



FENSA CASTING INSPECTION

4-minute dimensional control on the shop floor

How wireless optical 3D scanning helps a Mexican foundry inspect large castings quickly, safely and accurately.

01

CASE AT
A GLANCE

When parts are too large to move, inspection has to come to them.

CUSTOMER

FENSA

INDUSTRY

**Foundry & Heavy
Industry**

SOLUTION

NimbleTrack

LOCATION

Mexico

THE CHALLENGE

Castings from 0.5 m to 5 m required fast, accurate dimensional control without moving the part or introducing cable hazards on the foundry floor.

THE SOLUTION

NimbleTrack captured complete surface data wirelessly, while 3D software converted the scan into an intuitive dimensional report.

THE IMPACT

A representative casting was scanned in just 4 minutes, giving FENSA faster, decision-ready evidence for routine inspection.

KEY RESULTS

4 MINrepresentative
casting scan**UP TO 5 M**

casting size range

0.025 mm

system accuracy

Verified values from the published SCANOLGY FENSA application case.

02 / CUSTOMER & APPLICATION

Large castings left little room for slow, fixed inspection



CUSTOMER CONTEXT

FENSA is a leading Mexican foundry producing high-quality cast components for demanding industries. Its parts range from 0.5 m to 5 m and require rigorous dimensional quality control.

INSPECTION OBJECTIVE

Inspect large, bulky parts on the shop floor and deliver clear dimensional reports without moving them to a dedicated measurement room.

PART RANGE

0.5-5 m

MATERIAL

Cast metal

ENVIRONMENT

Foundry floor

03 / THE CHALLENGE

The system had to work around the casting—not the other way around

FENSA needed metrology-grade confidence inside a busy foundry, where bulky parts, limited space and cables could slow or disrupt inspection.

**01****Large, variable geometry**

Castings span from 0.5 m to 5 m, combining heavy mass, complex surfaces and features that are difficult to reach with fixed equipment.

02**Fast turnaround**

The inspection system had to complete a scan in under 5 minutes to minimize disruption on the production floor.

03**Shop-floor freedom**

Wireless operation had to remove cable interference while a compact setup worked inside FENSA's limited inspection area.

WHY CHANGE WAS NEEDED

The requirement: scan up to 5 m in under 5 minutes.

04 / THE SOLUTION

Bring metrology-grade inspection directly to the casting

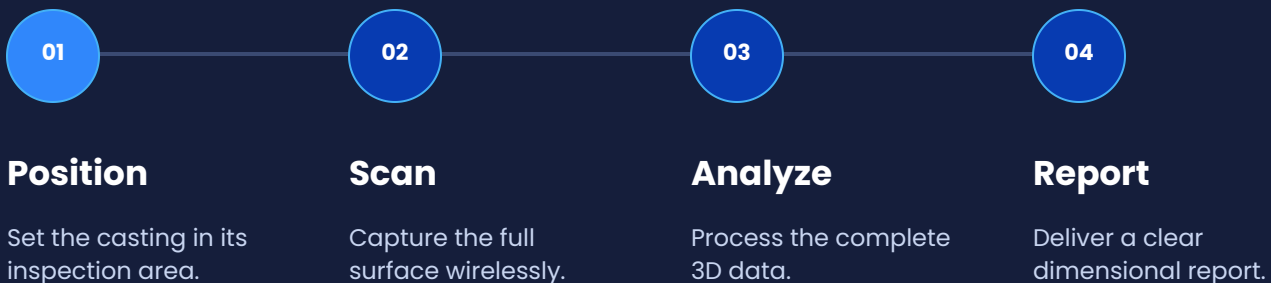
NimbleTrack combines optical tracking, marker-free capture and onboard processing so engineers can scan large castings directly on the factory floor with metrology-grade accuracy.

SOLUTION STACK

- **NimbleTrack optical 3D system**
- **Fully wireless & no markers**
- **3D software + dimensional report**



WORKFLOW



CORE VALUE

Large castings stay in place while decision-ready dimensional data reaches engineering in minutes.

05 / IN ACTION

Four steps turn a bulky casting into decision-ready data

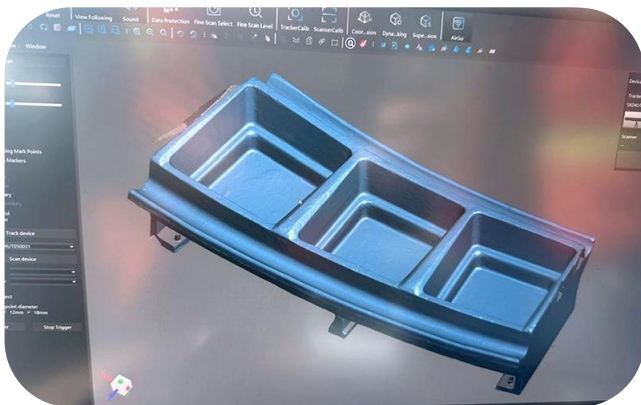
FENSA positions the part, captures its geometry wirelessly and converts the scan into a dimensional report for its Energy Engineering Area.

**01 / POSITION THE PART**

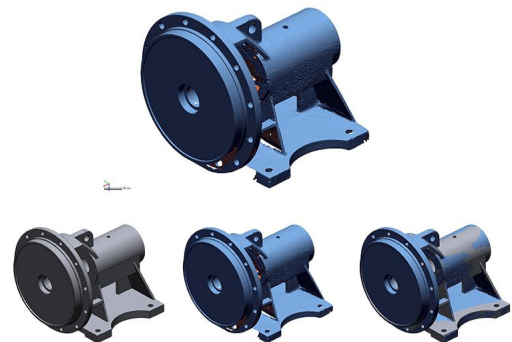
Set the casting in its inspection area—no dedicated CMM setup.

**02 / CAPTURE WIRELESSLY**

Scan the complete surface using the wireless scanner and tracker.

**03 / BUILD COMPLETE 3D DATA**

Process dense scan data into a full digital model of the casting.

**04 / ANALYZE & REPORT**

Run dimensional analysis and deliver a clear engineering report.

06 / RESULTS & IMPACT

Four minutes replaced the cable-limited routine

4 MIN

representative casting scan

FULLY WIRELESS

scanner and tracker

0.025 mm

system accuracy

BEFORE

Manual or slower inspection

Cables restricted movement

Sampled dimensions, limited context

AFTER

4-minute full-surface scan

Wireless mobility around the part

Complete 3D data and clear reports

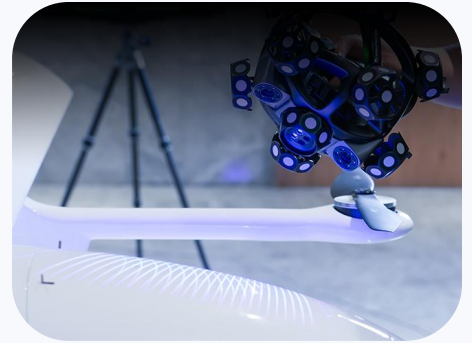
When inspection moves freely around the casting, quality decisions arrive faster without moving the part.

APPLICATION TAKEAWAY

07 / CONCLUSION

Inspect the casting where it stands—and know in minutes

NimbleTrack gives foundry teams the speed and mobility to turn large, complex parts into reliable dimensional evidence directly on the shop floor.



FEATURED SOLUTION

NimbleTrack Gen2

A fully wireless optical 3D scanning system for fast, marker-free measurement of parts from small to large.

- **System accuracy up to 0.025 mm**
- **Up to 6.63 million measurements/s**
- **Tracking distance up to 4.2 m**

ABOUT SCANOLGY

SCANOLGY provides industrial 3D measurement solutions for inspection, reverse engineering, and digital manufacturing across global industries.

Industrial metrology solutions serving customers in 70+ countries.

READY TO SOLVE YOUR MEASUREMENT CHALLENGE?

Talk to a SCANOLGY expert