



## **POLARIMETER AND REFRACTOMETERS**

POL-X - HR Series - HRD Series - 2WAY

# Extremely Reliable Polarimeter for Practical Experience

## THE STATE-OF-THE-ART POLARIMETER

### Combining wide measuring range with simplicity

- » Entirely Made in Italy
- » Outstanding quality/price ratio
- » New design for a compact and space-saving solution

## MONOCHROMATIC LED LIGHT SOURCE

### Instead of traditional sodium bulb

- » Unparalleled illumination
- » 30x longer lifespan than conventional polarimeters
- » Plug & play, no heating time required



# Polarimeter - POL-X

The POL-X polarimeter from Optika precisely determines the optical rotation of substances, quickly and easily. POL-X measures the optical rotation over the entire measuring range at the same high accuracy. It's suitable for many applications, from routine measurements to demanding experiments for innovative projects. With this new polarimeter, OPTIKA meets the requirements of the pharmaceutical, cosmetics, chemical and medical industries and creates an ideal tool for R&D applications.



Polarimetry is used in the Educational field (for physics & chemistry dept.) and for Quality & Process Control in Labs. It provides the concentration and purity of a substance before it is added to an expensive batch.



Optical rotation is an indispensable quality and identity assay for a wide range of critical industries. Food, drug, and flavors industries use polarimetry as a quality attribute both for raw ingredients and also finished products.

# Polarimeter - POL-X

## Technical Specifications

**Measuring range of optical rotation:**  $\pm 180^\circ$

**Resolution:**  $1^\circ$

**Accuracy:**  $0.05^\circ$

**Magnification factor of the glass:** 4x

**Light source:** Monochromatic LED, 1.2 W,  $\lambda_d = 590 \text{ nm}$  (equivalent to sodium lamp)

**Length of test tubes:** 100 mm and 200 mm

**Weight:** 1.7 Kg

**Overall dimensions:** 450x180x320 mm

**Accessories:**

POL-1.2 - 100 mm polarimeter tube

POL-1.3 - 200 mm polarimeter tube



## Target Industries

### Food

Concentration and purity of compounds (carbohydrates, lactose, raffinose, various starches, fructose, levulose, sucrose, natural monosaccharides, glucose, maltose, xylose) in sugar based foods, cereals and syrups.



### Chemical

Identification and characterization of polymers (bio-, natural or synthetic), foods, cereals and syrups.



### Pharmaceutical

Determination of product purity by measuring specific and optical rotation of amino acids, antibiotics, dextrose, steroids, amino sugars, cocaine, diuretics, tranquilizers, analgesics, codeine, serums, vitamins, etc.



### Fragrance, Flavor & Essential Oils

Inspection of incoming raw materials, such as camphors, gums, orange oil, citric acid, lavender oil, spearmint oil, glyceric acid, lemon oil, etc.





# Refractometers - HR & HRD Series



OPTIKA offers a wide range of hand refractometers to ensure incredibly rapid and convenient measurement of concentration in liquid and semi-solid samples, combining **accurate performance with excellent repeatability.**

The refractive index of a substance is related to its specific density; a refractometer is used to measure the purity or the concentration of a sample when mixed.

Refractometers are suitable for a wide range of applications, which includes the control of blend ratios in light industrial applications (such as glycols, battery acid, heat exchange fluids, coolants, quenchants and hydraulic oils) and represents the ideal solution for users working in the food industry (fruit, beverages, confectionery, jam, honey and other sugar based products).

- » **Value for money solution**
- » **Easy operation**
- » **Built-in LED illumination**
- » **Brix or scale specific (including ATC)**
- » **Sturdy construction with rubber handgrip**



Fruit



Fruit juice



Veterinary industry



Battery fluids



Honey



Wine



Clinical industry



Salinity



Confectionery/Jam



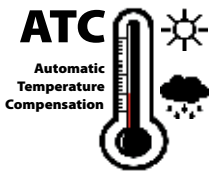
Grape must



Coolants/Antifreeze



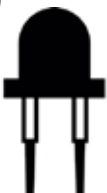
Food industry



**ATC - Automatic Temperature Compensation**  
No need to worry about temperature change during your measurement.



**LED**



**LED**  
Scale reading has never been so easy, also in case of low light conditions.



# HR Series - Hand Refractometers

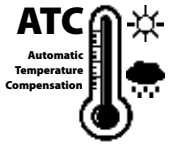
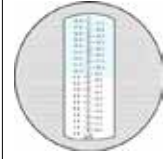
## HR-110N - Hand Refractometer, 0-20% Brix, ATC, Built-in LED Illuminator

Measuring range:

0-20% Brix.

Resolution:

0.1% Brix.



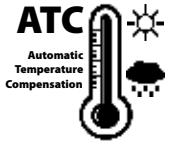
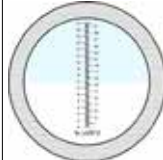
## HR-130N - Hand Refractometer, 0-32% Brix, ATC, Built-in LED Illuminator

Measuring range:

0-32% Brix.

Resolution:

0.2% Brix.



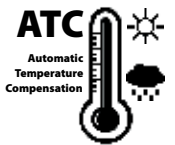
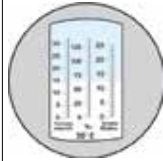
## HR-140N - Hand Refractometer, 0-32% Brix, ATC, Triple Scale, Built-in LED Illuminator

Measuring range:

0-32% Brix, 0-140° OE (Oechsle), 0-27° Babo (KMW).

Resolution:

0.2% Brix, 1° OE (Oechsle), 0.2° Babo (KMW).



## HR-150N - Hand Refractometer, 0-80% Brix, Double Scale, Built-in LED Illuminator

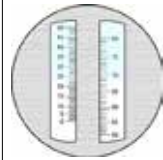
Measuring range:

0-80% Brix.

Resolution:

1% Brix.

Without ATC.



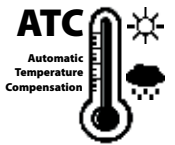
## HR-160N - Hand Refractometer for Urine and Protein, ATC, Built-in LED Illuminator

Measuring range:

Serum Protein 0-12g/dl, Specific Gravity 1.000-1.050sg, Refractive Index: 1.330RI-1.360RI.

Resolution:

Serum Protein 0.2g/dl, Specific Gravity 0.005sg, Refractive Index: 0.0005RI.



## HR-170N - Hand Refractometer for Battery and Antifreeze, ATC, Built-in LED Illuminator

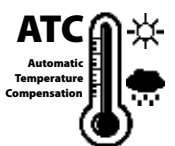
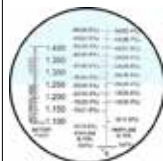
Measuring range:

Ethylene Glycol -50°C (66.6%)-0°C (0%), Propylene Glycol -50°C (62.4%)-0°C (0%),

Battery 1.15-1.30sg.

Resolution:

Ethylene Glycol 5°C, Propylene Glycol 5°C, Battery 0.01sg.



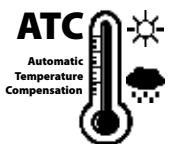
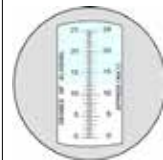
## HR-180N - Hand Refractometer for Wine and Grape, ATC, Built-in LED Illuminator

Measuring range:

Alcohol 0-25% vol, 0-40% Brix.

Resolution:

0.2% Alcohol, 0.2% Brix.



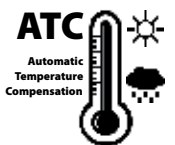
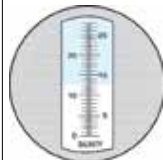
## HR-190N - Hand Refractometer, 0-28% Salinity, ATC, Built-in LED Illuminator

Measuring range:

0-28% Salinity.

Resolution:

0.2% Salinity.

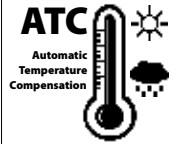


# HRD Series - Digital Refractometers

## HRD-300N - Digital Refractometer, Brix and Refractive Index

Brix Measuring range: 0-50%.  
 Refractive index: 1.3330-1.4200.  
 Precision of temperature measurement: 0.5°C, 0.9°F.  
 Alarm of low battery.

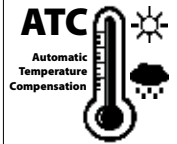
Resolution: 0.1% Brix.  
 Resolution: 0.0001.  
 Resolution: 0.1°C.



## HRD-400N - Digital Refractometer, Brix, Salinity and Refractive Index

Brix Measuring range: 0-50%.  
 Salinity range: 0-280‰  
 Refractive index: 1.3330-1.4200.  
 Precision of temperature measurement: 0.5°C, 0.9°C.  
 Alarm of low battery.

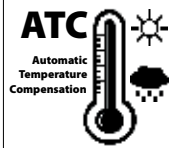
Resolution: 0.1%.  
 Resolution: 1‰.  
 Resolution: 0.0001.  
 Resolution: 0.1°C.



## HRD-500N - Digital Refractometer for Urine, Serum Protein and Refractive Index

Serum protein range: 0-12g/dl.  
 Refractive Index: 1.3330-1.3900.  
 Precision of temperature measurement: 0.5°C, 0.9°F.  
 Alarm of low battery.

Resolution: 0.1g/dl.  
 Resolution: 0.0001.  
 Resolution: 0.1°C.



# Refractometers - 2WAJ ABBE Bench Refractometer



Abbe bench-top refractometer measures refractive index ND and average color dispersion NF-NC of transparent and semi-transparent liquid or solid samples. It is a must-have equipment in factories, teaching institutes and science research centers related to oil, grease, pharmacy, painting, food, sugar-refining and geological industries, among the others. It is unique thanks to its ability in measuring also solid samples, such as film, glass, and other transparent materials.

**Main prism:** horizontal  
**Secondary prism:** fitted on a hinge  
**Refraction index scale:** Nd 1.300 – 1.700  
**Precision:** Nd ± 0.0003  
**Division:** Nd 0.0005  
**Sugars scale:** 0-95% from Nd 1.300 – 1.530  
**Precision:** 0-50% = 0.2%; 51-95% = 0.1%  
**Division:** 0.25%  
**Thermometer scale:** 0°C - 70°C, div. 1°C  
**Weight:** 4 Kg  
**Size:** 140x100x235 mm

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## Headquarters and Manufacturing Facilities

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## Optika Sales branches

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