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DeltaPix HDMI4KDPXII Stand Alone Mode Digital Microscope Camera User Manual

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General

DeltaPix HDMI-DPX series cameras come with an operating system, which can be directly connected to the monitor through an HDMI cable without going through the PC system, which saves space and is convenient and fast. This manual applies only to operations when an HDMI-DPX series camera is directly connected to the monitor via the HDMI port.
Different models of cameras have slightly different functions, please refer to the actual camera function interface.
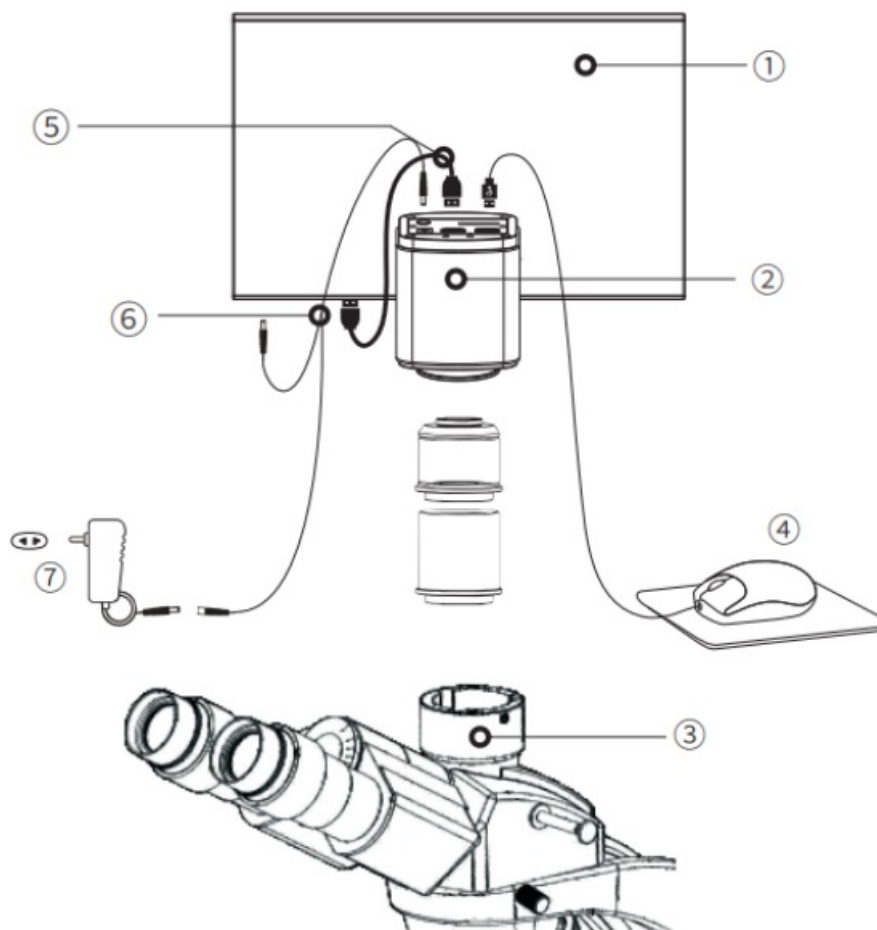
Getting Started

Installation

Figure 2-1

Connect the camera to the monitor through the HDMI cable, then the image can be displayed directly on the monitor; connect the mouse to the USB port of the camera and use the mouse to control the camera directly. The installation diagram is as follows:

Basic Operations

After the connection is completed, press ON/OFF key until the blue light is on and the moving cursor appears on the screen to indicate that the camera's HDMI system has been started. The function of HDMI is mainly composed of 3 parts, namely setting, display and measurement.
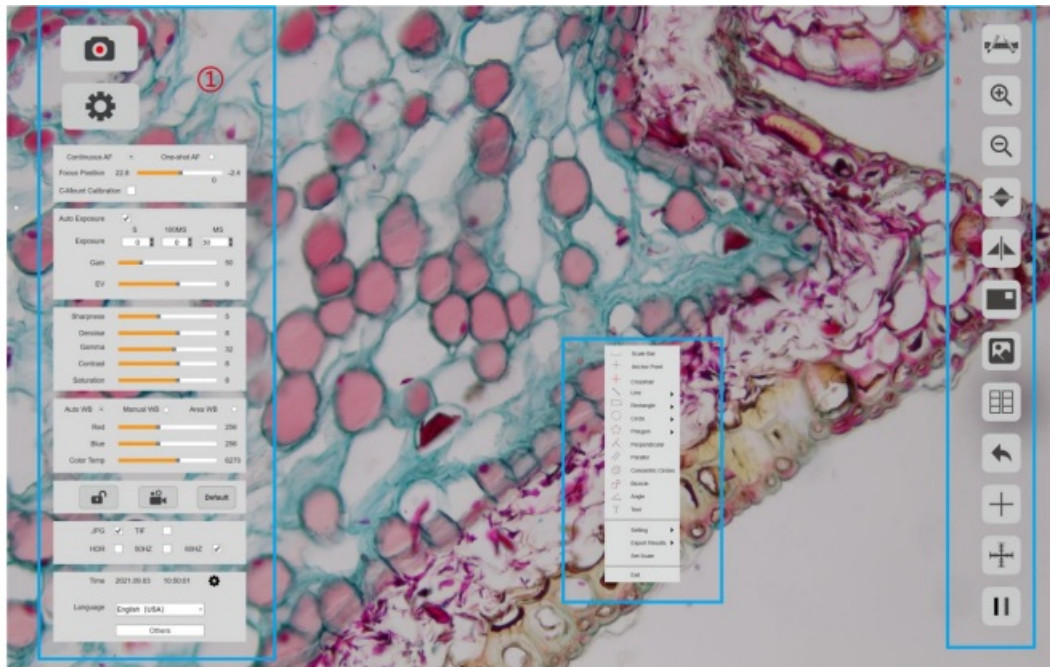
Figure 2-2

1. When the cursor is moved to the left of the screen, "Capture" and "Setting" icons will appear. Click "Setting" to get the parameter setting menu.
2. Right-click anywhere in the preview window to pop up the measurement menu.
3. When the cursor is moved to the right of the screen, the shortcut button appears.

Software

Settings

The setting menu is on the left side of the preview, including Exposure, White Balance, Image Adjust, File Format, Language and so on.

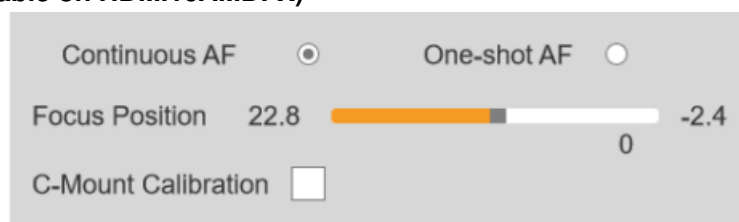### Auto Focus(Only available on HDMI16AMDPX)

Figure 3-1

When the optical focusing mechanism is not changed, the focusing operation is performed by moving the focusing frame.

- **Continuous AF:** Move the yellow frame in the preview (green when selected) to the area that needs to be focused, and the camera will automatically focus. When the sample or the camera moves and the distance between the sample and the camera changes, the camera will automatically correct the focus distance. To ensure focus.
- **One-shot AF:** Move the yellow frame in the preview(green when selected) to the area that needs to be focused, the camera will perform a focus operation. Once the focus is completed, the focal length of the camera will not change, even if the distance between the sample and the camera changes.

- **Focus Position:** The focus position can be adjusted manually, and the focal length of the camera will change.
- **C-Mount Calibration:** The camera automatically moves to the C-mount focus position.

Exposure

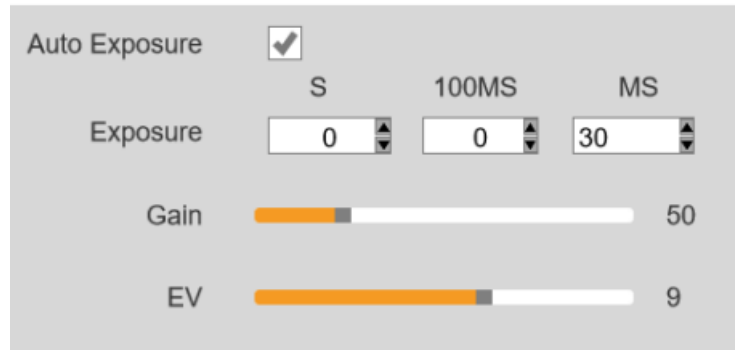Used to adjust the exposure time and gain parameters of the camera to get the best preview.

Figure 3-2

- **Auto Exposure:** Check [Auto Exposure] to automatically adjust the exposure time according to the environment brightness to obtain images with suitable brightness.
- **Exposure Time:** Users can manually adjust the exposure time according to actual needs, and the manual exposure time range is 0ms~1s. Different cameras have different exposure time ranges.
- **Gain:** Users can manually adjust the gain according to actual needs. The gain value can increase the brightness of the image, which is suitable for darker environments. But it also increases noise.
- **EV:** Users can manually adjust the value to change the target brightness for [Auto Exposure]. This setting only takes effect in [Auto Exposure] mode.

Image Adjust

Conduct real-time dynamic adjustment of preview by changing parameter to achieve ideal effect.
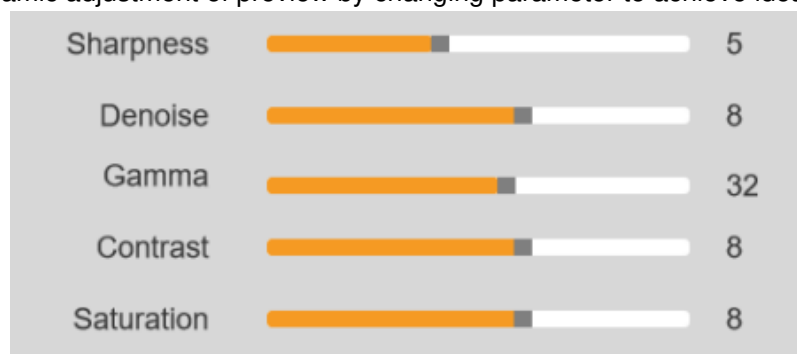

Figure 3-3

- **Sharpness:** To improve clarity of image edges; The range is 0~15, the default is 5.
- **Denoise:** Take the average adjacent frames of images, automatically filter out the non-overlapping information, so as to obtain a purer and delicate image. The number of frames can be customized. The range is 0~15, the default is 8.
- **Gamma:** Adjust the median level. The range is 0~63, the default is 32.
- **Contrast:** The ratio between the darkest areas and brightest areas of the image, the range is 0~15, the default

is 8.

- **Saturation:** The purity of the color, the higher value of the saturation, the brighter the color is. The range is 0~15, the default is 8.

White Balance

Users can adjust the parameters of white balance according to the actual light source to obtain better image effects which closely meet the needs.
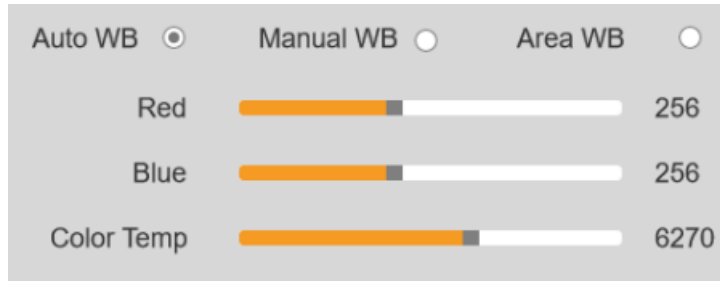

Figure 3-4

- **Auto WB:** By adjusting the gain value of red and blue, the camera is able to reflect the true image color under various illuminating conditions. The default setting of the white balance of the camera is Auto White Balance. User can switch to [Manual WB] under the environment with stable illuminating conditions.
- **Manual WB:** Manually adjust the gain value of the red and blue, so that the camera can restore the true image color under various lighting conditions.
- **Area WB:** When the [Area WB] is selected, the area white balance frame is pop-up. In an environment with stable lighting conditions, the user can move the regional white balance frame to any white area of the screen, and the size of the white balance frame can be adjusted. After checking [Manual WB], the gain value of the current white balance is locked.
- **Red and Blue(Gain):** Manually adjust the gain values of the red and blue channels for suitable white balance effect, adjusting range is 0~1024.
- **Color Temp:** Manually adjust the color temperature according to the actual environment to make the calibration white balance more accurate, the range is 1800K~10000K.

Video

This function block is mainly used for video recording and parameter settings.
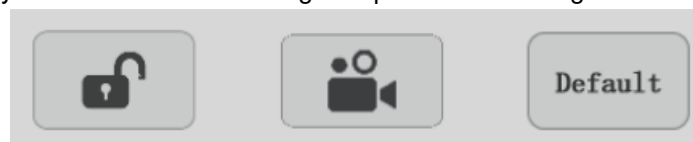

Figure 3-5

- **Lock:** Click [Lock] icon to lock the image parameters, only allow photo and video recording, and do not allow to adjust the image parameters.
- **Video:** Click [Video] icon to save the image data in video format to play back the dynamic change process of the observed sample. Click the button again to close the video capture.
- **Default:** Click the [Default] icon to restore the parameters of the setting module to the factory default parameters.

File Format and Light

This function block is used for setting the format of the image and the related settings of the light source

Figure 3-6

- **JPG:** A lossy compressed image format, the image size is small, but the quality of the original image data is bad.
- **TIF:** Lossless image format, which can save all data transmitted by the camera without loss, suitable for storage and conversion of images that require high image quality.
- **HDR:** Provides more dynamic range and image detail for better image quality.
- **Light Source Frequency:** The user can select the light source frequency according to the actual application scene, so that the camera preview will be normal, and there will be no picture stroboscopic phenomenon. The default is DC.

Time

Figure 3-7

- It display the camera system time, users can modify the system time.

Language

Figure 3-8

- HDMI system supports multiple languages, including Chinese, English, Japanese, Korean, Spanish, German, French, Italian. The user can switch the language according to needs.

Others

Users could check the camera basic parameters and version information on [Others], and [Others] provides parameter export and import.
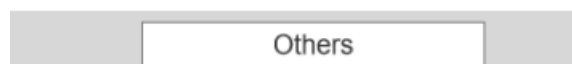

Figure 3-9

- **Parameter Setting:** Copy the parameters to other camera, so that the user's experimental conditions are as consistent as possible.
- **Export:** Export the parameters file to the external storage, such as a USB flash drive or SD card.
- **Import:** Import the parameters file from the external storage, such as a USB flash drive or SD card.
- **Network Settings:** Display and set network parameters.
- **Version:** Display camera firmware version.

- **Restore factory settings:** Click the button to restore the parameters of the camera to the factory default parameters. (supported by some models)

Parameters Setting	Import	Export

Network Settings	○ Ethernet
	○ Unicast
	☐ DHCP

IP Address	192 . 168 . 1 . 131
Subnet	255 . 255 . 255 . 0
Default Gateway	192 . 168 . 1 . 1
DHS Server	255 . 168 . 1 . 1
MAC	8e:7f:58:11:22:2f
Version	VS.1.1.6

Figure 3-10

Note: Only cameras with Ethernet ports can view IP and MAC address information;

Display

- The setting menu is on the right side of the preview, including calibration, zoom in and zoom out, image flip, image review, contrast, cross line, grid line, preview freeze and other functions.

Calibration

Converts pixel to meaningful units of measurement.

Operating Procedures

1. Use calibration slide on microscope, adjust microscope to get the clearest view;

2. Move cursor to right side of screen to pop-up menu, and click ;
3. Draw a line on preview screen;

Figure 3-11

4. Set [Length], [Unit],[Precision],and [Magnification] according to real situation.
5. Click [Start Measurement] to complete calibration;

Note

1. If switched scene or changed magnification, please create another calibration;
2. While drawing line, please select a longer scale for more accurate results. For example, 10 scale lengths have higher accuracy than 1 scale length.

Zoom In

- Zoom in on the preview, the maximum can be 4X. The zoom-in effect can be saved by taking a photo.

Zoom Out

- Zoom out the zoon-in preview, the minimum can be 1X, The zoom-out effect can be saved by taking a photo.

Vertical Flip

- Flip the preview screen vertically, and the effect can be saved by taking a photo.

Horizontal Flip

- Flip the preview screen horizontally, and the effect can be saved by taking a photo.

Mask

- Set the area of interest, use the mouse to select a window area on the preview. You cannot take pictures while

masking, click the right mouse button to exit the masking state.

![Image icon] **Image**

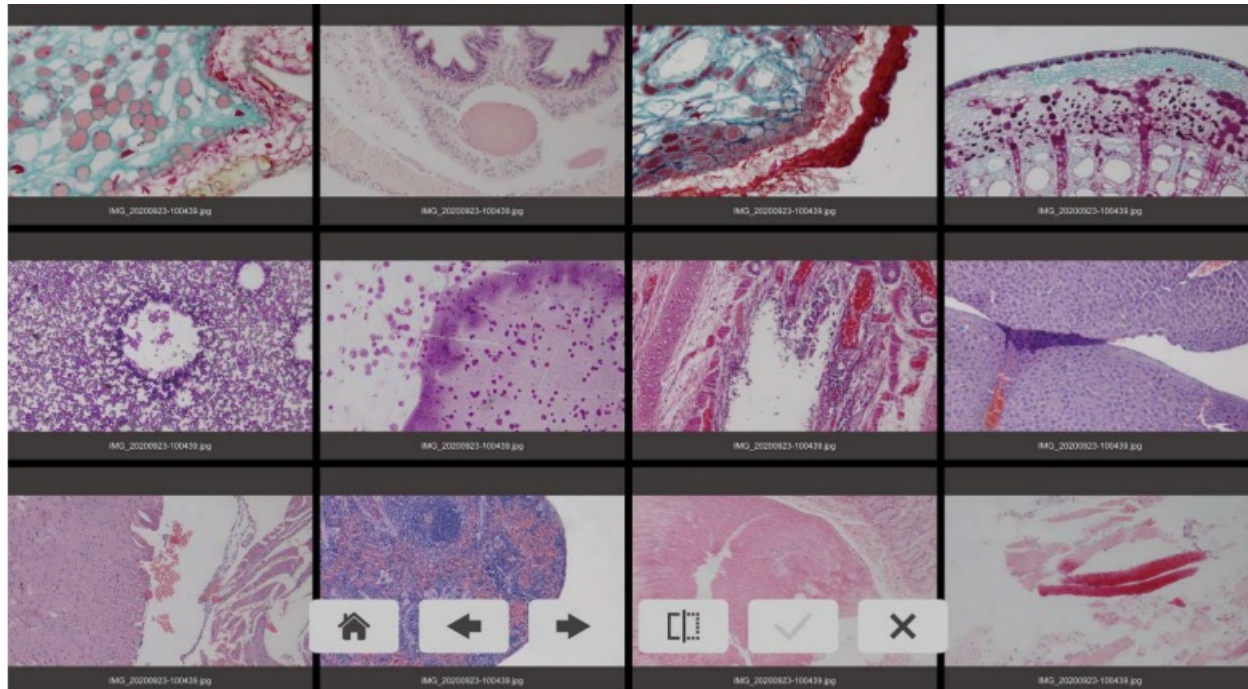- Displays thumbnails of all captured images and recorded images.

Figure 3-12

- **Home:** Back to the thumbnail screen.
- **Previous:** Return to the previous page to display thumbnails of the captured images and videos.
- **Next:** Go to the next page to display thumbnails of the captured images and videos
- **Compare:** Select two images and click the Compare button. The comparison image can be captured, saved and measured.
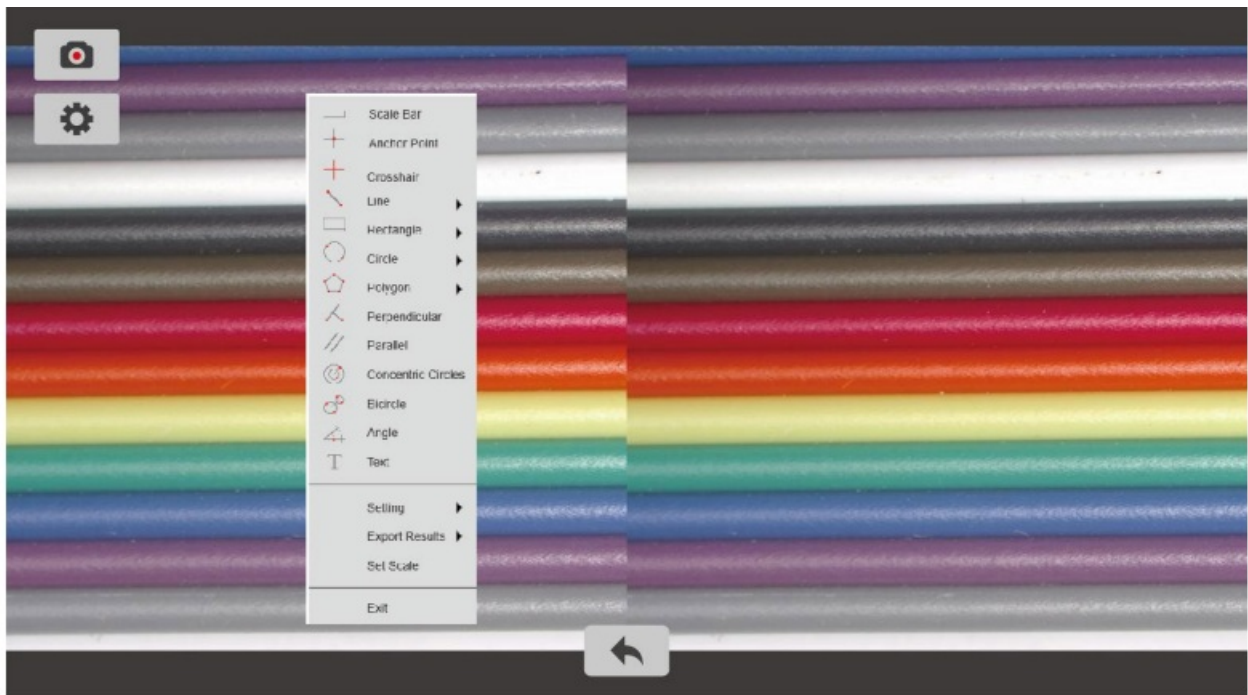
Figure 3-13

- **Select All:** Select all images on the current page.
- **Delete:** delete the selected image.

Compare

- Compare the live preview with the captured image. Users can measure the preview, and at the same time, the comparison screen can be captured and saved.

Cross Line

- Add cross lines on preview, the cross lines can be saved by taking a photo.
- **Rows:** Set the number of rows on the image, default 0.
- **Columns:** Set the number of columns on the image, default 0.

Operating Procedures

1. Click to pop up the setting screen;
2. Set the rows and columns, and set the color for cross lines, click OK to complete the settings;
3. Drag the line to adjust the position, when the position is confirmed, click the right mouse button to exit the line position editing mode;

Ruler

- Add ruler on preview, the ruler can be saved by taking a photo.

Freeze

- Click the button to freeze the current preview;
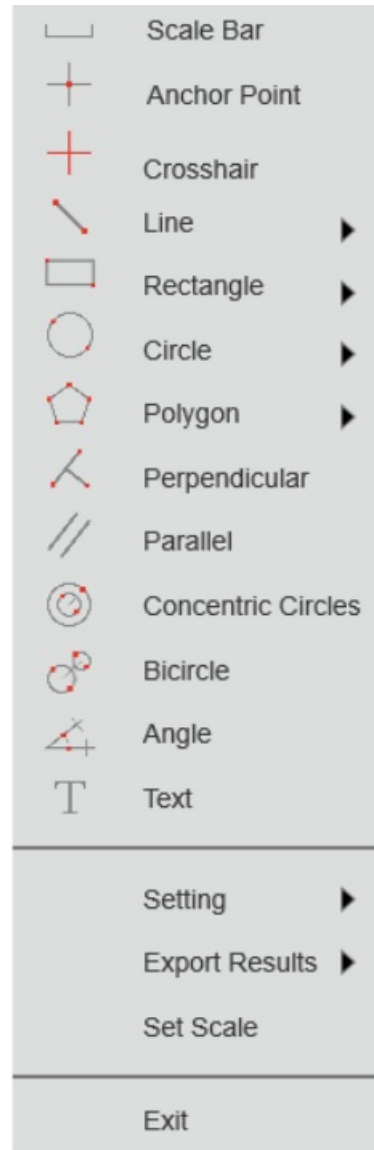
Measurement

Figure 3-14

- On stand-alone mode, users can execute the measurement in real time, and the measurement results can be saved as images.
- **Scale Bar:** On/off the scale bar on the picture.
- **Anchor Point:** Get the coordinates of the selected points.
- **Crosshair:** Take the mouse cursor as the center point, and extend the cross line of the vertical line and the horizontal line.
- **Line:** Arbitrary, horizontal and vertical line measurement.
- **Rectangle:** Measure rectangle perimeter and area, selectable to have the data of height, width, perimeter or area.
- **Circle:** Selectable to have the data of radius, perimeter or area.

1. **Center Point:** Use center point and point on the circle;
2. **Two Point:** Draw a circle according to the diameter;
3. **Three Point:** Use 3 points on the circle to draw a circle;

- **Polygon:** Measure polygon perimeter and area. Selectable to have the data of perimeter or area.
- **Perpendicular:** Measure the perpendicular length.
- **Concentric Circles:** Get the diameters of the two concentric circles.
- **Bicircle:** Get the distance between two circles's center points.
- **Angle:** Measure the angle.
- **Text:** Add text notes on images.
- **Settings:** Allows users to adjust measurement properties according to actual needs.
  1. **Line Width:** Adjusts the width of line currently applied to the image.
  2. **Line Color:** Adjusts the color of line currently applied to the image.
  3. **Font Size:** Adjusts the size of measurement font currently applied to the image.
  4. **Font Color:** Adjusts the color of measurement font currently applied to the image.
  5. **Magnifier: When** the magnifier is switched on, the cursor located area will be zoomed in and placed at the corner to help accurately locate the measurement point.
- **Export Results:** Select to export the measurement results to an excel or text file. The exported results will be saved in the SD card\MEASURE folder.
- **Set scale:** Switch the scale according to real situation.
- **Exit:** Exit the measurement.

Note: HD Lite cameras do not support measurement functions.

Customer Services

- Visit the official website of DeltaPix which is **www.delatpix.dk** and click on the [Support] bar to get answers to frequently asked questions.

Documents / Resources

![DeltaPix logo] **HDMI4KDPXII, HDMI16AMDPX and HDMI16MDPX User manual for Stand-Alone Mode**	**DeltaPix HDMI4KDPXII Stand Alone Mode Digital Microscope Camera** [pdf] User Manual HDMI16AMDPX, HDMI16MDPX, HDMI4KDPXII Stand Alone Mode Digital Microscope Camera, HDMI4KDPXII, Stand Alone Mode Digital Microscope Camera, Mode Digital Microscope Camera, Digital Microscope Camera, Microscope Camera, Camera

References

- ◢ **Digital microscopes and Microscope cameras - DeltaPix - DeltaPix**