

UnitX: AI Powered

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Lithium Ion Battery Inspection

# UnitX AI vision inspection has deployed 250+ units in world's top EV plants

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- Designed by engineers from **Stanford, MIT**
- Deployed in world's **top 2 EV**, **top 3 Li battery**, **top 5** automotive component plants

OptiX

Software-defined Imaging System

CorteX

Sample-Efficient Deep Learning



Captures 3D and 2D features  
Fly captures at up to 1 meter/sec



Detects high variance defects  
Integrates w/ PLC, MES, FTP



**UNITX**

# UnitX solves complex defect inspection challenges w/ 6 months ROI

- **3% Better OEE** w/ earlier warning on process drifts
- **100X Lower Escape** w/ precise traceability
- **Months ROI** w/ integration-ready PLC, MES, FTP support



Prismatic

## Core components

Prismatic cosmetic  
Lid cosmetic  
Valve  
QR code

## Upstream

Slitting  
Tab  
X-Ray/CT

## Midstream

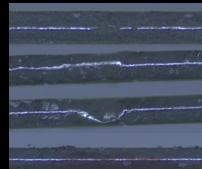
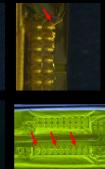
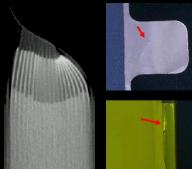
Tab weld  
Pack weld  
Electrode weld

## Downstream

Adhesive  
Prismatic cosmetic  
Mylar



Pouch



Cylindrical

**UNIT X**

# UnitX Works with All 3 Cell Types

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Prismatic



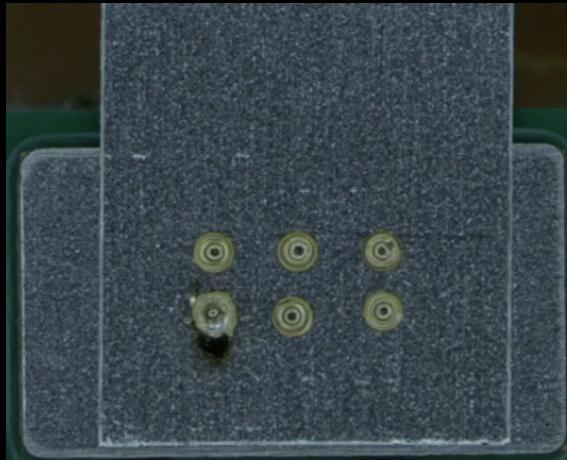
Pouch



Cylindrical

# Tab Laser-Weld Inspection

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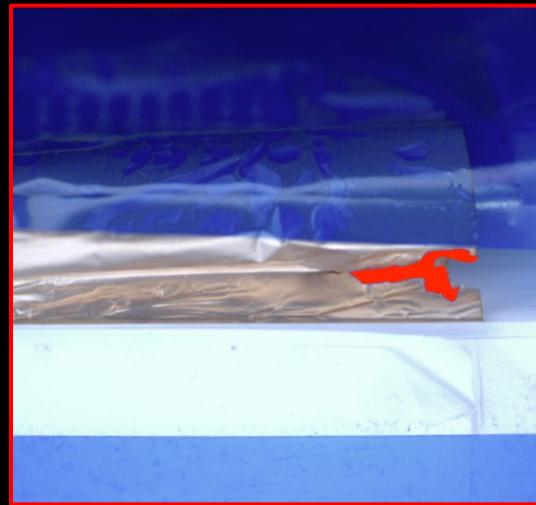
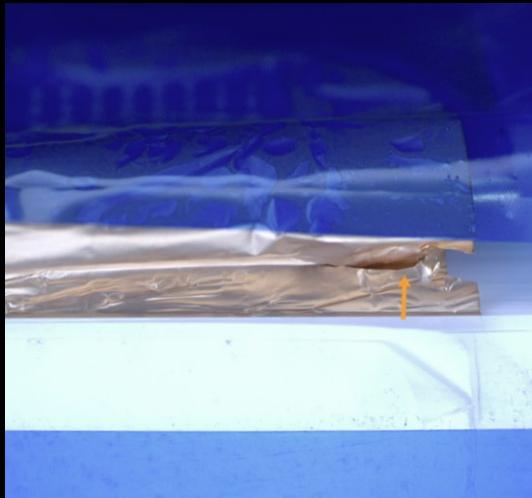


## Inspected Defects:

Blow holes, burn marks, white  
spot, missing welds, offset  
welds

# Tab Ultrasonic-Weld Inspection

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Inspected Defects:

Torn tabs, folded tabs,  
offset welds, missing welds

# Pouch Cell Surface Inspection

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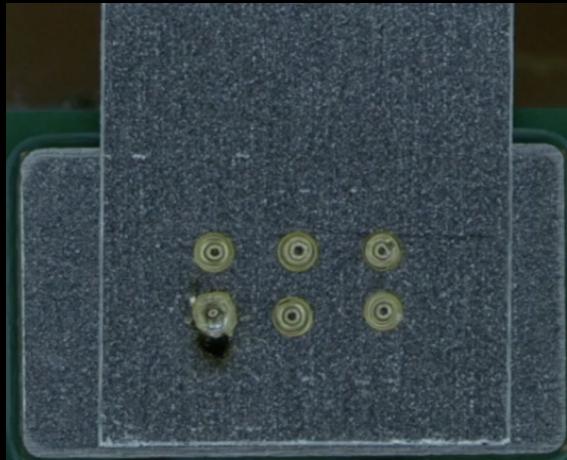


## Inspected Defects:

Scratches, dents, dings,  
porosity, contamination,  
deformation, damages

# Tab Laser-Weld Inspection

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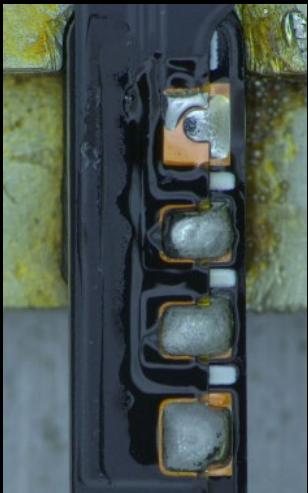


## Inspected Defects:

Blow holes, burn marks, white  
spot, missing welds, offset  
welds

# PCB Solder Joints Inspection

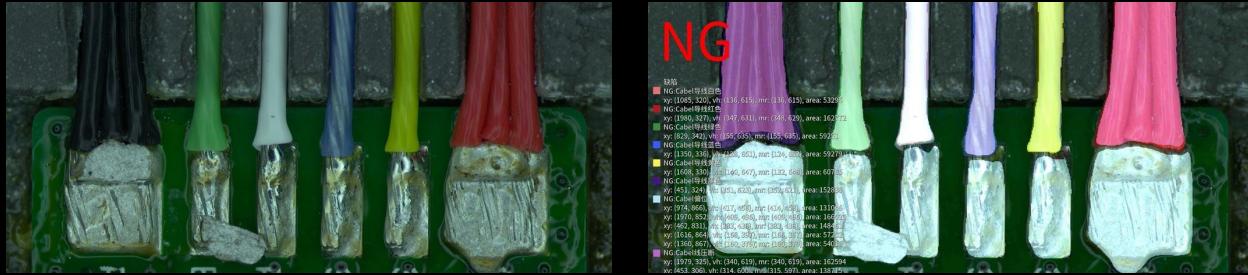
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Inspected Defects:

Bulbous joints, cracked joints,  
poor hole fill, contamination

# PCB Hot Bar Inspection



### Inspected Defects:

Offset, missing solder,  
damaged wires, bulbous  
joints, poor solder

# UnitX automates inspection across entire Libattery manufacturing process



Last 24 Hours

1/15 AM Shift

1/15 PM Shift

7 Day Avg

Variation

85%

83%

86%

91%

-6%

Yield

9.2k

4.8k

4.4k

9.4k

+2%

Volume

83%

96%

70%

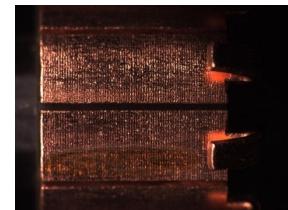
92%

-9%

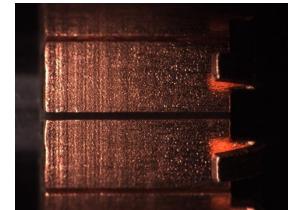
Up Time

5.2% scratches  
3.6% fold  
1.4% contamination  
1.1% porosities  
0.9% pin holes

NG210 Tab  
NG311 Tab fold  
NG516 Tab  
NG152 Weld  
NG152 Weld



Tab contamination  
1/24 3:23 pm



Tab scratches  
1/24 1:19 am

**UNIT** 

# Free Proof-of-Concept

Improve Quality & Yield

Contact today:

[info@unitxlabs.com](mailto:info@unitxlabs.com)