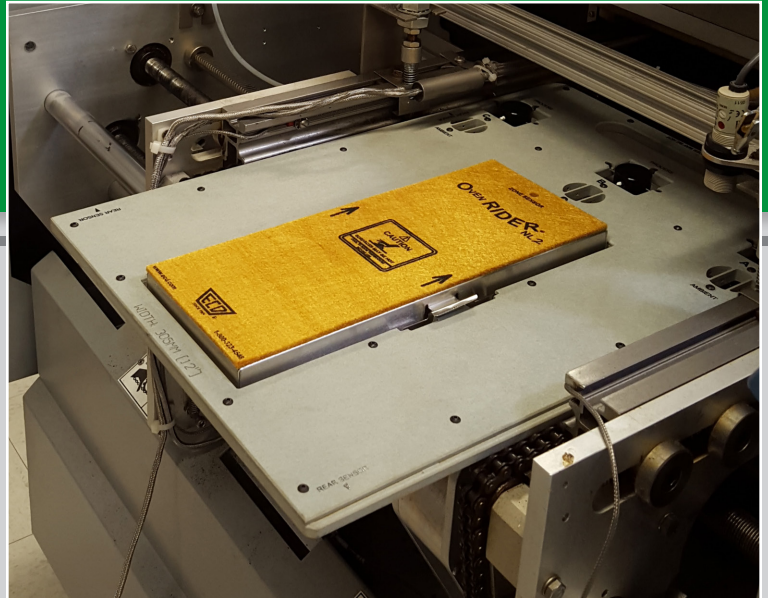


OvenRIDER™ NL 2+

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/or

YOUTUBE

PROCESS DEVELOPMENT & VALIDATION

MACHINE QUALITY MANAGEMENT

ANALYSIS & OPTIMIZATION

COMPONENT DRY STORAGE

ECO SINCE 1984

Conveyor	Zones	Temp
cm/min	#	°C
44.55	6	31

Zone	Temp	Temp	Temp	Temp	Temp
Zone 1	131.6	130.9	133.0	204.0	207.6
Zone 2	133.4	130.9	130.9	201.5	209.5
Zone 3	117.5	131.6	186.4	206.2	206.2
Zone 4	36.1	17.2	35.0	34.4	33.9
Zone 5	36.7	16.7	31.1	31.1	33.9
	19.4	17.8	46.5	43.8	54.7
	131.7	160.0	155.6	55.9	58.9
	207.6	131.1			
	209.5	128.3			
	206.2				

ELECTRONICS

BAKING

3D/ADDITIVE

SOLAR

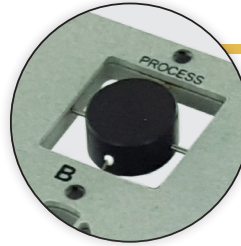
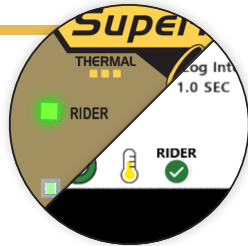
INDUSTRIAL

USA

FEATURES

RIDER INDICATOR

The Rider LED Indicates when SuperM.O.L.E.™ Gold 2 is connected to a WaveRIDER™ NL 2 test pallet. And when connected to a M.O.L.E.™ EV6, a "RIDER" symbol appears on the display. This also automatically sets the M.O.L.E.'s configuration.

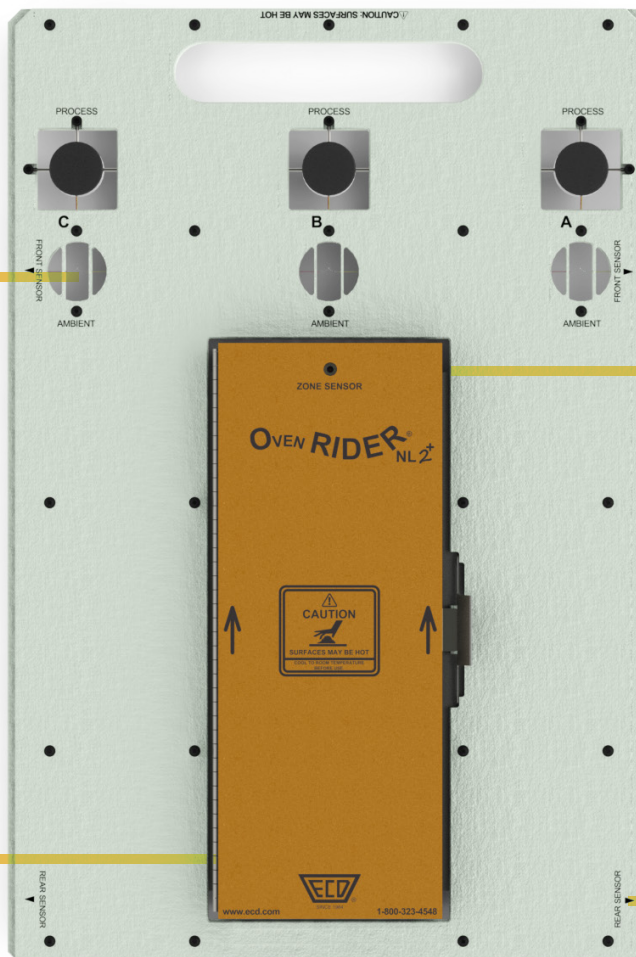


PROCESS SENSORS

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.



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.

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.

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

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.



OVENRIDER™ NL 2+ SYSTEM



KITS INCLUDE:

OvenRIDER™ NL 2+ pallet

- Includes 6 sensors & thermal barrier
- 9", 12", & 18" widths

Start/zones magnet kit

M.O.L.E.™ MAP Software

Quick reference guide

Carrying box

1 year warranty on materials and workmanship



Engineering Process Control Solutions for Over 50 years

SPECIFICATIONS

PHYSICAL (OvenRIDER™ NL 2+)

Length (Pallet): 452 mm [17.8 in]

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

- 20.55 mm [0.81in] above conveyor chain

Width:

- Standard: 167 mm [6.6 in], 305 mm [12 in], 458 mm [18in]
- 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 Type K (Process & Ambient)

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

DATA ACQUISITION (THERMAL PROFILER)

Data Capacity:

- SuperM.O.L.E.™ Gold 2: 2,500 minutes (100% memory)
- M.O.L.E.™ EV6: 2.6 mega points at 6 channels or 200 data runs (whichever comes first)

Time Accuracy: ±10 millisecond

Time Resolution: 0.1 Second

Temperature Accuracy: +/- 1°C (1.8°F)

Temperature Resolution:

- SuperM.O.L.E.™ Gold 2: 0.056°C [0.1°F]
- M.O.L.E.™ EV6: 0.0056°C (0.01°F)*

Measurement Range:

- SuperM.O.L.E.™ Gold 2: -200°C to 1271°C (-328°F to 2320°F)
- M.O.L.E.™ EV6: -200°C to 1,200°C (-328°F to 2,192°F)

*>= 0.5 seconds/sample

COMPLIANCE



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



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