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All prices quoted are exclusive of carriage and VAT at the standard rate.
B&S E-Line Economy Hand-Held Refractometer

A low cost option of hand held refractometer specifically suited for testing semi-solid substances such as apples, melons, grapes, sugar beet and potatoes during the harvest period. The instrument features ATC making for fast and accurate measurements. The device will automatically take into account any difference in temperature over the range of 10-30°C from the industry standard reference temperature of 20°C. All instruments are constructed from alloy with an outer sheath of rubber to prevent heat entering the instrument from the operator’s hand. Supplied in a hard case with a 12 month warranty.

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Scale Range</td>
</tr>
<tr>
<td>Scale Division</td>
</tr>
</tbody>
</table>

N.B. Product 44-812 measures the water in honey %

B&S Hand-Held Refractometers

Eclipse range of optical refractometers, offer high quality at an affordable price. The instruments are manufactured in the United Kingdom and are sealed to an ingress protection of IP65. The instruments are of ergonomic design, making use in wet and cold environments easy. Low Volume Eclipse refractometers, unique to B+S, are equipped with a specially designed sample presser to optimize the spreading of sample droplets and ensure the sharpest possible borderline. These instruments are popular with botanists and entomologists for the study of nectars and pollination where sample volumes of one microlitre are available.

All sugar scales are based on % w/w sucrose in water (1974 ICUMSA). All B+S Refractometers are adjusted to read at 20 °C/ 589.3 nm, in accordance with International Standard Practice.

These products comply with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Product Code</td>
</tr>
<tr>
<td>Scale Range</td>
</tr>
<tr>
<td>Scale Division</td>
</tr>
</tbody>
</table>
Atago Master-series

Emphasis has been placed in the new design, with a well balanced structure and an attractively streamlined body. These models come with Automatic Compensation (ATC) and are Water Resistant.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Item</th>
<th>Master Pa - 2391</th>
<th>Master PM - 2393</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>ATA 000TBA</td>
<td>ATA 000TBA</td>
</tr>
<tr>
<td>Scale Range</td>
<td>Brix 0.0 – 33.0% - A.T.C</td>
<td>Brix 0.0 – 33.0%</td>
</tr>
<tr>
<td>Minimum Scale</td>
<td>Brix 0.2%</td>
<td>Brix 0.2%</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>+ 0.2% (10 to 30°C)</td>
<td>+ 0.2% (10 to 30°C)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>Brix + 0.1%</td>
<td>Brix + 0.1%</td>
</tr>
<tr>
<td>Size and Weight</td>
<td>3.3 x 3.3 x 20.4cm, 100g</td>
<td>3.3 x 3.34 x 20.4cm, 100g</td>
</tr>
<tr>
<td>Intl. Protection Class</td>
<td>IP65 Water Resistant (Except Eyepiece)</td>
<td>-</td>
</tr>
</tbody>
</table>

*Calibrate with the 10% Sucrose Solution, 20% Sucrose Solution or 30% Sucrose Solution

Atago Master-M series

This is the successor model to the conventional N-1a. The MASTER-M is a good alternative choice when the water resistant feature is not a priority and the Temperature Compensation will be carried out manually. Not equipped with the Automatic Temperature Compensation feature.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Item</th>
<th>Master M - 2313</th>
<th>Master 20M - 2383</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>ATA 000TBA</td>
<td>ATA 000TBA</td>
</tr>
<tr>
<td>Scale Range</td>
<td>Brix 0.0 – 33.0%</td>
<td>Brix 0.0 – 20.0%</td>
</tr>
<tr>
<td>Minimum Scale</td>
<td>Brix 0.2%</td>
<td>Brix 0.2%</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Repeatability</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Size and Weight</td>
<td>3.3 x 3.3 x 20.4cm, 160g</td>
<td>3.3 x 3.34 x 20.1cm, 160g</td>
</tr>
<tr>
<td>Intl. Protection Class</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Atago Master-Pa and Master PM

The MASTER-Pa is the plastic body model of the MASTERa. The plastic body model is designed to be resistant to salty and acidic samples. It is convenient for measuring a variety of sauces, soy sauce, seasoning in liquid form as well as low-sugar jams and spreads. It is an Automatic Temperature Compensation (ATC) model with water resistant properties (IP65). The MASTER-PM is the plastic body model of the MASTER-M and is not equipped with the Automatic Temperature Compensation feature.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Item</th>
<th>Master Pa - 2391</th>
<th>Master PM - 2393</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>ATA 000TBA</td>
<td>ATA 000TBA</td>
</tr>
<tr>
<td>Scale Range</td>
<td>Brix 0.0 – 33.0% - A.T.C</td>
<td>Brix 0.0 – 33.0%</td>
</tr>
<tr>
<td>Minimum Scale</td>
<td>Brix 0.2%</td>
<td>Brix 0.2%</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>+ 0.2% (10 to 30°C)</td>
<td>-</td>
</tr>
<tr>
<td>Repeatability</td>
<td>Brix + 0.1%</td>
<td>-</td>
</tr>
<tr>
<td>Size and Weight</td>
<td>3.3 x 3.3 x 20.4cm, 100g</td>
<td>3.3 x 3.34 x 20.4cm, 100g</td>
</tr>
<tr>
<td>Intl. Protection Class</td>
<td>IP65 Water Resistant (Except Eyepiece)</td>
<td>-</td>
</tr>
</tbody>
</table>

www.aceindustrial.co.uk email: qa@aceindustrial.co.uk
Atago Digital Hand-held “Pocket” Refractometer

In pursuit of an “easy to use”, “easy to operate” and ergonomic architecture of new instruments, ATAGO has achieved a “palm-fitting-masterpiece” as well as a unit that is high in hygienic properties. These units are completely washable and the new “Pocket” PAL series complies with HACCP. They are also equipped with the ELI function, which will ensure accurate measurements outdoors.

**PAL-1**
The PAL-1 has the measurement range of Brix 0.0 to 53.0%, which can be used to measure the concentration of many different samples such as fruit juices, food and beverages, as well as chemicals and industrial solutions such as cutting oil, cleaning liquid and antifreeze.

**PAL-2**
The measurement range of the PAL-2 is Brix 45.0 to 93.0%, and is used to measure various high concentration samples such as jam, marmalade, jelly, honey and concentrated juice. PAL-2 has a convenient “zero setting”. Calibration can be done with water (no calibration liquid required). The NEW PAL-2 has all the same great features as the PAL-1.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Item</th>
<th>PAL-1 3810</th>
<th>PAL-2 3820</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>ATA016</td>
<td>ATA017</td>
</tr>
<tr>
<td>Measurement Range</td>
<td>Brix 0.0 to 53.0%</td>
<td>45.0 to 93.0%</td>
</tr>
<tr>
<td>Measurement Temperature</td>
<td>10 to 75°C (ATC)</td>
<td>10 to 75°C (ATC)</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>Brix + 0.2%</td>
<td>Brix + 0.2%</td>
</tr>
<tr>
<td>Measurement Time</td>
<td>3 seconds</td>
<td>3 seconds</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>10 to 40°C</td>
<td>10 to 40°C</td>
</tr>
<tr>
<td>Resolution</td>
<td>Brix 0.1%</td>
<td>Brix 0.1%</td>
</tr>
<tr>
<td>Sample Volume</td>
<td>0.3ml</td>
<td>0.3ml</td>
</tr>
<tr>
<td>Intl. Protection Class</td>
<td>IP65 Water Resistant</td>
<td>IP65</td>
</tr>
<tr>
<td>Size and Weight</td>
<td>5.5 x 3 x 10.9cm, 100g (main unit only)</td>
<td>IP65</td>
</tr>
<tr>
<td>Power Supply</td>
<td>2 x AAA Batteries</td>
<td></td>
</tr>
</tbody>
</table>

fax: +44 (0) 1580 891350  tel: +44 (0) 1580 891300
Atago Digital Refractometers - Palette Series

The Palette alpha series is the ultimate compact digital refractometer with ease of operation and proven reliable performance.

- accuracy (± 0.1%)
- 3 user-programmable scales available
- Extremely water resistant (IP65)
- Calibration with water only
- Light and compact, 100g
- Automatic Temperature Compensation (ATC)
- Ergonomically designed for one-handed operation
- Equipped with a strap holder option
- Convenient storage case
- 2 year warranty

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Item</th>
<th>PR-32a</th>
<th>PR-101a</th>
<th>PR-201a</th>
<th>PR-301a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>ATA005</td>
<td>ATA</td>
<td>ATA</td>
<td>ATA</td>
</tr>
<tr>
<td>Measurement Range</td>
<td>Brix 0 to 32%</td>
<td>0 to 45%</td>
<td>0 to 60%</td>
<td>45 to 90%</td>
</tr>
<tr>
<td>Measurement Temperature</td>
<td>5 to 40°C</td>
<td>5 to 40°C</td>
<td>10 to 40°C</td>
<td>10 to 40°C</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>Brix + 0.1%</td>
<td>Brix + 0.1%</td>
<td>Brix + 0.1%</td>
<td>Brix + 0.1%</td>
</tr>
<tr>
<td>Measurement Time</td>
<td>3 seconds</td>
<td>3 seconds</td>
<td>3 seconds</td>
<td>3 seconds</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>5 to 40°C</td>
<td>10 to 40°C</td>
<td>10 to 40°C</td>
<td>10 to 40°C</td>
</tr>
<tr>
<td>Resolution</td>
<td>Brix 0.1%</td>
<td>Brix 0.1%</td>
<td>Brix 0.1%</td>
<td>Brix 0.1%</td>
</tr>
<tr>
<td>Sample Volume</td>
<td>0.1ml</td>
<td>0.1ml</td>
<td>0.1ml</td>
<td>0.1ml</td>
</tr>
<tr>
<td>Intl. Protection Class</td>
<td>IP64 Water Resistant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size and Weight</td>
<td>17 x9 x 4cm, 300g (main unit only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>006P Dry Battery (9v)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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email: qa@aceindustrial.co.uk
Hanna Digital Refractometers

High Specification - Low Cost Digital Refractometer

The HI-96801 is an optical instrument that measures the refractive index of the sample to determine the sugar content. Measurement is simple and quick, samples are measured after a simple user calibration with deionized or distilled water. Within seconds the instrument measures the refractive index of the sample and converts it to % Brix concentration units.

HI 96801 is supplied with (1) 9V battery and instructions
- Calibrates with water
- Wide measurement range 0 to 85%
- Battery operated for portable use
- Easy to use, quick to read (1 second)
- 2 year manufacturers warranty

Calibration is easy and does not require the use of special calibration solutions. Simply place a couple of drops of pure water on the sample cell and press a button – the meter will automatically calibrate and be ready to use in less than 2 seconds.

Hanna digital refractometers are designed for either lab, factory or field use and are fully sealed against the ingress of water and dust to make them a real “go anywhere” meter.

Which ever meter you choose, results are shown directly converted to % sugars by weight concentration (or directly in % Brix on the HI96801) together with the temperature of the sample.

ANALYSE SUGAR CONTACT OF: FRUITS, ENERGY DRINKS, PUDDINGS, JUICES, JAM, MARMALADE, HONEY, SOUPS, JELLY, CONDIMENTS

<table>
<thead>
<tr>
<th>Item</th>
<th>HI-96801</th>
<th>HI-96802</th>
<th>HI-96803</th>
<th>HI-96804</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>HANNA0001</td>
<td>HANNA0002</td>
<td>HANNA0003</td>
<td>HANNA00031</td>
</tr>
<tr>
<td>Measurement Range</td>
<td>Brix 0 to 85%</td>
<td>0 to 85%</td>
<td>0 to 85%</td>
<td>0 to 85%</td>
</tr>
<tr>
<td>Measurement Temperature</td>
<td>0 to 80°C</td>
<td>0 to 80°C</td>
<td>0 to 80°C</td>
<td>0 to 80°C</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>± 0.2%</td>
<td>± 0.2%</td>
<td>± 0.2%</td>
<td>± 0.2%</td>
</tr>
<tr>
<td>Auto. Temp. Compensation</td>
<td>Automatic between 10 and 40°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement Time</td>
<td>Approximately 1.5 seconds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Sample Volume</td>
<td>2 metric drops (100L to cover prism totally)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Cell</td>
<td>Stainless steel ring and flint glass prism</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-Off</td>
<td>After 3 mins of non-use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure Rating</td>
<td>IP65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size and Weight</td>
<td>19.27 x 10.2 x 6.74cm, 420g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>Battery (9v) / 5000 readings</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

fax: +44 (0) 1580 891350  
tel: +44 (0) 1580 891300
Atago Refractometers - 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 two 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.

**Pen-Pro**

New Continuous Measurement feature to expand your current measuring methods

**FEATURES**

- Ergonomically designed for one-handed operation.
- The Automatic Temperature Compensation function of the PEN enables you to take measurements regardless of the ambient temperature.
- Protection class of the PEN is IP65 (Prism head IP67). You can rinse off the sample by running water on the prism. The design allows the user to easily wipe off the sample.
- Revolutionary new feature ELI*  
  *External Light Interference (ELI) – Patent Pending
- Convenient storage case.

**External Light Interface (ELI) Patent Pending**

When intense light passes through the prism of a digital refractometer, the light waves interfere with the sensor, which may lead to inaccurate measurements. To ensure accurate measurement results, the PEN Refractometer is programmed with the ELI function which displays the [nnnn] warning message when intense direct light is detected. When the ELI warning is displayed, shading the prism head with your hand and pressing the START key again will ensure accurate measurements.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Pen-Pro – 3730</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>ATA007</td>
</tr>
<tr>
<td>Measurement Range</td>
<td>Brix 0.0 to 85.0%</td>
</tr>
<tr>
<td>Resolution</td>
<td>Brix 0.1%</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>Brix + 0.2%</td>
</tr>
<tr>
<td>Measurement Temperature</td>
<td>10 to 60°C (ATC)</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>10 to 40°C</td>
</tr>
<tr>
<td>Intl. Protection Class</td>
<td>IP65 Water Resistant (Prism head : IP67)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>1 x AAA alkaline battery</td>
</tr>
<tr>
<td>Dimensions &amp; Weight</td>
<td>16 x 3.8 x 1.8cm, 70g</td>
</tr>
</tbody>
</table>

www.aceindustrial.co.uk  
email: qa@aceindustrial.co.uk
Atago PAL-ES2 and ES3 Salt Meter

Digital Hand-Held “Pocket” Salt Meter
(Conductivity Method)

The PAL-ES2 is suitable for measuring salt concentrations at restaurants and school cafeterias, as well as for food guidance in hospitals, and as an instrument for teaching in schools. The displayed unit is in g/100g.

<table>
<thead>
<tr>
<th>Item</th>
<th>PAL-ES2 – 4232</th>
<th>PAL-ES3 – 4233</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>ATA 000TBA</td>
<td>ATA 000TBA</td>
</tr>
<tr>
<td>Measurement Method</td>
<td>Conductivity method</td>
<td></td>
</tr>
<tr>
<td>Measurement Range</td>
<td>0.00 to 5.00% (g/100g)</td>
<td>0.0 to 33.0% (g/100ml)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.01% for salt concentration of 0.00 to 2.99% 0.1% for salt concentration of 3.0 to 5.0%</td>
<td>0.1 g/100ml</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>Displayed value 0.05% (for salt concentration of 0.00 to 1.00%) Relative precision less than 5% (for salt concentration of 1.01 to 5.0%)</td>
<td>Displayed value +0.6 g/100ml Relative precision + less than 6% (for measurement value of 10 to 33.0 g/100ml)</td>
</tr>
<tr>
<td>Temperature Compensation</td>
<td>10 to 40°C (Guaranteed accuracy range 15 to 35°C)</td>
<td></td>
</tr>
<tr>
<td>Intl. Protection Class</td>
<td>IP65 Water resistant</td>
<td></td>
</tr>
<tr>
<td>Size and Weight</td>
<td>5.5 x 3.1 x 10.9cm, 100g (main unit only)</td>
<td>2 x AAA Batteries</td>
</tr>
<tr>
<td>Power Supply</td>
<td>2 x AAA Batteries</td>
<td></td>
</tr>
</tbody>
</table>

Atago Palette Series Salt Meter

Digital Salt-Meter (Conductivity Method)

The ES-421 digital salt-meter employs a funnel-shaped conductivity sensor section, which measures the salt % of a sample (diluted solutions of soy sauce, ketchup, mayonnaise, Worcester sauce, pickle, juice, etc.). Only a very small amount of sample is needed (1.0 ml approx. is enough for measurement).

<table>
<thead>
<tr>
<th>Item</th>
<th>PAL-ES2 – 4210</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>ATA 000TBA</td>
</tr>
<tr>
<td>Measurement Method</td>
<td>Conductivity method</td>
</tr>
<tr>
<td>Measurement Range</td>
<td>0.00 to 10.0% (g/100g) of salt concentration</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>Displayed value 0.05% (for salt concentration 0.00 to 1.00%) Relative precision + 5% (for salt concentration 1.00 to 10.0%)</td>
</tr>
<tr>
<td>Temperature Compensation</td>
<td>Automatic compensation in a range from 10 to 40°C</td>
</tr>
<tr>
<td>Minimum Indication</td>
<td>0.01% for salt concentration of 1.00 to 2.99% 0.1% for salt concentration of 3.0 to 10.0%</td>
</tr>
<tr>
<td>Size and Weight</td>
<td>17 x 9 x 4cm, 300g (main unit only)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>006P Dry battery (9V)</td>
</tr>
</tbody>
</table>

Principle of Measurement
The detection principle of the conductivity method, which detects and converts electrolytes to NaCl concentration, has advantages over the Mohr’s method.
(1) No special tools (Chemical solution, pipettes, etc) are needed
(2) No user interpretation (automatic measurement).
(3) Faster measurement.
The Mohr’s method detects Chlorine and Converts to NaCl concentration. The unit that is used for Mohr’s method is (g/100ml) while PAL-ES2 and ES-421 use g/100g). There are many varied ingredients in different samples. Measurement values with Mohr’s and Conductivity can differ even within the same sample due to the difference in the measurement principles. However, there is a correlation of the measured values between the two methods.
Atago Pocket Acidity Meter PAL-ACID1

The PAL-ACID1 measures the total acidity in sample and converts it into citric acid concentration.

The kit comes complete with 10 bottles of quinone reagent solutions (5ml each), a micropipette, 10 micropipette tips, 10 disposable plastic pipettes, 1 bottle of calibration solution, an anti-volatile cover, and 2 AAA batteries.

Consumable Supplies
- Micropipette - 79401
- Calibration solution - 130002
- Quinone reagent solution (10 pcs) - 99432
- Quinone reagent solution (20 pcs) - 99430
- Quinone reagent solution (50 pcs) - 99431

One pipette tip per bottle is included.

Commonly Measured Samples

<table>
<thead>
<tr>
<th>Sample</th>
<th>(g/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grapefruit</td>
<td>12.8</td>
</tr>
<tr>
<td>Pineapple</td>
<td>7.3</td>
</tr>
<tr>
<td>Mandarin orange</td>
<td>6.7</td>
</tr>
<tr>
<td>Navel orange</td>
<td>6.7</td>
</tr>
<tr>
<td>Apple</td>
<td>2.5</td>
</tr>
<tr>
<td>Green apple</td>
<td>2.2</td>
</tr>
<tr>
<td>Apricot</td>
<td>1.8</td>
</tr>
<tr>
<td>Tomato</td>
<td>3.0–3.9</td>
</tr>
<tr>
<td>Canned tomatoes</td>
<td>4.4</td>
</tr>
<tr>
<td>Kiwi</td>
<td>14.6</td>
</tr>
<tr>
<td>Peach</td>
<td>4.3</td>
</tr>
<tr>
<td>Plum</td>
<td>11.7</td>
</tr>
<tr>
<td>Mango</td>
<td>6.2</td>
</tr>
<tr>
<td>Orange juice</td>
<td>7.7–13.6</td>
</tr>
<tr>
<td>Grapefruit juice</td>
<td>8.6</td>
</tr>
<tr>
<td>Blood orange juice</td>
<td>13.6</td>
</tr>
<tr>
<td>Apple juice</td>
<td>2.8</td>
</tr>
<tr>
<td>Tomato juice</td>
<td>3.3–4.7</td>
</tr>
<tr>
<td>Vegetable juice</td>
<td>4.1</td>
</tr>
<tr>
<td>Lactic acid drinks</td>
<td>4.1</td>
</tr>
<tr>
<td>Ketchup</td>
<td>20.0</td>
</tr>
<tr>
<td>Mayonnaise</td>
<td>11.6</td>
</tr>
<tr>
<td>Vinegar</td>
<td>55.6</td>
</tr>
</tbody>
</table>

PAL-ACID1 Test Kit Cat. No. 4651

- Measurement Range: Citric acid concentration (total-citrus acidity conversion [g/l]) 1.0 to 40.0 (g/l)
- Repeatability: 1.0 to 20.0 (g/l) ±0.5 (g/l), 20.1 to 40.0 (g/l) ±1.0 (g/l)
- Measurement Temperature: 10 to 40°C (Automatic Temperature Compensation)
- Standard Accessories: 
  - Micropipette: RE-79401
  - Calibration solution: RE-130002
  - Quinone reagent solution 10 pcs : RE-99432
- Power Supply: 2 × AAA batteries
- Minimum Indication: 0.1 (g/l)
- Ambient Temperature: 10 to 40°C
- Dimensions & Weight: 55(W)×31(D)×109(H)mm, 100g (Main Unit only)

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email: qa@aceindustrial.co.uk
Atago Pocket Acidity Meter PAL-ACID2

The PAL-ACID2 measures the total acidity in sample and converts it into tartaric acid concentration.

The kit comes complete with 10 bottles of quinone reagent solutions (5ml each), a micropipette, 10 micropipette tips, 10 disposable plastic pipettes, 1 bottle of calibration solution, an anti-volatile cover, and 2 AAA batteries.

Consumable Supplies

- Micropipette RE - 79401
- Calibration solution RE - 130002
- Quinone reagent solution (10 pcs) RE - 99432
- Quinone reagent solution (20 pcs) RE - 99430
- Quinone reagent solution (50 pcs) RE - 99431

One pipette tip per bottle is included.

### PAL-ACID2 Test Kit Cat. No. 4652

| Measurement Range | Tartaric acid concentration (total-Tartaric acidity conversion [g/l])
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.0 to 40.0 (g/l)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Repeatability</th>
<th>1.0 to 20.0 (g/l) ±0.5 (g/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20.1 to 40.0 (g/l) ±1.0 (g/l)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurement Temperature</th>
<th>10 to 40°C (Automatic Temperature Compensation)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Standard Accessories</th>
<th>Micropipette: RE-79401</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calibration solution: RE-130002</td>
</tr>
<tr>
<td></td>
<td>Quinone reagent solution 10 pcs: RE-99432</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>2 × AAA batteries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Indication</td>
<td>0.1 (g/l)</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>10 to 40°C</td>
</tr>
<tr>
<td>Dimensions &amp; Weight</td>
<td>55(W)×31(D)×109(H)mm, 100g (Main Unit only)</td>
</tr>
</tbody>
</table>

### Commonly Measured Samples (g/l)

- Grapes (Pione) 6.0
- Grapes (Delaware) 5.9
- Grapes (Kyoho) 4.7
- Red wine (Sangiovese) 5.3
- Red wine (Cabernet Sauvignon) 4.9—6.5
- White wine (Chardonnay) 5.0—7.3
- Grape juice 2.8—5.4

**PAL ACID 2 KIT No 4652**
Supplied C/W Starter Kit Contents
Hanna Mini Titrator for Fruit Juice Applications

Titratable Acidity Mini Titrator for Fruit Juice Analysis

Fast, Affordable, All-In-One Solution

The HI 84532 digital automatic mini titrator and pH meter is designed for measuring the concentration of titratable hydrogen ions contained in fruit juice samples by neutralization with a strong base solution to a fixed pH as according to the official methods of analysis of AOAC International. This new generation of mini automatic titrator improves upon the titrant delivery system and measuring ranges for increased accuracy compared to previous models. This meter reflects Hanna’s years of experience as a manufacturer of analytical instruments.

A clear and intuitive user interface allows users to navigate the HI 84532’s menus and functions quickly. The HELP key located on the keypad aids in on-screen set-up, calibration status and troubleshooting.

The HI 84532 incorporates a precise piston dosing system, which allows for a highly accurate determination of the amount of titrant used. It is capable of dynamic dosing, making testing both faster and more accurate. Pump calibrations, performed with the provided Hanna standards, help assure the measurement accuracy.

This mini-titrator is also designed to be used as a benchtop pH/mV meter. As a pH meter, it has many features of a professional grade benchtop including automatic calibration up to 3 points with 4 available buffers, a 0.01 pH resolution, accuracy of +/- 0.01 pH, automatic temperature compensation and comprehensive GLP Data. The GLP data includes date, time, offset, slope, and buffers used for calibration. Accuracy is always ensured with Hanna’s unique Cal-Check feature, which analyzes the response of the electrode during the calibration process.

Based on electrode response in the buffers, indicators are displayed on screen to alert the user of potential problems during calibration. These indicators include Buffer Contaminated, Electrode Dirty / Broken, and overall probe condition as a percentage that is based on both the offset and slope characteristic of the electrode.

The Cal-Check function not only ensures an accurate pH reading when the HI 84532 is used as a pH meter but also an accurate titration since the end point is determined by a set pH value.

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Why Titratable Acidity is So Important

Titratable acidity is an important parameter in determining fruit maturity and sour taste in citrus fruits. The maturity of fruit is one of the most important factors to determine how well fruit will store and how it will taste. For some fruits, governmental quality standards (based on titratable acidity or the ratio of total soluble solids (°Brix) to titratable acidity) are in place to protect consumers. Immature fruit will normally have a low sugar to acid ratio as compared to mature fruit that will have a high sugar to acid ratio.

The HI 84532 measures the concentration of titratable hydrogen ions contained in fruit juice samples by neutralization with a strong base solution to a fixed pH. This value includes all the substances of an acidic nature in the fruit juice including: free hydrogen ions, organic acids and acid salts. Titratable acidity is expressed as g/100 mL of the predominant acid. The predominant acids in fruit depend on the type of fruit being tested and include citric acid, tartaric acid, and malic acid.

Affordable All-in-one Solution

- **Piston Driven Pump with Dynamic Dosing**
  This piston driven dosing pump incorporates dynamic dosing to provide highly accurate, repeatable results.

- **CAL CHECK™**
  CAL CHECK alerts users to potential problems during calibration such as contaminated buffers or dirty/broken electrodes.

- **pH/mV Meter**
  In addition to automatic titration, the HI 84532 can also be used as a pH/mV meter.

- **Log-on-Demand**
  Log data up to 400 samples (200 for titration; 200 for pH/mV).

- **Graphic Mode/Exportable Data**
  Displays in-depth data on titration, which can then be stored and exported to either a USB drive or PC using the USB connection.

- **Automatic Stirrer Speed Control**
  Maintains stirrer speed at approximately 600 rpm regardless of viscosity of solution.

- **GLP Feature**
  The HI 84532 includes a GLP Feature that allows users to view calibration data for the pH electrode and dosing pump.

- **Easy to use interface**
  User intuitive design with large keys and easy to navigate screens.

- **pH Electrode**
  The HI 84532 is supplied with the HI 1131B electrode. This versatile electrode can measure all types of fruit juice.

<table>
<thead>
<tr>
<th>Fruits, juices</th>
<th>Titratable acidity (g/100 mL)</th>
<th>Predominant acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple, pear</td>
<td>0.36-0.80</td>
<td>Malic acid</td>
</tr>
<tr>
<td>Cranberry</td>
<td>1.6-3.6</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Grapefruit</td>
<td>1.2-2.0</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Lemon</td>
<td>4-6.2</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Mango</td>
<td>0.34-0.84</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Orange</td>
<td>0.8-1.4</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Peach, nectarine, sweet cherry</td>
<td>0.24-0.94</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Pineapple</td>
<td>0.7-1.6</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Plum/Sour cherry</td>
<td>0.94-1.64</td>
<td>Malic acid</td>
</tr>
<tr>
<td>Strawberry</td>
<td>0.6-1.1</td>
<td>Citric acid</td>
</tr>
<tr>
<td>Table grape</td>
<td>0.4-0.9</td>
<td>Tartaric acid</td>
</tr>
<tr>
<td>Tomato</td>
<td>0.34-1.00</td>
<td>Citric acid</td>
</tr>
</tbody>
</table>

**HI-84532** Supplied C/W Fully Equipped Starter Kit

fax: +44 (0) 1580 891350  tel: +44 (0) 1580 891300
Hanna edge™ pH • EC • DO

Give yourself the edge

High end bench technology and great user interface - all beautifully crafted in a stunning tablet design

edge is the latest innovation from Hanna Instruments offering the most advanced technology for measuring pH, conductivity and dissolved oxygen.

With edge, the measurement of pH, EC and DO is simpler, quicker and more accurate. Combining high precision technology with the user-friendly dimensions and format of a small digital tablet, edge is breaking new ground in electrochemistry.

Desirability too is 100%. Cutting-edge design, capacitive touch screen and an intuitive user interface are just a few of the great attributes that make edge stand out as the most innovative bench meter on the market.

How edge works:

edge measures pH, conductivity and dissolved oxygen through its unique digital electrodes. Connected via an easy plug-in 3.5mm connector, these smart electrodes enable edge to automatically recognise and store sensor type, ID and calibration information.

Programmed for basic and advanced modes, edge has the ability to offer simplified screen features for routine measurements or detailed data display.

edge warns users if the electrode is not clean or if buffers are contaminated during calibration. Advancing this technology even further, edge will also warn you if the pH bulb is cracked or if the junction of the electrode is compromised.

www.aceindustrial.co.uk  
email: qa@aceindustrial.co.uk
edge sets new standards in bench pH meters

- range: -2.00 to 16.00pH and -2.000 to 16.000pH
- resolution: 0.01pH and 0.001pH
- accuracy: +/- 0.01pH and +/- 0.002pH
- calibration: automatic with 7 standard buffers and 2 custom buffers
- capacitive touch screen
- large 140mm LCD display with clear full text readout
- digital smart electrodes enable edge to automatically recognise and store sensor type, ID and calibration information
- programmed for basic and advanced modes
- Hanna CAL-CHECK warns if electrode is not clean or buffers are contaminated
- log-on demand and interval logging
- PC interface via micro USB
- data download onto USB stick via standard USB
- GLP data automatically transferred
- slim and lightweight, edge can be hand-held or mounted on a wall, giving it even greater flexibility as a bench meter

Three formats
edge is available as three starter kits

**pH**
Product Code **HI-2020**
supplied complete with bench-top stand, electrode holder, pH electrode and bracket for optional wall-mount

**CONDUCTIVITY**
Product Code **HI-2030**
supplied complete with bench-top stand, electrode holder, EC electrode and bracket for optional wall-mount

**DISSOLVED OXYGEN**
Product Code **HI-2040**
supplied complete with bench-top stand, electrode holder, DO electrode and bracket for optional wall-mount

fax: +44 (0) 1580 891350  tel: +44 (0) 1580 891300
Handheld Photometer for “Free” Chlorine (HI-96701)

Designed to measure the free chlorine content of water, the Hanna Photometer for Free Chlorine is ideal for use in the production of a wide range of products.

Offering high levels of accuracy as well as being water resistant, portable and easy to use, this meter is hugely popular with operators across the food, laboratory and water industry.

A measurement range of 0.00 to 5.00 ppm free chlorine makes it the optimum solution for quick, efficient and economical chlorine measurement.

Also available as a full kit HI-96701C

Ideal for

- Food: ensuring the quality of the water used in salad washing processes
- Laboratory: plastics, paints, solvents, medicines, antiseptics
- Water: measuring free chlorine content in water samples

Key features

- Clear display messages make the instrument quick and easy to operate.
- The powerful Cal Check calibration function means that there is no need to return the instrument to the laboratory to check its efficiency. Samples can be checked and validation confirmed at the press of a button.
- Positive locking system ensures the cuvette is located in the same position each and every time it is placed in the measurement cell.
- Auto shut off feature turns meter off after 10 minutes of non-use to save battery life.
- Fully water resistant
- Clear easy to use function buttons
- Direct readout of parameter measured
- Calibration check solution available – HI 96701-11

Designed for precision

With the Hanna calibration check validation function, users can verify the performance of the meter quickly and easily at any time. Using Hanna NIST traceable standards, it takes just a few moments to check the accuracy of the instrument and to recalibrate as and when necessary.

All new instruments are factory calibrated at source and the electronic and optical design of the Hanna photometers minimises the need for frequent calibration. The Hanna calibration check further minimises the frequency with which instruments need to be returned to the calibration laboratory for full servicing.

Order information

- Meter only (HI-96701): 2 glass cuvettes, 9V battery
- Full kit (HI-96701C): 2 glass cuvettes, 9V battery, attaché case, calibration check standards, cleaning cloths

NB: reagents ordered separately
Hanna Photometers

Handheld Photometer for “Free and Total” chlorine (HI-96711)

Designed to measure the free and total chlorine content of water, the Hanna Photometer for Free and Total Chlorine is ideal for use in the production of a wide range of products. Offering high levels of accuracy as well as being water resistant, portable and easy to use, this meter is hugely popular with operators across the food, laboratory and water industry.

A measurement range of 0.00 to 5.00 ppm free chlorine makes it the optimum solution for quick, efficient and economical chlorine measurement. Where it is necessary to measure total chlorine as well as the amount of free chlorine in the water, the HI 96711 offers a perfect two in one solution.

+/- 0.03 mg/l +/-3% of reading @ 25 °C

This model also offers and extended range of 0.00 to 5.00 ppm making it ideal for testing even smaller concentrations of chlorine.

Also available as a full kit HI-96711C

Ideal for

• Food: quality of water used in salad washing processes
• Laboratory: plastics, paints, solvents, medicines, antiseptics
• Water: measuring free chlorine content in water samples

Key features

• Clear display messages make the instrument quick and easy to operate.
• The powerful Cal Check calibration function means that there is no need to return the instrument to the laboratory to check its efficiency. Samples can be checked and validation confirmed at the press of a button.
• Positive locking system ensures the cuvette is located in the same position each and every time it is placed in the measurement cell.
• Auto shut off feature turns meter off after 10 minutes of non-use to save battery life.
• Fully water resistant
• Clear easy to use function buttons
• Direct readout of parameter measured
• Calibration check solution available - HI 96711-11

Designed for precision

With the Hanna calibration check validation function, users can verify the performance of the meter quickly and easily at any time. Using Hanna NIST traceable standards, it takes just a few moments to check the accuracy of the instrument and to recalibrate as and when necessary.

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Order information

• Meter only (HI -96711): 2 glass cuvettes, 9V battery
• Full kit (HI-96711C): 2 glass cuvettes, 9V battery, attaché case, calibration check standards, cleaning cloths

NB: reagents ordered separately

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Minolta
Chroma Meters

- **Easy to use** – press one button to measure the application
- **Portable** – hand-held design in order to simplify measuring targets on-site
- **USDA Approved** – index is approved by USDA standards
- **Accurate** – highly accurate, saves time and money (prevents off-color rejects) than visual evaluation

- **The famous Chroma Meters series – more powerful and versatile then ever**

  - The Konica Minolta Chroma Meters CR-400 series continue the heritage of the first portable colorimeters introduced in the 80’s.
  
  - The CR-400, with its 8 mm measuring area is suitable for measuring reflected colour and colour difference in a wide range of industrial fields. It is able to meet the needs of various applications, from all sorts of ingredients, foods, raw materials and finished products to pharmaceuticals and dermatological applications.

  - If samples are structured or uneven in surface, such as granulates, fabrics, wood, stones, bricks, then the CR-410 is the right choice. Its unique very large aperture of 50 mm is perfectly suited for such samples and thus avoids averaging of several measurements.

The 400 series offer enhanced usability and functionality such as the re-designed Data Processor, featuring a large back light display for numerical or graphic display of measurement data and a built-in thermal high speed printer. The data memory now can store up to 100 target colours and up to 2000 measurements. Several new colour spaces and Pass/Fail formulas as well as indices for whiteness and yellowness enhance the usage into various fields of applications. The new “user indices” function allows the input of up to six different user or application specific equations using XYZ, Yxy or CIELAB values. Furthermore, the communication languages can be set for English, German, French, Italian, Spanish and Japanese.

* To discuss the above range of products or request more information please contact Ace Industrial.

www.aceindustrial.co.uk

email: qa@aceindustrial.co.uk
Masitek
Damage Analysers & Prevention

With our partners Masitek we provide easy to use, state of the art sensor technology that can identify problems causing product damage – shocks in bottling, cracks in eggs and bruising in produce – during manufacturing, processing and handling. This technology helps businesses reduce downtime and enhance product integrity while increasing productivity and profits.

Sensors, encased in customized replica devices, can be placed anywhere in harvesting, production or handling facilities and do not require costly shutdowns or any pauses in productivity. As soon as they are activated and placed in the process, they begin to gather and transmit data to an on-site mobile device – instantly! Problem areas are immediately identified, adjustments and changes are made and results are verified on the spot. Because the data is simultaneously backed up on a server, the information is available for later analysis and reporting.

Produce QC: Improve handling procedures in-line and increase profitability

**MASITEK**’s Produce QC™ has helped customers worldwide to reduce waste and improve bruising rates by upwards of 50%.

Reduce downtime and labour costs by detecting exactly where damage is occurring along the line, make instant changes, and validate that the corrective actions were beneficial – all within minutes!

**MASITEK** has supplied its innovative devices globally, improving quality for both large and small companies.

The Produce QC™ is ideally designed for:

- Apples
- Melons
- Cherries
- Avocado
- Stone-fruits

Smart Spud: Bruise free improvements in five minutes or less!

Improve potato bruise rates and increase output quality with **MASITEK**’s Smart Spud™.

Smart Spud™ focuses on helping customers eliminate waste by reducing the two most common types of potato damage: black spot and shatter bruising.

With the use of **MASITEK**’s Smart Spud™ sensor, customers can cut potato bruising and damage rates by at least 10% and have returns reported as high as 50% within minutes of use!

Whether you supply the chipping or French fry industry, retail grocery stores, ship potatoes overseas, or are a seed grower concerned with failure in the field, the **MASITEK** Smart Spud™ can help make improvements and increase profits on your bottom line.

Crackless Egg: Reduce your crack rates by almost 10% within five minutes or less!

**MASITEK**’s Crackless Egg™ wireless sensor is state of the art technology that is easy to use and provides real time data to reduce cracks and damage in the egg handling process. Customers using Crackless Egg™ report their quality rates routinely improve between 2% and 10%.

The Crackless Egg™ is a must have for all layer and grading operations wanting to improve quality without the need to hire additional resources. The device is user friendly, and diagnosis and results are easy to interpret.

Detect exactly where damage is occurring, improve quality control, increase productivity and profits quickly and effectively with **MASITEK**’s Crackless Egg™.

* To discuss the above range of products or request more information please contact Ace Industrial.

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Analysers

Ethylene Analyser: ICA 56

This analyser is a simple hand held instrument with a built in pump that provides a direct reading of the ethylene concentration within a produce storage or ripening area.

In storage rooms where low ethylene is essential, checks can be made that the ventilation and ethylene removal systems are operating correctly. The minimum resolution of 0.2 ppm makes this instrument very useful for most products. For the ultra ethylene sensitive products such as Kiwi Fruit, a reading on this machine will indicate severe storage atmosphere problems.

A lithium battery provides constant activation of the sensor to maintain stability and a 9v battery powers the display and pump. Unlike some other ethylene indicators, this instrument does not respond to many other hydrocarbon’s but sensitivity to Carbon Monoxide limits its usefulness in areas where fossil fuelled vehicles are operating.

Specifications:

- Range: 0-100ppm
- Resolution: Sensor 0.2ppm, Display 0.1ppm
- Typical cell & lithium battery life: 1.5 to 2 years
- Dimensions: 190 x 135 x 60mm
- Battery: Alkaline Manganese
- Battery life with pump 20+ hrs. Response time: 90% in 60sec.
- Sample flow: 0.8 l/min.
- Cross sensitivities:
  - CO: 40%, Ethanol: 72%, CO2: 0%, H2: 0%, NH3: 0%, H2S: 220%, MEK: 3%

Oxygen Analyser: ICA 310

This oxygen analyser is a high accuracy instrument for use where high resolution measurements in low oxygen atmospheres are required. The operation is simple with an ON switch and an air calibration adjustment. The sample gas is filtered and the oxygen concentration is measured with an advance high-performance and long life electrochemical cell.

This analyser automatically changes range to provide a resolution of 0.01% oxygen when the reading falls below 10%.

The measurement is not affected by CO2, CO, H2, ethylene or hydrocarbons in the sample gas. The cell has been designed to operate continuously in air for two years before it needs to be changed. A replacement cell is simple to install and requires minimal calibration.

The air calibration at 21% can be adjusted to compensate for ambient barometric pressure changes and gradual reduction in cell sensitivity. The analyser zero is very stable but for very critical work there is a screwdriver adjustment for calibration.

A miniature pump is controlled with a separate switch and the pump and analyser is powered by rechargeable batteries. A mains charger with optional power plugs for multinational use is also supplied.

As an option a USB data logger can record the measured value which can be downloaded on a standard computer USB port and graphed with the software provided.

Specifications:

- 10-25% Repeatability: 0.1%. Resolution: 0.1%.
- 0-10% Repeatability: 0.02%. Resolution: 0.01%.
- Typical cell life: 2 years.
- Dimensions: 190 x 135 x 60mm
- Battery: Ni-MH Rechargeable, life between charges 30H +
- Continual operation with mains power
- Response time: 99%in 20sec.
- Sample flow: 0.7 l/min.
- Optional logger: 32,000 readings, rate programmable 1 sec to 12 hrs/reading

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Carbon Dioxide Analyser: ICA 320

This CO₂ analyser is a convenient, light weight instrument for use where accurate CO₂ measurements are needed with simple operation and maximum portability.

The infra red sensor ensures accurate and trouble free operation with no cells to change or concerns about the measurement being influenced by other gases.

The calibration is very stable reducing the need for regular checking with calibration gases. A miniature pump is controlled with a separate switch and the pump and analyser is powered by rechargeable batteries. A mains charger with optional power plugs for multinational use is supplied for recharging or continual operation.

As an option a USB data logger can record the measured value which can be downloaded on a standard computer USB port and graphed with the software provided.

This analyser is available with a range of 0-5% CO₂ for checking storage and working areas and a version with 0-20% more suited to Controlled Atmosphere storage.

Specifications:

<table>
<thead>
<tr>
<th>Version</th>
<th>Repeatability</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td>0-5%</td>
<td>0.02%</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

Dimensions: 190 x 135 x 60mm

Battery: Ni-MH Rechargeable, life between charges 5H + Continual operation with mains power

Response time: 98% in 45 sec.

Sample flow: 0.7 l/min.

Optional logger: 32,000 readings, rate programmable 1 sec to 12 hrs/reading

Rugged Dual O₂ & CO₂ Analyser: ICA 350

This dual gas analyser is simple to use, rugged, portable and with excellent accuracy making it very suitable for local monitoring of Controlled atmosphere storage rooms.

Transport and storage is possible in all weather conditions with the protective water resistant lid closed.

Oxygen is measured with a high-performance electrochemical oxygen sensor. The zero calibration is very stable and the reading in air is adjusted with the simple front panel span control. The carbon dioxide is measured with a miniature, fully enclosed infrared sensor that is highly stable and requires infrequent calibration.

Two simple LCD displays are illuminated when the pump is running for good low light visibility.

A high-efficiency diaphragm pump gives a good sample flow and a hydrophobic filter prevents water being sucked into the gas sensors. A timer terminates the pump operation after 3 minutes.

Power is provided from a high efficiency NiMH battery with sufficient capacity for an 8 hour working day. The supplied multi voltage charger is used for both battery charging and continuous mains operation.

If voltage and current outputs are required for connecting to recorders and controllers then we recommend our ICA250 analyser.

Specifications:

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>O₂ cell life</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% O₂ 20% CO₂</td>
<td>0.1%</td>
<td>typically 2 years,</td>
</tr>
</tbody>
</table>

Battery capacity: 8 hrs operation between charges.

Charger: universal 100 to 240v ac.

Dimensions: 210 x 90 x 170 mm.

Sample flow: 0.8 L/min. Response time: 98% in 60 sec.
Fruit Texture Analyser

Get firm - insist on doing it electronically

The Fruit Texture Analyser (FTA) measures fruit firmness at the push of a button and captures the results to a PC. Tests are conducted at standard depths and speeds of penetration, ensuring accurate and repeatable results.

The FTA is ranked best fruit firmness testing instrument by a Washington State University study. (Download full report).

Get a taste for accurate measurement . . . every time!

Test apples, pears, peaches, nectarines and kiwi-fruit - with quick, easy reliable results.

Some firm advantages

- The FTA connects to a standard PC and the software runs on Windows 98/NT4/ME/2000/XP.
- The test results can be processed as follow:
  - Save the results to disk (or network) in ASCII format.
  - Capture the test results with your own software directly from the FTA using the control functions (supplied with the system in a DLL).
  - The FTA can directly be accessed from Excel, Word or Access. Click here to see how it works from Excel. Samples are included on CD.
- Installation only takes a few minutes.
- The FTA requires minimum maintenance - only cleaning to remove juice.
- The FTA can also be controlled from:
  1. ART-Soft database which forms part of the ART System (Apples Ripening Test). The software can be purchased directly from UP GmbH, Germany.
  2. FQMS database (Fruit Quality Management System). Contact GÜSS or Hortec for further information on this software.

Also measure size and weight

The EFM (Electronic Fruit Size Measure) can be connected to the FTA to measure fruit diameter electronically. Each measured size will be immediately available on the computer. Fruit diameter from 12 mm to 100 mm can be measured.

Note: the EFM is an optional attachment.

A Scale attachment can also be connected to the FTA to measure fruit weight electronically. The Scale is available in capacities ranging from 3 kg to 35 kg.

Note: the Scale is an optional attachment.

LCD/Keypad

With the LCD/Keypad attached the FTA can be operated without a connection to a PC. All the relevant measurements – firmness, size, minimum, maximum, average etc., will be displayed on the LCD.

Note: the LCD/Keypad is an optional attachment

Product Code

- FTA011 GS-15 Fruit Texture Analyser
- FTA021 GS-25 Fruit Texture Analyser
- FTA03 LCD Keypad
- FTA04 EFM Electronic Fruit Size Measure
- FTA05 Scale


### Features and benefits

- The FTA can be controlled with your own software. The control functions can be accessed through a DLL file. Integrating the FTA with existing QA software systems should not take longer than two hours of programming. Download SDK.
- Software can be configured to allow for customised output data and enables the FTA data to be incorporated into existing quality control systems.
- The electronic measure system ensures accurate, reliable firmness readings.
- All operating parameters can be regulated via the control PC (probe speed, calibration, threshold load, depth).
- The motorized system eliminates operator discrepancies and ensures accurate test distance (depth).
- Low maintenance - NO lubrication or adjustments are required.
- Electronic speed control ensures accurate probe speed and also ensures that tests are carried out under standard conditions.
- Software to generate reports from the recorded data is included in the package.
- Built-in safety features protect against overload.
- Measuring units:
  - **Firmness**: kg, pounds, Newton.
  - **Depth**: millimeter, inch.

### It’s all in the system

To run the control software, you need a computer with at least:

- Windows XP or Vista
- USB or Serial Port (DB9 connector)
- CD-ROM drive

The firmness data can easily be copied to Excel to create graphs for reports or presentation.

### Technical Data

<table>
<thead>
<tr>
<th></th>
<th>GS-15</th>
<th>GS-25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed of probe</td>
<td>1 ~ 40 mm/sec</td>
<td>1 ~ 40 mm/sec</td>
</tr>
<tr>
<td>Operating range</td>
<td>50 gram ~ 15 000 gram</td>
<td>50 gram ~ 25 000 gram</td>
</tr>
<tr>
<td>Maximum fruit size</td>
<td>120 mm</td>
<td>120 mm</td>
</tr>
<tr>
<td>Mass</td>
<td>9 kg (approx.)</td>
<td>9 kg (approx.)</td>
</tr>
<tr>
<td>Power consumption</td>
<td>50 watt (1)</td>
<td>50 watt (1)</td>
</tr>
<tr>
<td>EFM (size measure) port (2)</td>
<td>standard</td>
<td>standard</td>
</tr>
<tr>
<td>Scale attachment port (3)</td>
<td>standard</td>
<td>standard</td>
</tr>
<tr>
<td>LCD/Keypad port (4)</td>
<td>standard</td>
<td>standard</td>
</tr>
<tr>
<td>Digital caliper port (5)</td>
<td>standard</td>
<td>standard</td>
</tr>
<tr>
<td>Digital refractometer port (6)</td>
<td>standard</td>
<td>standard</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>30 V DC</td>
<td>30 V DC</td>
</tr>
<tr>
<td>USB</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

1) under max. load.
2) does not include EFM attachment.
3) does not include scale attachment.
4) does not include LCD/kepad attachment.
5) connects to Mitutoyo calipers only.
6) Connect Otago (with serial port) at FTA serial port. Data is then available at PC via USB connection.
Fruit Pressure Testers - Penetrometers

Our Fruit Firmness Tester (also known as the Fruit Pressure Tester) is a penetrometer that measures fruit firmness and provides a quick, easy and, according to university studies, an accurate method to determine fruit maturity.

- Firmness, or degree of softness or crispness, is used worldwide as a test of ripeness and maturity of many fruits. The Fruit Tester can be used as either a hand-held instrument or mounted on a test stand for more precise measurements.

- **Rugged construction**: High impact plastic case, aluminium dial, precision steel spring, brass mechanism chassis, impact resistant plastic crystal, stainless steel plunger and accessories. Parts disassemble for easy cleaning. All models include a full one year limited warranty.

- **Specifications**: “Peak Firmness Hold” button automatically freezes the highest reading until released by push button that returns the pointer to zero. Dual graduations; reads in ‘pound’ and ‘gram’. Compact 2 3/8” dial diameter; net weight 10 ounces. Accuracy +2 graduations through 2500 grams +1 graduation over 2500 grams (all models).

  All models include 5/16” and 7/16” stainless steel plunger tips, protection (splash) plate, fruit peeler, manual, user recommendations and carrying case.
We offer the Wolfcraft drill stand for customers who wish to position their penetrometer for regular test purposes, an adaptor is required to hold the penetrometer to the stand and details of which are listed below. The dimensions for the stand are 200 x 300 x 550 mm x 9 kg.

<table>
<thead>
<tr>
<th>Suggested Fruits</th>
<th>Capacity</th>
<th>(lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TU001 - FT444 Avocados</td>
<td>20kg x 200g</td>
<td>44lb x 0.5lb</td>
</tr>
<tr>
<td>TU002 - FT327 Apples, pears, kiwi, tomatoes</td>
<td>12.7kg x 100g</td>
<td>28lb x 0.25lb</td>
</tr>
<tr>
<td>TU003 - FT011 Citrus, peaches, melons</td>
<td>5kg x 50g</td>
<td>11lb x 0.1lb</td>
</tr>
<tr>
<td>TU0031 - FT011 Cherries, strawberries, grapes</td>
<td>500g x 5g</td>
<td>16oz x 0.125oz</td>
</tr>
<tr>
<td>TU005 - 5027 WOLFCRAFT DRILL STAND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TU006 - WOLFCRAFT DRILL STAND ADAPTOR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Optional Spare-Replacement Parts Available

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TU008 Fruit Peeler Knife</td>
<td></td>
</tr>
<tr>
<td>TU009 Probe Tip</td>
<td>5/16-8mm</td>
</tr>
<tr>
<td>TU010 Probe Tip</td>
<td>7/16-11mm</td>
</tr>
<tr>
<td>TU021 Pointed Avocado Tip</td>
<td>5/16-8mm</td>
</tr>
</tbody>
</table>
Fruit Tester HP-FFF-shore Analogue

Bareiss GmbH of Germany have developed specific hand-held instruments for the determination of firmness for fruit such as Avocados, Apples, Tomatoes, Strawberries, Peaches, Carrots and so on.

The ‘Bareiss Fruit-FFF’ testers are available in analogue and digital versions. Measuring with scale graduation from 1 – 100 units (with 1 being very soft and 100 being very hard). The ‘digital’ Bareiss HPE-FFF model has a constant pressure force applied to the fruit during the test, and an acoustic sound confirms that the “3 second” test has been completed. This allows for consistent test results, and minimises the influence of the operator during the test procedure.

- Test Anvil 0.10cm² for peaches, apricots and plums
- Test Anvil 0.25cm² for tomatoes and cherries
- Test Anvil 0.50cm² for strawberries
- Test Anvil Ball Ø 5mm for apples and avocados
- Test Anvil Ball Ø 2.5mm for carrots, cucumbers, radish, kohlrabi

Description
Analogue HP-FFF tester for the determination of fruit with maximum indicating pointer for reading of the highest measuring value.

Accessories
- An integrated pressure spring for a constant contact pressure
- Case
- Manufacturer Test certificate
- Exchange device for different test anvils
- One test anvil of choice (to be confirmed with order)

<table>
<thead>
<tr>
<th>Code</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM001</td>
<td>Bareiss Analogue Fruit Tester – Price includes one test anvil (confirm with order)</td>
</tr>
<tr>
<td>SM014</td>
<td>FM00029/1 Test Stand BS61/11</td>
</tr>
</tbody>
</table>

www.aceindustrial.co.uk email: qa@aceindustrial.co.uk
Fruit Tester HPE-FFF-shore Digital

The Bareiss electronic manual digital hardness tester serves for the hardness determination of fruit within the ranges of SHORE.

The patented pressing mechanism, which is integrated in the BAREISS HPE, ensures a constant contact pressure according to standard, without measuring errors by tilting or slope contact. The electronics is in a robust aluminium housing. The operation is made by a clearly arranged keyboard with a well readable display. By two keys the instrument is switched on and off and the measuring time is adjusted from zero to 99 secs. A flashing reading indicates optically the current measurement; an acoustic signal sounds after it has run down. The measured value is frozen on the display until the next measurement. The measured value is sent over the RS232-Serial Interface with 9-pin PC cable.

An easily exchangeable battery with an operation period of more than 2000 hours serves for the power supply. A durable case, a PC cable and the detailed operating instructions belong to the standard volume of supply.

Measuring faults are excluded

A spring, which is integrated in the tester produces a constant pressure according to standards. Measuring faults because of an inconstant contact pressure are excluded. After the measuring time has run down, an optical and acoustical signal is sent. The measured value is frozen at the display. As soon as the next measurement is started, the last measured value is erased. If there is no measurement for a long period, the instrument switches to a Stand-By mode.

Description

Digital HPE – FFF for the determination of the firmness of fruit pulp with an integrated pressure spring for a constant pressure with an exchange device for different test anvils.

Accessories

- Serial interface and 9-pin PC cable
- An integrated pressure spring for a constant contact pressure
- Measuring time and contact pressure according to standards
- Case
- Manufacturer Test certificate
- Exchange device for different test anvils
- One test anvil of choice (to be confirmed with order)

Code | Product
--- | ---
SM002 | HPE-FFF Digital Version 2 (FM02380) – Price includes one test anvil (confirm with order)
SM011 | Software
SM014 | FM00029/1 Test Stand BS61/11

fax: +44 (0) 1580 891350  tel: +44 (0) 1580 891300
Food Thermometers - ETI

- Colour-coded Thermapen® to avoid cross-contamination
- Free traceable certificate of calibration

The SuperFast Thermapen is available in ten colours, ideal for many different applications. These colour-coded Thermapens can be part of your HACCP and due diligence procedures, being used for different food types or preparation areas, reducing the risk of cross-contamination. Alternatively, each member of staff can be given a different coloured thermometer.

- suggested uses

Below are just a few examples of the different uses for the colour-coded SuperFast Thermapen thermometers.

- raw meat
- cooked meat
- salad/fruit products
- vegetable products
- raw fish/shellfish
- bakery/dairy products

<table>
<thead>
<tr>
<th>order code</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>231-217</td>
<td>Thermapen - white</td>
</tr>
<tr>
<td>231-227</td>
<td>Thermapen - yellow</td>
</tr>
<tr>
<td>231-237</td>
<td>Thermapen - green</td>
</tr>
<tr>
<td>231-247</td>
<td>Thermapen - red</td>
</tr>
<tr>
<td>231-257</td>
<td>Thermapen - blue</td>
</tr>
<tr>
<td>231-267</td>
<td>Thermapen - brown</td>
</tr>
<tr>
<td>231-277</td>
<td>Thermapen - black</td>
</tr>
<tr>
<td>231-287</td>
<td>Thermapen - orange</td>
</tr>
<tr>
<td>231-297</td>
<td>Thermapen - pink</td>
</tr>
<tr>
<td>231-307</td>
<td>Thermapen - purple</td>
</tr>
</tbody>
</table>

- RayTemp® 3 Infrared Thermometer

  ideal for the food industry
  
  - assured accuracy of ±1 °C over the range of 0 to 65 °C
  - compact, lightweight & easy to use

The RayTemp 3 is ideal for measuring food surface temperatures, eliminating the need to touch or contaminate the food you are measuring, avoiding the risk of cross-contamination.

Simply aim and pull the trigger to display the temperature of the item being measured. In addition the LCD will display the maximum temperature. The instrument incorporates a clear, easy to read, LCD display with low battery, laser and backlight indication and an auto-power off facility.

The thermometer also incorporates laser assisted alignment as standard, to assist in pin-pointing the area of measurement.

<table>
<thead>
<tr>
<th>order code</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>814-040</td>
<td>RayTemp 3</td>
</tr>
<tr>
<td>830-040</td>
<td>protective nylon pouch</td>
</tr>
<tr>
<td>834-740</td>
<td>ABS carrying case</td>
</tr>
</tbody>
</table>

specification RayTemp 3

<table>
<thead>
<tr>
<th>range</th>
<th>-60 to 500 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>resolution</td>
<td>0.1 °C (-9.9 to 199.9 °C) or 1 °C</td>
</tr>
<tr>
<td>accuracy - infrared</td>
<td>±1 °C (0 to 65 °C) otherwise ±2 °C</td>
</tr>
<tr>
<td>field of view target ratio</td>
<td>12:1</td>
</tr>
<tr>
<td>emissivity</td>
<td>0.97 fixed</td>
</tr>
<tr>
<td>battery &amp; life</td>
<td>2 x AAA alkaline - 140 hours</td>
</tr>
<tr>
<td>display custom</td>
<td>LCD</td>
</tr>
<tr>
<td>dimensions</td>
<td>39 x 72 x 175 mm</td>
</tr>
<tr>
<td>weight</td>
<td>180 grams</td>
</tr>
</tbody>
</table>

FREE traceable certificate of calibration included

www.aceindustrial.co.uk  
e-mail: qa@aceindustrial.co.uk
**Food Check thermometer & probe**
- designed for the professional caterer
- **FREE traceable certificate of calibration**
- available in four new colours

The Food Check is designed specifically for the food and catering professional. The thermometer will measure temperature quickly and accurately when monitoring cooked and chilled foods as part of HACCP and health and safety procedures.

The unit features a large, easy to read, LCD display with open circuit and low battery indication.

Each Food Check is supplied with a permanently attached food penetration probe with a 130 mm stainless steel stem and 500 mm PVC lead.

<table>
<thead>
<tr>
<th>order code</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>221-018</td>
<td>Food Check - White</td>
</tr>
<tr>
<td>221-028</td>
<td>Food Check - Yellow</td>
</tr>
<tr>
<td>221-038</td>
<td>Food Check - Green</td>
</tr>
<tr>
<td>221-048</td>
<td>Food Check - Red</td>
</tr>
<tr>
<td>221-058</td>
<td>Food Check - Blue</td>
</tr>
<tr>
<td>830-224</td>
<td>protective silicone boot - red</td>
</tr>
<tr>
<td>832-050</td>
<td>s/steel wall bracket &amp; boot</td>
</tr>
</tbody>
</table>

**specification**
- **Food Check**
  - range: -49.9 to 299.9 °C
  - resolution: 0.1 °C
  - accuracy: ±0.4 °C (-50 to 199 °C) otherwise ±1 °C
  - battery & life: 3 x 1.5 volt AAA - 10000 hours
  - sensor type: K thermocouple
  - display: 12 mm LCD
  - dimensions: 25 x 56 x 128 mm
  - weight: 130 grams

*FREE traceable certificate of calibration included*

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**Thermamite® Thermometer**
- complete with food penetration probe
- **FREE traceable certificate of calibration**
- **compact & robust design**

The Thermamite thermometer offers accuracy, flexibility and ease of use, coupled with the durability and reliability that is required by the food and catering industry in helping to meet today’s food hygiene legislation.

The thermometer incorporates a clear LCD display with a precise read-out of temperature over the range of -50 to 300 °C with a 1 °C resolution. Low battery and open circuit indication are also displayed. The unit will power off automatically after ten minutes, maximising battery life.

Each thermometer is supplied with a permanently attached pointed, stainless steel food penetration probe (Ø3.3 x 100 mm) and a 500 mm PVC lead.

<table>
<thead>
<tr>
<th>code</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>261-010</td>
<td>Thermamite - White</td>
</tr>
<tr>
<td>261-020</td>
<td>Thermamite - Yellow</td>
</tr>
<tr>
<td>261-030</td>
<td>Thermamite - Green</td>
</tr>
<tr>
<td>261-040</td>
<td>Thermamite - Red</td>
</tr>
<tr>
<td>261-050</td>
<td>Thermamite - Blue</td>
</tr>
<tr>
<td>830-225</td>
<td>protective silicone boot - blue</td>
</tr>
<tr>
<td>832-050</td>
<td>s/steel wall bracket &amp; boot</td>
</tr>
</tbody>
</table>

**specification**
- **Thermamite**
  - range: -50 to 300 °C
  - resolution: 1 °C
  - accuracy: ±1 °C ±0.1 %
  - battery & life: 3 x 1.5 volt AAA - 10000 hours
  - sensor type: K thermocouple
  - display: 12 mm LCD
  - dimensions: 25 x 56 x 128 mm
  - weight: 130 grams

*FREE traceable certificate of calibration included*

Our complete range of thermometers and data loggers are shown in a separate catalogue. Please contact Ace Industrial.

fax: +44 (0) 1580 891350
tel: +44 (0) 1580 891300
Food Thermometers - Comark

- **C20 Food Thermometer** - Thermistor - Single Button Operation

Check safe cooking temperatures in catering and foodservice environments with the C20 Food Thermometer. It has a simple, single button operation for ease of use.

Lumberg connector for use with a wide range of Comark thermistor probes.

- Battery life of up to 5 years
- Auto switch-off
- Built-in protective boot
- BioCote® antimicrobial protection

### Specification:

<table>
<thead>
<tr>
<th>Spec</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor Type</td>
<td>Thermistor</td>
</tr>
<tr>
<td>Measurement Range</td>
<td>-40°C to +125°C</td>
</tr>
<tr>
<td>Scales</td>
<td>°C</td>
</tr>
<tr>
<td>Displayed Resolution</td>
<td>0.1°</td>
</tr>
<tr>
<td>System Accuracy at +23°C</td>
<td>±0.5°C - 20°C to +70°C</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-20°C to +50°C</td>
</tr>
<tr>
<td>Display</td>
<td>4 digit, 12.5 mm LCD</td>
</tr>
<tr>
<td>Battery</td>
<td>2 x Type I.E.C. LR6 Size AA Customer Replaceable</td>
</tr>
<tr>
<td>Battery Life</td>
<td>Up to 5 Years</td>
</tr>
<tr>
<td>Environmental Protection</td>
<td>IP67 BS EN 60529 IEC 529</td>
</tr>
<tr>
<td>Dimensions</td>
<td>152mm L x 58mm W x 22/27mm D</td>
</tr>
<tr>
<td>Weight</td>
<td>128g</td>
</tr>
</tbody>
</table>

- **PX22L** Food Penetration Probe - White End Cap - Thermistor
- **PX22L/C** Food Penetration Probe - White End Cap - Thermistor - Curly
- **PX16L** Fast Response Food Penetration Probe - Thermistor
- **PX30L** Heavy Duty Penetration Probe - Thermistor - Curly
- **PX33L** Integral Plug Probe - Thermistor (PST)
- **AX24L** Flexible Wire Air Probe - Thermistor
- **DX31L** Food Simulant Probe - Thermistor
- **DX28L** Damped Sensor Probe - Thermistor

- **PDT300 Pen Style Pocket Digital Thermometer**

Compact, slim, pen style pocket thermometer. Use to check cooking temperatures of foods such as chicken or burgers.

Use in food service applications or suitable for home use too.

- Waterproof
- Response time better than 6 seconds
- Probe tip reduced to 1.6mm
- °F/°C switchable
- Slim profile fits flat in pocket
- Data hold to freeze a reading
- Auto power off
- Withstands constant use in wet or humid conditions
- NSF
- BioCote® antimicrobial protection

### Specification:

<table>
<thead>
<tr>
<th>Spec</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>-50° to +150°C</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2°F, ±1°C</td>
</tr>
<tr>
<td>Battery Type</td>
<td>LR44 1.5V Button Cell</td>
</tr>
</tbody>
</table>

www.aceindustrial.co.uk  
email: qa@aceindustrial.co.uk
FOOD THERMOMETERS

P125 Pocketherm Folding Food Thermometer

It's fast, it folds, it bleeps!

Neat, pocket digital thermometer for quick checks on frozen, chilled or cooked food. Coloured LEDs indicate temperatures within HACCP limits.

Flashing LEDs plus buzzer for Instant Temperature Indication:

- Yellow for frozen
- Green for chilled
- Red for cooked

BioCote® antimicrobial protection

<table>
<thead>
<tr>
<th>Specification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor Type</td>
</tr>
<tr>
<td>Measurement Range</td>
</tr>
<tr>
<td>Scale</td>
</tr>
<tr>
<td>Displayed Resolution</td>
</tr>
<tr>
<td>System Accuracy at +23°C/+73°F</td>
</tr>
<tr>
<td>0°C to +70°C</td>
</tr>
<tr>
<td>Operating Range</td>
</tr>
<tr>
<td>Temperature</td>
</tr>
<tr>
<td>Humidity</td>
</tr>
<tr>
<td>LED Indication (Flashing) plus buzzer</td>
</tr>
<tr>
<td>Yellow</td>
</tr>
<tr>
<td>Green</td>
</tr>
<tr>
<td>Red</td>
</tr>
<tr>
<td>Auto Switch Off</td>
</tr>
<tr>
<td>Battery Type</td>
</tr>
<tr>
<td>Battery Life</td>
</tr>
<tr>
<td>Dimensions - Case</td>
</tr>
<tr>
<td>Length</td>
</tr>
<tr>
<td>Width</td>
</tr>
<tr>
<td>Depth</td>
</tr>
<tr>
<td>Dimensions - Probe</td>
</tr>
<tr>
<td>Length</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>

KM20REF High Accuracy Reference Thermometer

High accuracy, reference thermometer for checking the calibration of all types of thermometer/probe combinations. Platinum resistance thermometer technology and permanently attached PT100 probe for highest system accuracy. Displays temperature in °C

- Complete with 5 point UKAS Certificate of Calibration
- Standard points -18°C, 0°C, 5°C, 8°C, 20°C
- Auto switch off
- Supplied with hard carrying case

<table>
<thead>
<tr>
<th>Specification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor Type</td>
</tr>
<tr>
<td>Measurement Range</td>
</tr>
<tr>
<td>Scale</td>
</tr>
<tr>
<td>Resolution</td>
</tr>
<tr>
<td>System Accuracy at +23°C</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
</tr>
<tr>
<td>UKAS Certificate Calibration Points</td>
</tr>
<tr>
<td>Battery Type</td>
</tr>
<tr>
<td>Battery Life</td>
</tr>
</tbody>
</table>

Our complete range of thermometers and data loggers are shown in a separate catalogue. Please contact Ace Industrial.

fax: +44 (0) 1580 891350  
tel: +44 (0) 1580 891300
Water Bath Calibration Checking
DIGITRON Calibration Checking System

The easy to use, low cost TBS1 has been designed to allow on-site system calibration checks throughout the food industry on any thermistor, platinum or thermocouple based instrument. The unit can be supplied with a UKAS traceable certificate to ensure compliance with ISO9001 procedures. For ease of use, the system is also light and compact.

**Accuracy and reliability**
The TBS1 has an excellent system accuracy of ±0.2% of ±0.1°C/±0.2°F reading.

Checking instrument accuracy is often a time consuming and skilled process. The TBS1 allows the operator to check system accuracy simply, easily and as often as required at their own premises.

**Ease of use**
Any member of staff who uses a thermometer may test and sign for the instrument even on a daily basis.

Please quote part number TBS1WBATHEU for European version or TBS1WBATHUK for the UK version.

- High accurate platinum sensor (PT1000)
- Easy to use
- Checks accuracy of instrument and probe
- Checks up to 3 instruments and probes simultaneously
- Helps you comply with ISO 9001 procedures

<table>
<thead>
<tr>
<th>Code</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIG001</td>
<td>UK Calibration Checking System</td>
</tr>
<tr>
<td>DIG002</td>
<td>European Calibration Checking System</td>
</tr>
</tbody>
</table>

**Specification**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor</td>
<td>PT1000</td>
</tr>
<tr>
<td>Operating Range</td>
<td>0°C to +50.0°C/+32°F to +122°F</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1°C/0.2°F</td>
</tr>
<tr>
<td>System Accuracy</td>
<td>±0.2% ±0.1°C/±0.1°C/±0.2% ±0.2°F of reading</td>
</tr>
<tr>
<td>Operating Temp. (Ambient)</td>
<td>0°C to +50°C/+32°F to +122°F, RH 80% max</td>
</tr>
<tr>
<td>Power Supply (Isolated)</td>
<td>220/240V ac 50/60 Hz</td>
</tr>
<tr>
<td>Display</td>
<td>31/2 digit 12.7mm/0.5&quot; liquid crystal display</td>
</tr>
<tr>
<td>Dimensions Max:</td>
<td>159 x 116 x 147mm/6.3 x 4.7 x 5.9&quot;</td>
</tr>
</tbody>
</table>

Weight (Excl. Power Supply) 310gms/11oz

www.aceindustrial.co.uk  email: qa@aceindustrial.co.uk
Ace Industrial supply an extensive range of certified BRIX solution standards of highest quality from certified traceable materials.

Do you use Brix as part of your quality control? Are you satisfied that your instruments are performing as expected? How often do you verify their calibration? Does your Quality Control Discipline call for an independent certification?

Standards are pure, unadulterated sucrose/water mixtures using only traceable, certified materials mixed to precise proportions by weight on a certified balance to within 0.0015% of the target strength.

They constitute true ‘Brix’ standards suitable for the verification of both refractometers and densitometers.

Certificates are provided with all standards for authentification of Quality Control procedures.

Range of high accuracy calibration fluids can be used to check, verify and re-calibrate critical angle refractometers. They are aqueous-based fluids that are non-flammable, non-toxic thus making them suitable for use in food testing/QA laboratories.

<table>
<thead>
<tr>
<th>Code</th>
<th>Concentration</th>
<th>Refractive Index</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALB013</td>
<td>SS10 10% Brix Solution</td>
<td>1.34782</td>
<td>1038.11</td>
</tr>
<tr>
<td>CALB012</td>
<td>SS15 15% Brix Solution</td>
<td>1.35568</td>
<td>1059.16</td>
</tr>
<tr>
<td>CALB014</td>
<td>SS20 20% Brix Solution</td>
<td>1.36384</td>
<td>1080.98</td>
</tr>
<tr>
<td>CALB016</td>
<td>SS30 30% Brix Solution</td>
<td>1.38115</td>
<td>1127.03</td>
</tr>
<tr>
<td>CALB017</td>
<td>SS35 35% Brix Solution</td>
<td>1.39032</td>
<td>1151.33</td>
</tr>
<tr>
<td>CALB018</td>
<td>SS60 60% Brix Solution</td>
<td>1.44193</td>
<td>1286.61</td>
</tr>
</tbody>
</table>

Sucrose solutions can also be supplied at bespoke concentrations between 0 and 60% at extra cost.

Ace Industrial supply calibration standards for Quality Control to many producers of the following:

- Fruit Juices
- Colas and Beverages
- Beer, Cider and Spirits
- Sauces and Pickles
- Confectionary Products
- Biscuits
- Preserves
- Dairy Products
- Fruits
- Oils
- Chemicals and Plastics

**Instrument Calibration – Service – Repair**

We offer a full range of calibration, to National Standards and UKAS, service and repairs are also available. Please contact our QA Service Department with your enquiry. – 01580 891300

<table>
<thead>
<tr>
<th>Item</th>
<th>Manufacturers Calibration Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penetrometer</td>
<td>12 Months</td>
</tr>
<tr>
<td>Refractometer</td>
<td>12 Months</td>
</tr>
<tr>
<td>Thermometer</td>
<td>12 Months</td>
</tr>
<tr>
<td>Bareiss Shore Meter</td>
<td>12 Months</td>
</tr>
<tr>
<td>Fruit Texture Analyser</td>
<td>12 Months</td>
</tr>
<tr>
<td>Waterbath</td>
<td>12 Months</td>
</tr>
</tbody>
</table>

fax: +44 (0) 1580 891350 tel: +44 (0) 1580 891300
**Scales**

**Weightstation Electronic Platform Scale 3kg**
A robust, easy to clean set of electronic scales with removable weighing platform and large display. These scales can be powered by mains or batteries, and have a wipe clean, splash proof fascia.

**Code: F201**

- Removable platform for easy cleaning
- Wipe clean splash proof fascia
- Clear easy to read digital display
- Touch button instant reaction controls
- Capacity 3kg (6lbs)
- Dimensions 80(H) x 178(W) x 225(D)mm
- Material Stainless steel platform
- Power Type Mains power adaptor (included) or takes 4 x D type batteries (not included)

**Weightstation Electronic Platform Scale 3kg**
These hygienic scales have a wipe-clean fascia and easily removable platform, making them perfect for use in food preparation. These scales can be powered by batteries or mains. These scales are not government stamped, and as such are unsuitable for use as retail food sales. Ideal for use in any kitchen.

**Code: F177**

- Removable platform for easy cleaning
- Wipe clean splash proof fascia
- Clear easy to read digital display
- Touch button instant reaction controls
- Capacity 6lbs/ 3kg
- Dimensions 100(H) x 252(W) x 300(L)mm
- Material Stainless steel platform
- Power Type Mains power adaptor (included) or takes 4 x D type batteries (not included)

**Weightstation Electronic Platform Scale 15kg**
Ideal for use in food preparation, these scales are very sturdy and easy to clean, with an easily-removed platform. These scales come supplied with a mains lead, but can also be battery powered.

**Code: F178**

**Weightstation Electric Bench Scales 30kg**
These heavy duty electronic scales have a remote, wall-mountable LCD display and a removable stainless steel platform for easy cleaning. These scales can be mains or battery operated, and feature a simple four button operation for ease of use.

**Code: CD564**

- Battery or mains powered
- Hygienic stainless steel removable platform for easy cleaning
- Automatic shut-off, calibration and zero tracking
- Low battery indicator
- Kg/lb conversion
- Remote LCD display
- Simple four button operation
- Graduation 10g
- 9V mains adaptor supplied
- 1.4m cable
- Capacity 66lbs/ 30kg
- Dimensions 40(H) x 310(W) x 300(D)mm
- Dimensions - cooking area Platform size: 315 x 325mm.
- Material Stainless steel

www.aceindustrial.co.uk   email: qa@aceindustrial.co.uk
Salter Electronic Bench Scales 6kg

A infinitely portable machine, this set of Salter scales is ideal for use in a wide range of applications where a high degree of accuracy is required. These scales feature an easy to read display, an internal battery which gives approximately 160 hours of use between charges, and can also be operated on mains power.

**Code:** DP031

- Mains or battery powered
- 160hr rechargeable battery
- Easy to read display
- Features a large stainless steel platform
- Weight display units: oz, lb, g, kg
- Housed in tough ABS case
- Mounted on four adjustable feet
- AC adaptor included
- Capacity 12lbs/ 6kg
- Dimensions 95(H) x 305(W) x 250(D)mm
- Weight 2.8kg

Salter Check Weigher Scales 6kg

A set of premium quality Salter scales featuring a large display and a buzzer, which sounds when the weight is within an acceptable range. These scales are infinitely portable, and feature an internal rechargeable battery which gives approximately 20 hours of usage between charges. These scales can also be operated from mains.

**Code:** DP029

- Accurate scale built to work in harsh, wet environments such as portion control, food processing or catering kitchens
- Washable and corrosion free
- Display screen is watertight
- Simple four button interface
- Buzzer sounds when weight is within set range
- Platform size: 13(H)x 229(W)x 190(D)mm
- Weight display units: oz, lb, g, kg
- Easy to read display
- AC or battery operated
- Capacity 12lbs/ 6kg
- Dimensions 110(H) x 285(W) x 235(D)mm
- Weight 3.7kg

Salter Electronic Bench Scales 15kg

Entirely portable, and ideal for use in busy kitchen environments, these Salter scales feature an internal rechargeable battery which gives approximately 20 hours of usage between charges. These scales can also be operated from mains, and feature a large, easy to read display and a buzzer, which will alert you when the weight is within an acceptable range.

**Code:** DP030

- Accurate scale built to work in harsh, wet environments such as portion control, food processing or catering kitchens
- Washable and corrosion free
- Display screen is watertight
- Simple four button interface
- Buzzer sounds when weight is within set range
- Platform size: 13(H)x 229(W)x 190(D)mm
- Weight display units: oz, lb, g, kg
- Easy to read display
- AC or battery operated
- Capacity 30lbs/ 15kg
- Dimensions 95(H) x 305(W) x 250(D)mm
- Weight 3.7kg

Salter Check Weigher Scales 15kg

An portable machine that is robust enough to be used anywhere, this set of Salter scales is ideal for use in a wide range of applications where a high degree of accuracy is required. These scales feature an easy to read display, an internal battery which gives approximately 160 hours of use between charges, and can also be operated on mains power.

**Code:** DP032

- Mains or battery powered
- 160hr rechargeable battery
- Easy to read display
- Features a large stainless steel platform
- Weight display units: oz, lb, g, kg
- Housed in tough ABS case
- Mounted on four adjustable feet
- AC adaptor included
- Capacity 30lbs/ 15kg
- Dimensions 95(H) x 305(W) x 250(D)mm
- Weight 2.8kg
Sizing Rings - Sizing Squares - Sizing Rules - Adjustable Bands

Ace Industrial offer the widest range of sizing devices available these include:

For Fruit
We offer individual Size Rings or size ring sets from 1mm to 150mm which are manufactured in wipe clean white polypropylene plastic as standard made sets or to customers specification, 2 or 3mm thick.

<table>
<thead>
<tr>
<th>Code</th>
<th>Product</th>
<th>Measurement</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR026</td>
<td>Grape Sizing Ring Set</td>
<td>15 – 29mm x 1mm</td>
<td>Graduation</td>
</tr>
<tr>
<td>SR041</td>
<td>Apple Sizing Ring Set</td>
<td>35 – 80mm x 5mm</td>
<td>Graduation</td>
</tr>
</tbody>
</table>

We also offer size strips or sizing plates which are adapted to customers requirements.

For Potato
We offer individual Size Squares or size square sets manufactured in wipe clean 3 mm foamex material, available individually or as sets made to customers own requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Product</th>
<th>Measurement</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR024</td>
<td>Potato Size Square Set</td>
<td>20 – 85mm x 5mm</td>
<td>Graduation</td>
</tr>
</tbody>
</table>

For Banana
We offer individual size Banana Sizing Rule
Manufactured in clear plastic strip material with alloy holding base.

<table>
<thead>
<tr>
<th>Code</th>
<th>Product</th>
<th>Measurement</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR027</td>
<td>Banana Rule</td>
<td>0-12”/ 0-31cm x 0.5mm</td>
<td>Graduation</td>
</tr>
<tr>
<td>SR0271</td>
<td>Banana Rule Metric</td>
<td>0-280mm x 1mm</td>
<td>Graduation</td>
</tr>
</tbody>
</table>

Adjustable Fruit and Produce Sizing Band
Manufactured in ABS plastic with metal measuring band.
A very popular device, as can be used to measure a variety of fruit and produce.

<table>
<thead>
<tr>
<th>Code</th>
<th>Product</th>
<th>Measurement</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR014</td>
<td>Adjustable Bands</td>
<td>20 – 100mm x 1mm</td>
<td>Graduation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1” – 4” x 0.10th”</td>
<td>Graduation</td>
</tr>
</tbody>
</table>
General Purpose Caliper

Very popular with all growers as the sizer has inches on one side and centimeters on the other. The locking jaw prevents movement during measurement. And suitable for a range of fruits and vegetables.

<table>
<thead>
<tr>
<th>Code</th>
<th>Item Description</th>
<th>Measurement Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO86</td>
<td>Deep Jaw Caliper</td>
<td>0 – 15cm / 0 – 6 inch</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/16th of an inch increment</td>
</tr>
</tbody>
</table>

Digitronic Caliper 110 Series

A precision digital caliper incorporating the latest electronic technology. Instant millimeters and inch conversion with zero set in any position.

- ABS/INC measurement
- Large LCD display
- On/off switch
- Zero point at any position
- Displays values in mm and inch
- Metal parts made of hardened stainless steel
- CR2032 battery

<table>
<thead>
<tr>
<th>Item</th>
<th>MW110-15DBL</th>
<th>MW110-20DBL</th>
<th>MW110-30DBL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>T082</td>
<td>T084</td>
<td>T085</td>
</tr>
<tr>
<td>Measurement Range</td>
<td>6” 0-150mm</td>
<td>8” 0-200mm</td>
<td>12” 0-300mm</td>
</tr>
<tr>
<td>Jaw Length</td>
<td>40mm</td>
<td>50mm</td>
<td>60mm</td>
</tr>
<tr>
<td>Working Temperature</td>
<td>0 to 40°C</td>
<td>0 to 40°C</td>
<td>0 to 40°C</td>
</tr>
<tr>
<td>Measurement Accuracy</td>
<td>± 0.02mm</td>
<td>± 0.03mm</td>
<td>± 0.03mm</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>&lt;80%</td>
<td>&lt;80%</td>
<td>&lt;80%</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-10 to 60°C</td>
<td>10 to 60°C</td>
<td>10 to 60°C</td>
</tr>
<tr>
<td>Power Supply</td>
<td>3.0V CR2032 Lithium</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Plastic Dial Caliper CDP150M

- Manufactured from glass reinforced nylon material
- Highly durable design
- Plastic depth rod
- + 0.1mm accuracy

<table>
<thead>
<tr>
<th>Item</th>
<th>Product Code</th>
<th>Measurement Range</th>
<th>Measurement Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DP150M</td>
<td>0-150mm</td>
<td>+ 0.1mm</td>
</tr>
</tbody>
</table>
**Fridges**

**Polar Under Counter Display Fridge 150 Ltr**
Great value Polar display fridge, finished in white and designed to fit into tight space/beneath counter tops to help save space. Features include precise digital temperature display, easy-use electronic controls and sturdy rear castors for easy manoeuvrability. CFC free, this display fridge also has an auto-return, lockable door and comes supplied with 2 shelves and 1 half shelf.

**Code: CD086**

- 2 Shelves and 1 Half Shelf
- Auto-Return Door
- White Exterior
- Lockable
- Maximum ambient temperature: 32°C
- Capacity 150 litre.
- Dimensions 850(h) x 600(w) x 600(d) mm.
- Refrigeration Capacity 150
- Number of Doors 1
- Refrigeration Finish White
- Refrigeration Function Refrigerator
- Refrigeration Type Display
- Power Type 230V. 150W. 1.1A
- Refrigerant R134a
- Temperature Range 0 degrees Celsius to 8 degrees Celsius.
- Voltage 230V
- Warranty 2 years on site parts & labour.
- Weight 47kg
- Plug fitted Yes

**Polar Display Fridge 400 Ltr**
A high quality, stylish refrigeration unit from Polar, featuring an attractive slimline body, digital temperature display and robust rear castors for easy movement. CFC free, it also boasts a light duty glass door, providing a great option for enticing customers and showcasing your products.

**Code: CD087**

- 3 Adjustable Shelves and 1 Half Shelf
- Auto-Return Door
- White Exterior
- Lockable
- Maximum ambient temperature: 32°C
- Capacity 400 litre.
- Dimensions 1850(h) x 600(w) x 600(d) mm.
- Refrigeration Capacity 400
- Number of Doors 1
- Refrigeration Finish White
- Refrigeration Function Refrigerator
- Refrigeration Type Display
- Power Type 230V. 185W. 1.5A
- Refrigerant R134a
- Temperature Range 0 degrees Celsius to 8 degrees Celsius.
- Voltage 230V
- Warranty 2 years on site parts & labour.
- Weight 72kg
- Plug fitted Yes

**Polar Display Fridge 600 Ltr**
A high quality, stylish refrigeration unit from Polar, featuring an attractive slimline body, digital temperature display, robust rear castors for easy movement and a maximum ambient temperature of 32 degrees. CFC free, it also boasts a lockable light duty glass door, providing a great option for enticing customers and showcasing your products.

**Code: CD088**

- White Exterior
- 600 litre capacity
- White exterior
- LED digital temperature display
- Lockable
- Maximum ambient temperature: 32°C
- Capacity 600 litre.
- Dimensions 1890(h) x 777(w) x 695(d) mm.
- Refrigeration Capacity 600
- Number of Doors 1
- Refrigeration Finish White
- Refrigeration Function Refrigerator
- Refrigeration Type Display
- Power Type 230V. 185W. 1.5A
- Refrigerant R134a
- Temperature Range 0 degrees Celsius to 8 degrees Celsius.
- Voltage 230V
- Warranty 2 years on site parts & labour.
- Weight 93kg
- Plug fitted Yes

www.aceindustrial.co.uk  
email: qa@aceindustrial.co.uk
Juicers

Santos Classic Juicer
Classic style that is ideal for continuous production, with high speed motor. Simply slice the fruit in half and the motor will extract the maximum amount of juice. Only suitable for use with oranges, lemons, limes or grapefruit.

Code: K275

- Waterproof motor block.
- 3 x Extractor Cone Sizes.
- 795ml Polycarbonate Bowl.
- Aluminium Alloy Base.
- 5 year warranty on asynchronous motor.
- Dimensions 350(h) x 200(w) x 300(d)mm.
- Output Max: 30 Litre/Hour
- Power Type 0.13kW, 230V, 0.6 Amp single phase.
- Speed 1500rpm.
- Warranty 1 years parts & labour
- Weight 5kg
- Plug fitted Yes

Santos Classic Citrus Juicer
Classic style that is ideal for continuous production. Simply slice the fruit in half and the high speed motor will extract the maximum amount of juice.

Code: K276

- 1500 rpm motor.
- Waterproof motor block.
- Chrome finish.
- Supplied with 3 extractor cone sizes.
- 5 year warranty on asynchronous motor.
- Capacity 795ml cup.
- Dimensions 350(h) x 200(w) x 300(d)mm.
- Material Aluminium Alloy Base
- Output 30 litres/hr
- Power Type 0.13kW, 230V, 0.6 Amp single phase.
- Speed 1500rpm.
- Warranty 1 year parts & labour
- Weight 5kg
- Plug fitted Yes

Tables

Stainless Steel Centre Table F20612Z 900mm
Sturdy stainless steel preparation table with satin polish finish for use in food preparation areas. Flat surface allows all-around use in the centre of rooms. Standard depth allows tables to be used together easily. Hygenic and professional.

Code: P407

- Supplied with legs and integral stainless steel undershelf.
- Delivered flat packed for easy self assembly.
- Hygienic and easy to clean.
- Optional drawers available separately.
- Dimensions 900(h) x 900(w) x 650(d)mm.
- Material 1.2mm Stainless steel satin polish finish.
- Warranty 1 year.
- NB other sizes available on request

Day Labels & Dispenser

Days of the Week Labels & Dispenser
Our easy to use day of the week label and dispenser set comes with everything you need to keep stored food organised, control food waste and comply with FDA regulations.

Code: S154 Seven rolls of labels complete with dispenser (replacement rolls of labels can be ordered separately).

- Keep stored food organised
- Colour coded to simplify rotation
- Complies with FDA regulation
- Room to add date below day
- Day labels supplied in rolls of 1000
- Dimensions 24 x 24mm labels
- Material Stainless steel dispenser

fax: +44 (0) 1580 891350  tel: +44 (0) 1580 891300
Cutting Utensils

Grape Scissors
The SC/3 are the perfect pair of grape scissors featuring a sharp 1.25” stainless steel blade and large finger holes for ease of use. Red plastic handles
Overall length 6.25”
SCIS-001

ARS Fruit/Grape Pruner
ARS – 310 curved needle nose pruner is the perfect tool for harvesting and picking fruit with carbon tool steel and soft non-slip pvc and steel core handle.
Overall length 7”, weight 110g
P725 RED
P7251 BLUE

All General Purpose Scissors
Colour Coded Scissors to prevent cross contamination during food preparation, plastic handle with stainless steel blade, 203 mm.

Victorinox Universal Kitchen Scissors
A high quality stainless steel pair of scissors with a choice of 3 handle colours. The pivot screw allows adjustment for precision cutting at all times and also allows for dismantling to facilitate cleaning and re-grinding. All blades are hardened to Rockwell 56 to stay sharper longer.
Size: 20.2cm
L366

Produce Test Knife
Stainless Steel 11cm blade with pointed serrated 3cm tip and folding handle.
KN003

DM036 Red
(Raw Meat)

DM037 Blue
(Raw Fish)

DM038 Yellow
(Cooked meat)

DM039 Green
(Salad and Fruit)
Quality Control & Coloured Tapes

A range of Quality Control and coloured tapes for communicating instructions to package handlers and couriers.
PG Pro series tape gun dispensers are also available.

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Type</th>
<th>Colour</th>
<th>Order Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRVT</td>
<td>Fragile</td>
<td>Vinyl</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>FRLNP</td>
<td>Fragile</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>CCSS</td>
<td>Contents Checked Security Sealed</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>GHWC</td>
<td>Glass Handle With Care</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>CPMT</td>
<td>Caution</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>TW60REJ</td>
<td>Reject</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>TW60AWI</td>
<td>Awaiting Inspection</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>TW60HAN</td>
<td>Handle With Care</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>TW60QCH</td>
<td>Q.C. Hold</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>TW60QCI</td>
<td>Q.C. Inspected</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>TW60QCR</td>
<td>Q.C. Rejected</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 1</td>
</tr>
<tr>
<td>TW60QUA</td>
<td>Quarantine</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 1</td>
</tr>
<tr>
<td>TW60TWU</td>
<td>This Way Up</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>TW60SEC</td>
<td>Security</td>
<td>Polyprop</td>
<td>Red/White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>WSP50</td>
<td>Polyprop White</td>
<td>Polyprop</td>
<td>White</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>RCP50</td>
<td>Polyprop Red</td>
<td>Polyprop</td>
<td>Red</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>BLC50</td>
<td>Polyprop Blue</td>
<td>Polyprop</td>
<td>Blue</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>GCP50</td>
<td>Polyprop Green</td>
<td>Polyprop</td>
<td>Green</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>YCP50</td>
<td>Polyprop Yellow</td>
<td>Polyprop</td>
<td>Yellow</td>
<td>Rolls per Case = 36</td>
</tr>
<tr>
<td>QCPP0</td>
<td>Q.C. Accepted</td>
<td>Vinyl</td>
<td>Green/White</td>
<td>Rolls per Case = 1</td>
</tr>
<tr>
<td>QCPP3</td>
<td>Q.C. Hold</td>
<td>Vinyl</td>
<td>Yellow/White</td>
<td>Rolls per Case = 1</td>
</tr>
<tr>
<td>QCPP8</td>
<td>Q.C. Passed</td>
<td>Vinyl</td>
<td>Green/White</td>
<td>Rolls per Case = 1</td>
</tr>
</tbody>
</table>

Safety Knife

Ace Industrial offer the Moving Edge range of safety knives.

The Moving Edge is the world’s first safety knife with an enclosed moving action blade.

The blade moves automatically during use to ensure it will not snag or jam.

It will pierce packing tape and also cut through 2 and 3mm strap.

The moving edge safety knife is available in a choice of 4 colours.

fax: +44 (0) 1580 891350  tel: +44 (0) 1580 891300
Colour Coded Knives

Improve kitchen hygiene and help to prevent cross contamination with this comprehensive knife range with high quality stainless steel blades and dishwasher proof handles.

10” Cooks Knife:
- C886 Red Handle
- C850 Blue Handle
- C816 Yellow Handle
- C868 Green Handle
- C879 White handle

8½” Cooks Knife:
- C895 Red Handle
- C851 Blue Handle
- C803 Yellow Handle
- C861 Green Handle
- C842 White handle

6½” Cooks Knife:
- C887 Red Handle
- C815 Yellow Handle
- C864 Green Handle
- C871 White handle

6” Fillet Knife:
- C890 Red Handle
- C854 Blue Handle

10” Serrated Slicer:
- C897 Red Handle
- C810 Yellow Handle
- C883 White handle

8” Serrated Bread knife:
- C882 White handle

3” Paring Knife:
- C542 Red Handle
- C544 Blue Handle
- C543 Yellow Handle
- C545 Green Handle
- C546 White handle

3½” Paring Knife:
- C891 Red Handle
- C852 Blue Handle
- C866 Green Handle
- C840 Brown Handle
- C876 White handle

4” Vegetable knife:
- C860 Green Handle

10” Serrated Vegetable knife:
- C862 Green Handle
- C875 White Handle

4” Serrated Tomator knife:
- CF898 Green Handle

Victorinox Chefs Knife Set and Wallet

Finest Swiss 7 piece knife set containing 10” cooks knife

Code: F202

- Please note, this set is supplied with a Vogue Roll up Wallet and Vogue Steel 10” (not Victorinox)
- Set comprises 10” cooks knife, 6” fillet knife, 8” pallette knife, 5” boning knife, 10” steel, 3” parer and a peeler.
- Age Restricted Product 18 Years +
- Handle Colour Black
- Knife Origin Switzerland
- Knife Type Knife Set

www.aceindustrial.co.uk  email: qa@aceindustrial.co.uk
Colour Coded Chopping Boards

Low Density Colour Coded Chopping Boards

Tough, durable and made from high quality polyethylene, these quality colour coded chopping boards are non-absorbent, odourless and comply with all hygiene regulations. Size 17.75” x 12” (450 x 30) x ½ “ thick.

½ ” / 12mm Thickness Boards

<table>
<thead>
<tr>
<th>Ref</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J252</td>
<td>White (Bakery &amp; Dairy)</td>
</tr>
<tr>
<td>J253</td>
<td>Green (Salad &amp; Fruit)</td>
</tr>
<tr>
<td>J254</td>
<td>Yellow (Cooked Meat)</td>
</tr>
<tr>
<td>J255</td>
<td>Red (Raw Meat)</td>
</tr>
<tr>
<td>J256</td>
<td>Brown (Vegetable)</td>
</tr>
<tr>
<td>J257</td>
<td>Blue (Raw Fish)</td>
</tr>
</tbody>
</table>

High Density Colour Coded Chopping Boards

Tough, durable and made from high quality polyethylene, these quality colour coded chopping boards are non-absorbent, odourless, non-toxic and comply with all hygiene regulations.

<table>
<thead>
<tr>
<th>Size</th>
<th>Red</th>
<th>Yellow</th>
<th>White</th>
<th>Green</th>
<th>Blue</th>
<th>Brown</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.5” x 17.75” x ½ “</td>
<td>J011</td>
<td>J021</td>
<td>J017</td>
<td>J013</td>
<td>J009</td>
<td>J005</td>
</tr>
</tbody>
</table>

Anti-Bacterial High Density Chopping Boards

Safely and effectively inhibits the activity of specific bacterial organisms known to cause food poisoning. Produced using the latest developments in plastics technology to make excellent quality hardwearing boards, which increase food hygiene levels in the kitchen. Size 18” x 12 x ½ “ (460 x 305 x 13mm). Rack sold separately.

<table>
<thead>
<tr>
<th>Ref</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F155</td>
<td>Red</td>
</tr>
<tr>
<td>F156</td>
<td>Yellow</td>
</tr>
<tr>
<td>F157</td>
<td>White</td>
</tr>
<tr>
<td>F158</td>
<td>Green</td>
</tr>
<tr>
<td>F159</td>
<td>Blue</td>
</tr>
<tr>
<td>F160</td>
<td>Brown</td>
</tr>
</tbody>
</table>

Chopping Board Racks

Stainless steel chopping board stand with 6, 30mm slots to keep boards easily accessible.

<table>
<thead>
<tr>
<th>Ref</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J027</td>
<td>6 x 30mm Slot Rack</td>
</tr>
</tbody>
</table>
Antibacterial Wipes

**Mini Tubs of 70 ProbeWipes**
This mini tub is designed to fit into the user’s pocket and incorporates an easy to dispense flip-top lid. The mini tub contains 70 blue anti-bacterial ProbeWipes. Each ProbeWipe measures 70 x 130 mm and is supplied in cartons of ten tubs.

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>836-020</td>
<td>Carton x 10 Mini Tubs</td>
</tr>
</tbody>
</table>

**Tubs of 180 ProbeWipes**
Each tub contains 180 blue anti-bacterial ProbeWipes that measure 130 x 130 mm. The tubs are supplied in cartons of six tubs of 180 ProbeWipes. An optional wall bracket is available, enabling a single tub of wipes to be conveniently positioned.

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>836-050</td>
<td>Carton x 6 Tubs of ProbeWipes</td>
</tr>
<tr>
<td>832-305</td>
<td>S/Steel Wall Bracket for Single Tub</td>
</tr>
</tbody>
</table>

**Sanisafe Surface Bucket Wipes**
Sanisafe blue wipes are impregnated with a blend of bactericides, surfactants and alcohol and are effective against a wide range of organisms. Ideal for disinfection for surfaces, conveyor belts, shelving and food preparation areas. Tested and approved to European norm EN1276. Available in buckets of 1,000 wipes.

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIP005</td>
<td>Bucket of 1000 wipes.</td>
</tr>
</tbody>
</table>

**Sanisafe 3 Quatfree (Biocide-free) Surface Bucket Wipes**
Sanisafe blue wipes are impregnated with a blend of bactericides, surfactants and alcohol and are effective against a wide range of organisms. Ideal for disinfection for surfaces, conveyor belts, shelving and food preparation areas. Tested and approved to European norm EN1276. Available in buckets of 1,000 wipes.

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIP015</td>
<td>Bucket of 1000 wipes.</td>
</tr>
</tbody>
</table>
3M Microbiology

3M Clean-Trace Surface Protein Plus Test

Effective Hygiene Monitoring

Ideal for small businesses and caterers, the Clean-Trace Surface Protein Plus is a rapid hygiene test which detects whether a surface has been cleaned effectively.

- **Easy to use**  Tests can be performed with minimal training
- **Rapid**  Results available within minutes
- **Convenient**  No instrumentation is required
- **Simple**  Visual reading of colour change and interpretation of results

*If it’s green, it’s clean*

3M Clean-Trace Tests

Superior repeatability and excellent sensitivity helping to improve factory hygiene assessment

Effective environmental hygiene management helps reduce levels of contamination in finished products, leading to improved quality, fewer batch rejections and lower risk of product recall. The Clean-Trace systems offer rapid, simple and reliable solutions to monitor biological contamination on surfaces and in water in real time, helping you to protect your customers, your brands and your reputation.

3M Clean-Trace Surface Protein Plus Test

- Semi-quantitative protein test with swab-click-read simplicity
- Easily accesses hard-to-reach areas
- Results available in 10 minutes or less if surface contamination is high

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M Clean-Trace Surface Protein Plus</td>
<td>PRO100</td>
<td>100 / ca QA002</td>
</tr>
</tbody>
</table>

QC Instrument Cases

We have pleasure in offering you instrument cases for your contents, they are strong, lightweight, aluminium framed with 2 lockable closures ensuring that all your quality control equipment is kept secure and together. Within the case there are removable storage dividers and foam lined multi positional compartments.

Alternatively we can supply a range of custom made foam lined qc cases to carry your individual quality assurance equipment.

- **Please contact us for further details.**

<table>
<thead>
<tr>
<th>Product Code</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T139</td>
<td>Silver QC Instrument Case – 460 X 335 X 155 mm</td>
</tr>
<tr>
<td>T1391</td>
<td>Black QC Instrument Case – 460 X 335 X 155 mm</td>
</tr>
</tbody>
</table>

fax: +44 (0) 1580 891350  tel: +44 (0) 1580 891300
Order Picking Trolleys

- **2 Shelf Order Picking Trolley:**
  - Tubular steel trolley with integral spring loaded steps
  - 760 x 460 x 40mm deep powder coated steel trays
  - Non slip safety treads
  - 2 Shelves
  - 4 Wheels
  - Wheel diameter 125 mm
  - Tray heights 310mm & 970mm
  **Code: BC51/S**

- **3 Shelf Low Order Picking Trolley:**
  - Tubular steel trolley with integral spring loaded steps
  - 760 x 460 x 40mm deep powder coated steel trays
  - Non slip safety treads
  - Height to top step 750mm
  - Tray heights 310mm, 640mm, 970mm
  - 3 shelves
  - 4 Wheels
  - Wheel diameter 125 mm
  **Code: BC51/S**

- **3 Shelf High Order Picking Trolley**
  - Tubular steel trolley with integral spring loaded steps
  - 760 x 460 x 40mm deep powder coated steel trays
  - Non slip safety treads
  - Height to top step 750mm
  - Tray heights 310mm, 860mm, 1420mm
  - 3 Shelves
  - 4 wheels
  - Wheel diameter 125 mm
  **Code: BC53/S**
"We have it covered"
From a Data Logger to Personalised Protective Clothing.

Our sub-divided catalogues cover:
- Quality Assurance Instruments
- Thermometers
- Protective Clothing
- Catering Equipment

We welcome your enquiries
ABOUT ACE

Ace Industrial Supplies Ltd was established in 1983 and is recognised as a leading UK distributor, offering a comprehensive range of brand names. We supply many specialised products to the food sector and general industry, both in the UK and increasingly around the world.

Located in Kent, our purpose built office and distribution warehouse allows us to stock in excess of 24,000 items, many of which, can be delivered next day by our own vehicles or a courier service is used for any national deliveries.