# REFRACTÓMETRO DE MANO
# HAND-HELD REFRACTOMETER
# RÉFRACTOMÈTRE À MAIN

REF. - CODE - RÉF. HPD010

Este manual es parte inseparable del aparato por lo que debe estar disponible a todos los usuarios del equipo. Le recomendamos leer atentamente el presente manual y seguir rigurosamente los procedimientos de uso para obtener las máximas prestaciones y una mayor duración del mismo.

*This manual should be available for all users of these equipments. To get the best results and a higher duration of this equipment it is advisable to read carefully this manual and follow the processes of use.*

*Ce manuel est une partie indissociable de l'appareil et doit être mis à la disposition de tous les utilisateurs de l'équipement. Nous vous recommandons de lire attentivement ce manuel et de suivre scrupuleusement les procédures d'utilisation afin d'obtenir des performances maximales et une plus longue durée de vie de l'appareil.*

## LANGUAGE INDEX

Spanish ..... 1-4
English ..... 5-7
French ..... 8-10

## TABLE OF CONTENTS

1. APPLICATIONS OF THE INSTRUMENT ..... 5
2. DESCRIPTION ..... 5
3. TECHNICAL SPECIFICATIONS ..... 6
4. METHOD OF OPERATION ..... 6
5. MAINTENANCE AND CLEANING ..... 7

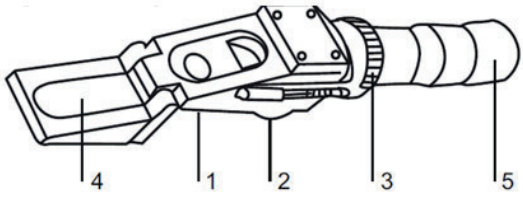
## 1. APPLICATIONS OF THE INSTRUMENT

Zuzi hand-held refractometers allow easy measurement of the concentration of dissolved solids in aqueous solutions, such as sugar, salt or protein content. Thanks to their compact design and ease of use, they can be used without prior training in the laboratory or in the field.
They have applications in various industries:

- Agri-food: control of fruit ripening, quality in beverages, honey or dairy products.
- Sanitary and veterinary: protein, urine or syrup analysis.
- Industrial and chemical: process control in refineries, distilleries, laboratories, etc.
- Marine research: salinity measurement in aquaculture and oceanographic studies.

## 2. DESCRIPTION

The HPD010 Zuzi hand refractometer has three scales to cover the range from 0 to 90%, the first scale is from 0 to 42%, the second scale is from 42% to 71%, the third scale is from 71 to 90%. This makes it possible to cover a wide range of substances with unknown concentrations.



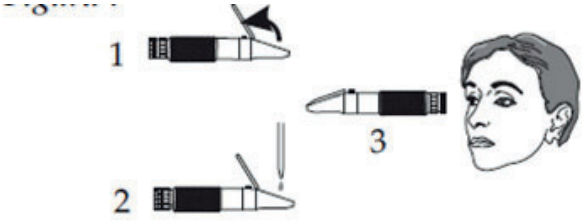

1. Light input
2. Scale selector
3. Polarising ring
4. Prism cover
5. Diopter / Eyepiece Adjustment Ring

## 3. TECHNICAL SPECIFICATIONS

| | |
|---|---|
| **Code** | **HPD010** |
| **Range** | 0-90 % Brix |
| **Scales** | 0-42%<br>42-71%<br>41-90% |
| **Accuracy** | 0.2 % |
| **CAT (10-30ºC)** | YES |
| **Dimensions** | 30x35x200 mm |
| **Weight** | 700 g |

## 4. METHOD OF OPERATION

■ Remove the refractometer from its packaging by removing all parts of the refractometer.
■ Open the plate covering the prism and clean both the plate and the prism with alcohol and a soft, lint-free cloth, care not to scratch the prism surface.
■ Point the prism part towards a bright light and adjust the dioptre ring until you can see the scale clearly.
■ The null of this instrument has been adjusted before leaving the factory.
■ Reopen the plate, clean and dry the prism and plate thoroughly, place one or two drops of the liquid to be measured, close the plate and look through the eyepiece, reading the concentration directly on the scale.




■ For greater ease of use and to avoid possible reading errors, these refractometers are equipped with the following improvements:
- Diopter adjustment ring maximum focus definition.
- High contrast of the separation lines (white-blue), which makes reading easier and safer, while saving time.
- Rubber eyecup: prevents light intrusion between the eye and the eyepiece during measurements by highlighting the brightness of the scale and the separation line.
- Rubber-coated refractometer body prevents the body temperature of the user's hand from being transferred to the sample, as temperature changes influence the measurement results.
- Adjusting and zeroing screw, to calibrate the device.
■ After the measurement, remove the sample with a damp cloth and finally wipe the prism and prism cover with a soft, dry cloth.

## 5. MAINTENANCE AND CLEANING

1. After use, do not use water to wash the instrument to prevent water from entering the instrument.
2. As this is a precision optical instrument, it must be handled with care. Do not touch or scratch the optical surfaces. It should be kept in a dry, clean and corrosion-free environment to avoid surface mildew and fogging. Avoid hard knocks during transportation.
3. The lenses must never be disassembled by the user, if there is any dirt on the external surfaces of the lenses clean them with a soft lint-free cloth impregnated with xylol or toluene.
4. To remove dust from the lens, blow it off with a blow bulb or clean it with a soft brush or brush with natural hair.
5. When cleaning mechanical parts, use non-corrosive lubricants, taking special care not to touch the optical parts.