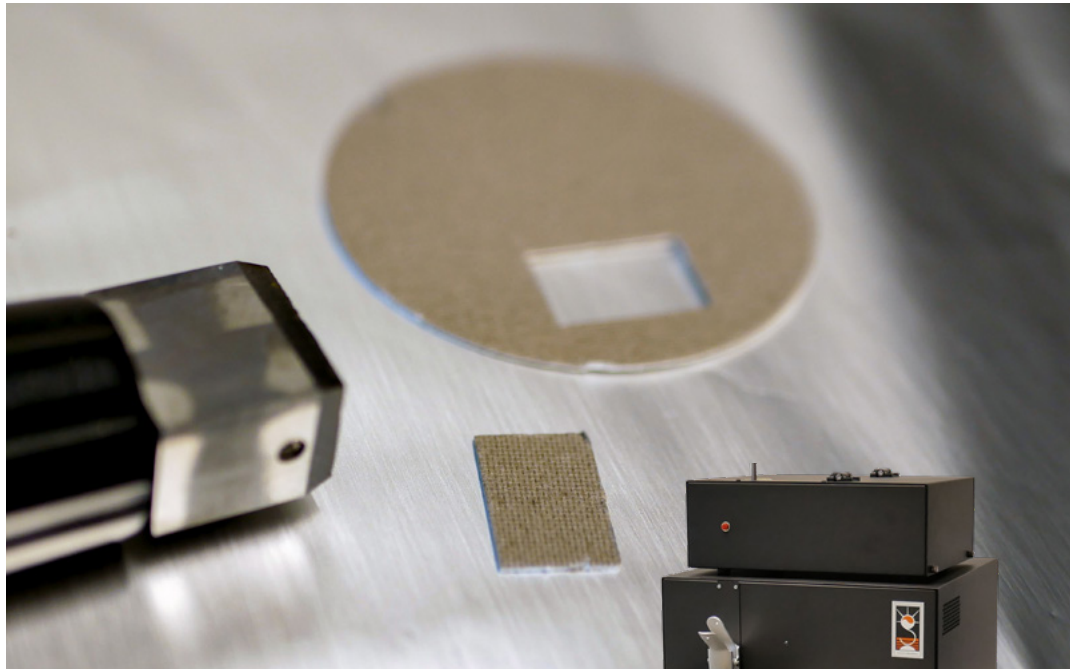
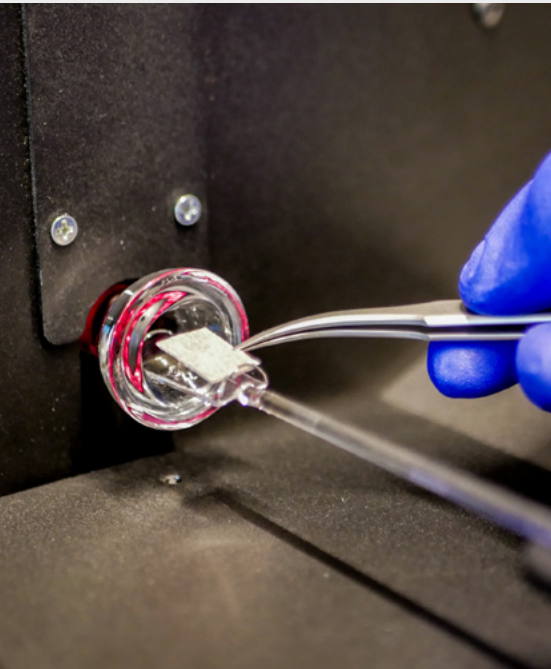




Sunset  
Laboratory Inc.

# Lab OCEC Analyzer M5L



## Applications

- Carbonaceous aerosol analysis
- Ambient and occupational air quality
- Aerosol and climate research
- Air pollution source apportionment
- Standard method for organic and elemental carbon

### Method Compliance:

- NIOSH 5040
- EU EN 16909:2017
- USEPA VARIAnT
- IMPROVE\_A



Scan the QR code  
to visit our website

## The Global Standard

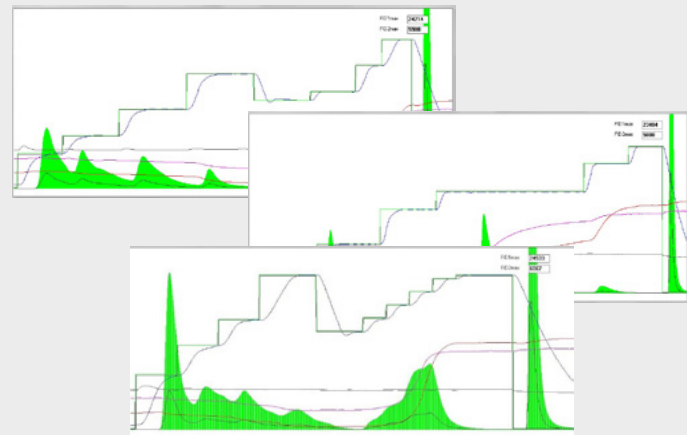
The Sunset Lab Analyzer M5L sets the standard on offline carbonaceous aerosol analysis. The M5L Lab Analyzer delivers unrivaled quality, reliability and accuracy in thermal-optical speciation of Organic (OC) and Elemental Carbon (EC) fractions of particulate matter collected onto quartz filters. Have confidence in knowing that the M5L is the most widely used OCEC available and Sunset Lab provides the best aftermarket support for all of these products.

Here are some of the features:

- Quantification of Organic, Elemental and Total Carbon species
- True thermal-optical method with optimized optical correction
- Full compatibility with existing and custom thermal protocols
- Automated and precise control of gases flow
- High sensitivity FID or NDIR detectors
- Operation and calculation software with extended array of features

## Carbonaceous Aerosol Analysis

- The Sunset Lab Analyser quantifies the carbonaceous species of particulate matter collected on quartz filters through the utilization of the most trusted analytical methods available.
- Total, Organic, Elemental and Carbonate Carbon species quantified
- Thermal-optical method can utilize transmittance or reflectance optical correction
- Precision regulated automated gas flow control system provides improved flow stability
- High sensitivity and robust detector options
- Integrated external standard utilized in every analysis



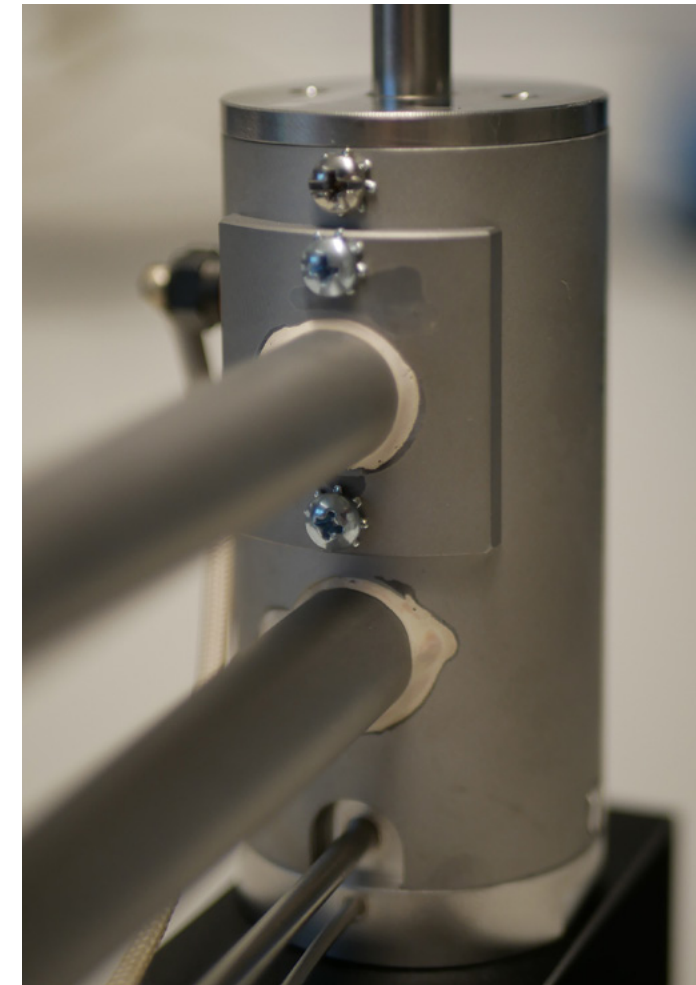
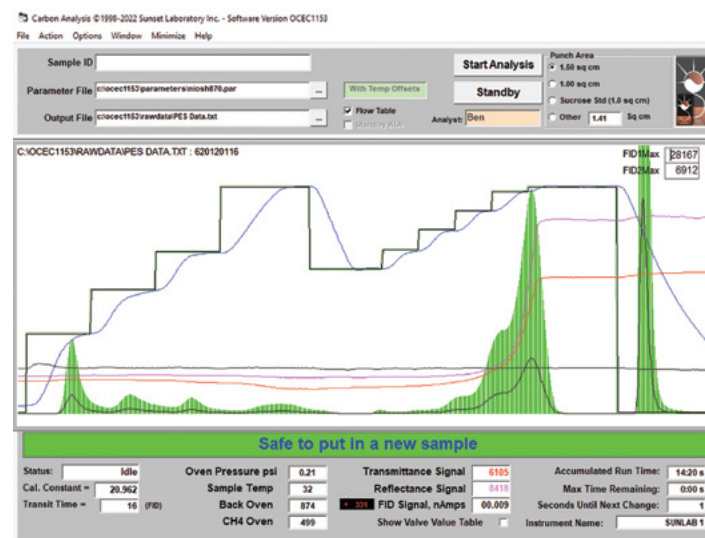
## Thermal Protocols

- Compliant with all accepted protocols, including NIOSH 5040, EU EN 16909:2017, USEPA VARIAnT, and IMPROVE A
- Versatility to incorporate custom protocols for research developments and innovative applications
- Optimized heating parameters for precise temperature control in every step

## OCEC Operation Software

The OCEC software allows a seamless analyzer operation and features all the controls necessary for a safe and reliable analysis:

- Clear and real time visualization of all instrument parameters
- Automatic alerts
- Stand-by and safe warm-up options
- Regular and user-friendly updates



## Calculation Software

The OCEC Calculation software provides an essential and powerful tool for OCEC data analysis. Here are some of the features of this tool:

- Fast calculation for large datasets
- Individual sample review and analysis
- Enhanced graphical display functions
- Investigate, review, and reprocess past datasets.
- Advanced user settings for in-depth analysis review
- Install on multiple computers
- Automatically identify and quantify peak fractions

## Autoloader Option

The Sunset Autoloader (pictured on the right) is an innovative device and the perfect match for the OCEC Lab Analyser. The Autoloader enables the full automation of OCEC analysis saving valuable time and freeing your workforce.

- Up to 36 sequential samples
- Unattended and automated analysis
- Round-the-clock operation
- Seamless software integration



## Detectors

The Sunset Lab Analyser is available with two detector options:

- Flame Ionization Detector (FID)
- Non-Dispersive Infrared Detector (NDIR)

## Technical Specifications

### Filters and sample size

- Suited for pure quartz filters
- Standard sample sizes of 1.0 and 1.5 cm<sup>2</sup>

### Measurement range

- Total carbon: 0.20 – 600 µg cm<sup>-2</sup>
- Organic Carbon: 0.20 – 600 µg cm<sup>-2</sup>
- Elemental Carbon: 0.20 – 30 µg cm<sup>-2</sup>
- Detection limit: 0.10 µg cm<sup>-2</sup>

### Thermal protocols

- NIOSH Method 5040
- EUSAAR 2
- IMPROVE-A
- Custom protocols

### Calibration

- External standard—injection of a fixed volume of reference gas at the end of each analysis
- Primary calibrations are referenced against sucrose solutions or NIST traceable gas standards

### Optical system

- Transmittance and reflectance
- Collimated laser diode ( $\lambda = 660 \pm 5$  nm)
- Precision laser cooling for improved stability and durability

### Support gases

- Helium (UHP)
- 10% Oxygen in Helium
- 5% Methane in Helium
- Zero Air (FID version only)
- Hydrogen (FID version only)

### Data acquisition

- 16-bit processor
- 1 Hz frequency
- RS-232 / USB interface

### Dimensions and weight

- W x D x H: 41.5 x 57.0 x 52.0 (34.0 \*) cm
- W x D x H: 16.2 x 22.4 x 20.5 (13.4 \*) in
- Weight: ~16 kg / 35 lbs.

\* NDIR version

### Power requirements

- 120 VAC / 15 A or 220 VAC / 8 A

### Package contents

- Sunset Lab OCEC Analyzer unit and respective detector unit
- Operating computer with OCEC and Calculation software pre-installed
- Accessories: sample punch 1.5 cm<sup>2</sup>, quartz spoon, forceps, cables, copper wire spool
- Spare consumable parts kit: quartz main oven, 2 quartz spoons, methanator oven and heating coils set



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