Digital Microscope ShuttlePix P-400Rv

A new era of microscopy: “Shuttle style.”
ShuttlePix, a revolutionary portable digital microscope

The ShuttlePix digital microscope is an all-new, one-of-a-kind digital microscope that can be used as a docked device, for high magnification and various measurements, or as a portable digital camera, for capturing any sample sizes.

**Zoom Camera Head**
- Cordless setup enabling image capture in the lab or in the field (Battery-powered with built-in illumination and SD card slot)
- Digital camera-like ease of use

**Motorized Stand**
- Extended Depth-of-Focus (EDF) image capture
- Intuitive stylus and icon-driven operation using dedicated Touch Panel Monitor (advanced image capturing, simple measurement, etc.)
- Dedicated PC software expands operation and possibilities (image processing, 3D/color height-maps, etc.)

**Simple Stand**
- All-in-one design not needing a power source (simple reflection stand)
- Provides diascopic illumination imaging capabilities (simple diascopic LED stand)
- Quick view feature ensures fast image uploads to your PC
- Easy navigation with the Remote Control
Experience the high performance by Nikon’s high quality optics and advanced technologies

ShuttlePix STYLE

- **Compact body with no lens changing**
- **20x optical zoom**

When used on the motorized focusing stand and touch panel monitor, this magnification increases to between 20x and 400x. ShuttlePix provides ample magnification range that ensures you never have to switch or purchase different lenses for different magnifications. Magnification information is also linked to ShuttlePix’s scale and simple measurement functions.

- **Automatic sample-optimized camera settings**
- **Scene mode**

Ensure optimal settings for image capture through five types of scene mode: wafer/IC chip, metal, printed circuit board, flat panel display, and high-reflection sample.

- **High NA / High definition / Wide field of view**
- **Maximum optical performance**

Nikon's proprietary optics achieve precise observation and imaging with NA up to 0.2 (at 400x magnification) and 20mm-diagonal wide field of view (at 20x magnification). Changing of Resolution Preferred Mode and Depth-of-Focus Preferred Mode is also possible.

- **Newly-developed design for bright, even illumination**
- **4-segment LED ring light**

ShuttlePix's new illumination technology achieves consistent brightness at all levels of magnification. Capture shaded images as well, through split-half illumination switchable among top, bottom, left, and right.

- **From shooting large samples to use in the field**
- **Capable of shooting any sample size**

The Handy can observe samples of all sizes, such as inspections of art displays to automotive. Use of the stand allows for abrasion observation of electronic and aircraft parts. With the built-in battery, cable-less operation is possible.
High-resolution, all-focused image capturing is possible without PC

with MOTORIZED STAND

Image capture and measurement with intuitive stylus and icon operation

Motorized Focusing Stand plus Touch Panel Monitor

ShuttlePix is equipped with a vertical-movement Motorized Focusing Stand and a 17”, 1280×1024 color LCD Touch Panel Monitor. Through the intuitive operation of touching icons or using the screen stylus, precise image capturing and simple measurement are now possible.

Easy capturing of all-focused images

One-touch EDF

EDF images can be captured simply by operating the button located on the stand.

Perform measurements without a PC

Simple measurements

The touch panel monitor makes it possible to perform a truly wide range of simple measurements.

Measurement function
Distance between 2 points, point-to-line distance, distance between center points of 2 circles, angle, circle, area, pitch

Annotation
Count marking, text input, pen drawing, straight line, scale indication, cross-hairs, grid, XY scale, XY measurement

Stage options for every application

Stage lineup

Image capturing for large samples (up to 75mm×50mm×148mm) is possible with the Zoom Camera Head and Motorized Focusing Stand. Select from three dedicated Stages matched to the observation sample.

Quick 3D view

Captured images are simultaneously transmitted to the Shuttle Pix Editor, where 3D images can be viewed.
Capture digital microscopy images at any location

**ZOOM CAMERA HEAD**

- **Image capture with the ease of a digital camera**
- **Zoom Camera Head**
  Image capturing is simple, with the use of the capture switch (trigger). The lightweight and ergonomic camera head allows for easy handling for all users. Voice recording is now available as a new function.

- **Achieving optimal image capture**
  **Best shot selection mode**
  When capturing images, up to 10 continuous frames are recorded and only the optimal shot is kept. This guarantees capturing sharp images even at high magnifications.

- **Focus assist capture function**
  (scheduled release in August 2013)
  During Preview Mode, images will be automatically captured at the optimum focus point.

- **Scale display**
  (cross hairs, H, grid)
  The scale display feature allows for confirmation of a sample or defect’s size.

- **Focus assist capture function**
  During Preview Mode, images will be automatically captured at the optimum focus point.

High magnification image capturing and simple measurements anywhere anytime

with SIMPLE STAND

- **Stands tailored to the purpose of use**
  **Simple reflection/ Diascopic LED stand**
  An all-in-one compact reflector stand with a battery operated Zoom Camera Head and a Diascopic LED Stand capable of diascopic observation are both available.

- **Easy operations at hand**
  **Remote Controller**
  Image capturing, zooming, brightness adjustment, and illumination angles, can all be controlled. Stable operation is possible even when using Zoom Camera Head.

- **Automatically upload your images to PC**
  **Quick view**
  The free, dedicated software ShuttlePix Editor (see p.6) can automatically upload images taken with the ShuttlePix to your PC. This enables users to immediately scroll through thumbnail images and perform simple measurements on selected images right after image capturing.
Wide range of features using the dedicated software

with PC / SOFTWARE

Free download and registration of software
ShuttlePix Editor

Conveniently outputs simple measurements and 3D EDF images or cross-section displays directly into Excel via dedicated ShuttlePix Editor* software. Software download from the Nikon website and user registration are free.

*Compatible with Windows XP and Windows 7 (Quick view feature only compatible with Windows® 7)

3D display of EDF images and height data
3D display

Use a 3D bird's-eye view to display EDF images and height data taken with ShuttlePix. Rotation, zoom in/out, scale display, color-based heightmaps, and other image display operations are available.

Display and simple measurement of height data cross-section
Cross-section display and simple measurement

Display cross sections at specified positions based on height data embedded in EDF images. Perform simple measurements of the cross section including height, angle, and width, with measurement data displayable and recordable in tabular form.

Interface

Speed capture makes it easy to measure right after shooting an image

Zoom camera head set: Use the zoom head camera's SD card to upload saved images to your PC.
Motorized focusing stand set: In addition to SD card, use the USB memory connected to the stand or USB cable to upload saved images to your PC.
Plain stand set: In addition to the SD card and USB memory, use the Quick view feature to upload images to your PC automatically.

Various measuring performance
Simple measurement

Add comments and markers to key measurements. Measurement results can be output in tabular form.

Measurement Data

<table>
<thead>
<tr>
<th>ID</th>
<th>Symbol</th>
<th>Length</th>
<th>Angle</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Angle 1</td>
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<td>0.0299</td>
</tr>
<tr>
<td>2</td>
<td>Horizontal</td>
<td>0.01239</td>
<td>0.0299</td>
</tr>
<tr>
<td>3</td>
<td>Vertical 1</td>
<td>0.01239</td>
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</tr>
<tr>
<td>4</td>
<td>Vertical 2</td>
<td>0.01239</td>
<td>0.0299</td>
</tr>
</tbody>
</table>

*Download of ShuttlePix Editor is limited to registered users of the product.
**System Diagram**

**Dimensions**

**Zoom Camera Head**
- Dimensions: 228.3 x 96.4 x 144.8

**Motorized Focusing Stand + Touch Panel Monitor**
- Dimensions: 387.8 x 280 x 404

**Plain Stand C**
- Dimensions: 180 x 160 x 265

**LED Stand**
- Dimensions: 330.5 x 130 x 265

**Remote Controller**
- Dimensions: 134.5 x 110.0 x 114.6

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*Please select according to the region*

*One Stage required when using Motorized Focusing Stand*
Specifications

Zoom Camera Head (P-400Rv)

**Effective pixels**
- CCO: 1/1.8" color CCO, total pixels approx. 2.1 megapixels
- Frame rate: 28fps (selectable 28fps/15fps/3fps within 15fps-120fps) when connected to Motorized Focusing Stand

**Optics**
- Magnification: 3.37 x 25.6mm (image magnification on dedicated 17" monitor), optical zoom ratio = 20:1
- Working distance: 29mm
- FOV: Maximum diagonal field of view 20mm (16mm x 14mm)

**Illumination**
- Light source: White LED
- Illumination method: Episcopic illumination from around the objective lens
- Illumination area: ø22mm, 4-segment ring LED (top/bottom/left/right)

**Recording**
- Storage media: SD memory card, SDHC memory card (max. 16GB)
- (selectable USB memory or FTP when connected to Motorized Focusing Stand)
- **Image file format**: TIFF (when compounded), JPEG (compressed level 3)
- **Audio file format**: WAV (when compounded)

**Exposure**
- **Exposure central**: Program AE/shutter preferred/manual exposure
- **Exposure compensation**: -2EV to +2EV in 1/3EV steps, camera gain and shutter speed can be set (manual exposure)

**Aperture**
- F/3.5, F/5.6, F/7.1, F/8.3, F/10.0, F/11.2, F/12.8, F/14.0, F/15.8, F/17.0

**Motorized Focusing Stand (P-MFSC)**
- **Stroke**: 2 axis stroke: 150mm (upward 148mm, downward 2mm), upper and lower limit adjustable
- **Stage**: 3×4 snap/folding stage height stage

**Image Edit**
- **Resolution**: SXGA (1280×1024)
- **Display size**: 17.0" (display area 333.9mm×270.3mm)

**Stage**
- **Size of stage glass**: Approx. ø90mm
- **Stroke**: 3×2 Stage/Sliding Stage/Tilting Stage
- **Z axis stroke**: 100mm (upward 98mm, downward 2mm)

**Touch Panel Monitor (P-TPM)**
- **Display size**: 17.0" (display area 333.9mm×270.3mm)
- **Resolution**: SXGA (1280×1024)
- **Connector**: USB host: USB 2.0 A connector×3, USB device: USB 2.0 B connector×1

**Plain Stand C (P-PSC)**
- **Dimensions**: Approx. 180(W)×265(D)×325.5(H)mm
- **Stroke**: 2 axis stroke: 105mm (upward 96mm, downward 9mm)
- **Size of stage glass**: ø90mm
- **Weight**: Approx. 2.9kg

**LED Stand (P-LEDs)**
- **Dimensions**: Approx. 200(W)×325(D)×450(H)mm
- **Stroke**: 2 axis stroke: 100mm (upward 96mm, downward 9mm)
- **Size of stage glass**: ø90mm
- **Weight**: Approx. 4.8kg

**Image compensation**
- Image quality adjustment: Saturation/hue/contrast/sharpness/color effect
- **White balance**
- Manual setting (adjustable red/blue gain can be adjusted)
- **TFT Monitor**
- 17" TFT color liquid crystal display, tilt/tilt automatically when connected to Motorized Focusing Stand
- **Image playback**
- Full-frame view, thumbnail view (9 frames), zoom view (scrollable)
- **Image deletion**
- Quick delete, select image delmers, folder delete, card format

**Language**
- Japanese/English

**Power supply**
- Li-Ion Rechargeable Battery/AC adapter/Motorized Focusing Stand (access connected to Motorized Focusing Stand)
- AC adapter: AC100-240V 1/2-PIN (optional)
- **Auto power save**: Off/1 minute/10 minute

**Power consumption**
- 24VAC
- **Battery operating time**
- Approx. 90 minutes (battery life at maximum power consumption with maximum LED brightness)

**Charging time**
- Approx. 4 hours (when no charge remains)

**Tripped socket hole**
- 1/4-inch (ISO 1222)

**Dimensions**
- Approx. 96(W)×238(D)×142(H)mm
- **Weight**: Approx. 7kg (excluding battery and SD card)

**USB connection**
- **USB host**: USB 2.0 A connector×2 (for connection to USB mouse/image memory device)
- **USB device**: USB 2.0 B connector×1 (for connection to PC)

**Power supply**
- AC100-240V 50/60Hz

**Power consumption**
- 140VA

**Dimensions**
- Approx. 280(W)×490(D)×450(H)mm
- **Weight**: Approx. 9kg

**USB connection**
- **USB host**: USB 2.0 A connector×3
- **USB device**: USB 2.0 B connector×1

**Network**
- **Power supply**: AC adapter (optional)
- **Battery**: AC adapter

**Direct Printing**
- **Supported printer**: 2nd paper feed printer

See the URL above for product details and download information regarding ShuttlePix Editor dedicated software.