HD-CR 35 NDT

Image Plate Scanner

The next level in CR

hand made in Germany

DÜRR NDT

HD-CR 35 NDT • Discover the benefits of Digital Radiography

What is CR? How does it work?

Computed Radiography (CR) is the acquisition of a digital image by using a Phosphor Imaging Plate (IP) in place of conventional film.

Key advantages of CR include:

- IP's are reusable
- No dark room or chemicals required
- Exposure and process times reduced
- Easy work flow and image optimisation with D-Tect software
- Simple to share and archive digital information

The CR technology consists of a 3-step process.

The Image (storage) Plate (IP) is exposed with X-ray or gamma radiation, which causes the phosphor layer in the plate to store the latent image.

During the reading process of the plate in the scanner, a focussed laser beam triggers the release of the stored image data in form of visible light.

The emitted light is detected, captured and converted into electrical signals which are digitized and finally displayed as a digital image on the PC monitor.

The internal in-line eraser removes the residual data from the IP, which is then ready for the next exposure.

What is important?

With film radiography the only variable is the film. With CR we have different IP's and the ability to adjust up to 4 parameters within the scanner to optimise the image quality to suit the required inspection task.

High definition Computed Radiography

DÜRR NDT is the first company worldwide that has developed a scanner with a 12,5 µm laser spot. When used with correspondingly high resolution phosphor storage plates, this meets all the stringent requirements of EN 14784, EN 17636 and ASTM E2446.

The combination of high resolution image plates and this HD-CR device achieves the unique Basic Spatial Resolution of 40 µm over all system classes for the first time. (Certified by BAM).

Adjustable resolution

The unique TreFoc Technology can be found in the HD-CR 35 NDT. This always sets the laser beam in relation to the image plate and the object to be examined, so that the maximum resolution is achieved, while simultaneously attaining the optimal signal-to-noise ratio.

- Cost Reduction
- Improved handling
- Increased efficiency

Acceptance
Perfect image quality – film-like or better

Benefit
Significant reduction of consumables

Experience
Technology proven in more than 25.000 units

MADE IN GERMANY
Development and production in Germany

HD-CR 35 NDT • Certified and proven reliability

Why CR technology from DÜRR NDT

When selecting an image plate scanner from DÜRR NDT, the user receives a system perfectly tailored for use in non-destructive examination.

All devices are BAM-certified and correspond to the relevant EN and ASTM standards. Compliance with the DICONDE standard is, of course, also provided, as is production in accordance with EN ISO 9001.

- EN ISO 9001 certified
- BAM certified
- EN and ASTM compliant
- DICONDE compliant

TreFoc Technology • Three scanners in one

What does TreFoc Technology mean and how does it work?

TreFoc TECHNOLOGY

TreFoc Technology

TreFoc Technology is the name for the our new laser focussing technology, uniquely in systems from DÜRR NDT. With TreFoc the laser beam is adjusted perfectly to give optimal image results and the highest signal-to-noise ratio in any application.

Inside the laser tube, an iris diaphragm adjusts the laser beam diameter. Since the perfect laser beam diameter can be selected for each object and image type, optimum results for any particular application can be easily achieved.

Regardless of the application – high-resolution image or low-exposure corrosion measurement – the unique TreFoc Technology gives perfect image results with the best SNR every time.

The principle of changing the laser beam diameter takes into consideration the maximum resolution of the image plates available on the market.

So every image plate type can be read with a laser beam focussed specifically for that plate, thus always achieving the best image with the lowest noise.

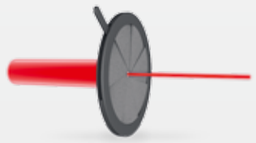
Digital radiography has never been more intelligent!

50 µm

Corrosion measurements, overview images

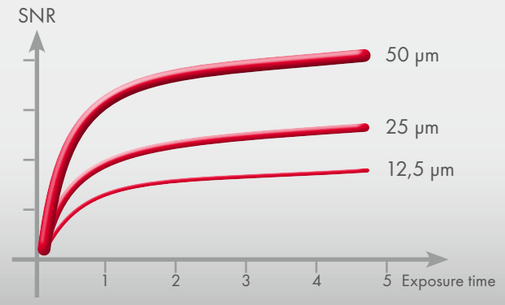
25 µm

Corrosion measurements, weld seam inspection



12,5 µm

Weld seam inspection, aerospace, composite



TreFoc • The new standard in CR

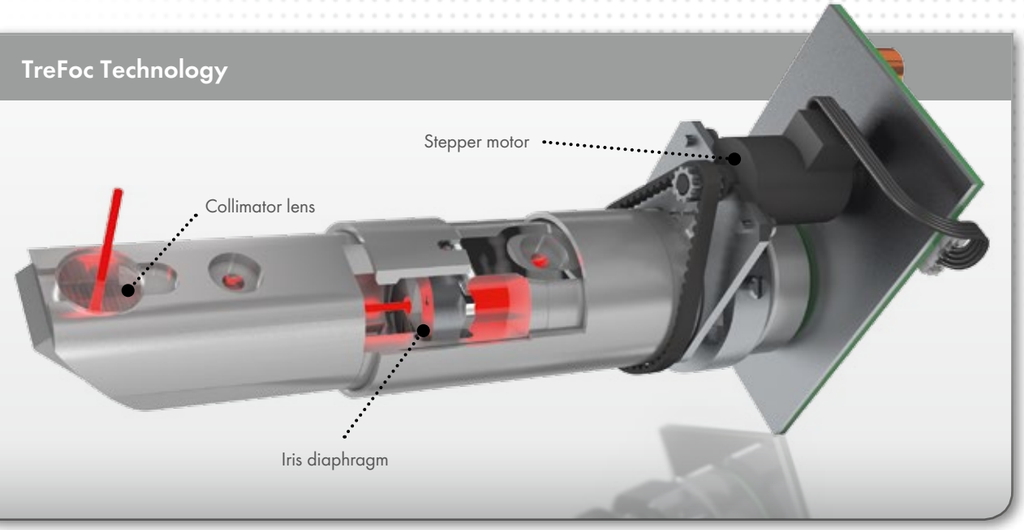
One device for any application

With the HD-CR 35 NDT, small, large or even individually tailored image plates can be processed directly.

Of course, this also applies to the different available image plate resolutions.

Regardless of the task, the scanner will provide optimum results.

TreFoc Technology



TreFoc Technology
Always perfect results!

Crystal clear
Automatic laser adjustment for optimum SNR values

Data security
Simplified archiving and data sharing

Logical
Easy and fast use through intuitive operating concepts

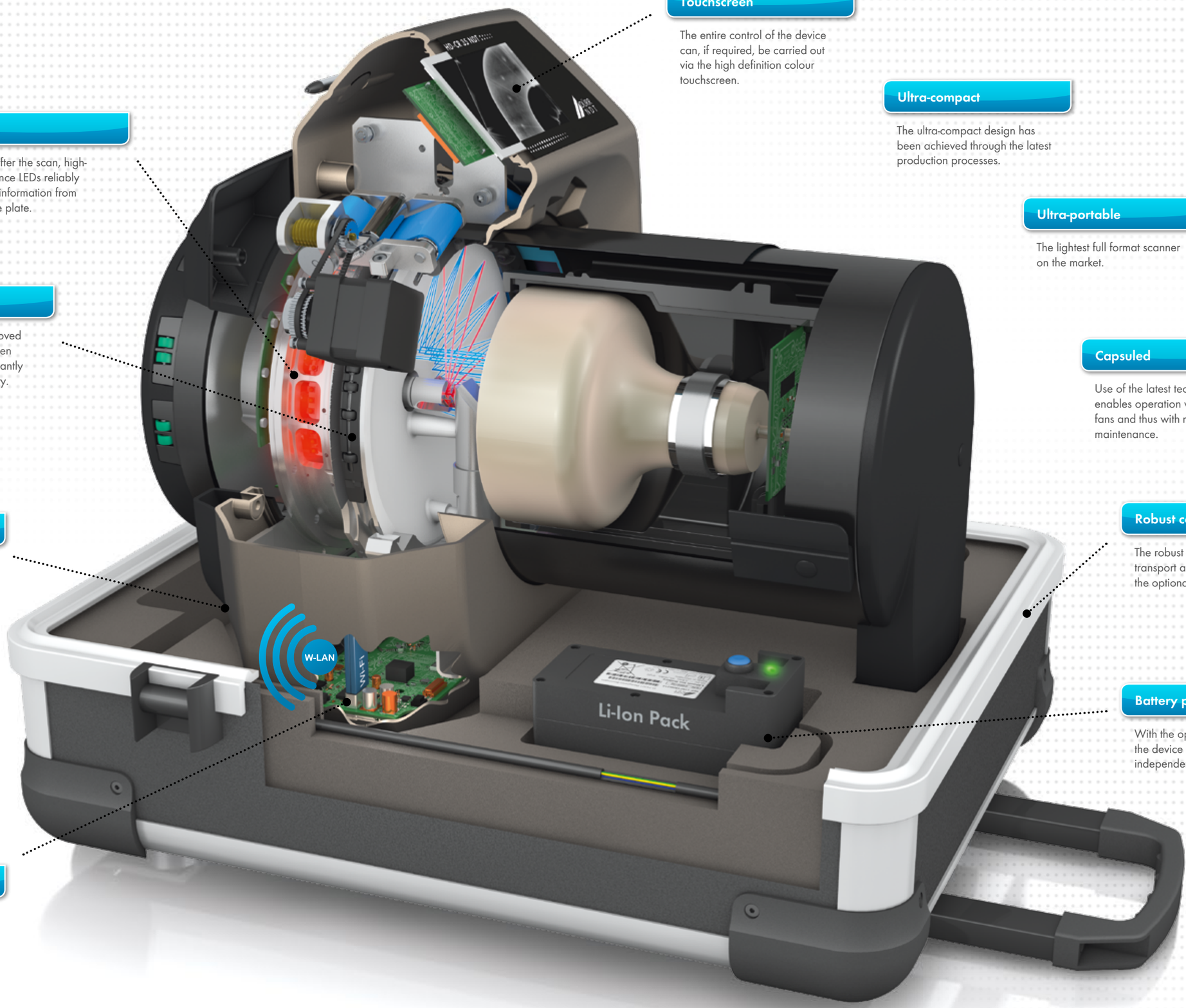
Clockwork precision
No artefacts thanks to high precision components

Intelligent
Individually adjustable to your preferences

Wireless
Wireless connetion to the network

Network / Stand-alone
Easily connected to the network or installed as single station

HD-CR 35 NDT • Innovative – Ultra-compact – Unique



Touchscreen

The entire control of the device can, if required, be carried out via the high definition colour touchscreen.

Ultra-compact

The ultra-compact design has been achieved through the latest production processes.

Ultra-portable

The lightest full format scanner on the market.

Capsuled

Use of the latest technology enables operation without any fans and thus with minimum maintenance.

Eraser

Directly after the scan, high-performance LEDs reliably erase all information from the image plate.

Drive

Thanks to the newly improved drive concept, it has proven possible to further significantly enhance the image quality.

SD memory card

All images can be safely stored in offline operation on the up to 32 GB SD memory card.

Robust case

The robust case ensures safe transport and offers holders for the optional battery packs.

Battery pack

With the optional battery pack, the device can be operated fully independently.

Wireless

With a standard wireless interface, the system can be connected without cables.

HD-CR 35 NDT • Always the perfect solution

The perfect solution for any application

The connection of the image plate scanner and built-in mini PC with the colour display and a memory card of up to 32 GB makes the new HD-CR 35 NDT the perfect system for any application in non-destructive testing.

Whether used in a mobile application, the production process or code-compliant testing, the new HD-CR 35 NDT supports you with optimum flexibility and image quality.

- **Built-in mini PC**
- **Colour touchscreen display**
- **Online and offline operation**

HD-CR 35 NDT • Multitalented thanks to TreFoc Technology

Regular operation

The scanner is connected to the PC in a conventional manner. All parameters and images are exchanged between the scanner and the PC through this connection and the generated images are displayed on the computer monitor.

Transfer
via Ethernet or W-LAN

Office

Import and interpretation of images aquired remotely

Preparation

Once the scanner and the optional battery are packed into the leight weight transport case, the system is ready for the on site job. Just leave the Laptop or PC behind as the system comes with a build in Mini-PC and high resolution touch display.

Interpretation

7

All images taken on site may be interpreted after they have been imported into the D-Tect imaging software. All metadata acquired on site, such as mA, kV and exposure time, as well as any additional information, are imported and available for future use.

Import

Once the team has returned from the remote site, all images will be imported from the SD-memory card. The import of multiple images from different projects is easy and intuitive. The transfer of data is done in no time.

Remote operation of the scanner without PC

Choose Type of inspection

The type of inspection may be choosen directly on the touch display. The unit will automatically adjust the hardware according to the type of inspection and Image Plate used.

On site

Add information

If required, various pre-defined fields may be filled with additional information like kV, mA and exposure time. In order to distinguish different sites or tasks, those may be added also. If no additional information is required, this step may be skipped.

Transfer images

The SD memory card with up to 32 GB storage capacity allows to save several hundred images along with the additional meta data recorded.

Preview

After the Image Plate has been scanned, a preview image is displayed for pre-evaluation. The operator can zoom in/out and change contrast / brightness. This preview allows the image to be verified for acceptability for further interpretation. Once the operator has accepted the image, it will be saved on the SD-memory card.

D-Tect • The perfect software solution

The software from DÜRR NDT for all digital systems

D-Tect software is completely developed in-house by DÜRR NDT, and is the perfect complement to all our digital systems – image plate scanners and flat panel detectors.

DICONDE

Since D-Tect supports the DICONDE standard, the user can be certain that images can be archived, exported and then viewed on any other DICONDE compliant system, or simply transferred to that system. On request, DÜRR NDT offers even more optional functions in addition to the standard DICONDE functions.

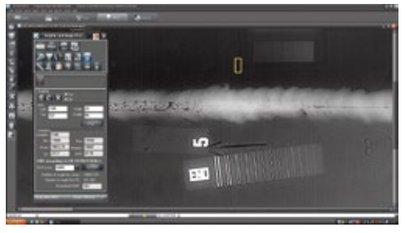
ALL-IN-ONE

D-Tect is an ALL-IN-ONE solution. All functions from image acquisition, analysis and related report generation, to export, archiving and database management are included.

Individually tailored, perfectly adapted

So that the processes, which differ slightly from company to company, can be represented perfectly, we are happy to tailor an individual solution to your needs. The software then perfectly meets your requirements and the established processes can be retained.

A versatile software platform with solutions for every application



Signal-to-noise ratio (SNR)

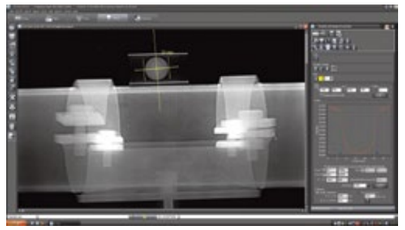
The SNR measurement required by the relevant standard is carried out simply by clicking in the relevant image area. The normalised SNR is calculated automatically, provided that the BSR has first been determined in D-Tect.

1 : 1 display

In production processes, the 1 : 1 display of the tested components is repeatedly required. DÜRR NDT has developed a solution for this, which reliably displays the original size of the test object at any time.

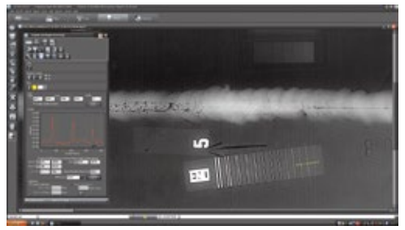
D-Tect • The perfect partner for your applications

A versatile software platform with solutions for every application



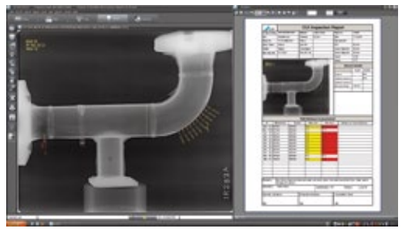
Calibration

Automatic calibration using a ball bearing or any other object with a known dimension, like the outer dimension of a pipe.



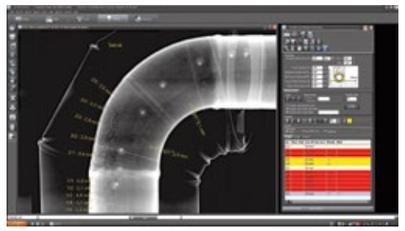
BSR

Automatic tool to determine the BSR of an image in accordance with EN17636-2.



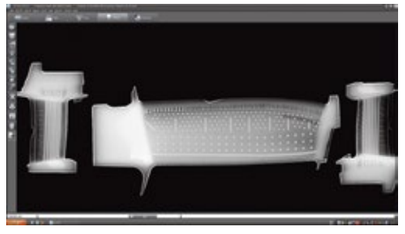
Report

Report function. Gives the user the opportunity to produce a report populated with the information and data along with thumbnail images. A template may be provided matching your requirements.



Wall thickness

Automatic measurement tool, single point or multiple measurements along a straight line or around a curve. Set up to give warnings when wall loss reaches a critical level.



Aerospace

Ideal for Aerospace applications where consistent quality and highest resolution are required.

Tailored to fit your needs

A versatile software platform that provides the information and data which is relevant for your particular application and workflow.

HD-CR 35 NDT • The new CR standard with TreFoc Technology

Technical Data	HD-CR 35 NDT
TreFoc Technology	Adjustable laser spot sizes: 12.5 - 25 - 50 µm
BSR (Basic Spatial Res.)	40 µm certified by BAM
Grey level resolution	16 bit, 65.536 grey levels
Dimensions (H x W x D)	40 x 37 x 47 cm 15.8" x 14.6" x 18.5"
Weight	17,5 kg 38.6 lbs
Electrical	100 – 240 VAC / 50 – 60 Hz, < 140 W
Temperature range	10 to 35 °C 50 to 95 °F
Noise Level	< 39 dB(A)
Laser Class	I (EN 60825-1: 1994-03 + A1: 2002-07 + A2: 2001-03) + CFR 1040.10
PC-Connection	Ethernet (TCP-IP protocol), W-LAN
Display	4.3" TFT, 800 x 480 px
Storage	SDHC, max 32 GB
Software	DÜRR NDT D-Tect
IT-Requirements	For requirements refer to www.duerr-ndt.com

NEW
30 micron
Basic Spatial Resolution
CERTIFIED

Accessories

Transport Case

Lightweight case for scanner transport.

Battery pack

Lithium-ion battery for stand-alone operation of the scanner without mains voltage.

Image plates (IP)

IPs are available in different qualities and all standard formats and, on request, in special sizes and forms.

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