

### 1 Microscope slide drying bench, MH 6616

Accepts up to 50 slides 26mm x 76mm. With built-in energy regulator for temperatures up to 100°C. Speeds up slide preparation. Slides can be placed in any position:

- On storage bars
- Against storage bars
- Flat

Heating area: 702cm<sup>2</sup>  
 Dimensions: 480mm x 480mm x 170mm  
 Supply requirement: 220V, 150W

Electrothermal



| Type                                   | PK | Cat. No.  |
|--|----|-----------|
| Microscope slide drying bench, MH 6616 | 1  | 9.770 106 |
| Spare heating element                  | 1  | 9.770 108 |

### Digital hand-held refractometers



DR201-95 and DR201-95OE are compact digital hand-held refractometers, which eliminate the problem of reading errors by users. Handling is fast and very easy, distilled water is used for calibration. Thanks to several scales and a broad measuring range, the device is almost always suitable.

For wine-growers, a device equipped with a special Oechsle-scale is available. DR301-95 offers 2 additional user-defined scales and can be connected to a computer. Specialties: optional temperature compensation feature and upper and lower tolerance alarm.

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| Specifications            | DR201-95   DR201-95OE   DR301-95                     |
|---------------------------|--|
| Temperature measurement:  | 0-40°C   0-40°C   5-40°C                             |
| Temperature accuracy:     | 0.5°C  |
| Temperature compensation: | 10-40°C   10-40°C   5-40°C                           |
| Dimensions:               | 130x80x40   130x80x40   180x100x40mm                 |
| Weight:                   | 200   200   500g                                     |
| Power supply:             | 1.5V battery   1.5V battery   9V battery, AC adapter |



6.230 350

| Type        | Measuring range                 | Accuracy                 | Graduations              | PK | Cat. No.  |
|-------------|---------------------------------|--------------------------|--------------------------|----|-----------|
| DR201-95    | 1.3330-1.5318 nD<br>0-95 % Brix | 0.0003 nD<br>0.2 % Brix  | 0.0001 nD<br>0.1 % Brix  | 1  | 6.230 350 |
| DR201-95 OE | 0-250° Oechsle<br>0-95 % Brix   | 1° Oechsle<br>0.2 % Brix | 1° Oechsle<br>0.1 % Brix | 1  | 9.801 116 |
| DR301-95    | 1.3330-1.5318nD<br>0-95% Brix   | 0.00015 nD<br>0.1 % Brix | 0.0001 nD<br>0.1 % Brix  | 1  | 6.236 921 |



6.236 921

### 4 5 Refractometers, portable, precision

Simple and precise optical instruments to analyse liquids and their solid contents. Models are equipped with an automatic temperature compensation device (ATC). Supplied with a plastic box and comfortable leather-type case.

| Type    | For                         | Measuring range                                      | Accuracy                           | PK | Cat. No.  |
|---------|-----------------------------|--|------------------------------------|----|-----------|
| RGA/ATC | Alcohol                     | 0 - 80% Vol  | 1% Vol                             | 1  | 9.801 256 |
| RBB/ATC | Wine                        | 0 - 25% Vol<br>0 - 22° Be'<br>0 - 40% Brix           | 0,2% Vol<br>0,2° Be'<br>0,2% Brix  | 1  | 9.801 255 |
| RBO/ATC | Wine                        | 0 - 140° Oe<br>0 - 25° Babo<br>0 - 32% Brix          | 1° Oe<br>0,2° Babo<br>0,2% Brix    | 1  | 9.801 254 |
| RMB/ATC | Wine                        | 0 - 25% Vol<br>0 - 20° Be'                           | 0,2% Vol<br>0,2° Be'               | 1  | 9.801 253 |
| RMA/ATC | Wine                        | 0 - 25% Vol<br>0 - 40% Brix                          | 0,2% Vol<br>0,2% Brix              | 1  | 9.801 252 |
| RPC/ATC | Freezing point<br>batteries | -50° - 0°C<br>1,10 - 1,40                            | 5°C<br>0,1                         | 1  | 9.801 251 |
| RCS/ATC | Salinity                    | 0 - 28%  | 0,2%                               | 1  | 9.801 250 |
| RSM/ATC | Salinity                    | 0 - 100‰   | 1‰                                 | 1  | 9.801 249 |
| RCZ/ATC |                             | 0 - 32% Brix   | 0,2%                               | 1  | 9.801 200 |
| RTS     |                             | 0 - 90% Brix   | 0,2%                               | 1  | 9.801 201 |
| RPI/ATC | Salinity                    | 0 - 12 g/dl<br>1,000 - 1,050 sg<br>1,330 - 1,3600 nD | 0,2 g/dl<br>0,002 sg<br>0,00025 nD | 1  | 9.801 202 |
| RBC/ATC |                             | 0 - 10% Brix   | 0,1%                               | 1  | 9.801 241 |
| RLC/ATC |                             | 0 - 18% Brix   | 0,1%                               | 1  | 9.801 242 |
| RFC/ATC |                             | 28 - 62% Brix  | 0,2%                               | 1  | 9.801 244 |
| RPD/ATC |                             | 45 - 82% Brix  | 0,5%                               | 1  | 9.801 245 |
| RPU     |                             | 0 - 80% Brix   | 1%                                 | 1  | 9.801 246 |
| RTS/ATC | Honey and jam               | 58 - 90% Brix<br>38 - 43° Be'<br>17 - 27 Wasser      | 0,5% Brix<br>0,5° Be'<br>1% water  | 1  | 9.801 247 |



### Refractometers, hand-held, precision

For simple, manual measurement of concentrations and refractive indices of liquids. Hand-held, precision refractometers with focussing eyepiece, matrix scale (E model) for improved readings, soft rubber eyecups (to reduce straylight ingress, also spectacle lenses do not slip off and are not scratched), case and conversion tables.

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Hand-held refractometers cannot be fitted with a thermostatic controller and so measurements have to be temperature compensated.

ATC: Automatic temperature compensation. Temperature compensation scale: Compensation values can be read from the thermometer in the hinged prism cover and have to be checked against the readings taken. Thermometer on the prism cover displays measuring temperature and/or direct compensation values. Compensation values must be checked against readings taken.

Occasional resetting to the actual measuring temperature can be achieved by turning an adjustment screw.

| Type                | For                    | Measuring range                    | Accuracy   | PK | Cat. No.           |
|---------------------|------------------------|------------------------------------|------------|----|--------------------|
| Master-T20          |                        | 0,0 - 20,0% Brix                   | 0,1 % Brix | 1  | 9.801 301 <b>1</b> |
| Master-T            |                        | 0,0 - 33,0% Brix                   | 0,2 % Brix | 1  | 9.801 306          |
| Master-4T           |                        | 45,0 - 82,0% Brix                  | 0,2 % Brix | 1  | 9.801 351          |
| HSR-500             | Sugar                  | 0,0 - 90,0% Brix                   | 0,2 % Brix | 1  | 9.801 312 <b>2</b> |
| R-5000              | Refractive index       | 1,333 - 1,520 nD                   | 0,001 nD   | 1  | 9.801 313          |
| HHR-2N              | Honey                  | 12,0 - 30,0% Brix                  | 0,1 % Brix | 1  | 9.801 333 <b>3</b> |
| Master-BR           | Freezing point coolant |                                    |            | 1  | 9.801 348          |
|                     | Ethylene glycol        | 0 - 70%, 0 ... -50°C               |            |    |                    |
|                     | Propylene glycol       | 0 - 70%, 0 ... -50°C               |            |    |                    |
| Master-S/Mill-Alpha | Salinity               | 0,0 - 100,0%<br>1,000 - 1,070 g/ml | 0,001 g/ml | 1  | 9.801 359          |



9.801 301



9.801 312



9.801 333

### Manual hand-held refractometers

**NEW!**

Precision instruments for quick daily use.

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Various scales and functions ensure there is a suitable refractometer for every application area.

| Type     | Measuring range                 | Accuracy                                      | PK | Cat. No.           |
|----------|---------------------------------|---|----|--------------------|
| HRKTZ1   | 0-80% Brix                      | Ethylene-Propylene: 5%,<br>Battery acid: 0.01 | 1  | 7.603 129          |
| HRN32    | 0-32% Brix                      | 0.2% Brix                                     | 1  | 9.801 121 <b>4</b> |
| HR181    | 0-18% Brix                      | 0.1% Brix                                     | 1  | 9.801 123 <b>5</b> |
| HRN82    | 45-82% Brix                     | 0.2 %Brix                                     | 1  | 9.801 124          |
| HR27-100 | 1000-1070 d2020, 0-100‰Salinity | 0.001 d2020, 1‰Salinity                       | 1  | 9.801 127          |
| HRH30    | 12-30% water content in honey   | 0.1% water                                    | 1  | 9.801 130          |
| HRT32    | 0-32% Brix                      | 0.2% Brix                                     | 1  | 9.801 142          |
| HRN20    | 0-20% Brix                      | 0.2% Brix                                     | 1  | 9.801 149          |
| HR900    | 0-90% Brix                      | 0.2% Brix                                     | 1  | 9.801 150 <b>6</b> |
| HR901    | 1333-1517 nD                    | 0.0005 nD                                     | 1  | 9.801 151          |



9.801 121



9.801 123



9.801 150

# 10. Optical instruments and Microscopes

## Refractometers/Hand held refractometers

### 1 Hand spectrosopes

Handy and precise. Ideal for demonstrations in schools and for:

- Viewing/observation of emission and absorption spectra
- Control of the wavelength spectra of gas emission lamps

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| Type | Features  | PK | Cat. No.  |
|------|---|----|-----------|
| 1501 | with adjustable split   | 1  | 9.841 501 |
| 1504 | with adjustable split and wavelength scale                                    | 1  | 9.841 504 |
| 1506 | with adjustable slit, wavelength scale, comparison prism and test tube holder | 1  | 9.841 506 |

### 2 Digital Hand-held "PEN" Refractometer PEN-PRO

The PEN-PRO has a measurement range of Brix 0.0 to 85.0% which can be used to measure almost any sample. There are 2 ways to measure with the PEN-PRO.

Either dip the tip into the sample and press the Start key or press the Start key and touch the tip into the sample.

There is also the new feature to perform continuous measurements.

**Specifications**

|                             |  |
|-----------------------------|--|
| Measurement range:          | 0.0 to 85.0% Brix                                |
| Resolution:                 | 0.1% Brix  |
| Accuracy:                   | ±0.2% Brix                                       |
| Measuring temperature:      | 10 to 60°C (Automatic Temperature Compensation)  |
| Ambient temperature:        | 10 to 40°C                                       |
| Measuring time:             | 2 seconds  |
| Temperature, liquid sample: | 10 to 60°C                                       |
| Supply requirements:        | 1 x 1.5V AAA battery (approx. 8000 measurements) |
| Dimensions:                 | 160 x 38 x 18mm                                  |
| Weight:                     | 70g  |
| Protection class:           | IP65   |

| Type    | PK | Cat. No.  |
|---------|----|-----------|
| PEN-PRO | 1  | 9.801 368 |

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### 3 Digital Hand-held Pocket Refractometer PAL-1, PAL-2, PAL-3, PAL-RI, PAL-Alpha, PAL-BX/RI

For measurement of various high concentration samples such as jam, marmalade, jelly, honey and concentrated juice. Ingress Protection class IP 65 means that they can be cleaned under running water. Easily calibrated since "zero-setting" (calibration) is achieved using water.

**Specifications**

|                                |   |
|--------------------------------|---|
| Resolution:                    | Brix 0.1%                                       |
| Measurement accuracy:          | Brix ±0.2%                                      |
| Measurement temperature:       | 10 to 60°C (Automatic Temperature Compensation) |
| Ambient operating temperature: | 10 to 40°C                                      |
| Ingress protection class:      | IP65 dust- and waterproof                       |
| Power supply:                  | 2 x AAA Batteries                               |
| Dimensions:                    | 55 x 31 x 109mm                                 |
| Weight:                        | 100g  |

| Type      | Measuring range                     | PK | Cat. No.  |
|-----------|-------------------------------------|----|-----------|
| PAL-1     | 0,0 - 53,0 Brix                     | 1  | 9.801 375 |
| PAL-2     | 45,0 - 93,0 Brix                    | 1  | 9.801 381 |
| PAL-3     | 0,0 - 93,0 Brix                     | 1  | 9.801 382 |
| PAL-RI    | 1,3306 - 1,5284 nD                  | 1  | 9.801 383 |
| PAL-Alpha | 0,0 - 85,0 Brix                     | 1  | 9.801 362 |
| PAL-BX/RI | 0,0 - 93,0 Brix, 1,3306 - 1,5284 nD | 1  | 6.231 591 |

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### 1 Digital Wine Refractometer, Type WM-7

The WM-7 is a digital pocket wine refractometer with 7 scales, developed for the simple, rapid and precise measurement of grape must.

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Dimensions: 170 x 90 x 40mm  
Weight: 300g

| Type      | Measuring range  | Graduations                                     | Accuracy   | Temp. range | PK | Cat. No.  |
|-----------|--|---|--|-------------|----|-----------|
|           |  |   |  | °C          |    |           |
| 3415-WM-7 | 0,0 - 45,0% Brix<br>0,0 - 26,0% T.A. 1990<br>0,0 - 25,0% T.A. 1971<br>0 - 240° Oe (Ger)<br>0,0 - 40,0°KMW<br>0,0 - 210°Baume | 0,1% Brix<br>0,1%<br>0,1%<br>1°<br>0,1°<br>0,1° | 0.5% brix<br>±0.2%<br>±0.2%<br>±1°<br>±0.2°<br>±0.2° | 5 - 40      | 1  | 9.801 345 |



### 2 Digital refractometer, UG-1Alpha

Digital display of the automatically temperature-compensated result. Battery powered, splashproof. For measuring the density of urine.

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| Measuring range            | Resolution | Accuracy | Temp. range | PK | Cat. No.  |
|----------------------------|------------|----------|-------------|----|-----------|
|                            |            |          | °C          |    |           |
| 1,0000 - 1,0600 Urine S.G. | 0,001      | ±0,001   | 10 - 35     | 1  | 9.801 324 |



### 3 Digital refractometers

#### Type PR-32α

Can be used to measure fruit juices, soft drinks, diluted soluble oils, aqueous cleaning solutions, etc.

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#### Type PR-101α

Applications include measuring fruit juices, lemonade, coffee, diluted soluble oils and anti-freeze solutions.

#### Type PR-201α

It can be used for accurately measuring jams, concentrated fruit juices, coolants and similar products.

#### Type PR-301α

Especially suited to measuring jellies, liquid cane sugar, etc.

#### Type PET-109

This model is used for simply determining the concentration of ethyl alcohol, which is used in foods and for cleaning, cooling and other purposes.

#### Type PR-RI

A new Refractive Index model has been added to the popular long-selling "Palette Series". It is suitable for measuring the refractive indices of liquid samples in pharmaceutical and chemical products. Ambient temperature: 10 to 40°C.

#### Specifications (all types):

Measurement time: 3 seconds (Type PET-109, Measurement time: 2 seconds)  
Sample volume: 0.1ml  
Power supply: 9V battery  
Dimensions: 170 x 90 x 40mm  
Weight: 300g

| Type    | Measuring range      | Graduations   | Accuracy           | Temp. range | PK | Cat. No.  |
|---------|----------------------|---------------|--------------------|-------------|----|-----------|
|         |                      |               |                    | °C          |    |           |
| PR-32α  | 0,0 - 32,0 % Brix    | 0,1 % Brix    | 0,1 % Brix         | 5,0 - 40,0  | 1  | 9.801 376 |
| PR 101α | 0,0 - 45,0 % Brix    | 0,1 % Brix    | 0,2 % Brix         | 5,0 - 40,0  | 1  | 9.801 377 |
| PR-201α | 0,0 - 60,0 % Brix    | 0,1 % Brix    | 0,1 % Brix         | 10,0 - 40,0 | 1  | 9.801 378 |
| PR-301α | 45,0 - 90,0 % Brix   | 0,1 % Brix    | 0,1 % Brix         | 10,0 - 40,0 | 1  | 9.801 379 |
| PET-109 | 0,0 - 45,0 % (w / w) | 0,1 % (w / w) | 0,5 % (w / w)      | 10,0 - 35,0 | 1  | 9.801 344 |
| PR-RI   | 1,3306 - 1,4436 nD   | -             | ± 0,0002 nD / 20°C | 5,0 - 45,0  | 1  | 9.801 369 |

# 10. Optical instruments and Microscopes

## Refractometers/Hand held refractometers-Benchtop refractometers

### 1 Digital Refractometer RX-5000/RX-5000Alpha

**NEW!**

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The RX-5000 and RX-5000 Alpha are reliable and cost effective instruments with a measurement accuracy of  $\pm 0.03\%$  Brix and  $\pm 0.00004$ nD. An excellent alternative to traditional Abbe refractometers and essential to any QC/QA lab. Equipped with 60 programmable user scales and 4 level password protection feature. RX-5000 is designed to connect to an external circulating waterbath. RX-5000 Alpha comes with a Peltier thermo module. Both refractometers can be connected with an optional printer.

**Specifications**

Measurement range: 0.00 to 95.00% Brix, 1.3270 to 1.5800nD  
 Resolution: 0.01 % Brix, 0.00001nD  
 Accuracy: 0.03% Brix, 0.00004nD  
 RX-5000/RX-5000Alpha: 0.01% Brix, 0.00002nD  
 RX-5000Alpha Plus:  
 Working temperature: 5 to 60°C  
 Input voltage: AC 100-240V, 50/60Hz  
 Output voltage: DC, 6A for refractometer, DC 6.5V, 1.5A for printer  
 Dimensions: 370 x 260 x 140mm  
 Weight: 6.4kg

| Type              | PK | Cat. No.  |
|-------------------|----|-----------|
| RX-5000           | 1  | 9.801 373 |
| RX-5000Alpha      | 1  | 9.801 374 |
| RX-5000Alpha Plus | 1  | 9.801 386 |

### 2 Abbe refractometer AR4

**NEW!**

A. Krüss Optronic



Classic refractometer for solids and liquids. Coloration and clouding scarcely influence the measuring results. Handling is simple and the device can easily be calibrated through calibration plates (included). LED illumination (guarantees extremely long life), digital thermometer, optional flow measurement cell and thermostat connections. Specialty: adjustable scales, temperature-controlled prisms.

**Specifications**

Thermometer: digital -40 to 120°C  
 Illumination: Scale lighting, LED light (590nm) for measuring prism  
 Dimensions: 140x100x270mm  
 Weight: 4.4kg  
 Power supply: 110V/220V, switchable

| Type | Accuracy                | Measuring range                | Graduations             | PK | Cat. No.  |
|------|-------------------------|--------------------------------|-------------------------|----|-----------|
| AR4  | 0.0002 nD<br>0.1 % Brix | 1.3000-1.7000nD<br>0-95 % Brix | 0.0005 nD<br>0.1 % Brix | 1  | 9.801 110 |

### 3 Digital bench refractometer, Smart-1

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The Smart-1 is an automatic refractometer with an extra-wide measurement range. This model measures low-concentration samples, e.g. soup, medium-concentration samples e.g. sauce or ketchup, and high-concentration (Brix) samples e.g. jam, marmalade or honey within a food factory. In addition the Smart-1 can be used to control the concentration of a variety of industrial solutions, including water-soluble cutting oil, cleaning solutions and glycol anti-freeze.

Measurement range: 0.00 to 95.00% Brix  
 Readability: 0.1% Brix  
 Measurement accuracy:  $\pm 0.05\%$  Brix  
 Temperature compensation range: +5.00 to +40.00°C  
 Interface: RS232C  
 Ingress protection class: IP64 (except a.c. adapter)  
 Supply requirement: 100-240 V 50/60Hz a.c.  
 Dimensions and weight: 12 x 27 x 9cm, 2.0kg  
 a.c. adapter: 10.5 x 17.5 x 4cm, 0.7kg

| Type    | PK | Cat. No.  |
|---------|----|-----------|
| SMART-1 | 1  | 9.801 390 |



### 1 Digital desk refractometers

**NEW!**

The DR6000 refractometers work with hardly any service and are very quiet, good for long-term work in the lab. Very easy to operate due to an intuitive touch screen. Optional connections to printer, PC or network provide highest flexibility. High precision through integrated peltier thermostat (T-model). Flow measurement cells enable continuous measuring (F-model). The devices are used wherever a substance in watery solutions has to be measured.

Areas of usage: beverage, chemistry, pharma, food, paper, sewerage, textile, petrochemistry, cosmetics.

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#### Specifications

|                                   |                         |
|-----------------------------------|-------------------------|
| Interface:                        | RS-232, USB, Ethernet   |
| Temperature measurement:          | 5 to 90°C               |
| Temperature resolution:           | 0.1°C                   |
| Temperature measurement accuracy: | 0.05°C (0.1°C T-models) |
| Measurement mode:                 | Single, interval        |
| Scales:                           | 7 default, custom       |
| Protection class:                 | IP 65                   |
| Power supply:                     | 90-260V, 56/60Hz, 60W   |

| Type      | Measuring range                   | Accuracy                  | Graduations               | PK | Cat. No.  |
|-----------|-----------------------------------|---------------------------|---------------------------|----|-----------|
| DR6000    | 1.3200-1.5800 nD<br>0-95% Brix    | 0.0001 nD<br>0.1 % Brix   | 0.0001 nD<br>0.1 % Brix   | 1  | 6.239 384 |
| DR6000-T  | 1.3200-1.5800 nD<br>0-95 % Brix   | 0.0001 nD<br>0.1 % Brix   | 0.0001 nD<br>0.1 % Brix   | 1  | 6.237 965 |
| DR6000-TF | 1.3200-1.5800 nD<br>0-95 % Brix   | 0.0001 nD<br>0.1 % Brix   | 0.0001 nD<br>0.1 % Brix   | 1  | 9.801 101 |
| DR6100-T  | 1.3200-1.7000 nD<br>0-95% Brix    | 0.0001 nD<br>0.1 % Brix   | 0.0001 nD<br>0.1 % Brix   | 1  | 6.241 690 |
| DR6100-TF | 1.3200-1.7000 nD<br>0-95% Brix    | 0.0001 nD<br>0.1 % Brix   | 0.0001 nD<br>0.1 % Brix   | 1  | 6.235 892 |
| DR6200-T  | 1.32000-1.58000 nD<br>0-95 % Brix | 0.00002 nD<br>0.02 % Brix | 0.00002 nD<br>0.01 % Brix | 1  | 9.801 102 |
| DR6200-TF | 1.32000-1.58000 nD<br>0-95 % Brix | 0.00002 nD<br>0.02 % Brix | 0.00002 nD<br>0.01 % Brix | 1  | 9.801 103 |
| DR6300-T  | 1.32000-1.70000 nD<br>0-95 % Brix | 0.00002 nD<br>0.02 % Brix | 0.00002 nD<br>0.01 % Brix | 1  | 9.801 104 |
| DR6300-TF | 1.32000-1.70000 nD<br>0-95 % Brix | 0.00002 nD<br>0.02 % Brix | 0.00002 nD<br>0.01 % Brix | 1  | 9.801 105 |



### 2 Adjustable Electronic Peltier Thermostat PT 31

This electronic water-bath thermostat with Peltier element is a versatile, high-performance instrument. In one application, it can be used to set the correct refractometer temperature. It is extremely robust, compact and easy to operate. Thanks to its small footprint it does not take up valuable space in the laboratory.

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#### Specifications

|                          |                       |
|--------------------------|-----------------------|
| Temperature range:       | 8 to 40°C, adjustable |
| Accuracy of temperature: | ±0.2°C                |
| Resolution:              | 0.1°C                 |
| Pump performance:        | 20 l/h                |
| Max. pump pressure:      | 2000 Pa               |
| Cooling power:           | 15 W                  |
| Heating power:           | 30 W                  |
| Power supply:            | 115-230 V a.c.        |
| Dimensions (WxDxH):      | 80 x 140 x 210mm      |
| Weight:                  | 1.5kg                 |

| Type | PK | Cat. No.  |
|------|----|-----------|
| PT31 | 1  | 9.841 515 |



### 1 Abbe refractometers, NAR-1T series/NAR-2T

#### Type NAR-1T-Liquid

The Abbe Refractometer for liquid sample measurement only. It has the Refractive Index Scale and the Brix scale, and it comes with D-line (589nm) light source. Calibration can be achieved using distilled water.

#### Type NAR-1T Solid

Abbe Refractometer for solid sample measurement (it can also be used to measure liquid samples). It has the Refractive Index Scale and the BRIX scale, and it comes with D-line (589nm) light source.

#### Type NAR-2T

Designed for use with substances requiring measurement at high temperature.

| Type          | Measuring range                         | Graduations            | Accuracy                  | Temp. range | PK | Cat. No.         |
|---------------|---|------------------------|---------------------------|-------------|----|------------------|
|               |   |                        |                           | °C          |    |                  |
| NAR-1T Liquid | 1,3000 - 1,7000 nD<br>0,0 - 95,0 % Brix | 0,001 nD<br>0,5 % Brix | ±0,0002 nD<br>±0,1 % Brix | 0,0 - 50    | 1  | <b>6.231 748</b> |
| NAR-1T Solid  | 1,3000 - 1,7000 nD<br>0,0 - 95,0 % Brix | 0,001 nD<br>0,5 % Brix | ±0,0002 nD<br>±0,1 % Brix | 0,0 - 50    | 1  | <b>6.228 976</b> |
| NAR-2T        | 1,3000 - 1,7000 nD<br>0,0 - 95,0 % Brix | 0,001 nD<br>0,5 % Brix | ±0,0002 nD<br>±0,1 % Brix | 0,0 - 120   | 1  | <b>9.801 317</b> |



### 2 Digital Abbe refractometer, DR-A1

Very simple operation, where only the refraction boundary line has to be moved to the measurement cross hairs. The refractometer displays measurements directly (as a refractive index) or in Brix (%) in digits together with temperature. Measurements can be taken easily by anyone using this refractometer without taking an analogue scale reading in advance. Dispersive value can not be measured using this refractometer.

Temperature range: 0 to 50.0°C  
 Power supply: a.c. adapter (100 to 240V 50/60Hz)  
 Dimensions: 130 x 290 x 310mm  
 Weight: 6.0kg

| Type  | Measuring range                       | Graduations            | Accuracy               | PK | Cat. No.         |
|-------|---------------------------------------|------------------------|------------------------|----|------------------|
| DR-A1 | 1,3000 - 1,7100 nD<br>0,0 - 95,0 Brix | 0,0001 nD<br>0,1% Brix | 0,0002 nD<br>0,1% Brix | 1  | <b>9.801 325</b> |



### 3 Digital Refractometer HI 96801



Portable digital Refractometer measures the refractive index to determine the % Brix of sugar in aqueous solutions. Wide range : 0 to 85% Brix , can be used for various applications. Automatic temperature compensation, % Brix und temperature are displayed simultaneously. Quick and precise measurements. Easy Calibration with distilled or deionized water. Supplied with 9V battery and instruction manual.

#### Specifications

Measuring range: 0 to 85% Brix  
 Resolution: 0.1% Brix  
 Measuring accuracy: ±0.2% Brix  
 Temperature compensation range: 10 to 40°C  
 Dimensions: 192 x 102 x 67mm  
 Weight: 300g  
 Power supply: 9V (9.012 927 Rechargeable battery)  
 9V (9.12 923 Battery)

| Type     | Measuring range | PK | Cat. No.         |
|----------|-----------------|----|------------------|
| HI 96801 | 0 to 85% Brix   | 1  | <b>9.801 185</b> |



**1**


### 1 Abbe Refractometer Model RMT

Laboratory refractometer for precisely measuring liquids, solids, semi-liquids and powders. Optical refraction index and Brix scale reading system, with an excellent boundary line brightness and contrast. Prism with large windows, equipped with movable shrouds to keep out light. Focussable eyepiece.

*Exacta Optech*

Standard accessories: Calibrating glass prism, thermometer, dust cover, mono-bromonaphtalene standard (bottle), calibrating screw driver, wooden box.

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Range:                           | 1.300 to 1.700nD<br>0 to 95% Brix |
| Precision:                       | 0.001 nD<br>0.2% Brix             |
| Manual temperature compensation: | 0 to 70°C                         |

| Type | PK | Cat. No.  |
|------|----|-----------|
| RMT  | 1  | 9.801 257 |

**2**


### 2 Abbe Refractometer Model RMI

High-precision refractometer suitable for measuring high temperature liquids, solids, semiliquids and powders. Optical refraction index and Brix scale reading system, with an excellent boundary line brightness and contrast due to the low voltage lighting system. Large sized prism (6cm<sup>2</sup>) with movable shrouds. Focussable eyepiece.

*Exacta Optech*

Standard accessories: Calibrating glass prism, thermometer, 6V-5W lamps (2 inc.), dust cover, mono-bromonaphtalene standard (bottle), stabilised mains adapter, calibrating screw driver.

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Range:                           | 1.300 to 1.700nD<br>0 to 95% Brix |
| Precision:                       | 0.001nD<br>0.2% Brix              |
| Manual temperature compensation: | 0 to 100°C                        |

| Type | PK | Cat. No.  |
|------|----|-----------|
| RMI  | 1  | 9.801 258 |

**3**


### 3 Polarimeter Polax-2L

The Polax-2L (manually-operating meter with digital indicator) is widely used in the sugar, pharmaceutical, chemical, perfume and educational industries. It can accurately measure the angle of rotation (or the value in the international standard sugar scale) with easy operation.

*Atago*

|                                     |                         |
|-------------------------------------|-------------------------|
| Measurement range                   |                         |
| Angle of rotation:                  | -179.95 to +180°        |
| International standard sugar scale: | -130 to +130°Z          |
| Minimum unit displayed              |                         |
| Angle of rotation:                  | 0.05°                   |
| International standard sugar scale: | 0.1°Z                   |
| Measurement accuracy                |                         |
| Angle of rotation:                  | ±0.10°                  |
| Measurement temperature range:      | 5 to 40°C               |
| Observation tubes:                  | 1 x 200mm and 1 x 100mm |
| Power supply:                       | 100-240V, 50/60Hz a.c.  |
| Power consumption:                  | 40 VA                   |
| Dimensions:                         | 43 x 22 x 30cm          |
| Weight:                             | 11.5kg                  |

| Type     | PK | Cat. No.  |
|----------|----|-----------|
| Polax-2L | 1  | 9.801 398 |

