Carestream HPX1-*Plus*

For Non-Destructive Testing

THE BENCHMARK IN COMPUTED RADIOGRAPHY.

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Introducing the HPX-1 *Plus* Digital CR System

The HPX family of products has earned many of the NDT industry's most prestigious awards. It was no surprise when we first introduced the original HPX-1 that it would change the CR landscape and raise the bar in the industry. The new HPX-1 *Plus* CR system builds on this solid foundation, and raises the bar even higher, to make NDT radiography easier, more productive, more accurate, and more affordable.

The HPX-1 *Plus* offers many improvements. Improved optics for better imaging, up to 30% faster throughput on long saturated plates (very high exposure), an improved imaging plate transport system to protect imaging plates, higher mechanical reliability and a more user-friendly DICONDE compliant software for the best experience in digital imaging.

The HPX-1 *Plus* is a full width CR reader capable of running extra long imaging plates. The system has a wide dynamic range with high sensitivity, making it ideal for almost any type of imaging application. Whether you're using a gamma or X-ray source, the HPX-1 *Plus*' high sensitivity can help reduce shot time. It shows exceptional performance in weld applications, delivering weld-quality images consistently and dependably.

The complete system ships pre-configured and is ready to operate with a few simple connections. The powerful, easy-to-learn software and intuitive interface minimizes training time; your operators will be up and running fast.

Carestream's award-winning HPX family of digital products have improved field reliability and enhanced the capabilities in the NDT marketplace. Long plate and multi-plate scanning combined with SmartErase® boosts output productivity so you can get more done in a day than ever before. Our exclusive positive pressure filtered air system keeps dust and dirt out for cleaner images in both the laboratory and in remote operations. With a shock and vibration resistant design your team can image in the harshest of environments bringing a new level of confidence to digital imaging in the field.

HPX-1 PLUS EASIER, BETTER, FASTER, MORE RELIABLE DIGITAL IMAGING.

HPX-1 *Plus* The power of Digital Imaging at your Fingertips

+ Ultra High Image Quality

Spatial Resolution: 25µ, 35µ, 50µ and 100µ operation
Pixel Pitch: 50 Microns or better (12 lp/mm)
Laser Spot Size: 20µ (measured at 85% of peak)

+ Positive Pressure Fans for Dirty NDT Environments

Let's face it, NDT environments can be dirty. Drum and flat bed style scanners collect contaminants on the surface where they can be transported into the system or into the optical path and be be imaged. HPX-1 Plus is the only CR system on the market that has positive airflow to keep contaminants outside the unit.

+ Dual Air Filters (including HEPA)

Clean air is critical to keeping the equipment cool and the imaging areas clean. The HPX-1 *Plus* is the only system outfitted with dual filters to make sure the environment is kept outside.

+ Image Plate Flexibility

HPX systems are one of the most flexible CR systems on the market capable of handling raw imaging plates, multiple plates at one time, custom cut sizes (with Plate Carrier), hard cassettes and long Plates (up to 60") without special feed guides.

+ Plate Transport System

The HPX-1 Plus plate transport system has always minimized contact with the imaging plate. Unlike magnetic plate drive systems that require uniquely designed imaging plates (which can be costly) or drum systems that advise using plate protective covers to avoid plate damage, the HPX-1 Plus run plates phosphor side up with a proven transport system that won't damage your imaging plates.

+ Improved Optics

HPX-1 Plus' improved PMT's improve its sensitivity and reduce unwanted artifacts. CR systems often also make it possible to lower your exposure while still achieving the required sensitivity. Our adjustable PMT and Laser Power allow you fine tune every image for optimum capture every time.

+ Powerful Software

HPX-1 *Plus* is operated using our powerful INDUSTREX software that includes a host of features for measurement, custom designed EDGE Image Filters, full DICONDE compliance, and many other tools designed specifically for NDT.

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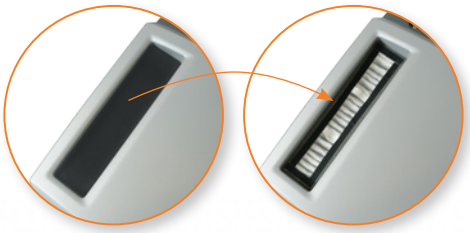
HPX-1 *Plus* At-a-Glance

1. **Sturdy Knights Armor** colored molded outer shell for optimum protection.

2. **Dual Layered HEPA Air Filters** feed clean air to the system.



3. **Positive Airflow** – Three large fans blow positive air through the unit to keep it cool and to keep contaminants out.

4. **Halogen Erase Lights** – Extra bright erase will erase even saturated plates without leaving any ghost images.

5. **SmartErase** – System will check plates after erasing and automatically re-erase if needed.

6. **Vibration Absorbing Feet** – Minimize vibration artifacts even in active workflow areas.

Diagnostic Tool

7 **System Status** – Diagnostic Tool (optional accessory) allows user to check system status per ASTM E2445.

8 **Adjustable PMT & Laser Power** – Simple to change PMT and Laser settings allow optimum tuning for the best image possible.

9 **Ultra High Resolution** imaging.

10 **Certified & Compliant** – ASTM, EN, DICONDE and ISO 9001 compliant.

11 **Plate Transport** – Low Contact design minimizes contact with imaging plates.

12 **Imaging Plate Flexibility** – Accepts bare plates, extra long and custom cut plates. Also accepts rigid cassettes for optimal plate protection.

13 **Customer Installable Design** – Only two simple user connections to connect and run the system.

Swap Out Service Repair

Touted as being the best service model in the industry, every HPX-1 Plus comes with one full year of Swap Out Service Repair. If your unit goes down during warranty we will ship you a loaner so you can keep working while we work on yours.

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HPX-1 *Plus*

THE HPX-1 *PLUS* WILL CHANGE THE WAY YOU WORK.

Easy to Install

The HPX-1 Plus site install & easy workflow. Customer installable and simple to operate. Only two connections to make and you can start working.

Rapid Job Setup

Flexible to operate in a windows or DICONDE mode, Our INDUSTREX software can be set to operate in a Windows based format or in full DICONDE mode. Use whichever best fits your workflow and customer requirements.

Shot Time Improvement

Shoot faster, radiate less and keep your source longer. In certain circumstances, it's possible for HPX-1 *Plus* to reduce exposure time.

Process, Analyze & Approve

High resolution. High throughput. HPX-1 *Plus* can process imaging plates up to 60-inches and has a new halogen erase system for faster throughput. Preset the system so images appear with the desired filters already applied and approve in one click.

Customized Reporting

The HPX- 1 *Plus* can make customized multi-line or single shot-style reports in seconds. Create a work report by simply selecting the welds to be included and click "create report". Make a custom-made multi-line or single weld-style report in seconds with pre-selected data.

Performance Accessories

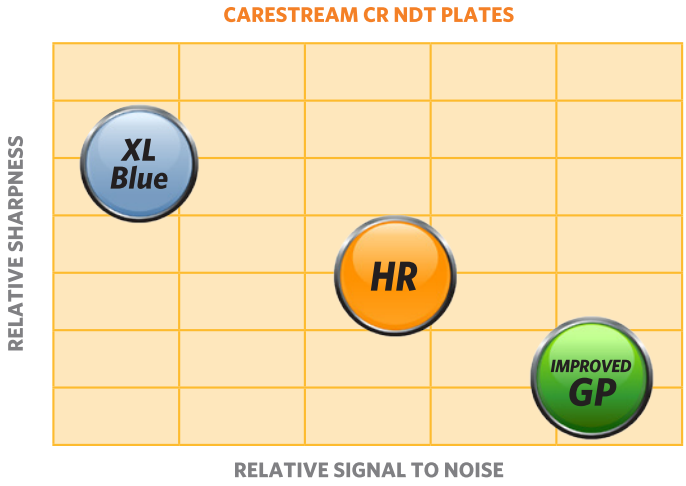
- Use GP, HR and XL Blue imaging plates
- Small plate carrier
- Rapid diagnostic tool to check system status
- Job setup module (DICONDE)
- DR panel interface
- Archiving interface

PRODUCTIVITY +

Flex GP, Flex HR and Flex XL Blue Digital Imaging Plates

Carestream's innovative research and development teams are continually working to make sure you have the products you need for any non-destructive testing (NDT) application.

Our INDUSTREX Digital Imaging Plates are a prime example. They offer the flexibility of film without the need for wet processing. This lets you capture and read images quickly and easily, both in the field and in the lab. You can optimize the images if needed and store or share them digitally. And, they work with the Carestream INDUSTREX HPX-1 *Plus* Digital System.



General Purpose

The general purpose imaging plate is sufficient for shots where fine detail is not required. It requires the lowest dose, which helps productivity. The plate is best utilized for high energy X-ray or Cobalt applications. Typical industries are security, military, and castings. The plate has the lowest price.

- **Lowest resolution**
- **Good for profile shots**
- **Use for very high energy X-ray, or Cobalt**
- **Lowest price**

High Resolution

The high resolution imaging plate is best for applications where the nest image quality is required. The plate produces weld quality images, and has the best detectability (contrast sensitivity) in the industry. The plate can be used for general X-ray, and Iridium or Selenium applications. Typical industries are oil and gas and aerospace. The price is higher than GP, but is lower than XL Blue.

- **Weld quality image quality**
- **Best detectability (contrast sensitivity)**
- **Best signal-to-noise ratio**
- **Use for general X-ray, iridium and Selenium**
- **Priced higher than GP, lower than XL Blue**

XL Blue

The XL Blue imaging plate has the highest resolution, and is typically used for low energy X-ray applications and system classification. The plate is used when fine detail is required and requires the most dose. Typical industries are electronics. The plate has the highest price.

- **Highest resolution**
- **Use for low energy X-ray**
- **Not recommended gamma due to higher noise level**
- **Highest price**

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For Non-Destructive Testing

HPX-1 *Plus* PRODUCT SPECIFICATIONS

System Type	Computed Radiography (CR)		
Scanning Capture	16 bit linear		
Throughput: Single Plate	66 plates /hour for qty (1) - 14 x 17in @ 100µm 33 plates /hour for qty (1) - 14 x 17in @ 50µm		
Throughput: Multi-Plate Scan	274 plates /hour for qty (3) - 4.5 x 10in @ 100µm 151 plates /hour for qty (3) - 4.5 x 10in @ 50µm		
Imaging Media	Accepts both rigid cassettes and flexible plates		
Rigid Cassette Sizes	10 x 8 inch	10 x 12 inch	14 x 17 inch
Flexible Plate Sizes	10 x 8 inch	4.5 x 17 inch	10cm x 24cm
	3.5 x 10 inch	7 x 17 inch	30cm x 40cm
	4.5 x 10 inch	14 x 17 inch	10cm x 40cm
	10 x 12 inch	14 x 36 inch	70mm x 10 inch
	3.5 x 17 inch	14 x 51 inch	70mm x 17 inch
		14 x 60 inch	
Multi Plate Scanning	Can scan multiple plates simultaneously		
Laser Spot Size	50µm measured at full width, half max. 30µm measured at 85% of peak		
Laser Intensity	User selectable laser intensity		
Pixel Pitch	25µm, 35µm, 50µm, 100µm Laser spot is filtered not adjusted by varying power for a consistent spot		
Spacial Resolution	50 microns or better (10 to 12lp/mm)		
Operating Modes	Scan only | Scan and Erase | Erase only | Scan and hold for preview before deciding to erase		
Erase	Smart Erase Halogen System: applies only the erase needed based on dose		
Erase Speed	Automatically varies from 0.2 to 2.2 seconds per inch travel		
Feed Mechanism	Internal horizontal roller pairs. Protected from dirt ingress to prolong plate life.		
Connectivity	Ethernet connection standard (1Gbps)		
Network	DICOM and DICONDE compliant		
Air Flow	Filtered, positive air pressure in scanner keeps damaging particulates out		
Mirror Surfaces	Face downwards eliminating gravity driven particulates		
Maintenance	User serviceable wear parts		
Calibration	Fully factory calibrated and ready to operate		
Software	INDUSTREX (installed & tested prior to delivery, Windows 7 Ultimate (64 bit)		
Filter	EDGE uses a unique display filter without modifying the original source file. Image is adjustable for sharpening, edge enhancement and gray scale equalization		
Monitor	3MP (color) or 5MP (monochrome), high contrast, stable calibration		
Chassis	Rigid aluminum construction with vibration damping feet		
Power	100-240 VAC (Automatic Level Sensing)		
Warranty	One Year Parts and Labor		
Installation	Ships complete and can be easily and quickly installed on-site by the customer		
Dimensions	26 in (66cm) x 23 in (54.8cm) x 17.5 in (44.5cm)		
Weight	120 lbs (54.4 kg)		

Order Number: HPXPLUS-EN