

THE **3DS-SHAPER** SERIES

ULTRA-PRECISE 3D LASER PROFILOMETRY

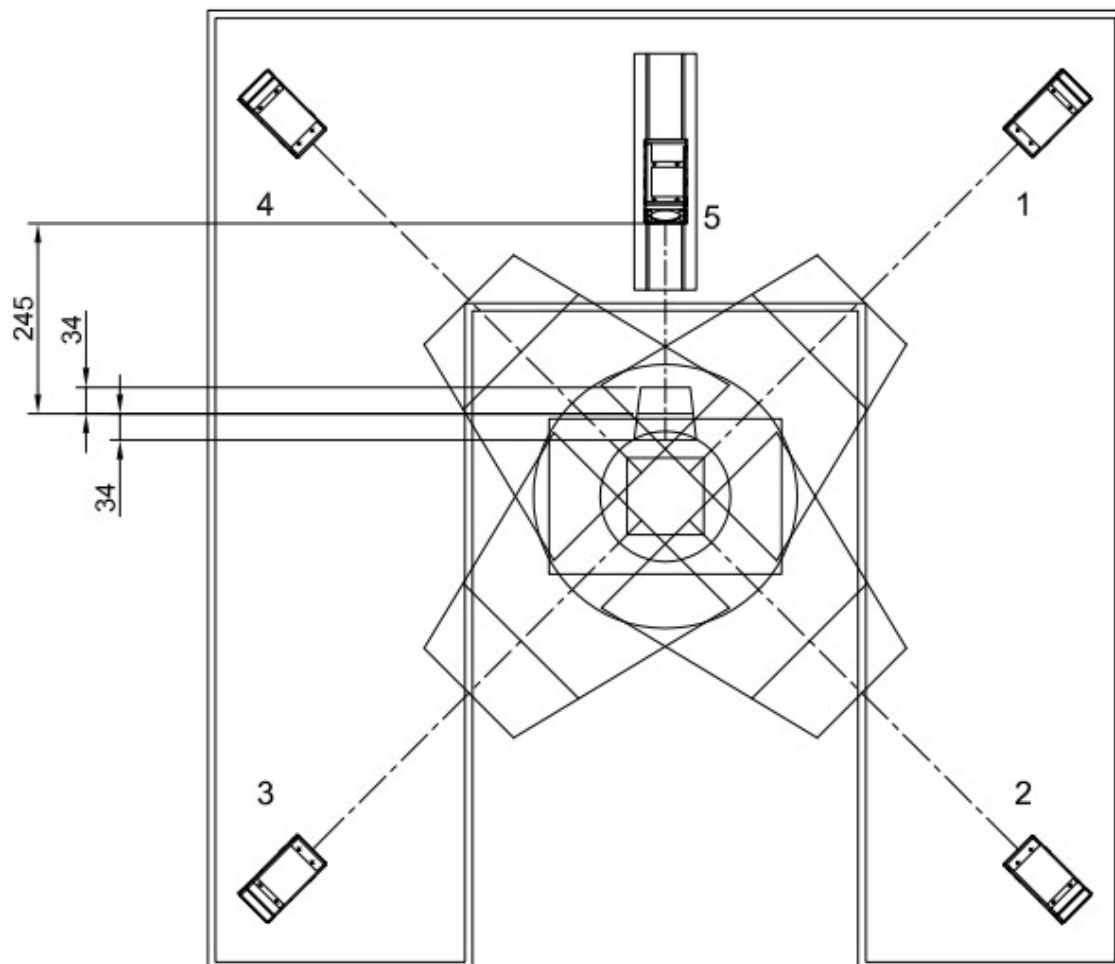
OVERVIEW

The Ultimate Solution for Weld Seam Inspection and Dimensional Analysis

The 3DS-Shaper Series represents the pinnacle of non-contact measurement technology. Designed for industrial environments, this system provides high-speed, ultra-precise 3D laser profilometry to ensure the integrity and geometry of your products.

Key Benefits:

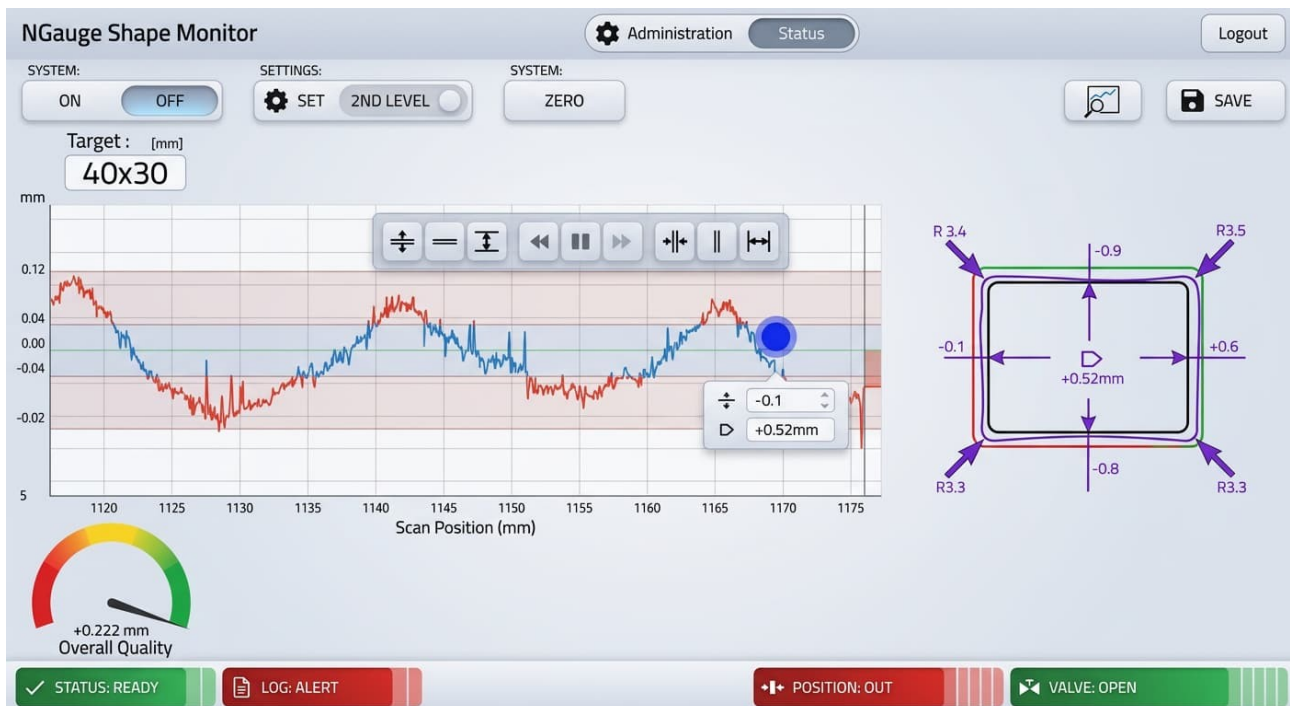
- Non-contact measurement
- High-speed sampling rates
- Complete 360° profilometry
- Real-time defect detection



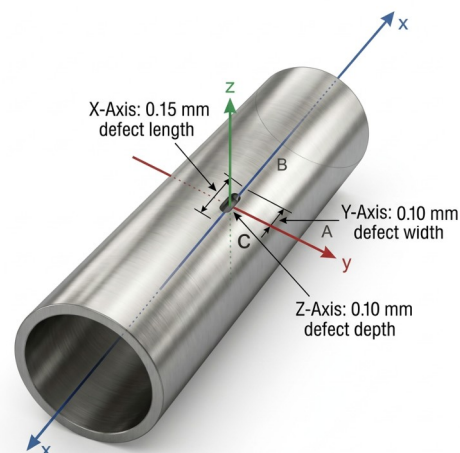
✶ 3DShaper 380.4-245.1 ✶

CAPABILITIES & DETECTION

WHAT CAN THE 3DS-SHAPER DETECT?



Our advanced technology distinguishes between external surface geometry and internal structural integrity.



DETECTABLE FEATURES (External Geometry):

- **Corners & Radius:** Precision measurement of edge geometry.
- **Diameter & Ovality:** Verifying roundness and size consistency.
- **Mismatch:** Detecting alignment issues between pipe joints.
- **Bead Height:** Measuring weld cap height and butt joints.
- **Longitudinal Straightness:** Ensuring the pipe runs true without deviation.
- **Volume:** Calculating cubic volume based on P x L dimensions.

NOT DETECTABLE (Sub-Surface/Internal):

- Internal Tensions
- Internal Corners & Wall Thickness
- Inside Cracks

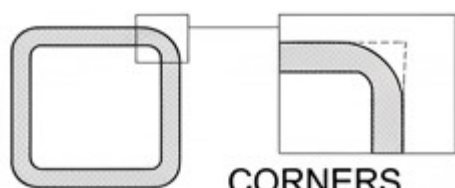
WELD SEAM INSPECTION SPECIFICS

Detectable Weld Defects:

- External Lack
- Pass Through
- Surface Recoil
- Geometry Irregularities
- Weld Angle deviations
- Weld Edges
- Excess Weld Material
- Out-of-Weld Cracks

Not Detectable Weld Defects:

- Porosity
- Internal Lack
- Bead/Wall Ratio issues



CORNERS



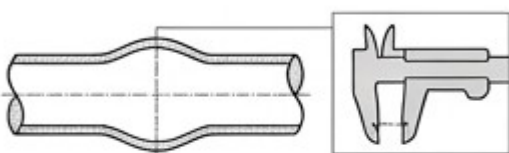
RADIUS



DIAMETER



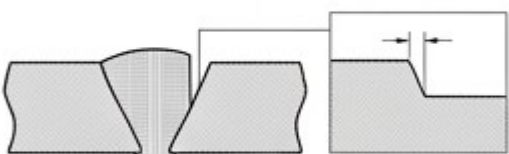
MISMATCH



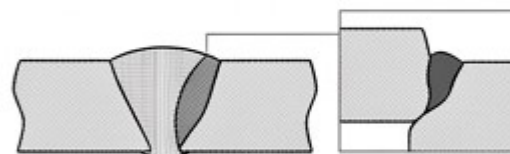
MISMATCH



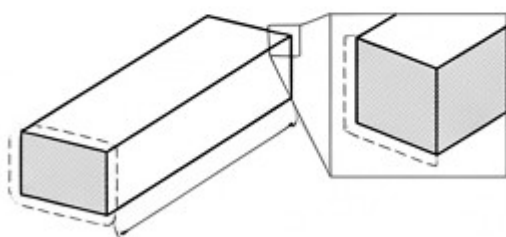
LOCAL OVALITY



BEAD HEIGHT

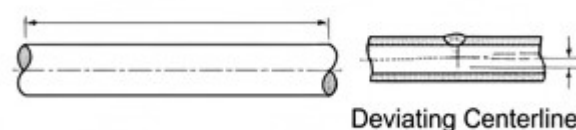


MISMATCH

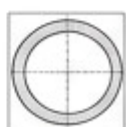


VOLUME

Longitudinal Straightness



Deviating Centerline



ROUND

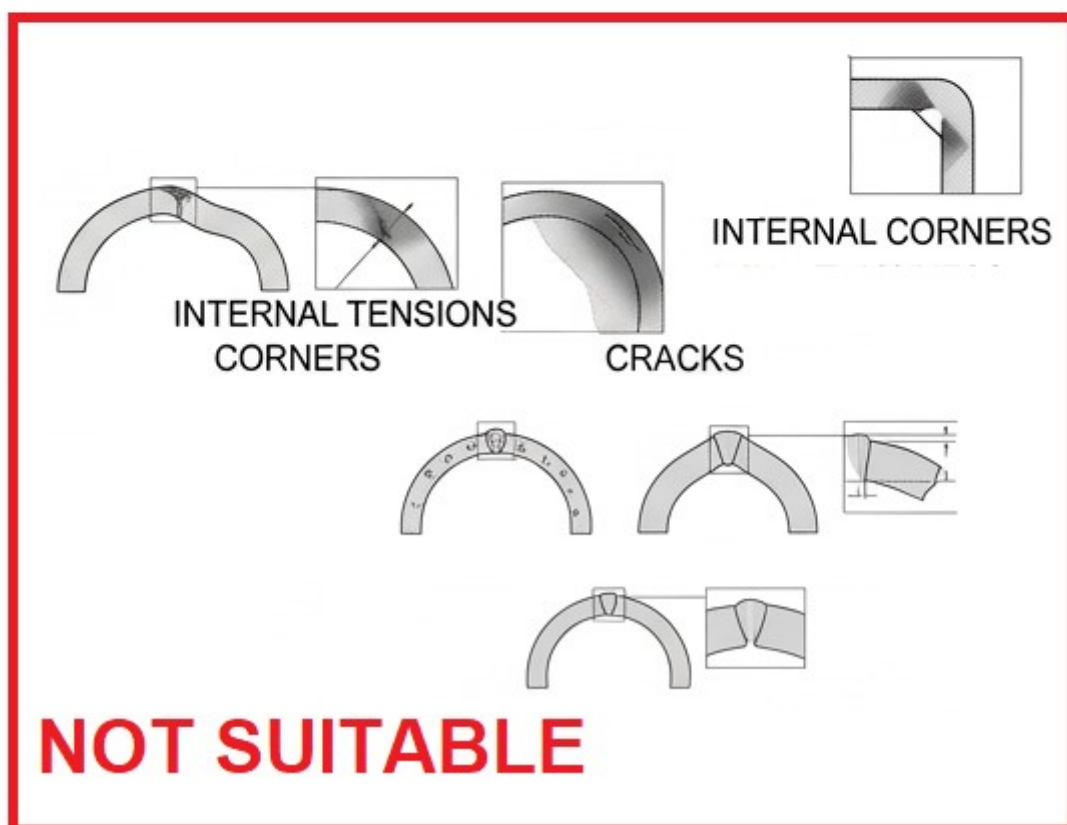
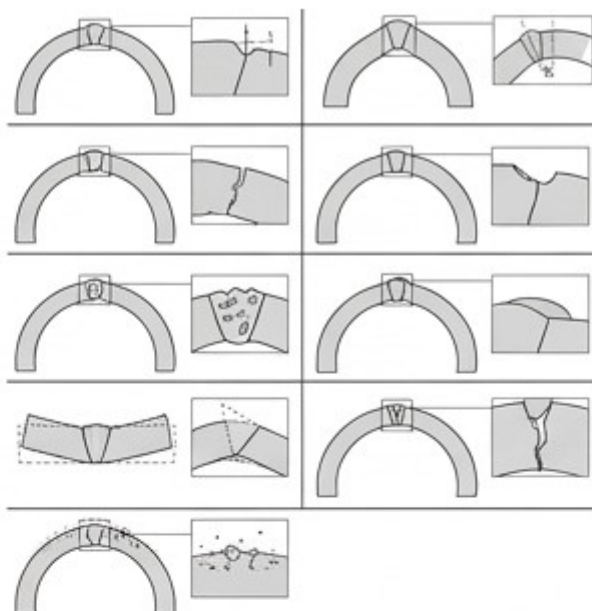


SQUARE



RECTANGULAR

DIMENSIONS



TECHNOLOGY & CONFIGURATION

VERSATILITY & PRECISION

The 3DS-Shaper Series utilizes a modular sensor array to adapt to different production line requirements, from basic shape checking to high-precision weld inspection.

System Models:

- **3DShaper 980-3:** The basic approach for long products. Features static heads for 360° profilometry.
- **3DShaper 380-4:** The average option. Static heads capable of an accuracy of 100 microns.
- **3DShaper 380-5:** High-precision configuration with static heads.
- **3DShaper 380.4-245.1:** Specifically suitable for precise weld detection.
- **3DShaper 245.1-5:** Ultra-high precision model.

Model Capabilities Matrix:

MODEL	SHAPE DETECTION	WELD DETECTION
3DShaper 980-3	YES	NO
3DShaper 380-4	YES	NO
3DShaper 380-5	YES	YES
3DShaper 380.4-245.1	YES	YES
3DShaper 245.1-5	YES	YES

TECHNICAL SPECIFICATIONS

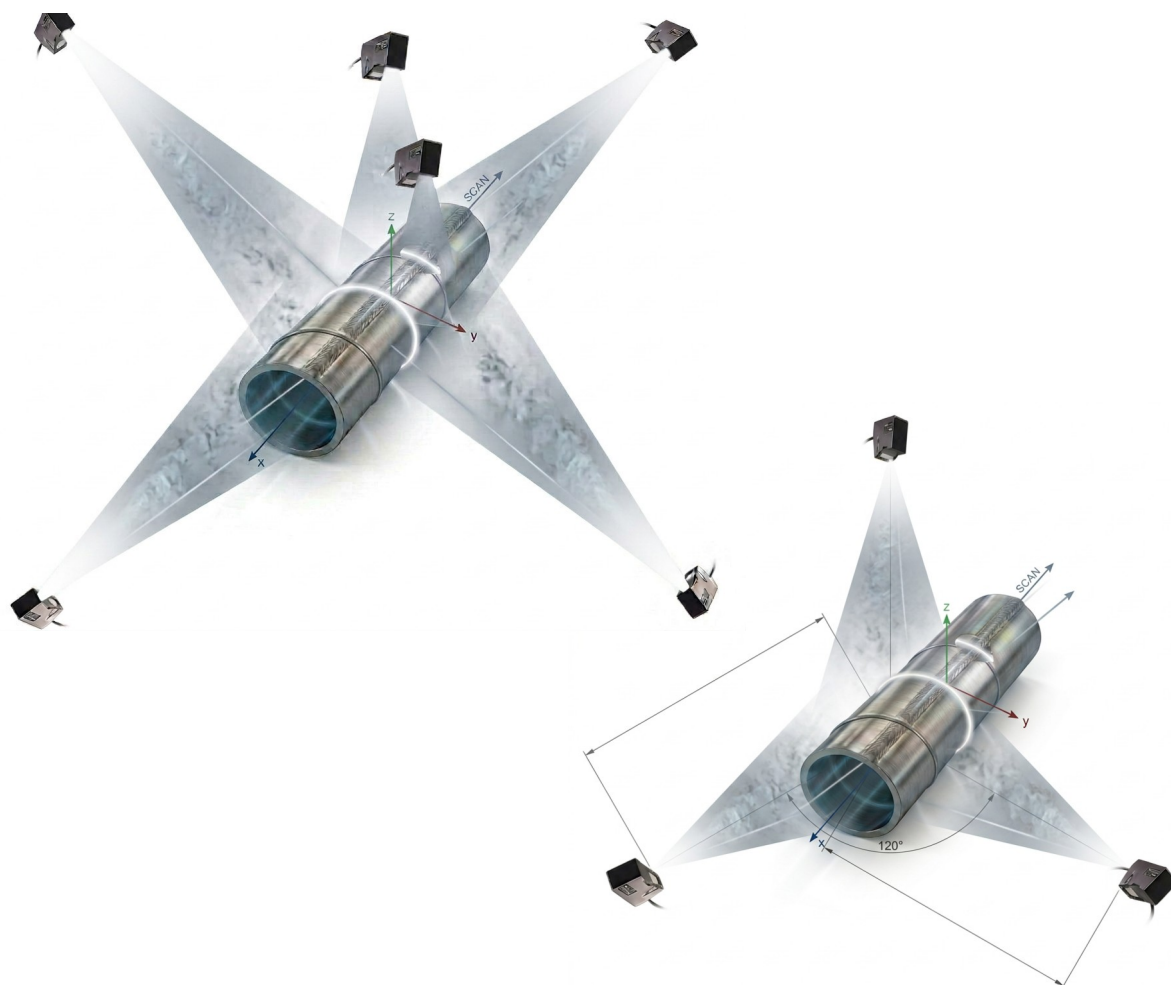
TECHNICAL DATA

Minimum Detectable Defect:

Axis	Parameter	3DShaper 980	3DShaper 380	3DShaper 245.1
X (length)	Sampling rate + speed	0.15 mm	0.15 mm	0.15 mm
Y (width)	Points per profile	0.075 mm	0.075 mm	0.056 mm
Z (depth)	Sensor accuracy	0.50 mm	0.10 mm	0.05 mm

Sensor Specifications:

Specification	3DShaper 980	3DShaper 380	3DShaper 245.1
Repeatability	50 µm	10 µm	1 µm
Linearity	±0.035% of F.S. ±0.035% of F.S. ±0.035% of F.S.		
Profile Data Interval	75 µm (default)	75 µm (default)	75 µm (default)
Profile Data Count	3,200 points	3,200 points	3,200 points
Temp Drift	0.0315 mm/°C	0.0315 mm/°C	0.0315 mm/°C



BUILT FOR INDUSTRY 4.0

The 3DS-Shaper Series is designed to integrate seamlessly into modern manufacturing environments. With robust construction and a user-friendly interface, operators can monitor weld quality in real-time.

Why Choose LGE 3DS-Shaper?

- **Reliability:** Repeatability down to 1 μm .
- **Speed:** High-speed sampling rates for inline production.
- **Accuracy:** Precise detection of external weld defects and dimensional tolerances.