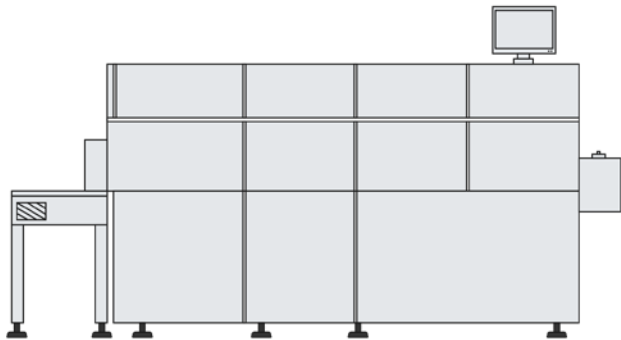




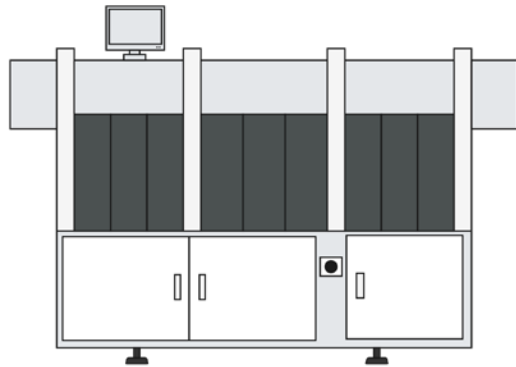
Guided by Quality, Driven by Passion



ECD PRODUCT CATALOG

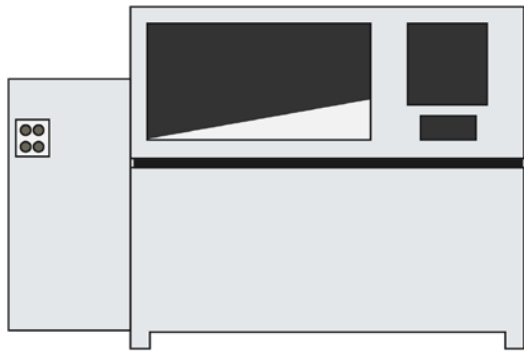


REFLOW OVEN

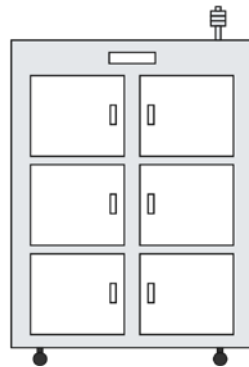


IN-LINE CURING





FLUX & WAVE SOLDER



DRY STORAGE



SuperM.O.L.E.® Gold 2



- 6-channel value-packed thermal profiling workhorse most often relied upon for in-transit thermal profiling Quality Assurance.
- Profile for recipe generation, golden boards and oven verification, all with the same tool
- Multi-run, 1.5 million data point memory means your not tethered to the PC for ongoing profile runs
- Easy to use - separate On/Off and Record buttons, direct USB for setup, download and charging
- 14 LED's keep you informed of M.O.L.E.® and sensors mode and health
- Takes full advantage of M.O.L.E.® MAP Software, pallets, and sensors

REFLOW OVEN
IN-LINE CURING
FLUX & WAVE SOLDER

www.ecd.com/products/thermal-profilers/supermole-gold-2.aspx



SuperM.O.L.E.® Gold 2



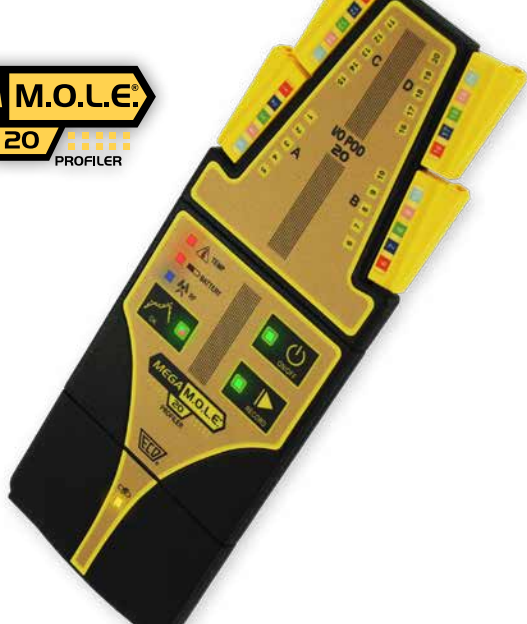
- Perfect 3-channel entry-Level Profiler
- Value-packed - High level of similarity to our 6 and 20 channel models with the same controls
- Profiles Hot, Cold and Sensitive components on your PCB
- M.O.L.E.® readiness indicators show battery and internal temperature are good for a run
- Operator Go/No-Go function is achieved with Patented "OK" button for instant profile validation
- Powers OvenCHECKER™ too!

**REFLOW OVEN
IN-LINE CURING**





V-M.O.L.E.®



- Elevates profiling precision of large complex boards to 20 assembly locations to satisfy OEM and R&D demands
- Easy of use - Thermocouples organized into 4 gangs of 5 channels, nano-mini adapters available
- Patented "OK" button provides instant profile validation: Engineer sets Slope, Soak, TAL and Peak specs in M.O.L.E.® MAP. Operator presses "OK" button for instant Go/No-Go assurance by Green/Red LED.
- Three-module design with M.O.L.E.®, I/O Module and Power Pack for interchangeable flexibility
- Multi-run, 1.5 million data point memory enables faster sample rates and longer runs
- Real-Time Wireless RF Compatible

**REFLOW OVEN
IN-LINE CURING**





MEGAM.O.L.E.® 20



M.O.L.E.® THERMAL PROFILER

- Easy to use - separate On/Off and Record buttons, direct USB for setup, download and charging
- 14 LED's keep you informed of M.O.L.E.® and sensors mode and health
- Multi-run, 1.5 million data point memory means your not tethered to the PC for ongoing profile runs

THERMAL BARRIER

- Low mass=Low impact on Vapor Cloud
- Rapid cooling for multiple data runs
- Preflight ready with external Thermo-couples and M.O.L.E.® LED indicators.



- 3-channel profiling solution that enables Quality Assurance measurement during Metallization and Lamination Press Photo Voltaic processes
- 16mm/0.7" polished Stainless Steel Thermal Barrier
- Stainless Steel Sheathed Type K Mini Thermocouples
- Optional Compression Shell for 0.7" barrier available
- 96-run Memory and 70 hours of logging at 0.1 second rate
- M.O.L.E.® MAP 3's Solar Metallization Environment enables V-M.O.L.E.® Solar's "OK" button with Soak, Peak and TAL specifications
- M.O.L.E.® Readiness Indicators show battery and internal temperature are good for a run





- Guarantees the wave solder machine is performing the product recipe, every day
- Use as a physically stable alternative to a “Golden Board” as a first-off at the beginning of every shift (Go/No-Go readiness)
- Process Sensors quantify Parallelism, Dwell Time in wave(s) Immersion Depth and Conveyor Speed
- Replaceable Test Coupon measures solder, top and bottom-side temperatures
- For 6-channel SuperM.O.L.E.® Gold 2 & M.O.L.E.® MAP 3

FLUX & WAVE SOLDER

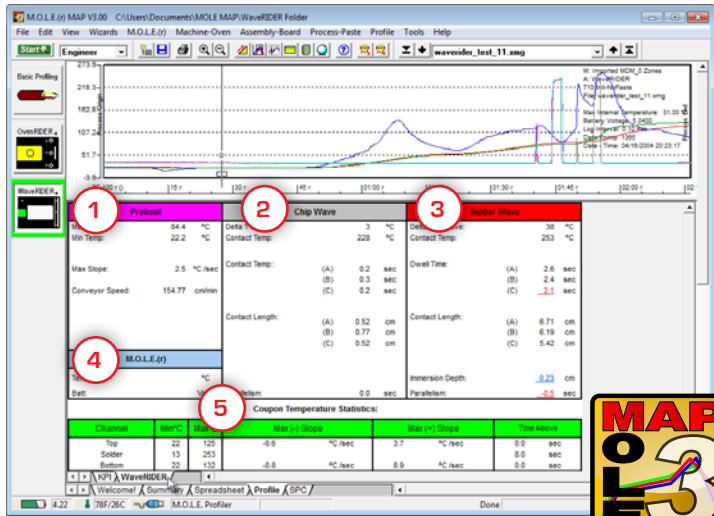


WaveRIDER® Data Table:

This table is specialized for wave solder machine applications. The Group Parameters on the data sheet are color coded so when they are viewed on other Page Tabs they can be easily associated with the Label Parameters.

Features:

1. Pre-heat Parameters and Conveyor speed.
2. Chip Wave Parameters (Blank column if there is no chip wave).
3. Solder Wave Parameters.
4. M.O.L.E. Internal Status.
5. Overall Coupon Parameters.



OvenRIDER® NL 2+



- Industry standard 6-channel convection reflow oven verification platform
- Superior alternative to 'Golden Board' as a first-off (thousands of runs)
- Verifies Heat Flow and Temperatures per zone across the oven plus Conveyor Speed
- Provides SPC-driven Go/No-Go oven readiness to the process engineer, operators and maintenance technicians
- Comes in 6.6"/168mm; 12"/305mm; & 18"/458mm + custom widths
- For 6-channel SuperM.O.L.E.® Gold 2 & M.O.L.E.® MAP 3

REFLOW OVEN
IN-LINE CURING

www.ecd.com/products/process-test-pallets/ovenrider.aspx



OvenRIDER® Data Table:

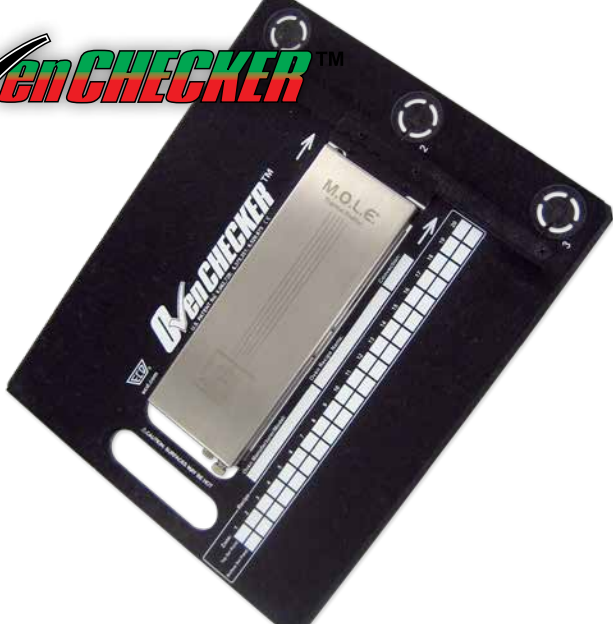
This table specialized for reflow oven applications. The Group Parameters are color coded so when they are viewed on other Page Tabs they can be easily associated with the Label Parameters

Features:

1. Oven Summary data
2. M.O.L.E.® Status
3. Individual Temperature and Process Delta Zone Data



OvenCHECKER™



- 3-channel reflow oven recipe verification platform
- Perfect choice if you must delegate Go/No-Go decisions to multiple operators
- The 3-channel V-M.O.L.E.® interprets 3 FR4-simulating sensors on the pallet's leading edge
- ECD-exclusive 'OK Button" makes quick work of determining if oven is in or out of Spec
- You Specify Ramp, Soak, TAL and Peak, make a Run then press the OK button to Verify specs

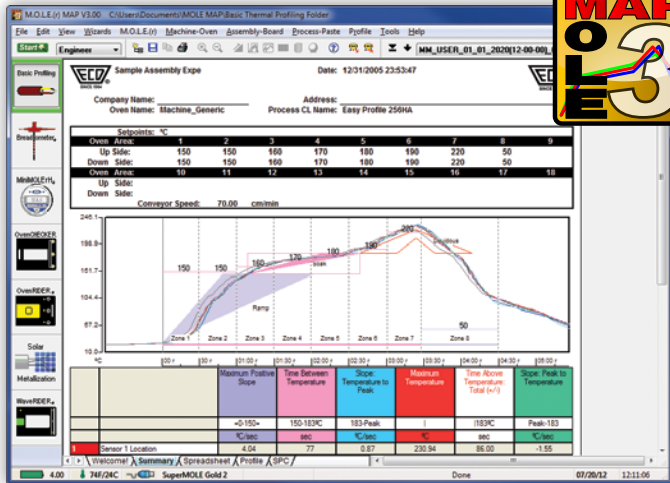
REFLOW OVEN

Create a Target-10™ specification file using the OvenCHECKER™:

- A simple color “Go/No-Go” test criteria
- Analog gauges for intuitive data interpretation
- Drill down Data for engineering analysis
- Configurability, so you can delegate decision-making

“Verify” your process using the OvenCHECKER™ by pressing the OK button.





- With MAP 3 any ECD sensor package input to any ECD M.O.L.E.® operates within a unique 'Environment' attuned to the profiling job at hand – all within the same program!
- WaveRIDER® NL2, OvenRIDER® NL2 and other platforms all operate within a unique M.O.L.E.® MAP Environment
- Special Profile Tab sets up the M.O.L.E.®'s patented "OK" button for Target-10, Bake-S, and Relative Humidity, etc.
- Flexible: Interactive Prediction is a great assist for recipe development. You can make quick adjustments to a profile just made or any run in any MAP Directory
- Robust: Process documentation complete with Oven and Solder Paste Databases you can easily add to, Preferences can be set once or customized to various product and production lines.

**REFLOW OVEN
IN-LINE CURING
FLUX & WAVE SOLDER**



- Quickly pictures spray flux top side penetration and pattern uniformity to ensure proper setup and maintenance
- Ensure proper deoxidation and wetting throughout the width and length of wave soldered products
- Load on conveyor just like product and retrieve prior to preheater if a product recipe is active
- Sprayed flux through a sandwiched through-hole mesh makes an easily discernible and comparable signature on the test paper to make your machine adjustments

FLUX & WAVE SOLDER

www.ecd.com/products/process-test-pallets/fluxometer.aspx



FLUXOMETER®



FLUXOMETER®



DYNAMIC MEASUREMENT CAPABILITIES

- Open architecture that is integration-ready for future measurement needs.

INDUSTRY 4.0+

- Integrated bridge technology that synthesizes multiple data sources and pathways

AUTOMATED THERMAL PROFILING

- **Auto** start/arm/profile generation/product change over

FULL-FEATURED TRACEABILITY

- Local and remote database supporting specific board tracking and tracing

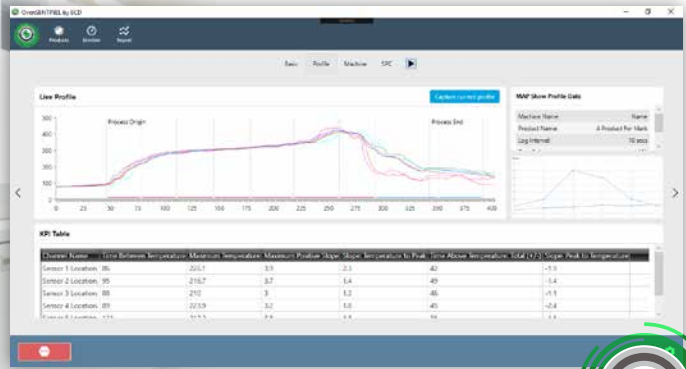
CONTINUOUS QUALITY MONITORING

- Precise PASS/FAIL governance for every board

NEW
2018

REFLOW OVEN





OvenSENTINEL™

SmartDRY™
INTELLIGENT DRY STORAGE™



- J-STD Performance – Achieves more than *just* compliance with innovative regeneration
- Market leading recovery time of <3 minutes provides constant access to your stored parts
- Designed by trusted electronics innovator, ECD, and quality-built in the U.S.A.
- Selection of volume sizes to suit your needs
- Industry 4.0 Ready - Integrated network tracks events from all SmartDRY™ cabinets for access to data on connected devices.
- Immediate visual confirmation of dry storage status

DRY STORAGE



NETWORK DASHBOARD



INTELLIGENT LIGHT STATUS

SHELVING



SmartDRY™

THERMOCOUPLES



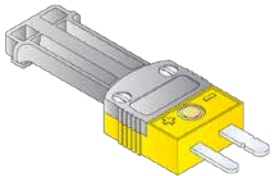
TEFLON® PFA



GLASS



OVERBRAID



MINI



MICRO



NANO



- Available in a wide variety of insulation types and temperature ratings to suit your application
- We stock and can supply a full range of K-type thermocouples with PFA (Teflon®), glass, glass with overbraid and stainless/inconel sheath in your length and wire diameter
- Micro, Nano and Mini connector styles available
- ECD sells only special-limits-of-error grade thermocouple wire
- Maintain the integrity of your measurements by replacing thermocouples at the first sign of nicks, kinks or severed junction
- Can be selected and purchased on our Super Store as well

REFLOW OVEN
IN-LINE CURING

<http://superstore.ecd.com/c-14-thermocouples.aspx>



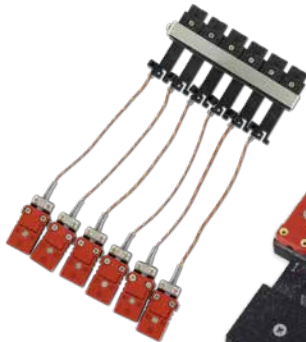
- Adapts mini-terminated K-Type thermocouples to ECD Micro Gold & Nano styles.
- One-Piece and individual channel adapters.
- Available in Teflon and Glass wire insulations for high-temp lead-free work. The glass wire and high temp mini connectors are rated to 900F/482C.

**REFLOW OVEN
IN-LINE CURING**

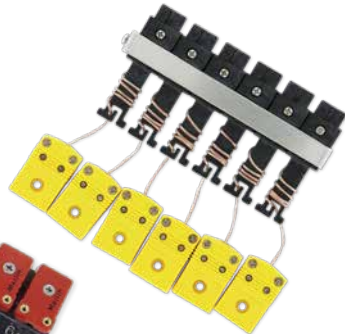
<http://superstore.ecd.com/c-43-adaptors.aspx>



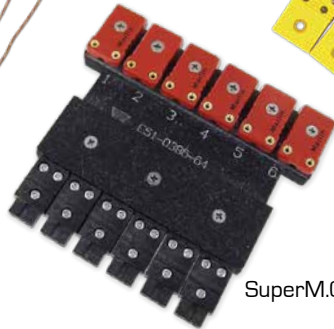
SuperM.O.L.E.® Gold - Standard Mini
Adaptor (Glass)



SuperM.O.L.E.® Gold - Standard Mini
Adaptor (Teflon®)



SuperM.O.L.E.® Gold - Standard Mini
Adaptor (Rigid)



THERMOCOUPLE ADAPTORS

THERMOCOUPLE ACCESSORIES



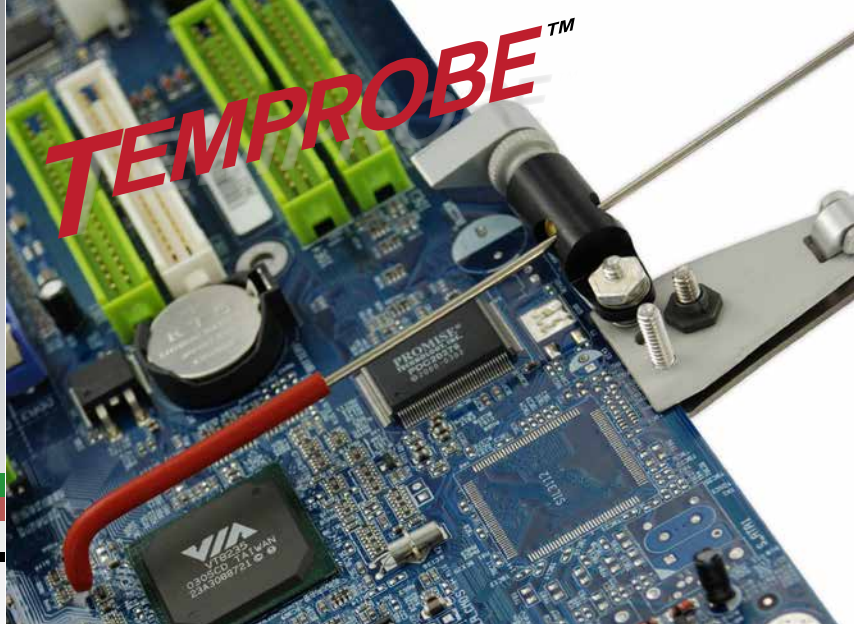
- T/C Fiberglass Sleeving Organizer
- High Temp Solder Sample (Sn05Pb93)
- Aluminum T/C Tape (Roll & 0.5" x 1" pieces)
- Polyamide (Kapton) T/C Tape (Roll & 0.25" x 1" pieces)
- Instant Adhesive
- Takpak Spray Accelerator

**REFLOW OVEN
IN-LINE CURING**

- A precision reusable instrument with excellent thermal isolation
- Non-destructive attachment – use when you can't spare a profile board from the lot
- Clamp to trailing edge of PCB or ECD Board Carrier™
- Precisely set and lock angle and span to position tip onto any component or lead, including fine pitch

REFLOW OVEN
IN-LINE CURING

<http://superstore.ecd.com/c-44-probes.aspx>



Temprobe™

REFLOW RIDER™



E-Z RIDER™



SIDE RIDER™



Reflow Profiling

- The SIDE RIDER™ platform can be used alone for narrow rail widths or with an “Outrigger”; an expandable rugged, metal frame with scissors action extension.
- REFLOW RIDER™ is built of high quality materials, for reliable operation and long life. The side rails, arms and support deck are hard-anodized aluminum. The side rails are clear anodized aluminum. All fasteners are stainless steel.

Wave Soldering

- The E-Z RIDER™ adjusts to the exact width of your circuit board in seconds. Scissor out the side rails to match the width of your board, and lock them in place with the turn of a screw. Place your profiler on the carrier, where it is securely held by two arms and a backstop, and insert its titanium side rails into the finger conveyor.

REFLOW OVEN
IN-LINE CURING



Profiling...Easier than Ever With A Versatile Board Carrier™
Our high quality Board Carriers securely hold small to medium sized circuit boards of almost any shape and up to six Temprobes™ for thermal profiling.

**REFLOW OVEN
IN-LINE CURING**

<http://superstore.ecd.com/c-45-board-carriers.aspx>



BOARD CARRIER™

THERMAL BARRIERS

0.7" SuperSurvivor



1" Uni-Barrier



BB-45



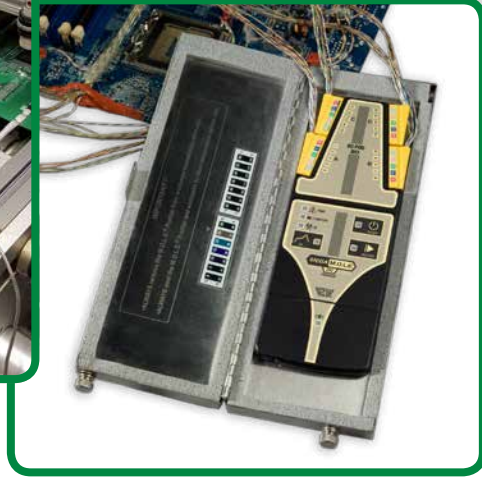
	0.7" SS	1" UNI-BARRIER	2" BB-45
150°C/302°F	6min	27min	35min
250°C/482°F	5min	13min	17min

- Your M.O.L.E.®'s lifeline to longevity. Barriers enable in-transit profiling and we've got a wide range of models for uses you may not have thought of.
- Replace an old kit barrier
- Upgrade to keep the M.O.L.E.® cooler for longer or hotter process specs
- Expand M.O.L.E.® use to multiple process heating applications in your plant (curing, coating, treating)
- A different thermal barrier and thermocouples stretch your profiler's value
- Time at Temperature and vertical above belt clearance drive the thermal barrier selection for your application

**REFLOW OVEN
IN-LINE CURING**

<http://superstore.ecd.com/c-56-thermal-barriers.aspx>





THERMAL BARRIERS



© 2018 ECD. All Rights Reserved. Foreign and US Products of ECD are covered by US Patents and Patents Pending.

The trapezoidal ECD logo®, M.O.L.E.® (Multi-Channel Occurrent Logger Evaluator), Fluxometer®, MEGAM.O.L.E.® 20, OvenRIDER® NL 2+, OvenWATCH®, SuperM.O.L.E.® Gold 2, V-M.O.L.E.® and WaveRIDER® NL 2 are registered trademarks of Electronic Controls Design, Inc.. Board Carrier™, E-Z Rider™, OvenCHECKER™, OvenSENTINEL™ Reflow Rider™, SmartDRY™, Side Rider™ and Temprobe™ are trademarks of Electronic Controls Design, Inc.

Patents & Patents Pending: WaveRIDER® #5,767,424; Fluxometer® #6,321,591; OvenRIDER® #6,062,728 #6,375,351 #6,520,675; OvenWATCH® #6,799,712;



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