



# POLLUTION

ANALYTICAL EQUIPMENT

## Polaris FID

TVOC

STACK EMISSIONS ANALYSER



## Portable TOC Analyser for Stack Emissions



Lightweight, compact, safe and SMART

## SPECIFICATIONS

Size and Weight	355(W) x 155(H) x 426(D) mm, 10 Kg (with batteries 13,4 Kg)
Power Supply	<ul style="list-style-type: none"> <li>External Power Adapter: 110÷240 Vac – 24 Vdc, 200W</li> <li>2 NMH batteries 9Ah (running-time roughly 2h @180°C)</li> <li>Battery Transportation Information: UN 3496, Class 9 with Special Provision A199</li> </ul>
Sampling	Heated head system
Environmental Operating Ranges	0°C < T < +55°C - 0% < RH < 95%
Max detector body temperature	195°C
Max temperature Sample Inlet	185°C
Materials in contact with the sample	Steel AISI316 and high performance polymers
Sample flow	Approximately 800 ml/min
Pression échantillon	atm ± 100 mbar
Measuring Range	0-20/50/150/500/5.000/10.000/100.000 mgC/Nm <sup>3</sup> (other on request) 0-10/100/1.000/5.000/50.000 ppm relative to Propane
Accuracy	1% of the F.S. or 0,4 mgC/Nm <sup>3</sup> , whichever is greater (0,25 ppm as Propane)
Limit of detection	<0,1mgC/Nm <sup>3</sup>
Setting Methods and Data Storage	<ul style="list-style-type: none"> <li>Upload/Download Methods via USB</li> <li>Internal Flash Memory data storage (30 days of continuous measurements)</li> </ul>
Interfaces	<ul style="list-style-type: none"> <li>USB (download/upload methods and download data)</li> <li>Bluetooth (computer connection with provided software for real time data acquisition and designed APP for any Android smart device)</li> </ul>
Flame management	Electronic, with diagnostic and 'flame off' visual alarm, automatic system to restart the flame
Hydrogen storage cartridge	<ul style="list-style-type: none"> <li>Metal hydrides technology (running-time about 24 hours)</li> <li>Rechargeable via external source of hydrogen under moderate pressure</li> <li>Transportation Information: no transport restriction (UN 3479)</li> </ul>
Zero Air	<ul style="list-style-type: none"> <li>1L Cylinder (non-rechargeable): technical air @ 12bar / 20°C (<i>running time approximately 10h</i>)</li> <li>Quick connectors for external Zero Air cylinder</li> <li>Transportation Information: UN 1956, Hazard Class Number 2.2 (Non-Flammable Gas)</li> </ul>
Span Gas	<ul style="list-style-type: none"> <li>1L Cylinder (non-rechargeable): propane in air @ 12bar / 20°C (<i>Concentration of total carbon equivalent : 16/40/120/320 mgC/Nm<sup>3</sup></i>). Other configurations on request</li> <li>Quick connectors for external Span Gas cylinder</li> <li>Transportation Information: UN 1956, Hazard Class Number 2.2 (Non-Flammable Gas)</li> </ul>
Compliance and Certifications	<p>Compliance: EN12619:2013</p> <p>Certification:</p> <ul style="list-style-type: none"> <li>TUV Rheinland (ID 000039773) according to MCERTS performance standards</li> <li>EN12619:1999, EN13526:2002</li> <li>Quality Management System in conformity with EN15267-2 and ISO9001:2015</li> </ul>



### POLARIS FID SE - NMHC DOCKING STATION

Size and Weight	330 (W) x 110 (H) x 330 (D) mm, 7 Kg
Power Supply	110÷240 Vac, 600W
Measurement	Automatic: Methane, Total Hydrocarbons, NMHC (calculated)
Optional	Temperature controller (80-200°) and power for sampling line
Compliance and Certification	Compliance: EN ISO25140:2010

Due to continuous improvement, our products can be subject to modification at any time and without any notice among the technical specs and images here listed, to be considered only as indicative



# POLARIS FID SE, THE PORTABLE FID FOR STACK EMISSIONS: LIGHTWEIGHT, COMPACT, SAFE AND SMART

POLARIS FID SMART EDITION (SE) analyser is the evolution of the bestseller POLARIS FID, realized by Pollution Analytical Equipment. It is an on-site monitor for the detection of total organic carbon (TOC) in compliance with EN12619:2013 and EPA Method 25A. It is a fully portable instrument because it incorporates everything needed for the analysis; for that reason it is useful for environmental screening as well. POLARIS FID SE is Smart thanks to Bluetooth Connection and the designed APP to view real time data and graphs for any Android smart device.

## POLARIS FID SE RUNS WITH BATTERIES THANKS TO THE EXCLUSIVE DESIGN WITH LOW POWER CONSUMPTION

The miniaturization of the flame ionization detector (FID) and heated volumetric sampling system result in outstanding energy savings and thus allows the use of built-in rechargeable batteries. It also ensures the highest accuracy and repeatability of sequences of analysis.



## POLARIS FID SE IS BUILT TO RESIST TO THE MOST DIFFICULT OPERATING CONDITIONS

The instrument is designed to be resistant to samples with high temperature and humidity: this is a typical working condition with hot samples during stack monitoring. The detector manifold, the sampling lines and all the valves are integrated into a single block and uniformly heated, in order to eliminate all possible cold spots and avoiding local sample condensation.

## APPLICATIONS

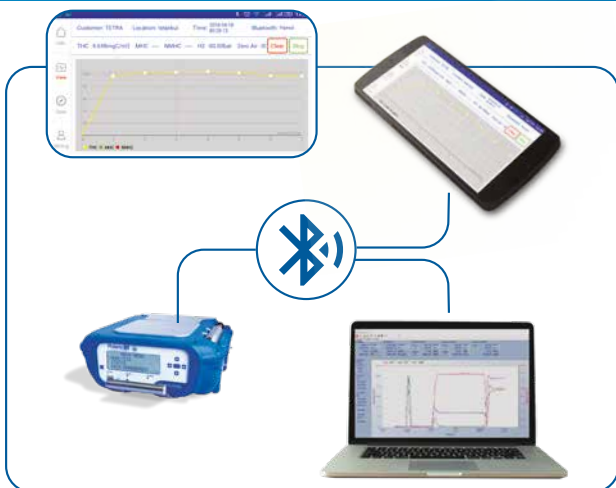
- On-site analysis of TOC (Total Organic Carbon) in Stack Emissions, in compliance with EN12619:2013 and EPA Method 25A
- Methane/NMHC Automatic analysis in compliance with EN25140:2010
- Environmental screening

## KEY FEATURES

- Rechargeable battery operations  
*fully portable*
- Integrated hydrogen cartridge  
*safe and compact*
- Zero Air and Span Gas integrated into the chassis  
*ergonomic and lightweight*
- Heated volumetric sampling system  
*accurate and precise*
- Alphanumeric display and USB port for uploading methods and downloading data analysis  
*easy and advanced*
- Docking station for Methane/NMHC and optional controller for heated lines  
*effective and flexible*
- TÜV Approval  
*certified and guaranteed*
- Wireless Bluetooth computer connection and Management software  
*fast and friendly*
- Designed APP for Android smart device  
*real time data close at hand*

## POLARIS FID SE IS COMPACT, LIGHTWEIGHT AND ERGONOMIC FOR EASY USE

The instrument incorporates everything you need for analysis: batteries, hydrogen storage cartridge, pump and Activated Charcoal filter for the flame air, span gas cylinder for the calibration and technical air cylinder for high accuracy and precision. The sample inlet, with double filter, is compatible with all sampling lines on the market. It is equipped with comfortable shoulder strap for field use.



### POLARIS FID SE OPERATES IN COMPLETE AUTONOMY, AND CONTROLS THE ENTIRE ANALYTICAL PROCESS

The integrated microprocessor automatically controls several parameters: ignition and flame monitoring, diagnostic checks, sampling lines cleaning cycles, calibration procedures. Moreover Bluetooth connectivity allows wireless computer connection through Mc-FID software. Mc-FID features: status monitoring, real time data collection (i.e. data graph drawing), data logger and export to any spreadsheet program, printable reports. The new APP runs on any Android smart device and allows to view in real time data and graph both in your smartphone or tablet. Data can be stored directly inside the device memory and exported as Excel file format, ready to be sent via email. Every measurement is also geotagged.

### POLARIS FID SE FEEDS THE FLAME THROUGH AN INTEGRATED AND SAFE HYDROGEN STORAGE

The compact hydrogen storage cartridge (using an innovative metal-hydride technology) is integrated into the instrument and self-desorbs the hydrogen fuel to the flame detector at appropriate pressure and flow. It is very safe and it does not require pressure regulators; it is a very handy instrument because it allows to perform analysis for many hours. Because of its peculiarities, it can be carried by car and by plane without any restriction. It can be easily recharged in less than one hour in the laboratory using a standard hydrogen cylinder with regulator or with an hydrogen generator at high output pressure.

## POLARIS PROBE

### HEATED SAMPLING PROBE FOR TOC

POLARIS PROBE is the sampling probe for TOC analysis: it is lightweight, compact and robust, the best accessory that matches Polaris FID SE portability.

POLARIS PROBE is EN12619:2013 compliant, comes equipped with a specially designed heated sampling line self-regulated at 180°C. A separate inlet port placed before the heated filter allows the injection of span gas for calibration or zero air for zero check.



POLARIS PROBE sampling line integrates a special support that prevents any cold spots and maximizes the sturdiness of the junction between the heated line and probe. Standard Swagelok fitting simplifies the connection between these two parts.

### STANDARD CONFIGURATION

- 70 cm Stainless steel Sampling Probe Tip
- Power 240VAC

### FEATURES AT A GLANCE

- Lightweight, compact and robust
- Built-in self-regulating elements at 180°C
- Control light indicates when the probe reaches the set point temperature
- Micro-Filter easily replaced
- Quick fitting inlet port for calibration and zero check
- Carrying handle mounted on the heat-isolated housing
- Standard Swagelok fitting and high strength special support protection

### OPTIONAL ACCESSORIES

- Lines are available at different lengths: 3, 5, 10, 20 meters
- Stainless steel Sampling Probe Tip at 30 cm
- Titanium Sampling Probe Tip at 30 cm or 70 cm
- Power 115VAC
- Anti shock Carrying Case for safe transport of the probe
- Optional Filters available for different application



# NMHC DOCKING STATION



**Polaris FID**  
DOCKING STATION **NMHC**

SMART  
**SE**  
EDITION

External Catalyst for automatic Methane/NMHCs analysis.

POLARIS FID SE controls the Docking Station to measure sequentially total hydrocarbons and/or methane only. Automatically it calculates the difference between them reporting the NMHC value. The Docking Station also powers POLARIS FID SE and heated lines. Optional internal temperature controller for the heated line, range 80°C – 200°C.

Docking station is developed and tested according to the performance criteria of the EN25140:2010 for methane and not-methane analysis.

## ACCESSORIES AND CONSUMABLES



### POLARIS FID SE - Calibration Gas

Kit of 12 disposable cylinders:

- Span Gas 16/40/120/320 mgC/Nm<sup>3</sup>

Other configurations on request

- Zero Air
- Combo: 9 Zero + 3 Span



### POLARIS FID SE - H2 Cartridge

Compact hydrogen storage cartridge based on metal hydride technology, can be easily recharged with an external pressurised hydrogen source in less than 1 hour. 50L Capacity.

Dimensions: 200 (L) x 30 (D) mm.



### POLARIS FID SE - H2 Recharging Interface

Connection Kit for the recharge of the Hydrogen cartridges through external pressurised cylinder. It is equipped with safety valves.



### POLARIS FID SE - Activated Charcoal filter for comburent air

Dimensions: 220 (L) x 28 (D) mm.



### POLARIS FID SE - First Maintenance Kit

Set of special screwdrivers/keys, replacement inlet filters, H<sub>2</sub>, zero and span gas fittings for external canisters

Many other accessories and consumables are available for best results with POLARIS FID SE, e.g. external battery charger, carrying cases and filters.



## THE ANSWER TO YOUR ON-SITE DETECTION CHALLENGES

**POLLUTION S.r.l.**

Via Guizzardi, 52  
40054 Budrio (Bologna) - Italy  
Tel. +39 051 6931840  
Fax +39 051 6931818  
pollution@pollution.it

[www.pollution.it](http://www.pollution.it)

