

INDUSTRIAL

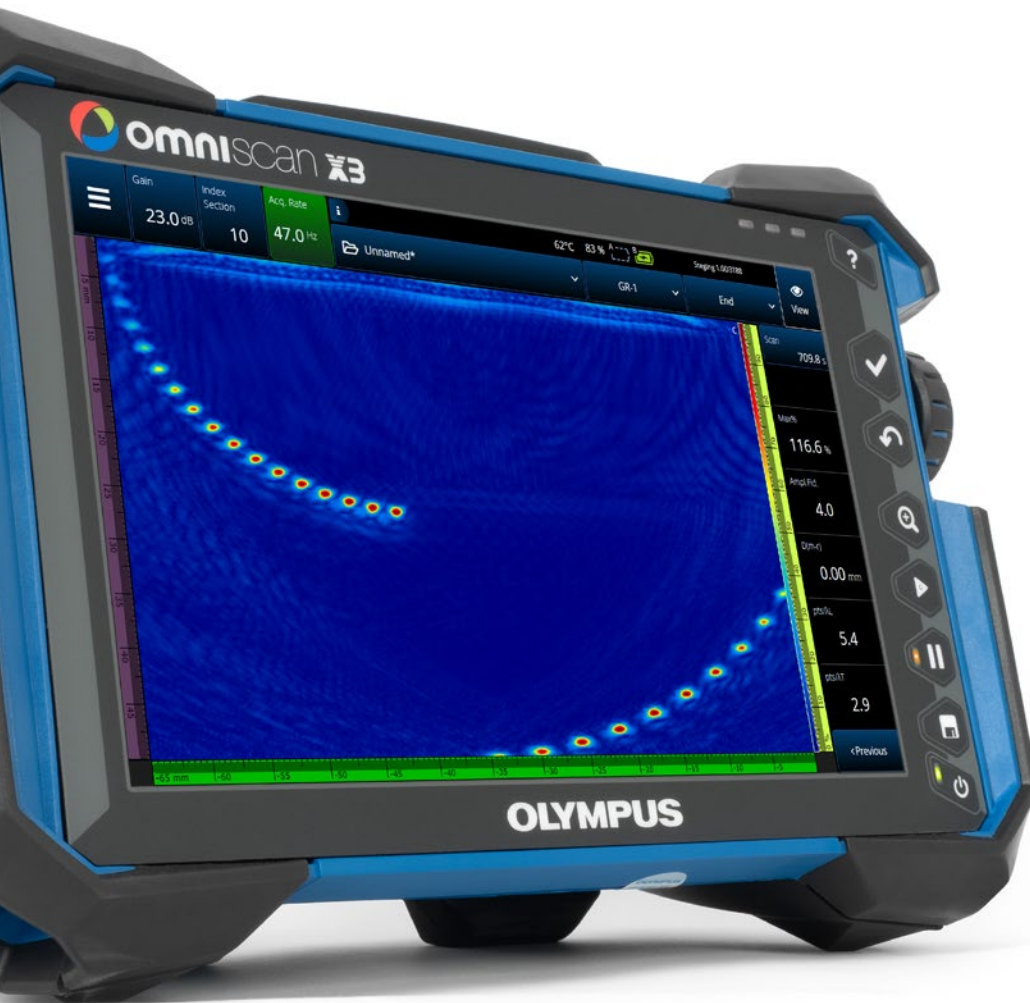
Confidence You Can See

OmniScan™ X3 Phased Array Flaw Detector with TFM



EVIDENT

Innovative TFM



TFM Images with Superb Detail

The combination of the OmniScan™ X3 flaw detector's live total focusing method (TFM) envelope processing, up to 1,024 × 1,024 grid resolution, and vibrant color display make its TFM images stand out with exceptional detail. Defects appear sharp and clear with high resolution.

Detect Early-Stage HTHA

The instrument's advanced imaging capabilities translate into better and finer detection of high-temperature hydrogen attack (HTHA), so you can detect the damage mechanisms at an early stage, when it matters the most.



Confirm Your Coverage in Advance

The Acoustic Influence Map (AIM) tool provides you with an instant visual model of the sensitivity based on your mode, settings, and simulated reflector.

The tool enables you to visualize the effect of a wave set (in TFM mode), see where sensitivity stops, and adjust your scan plan accordingly.



Facilitates Flaw Interpretation and Sizing

Up to four TFM modes provide images from different angles. This information can provide you with greater confidence when identifying defects and determining defect depth.

Improved Phased Array

Innovations for Efficiency

3X as fast as the OmniScan MX2 flaw detector (max pulse repetition frequency)

Single time-of-flight diffraction (TOFD) menu for accelerated workflow

Improved fast phased array calibration lessens frustration

800% high amplitude range reduces the need to rescan

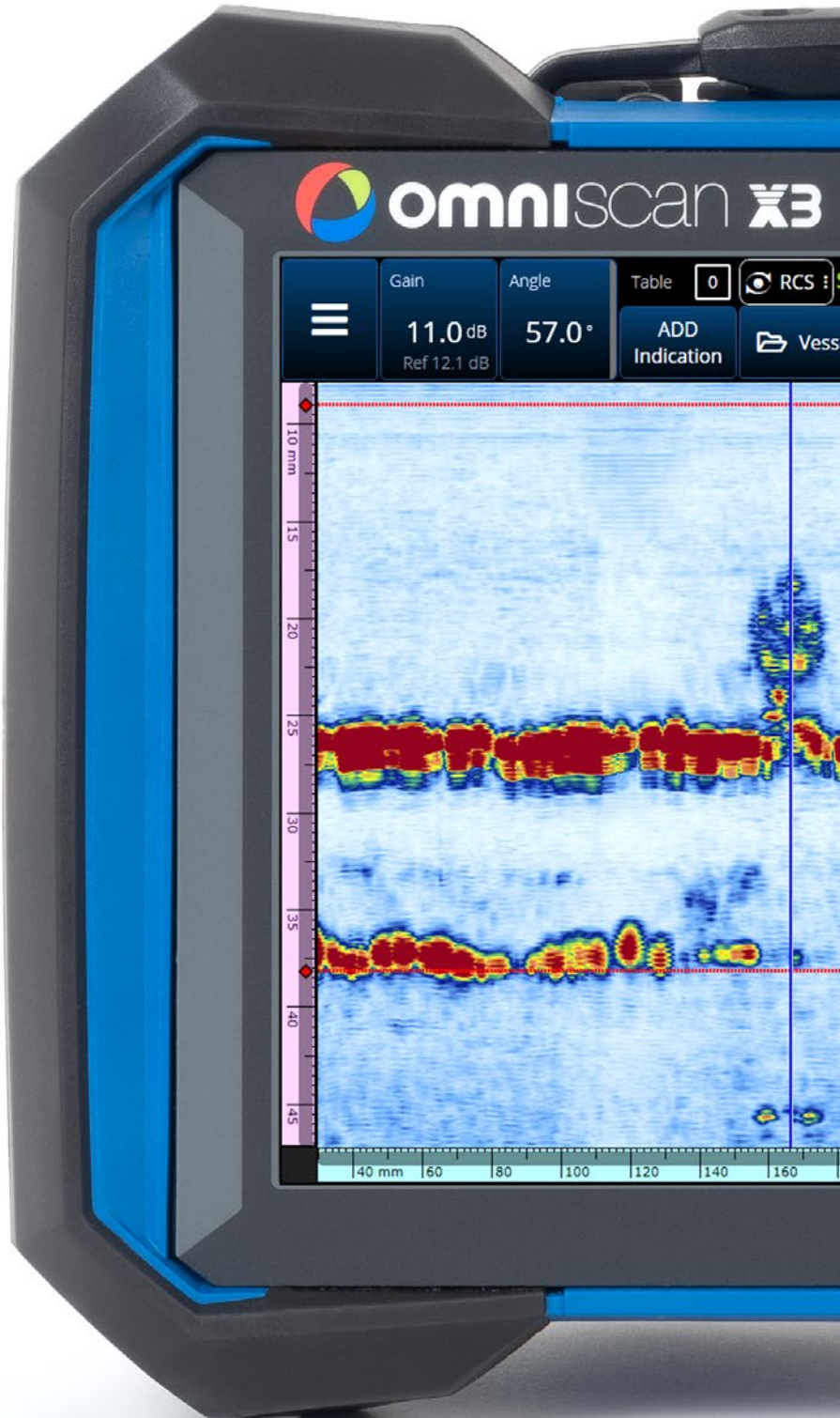
Onboard Dual Linear Array™ and Dual Matrix Array™ probe support accelerates setup creation

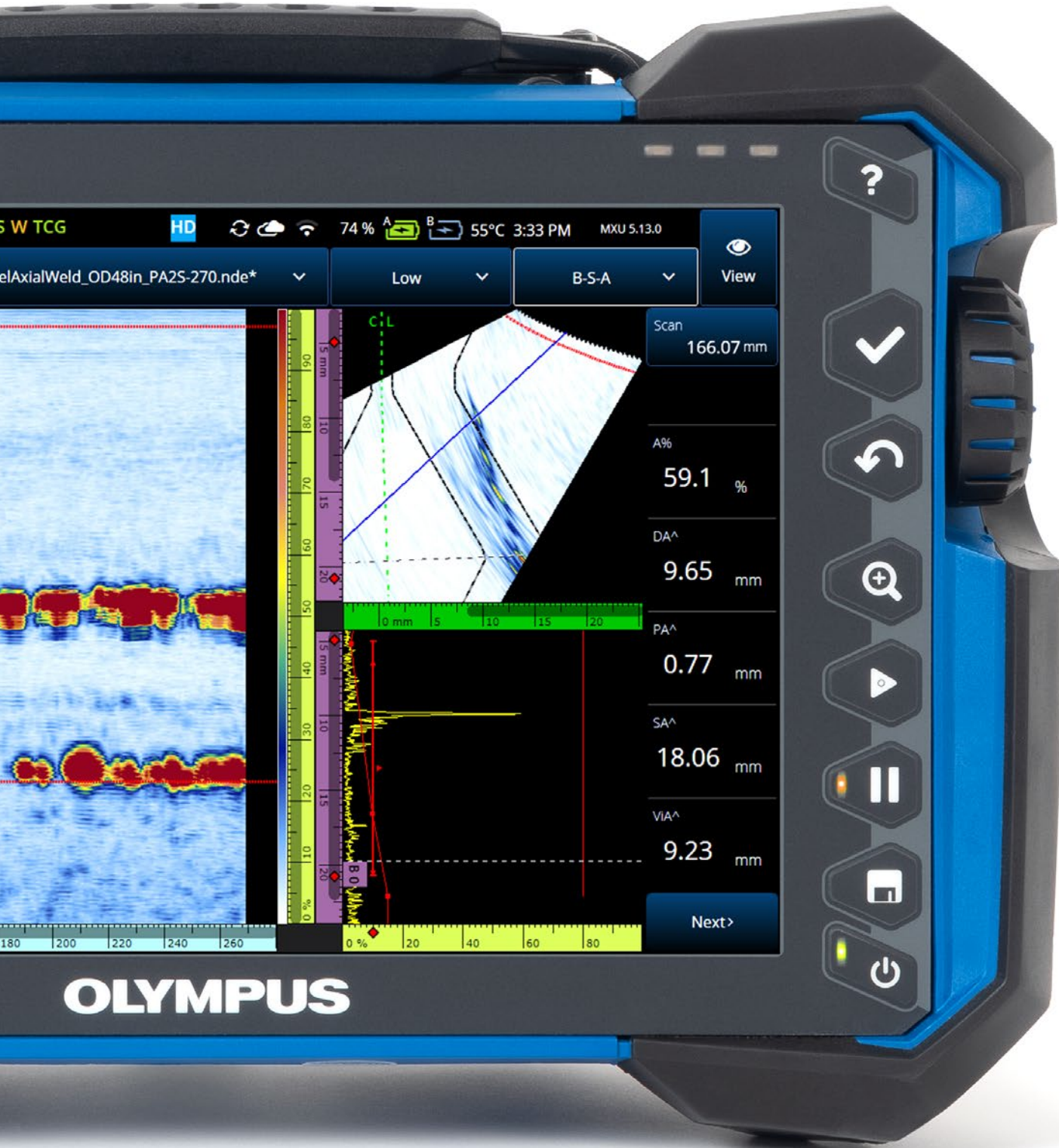
Compatible with Existing Files and Setups

Existing probes and scanners

MX2/SX data files to compare new data with old and monitor changes through time

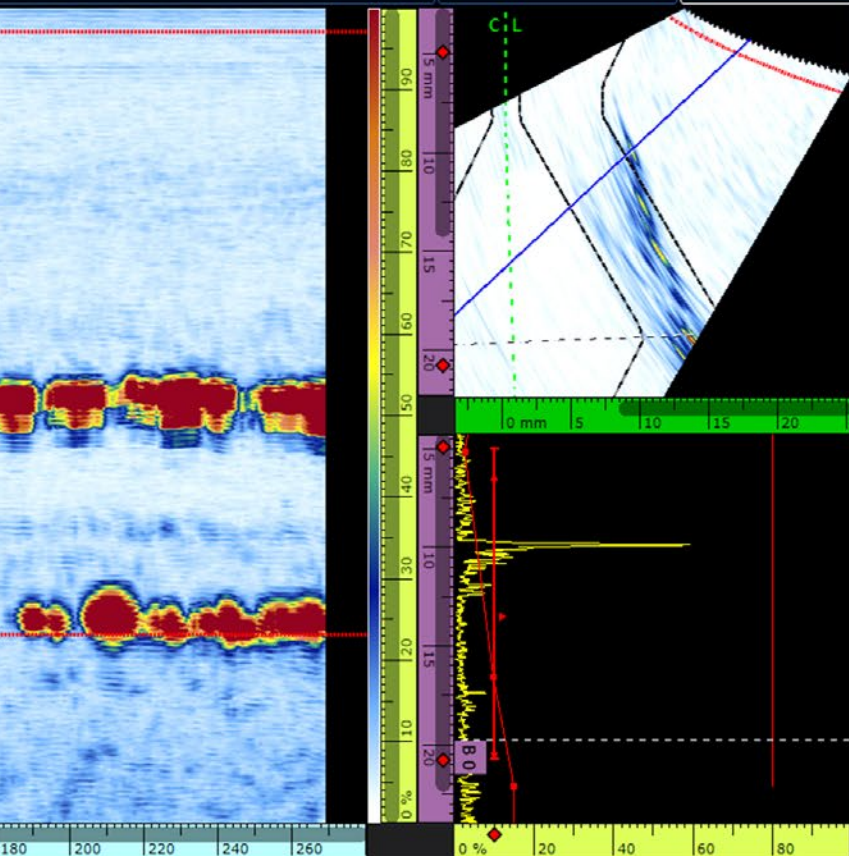
MX/MX2/SX setups to facilitate procedure compliance





S W TCG HD 74% A B 55°C 3:33 PM MXU 5.13.0

elAxialWeld_OD48in_PA2S-270.nde* Low B-S-A View



Scan
166.07 mm

A%
59.1 %

DA^
9.65 mm

PA^
0.77 mm

SA^
18.06 mm

VI A^
9.23 mm

Next>

- ? (Help)
- ✓ (Check/Confirm)
- ↶ (Previous)
- ⊕ (Zoom In)
- ⊖ (Zoom Out)
- ⏸ (Pause)
- 📁 (Save)
- ⏻ (Power)

OLYMPUS

Reliable and Easy to Use



Get to Work, Quickly

The onboard scan plan, improved fast calibration, and streamlined user interface eliminate unnecessary steps to help ensure that you can complete your inspection setup in minimal time.

If you are an existing OmniScan™ user, the transition from the MX2 is fast. If you are new to phased array ultrasonic testing or TFM, the OmniScan X3 flaw detector is easy to learn.

Equipped for Tough Challenges

Scan without Stopping

The 25 GB maximum file size enables you to continuously scan large components without stopping.

25
GB

=



10 m
(32.8 ft)
weld
(1)



13 m²
(140 ft²)
area
(2)



20 m
(65.6 ft)
diameter
(3)

(1) A single scan using 4 TFM groups optimized for a thickness of 50 mm.

(2) Scan up to a single 7.6 m × 1.7 m (25 ft × 5.6 ft) storage tank plate with a 1 mm × 1 mm resolution using a HydroFORM™ scanner.

(3) A single pass of a wind tower weld using 4 sector scans, 2 linear scans, and 2 TOFD groups.



The Workhorse of Your Inspection Fleet

The OmniScan™ X3 flaw detector offers tools to help you complete your work efficiently. Its range of applications include welds, pipelines, pipes, corrosion resistant alloys, corrosion mapping, HTHA inspection, detection of stepwise cracking, composite inspection, flaw imaging, and more.

A Better OmniScan

- › IP65 certified rain and dust proof
- › User-replaceable cooling fan can be changed without opening up the instrument or voiding the calibration
- › Onboard GPS to record the location of your data
- › Connect wirelessly to the Evident Connect cloud platform to download the latest software as soon as it's available



Specifications

| | | |
|----------------------------|--|---|
| Size (W × H × D) | 335 mm × 221 mm × 151 mm (13.2 in. × 8.7 in. × 5.9 in.) | |
| Weight | 5.7 kg (12.6 lb) (with 1 battery) | |
| Onboard Storage | 64 GB internal SSD storage, extendable as needed with an external USB drive; 25 GB maximum file size | |
| Storage Devices | SDHC™ and SDXC™ cards or most standard USB storage devices | |
| GPS | Yes (unless specified otherwise for some regions) | |
| Alarms | 3 | |
| Wireless Connection | Yes (wireless LAN dongle included in the package) | |
| Connectors | 1 PA connector; 2x UT channels (2 P/R connectors each) | |
| Number of Groups | 8 groups (16:128PR and 32:128PR); 16:64PR offers either 2 groups (PA, UT, or TFM) or 2PA + 1 UT | |
| Certifications | ISO 18563-1:2015 ISO 22232-1:2020 | |
| Display | | |
| Type | TFT LCD with resistive touch screen | |
| Size | 269 mm (10.6 in.) | |
| Resolution | 1280 × 768 pixels | |
| Inputs and Outputs | | |
| Ports | 2 USB ports (one hidden behind the battery), 1 USB 3.0, HDMI video output, SDHC memory card, and Ethernet communication port | |
| Encoder | 2-axis encoder line (quadrature or clock/direction), 3rd encoder ready | |
| Digital Input | 6 digital inputs, TTL (enabling acquisition ON/OFF) | |
| Digital Output | 5 digital outputs, TTL | |
| Power Output Line | 5 V nominal, 1 A (short-circuit protected), and 12 V output at 1 A | |
| External DC Supply | | |
| DC-IN Voltage | 15 VDC to 18 VDC (min. 50 W) | |
| Connector | Circular, 2.5 mm pin diameter, center-positive | |
| Battery | | |
| Type | Lithium-ion battery | |
| Capacity | 93 Wh | |
| Number of Batteries | 2 | |
| Life | 5 hours using 2 batteries (hot-swap capable) | |
| PA/UT Configuration | | |
| Frequency | Effective Digitizing Frequency | Up to 100 MHz |
| | Max PRF | 20 kHz |
| Display | Refresh Rate | A-scan: 60 Hz; S-scan: 20 Hz to 30 Hz |
| | Envelope (Echo Dynamic Mode) | Yes: Volume-corrected S-scan (30 Hz) |
| | A-Scan Height | Up to 800% |
| Data Specifications | | |
| Processing | Maximum Number of A-Scan Data Points | Up to 16,384 |
| | Real-Time Averaging | PA: 2, 4, 8, 16 UT: 2, 4, 8, 16, 32, 64 |
| | Rectification | RF, full wave, half wave+, half wave- |
| | Filtering | PA channel: 3 low-pass, 6 band-pass, and 4 high-pass filters UT channel: 8 low-pass, 6 band-pass, and 4 high-pass filters (3 low-pass filters when configured in TOFD) |
| | Video Filtering | Smoothing (adjusted to the probe frequency range) |
| Programmable TCG | Number of Points | 32: One TCG (time-corrected gain) curve per focal law |
| | Range | PA (standard): 40 dB per step of 0.1 dB PA (extended): 65 dB per step of 0.1 dB UT: 100 dB per step of 0.1 dB |
| | Maximum Slope | PA (standard): 40 dB/10 ns PA (extended): 0.1 dB/10 ns UT: 40 dB/10 ns |

| Acoustic Specifications | | | |
|------------------------------|---|---|---|
| | | PA Channel | UT Channels |
| Pulsar | Voltage | 40 V, 80 V, and 115 V | 85 V, 155 V, and 295 V |
| | Pulse Width | Adjustable from 30 ns to 500 ns; resolution of 2.5 ns | Adjustable from 30 ns to 1,000 ns; resolution of 2.5 ns |
| | Fall Time | < 10 ns | < 10 ns |
| | Pulse Shape | Negative square pulse | Negative square pulse |
| | Output Impedance | 28 Ω in pulse-echo 24 Ω in pitch-catch | < 30 Ω |
| Receiver | Gain Range | 0 dB to 80 dB maximum input signal; 800 mVp-p (full-screen height) | 0 dB to 120 dB maximum input signal; 30 Vp-p (full-screen height) |
| | Input Impedance | 57 Ω ± 10% at 9 MHz in pulse-echo 100 Ω ± 10% at 9 MHz in pitch-catch | 50 Ω in pulse-echo mode 50 Ω in pulse-receive mode |
| | System Bandwidth | 0.5 MHz to 18 MHz | 0.25 MHz to 28 MHz |
| Beam Formation | Scan Type | Single, linear, sectorial, compound, and TFM | |
| | Maximum Aperture | OMNIX3-PA16128PR and OMNIX3-PA16:64PR = 16 elements OMNIX3-PA32128PR = 32 elements | |
| | Number of Focal Laws | Up to 1024 | |
| | Delay Range Transmission | 0 μs to 10 μs in 2.5 ns increments | |
| | Delay Range Reception | 0 μs to 6.4 μs in 2.5 ns increments | |
| TFM/FMC | | | |
| Supported Modes | Pulse echo: L-L, TT, and TT-TT Self-Tandem: TT-T, LL-L, LT-T, TL-T, TTT-TT, and TL-L | | |
| Parallel Multimode TFM | 4 simultaneous TFM groups (wave sets) | | |
| Live Envelope Process | Yes | | |
| Maximum Aperture | 64-element extended aperture (32:128PR only) 32-element extended aperture for 16:64PR and 16:128PR | | |
| Image Resolution | Up to 1024 × 1024 (1 MM points) (for each TFM wave set) | | |
| Operating Environment | | | |
| Ingress Protection Rating | IP65 certified (completely protected against dust and water jets from all directions (6.3 mm nozzle)) | | |
| Shockproof Rating | Drop tested according to MIL-STD-810G | | |
| Intended Use | Indoor and outdoor use | | |
| Operating Temperature | -10°C to 45° C (14 °F to 113°F) | | |
| Storage Temperature | -20 °C to 60 °C (-4 °F to 140 °F) (with battery inside) -20 °C to 70 °C (-4 °F to 158 °F) (with no battery inside) | | |

Three Available Options

The OmniScan X3 flaw detector is available in 16:64PR*, 16:128PR, and 32:128PR models. It is easy to upgrade to the 32:128PR model if you decide you need more pulsers.
* Limited to 2 groups (PA, UT, or TFM) or 2PA + 1 UT.

Standard Inclusions (32:128PR)

OmniScan X3 phased array instrument, including FMC/TFM functionality and 2 UT channels, and regionally configured power cord with printed instructions. Includes the latest version of OmniScan MXU software, a rigid transport case, calibration certificate, 93 Wh lithium-ion battery, spare screen protector, DC charger with power cord, USB key with OmniScan software and user manuals, wireless LAN dongle, SDHC™ card, empty USB key for file transfer purposes, and OmniPC analysis software. GPS functionality restricted in some regions. Contact your Evident representative for more details.



Evident Scientific, Inc.
48 Woerd Avenue
Waltham, MA 02453, USA
(1) 781-419-3900

Evident Canada Inc.
3415 Rue Pierre-Ardouin,
Québec, QC G1P 0B3, Canada
+1-418-872-1155

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