

# Examine Wax Appearance Temperature

with the

## Optical WAT Detector OWD

### Characteristics

- Most accurate measurement of wax appearance temperature WAT
- Measurement by Cross Polarization Translucency (CPT method)
- Ultra-high sensible light sensor
- Small sample volume of <1 ml
- Fast and precise temperature control
- Adaptable temperature ramps

### Measure Wax Appearance Temperature WAT with high precision

The precise detection of a samples wax appearance temperature WAT is of high importance for multiple applications.

The new Optical WAT Detector OWD allows a fast and accurate measurement for the onset of wax crystallization of oil samples with the integrated thermoelectric heating/cooling unit and a highly sensitive light sensor.

Besides the use in a laboratory the unit is also highly portable for field tests.



### Measurement principle

The Optical WAT Detector operates on the principle of Cross Polarization Translucency (CPT), which utilizes the ability of hydrocarbon crystals to alter the oscillation angle of polarized light. The sample is placed in a small test chamber (< 1 ml) with a transparent bottom containing a polarized filter. From below, polarized light illuminates

the sample, while a second filter on top is positioned at a 90° angle to block transmission. As the sample cools, wax crystals form and reorient the polarized light, allowing more light to pass through the upper filter. This change in transmittance is accurately captured by a highly sensitive light sensor.

### Cloud point detection

The detector also allows to measure the cloud point for paraffinic content, e.g. for condensates, diesel and fuel oils.

### Low sample amount

The OWD runs with only a very small sample amount of less than 1 ml. Just a few drops placed on the sensor plate are enough to run an entire temperature profile for the determination of the sample's WAT or cloud point.

### Portability

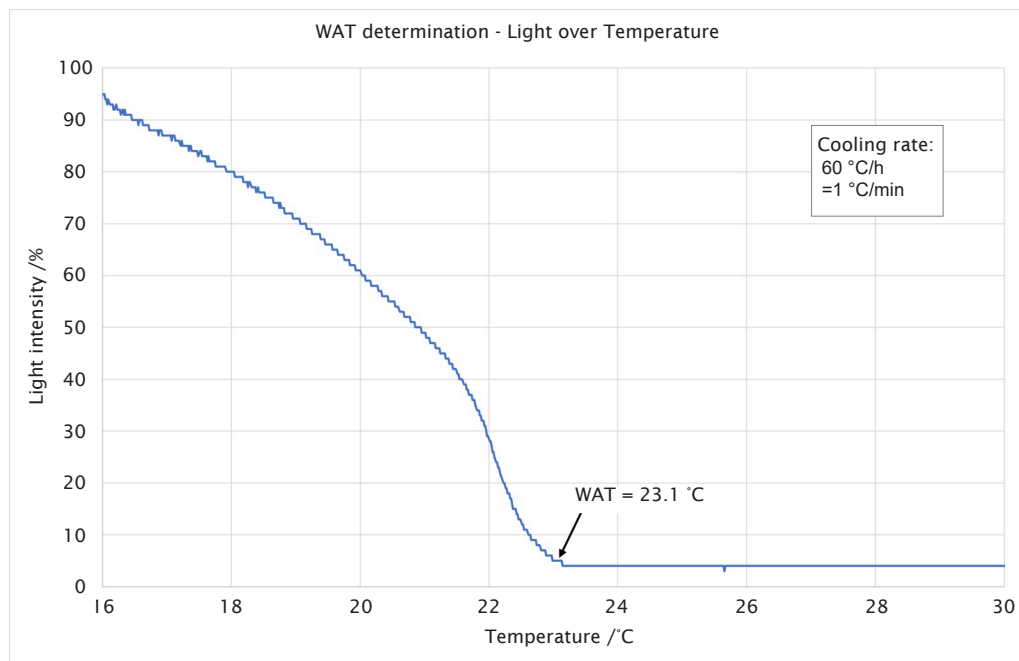
Designed for use in laboratories as well as a portable unit for field tests the OWD offers a high flexibility. Only a water supply or a

portable chiller is required for counter-cooling.

### The software

The OWD is operated via the WinOWD control software, providing both comfortable handling and high flexibility. The software includes features such as detailed customization of ramp settings, a time-saving sweep program, and automated test repetitions. Measurement data can also be exported directly to a spreadsheet program for further analysis.

The Optical WAT Detector can be adapted to your requirements.



Measurement example for wax appearance temperature (WAT) determination

## Specifications:

|                           |                                                                                                                       |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Temperature range:        | -20 .. +90 °C (-4 .. +194 °F) with cooling water at +10 °C<br>-30 .. +90 °C (-22 .. +194 °F) with pre-cooler at -5 °C |
| Sample volume:            | < 1 ml                                                                                                                |
| Accuracy / Repeatability: | 0.1 °C / 0.2 °C                                                                                                       |
| Power consumption:        | 210 W                                                                                                                 |
| Voltage input:            | 110 - 240 V~, 50/60 Hz wide-range                                                                                     |
| Weight:                   | 4.7 kg                                                                                                                |
| Dimensions (WxDxH):       | 19 x 32 x 22 cm                                                                                                       |