

# CONVECTION REFLOW OVEN VERIFICATION

## OVENRIDER® NL 2



Look to ECD's OvenRIDER® NL 2\* if you need to VERIFY an oven's performance:

- *post-maintenance* • *pre-production* • *pre-purchase* • *pre-repair* •

Regardless of the recipe and what your oven's controls indicate, what your PCB actually experiences at board-level as it goes through the oven can be SIGNIFICANTLY different. Achieve convection reflow oven Verification by separating zonal temperatures from convective heat flow efficiency while verifying conveyor speed for a true picture of oven Lead-Free performance consistency.

The patented OvenRIDER® travels through your oven with a M.O.L.E.® inside collecting data for analysis and SPC charting. A combination of thermal and process sensors measure oven performance, delivering consistent data that can be used to identify modest trends which may be developing, or serious conditions that have already arrived. Simple PCB profiling cannot detect all the subtleties which can have a profound effect on PCB production quality.

### Features:

- Verifies true oven performance
- Provides Go/No-Go data to operators as a First-Off tool
- Self contained, simple to use - reduces downtime
- Use as a tool for selling your manufacturing expertise to new accounts
- Simple, objective data - removes interpretation
- SPC predicts performance - reduces rework/scrap
- CP and Cpk - capability indices - calculated and presented automatically

### Benefits:

- Helps maximize yields to improve your bottom line
- Provides proof to your customers that SMT soldering is in control
- Profiles the oven without attaching thermocouples - saves time and effort
- Control oven stability with a stable test fixture rated for 1,000+ runs, not a golden board PCB.
- Convection performance and conveyor speed are watched, not just temperatures

### System Includes:

- OvenRIDER® NL 2 Pallet
- OvenRIDER® SPC Software
- Start/Zones Magnet Kit
- Quick Reference Guide
- Carrying Box

**Order ECD P/N: E45-6836-15**  
(12" Model)



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Home of the M.O.L.E.® Thermal Profiler

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- Top rated customer support • No-cost ECD University Training • Award winning free software •

# SPECIFICATIONS

# OVENRIDER<sup>®</sup> NL2



## PALLET SENSORS

6 Type K (Process & Ambient)  
Special Limits of Error K-Type thermocouple wire  
( $\pm 1.1^{\circ}\text{C}$  or 0.4%, whichever is greater)

## DATA ACQUISITION: SuperM.O.L.E.<sup>®</sup> Gold

Data Capacity: 9 minutes 6 seconds  
Time Accuracy:  $\pm 10$  millisecond  
Time Resolution: 0.1 Second  
Temp Accuracy:  $\pm 1^{\circ}\text{C}$  (1.8 $^{\circ}\text{F}$ )  
Temp Resolution: 0.056 $^{\circ}\text{C}$  (0.1 $^{\circ}\text{F}$ )  
Measurement range: -129 $^{\circ}\text{C}$  to 1300 $^{\circ}\text{C}$  (-200 $^{\circ}\text{F}$  to 2372 $^{\circ}\text{F}$ )

## REPLACEABLE SENSOR BATTERY

3.6 volt  $\frac{1}{2}$  AA lithium

## PHYSICAL

Dimensions:  
• Standard Widths: 6.6" (167 mm), 12" (305 mm), 18" (458 mm)  
• Custom Widths: >6.6" (>167 mm)  
• Height: 0.8 in. (20.3 mm)  
• Length: 17.8 in. (452 mm)

Weight:  
• 6.6": 3.84 lbs. (1742 grams)  
• 12": 6.19 lbs. (2808 grams)  
• 18": 7.8 lbs. (3538 grams)

## WARRANTY

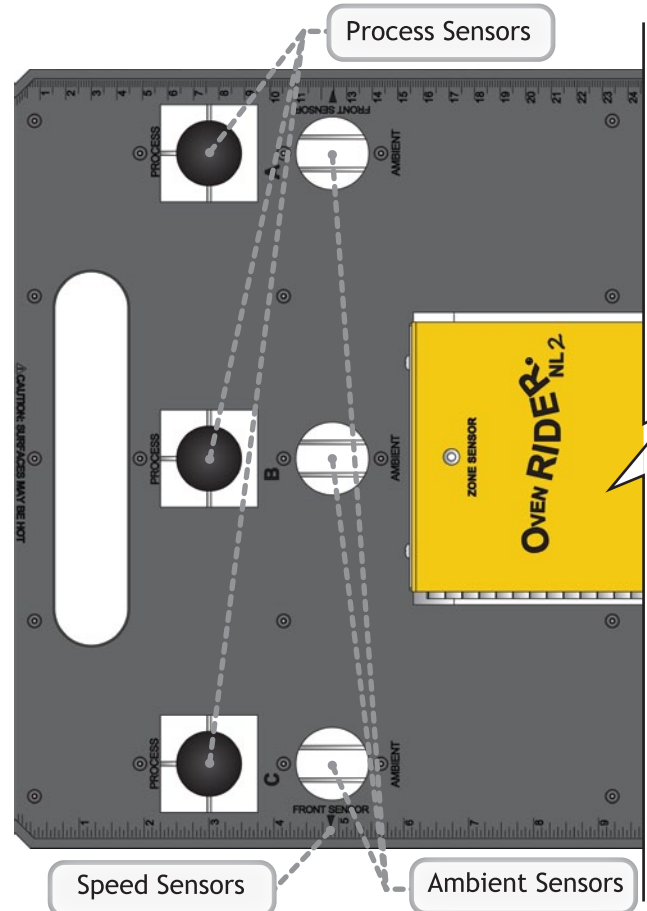
2 years parts and labor

## WEBSITE

[www.ecd.com](http://www.ecd.com)

## PALLET SENSOR DEFINITIONS

**Process Sensors:** Mass pucks (3) measure the effect of convection to drive heat evenly into a product. The center 70% in each oven zone reports a Process Delta to verify convection consistency for SPC. Detects a failed fan, clogged vent or wrong oven setting.



**Ambient Sensors:** Exposed thermocouples (3) have fast response to Oven Air Temperatures. Averages reported per zone to verify consistency (SPC). Detects a failing heater or wrong oven setting.

**Speed Sensors:** Front & Rear Speed Sensors define process origin and conveyor speed with rail-mounted 'Start' magnet. Belt speed verified for consistency (SPC). Detects the wrong oven setting or maintenance requirement.

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