

Detectra Crawler V3

Detect. Quantify. Act.

Detectra is a compact inspection crawler that drives deep into the internal chambers of a wind-turbine blade and captures every bond line, shear web and laminate surface in 8K 360° video under its own LED illumination. It is controlled from a rugged tablet over a Wi-Fi link and records position-tagged footage on board. Uploads to the Fenestra cloud portal, for review, annotation and reporting, are initiated by the operator from the tablet; recordings can also be downloaded to your own computer via the crawler's Wi-Fi web page.


8K

360° video

3.7 kg

crawler weight

80 m

Wi-Fi range

80 %

blade reach

KEY CAPABILITIES

Imaging

- 8K 360° camera for complete situational awareness
- 4 × 52 LED lighting for dark blade interiors, individually switchable
- Every recording is position-tagged; tags can be corrected in Fenestra with manual anchor points or computer-vision detection of position markings inside the blade
- On-device 8K stitching at 24 fps; lightweight player for instant tablet review

Control & connectivity

- Dedicated rugged control tablet, no software installation
- Intuitive remote-control operation from the tablet
- Crawler-hosted Wi-Fi access point, 80 m range
- Built-in VPN for remote support and diagnostics

Field-ready design

- Compact and light: 320 × 230 × 185 mm, 3.7 kg
- Cable pull-out system for controlled extraction
- Battery capacity for up to 12 blade inspections per day
- Crawler in one heavy-duty transport case, accessories in an identical second case

Data & reporting

- Structured JSON metadata with every recording
- Built-in search and filtering on the crawler
- Operator-initiated upload to Fenestra, single file or bulk; no misplaced SD cards
- Or download to your own computer via the crawler Wi-Fi web page

TECHNICAL SPECIFICATIONS

GENERAL	
Dimensions (L × W × H)	320 × 230 × 185 mm
Weight	3.7 kg
Blade reach	Up to 80 % of blade length from the root
Operating environment	Dry blade interiors; dust-tolerant design
Transport	Crawler in one heavy-duty transport case; tablet, batteries and chargers in an identical second case
Compliance	CE-marked (EU) · 12-month warranty
MOBILITY	
Drive	Four-wheel electric drive, independently driven wheels with rubber tyres
Speed	0–3 m/s, proportional speed control from the tablet
Distance measurement	Wheel-encoder odometry; travelled distance shown live and stored with each recording
Position tagging	Every recording is position-tagged; tags correctable in Fenestra via manual anchor points or computer-vision detection of position markings in the blade
Recovery	Cable pull-out system with freewheel mode for controlled extraction
IMAGING & LIGHTING	
360° camera	Insta360 X5: 8K (7680 × 3840) 360° video at 24 fps, stitched on board the crawler
Navigation camera	Forward-facing 120° wide-angle camera, live stream for driving

Lighting	4 × 52 LED array; each panel switched on and off with its own manual click button
Output	Equirectangular 8K MP4 + JSON metadata (site, turbine, blade, chamber, distance, timestamps)
CONTROL & CONNECTIVITY	
Operator link	2.4 GHz Wi-Fi access point hosted by the crawler; 80 m rated, 100 m verified line-of-sight
Operator device	Rugged 10.1" tablet (IP68), 500-nit display, glove-operable, locked to the inspection app
User interface	Live view, drive controls, inspection fields, recording management, search and filtering
Languages	English, French, German, Spanish
Internet uplink	Site Wi-Fi or hotspot for recording upload, software updates and remote assistance
Remote support	Built-in VPN for secure remote diagnostics and service
POWER	
Main battery	Makita 18 V platform, 2 packs supplied; powers electronics, cameras and lighting
Drive batteries	3 dedicated drive packs supplied
Endurance	Up to 12 blade inspections per day with the supplied packs
Charging	1 main-battery charger + 2 drive-battery chargers included
DATA & CLOUD	
Storage	On-board 250 GB solid-state storage; recordings stay on board until you delete them
Upload	Direct upload to Fenestra portal (SharePoint) storage, single file or bulk, always initiated by the operator; or download to your own computer via the crawler Wi-Fi web page
Fenestra portal	Review 8K recordings, annotate and locate findings, severity scoring, PDF reports, damage progression across the site

SCOPE OF SUPPLY

- Detectra crawler
- Remote-control tablet
- Pull-out cable
- 2 main batteries
- 3 drive batteries
- 1 main-battery charger
- 2 drive-battery chargers
- 2 identical heavy-duty transport cases (crawler / accessories)



OPERATOR INTERFACE

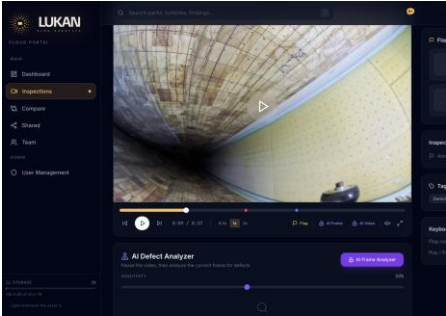
Live 360° view with distance readout, drive controls, inspection fields and recording management on the supplied tablet.



Screenshot from an earlier software version; the interface is subject to change.

FENESTRA CLOUD PORTAL

Footage flows into Fenestra: review 8K data, annotate and locate findings, generate PDF reports and track damage progression across the whole site.



Screenshot from an earlier portal version; the interface is subject to change.

INSPECTION WORKFLOW

1 Deploy

Open the transport cases, fit the batteries, place the crawler at the blade root and clip on the pull-out cable.

2 Drive & record

Drive into each chamber from the tablet; the LED array lights the interior and the 8K 360° camera records with distance tags.

3 Upload

Start the upload of single recordings or everything new to Fenestra from the tablet, or download to your own computer via the crawler Wi-Fi web page.

4 Review & report

Open the recordings in Fenestra, mark findings, score severity and export the PDF inspection report.