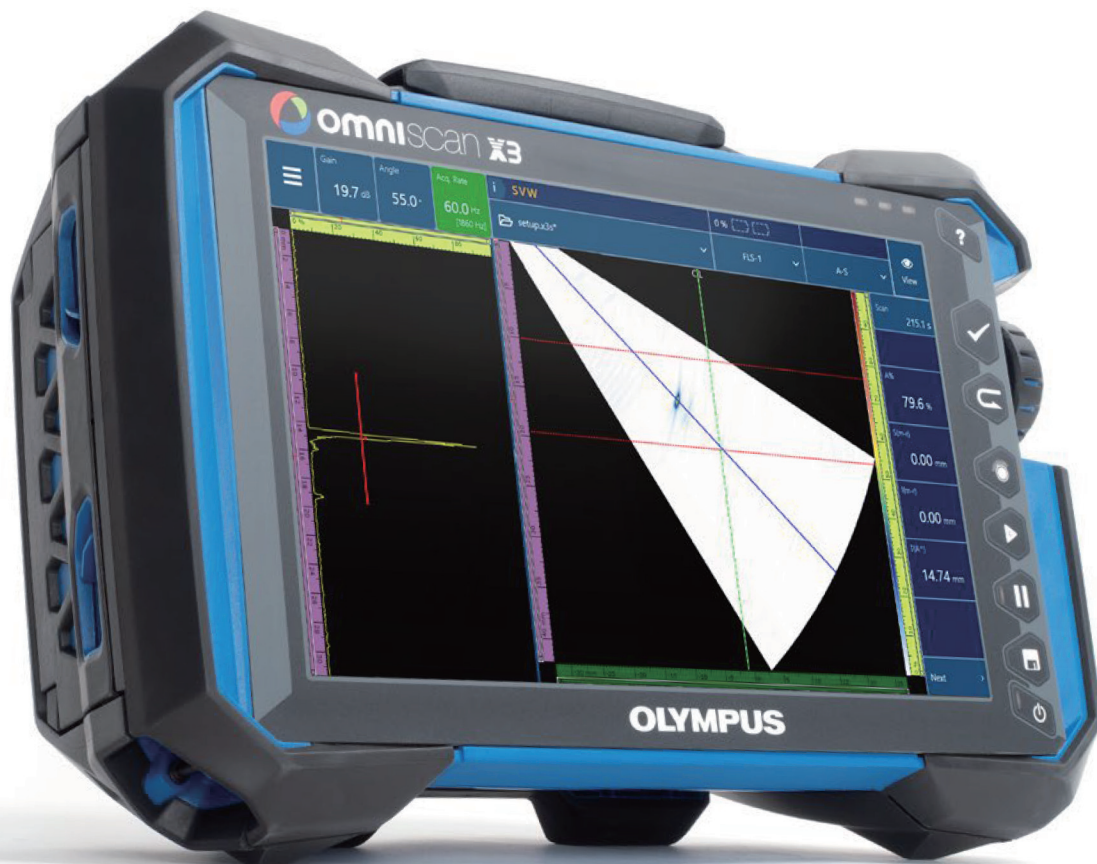


OLYMPUS[®]

OmniScan[®] X3

Phased Array Flaw Detector



Confidence You Can See

OmniScan[®] Redefined

The workhorse of your phased array inspection fleet is now even better. Building on the reliability, image quality, and ease of use that have helped make OmniScan flaw detectors the global standard in portable phased array, we've added powerful new tools, such as total focusing method (TFM) images, to help you do your job even more confidently.

If you've used an OmniScan instrument before, the X3 flaw detector will feel very familiar—a highly portable tool with a robust, industrial housing and a cleaner, more modern user interface. If you've never used one, you'll quickly see why they are the standard, trusted by inspectors all over the world.

All the Essentials

- TOFD onboard
- Two UT channels
- Drop tested and IP65 certified
- 8 beam sets
- Compatible with existing Olympus scanners and probes
- 16:128PR or 32:128PR configurations
- ISO 18563-1:2015 and EN12668-1:2010 compliant

Innovations that Enable Efficiency

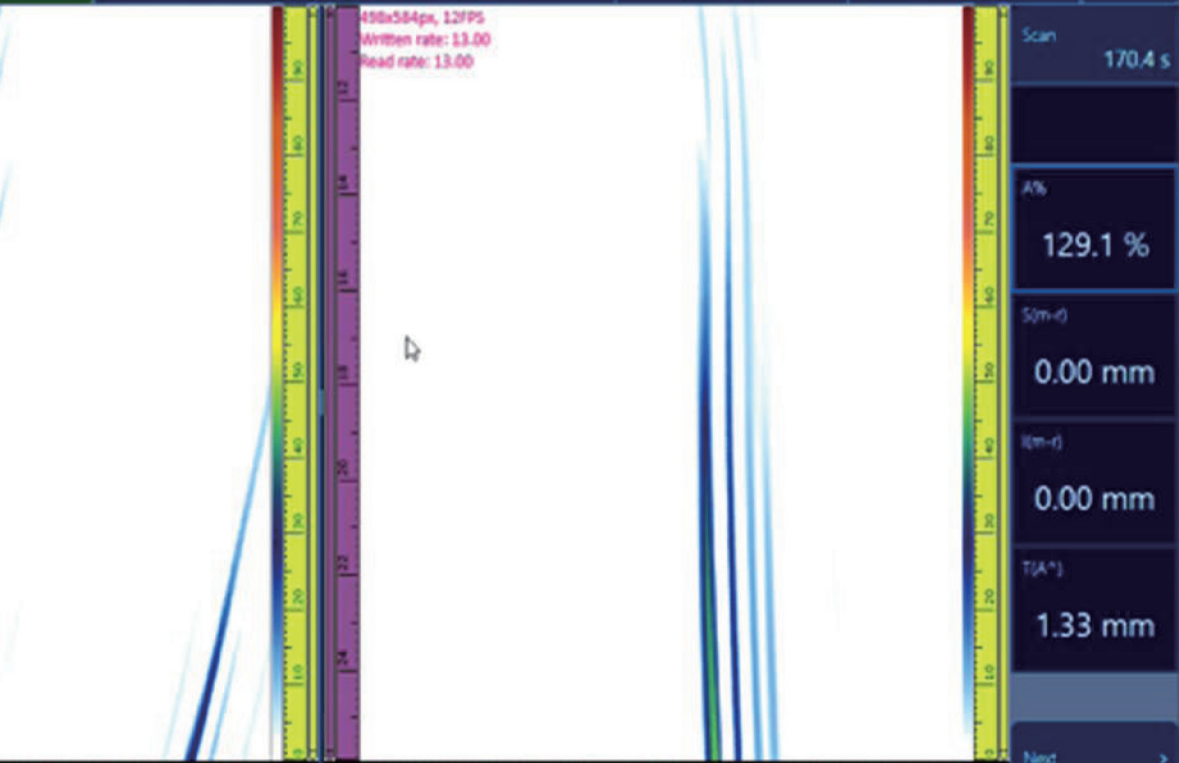
- Total focusing method (TFM) images collected through full matrix capture (FMC), including 64-element aperture support
- Large, 4 GB file size with 64 GB internal memory
- Thoughtfully designed software minimizes button presses
- Create your whole scan plan in a single workflow
- Fast, "single swipe" calibration envelope collection
- 1024 focal laws



an X3

20.0 Hz [20 Hz] SVW Staging 10.1%

20mCrack_55_555.xdr A-S FLS-1 View



Scan 170.4 s

A% 129.1 %

S(m-d) 0.00 mm

I(m-d) 0.00 mm

T(A*) 1.33 mm

Next >

- ? (Help)
- ✓ (Check/Confirm)
- ↶ (Undo)
- ☀ (Light)
- ▶ (Next)
- ≡ (Menu)
- 📁 (File)
- ⏻ (Power)

OLYMPUS

From Start to Finish, More Efficient Inspections

Get Right to Work

Right out of the box, the comprehensive onboard scan plan tool helps you visualize your inspection before you begin. If you've missed anything in your plan, the visualization tools enable you to spot it in advance, reducing the risk of errors. You can create your entire plan, including the TFM zone, in one simple workflow. Improved calibration and setup verification tools enable you to rapidly complete your inspection setup and get to work fast.



Faster Setups

- Configure multiple probes/beam sets at once
- Onboard dual linear, matrix, and dual matrix array creation
- Automatic wedge verification
- Single swipe calibration
- Simultaneous multipoint time-corrected gain (TCG) collection
- Simplified calibration verification process for saved setups

Better Images for Confident Decision Making

Better phased array images help you be more confident in your decisions. With TFM, you can obtain better images throughout the volume of a part and produce images that are geometrically correct, enabling you to validate flaw characterizations made using conventional phased array techniques. Utilize up to 64 active elements in full matrix capture to maximize your TFM coverage and resolution.

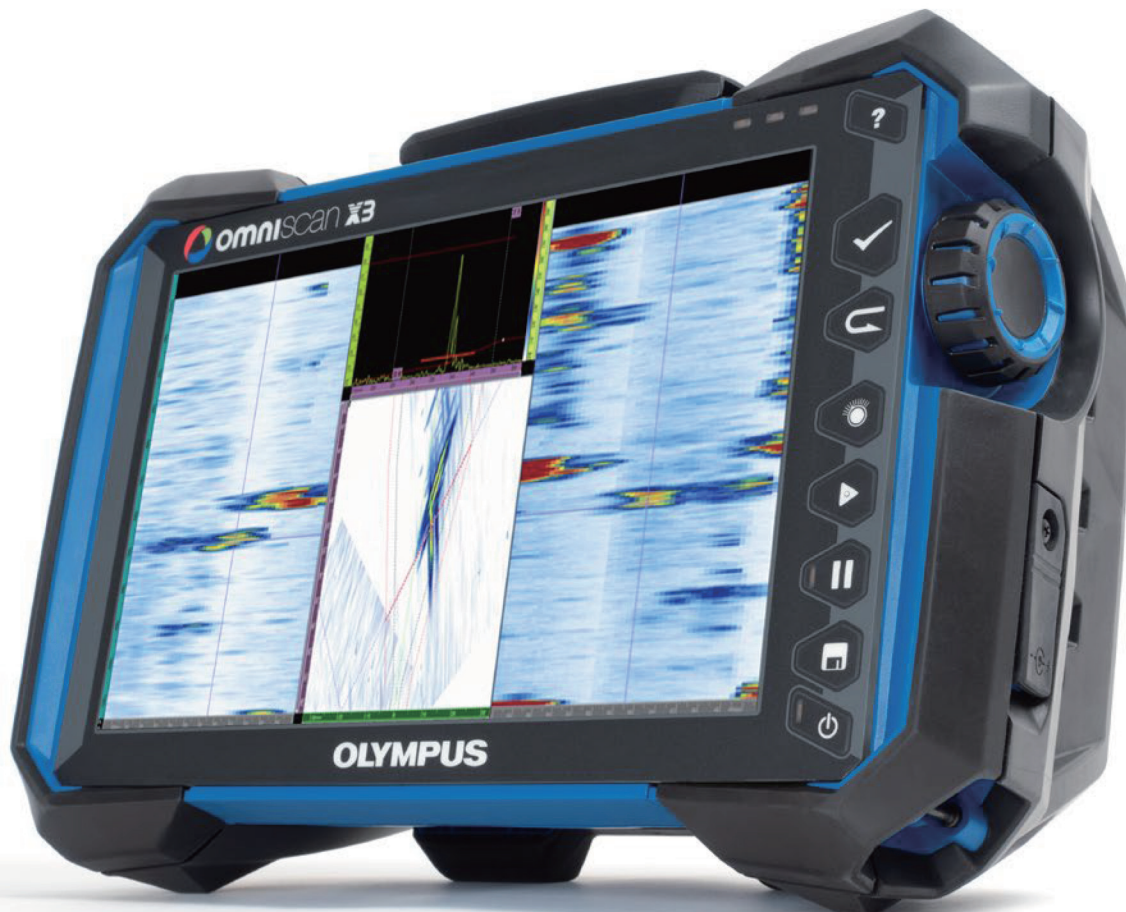
Additional features improve the quality of phased array imaging, including a 16-bit A-scan, interpolation, and smoothing, to make flaw scanning more efficient.

All Your Tools Onboard

- Access the features you need quickly, even in the middle of an inspection
- Efficient menu structure means minimal button presses to complete your inspection
- Balanced power and functionality—use advanced mode to access expert-level features as needed
- Wirelessly send data or share your screen with an offsite colleague using the Olympus Scientific Cloud (OSC)
- Supports dual linear/dual matrix array probes, dynamic depth focusing, auto cursor placement, and more
- 4 GB onboard memory helps you scan large parts without the need to segment scans or offload data
- Track the position of your inspection results with a built-in GPS

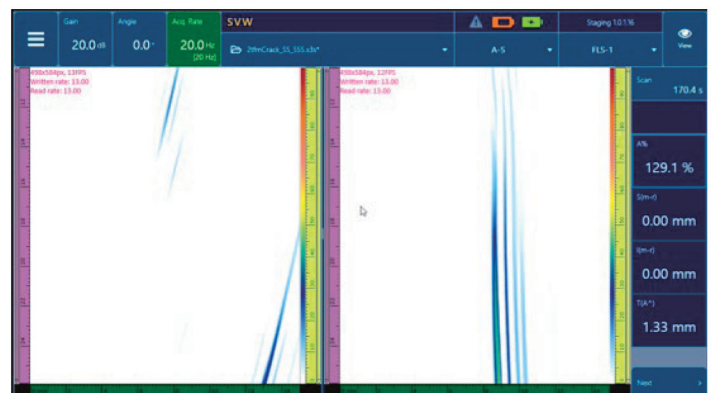
Faster Analysis, Faster Results

Analyzing phased array data can take longer than the inspection. The OmniScan® X3 flaw detector offers flexible tools for faster analysis, whether onboard the instrument or on your PC. And communicating your comprehensive inspection results, from the scan plan to flaw sizing, is simple with an improved indication table and more export options, including an SD™ card, USB memory stick, and the Cloud.



Data Interpretation Tools

- Weld gate reduces the impact of irrelevant geometry echoes
- Volumetric top and side views merge and geometrically correct data to emphasize flaws
- Auto cursor placement identifies the -6 dB drop points from peak indication amplitudes for less time positioning cursors
- Third-party programs can connect to the OSC, so you can access your data with your favorite analysis programs



The Workhorse of Your Inspection Fleet

The OmniScan® X3 flaw detector has the power and flexibility to handle your phased array inspection challenges. Whether you're inspecting welds, pipes, pressure vessels, or composites, the X3 instrument has tools to help complete your work efficiently and interpret flaws with confidence.



Weld

- Check that welds are properly covered with multiple beam set visualization
- Extended 800% high amplitude range lets you characterize saturated indications, such as lack of fusion, without rescanning the component
- Supports multiprobe configurations and different firing patterns, providing better coverage in each weld zone
- Weld gate highlights the zone of interest



Corrosion

- Fast acquisition speed makes it easier to inspect large pipes or vessels
- 4 GB individual file size allows for more data collection with fewer interruptions
- Compatible with all Olympus corrosion scanners
- Supports Dual Linear Array™ probes for improved near-surface resolution

Composites

- High-amplitude range (800%) and 16-bit digitizer enable a wider dynamic inspection range in attenuating materials
- TCG dynamic range of up to 65 dB with improved TCG table view for manual point editing
- 12 kHz scan speeds enable fast data collection over large scan areas
- Wide pulse width control for optimal use of low-frequency probes

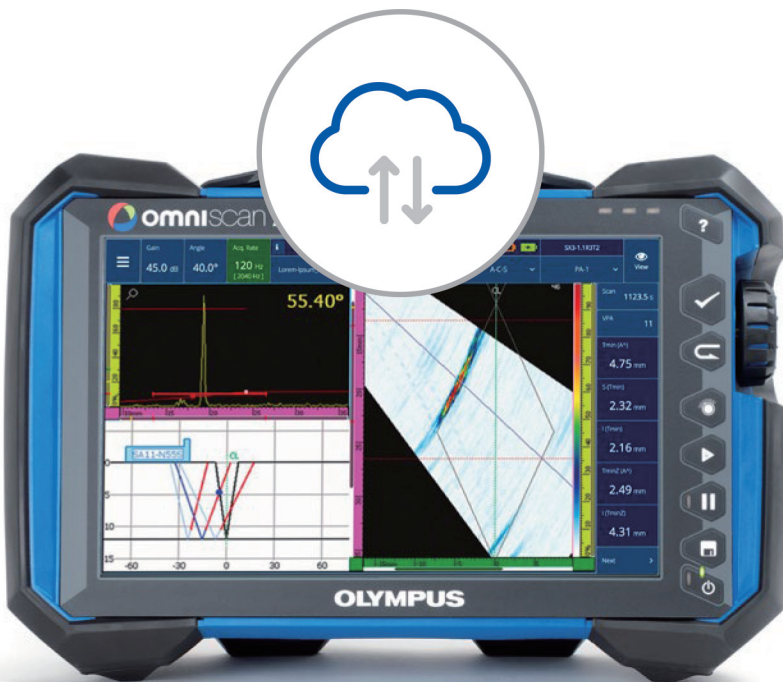


Reliability You Trust

When you're inspecting assets outdoors, tools can get wet, hot, or even dropped. That's why we put the OmniScan® X3 flaw detector through rigorous durability testing. IP65 certified dust proof and water resistant and built to pass a 4-foot drop test, it's ready to work when you are. A large 10.6-inch WXGA display provides clarity and visibility in any lighting condition while enabling crisp touch screen operation, even when using gloves, couplant, or in difficult conditions. In hot environments, the easily replaceable cooling fan keeps you working in temperatures ranging from -10 °C to 45 °C (14 °F to 113 °F) without compromising the IP65 certification.



Leverage the Power of the Cloud



Wireless connectivity to the Olympus Scientific Cloud enables more efficient collaboration and seamless phased array data management.

- Share your instrument's screen with colleagues for guidance or a second opinion
- Data can be uploaded to the Cloud, so it's accessible from anywhere
- Save inspection setup files in the Cloud to access as necessary or deploy to jobs through the OSC Hub
- Access your calibration certificates from the Cloud
- Wireless firmware update helps ensure you've got the latest software and features

Specifications

Type	Multibeam sets, multimode ultrasonic flaw detector	
Power Supply	18 V, 3.9 A	
Size (W x H x D)	330 mm x 215 mm x 142 mm (13 in. x 8.5 in. x 5.6 in.)	
Weight	5.7 kg (with 1 battery) (12.6 lbs)	
Hard Drive Capacity	8 GB DDR (RAM); 64 GB SSD	
Storage Devices	SDHC™ and SDXC™ cards or most standard USB storage devices	
Max Onboard File Size	4 GB	
GPS	Yes (unless specified otherwise for some regions)	
Alarms	3	
Wireless Connection	Yes (USB dongle sold separately as an accessory)	
PA Connectors	1 connector	
Number of Beam Sets	8 beam sets, 1,024 focal laws	
UT Connectors	4 (2 channels P/R)	
Certifications	ISO 18563-1:2015 EN12668-1:2010	
Display		
Technology	Resistive touch screen	
Size	269 mm (10.6 in.)	
Resolution	1280 x 768 pixels	
Number of Colors	16 million	
Type	TFT LCD	
Viewing Angles	Horizontal: -85° to 85° Vertical: -85° to 85°	
I/O Ports		
USB 2.0	2 ports (one hidden behind the battery)	
USB 3.0	1 port	
Video Output	Video out (HDMI)	
Memory Card	SDHC port	
Communication	Ethernet	
I/O Lines		
Encoder	2-axis encoder line (quadrature or clock/direction)	
Digital Input	6 digital inputs, TTL	
Digital Output	5 digital outputs, TTL	
Acquisition ON/OFF Switch	Through the configuration of a digital input	
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	Digitizing Frequency	100 MHz
	Max PRF	12 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%
Synchronization	On Internal Clock	1 Hz to 10 kHz
	External Pace	Yes
	On Encoder	On 2 axes: from 1 to 65,536 steps

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: 3 low-pass, 6 band-pass, and 4 high-pass filters (3 low-pass filters when configured in TOFD)	
Programmable TCG	Video Filtering	Smoothing (adjusted to the probe frequency range)	
	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			
Pulsar		PA Channel	UT Channels
	Voltage	40 V, 80 V, and 115 V	95 V, 175 V, and 340 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	35 Ω in pulse-echo 30 Ω in pitch-catch	< 30 Ω
Receiver	Gain Range	0 dB to 80 dB maximum input signal; 550 mVp-p (full-screen height)	0 dB to 120 dB maximum input signal; 34.5 Vp-p (full-screen height)
	Input Impedance	57 Ω ± 10% at 9 MHz in pulse-echo	60 Ω in pulse-echo mode 50 Ω in pulse-receive mode
	Input Impedance	100 Ω ± 10% at 9 MHz in pitch-catch	
	System Bandwidth	.5 MHz to 18 MHz	0.25 MHz to 28 MHz
Beam Formation	Scan Type	Single, linear, sectorial, compound, and TFM	-
	Aperture	OMNIX3-PA16128PR = 16 elements OMNIX3-PA32128PR = 32 elements	-
	Number of Elements	OMNIX3-PA16128PR = 16 elements OMNIX3-PA32128PR = 32 elements	-
	Number of Focal Laws	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	LL, LLL, LLLL, TT, TTT, TTTT, LTT, LTL, TLL		
Parallel Multimode TFM	Yes		
Number of Beam Sets	2 beam sets		
Maximum Aperture	64 elements extended aperture		
Image Resolution	Up to 1024 x 1024 (1 MM points)		
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		
Altitude	Up to 2,000 m		
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)		
Maximum Relative Humidity (RH)	Max. 70% RH at 45 °C (113 °F) noncondensing		
Pollution Degree	2		
Installation/Overvoltage Category	II		

www.olympus-ims.com

OLYMPUS

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