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# About NOVO DR



NOVO DR Ltd. offers the highest image quality in the portable digital radiography industry. The ruggedness and reliability of our systems combined with amazing X-Ray Images make them the best in the market. Our intuitive and easy to use products have been designed and engineered by our incredibly professional and highly experienced team!

We put a strong emphasis on the following points:

- Highest Image Quality
- Reliability
- Ease of Use
- Fast & Professional Support

# Why NOVO?



## Highest Image Quality

Decades of expertise, detectors built specifically for NDT applications and advanced software all attribute to the highest image quality.



## Reliable

Our systems are designed for outdoor operations, so we use the best raw materials; proprietary NOVO cables; MIL DTL 38999 connectors & rugged detectors.



## Easy to Use

The lightest Detectors, Intuitive NOVO Touch Software and user-friendly system components make NOVO equipment effortless to setup & operate.



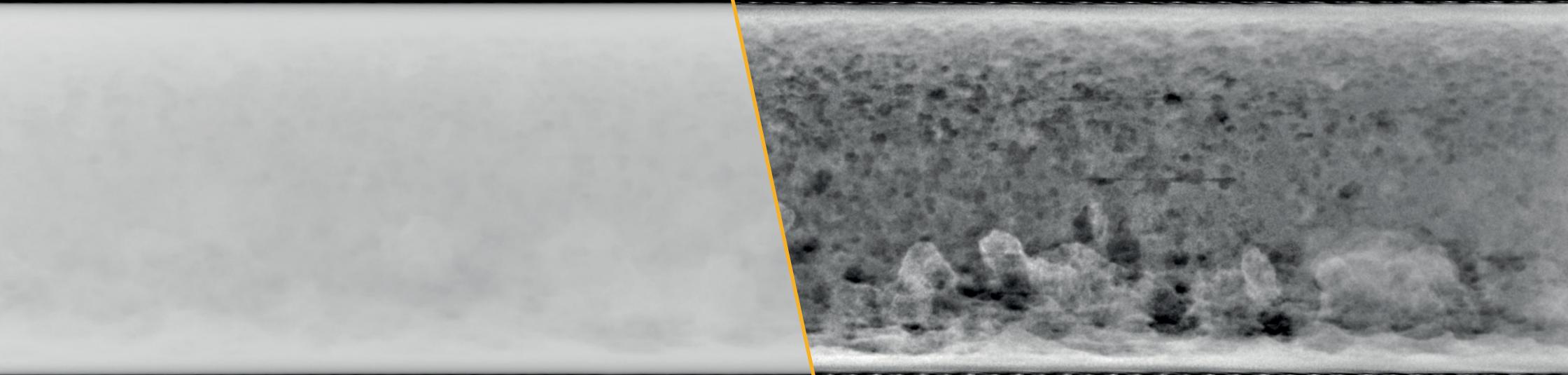
## Professional Support

Fast response, the expertise of our team and in-house Developers bring you the right solution.

# Product Highlights



Genie

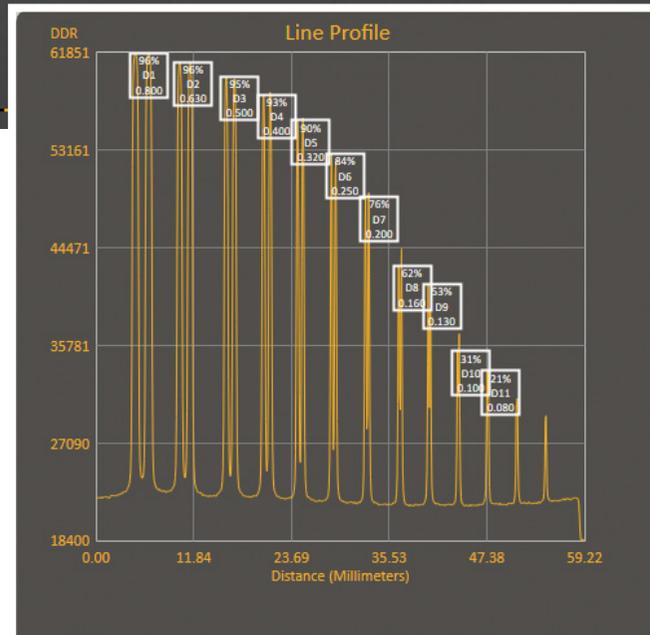
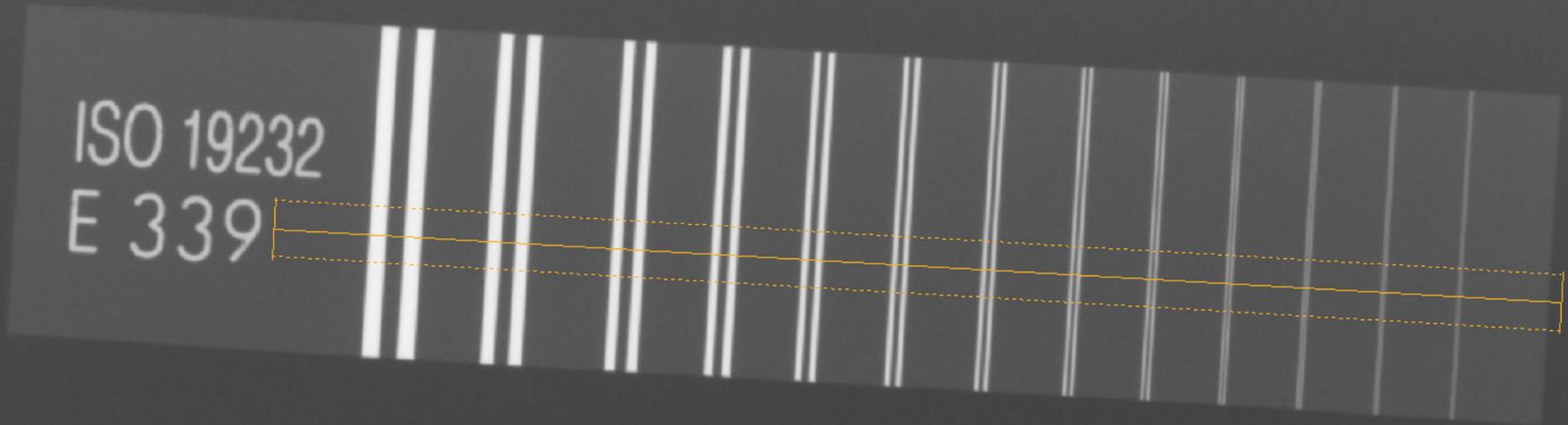


Before

After



# SRb (Basic Spatial Resolution) Calculator

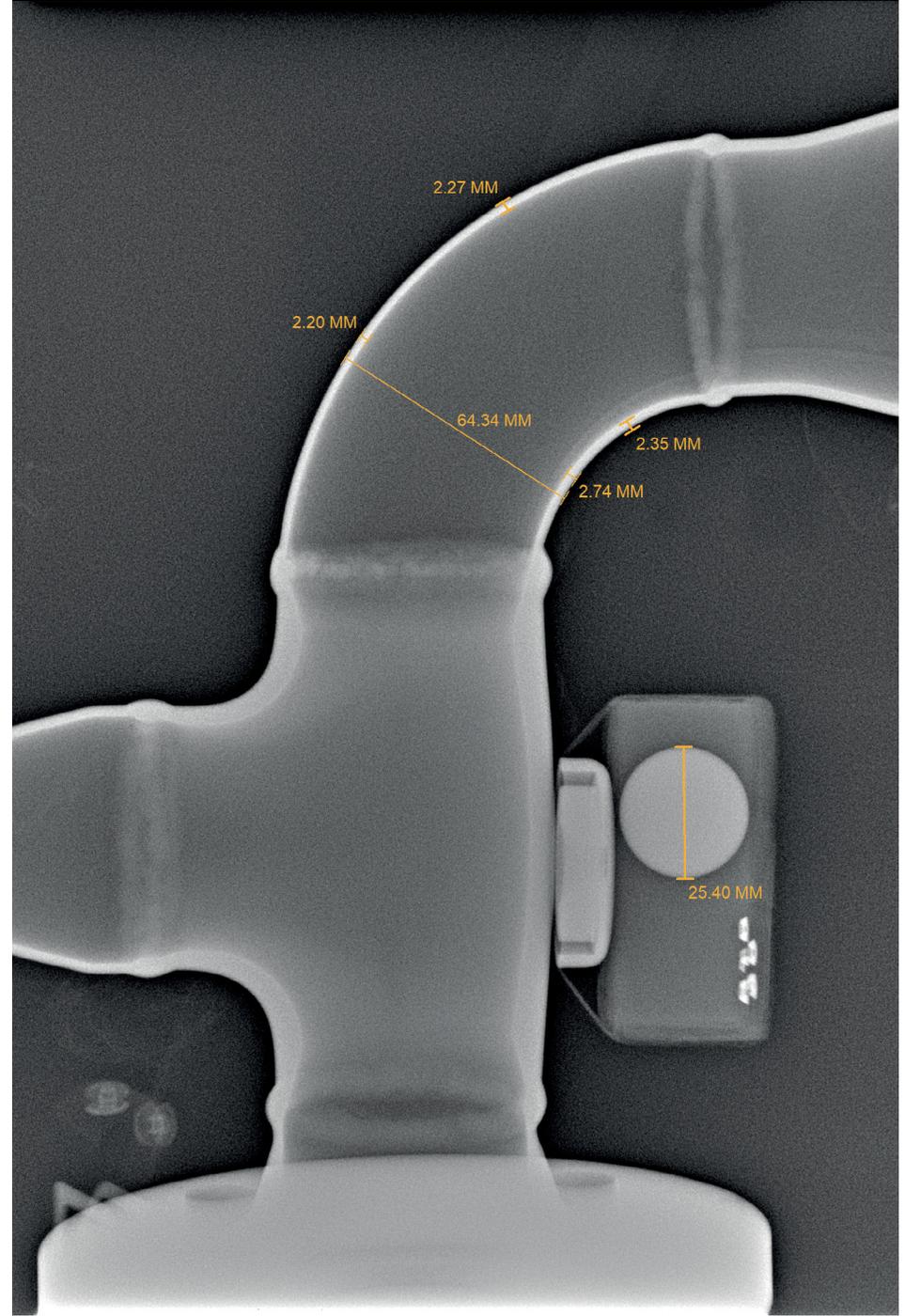
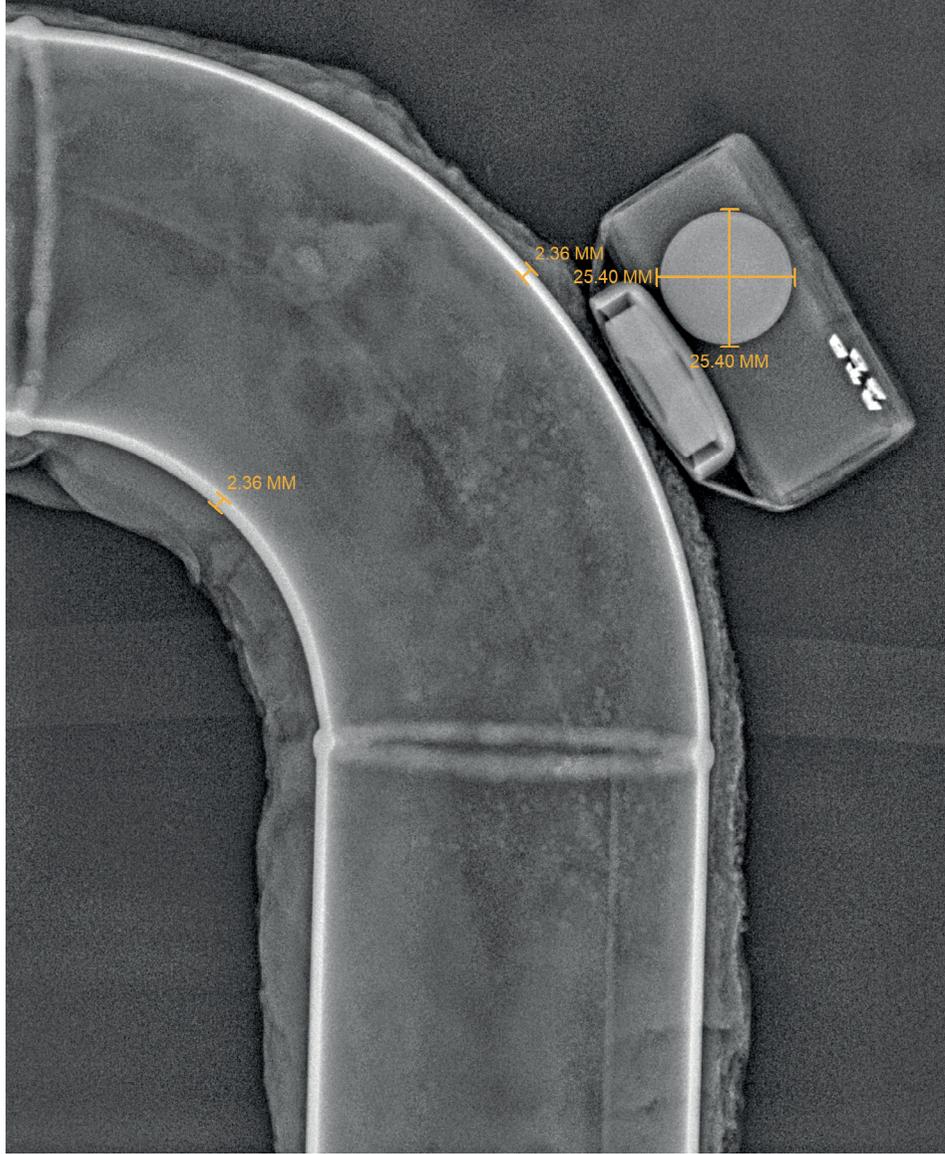


Name	D
1 D	0.800
2 D	0.630
3 D	0.500
4 D	0.400
5 D	0.320
6 D	0.250
7 D	0.200
8 D	0.160
9 D	0.130
10 D	0.100
11 D	0.080
12 D	0.063

↑  
Region of Interest



# Wall Thickness Tool





## Bright XL Tablet



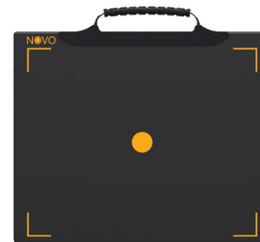
- 21.5" Touch Display
- True Sun Readable 1500 NIT Super Brightness
- 6+ Hr. Battery Life
- Windows 10
- Designed for Harsh Field Use



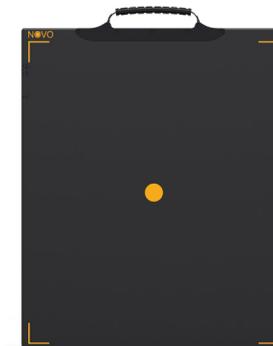
## Lightest Detectors



NOVO 12HRN



NOVO 15WN



NOVO 22WN

- Unmatched Image Quality
- Lightest in the Market
- Titanium Magnetic Connector
- Shielded for High Energies
- 16-bit Latest Generation
- Drop Tested
- Load Resistant 661 lbs. (300kg)

# Systems



# NOVO Discovery System Bright XL

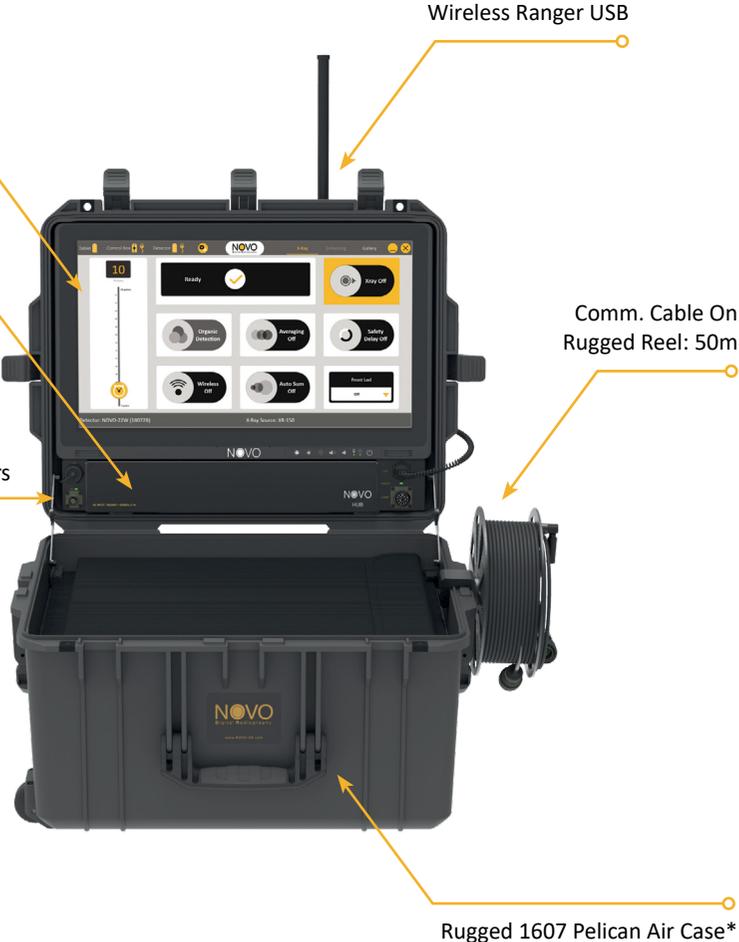
Available with 12HRN/15WN/22WN Detectors



NOVO Bright Tablet & NOVO Touch Software

Power & Communication Hub II

MIL DTL 38999 connectors



\*Fits the Golden XR150, XR200 & XRS-3 X-Ray Sources

# NOVO Discovery Systems

Available with 12HRN/15WN/22WN Detectors



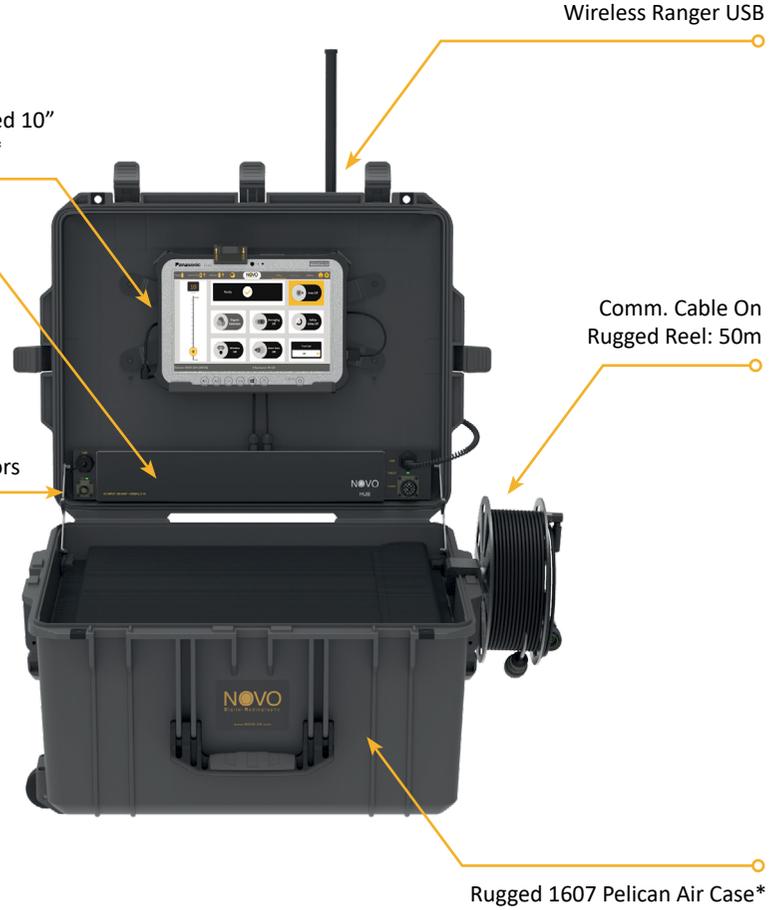
Bipod Detector Stand



Panasonic Toughpad FZ-G1 Rugged 10" Tablet & NOVO Touch Software\*\*

Power & Communication Hub II

MIL DTL 38999 connectors



\* Fits the Golden XR150, XR200 & XRS-3 X-Ray Sources  
 \*\*Other tablets and laptops are available

# NOVO Tactical System

Available with 15WN Detector



\* Fits the Golden XR150, XR200 & XRS-3 X-Ray Sources

# NOVO Laboratory Systems

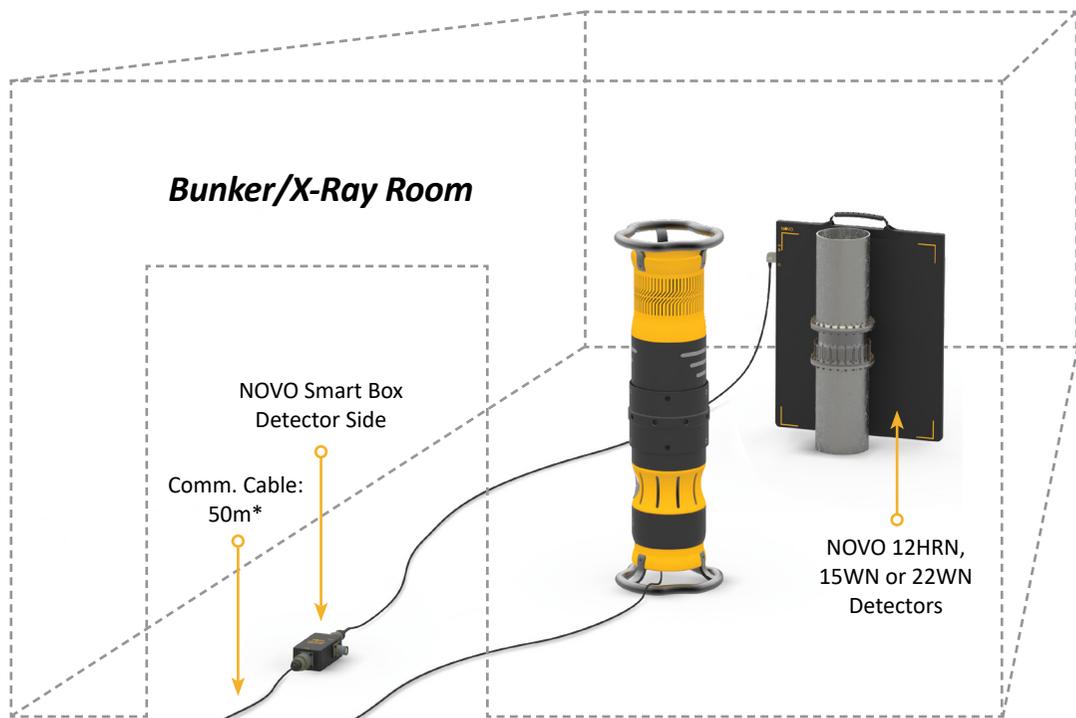
Available with 12HRN/15WN/22WN Detectors



NOVO Touch Professional Software



NOVO Smart Box PC Side



\* Maximal Cable length 100m

# NOVO Cabinet Systems

Available with 12HRN/15WN/22WN Detectors



## X-Ray Cabinet

NOVO 12HRN, 15WN or 22WN Detectors

NOVO Touch Professional Software

NOVO Smart Box PC Side

Comm. Cable

\*Supports vertical and horizontal cabinets

# NOVO Touch Pro Software

The NOVO Touch Software is a proprietary software developed from the ground up to provide the best experience and functionality for field & laboratory operations.



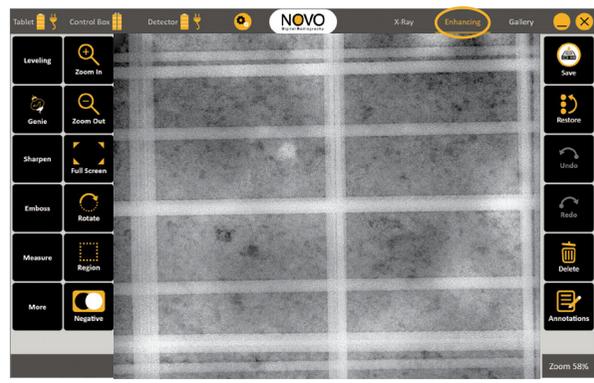
## Software Highlights

- User friendly, native touch interface
- Intuitive operation for grabbing X-Ray images, processing, archiving and sharing
- Built-in tools such as the Genie, Line Profile, SRb, DWT, Stitching, Image Statistics and more
- Supports various International Standards
- Supports different file formats such as TIF, DICOM
- Controls the operation of the NOVO accessories such as illumination, supports wired and wireless communication, activates a variety of X-Ray sources and more
- Compatible with the latest touch screen technology & standard PC's operating with Windows® 10
- Option to connect keyboard & mouse

## Key Software Features

- GENIE - One Touch Enhancement
- Auto Wall Thickness Measurement
- Auto Basic Spatial Resolution (SRb)
- Pixel Map
- Line Profile
- DWT (Double Wall Technique)
- Manual & Automatic Stitching
- Averaging (Frame Integration)
- Image Statistics
- 1600% Zoom
- Annotations-Text, Shape Etc.

and many more....



**Enhancing Tab**  
*Rebars through a 6" ( 15.2cm) concrete wall*  
 Detector: NOVO 22WN  
 Exposure time: 7s

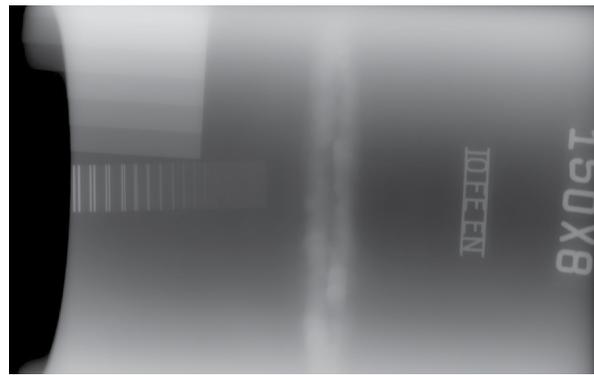


**Gallery Tab**

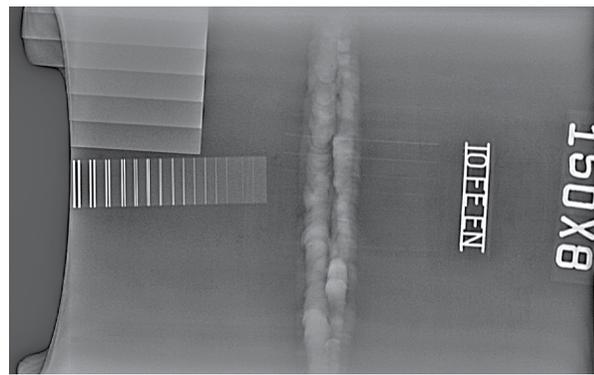


## The Genie Enhancement Feature - Proprietary State-of-the-art Algorithm

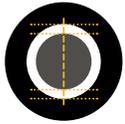
Allows taking a single image and enhancing both thin and thick areas on the same image, while highlighting all the defects with just one touch



Before

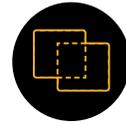
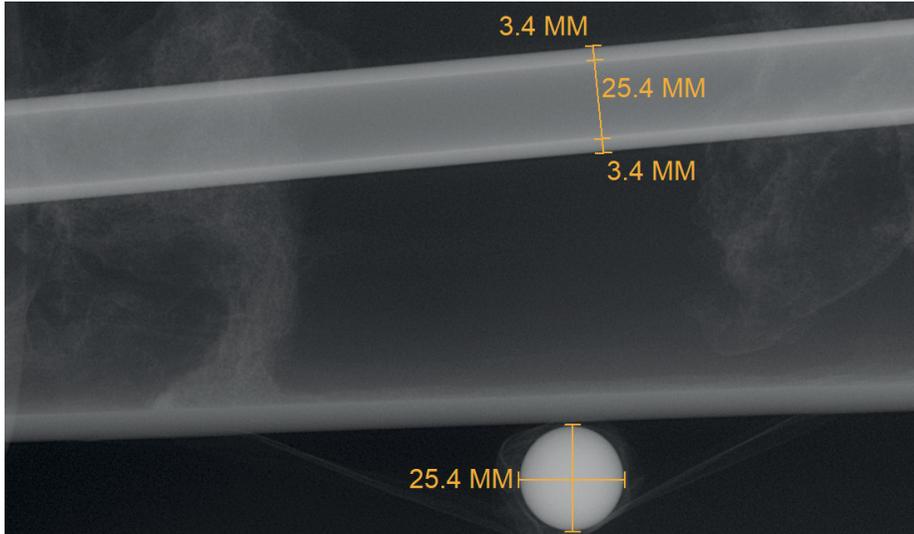


After



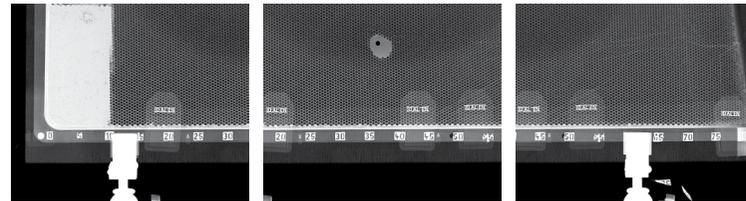
### Wall Thickness Tool

Fast, Easy & Automatic Wall Thickness Measurements

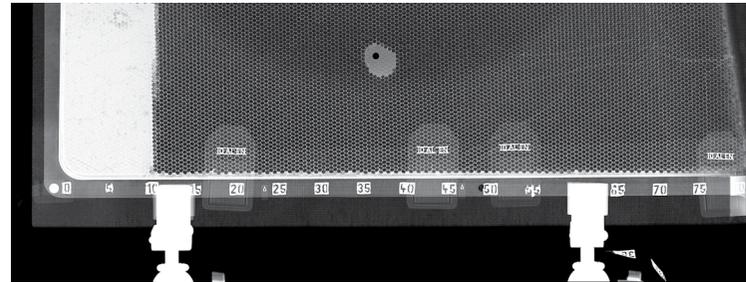


### Stitching Feature

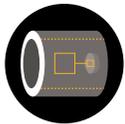
Stitch multiple images using our easy to use, Manual Stitching feature or our extremely fast, Automatic Stitching feature



Before:  
Multiple X-Ray  
Images

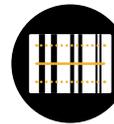
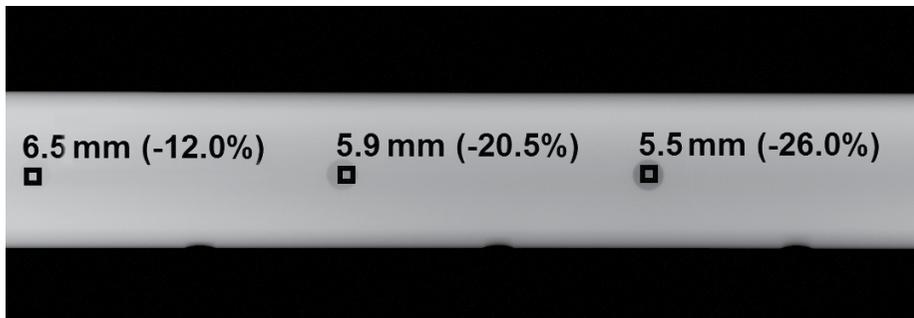


After: One  
Large X-Ray  
Image



### DWT

Simple & intuitive Double Wall Thickness Technique Tool- converting gray levels into material thickness



### Auto Basic Spatial Resolution Calculator

Select the Region of Interest and leave the rest to the NOVO SRb calculator.



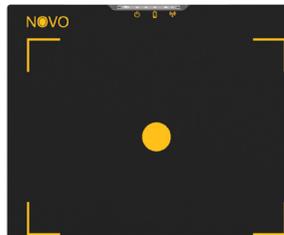
# Components

## NOVO 12HRN Detector

The NOVO 12HRN Detector is a High Resolution, Amorphous Silicon Detector with a 75µm pixel size. When needed this Detector allows for long exposure times (for high thickness materials) while keeping a very low noise level unlike other technologies such as CMOS.

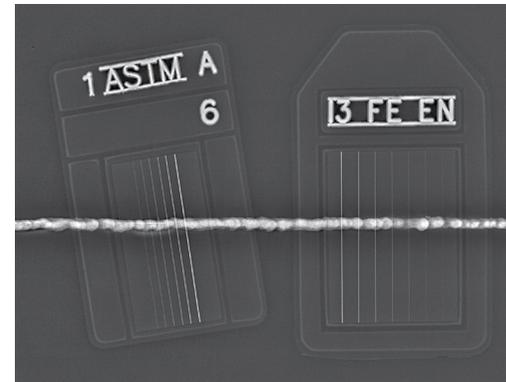
This technology, together with the NOVO Professional Touch Software makes NOVO DR the first company with a DR system that supports the ISO 17636-2 Class B requirements for the entire thickness range while using One Detector only!

- 75µm pixel size
- Supports ISO 17636-2 Class B requirements from 1.5 mm and up to >50mm of steel
- Reduced averaging (frame integration) needed due to very low noise
- Minimal dead space – Active area starts 3mm from the bottom of the detector
- Quick removable, rechargeable battery
- Wireless & wired operation
- Removable handle



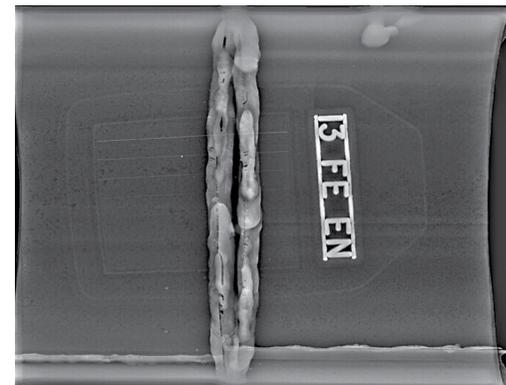
Detector Model	NOVO 12HRN
Detector Imaging Area	6.8" x 9.0" (17.3cm x 22.9cm)
Detector Size	8.2" x 10.1" (20.8cm x 25.6cm)
Active Area (Imaging Area / Detector Size)	74% Active Area
Detector Weight	5.3 lbs. (2.4kg)
Detector Load Resistance	661 lbs. (300kg)
Detector Drop Test	27.5" (70cm)
Detector Thickness	1.1" (27.5mm)
Bit Depth	16 bit latest generation
Life Span	Over 100K rem*

\* Over 100K rem of direct exposure on the detector



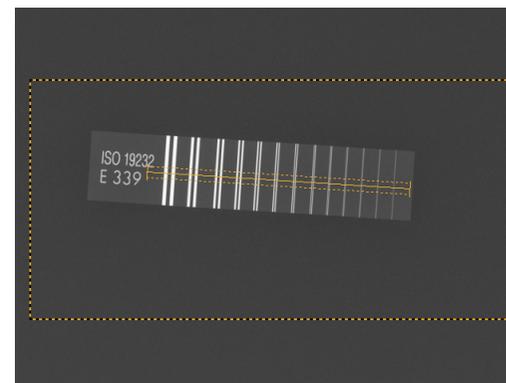
### 1.6mm Stainless Steel Plate

*IQI Source Side - W18  
Class B Compliant  
Energy: 160kv  
Current: 0.5mA*



### Stainless Steel Pipe 6mm Penetrated Thickness

*IQI Source Side - W16  
Class B Compliant  
Energy: 160kv  
Current: 0.5mA*



### Duplex Wire

*According to ISO 17636-2  
Spatial Resolution - **D12 (63µm)**  
According to Boeing 7044 Ver C  
Spatial Resolution - **less than 80µm***

## 15WN & 22WN Detectors

The NOVO 15WN and NOVO 22WN Detectors provide outstanding image quality in a rugged, durable, thin design and are the latest in DR imaging technology.

- Built-in shielding for maximum life span
- High dose Compatible
- Dual direction titanium magnetic connector
- Quick removable & rechargeable battery
- Wireless & wired operation
- Specifically designed for fieldwork & harsh weather conditions



Dual Direction Titanium Magnetic Connector



Detector Model	NOVO 15WN	NOVO 22WN
Detector Imaging Area	9.1" x 11.2" (23.1cm x 28.4cm)	14.0" x 16.8" (35.6cm x 42.7cm)
Detector Size	10.6" x 13" (26.9cm x 33cm)	15.2" x 18.2" (38.5cm x 46.2cm)
Active Area (Imaging Area / Detector Size)	74% Active Area	85% Active Area
Detector Weight	5.5 lbs. (2.5kg)	9.9 lbs. (4.5kg)
Detector Load Proof	661 lbs. (300kg)	661 lbs. (300kg)
Detector Drop Test	20" (50cm)	20" (50cm)
Detector Thickness	0.6" (15.6mm)	0.6" (15.6mm)
Bit Depth	16 bit latest generation	16 bit latest generation
Life Span	Over 100K rem*	Over 100K rem*

\* Over 100K rem of direct exposure on the detector

## Cases

NOVO Offers a variety of customized cases for a wide range of applications.

- Customized internal & external design
- Rugged
- Smallest Foot Print
- Lightweight
- Hard Cases & Backpacks Available

### Hard Case



Discovery II Case

### Backpack



Tactical II Backpack

NOVO Customized Cases	Description	Case External Dimensions
Discovery II Case	Rugged 1607 Pelican™ Case	24.13" x 18.80" x 13.25" (61.3cm x 47.8cm x 33.7cm)
Tactical II Backpack	5.11 All Hazards Prime Backpack	11.5" x 7.5" x 20.5" (29.2cm x 19.1cm x 52.1cm)*

\* Main compartment dimensions

# Components - Controllers

## Falcon II

The Falcon II is lightweight (900g) controller that has a built-in GPS and provides up to 500m Line of Sight (LOS) Wireless Communication and a Wired Communication up to 300m. Its built-in battery allows for 6+ hours of operation and unlimited use when the System is connected to external power (power down the line). The Falcon II works with rugged MIL-DTL 38999 connectors. It supports operation of both old and new RS223 Golden Engineering Sources.



Falcon II

## Control Box

The Control Box can provide up to 24 hours of battery operation as well as continuous use when connected to external power. In addition, the Control Box elevates the X-Ray source to provide full coverage of the Detector and has a white LED and infra-red flashlights. The Control Box supports the rugged MIL-DTL 38999 connectors.



Control Box

## Wireless Spark III

The Wireless Spark III is the NOVO smallest and lightest controller. Making it the ideal controller when minimum weight is required. It also supports the rugged MIL-DTL 38999 connectors.



Wireless Spark III

	Weight	Unlimited operation with AC	Built-in Battery	Wired/Hybrid	Wireless	Supports All Golden Sources	Quick connection to source	MIL-DTL 38999 connectors	Weatherproof design	GPS	LED Indications	White LED flashlight	Infra-red flashlight	Supports Parallel Multi Location Control & Display
Falcon II	2lbs (0.9 kg)	✓	6+ hours	✓	Up to 500m Line of Sight	✓	✓	✓	✓	✓	✓	✗	✗	✓
Control Box	5.3 lbs. (2.4 kg)	✓	24 hours	✓	Up to 400m Line of Sight	✓	✓	✓	✓	✗	✓	✓	✓	✓
Wireless Spark III	0.7 lbs. (0.3 kg)	✗	6 hours	✗	Up to 400m Line of Sight	✓	✓	✓	✓	✗	✓	✗	✗	✗

# Components

## Tablets

NOVO offers a variety of tablets that can be operated from our customized case or handheld.

- Pre-installed with the NOVO Touch Software
- Control the system's operation
- One or multiple parallel location control & display
- Ruggedized 7" up to 21.5" Full HD Tablets
- A variety of Laptops Available
- Supports Windows® 10

### Most Popular Tablets



Panasonic Toughpad™ FZ-G1- 10"



Panasonic Toughbook® CF-33- 12"



NOVO Bright XL 21.5" Full HD

	Panasonic Toughpad™ FZ-G1	Panasonic Toughbook® CF-33	NOVO Bright XL
Screen Size	10.1"	12"	21.5"
Screen Resolution	1920x1200	2160x1440	Full HD
Screen Brightness (NIT)	800	1200	True Sun Readable 1500 NIT Super Brightness
Multi-Touch	10 point, multi touch	10 point, multi touch	10 point, multi touch
Operating System	Supports Windows 10	Supports Windows 10	Supports Windows 10

## X-Ray & Isotopes

The NOVO systems are designed to operate with Isotopes, Constant Potential, Microfocus X-Ray Sources & the entire range of Golden Engineering pulsed X-Ray sources.

- Reduced dose, increased safety, improved productivity, prolonged tube life and enable Isotopes usage at a very low activity level
- Operational safety distance is easily obtained with wired or wireless capabilities
- Specially designed connector/picatiny connects the Golden source to the Control Box for quick deployment
- The optional Golden X-Ray sources are portable, battery operated, lightweight & contain no radioactive materials



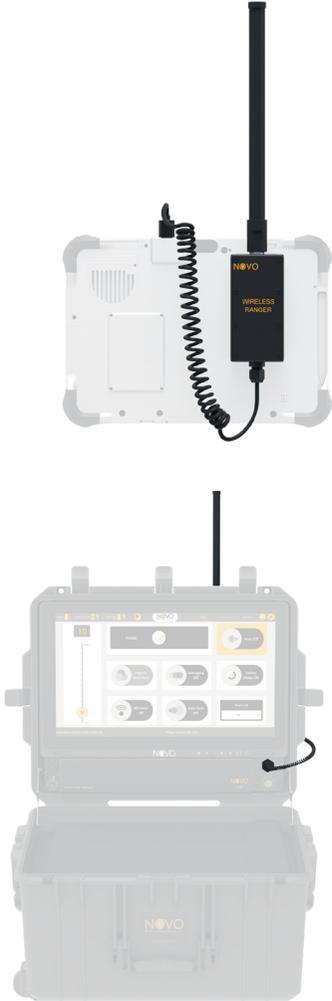
	XR200	XRS-3	XRS-4
KVP	150	270	370
Weight	10.7 lbs. (4.8 kg)	11.8 lbs. (5.3 kg)	18.3 lbs. (8.3 kg)
Size	10.7" x 4.3" x 5.8" (27.2cm x 10.8cm x 14.8cm)	14.2" x 4.3" x 5.8" (36.1cm x 10.9cm x 14.8cm)	19.3" x 4.8" x 7.1" (48.9cm x 12.2cm x 17.9cm)
Pulse Rate	10 pulses per second	15 pulses per second	9 pulses per second

# Accessories

## Wireless Ranger

The NOVO Wireless Ranger is a wireless transceiver, which extends the wireless communication range between the tablet and the inspection area.

- Battery-free
- Lightweight
- Up to 500m (0.31 miles) LOS with Falcon II
- Built in magnets to mount on any ferromagnetic object - tablet, case, vehicle etc.



## Wireless Super Ranger

The NOVO Wireless Super Ranger is a special booster that increases wireless distance and stability of our standard Ranger device.

- Same size as Standard Ranger
- Built-in Magnets and ¼" Thread for a Variety of Mounting Options
- 20+ Hours Built-in Battery



## Wireless X-Ray

The Wireless X-Ray allows to control a variety of X-Ray sources without cable connection between the controller and the X-Ray source in locations where it's inconvenient or impossible to use a cable.

- Lightweight
- Easy attaching to Golden Sources



## Communication Cable

The communication cable provides reliable and fast data transmission between the various system parts.

- Power Over Line for unlimited operation when using an external power source
- Lightweight, robust custom reel
- Extension cables of 50m, 100m and 150m
- Maximum of 300m wired operation



Built-in 50m Rugged Pelican Reel



Pelican Reel



Backpack Reel



Extension Reel

## Accessories

### Armor Kit

The Armor Kit Contains the NOVO Armor, which provides additional mechanical protection to the NOVO Detectors, the Armor Stand and a traveling soft cover.

- Newest shock absorbent technology
- Water resistant design
- Supports wired & wireless communication
- Multiple positioning options
- Tripod connection using the Built-in 1/4" threads
- Fast Detector battery replacement



NOVO Armor 22



NOVO Armor 15



NOVO Armor 12



NOVO Armor Stand



### Soft Protective Cover

The Detector Soft Protective Cover provides additional protection for the NOVO 15WN & 22WN Detectors.

- Additional weather & impact protection
- Special opening for Tripod Mount access
- Various positioning options
- Supports wired & wireless communication
- Lightweight & small footprint



## Detector Stand

The Detector Stand is a custom-made accessory that firmly holds the Detector in an upright position (portrait or landscape).

- Low profile design
- Utmost flexibility in tight places
- Multiple positioning options- standalone (figure a) or leaning on a wall (figure b)



## Tripod Mounts

The Tripod Mount is a lightweight accessory that firmly holds the detector and provides various positioning options.

- Two 1/4" standard threads for tripod or manipulation arm connection
- Secured connection to the Detector using a safety pin
- Numerous positioning options



NOVO 22 Tripod Mount  
~1lbs. (~0.5kg)



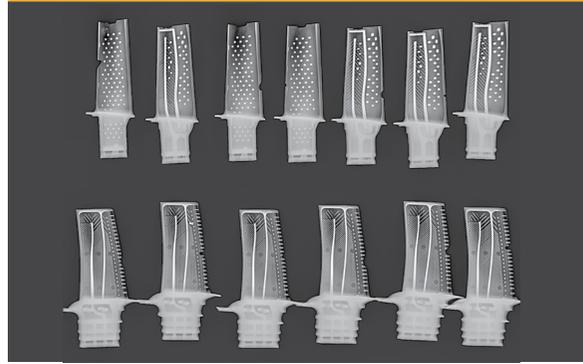
NOVO 15 Tripod Mount  
~0.8lbs. (~0.35kg)

# Applications

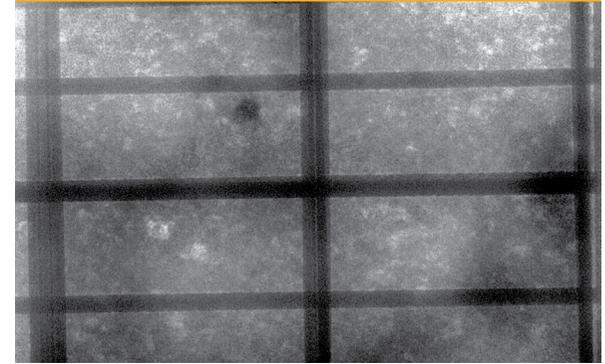
Oil & Gas



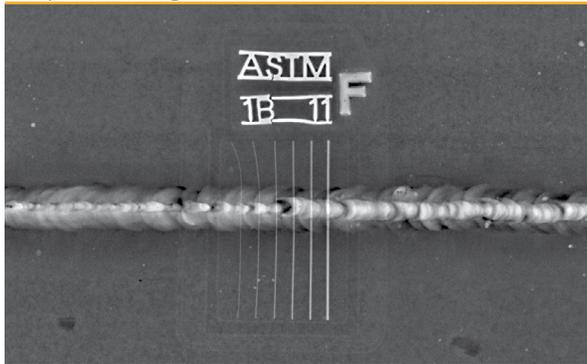
Aerospace



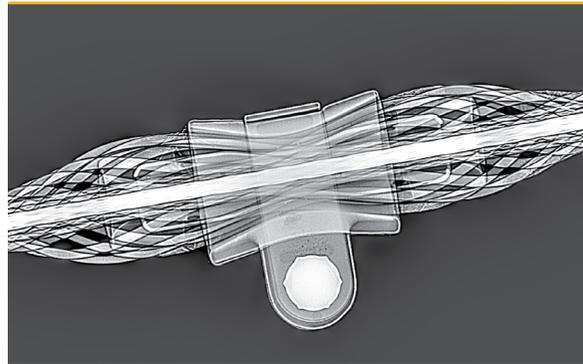
Concrete



Ship Building



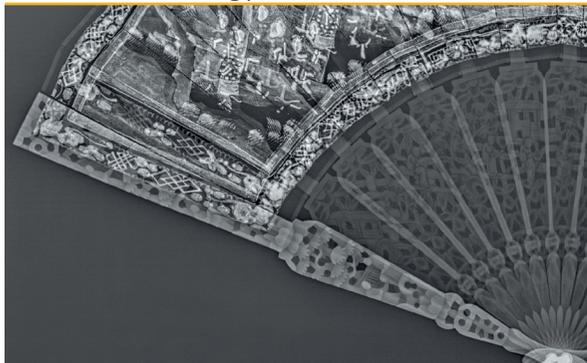
Power Line



Munition



Art & Archaeology



*International Standards*

The NOVO Touch Professional Software has numerous tools necessary to support multiple international standards such as:

- ISO 17636-2 Class B
- BOEING 7044 Ver C
- ASME Section V article 2
- ASTM DICONDE

