

M.O.L.E.® Thermal Profilers & Process Test Pallets to meet your Characterization & Verification needs



**V-M.O.L.E.®
(3-Channels)**

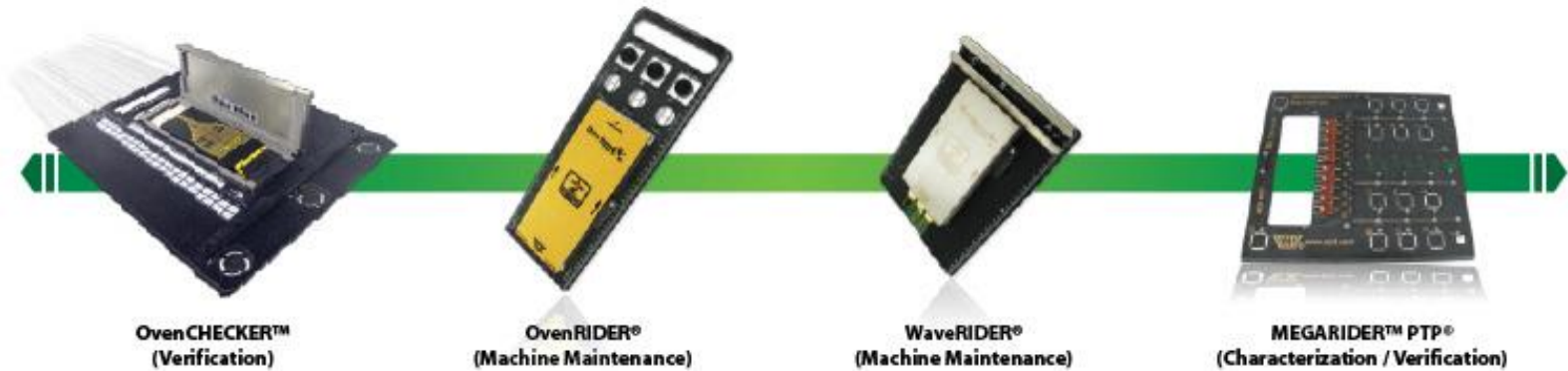
**SuperM.O.L.E.® Gold 2
(6-Channels)**

**MEGAM.O.L.E.® 20
(20-Channels)**

**PTP® VP-8
(8-Channels)**

**MiniM.O.L.E.® rH
(2-Sensors)**

Thermal Profilers



**Oven CHECKER™
(Verification)**

**OvenRIDER®
(Machine Maintenance)**

**WaveRIDER®
(Machine Maintenance)**

**MEGARIDER™ PTP®
(Characterization / Verification)**

Process Test Pallets

The Smartest Profilers on the Planet



What's New:

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

After an long exemplary run, ECD is replacing the esteemed SuperM.O.L.E.® Gold with more gold... The SuperM.O.L.E.® Gold 2!

Now all facets of the ECD product line have risen to a new level of performance and unification for improved customer productivity.

M.O.L.E. ® MAP Software

Now ships with every product that uses ECD software. All these programs are now replaced by MAP 3:

- OvenRIDER® SPC • SuperM.O.L.E. ® Gold SPC
- WaveRIDER® SPC • BakeWATCH® SPC

WaveRIDER® NL 2 and OvenRIDER® NL 2

Now fully compatible with SuperM.O.L.E. ® Gold 2

- RIDERs ship with MAP 3
- And retain compatibility with Xpert-Ready SuperM.O.L.E. ® Gold as well

SuperM.O.L.E.® Gold 2

SuperM.O.L.E.® Gold 2 - continues the legacy of the original **SuperM.O.L.E.® Gold** Thermal Profiler. With all the power of a **MEGAM.O.L.E.® 20**, it retains the same form factor, thermocouple connector type, channel count (6), and RIDER-product compatibility.

The core functionality enhancements include:

- **Waste-No Runs: New ECD Technology** : Thermocouple Readiness LEDs Individual channel indicators on thermal profiler o **RED** indicates channel is “active”, as configured in the software, and o **GREEN** indicates that thermocouple is plugged in and a complete circuit
- **Save Steps:** 96 Thermal Profile storage let's you download when you are ready
- Built-in patented “**OK Button**” compares a thermal profile to spec & gives a GO or NO-GO decision
- **Protect your Time & Profiler:** Health Indicators (Core Temperature; Battery state; RF) help prevent wasted time and damage
- **Auto Detect LED:** Thermal Profiler automatically recognizes the WaveRIDER® NL 2 & OvenRIDER® NL 2 process test pallets
- Optional 2-Way RF is pre-plumbed and available at time of purchase or future upgrade
- Single-piece construction (no separate battery module; ~5x charge-life of current SuperM.O.L.E.® Gold. Estimated 4-5 year battery-life
- Easy to Use: Fast upload, download and charge through USB.

MEGAM.O.L.E.® 20 Profiling Kit 2

MEGAM.O.L.E.® 20 Thermal Profiler – Offers a full 20 channels, the most of any traveling profiler in the Thermal Process Industry! At only 7.2 mm thick, *MEGAM.O.L.E.® 20* provides a thinner and more advanced configuration than previously available, and has the capacity for over 96 separate runs before downloading data to M.O.L.E.® MAP Software. The thin and narrow shape of the *MEGAM.O.L.E.® 20* is especially beneficial when faced with significant physical constraints of nitrogen curtains, and smaller boards.

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V-M.O.L.E.® Profiling Kit

The V-M.O.L.E.® Thermal Profiler - A 3-channel thermal profiler with the power of the *MEGAM.O.L.E.®* 20 thermal profiler in a high value (yet cost-effective) package. The V-M.O.L.E.® Thermal Profiler provides a valuable platform for doing both Process Engineering & Process Verification. Lower operating cost... and it's GREEN!

- Uses less energy
- No battery discard issue
- V-M.O.L.E.® is RoHS compatible and compliant

Time is money. V-M.O.L.E.® saves both!

V-M.O.L.E.® Solar Profiling System

ECD's V-M.O.L.E.® Solar Profiling System or solar cell metallization - Critical solar device efficiencies resulting from the “Metallization process” are driven by key process parameters:

- Temperature Ramp Rate
- Hold Time (Dry Time)
- Time Above Temperature
- Peak Temperature
- Cooling Rate

ECD's V-M.O.L.E.® Solar Profiling System is designed to provide assurance that these key process parameters are met **quicker** and **easier** than any other thermal profiler on the market.

AutoM.O.L.E.® Xpert3 Kit

AutoM.O.L.E.® Xpert3 - Saves you from the laborious, time consuming iterations of reflow process development that deprive the oven from manufacturing. Instead, you work right at your desk to create a robust lead-free process and oven recipe before actually running a profile. New, flexible oven Signature creation makes Xpert3 compatible with virtually any oven, freeing the program from the confines of machine, PC and software compatibility. This advanced functionality lifts the process engineer to new levels of productivity by providing an ability to transpose oven recipes for copy-exact production from line to line or R&D to EMS provider. Prediction “Intelligence” is based upon oven heat transfer at a given convection rate, conveyor speed (the Signature), solder paste specification and assembly properties. Xpert3 automatically manages the process window for you, calculating a robust product profile the oven can execute while satisfying paste and product specifications.

PTP® VP-8 Vapor Phase Thermal Profiling System

The “PTP® VP-8” is a complete thermal profiling solution for the vapor phase solder process, using the award winning, M.O.L.E.® MAP software, in combination with the German-Engineered PTP® Vapor Phase thermal profiler. This match-up provides all the power & analytics you will need to Characterize and Verify the key process parameters for your complex & disparate, or high-mass PCB assemblies

OvenWATCH® Reflow Oven Product Quality Monitoring System

OvenWATCH® Systems provide 24-hour continuous oven monitoring with the ability to identify out-of-control trends so you can correct them before they adversely affect product quality. Complete with automatic SPC Analysis, Alarms, Warnings and SMEMA Control, OvenWATCH® reduces the need for traditional “golden board” profiling. The included Windows XP computer provides oven independent autonomous monitoring while storing all your data in an industry standard SQL database. Each OvenWATCH® System includes a stand-alone 6-channel thermal profiler and standard accessories to allow for traditional PCB profiling. The Optional barcode feature allows you to maintain individual board traceability with the ability to detect missing or invalid barcodes

OvenRIDER® NL 2 Reflow Oven Analysis Systems

OvenRIDER® NL 2 SPC System – Achieve convection reflow oven Verification by separating zonal temperatures from convection efficiency while verifying conveyor speed for a true picture of oven Lead-Free performance consistency. New this year is compatibility with SuperM.O.L.E.® Gold 2 via MAP 3.0 software! With this combination, OvenRIDER® NL 2 enters the “Smart Pallet” era with auto-detection and 0.1 sec. M.O.L.E.® interval setup without programming nor configuration plug! And NL 2 pallets continue to remain compatible with Xpert-Ready SuperM.O.L.E.® Golds using MAP 3.0 software too. Think of OvenRIDER® NL 2 as a ‘Golden Board’, with no thermocouples to attach. Clearance height above the chain conveyor is a low 0.8"/20.3mm. The kit includes the OvenRIDER® NL 2 pallet in your choice of width, magnet kit and MAP 3.0 software.

OvenCHECKER™ Oven Verification Systems

OvenCHECKER™ Oven Verification System – The EASIEST way available to “Verify” a reflow oven profile!

- Perfect choice if you must delegate Go/No-Go decisions to multiple operators
- Long-life pallet designed for 1,000+ reflow runs integrates 3 leading-edge FR-4 simulating sensors and a Thermal Barrier
- V-MOLE thermal profiler includes the exclusive ECD “OK Button” to indicate Go/No-Go for operator decision without a computer
- You Specify Ramp, Soak, TAL and Peak, in M.O.L.E. ®MAP software, make a Run then press the OK button to Verify specs

WaveRIDER® NL 2 Wave Solder Machine Analysis System

WaveRIDER® NL 2 System – Tune your wave solder machine performance with statistical process control to ensure successful production results. New this year is compatibility with SuperM.O.L.E.® Gold 2 via MAP 3.0 software! With this combination, WaveRIDER® NL 2 enters the “Smart Pallet” era with auto-detection and 0.1 sec. M.O.L.E. interval setup without programming nor configuration plug! And NL 2 pallets continue to remain compatible with Xpert-Ready SuperM.O.L.E.® Golds using MAP 3.0 software too. Think of WaveRIDER® NL 2 as an electronic glass plate that serves as a ‘Golden Board’ without having to attach thermocouples. Measured parameters include wave parallelism, immersion depth, preheat slope, Delta-T at Wave and conveyor speed. This kit includes the WaveRIDER® NL 2 pallet in your choice of width and MAP 3.0 software..

Fluxometer® Spray Fluxing Measurement System

Fluxometer® – Eliminates guesswork when it comes to managing the consistency of flux application during wave soldering. Ordered in the same width as WaveRIDER®, the Fluxometer® rides the finger conveyor through the fluxing stage to measure topside board penetration and uniformity. The test mesh is a G-10 Glass Epoxy PTH circuit board with a consistent mesh, which producing a dot pattern on the test paper where adequate spray fluxer movement, delivery and spray pattern create top side via penetration. This process is more concise than the random through-hole patterns of a production circuit board.