A compact tabletop microscope invites you to the stereoscopic micro world

Features

1. Energy-saving design\(^1\) and compact size
2. No metal coating required to observe non-conductive samples
3. Easy to use
4. Quick change through desired magnifications
5. Stereoscopic observation with greater depth of focus\(^2\)

\(^1\) 80% less power consumption than the predecessor
\(^2\) in comparison with optical microscope

Compact size
Easy to use
Solid construction
Superior resolution and higher magnification than an optical microscope
Ideal for a variety of sample types

Reference example of PC installation. An associated PC to be procured locally.
No metal coatings required for observation of non-conductive sample types

No coating is required due to observation under variable pressure vacuum

Samples imaged by the TM-1000 require no special preparation such as metal coatings of non-conductive samples, giving the ability to observe a broad variety of samples quickly and easily.

Energy-saving design and compact size

Table-top size and ready for observation anytime

The TM-1000 is ready to image at anytime using a standard power outlet. Power is only needed during use, creating an energy-saving, eco-friendly system.

The compact and portable design allows it to fit on any standard laboratory bench or desk, requiring no special room or environment.

Energy-saving design without continuous power ON

The TM-1000 incorporates a user friendly, intuitive screen controlled by a mouse that any novice user can quickly learn. Designed for both educational and professional research labs, the Tabletop Microscope’s ease of use brings the power of high resolution microscopy to any facility.

Simply insert your sample into the chamber, pump down and click the start button; it’s that easy. The image is automatically focused and ready for you to explore the fascinating structures of the micro-world.

Charge-up reduction mode

With the integrated “Charge-up reduction mode”, even samples that are prone to charging can be observed at high magnification with little or no disturbances. This is just one of many features the TM-1000 uses to optimize the image quality with just a click of the mouse.
3 Easy to use

Auto Start function
By clicking the "Start" button, the TM-1000 will automatically saturate the filament, set the magnification to 100X, adjust the contrast and brightness and focus the image providing a sharp image on the viewing monitor.

Image rotation on the monitor
The integrated image rotation function allows the user to rotate the image 360 degrees for frame perfect orientation and image capture.

4 Quick change to required magnifications

Changing magnification is quick and easy
The magnification can quickly be changed between 20X to 10,000X via the GUI. There is no need to change the objective lens as required by optical microscopes.

Preset magnifications
Two magnification presets can be saved for quick and easy access to frequently used magnification conditions.
### Stereoscopic morphological observation with greater depth of focus

#### Stereoscopic image observation with high depth of focus

The TM-1000’s imaging system allows stereoscopic observation with a high depth of focus.

![Optical microscope image](image)

Sample: Diatom

**Elemental observation**

In addition to great depth of focus and surface topography, the TM-1000 provides elemental information observed as a function of atomic number. High atomic number material will appear bright as compared to low atomic number material which will appear darker, whereby providing compositional information.

![Cosmetic Foundation](image)

![Serpentine](image)

#### Data Entry/Measurement function

Texts and graphics can be superimposed on a captured image. As an example of operation, point-to-point measurement at any angle can be simply executed by dragging from the first point to the end point. Arrows, rectangles and ellipse can be entered to point out areas of interest.

![Text tool](image)

![Line drawing tool](image)

![Single arrow headed line drawing tool](image)

![Double arrow headed line drawing tool](image)

![Inner dimension drawing tool](image)

![Outer dimension drawing tool](image)

![Ellipse drawing tool](image)

![Rectangle drawing tool](image)

#### Image balance mode

Although the TM-1000 employs an automatic brightness and contrast adjustment, they can be additionally manipulated by an individual slide bar on a captured image to enhance images and bring out fine structures when necessary.
Application gallery

Printed Circuit Board

Semiconductor Device

Watch Mechanism

Stent

Solder

Varistor

Carbon Fiber

Foamed Plastic

Ceramic

Ceramic Electronic Component

Polystyrene Compound

Polyurethane Foam
Main unit specifications

### Specifications

<table>
<thead>
<tr>
<th>Items</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Magnification</strong></td>
<td>20<del>10,000X (digital zoom: 2X</del>9X)</td>
</tr>
<tr>
<td><strong>Accelerating voltage</strong></td>
<td>15kV</td>
</tr>
<tr>
<td><strong>Observation mode</strong></td>
<td>Standard mode</td>
</tr>
<tr>
<td></td>
<td>Charge-up reduction mode</td>
</tr>
<tr>
<td><strong>Sample stage traverse</strong></td>
<td>X:15mm, Y:18mm</td>
</tr>
<tr>
<td><strong>Maximum sample size</strong></td>
<td>70mm in diameter</td>
</tr>
<tr>
<td><strong>Maximum sample height</strong></td>
<td>20mm</td>
</tr>
<tr>
<td><strong>Electron gun</strong></td>
<td>Pre-centered cartridge filament</td>
</tr>
<tr>
<td><strong>Signal detection system</strong></td>
<td>High-sensitive semiconductor BSE detector</td>
</tr>
<tr>
<td><strong>Auto image adjustment function</strong></td>
<td>Auto start, auto focus, auto brightness/contrast</td>
</tr>
<tr>
<td><strong>Frame memory</strong></td>
<td>640 × 480 pixels, 1,280 × 960 pixels</td>
</tr>
<tr>
<td><strong>Image data memory</strong></td>
<td>HDD of PC and other removal media</td>
</tr>
<tr>
<td><strong>Image format</strong></td>
<td>BMP, TIFF, JPEG</td>
</tr>
<tr>
<td><strong>Evacuation system</strong></td>
<td>Turbomolecular pump: 30L/s × 1 unit, Diaphragm pump: 1m³/h × 1 unit</td>
</tr>
<tr>
<td><strong>Safety device</strong></td>
<td>Over-current protection function</td>
</tr>
</tbody>
</table>

### Dimensions and weight

<table>
<thead>
<tr>
<th>Items</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main unit</strong></td>
<td>338 × 564 × 513mm, 58.5kg</td>
</tr>
<tr>
<td><strong>Control unit</strong></td>
<td>140 × 564 × 513mm, 23.0kg</td>
</tr>
<tr>
<td><strong>Diaphragm pump</strong></td>
<td>165 × 236 × 217mm, 4.5kg</td>
</tr>
</tbody>
</table>

### Installation condition

<table>
<thead>
<tr>
<th>Items</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Room temperature</strong></td>
<td>15~30°C</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>55%RH or less</td>
</tr>
<tr>
<td><strong>Power source</strong></td>
<td>Single-phase AC100, 110, 115, 200, 220 or 240V (±10%), 500VA</td>
</tr>
<tr>
<td><strong>Grounding</strong></td>
<td>100 ohm or less</td>
</tr>
</tbody>
</table>

### Required PC specifications

<table>
<thead>
<tr>
<th>Items</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OS</strong></td>
<td>Windows XP Home Edition (SP2)</td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td>Intel Celeron M340 or better</td>
</tr>
<tr>
<td><strong>Memory size</strong></td>
<td>512MB or larger</td>
</tr>
<tr>
<td><strong>Display monitor</strong></td>
<td>15.4 type, WXGA 1,280 × 800 pixels</td>
</tr>
<tr>
<td><strong>Interface connector</strong></td>
<td>USB 2.0</td>
</tr>
</tbody>
</table>

### Suggested installation layout

*An associated PC is to be procured locally.
* Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.
* Intel and Celeron are registered trademarks of Intel Corp. or its affiliated companies in the United States and/or other countries.
* Specifications of a PC are subject to change.

* Recommended table size: 1,200 × 800mm, withstand load: 100kg or more
* Periodical maintenance is required for this apparatus
* Limited to indoor operation.
NOTICE: For proper operation, follow the instruction manual when using the instrument.

Specifications in this catalog are subject to change with or without notice, as Hitachi High-Technologies Corporation continues to develop the latest technologies and products for our customers.

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