# Carestream HPX-DR

## For Non-Destructive Testing

**WEATHERPROOF & WIRELESS DIGITAL RADIOGRAPHY FOR NDT.**

Carestream

# HPX-DR Wireless Detectors

**Carestream NDT is pleased to introduce our wireless DR detector for digital Imaging.**

Carestream's new HPX-DR is a high performance, compact and lightweight DDA detector. It weighs in at only 12.5 lbs and has one of the slimmest profiles available at only 14x17" (35x43cm).

With rapid imaging and a potential for reduction of your overall shot time, it will improve throughput while reducing overall the consumable costs (for film or imaging plates).

The HPX-DR features heavy-duty shielding designed specifically for high exposure NDT applications. It boasts an impressive 139μ pixel pitch with improved spatial resolution for finer detail imaging. The detector is rated for energies up to 3MeV and built to withstand the rigors of NDT. It can operate in either a wireless or tethered configuration with rapid transfer of images, FASTER and EASIER than ever before.

The HPX-DR detector is unique in design – coming standard with a rugged, weatherproof enclosure perfect for remote field work. Unlike other panels that claim a weatherproof design when used inside their protective carrying case, this detector has an IP57 enclosure rating without the protective case! With the HPX-DR you can stop wrapping your DDA panel in bags and keep working in rain, snow, mud or whatever Mother Nature throws at you!



- **REDUCED EXPOSURE** – DDA panels are highly sensitive. Combine this with the ability to do frame averaging and you will likely be able to reduce your exposure time and still capture the sensitivity needed for your critical inspection task.

- **FASTER** – Uses no disposable media in the process, eliminating cassette loading and unloading time, developing, processing and reloading for the next shot. The HPX-DR detector offers quick start up and calibration, and rapid image display after acquisition. Produce high quality digital images in seconds for immediate analysis.

- **EASIER** – The HPX-DR detector is lightweight and compact with an all-weather design that is simple to operate. In the lab, it can be operated on a powered tether and in the field it can run 100% on battery. With the 'hot swap' feature the panel can remain on when changing batteries, increasing uptime.



- **WIRELESS** – The HPX-DR detector can operate completely wireless giving the user full freedom of movement and minimizing set-up time on site. This is especially helpful for rope access teams looking for minimal weight, high sensitivity and a powerful wireless connection.

- **HIGH RESOLUTION** – The HPX-DR images have a 139μ pixel pitch and 139μ spatial resolution that can reveal small details. All powered by our INDUSTREX image analysis software with the most advanced NDT post-capture tools for image measurements, enhancements and analysis.

# HPX–DR At-a-Glance

- **139μ Pixel Pitch**
- **139μ Spatial Resolution**
- **GOS DRX Standard Scintillator**
- **Portable at 12.5 lbs (5.7 Kg)**
- **Heavy Duty Shielding**
- **Exposure Range up to 3 MeV**

## Features

### WIRELESS
Ultimate hands free with robust wireless (802.11 A/N or G) secure data transfer, long distance communication and live panel monitoring. Get the most out of your wireless with reliable, mobile access point for extended range and a strong wireless signal.

### COMPACT DESIGN
Rugged design with a durable aluminum frame and carbon fiber cover. Panel thickness is just 14.7 mm (0.58") one of the thinnest in the industry making it easy to slide between objects.

### CLOSE-TO-EDGE IMAGING
The HPX-DR image area is slightly offset, allowing you closer access to the panel edge for profile work. This panel can fit between pipes and captures near edge so you can see and measure the outer wall.

### HIGH RESOLUTION
139μ pixel pitch is one of the best available, allowing for high quality imaging and defect detection. Multi-frame averaging improves the quality while reducing the overall noise in the image.

### IP57 ENCLOSURE
The only panel with this high a degree of protection against liquid. Unlike others that need a special case for protection from the harsh elements of field work, the HPX-DR is built to meet IP57 enclosure standards.

### INDICATORS
Multiple indicator lights on the panel edge communicate panel status, battery information and wireless connectivity. Its easy for the user to see at a glance the condition of the panel.

### FLEXIBLE POWER
Powerful lithium-ion batteries allow users to make many images. When tethered the batteries automatically recharge or you can purchase a 3-battery quick charger to keep production moving. Battery 'Hot Swap' feature keeps the panel running during change. Magnetic tether stays attached but can break away if needed to eliminate damage to the panel connection in the event of a drop or pull. Power saving mode when panel has not been activated for a period of time.

# Carestream HPX-DR
## For Non-Destructive Testing

## PRODUCT SPECIFICATIONS

### MECHANICAL

| | |
|---|---|
| Size (cm) | 35 x 43 Cassette (ISO 4090) |
| | 38.35 x 45.95 x 1.47cm |
| Weight | 5.7 kg (12.5 lbs.) |
| Housing Material | Aluminum |
| Sensor Protection Material | Carbon fiber and aluminum plate |
| Load Limit | Distributed evenly over detector area: 170 kg. (375 lb.) |
| Receptor Type | Amorphous silicon on glass - no tiling |
| Conversion Screen | GOS |
| Pixel Size (μm) | 139 x 139 |
| Scan Method | Progressive |
| A/D Conversion (bits) | 16 |
| Resolution | 3.6 lp/mm |

### DETECTOR BATTERY

| | |
|---|---|
| Technology | Lithium-polymer Technology "Smart" battery technology prevents overcharge |
| Size | 21 x 15 x 0.67 cm |
| Weight | 0.4 kg (12.4 oz.) |
| Voltage/Energy | 14.8V DC, 2.1Ah (nominal) capacity |
| Battery "Hot Swap" Capability | Yes |
| Expected Life (Battery) | 500 charge / discharge cycles results in ~80% full charge energy |
| Safety | IEC 60601 –1:1988 + Amendment 1:1991 + Amendment 2:1995 |
| | IEC 62133:2002 – Safety requirements for secondary cells and batteries containing alkaline or other non-acid electrolytes |
| Electromagnetic Compatibility | IEC 60601–1–2 Ed. 2.1, 2004 – Electrical Equipment Electromagnetic Compatibility |
| | Requirements and tests, including CISPR 11:1999 + A2:02 emissions Group 1, Class A |

### WIRELESS SYSTEM

| | |
|---|---|
| Network Protocol | TCP/IP, IPv4/IPv6 |
| Network Type | Isolated Private Wireless LAN (WLAN), Enterprise Wireless |
| Wireless Protocol | 802.11 A - or - N - or - G |
| Antenna | Frequency Band: 5 and 2.4 GHz |
| | Available Channels (fixed at installation): 1, 5, 9, 13, 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136,140, 149, 153, 157, 161, 165 |
| Max. Power of Detector Radio | 50 mW |
| No. of Antennas on Detector | 2 |
| IP Addressing | Static Private IP Address for Detectors and AP |
| Agency Approvals | FCC Part 15 |
| Dual Homed PC (2 NIC Cards) | Private network connection |

### SECURITY

| | |
|---|---|
| WPA2-PSK AES | Factory loaded and user loaded keys |
| SSID | Broadcast |
| User name and Password | Non-default user name and password |

### ENTERPRISE WIRELESS

| | |
|---|---|
| IP Addressing | Static or DHCP |
| Authentication | The detector supports authentication with most radius servers using the following protocols: EAP-TLS, EAP-PEAP-MSCHAPV2, EAP-FAST, EAP-PEAP-TLS, EAP-TTLS, EAP-TTLS-MSCHAPV2 |
| Encryption Methods | AES-CCMP, WPA2-AES |
| Certificates Supported | .pern, .crt, .cer, .der, .p7b, .pfx, .p12 extensions |
| Keys | Private keys with .key extensions |
| QOS | Control signals and data path can be separately configured |

### ENVIRONMENTAL

| | |
|---|---|
| Shock | High shock tolerance |
| Temperature Range (°C) | -20 to +50 Ambient-Storage (-23 to +60) Shipping (-23 to +60) |
| Relative Humidity Non-Condensing | Operating 10 - 86% Storage 10 - 86% |
| Ingress Protection | IP57 |

**SERVICE** Can't be down? Carestream offers an optional service protection plan that keeps you running in almost any situation. Under this plan we cover excessive drops, glass breakage and almost any physical damage that can occur to the panel during a 12 month period. (See service agreement for more details.)

www.carestream.com