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# Manual

## Refractometer PCE-ALK



Version 1.0  
Date of creation: 23.05.2016  
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Thank you for purchasing a refractometer from PCE Instruments.

## 1 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. There is no warranty of damages or injuries caused by non-observance of the manual.

- This device may only be used in the way specified in this manual. If used otherwise, this may cause dangerous situations.
- Do not expose the device to extreme temperatures, direct sunlight, extreme air humidity or moisture. The device must not be used when the environmental conditions are outside the limit values stated in the specifications.
- During calibration, please make sure that the environmental temperature is +20 °C. If the actual environmental temperature deviates (from +20 °C) too much, this affects the accuracy of the measurements.
- The case should only be opened by qualified personnel of PCE Instruments.
- Do not touch the instrument with wet hands.
- The refractometer is a sensitive optical device. Handle it with care and do not expose the device to shocks or strong vibrations.
- You should not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth / use only pH-neutral cleaner without solvents or abrasives. Clean the prism on a regular basis.
- The device must only be used with original PCE accessories or equivalent.
- Before each use, please inspect the case for damage. In case of any visible damage, please do not use the device.
- If the eyepiece becomes fogged, there is moisture inside of the device. In this case, please contact our customer support.

This user's handbook is published from PCE Instruments without any guarantee.

We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions please contact PCE Instruments.

## 2 Specifications

### 2.1 Technical specifications

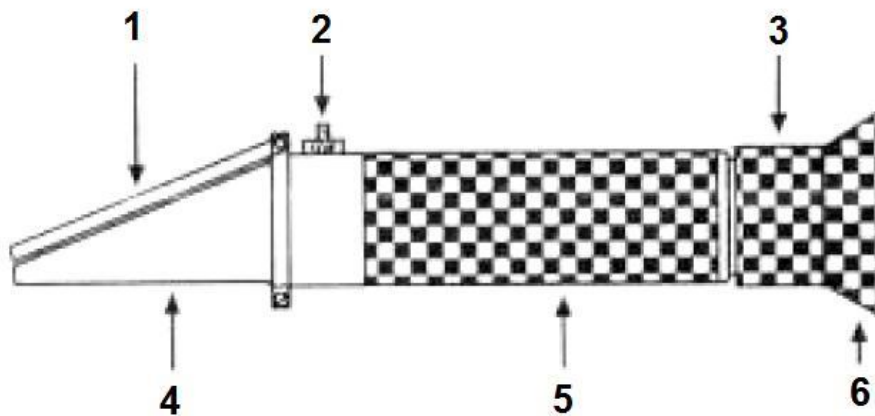
Measuring range	0 ... 80 vol% (% v/v)
Resolution	1 vol% (0 ... 60 vol%) 2 vol% (60 ... 80 vol%)
Accuracy	± 1 %
Automatic temperature compensation	Yes
Operating temperature	+10 ... +30 °C
Dimensions	203 x Ø29 mm
Weight	280 g

### 2.2 Delivery contents

- 1 x refractometer PCE-ALK
- 1 x pipette
- 1 x screw driver
- 1 x carrying case
- 1 x instruction manual

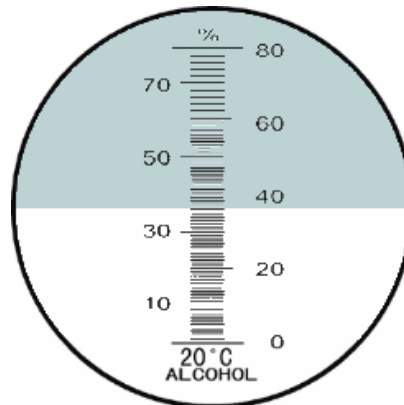
## 3 System description

### Device



- |    |                   |    |             |
|----|-------------------|----|-------------|
| 1. | Daylight plate    | 4. | Prism       |
| 2. | Calibration screw | 5. | Rubber grip |
| 3. | Focus adjustment  | 6. | Eyepiece    |

### Indicator



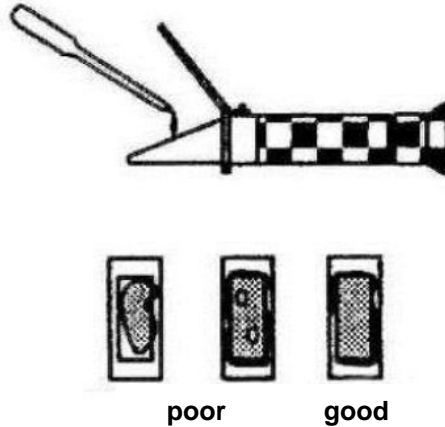
## 4 Calibration

Before using the refractometer for the first time, you have to perform a calibration. We also recommend calibrating the device on a regular basis.

The refractometer has an automatic temperature compensation which compensates for fluctuations in the environmental temperature. However, during calibration, the environmental temperature has to be +20 °C to assure accurate measurement results later.

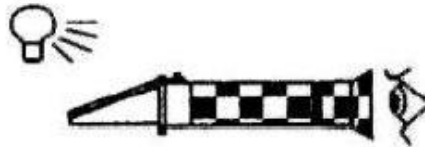
Use distilled water for calibration and follow these steps:

1. Open the daylight plate and use the pipette to place a few drops of distilled water on the prism. Close the daylight plate and make sure that the prism is evenly covered with liquid and free from any air bubbles.



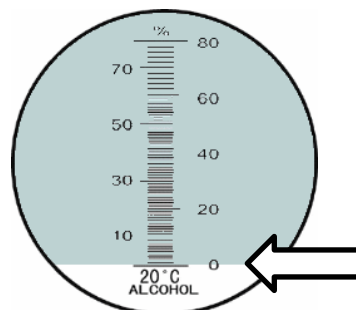
Let the water rest on the prism for approximately 30 seconds for temperature equalization.

2. Hold the prism in the direction of a light source and look through the eyepiece.



Now you can see the indicator scale. If necessary, use the focus adjustment to get a sharp image.

3. To calibrate the refractometer, use a screw driver and adjust the calibration screw, so that the white and the blue area meet right at the "0" mark on the scale (see picture below).



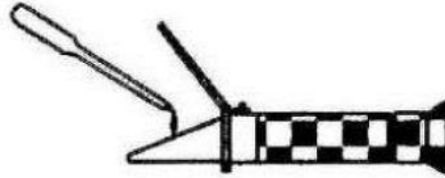
The device is now calibrated.

## 5 Operation

Before taking a measurement, please make sure that the device is calibrated properly.

To take a measurement, follow these steps:

1. Open the daylight plate and use the pipette to place a few drops of the liquid to be measured on the prism. Close the daylight plate and make sure that the prism is evenly covered with liquid and free from any air bubbles.

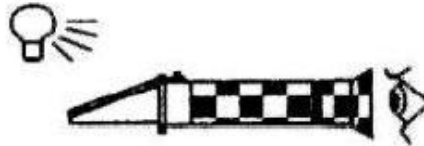


poor

good

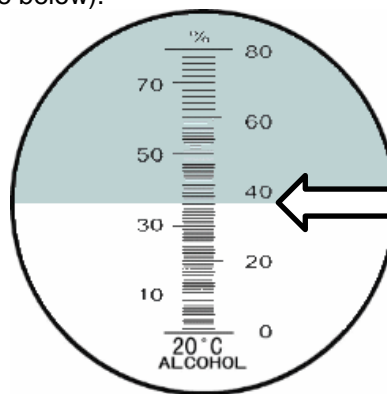
Let the liquid rest on the prism for approx. 30 seconds for temperature equalization.

2. Hold the prism in the direction of a light source and look through the eyepiece.



Now you can see the indicator scale. If necessary, use the focus adjustment to get a sharp image.

You can read out the alcohol content of the sample at the point on the scale where the white area meets the blue area (see picture below).



## 6 Disposal

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

If you have any questions, please contact PCE Instruments.



## 7 Contact

If you have any questions about our range of products or measuring instruments please contact PCE Instruments.

### 7.1 PCE Instruments UK

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