

PIXELRAY® DATA SHEET

What Is CR?

- CR stands for Computed Radiography.
- It is a system by which reusable phosphor plates are exposed to x-rays and run through a reader to create digital x-ray images.
- CR is fast replacing film in radiographic imaging.
- The reusable phosphor plates are erased using visible light.

Screens

- The most commonly used screen is 14" by 17".
- A screen's maximum width is 14".
- A common long screen is 14" by 51".
- Custom screens can be made significantly longer. 450" is the theoretical max and L3 has scanned screens that are over 100".
- Minimum bend radius is about 3".
- Screens can be reused up to 10,000 times if they are properly cared for.

Common Screen Sizes

- o 8x10 screen
- o 10x12 screen
- o 14x17 screen
- o 14x36 screen
- o 14x51 screen

Other sizes are available.

Spatial Resolution

- Different readers allow the user to select different pixel spatial resolutions.
- A commonly used resolution is 100 μ per pixel, or about 254 pixels per inch, or 5 lp/mm.
- The maximum commonly used spatial resolution is 50 μ per pixel. However, with special readers and screens, resolutions of 25 μ or better are possible.
- The spot size of the scanning laser is different for different readers. Some examples:
 - o Kodak ACR 2000 is ~80 μ .
 - o ScanX Discover HC is ~50 μ .
 - o Carestream HPX1 is ~45 μ .
 - o ScanX Discover HR is ~14 μ .

Intensity Resolution

- Each pixel has between 12 and 16 bits per pixel (BPP) of grayscale information.
 - o Kodak ACR 2000 is 11.5 BPP.
 - o ScanX Discover HC and HR has variable spatial resolutions.
 - 16 BPP @ 67 μ
 - 15.6 BPP @ 50 μ
 - 14.6 BPP @ 25 μ
 - 13.6 BPP @ 13 μ
 - o Carestream HPX1 is 12 BPP (resampled down from 16 BPP).

Digital Image Size

- A 14" by 17" screen scanned at 100 μ per pixel creates a file of 30 MB.
- A 14" by 17" screen scanned at 50 μ per pixel creates a file of 120 MB.
- A 14" by 51" screen scanned at 50 μ per pixel creates a file of 360 MB.

Scan Speed

- The scan speed is dependent on the size of the screen and the spatial resolution that was chosen by the user.
- Example: A 14" by 17" screen scanned at 100 μ with a ScanX unit will take less than a minute to scan and appear on the screen.

CR Hardware

- **ScanX Discover HC System**
Includes Computer, Reader, In-line Eraser, PixelRay Software, Optional Long Screen Handling Trays
- **ScanX Discover HR System**
Includes Computer, Reader, In-line Eraser, PixelRay Software, Optional Long Screen Handling Trays
- **HPX-1 System**
Includes Computer, Reader, In-line Eraser, Kodak Industrex Software
- **ACR System for screens up to 17" long (ACR 2000i)**
Includes Computer, Reader with integral eraser, PixelRay Software
- **ACR System for screens up to 100" long (ACR 2000)**
Includes Computer, Reader, Separate Eraser, Pixel-Ray Software, Optional Long Screen Handling Trays

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What Is PixelRay?

PixelRay is an advanced digital x-ray imaging system that captures x-ray images with grayscales up to 16 bits per pixel (BPP), depending on the type of x-ray digitizing reader. It has a versatile interface that allows image modification, enhancement, and measurement to solve a variety of image analysis problems. Its many built-in video tutorials and wizards help walk you through the software. Major features include:

- Windows 7 ready
- Over a dozen video tutorials
- One-touch magnifier
- User-customizable filters
- ScanX PMT wizard
- Fast image rotation
- Automatic pan window
- Flexible histogram interface
- ScanX scanning preview window
- Dozens of preprogrammed Lookup Tables (LUTs)

PC Specifications

The specifications of the controlling PC are flexible as they will change with everchanging computer models and depend on the CR reader that is to be controlled.

COMPONENT	MINIMUM	RECOMMENDED
Operating System (OS)	Win XP	Windows 7
CPU Speed	1.8 GHz	3 GHz
Hard Disk Size	40 GB	500 GB
RAM	512 MB	4 GB
Monitor Size (Resolution)	15" (1024 x 768)	20" (1280 x 1024)
Disk Burner	CD	DVD
PCI Slots	1 (for ACR interface card)	3 (for expansion, net cards, etc.)
USB ports	1 (for ScanX or HPX1)	2 (for external devices)

Reader temperature limits

- Operating: 15 to 35 C
- Storage: -18 to 65 C

Warranty

- Computer: 1 year from manufacturer
- Reader: 1 year
- Screens: 90 days

For the ScanX Discover HR & HC systems

Example recommended computer requirements are:

Laptop computer	Toshiba P505
Operating system	Windows 7
Processor speed	2.1 GHz
RAM	4 GB
Hard disk space	300 GB
Three USB2	One for scanner, one for pointing device, etc.
DVD drive	For loading programs and drivers

