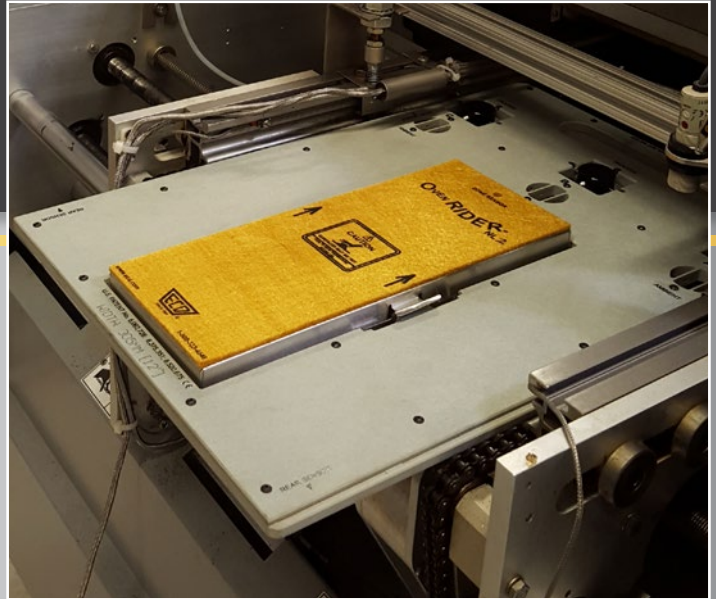


OvenRIDER® NL 2+

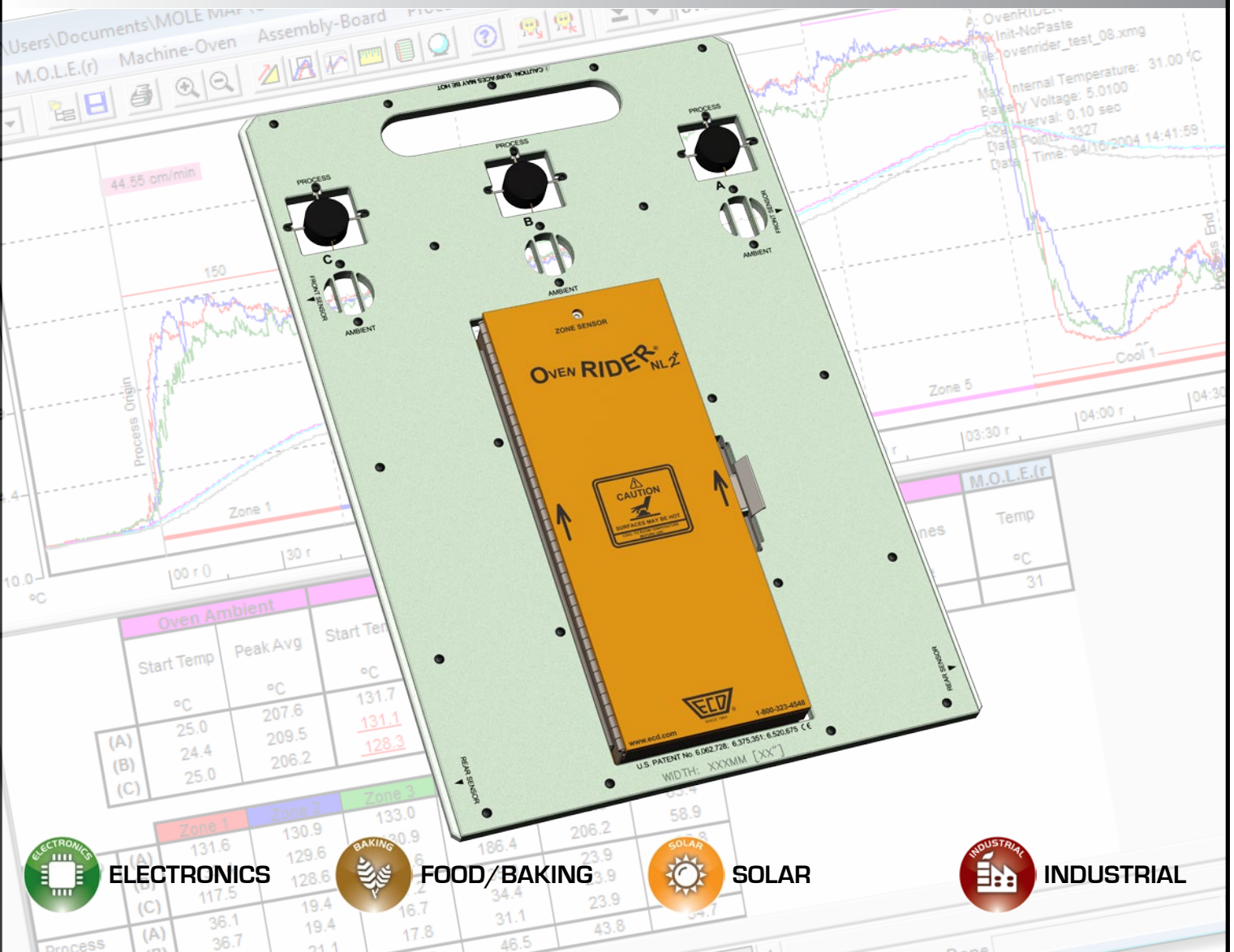
CONVECTION REFLOW OVEN VERIFICATION

OvenRIDER® NL 2+



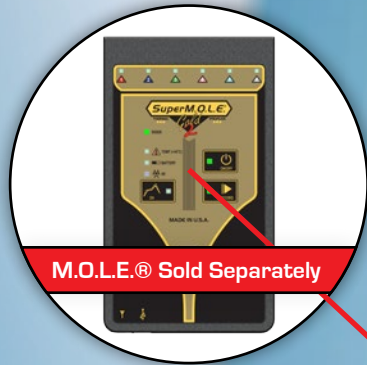
The patented OvenRIDER® NL 2+ travels through your oven with a M.O.L.E.® inside collecting data for analysis and SPC charting. A combination of thermal and process sensors measure oven performance, delivering consistent data that can be used to identify modest trends which may be developing, or serious conditions that have already arrived. Simple PCB profiling cannot detect all the subtleties which can have a profound effect on PCB production quality.

www.ecd.com/products/overrider

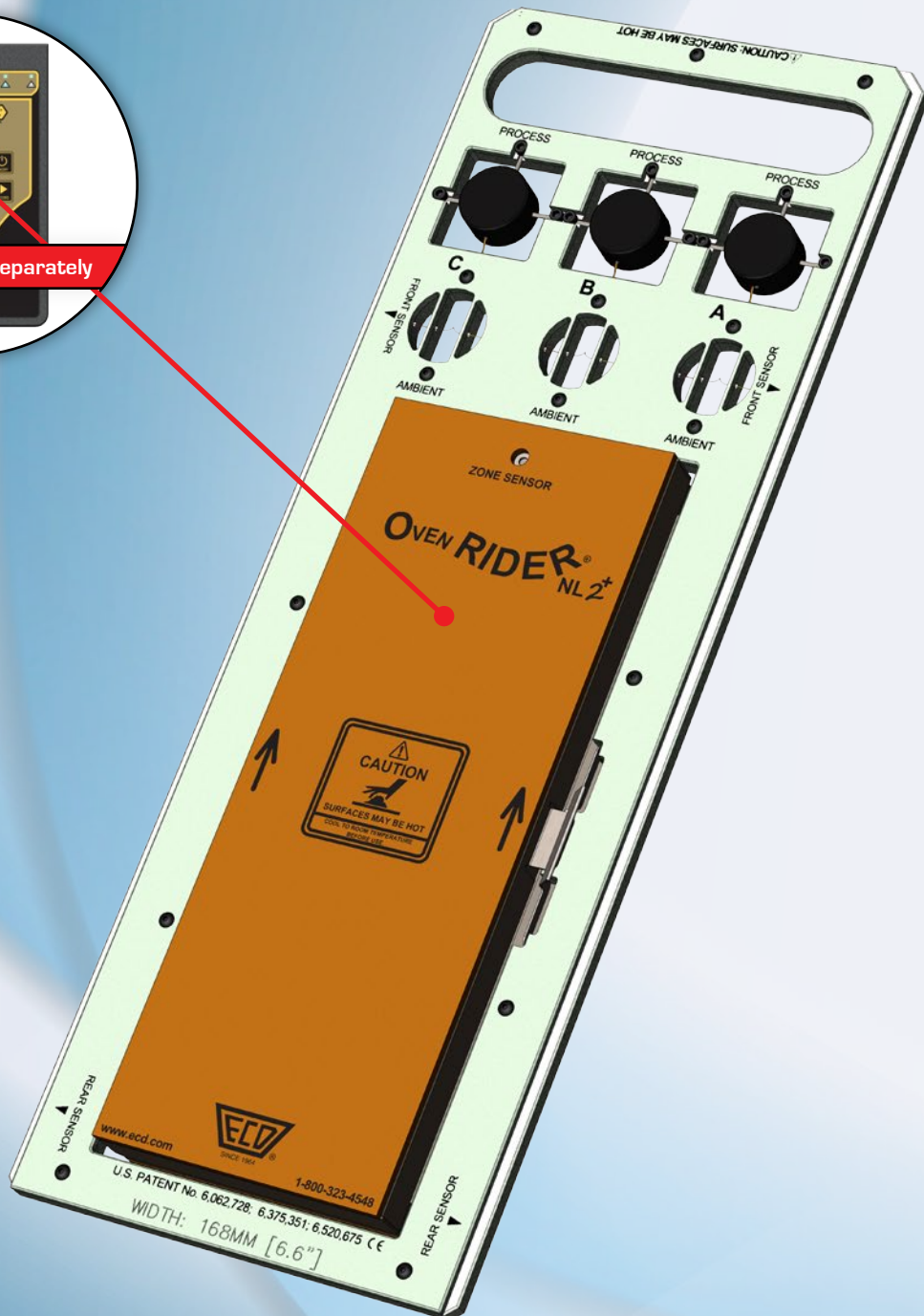


 **ELECTRONICS**
 **FOOD/BAKING**
 **SOLAR**
 **INDUSTRIAL**

Look to ECD's OvenRIDER® NL 2+ if you need to VERIFY an oven's performance:
• post-maintenance • pre-production • pre-purchase • pre-repair •



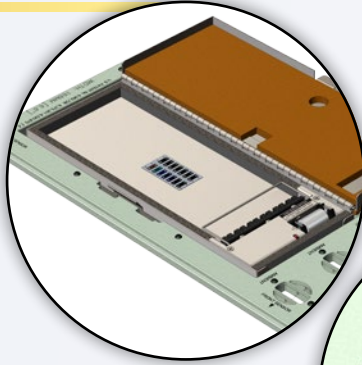
M.O.L.E.® Sold Separately



Excellence in Measurement Solutions Worldwide

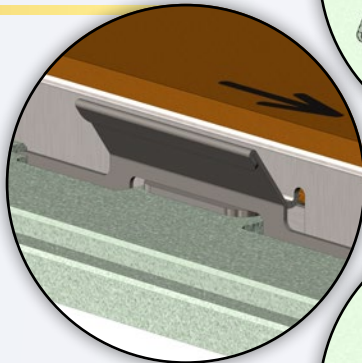
THERMAL BARRIER

This barrier also is equipped with external insulation on the top and bottom, which provides the extra thermal protection needed for Lead-Free processes. This barrier is lowered 0.685" [17.40mm] into the plane of the pallet for extra oven clearance.



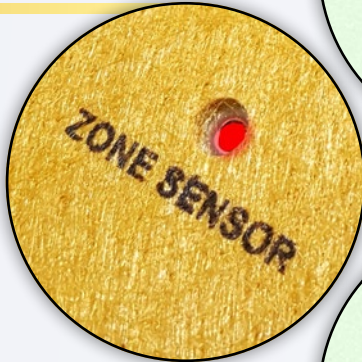
BARRIER LATCH

- Mechanically robust and secure for longer life.
- Prevents M.O.L.E.® Thermal Profiler from over-temperature
- Prevents accidental dropping of M.O.L.E.® Thermal Profiler while handling



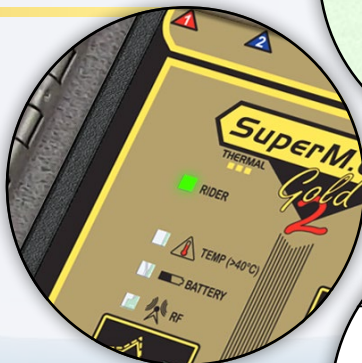
ZONE SENSOR LIGHT

There is an LED porthole on the top of the barrier cover that illuminates when the OvenRIDER® NL 2+ detects zone boundary. This LED is powered by a replaceable 3.6 volt 1/2 AA lithium battery.



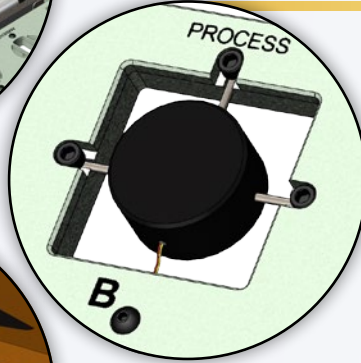
RIDER LED

The Rider LED Indicates when SuperM.O.L.E.® Gold 2 is connected to a OvenRIDER® NL 2+ test pallet.



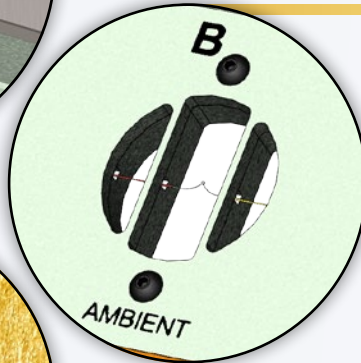
PROCESS SENSORS

Three high mass pucks measure the effect of convection to drive heat evenly into a product. Each oven zone reports a Process Delta to verify convection consistency for SPC. This detects a failed fan, restricted vent or incorrect oven convection setting.



AMBIENT SENSORS

Three exposed fast response thermocouples average the center 70% of the measured air temperature in each zone to verify consistency for SPC. This detects a failing heater or wrong oven setting. The NL 2+ pallet design offers added protection from accidental damage.



SPEED SENSORS

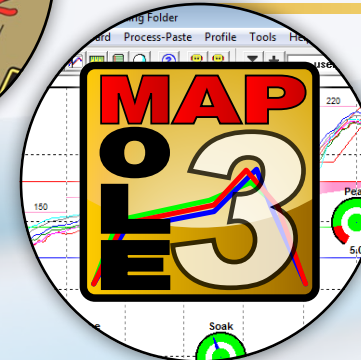
Front & Rear Speed Sensors define process origin and conveyor speed with rail-mounted 'Start' magnet. Belt speed verified for consistency (SPC). Detects the wrong oven setting or maintenance requirement.



M.O.L.E.® MAP SOFTWARE

Download and analyze the data with the ECD award winning software.

- SPC predicts performance - reduces rework/scrap
- CP and Cpk - capability indices - calculated and presented automatically



SPECIFICATIONS

PHYSICAL: OvenRIDER® NL 2+

Length (Pallet): 452 mm [17.8 in]

Height (Thermal Barrier): 31.75 mm [1.25 in]

- 20.55 mm [0.81 in] above conveyor chain

Width:

- Standard: 167 mm [6.6 in], 305 mm [12 in], 458 mm [18 in]
- Custom: >167 mm [6.6 in]

Weight:

- 6.6": 1.74 kg [3.84 lb], 12": 2.81 kg [6.19 lb], 18": 3.54 kg [7.8 lb]

Max. Operational Temperature (Pallet): 300°C [572°F]

Max. Operational Temperature (Thermal Barrier):

- 200°C [392°F] for 9.5min. / 230°C [446°F] 8 min.

PALLET SENSORS

6 (Process & Ambient)

Special Limits of Error K-Type thermocouple wire
(± 1.1°C or 0.4%, whichever is greater)

DATA ACQUISITION: SuperM.O.L.E.® Gold / 2

Data Capacity:

- SuperM.O.L.E.® Gold: 9 minutes 6 seconds
- SuperM.O.L.E.® Gold 2: 2,500 minutes (100% memory)

Time Accuracy: ±10 millisecond

Time Resolution: 0.1 Second

Temperature Accuracy: +/- 1°C [1.8°F]

Temperature Resolution: 0.056°C [0.1°F]

Measurement Range:

- SuperM.O.L.E.® Gold: 0°C to 300°C (32°F to 572°F)
- SuperM.O.L.E.® Gold 2: -200°C to 1271°C (-328°F to 2320°F)

PATENT

U.S. PATENT No. 6,062,728; 6,375,351; 6,520,675

WARRANTY

1 year parts and labor

WEBSITE

www.ecd.com ➔

SYSTEM KITS:

OvenRIDER® NL 2+ Standard Systems

- E56-6836-05: 168 mm [6.6 in] wide pallet
- E56-6836-15: 305 mm [12 in] wide pallet
- E56-6836-25: 458 mm [18 in] wide pallet

OvenRIDER® NL 2+ Custom System

- E56-6836-35: >167 mm [6.6 in] wide pallet

KITS INCLUDE:

OvenRIDER® NL 2+ Pallet

- Includes 6 sensors & Thermal Barrier

M.O.L.E.® MAP Software

Start/Zones Magnet Kit

Quick Reference Guide

Carrying Box

1 year warranty on materials and workmanship



ECD North & South America
World Headquarters
4287-B SE International Way
Milwaukie, Oregon 97222-8825 U.S.A.
Tel: +1 503 659 6100 / +1 800 323 4548
Fax: +1 503 659 4422
E-Mail: sales@ecd.com | Web: www.ecd.com

ECD Asia/Pacific
Singapore
Mobile: +65 9692 6822
Fax: +65 6241 9890
E-Mail: ecd.asia@ecd.com

ECD Europe/Africa/Middle East
Mobile: +48 512 659 100
E-Mail: ecd.europe@ecd.com

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