

EMIA Series

Carbon/Sulfur Analyzer



Simple to operate, dustless and low maintenance.



EMIA Series

Carbon/Sulfur Analyzer

The EMIA-Pro and EMIA-Expert Carbon/Sulfur Analyzer series is based on HORIBA's widely respected expertise in Non-Dispersive Infrared (NDIR) technology.

The EMIA Series

Standard Model:

EMIA-Pro

Enables everyone to become a professional analyst

The EMIA-Pro is the most advanced system available. The key features are:

1. Long MTBM (Mean Time Between Maintenance)
2. High Throughput
3. Fast and Easy Maintenance
4. Advanced Operation Software



EMIA-Pro

High Performance Model:

EMIA-Expert

For expert analysts demanding the greatest accuracy and precision

Advanced functions for the EMIA-Expert:

- **High Performance Purifier Unit for Carrier Gas**
Enables the measurement of ultra-low carbon concentration with high accuracy by eliminating hydrocarbon impurities in the carrier gas.
- **High Performance Heating Filter Unit**
Samples which are moist or that generate water during analysis may cause a small error for the analysis of sulfur. This is due to the evolved water absorbing the SO₂ gas. Using the heating filter, the absorption of SO₂ by moisture is prevented, and highly accurate sulfur analysis is guaranteed.



EMIA-Expert

Option

• Crucible pre-heating unit

The crucible pre-heating unit FK-100 with the automatic transportation function heats ceramic crucibles at 1100 degrees C for 10 min. prior to analysis.



Model	FK-100
Size [W x D x H]	280 x 1020 x 680 mm
Mass	50 kg
Temp. for use	1100 °C (Max)
Specifications	Power: 100 V ± 10% (50/60 Hz) Power Consumption: 1.5 kVA
The number of crucible stock	100 pcs (Max)
The way of crucible supply	Operated by electronic cylinder

• Auto-sampler unit

Automated crucible loading and disposal unit. Up to 20 crucibles may be loaded and analyzed automatically.

• Halogen trap unit

Halogens may corrode the detector unit, reducing its lifetime. When measuring samples which contains halogen, this unit traps the halogen elements in the sample gas.

The Key Features of the EMIA Series

The new generation EMIA Series has been developed on the concepts of “reliability,” “user-friendliness” and “high throughput.” The instruments build upon the high reliability and functionality from the former EMIA-V2 Series, with improved cleaning performance, durability and maintenance to ensure efficient measurements in a user friendly package. Shortened measurement cycle times, long term precision and accuracy help improve your productivity.

Long MTBM (Mean Time Between Maintenance)

Dust can be a major cause of decreased analytical accuracy, but the unique newly-developed cleaning mechanism (*patent pending) clears the dust on the filter.

Owing to the innovative HORIBA proprietary auto-cleaning design, the EMIA Series is a long MTBM system which is able to run 200 samples without furnace cleaning.



	Standard Specification	Before measurement	After 200 measurements
Leakage Pressure	≤ 1.0 kPa	0.23 kPa	0.29 kPa
RSD for Carbon	≤ 1%	-	0.39%
RSD for Sulfur	≤ 1.5%	-	1.21%

High Throughput

With the latest innovations (*patent pending), the EMIA Series can complete one measurement cycle (measurement, display result and cleaning process) in 70 seconds (i.e. about 50 samples/hour).

The EMIA-Pro/Expert achieve the top-class high throughput in the market*.

*According to our research as of June 2016.



Fast and Easy Maintenance

With the latest innovations the cleaning time for the EMIA Series instruments is typically half of that of our conventional models. The flat design around the crucible stand and simple design around the furnace also simplify user access for cleaning.



Flat design around the crucible stand

Maintenance Cleaning Contents



Advanced Operation Software

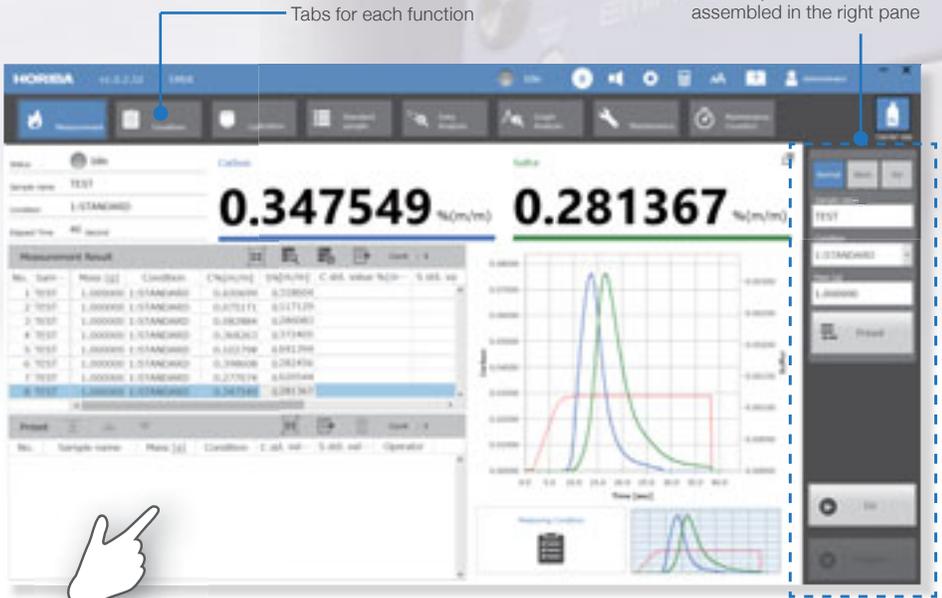
Advanced User-Friendly Interface

The layout, operation menus and functions have been designed to highlight our 'easy-to-use' promise.

Operation by the PC with touch-panel enables intuitive and visual operation.

A self-diagnostic monitor checking capability has been included to monitor the status of the connected device, along with an alarm function and 3 expanded navigators to facilitate the daily operation.

The new software platform enables everyone to operate the EMIA Series without long hours of software training.



Tabs for each function

The operation menus are assembled in the right pane



Touch-panel operation (Optional)

The measurement will be done by executing the menus in descending order

Enhanced Operator Support

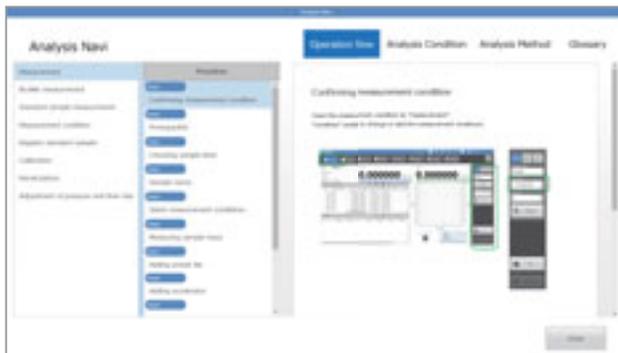
Analysis Navigator

One-Click Operation Mode

This function uses the recommended best measurement flow and analysis conditions based on our experience.

Operation Flow

"Operation Flow" in the Analysis Navigator shows the proper measurement flow and guides the operator through the process to get the results with good reliability and accuracy.



Analysis Condition

Just by choosing the sample by name, the software sets up the analysis conditions automatically, so the operator does not need to set any conditions.



Troubleshooting Navigator

Automatic Diagnosis System

When any fault occurs, this function pinpoints the location automatically, and notifies the operator with the recovery procedure. Thus, it saves the user unnecessary downtime and running expense.



Maintenance Navigator

Periodic preventive maintenance is essential for the accurate performance for the EMIA Series. In this Navigator, the daily maintenance menus are listed and the videos and photos of the maintenance procedures are displayed just by clicking the menus.



The Industry-proven NDIR Technology of HORIBA

• Long history and global standard technology

- Since 1957, when HORIBA launched the first analyzer based on NDIR technology, we have pioneered NDIR analyzers and provided new and added value to the applications. This sophisticated NDIR technique has been employed on many of our analyzers, and we have provided solutions for a wide range of applications. Some HORIBA analyzers that use this advanced NDIR technique are recognized as the global standard for emission gas measurement system.

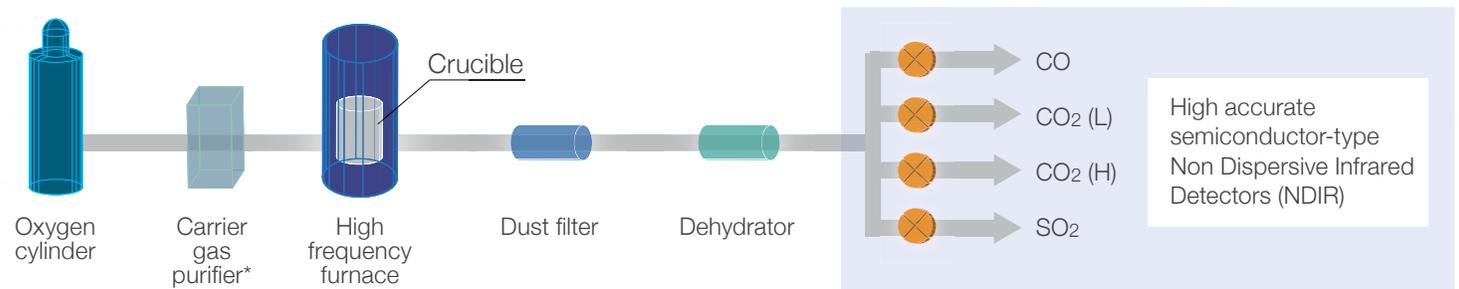
• Proprietary HORIBA technology

- The NDIR detector is the key element for accurate measurement of our Carbon/Sulfur analyzers. This detector is designed by highly skilled engineers and manufactured with very strict quality control process.



Detector Polishing

Principal of NDIR Measurement



*Optional for EMIA-Pro, Standard for EMIA-Expert

Application Examples



Steel Products

Steel plate/sheets/bar/pipe, Automotive steel sheet, Casting iron, Steel slag, etc.



Non-ferrous Alloy

Copper, Nickel, Aluminum, Zinc, Tungsten carbide



Mineral

Cokes, Lime stone, Coal, Silicone, Rare metal



Energy

Electrode material of Li-Ion battery, Si wafer for solar cell, SiC for Power device



Electrical Material

Capacitor, Solder, Target material, Bonding wire, Filler



Others

Catalyst, Rubber, Carbon black, Silica, Cement

Other Products

EMGA-920

Oxygen/Nitrogen Analyzer

- High performance
- High-speed analysis, easy operation and maintenance
- Dual Sample/Flux introduction mechanism



LabRAM HR Evolution

Confocal Raman Microscope

- Ultimate instrument for Raman spectroscopy
- High spatial and spectral resolution
- Laser sources: from UV to NIR
- Ultra-fast confocal imaging
- Offers both micro and macro measurements



GD-Profil2

Glow Discharge Spectrometer

- Ultra-fast depth profiler for surface analysis from 1 nm up to 100 μm.
- Measurement element: H - U
- Ideal tool for thin film characterization and process studies.



Ultima Expert

ICP-OES Spectrometer

- Offers the highest performance in the market
- High resolution
- High sensitivity
- Measurement wavelength: UV - Visible (160 - 800 nm)



The EMIA Series Technical Specifications

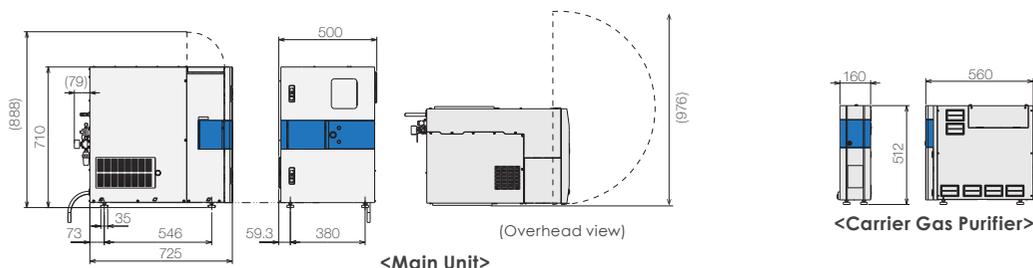
Contents		EMIA-Pro	EMIA-Expert
Required sample amount		1.0 ± 0.10 g	
Standard cycle time		70 seconds/cycle	
Carbon	Meas. Range (m/m)	1.6 ppm - 6.0%	0.6 ppm - 10.0%
	Blank accuracy	$\sigma_{n-1} \leq 0.8$ ppm	$\sigma_{n-1} \leq 0.3$ ppm
Sulfur	Meas. Range (m/m)	2.0 ppm - 1.0%	0.6 ppm - 1.0%
	Blank accuracy	$\sigma_{n-1} \leq 1.0$ ppm	$\sigma_{n-1} \leq 0.3$ ppm
Sample meas. Accuracy	Carbon	$\sigma_{n-1} \leq 2.0$ ppm or RSD $\leq 1.0\%$	$\sigma_{n-1} \leq 0.3$ ppm (Sample less than 20 ppm), $\sigma_{n-1} \leq 1.0$ ppm or RSD $\leq 0.5\%$ (Sample more than 20 ppm)
	Sulfur	$\sigma_{n-1} \leq 2.0$ ppm or RSD $\leq 1.5\%$	$\sigma_{n-1} \leq 0.3$ ppm (Sample less than 20 ppm), $\sigma_{n-1} \leq 1.0$ ppm or RSD $\leq 0.75\%$ (Sample more than 20 ppm)
Utility	Carrier gas	Oxygen (Purity: 99.5%, Pressure: 0.30 - 0.33 MPa)	
	Operation gas	Nitrogen (Purity: 99.5%, Pressure: 0.35 - 0.38 MPa)	
	Power	200/220/240 V, 50/60 Hz, 5 kVA	
Dimensions and mass	Main unit*	500 x 725 x 710 mm [W x D x H], Approximately 134 kg	
	Purifier unit**	(Optional)	160 x 560 x 512 mm [W x D x H], Approximately 21 kg
Data processing and operation		USB data communication with PC Windows® 8.1, Touch panel (Optional) or keyboard and mouse operation	
Model name		EMIA-20P: Carbon/Sulfur EMIA-21P: Carbon EMIA-22P: Sulfur	EMIA-20E: Carbon/Sulfur EMIA-21E: Carbon EMIA-22E: Sulfur

Note) "ppm" is equal to mg/kg.

* Except piping part and projection parts (D: 79 mm) on the back side. ** Optional for EMIA-Pro, Standard for EMIA-Expert
Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

Dimensions

(Unit: mm)



The HORIBA Group adopts 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.



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