.008"

Auto Film Feeder Continuous Loading SmartFeeder® — Modular with 50-film capacity (mixed sized, no presorting necessary)

Translation Table Linear OD

Geometric Accuracy Better than 1% or 2 pixels, whichever is greater, in both axes

Scan Rate 200 lines/second (120 films per hour, 18cm x 24cm)

Hardware Interface USB 2.0

Software Windows® scanning modules and Linux software development tools available

Power Requirements
Voltage: 85~264 vac
Frequency: 47~63 Hz
Power: ≤100 watts

Operating Environment 50º to 95º F (10º to 35º C), 20% to 85% relative humidity non-condensing

Storage Environment 0º to 140º F (-18º to 60º C), 20% to 85% relative humidity non-condensing

Illuminator LED Illuminator, > 500,000 scans

Detector Solid-state, next-generation High Definition CCD (HD-CCD®)

Dimensions
With Feeder & Exit Tray: 19"W x 21.25"D x 25.5"H (483mm x 540mm x 648mm)
Without Feeder & Exit Tray: 19"W x 14.25D x 12.75H (483mm x 362mm x 324mm)
Shipping: 24"W x 29"L x 24"H (610mm x 737mm x 610mm)

Weight 45 lbs. (21 kg); shipping weight: 60 lbs (27 kg)

Regulatory Compliance CE-MDD 93/42/EEC Class 1; CAN/CSA C22.2 No 601.1-M90; Health Canada Class II; Japan-MHW; SFDA; KFDA; FCC Class A; EN 60601-2; IEC 60601-1; IEC 60950; ISO 9001:2000; ISO 13485:2003

Specifications are subject to change without notice

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