

LASERVISION-AI

WIND ENERGY AUTOMATIC INSPECTION

BRINGING LARGE-FIELD INSPECTION AND ADVANCED LASER PROJECTION TO WIND BLADE MANUFACTURE

PRODUCT DESCRIPTION

LASERVISION-AI's ability to capture highly detailed images throughout a large field of vision (FOV) uniquely qualifies the system to bring in-process automatic inspection to the wind energy industry. Critical attributes of wind blades – including core resin gaps, preclose bond gaps, leading-edge profile and porosity – are easily detected by LASERVISION-AI's high-magnification, high-resolution camera and powerful AI-enabled analysis algorithms. Laser projection pinpoints errors for prompt correction



FEATURES AND BENEFITS

Captures detailed, calibrated high-resolution images anywhere in its giant FOV

- Enables inspection of large surfaces with complex contours
- High-magnification camera provides required detail in each image (typically 20cm x 20cm)

Verifies attributes and flags nonconformances for immediate corrective action

- Enables inspection of all attributes (not just a sampling)
- Immediate corrective actions keep nonconformances from advancing through production

Operates from a stationary mount away from production equipment

- Does not interfere with or disrupt production equipment
- Value-added operations continue while inspections are performed

Pinpoints anomalies with laser projector

- Directs operators efficiently to the anomaly's location

Feeds the as-built Digital Twin

- Enhances traceability with images and data for the life of the component
- Provides data needed for Deep Learning and continuous process improvement

Provides operators with electronic work instructions

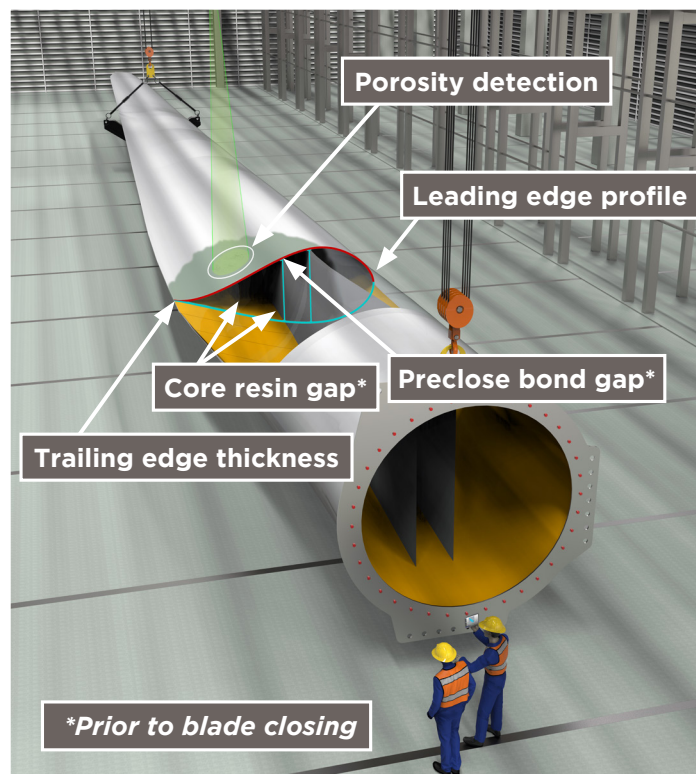
- Facilitates the paperless factory
- Helps ensure that processes are carried out as planned

Enables tablet or phone-size remote controls

- Eliminates step-away time to consult the work cell controller

Performs laser templating

- Accelerates additive processes and manual tasks



LASERVISION-AI WIND ENERGY APPLICATIONS

LASERVISION-AI verifies (or flags nonconformances):

- Leading edge profile
- Preclose bond gap
- Trailing edge thickness
- Core resin gaps/widths
- Resin flow
- Porosity
- Ply location
- Foreign Object Detection (FOD)