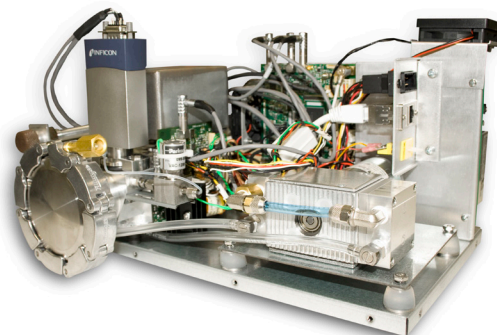


1<sup>st</sup> Detect's OEM-1000™ is a fully functional ion trap mass spectrometer component that gives users the power of mass spectrometry in a small, easily customizable platform that can be integrated into customer specific packaging and equipment. The complete system is easily integrated and includes the core analyzer, control electronics, and vacuum system.



## SPECIFICATIONS

- **MASS RANGE:** 45–400 amu (standard)  
Custom ranges available, see *Options*
- **MAX SCAN RATE:** 38k amu/sec (45–400 amu)
- **SCANS/SEC:** 1 spectra/sec (typical) 7 spectra/sec (maximum), with 14 TIC points/sec.  
Faster scan rates require special settings.
- **RESOLUTION:** Better than Unit Mass
- **MASS STABILITY:** Within  $\pm 0.5$  amu over an 8-hour period  
(measured at  $m/z = 91$  amu xylene with continuous sampler)
- **DETECTOR:** Channel Electron Multiplier
- **SENSITIVITY:** (measured at  $m/z = 91$  amu xylene)  
*Membrane Inlet* 500 ppb, *Preconcentrator* 500 ppt using 30 sec sampling time
- **MS/MS CAPABLE:** No collisional gas or buffer gas required
- **IONIZATION MODE:** Electron Ionization
- **AVERAGE POWER:** MS operation <45W (typical) 70W (maximum)
- **INPUT POWER:** 24 VDC / 5A
- **WEIGHT:** < 15 lbs (7 kg)
- **DIMENSIONS (W x H x D):** 7.5" x 13" x 7.5" (19 cm x 33 cm x 19 cm)
- **STARTUP TIME:** < 20 minutes from cold start (typical)
- **TURBO PUMP:** 10 L/s turbomolecular pump
- **ROUGHING PUMP:** 5 L/min diaphragm vacuum pump

---

## TYPICAL APPLICATIONS

---

- High fidelity detector for gas chromatography equipment
- Integration with orthogonal analysis systems
- High performance analyzer for customer specific packaging and user experience
- High performance chemical analyzer for multi-modal detection platforms
- Ability to add mass spectrometric analysis to industrial processing instrumentation

---

## BENEFITS

---

- Mass spectrometric quality analysis can be added to existing instruments without the need for separate hardware
- Versatility of inlet configurations allows for coupling to your specific sample preparation systems
- Lower cost alternative to traditional laboratory instruments
- Mass spectrometer control software can be integrated with customer software presenting a unified customer interface
- Air is used as a carrier gas, no cylinders or external supply required

---

## OPTIONS

---

1<sup>st</sup> Detect is able to provide a wide variety of custom solutions to fit your unique application. Our offerings include, but are not limited to:

- **CUSTOM MASS RANGE** - The OEM-1000 is able to measure any ion mass from 15 amu to 500 amu. If you require a mass outside of the standard 45–400 amu window, please note that the overall mass range may change. Typical mass ranges are: 15–45 amu, 45–400 amu, 100–500 amu.
- **CUSTOM FORM FACTOR** - The OEM-1000 can be configured to fit an array of platforms including benchtop platforms, rack-mount systems, or ruggedized field portable packages.
- **HIGH FLOW VACUUM** - The OEM-1000 can be offered with increased capacity vacuum systems to accommodate high flow inlets and systems (e.g., fast GC) up to 1.5 mL/min.

