EMGA-920 is a simultaneous oxygen/nitrogen elemental analyzer with high accuracy and repeatability suited to advanced R&D as well as quality control in the markets of steel, new materials, catalysts and many others. This is a new generation model optimized to fit the user’s needs.

**In Pursuit of High performance / Speed / Operability**

**Super High Performance**

- **Wide measurement range**
  - Oxygen: ~5%(m/m) & Nitrogen: ~3%(m/m)
    - Dual detectors for CO and CO2 provide the widest measurement range for oxygen.
    - Optimized TCD design for nitrogen.

- **Precision**
  - Oxygen/Nitrogen: SD<0.02µg/g or RSD<0.5% whichever is larger (Reference gas)
    - SD<0.3µg/g (Standard sample value 10µg/g or less)
    - RSD<1.0% (Standard sample value 0.01% to 0.02%)

- **Standard method**
  - EMGA-920 fulfills requirements of the standard methods for analysis of steel, titanium, tantalum, ceramics etc.
    - JIS G1228:1997

**Analysis examples of JSS samples containing low concentrations of oxygen and nitrogen.**

<table>
<thead>
<tr>
<th>Sample name</th>
<th>O (3.4µg/g)</th>
<th>N (7.5µg/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSS GS-6b</td>
<td>1.32</td>
<td>7.74</td>
</tr>
<tr>
<td></td>
<td>3.28</td>
<td>7.41</td>
</tr>
<tr>
<td></td>
<td>3.48</td>
<td>7.51</td>
</tr>
<tr>
<td></td>
<td>3.25</td>
<td>7.69</td>
</tr>
<tr>
<td></td>
<td>3.51</td>
<td>7.25</td>
</tr>
</tbody>
</table>

**Simple Operation**

- **Simple operation**
  - EMGA-920 uses two automation systems for loading and disposing crucibles and for cleaning the electrodes after measurement. Automation sequences allow operation by simply positioning the sample and pushing the start button. The operator has to specify the method and the sample’s name in the software. The crucible loader and auto cleaner avoid operator contact with carbon dust by providing clean operating conditions.

**User-friendly Software**

- **Measurement window**
  - Simple software allows easy operation. Extracted gas signals are displayed in real time numerically as well as graphically with curves that include temperature level.
  - Graphs are saved automatically. In the measurement window, sample weight can be registered automatically. Results are saved in a data table for easy management.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Crucible disposal</th>
<th>Electrodes cleaning</th>
<th>New crucible loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push start button to open sample window</td>
<td>Push start button to start measurement</td>
<td>Measurement</td>
<td>Fully automated sequences</td>
</tr>
</tbody>
</table>

**HORIBA originality - Maintenance navigator**

- Maintenance counter informs users about consumables replacement to assure high accuracy results. In the same window, you can reach pictures and videos illustrating maintenance operations by a simple click. Operators can freely have a look at the concerned area by playing with the 3D display. As the navigator describes the easy-to-understand procedure for replacing parts, operators can perform routine maintenance without any experience or technical knowledge.
**Fully Supported Accessories**

To achieve high-speed and simple operation all accessories are included in the EMGA-920.

**Crucible loader** (Automated crucible supply system)

- Precise capture and positioning of crucibles by rotary mechanism
- Maximum stock: 100pcs. Compatible with normal or long type crucibles.

**Auto cleaner**

- Two rotating brushes clean the upper and lower electrode after each measurement.
- The vacuum cleaner prevents contamination by removing dust.

**Hopper** (Sample window)

- Improved Hopper mechanism for easy cleaning.

**Crucible waste box**

- About 200 crucibles can be held in the waste box.

**Sample/Flux dual loading mechanism**

Thanks to this mechanism, sample and flux drop independently allowing outgassing of the flux at low temperature prior to the analysis. The benefits are prevention of flux spatter, control of crucible erosion and optimization of flux outgassing temperature. As a result, optimization of flux efficiency and blank reduction contribute to high accuracy measurements.

**Easy replacement of electrode and reagent tubes**

**Gas flow diagram**

- Oxygen determination: 2 NDIR detectors for high accuracy among the full measurement range. Automatically controlled by the software.
  - CO for high oxygen levels
  - CO₂ for low concentration of oxygen with high sensitivity
- Nitrogen determination: N₂ with Thermal Conductivity Detector (TCD)
**Specifications**

**Product name**: Oxygen/Nitrogen analyzer

**Model**: EMGA-920

**Principle**: Oxygen: Non Dispersive Infrared detector (NDIR) Nitrogen: Thermal Conductivity detector (TCD)

**Measurements**

1. Oxygen: 0–5% (mm) Nitrogen: 0–3% (mm)
   - *(Up to 100%, it is possible by decreasing the sample weight.)*

2. **Sample weight**: 1g as standard condition, possible to decrease

3. **Sensitivity**
   - Oxygen/Nitrogen: 0.001g/g

4. **Precision (Repeatability)**
   - Oxygen/Nitrogen: SD ≤ 0.02g/g or RSD ≤ 0.5% whichever is larger (Reference gas) SD ≤ 0.3g/g (Standard sample value 10g/kg or less) RSD ≤ 1.0% (Standard sample value 0.01% or 0.02%)

5. **Type and power of furnace**
   - Impulse furnace with inert gas fusion with power variable from 0 to 8kW

6. **Sample loading**
   - Sample flux dual loading mechanism

7. **Calibration**
   - 1) One point or multi point calibration (Reference gas or standard samples)
   - 2) Calibration using previous analysis data
   - 3) Calibration curve correction function

**Installation example**

- Lab bench
- Mininature with Approx 1000mm (Recommended 2000mm)
- Depth: Approx 600mm

**Other available models**

- **EMGA-820AC**: same performance as EMGA-920 but without crucible loader
- **EMGA-820M**: same performance as EMGA-920 but without crucible loader and auto cleaner

**Dimensional outline drawing**

- The Horiba (group) accepts IMS (Integrated Management System) which integrates Quality Management System (ISO9001), Environmental Management System (ISO14001), and Occupational Health and Safety Management System (OHSAS18001).

  - We have now integrated Business Continuity Management System (ISO22301) in order to provide our products and services in a stable manner, even in emergencies.

**Consumables/Options**

**Sn & Ni pellet**

**Double crucible**

**Ni capsule**

**Sn capsule**

**Standard crucible**

**Long crucible**

**Converter C-550**

**Manual Press**

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**Please read the operation manual before using this product to assure safe and proper handling of the product.**

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- **Bulletin: HRE-3748B**

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