



# TESTING, INSPECTION & ANALYSIS FOR ADDITIVE MANUFACTURERS

From patient-specific implants to flight-critical hardware, additive manufacturing (AM) is reshaping how complex parts are designed and produced. Industrial Inspection & Analysis (IIA) partners with AM teams to verify internal quality, dimensional accuracy, and material performance so innovative designs make it to production with confidence. With over a century of inspection heritage and deep Additive Manufacturing know-how, our labs are equipped to evaluate intricate internal geometries and advanced alloys with repeatability and speed.



## SERVICES FOR ADDITIVE MANUFACTURERS

Our ISO-17025 accredited labs offer end-to-end solutions across the AM product lifecycle from concept and first articles to serial production and field returns.

- **DIMENSIONAL INSPECTION / METROLOGY** – CMM, GD&T compliance, first article & PPAP support
- **ADVANCED 3D SCANNING** – Computed tomography (CT), structured light and laser scanning for complex surfaces; CAD comparison
- **SCAN-TO-CAD COMPARISON** – Color-map deviation analysis for build validation and process control
- **REVERSE ENGINEERING** – Generate manufacturable CAD from legacy or as-built components
- **NON-DESTRUCTIVE TESTING (NDT)** – Digital radiography, computed tomography (CT), ultrasonic testing (UT), dye penetrant (PT), magnetic particle (MT) as applicable to part geometry and finish
- **MECHANICAL TESTING** – Tensile, fatigue, hardness, impact per relevant specs
- **METALLURGICAL TESTING** – Microstructure, porosity characterization, phase analysis, fractography
- **CHEMICAL ANALYSIS** – Composition & contamination checks for alloys and feedstocks
- **MANUFACTURING PROCESS CONSULTING** – Build file, orientation, and inspection planning; sampling strategies; qualification support
- **EMC/RF TESTING** – When printed housings and assemblies require compliance evidence
- **FLUID TESTING & ANALYSIS FOR MANUFACTURING EQUIPMENT** – Oil/thermal fluid cleanliness trending for machine reliability



## TRUST AN INSPECTION LEADER

IIA brings a century of inspection heritage together with modern Additive Manufacturing expertise to help you accelerate development, reduce rework, and release quality parts to production.

# CT SCANNING: BUILT FOR ADDITIVE MANUFACTURING



Additive parts often contain internal channels, lattice structures, and encapsulated features that conventional inspection can miss. Industrial CT scanning non-destructively visualizes and measures internal and external geometries in 3D. This is ideal for validating parts, diagnosing defects, identifying build anomalies, and identifying process improvements. We tailor scan parameters to part size, material, and critical features, reporting voxel size and measurement uncertainty appropriate to your application.

## WHAT CT CAN REVEAL FOR AM PARTS

- Internal porosity, lack of fusion, inclusions, and keyhole defects
- Wall thickness, thin-feature integrity, and minimum radii
- Lattice integrity and strut continuity
- Powder entrapment and channel blockage
- Assembly fit, interference checks, and part-to-CAD deviation

## WHEN YOU CHOOSE IIA, YOU CHOOSE:

- **RELIABLE RESULTS** – Validated methods and clear acceptance criteria
- **SKILLED & CERTIFIED TECHNICIANS** – AM-literate inspectors and engineers
- **FAST, FRIENDLY SERVICE** – Agile scheduling and practical reporting
- **ADVANCED EQUIPMENT** – Metrology-grade 3D scanning, CT, and mechanical/metallurgical labs
- **UNBIASED ASSESSMENTS** – Independent testing and clear traceability

- **ONE-STOP TESTING** – Dimensional, NDT, mechanical, metallurgical, and chemical under one roof
- **COST-EFFECTIVE SERVICES** – Outsourced capacity without CapEx or staffing burden
- **REGULATORY & STANDARDS EXPERTISE** – Support for aerospace, defense, energy, medical, and industrial requirements



## OUTSOURCE YOUR INSPECTIONS

Avoid purchasing specialized equipment that may sit idle or require ongoing validation and staffing. With IIA, you gain quality testing, quick turnarounds, and the flexibility to scale inspection to changing volume, design revisions, and regulatory expectations.

ISO/IEC 17025: 2017 Accredited

## WHAT OUR CUSTOMERS ARE SAYING:

“You helped us pinpoint a build parameter issue and get to the root cause quickly. The CT scan-to-CAD analysis made the path to corrective action obvious.”

- Engineering Manager, Leading Aerospace Manufacturer



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