



Process Aerosol Photometer PAP 610

The Process Aerosol Photometer was developed for in-situ-concentration measurement of blow-by aerosols. This measuring instrument is an addition to the Gravimetric Measurement System GMS 141 which is also provided by Topas. The GMS 141 is used for calibrating the PAP 610.

### Operating Principle

A highly concentrated aerosol passes through an extinction of light arrangement and causes a light decrease of the incident light in propagation direction.

It may be shown that is possible to draw conclusions about the concentration and medium particle size of the aerosol by measuring light decrease for two different wavelengths.

A direct indicator for the particle size is the extinction ratio.

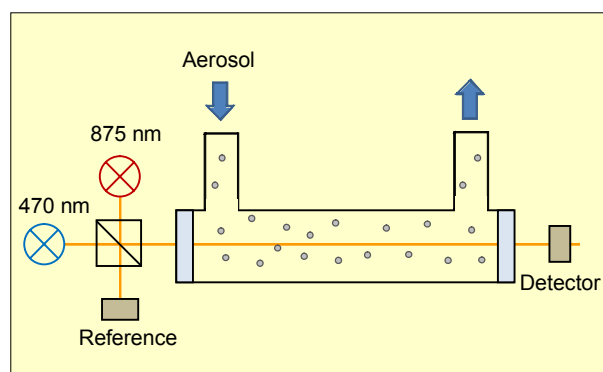
The physical connection between extinction ratio and accompanying medium particle size is given in the diagram on the back. The diagram shows as an example the extinction ratio for different aerosol particle sizes with an index of refraction of 1.4.

### Special Advantages

- Transmittance measurement by 2 wavelengths
- High-resolution transmittance measurement in aerosols in tiny time intervals
- Heatable measurement chamber
- Temperature compensation of electronic assembly
- Simple cleaning of process windows
- Optional: closed purge air system

### Applications

- Transmittance measurement of oil aerosol for crank case ventilation in combustion engines
- Concentration monitoring of aerosol generators on oil mist test stands (SPT 140)
- In-line monitoring of aerosol separators
- Particle size monitoring for submicron aerosols

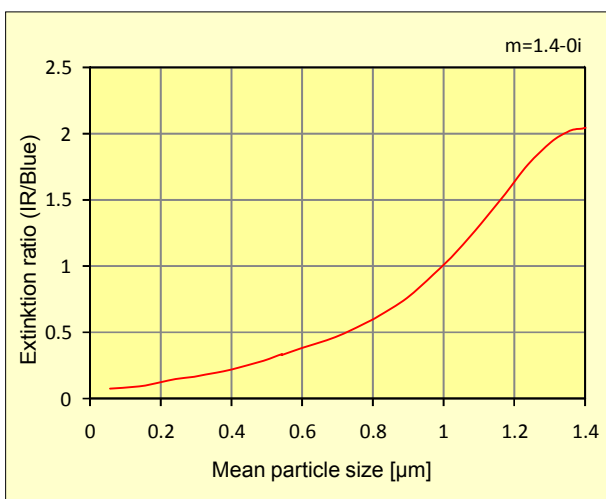


Schematic diagram of the PAP 610

## Specifications

### Details

- Wavelengths:
  - 875 nm (infrared)
  - 470 nm (blue)
- Measurement chamber: L=300 mm, d=25 mm
- Pipe connection diameter: d=28 mm
- Measurement chamber heatable up to 110°C
- Maximum temperature limited by safety switch
- Seal material FKM/FPM (oil proof at high temperatures)
- Temperature compensation for electronic assembly
- Electric power supply:
  - Heater: 230 V
  - PAP 610: 24 V / 200 mA
- PC/PLC connection over RS485
- Digital status output
  - (Open-Drain, 24 V, 1 A)
- Optional: RS485-USB-converter
- Windows Software for:
  - measuring data acquisition
  - set up of the PAP 610



Extinction ratio as function of medium particle size for m=1.4-0i

### Technical Data

Principle of measurement	transmittance
Optical path length	preferably 300 mm
Wavelengths	875 nm and 470 nm
Installation	In-line
Pipe connection diameter	DN 28 mm
Aerosol contacting materials	aluminium, FKM, glass, stainless steel
Heatable measurement chamber	max. 110 °C
Power supply heater	230 V AC / 50 Hz, 600 W, 3 A
Power supply PAP 610	24 V / 200 mA (power supply unit, 100-240 V AC / 50-60 Hz / 200 mA)
Dimensions (L x Ø)	560 x 76 mm
Weight	approx. 6 kg

QMS certified to  
DIN EN ISO 9001.



12 100 11908 TMS

For more information please visit  
our website at  
[www.topas-gmbh.de](http://www.topas-gmbh.de)

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