Carestream HPX1-Plus
For Non-Destructive Testing

THE BENCHMARK IN COMPUTED RADIOGRAPHY.
HPX-1 Plus PRODUCT SPECIFICATIONS

System Type: Computed Radiography (CR)

Scanning Capture:
- 16 bit linear or 12 bit log

Throughput:
- Single Plate:
  - 66 plates/hour for qty (1) - 14 x 17 in @ 100 µm
  - 33 plates/hour for qty (1) - 14 x 17 in @ 50 µm
- Multi-Plate Scan:
  - 274 plates/hour for qty (3) - 4.5 x 10 in @ 100 µm
  - 151 plates/hour for qty (3) - 4.5 x 10 in @ 50 µm

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
- 10 x 24 cm
- 3.5 x 10 inch
- 7 x 17 inch
- 33 cm x 40 cm
- 4.5 x 10 inch
- 14 x 17 inch
- 10 cm x 40 cm
- 10 x 12 inch
- 14 x 16 inch
- 70 mm x 10 inch
- 3.5 x 17 inch
- 14 x 51 inch
- 70 mm x 17 inch
- 4.5 x 10 inch
- 14 x 17 inch
- 10 cm x 40 cm
- 10 x 12 inch
- 14 x 36 inch
- 70 mm x 10 inch
- 3.5 x 17 inch
- 14 x 51 inch
- 70 mm x 17 inch
- 14 x 60 inch
- Custom plate sizes available on request

Multi Plate Scanning:
- Can scan multiple plates simultaneously without carrier or adaptors

Laser Spot Size:
- 50 µm measured at full width, half max.
- 20 µm measured at 85% of peak

Laser Intensity:
- User selectable laser intensity

Pixel Pitch:
- 25 µm, 35 µm, 50 µm, 100 µm
- Laser spot is filtered not adjusted by varying power for a consistent spot size

Spatial Resolution:
- 50 microns or better (10 to 12 lp/mm)

Operating Modes:
- 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 (Turn Key ready, Windows 7 Ultimate (64 bit))

Filter:
- EDGE is a unique display filter which runs without modifying the original image data. Image is adjustable with a variety of pre-defined or user customizable settings

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 (66 cm) x 23 in (54.8 cm) x 17.5 in (44.5 cm)

Weight:
- 120 lbs (54.4 kg)
HPX-1 Plus The power of Digital Imaging at your Fingertips

+ Ultra High Image Quality

 **Pixel Pitch:** 25µm, 35µm, 50µm and 100µm operation  
 **Spatial Resolution:** 50 microns or better (12 lp/mm)  
 **Laser Spot Size:** 20µm (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 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 bare plates, multiple plates at one time, custom cut sizes (with plate carrier), imaging plates in rigid cassettes and long plates (up to 85”) 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 runs plates phosphor side up with a proven transport system that won’t damage your imaging plates.

+ Improved Imaging

HPX-1 Plus’ new optics improve sensitivity and reduce unwanted artifacts. CR systems also often make it possible to lower your exposure while still achieving the required sensitivity. Our adjustable PMT and Laser Power allow you to 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 Display Filters, DICONDE compliance, and many other tools designed specifically for NDT.
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, will erase even saturated plates without leaving any ghost images.

5. **SmartErase** - System will check plates after scanning and during the erase cycle automatically adjust and optimize the erase level.

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

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7 System Status – Diagnostic Tool (optional accessory) allows user to monitor system stability 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. BAM certified per E2446 and EN 14784-1.

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. Optional plate carrier can transport plates as small as 1 x 1 inch. (2.5 x 2.5 cm)

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.
The HPX-1 PLUS will change the way you work.

Rapid Job Setup
Quick setup. DICONE compliant. Our INDUSTREX software runs from a Windows® 64-bit platform, is DICONE compliant and designed for optimal workflow to improve productivity.

Easy to Install
The HPX-1 Plus site install is simple. With only a few cable connections you can be up and running fast.

Process, Analyze & Approve
High resolution. High throughput. HPX-1 Plus can process imaging plates up to 85 inches long. Preset the system so images appear with the desired filters already applied and approve in one click.

Shot Time Improvement
Shoot faster, irradiate less, keep your source longer. In certain circumstances, it's possible for CR to reduce exposure time which in turn improves productivity, site safety and extends the useful life of the source as it decays.

Customized Reporting
Customized multi-line or single shot reports. Create a customized job report by simply selecting the shots to be included and click “create report”. Make a custom-made multi-line or single weld-style report in seconds.

Performance Accessories
- GP, HR and XL Blue imaging plates
- Small plate carrier
- Diagnostic tool to monitor system stability
- Job setup module (DICONE)
- DR panel interface
- Archiving interface

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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 quickly.

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.
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.

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

High Resolution
The high resolution imaging plate is best for applications where the best image quality is required. This plate produces weld quality images, and has the best detectability (contrast sensitivity) in the industry. This 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.

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