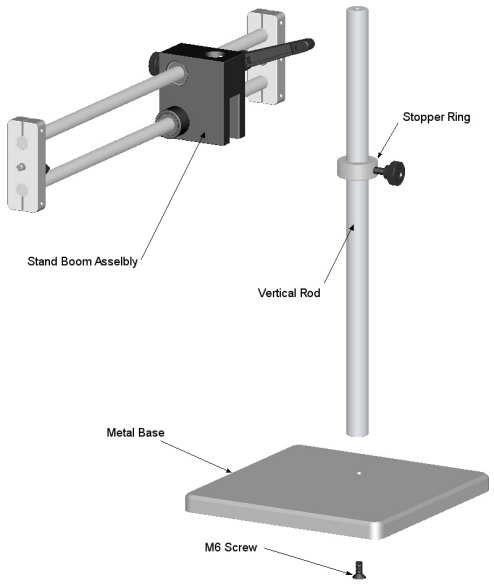
Installation instructions for W10x-HD camera

1. Assemble the Boom Stand according to the bellow picture.



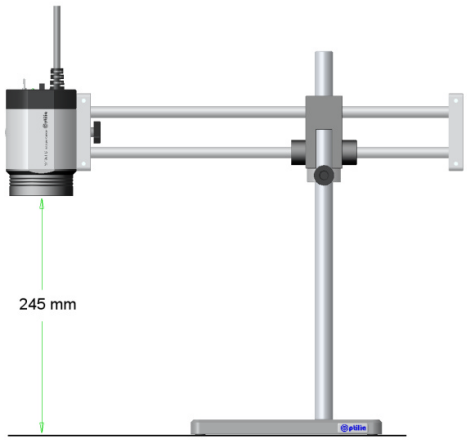
2. Put the stand on a flat and stable working bench and mount the W10x-HD camera onto the horizontal Boom.

3. Adjust height of the Boom for 245mm Working distance measured from front edge of the camera. W10x-HD camera with standard optics has a focusing interval of approximately 190-250mm. Auto focus will not function properly outside this range.

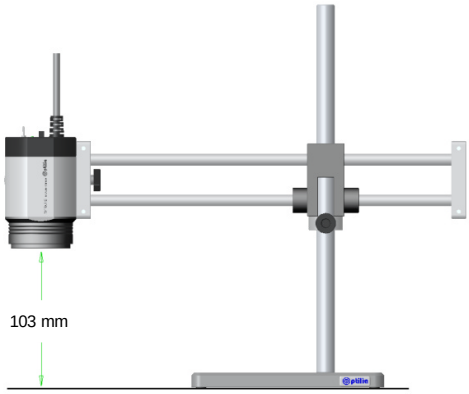
4. Working distance of the camera needs to be decreased according to the bellow if close-up lenses are attached:

No.	Lens	Working distance range
1	Standard lens (no additional Close-up)	~ 245-190 mm
2	+5 Close-up lens (f=200mm)	~ 103 to 90 mm
3	+10 Close-up lens (f=100mm)	~ 61 to 54 mm

Note: Working distances are measured from front edge of W10x-HD without UV-filter.



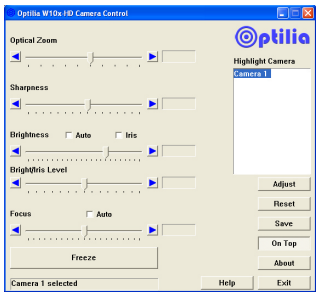
Standard Working Distance without extra lenses



Working Distance with +5 Close-up lens

5. Connect the W10x-HD camera to Y/Pb/Pr Component Video inputs of a FULL HD monitor or TV. Turn on W10x-HD and select Component Source of your TV or LCD. Laser pointer can be turned on/off via a switch on the back side of the Camera.

6. Connect RS232 cable of W10x-HD to COM port of PC, Laptop or external Control Unit (optional accessory). Use the included USB-COM converter device if your computer only provides Serial COM ports. Connect the camera to Power Supply (MiniDin connector). In case of external Control Unit, please refer to its instructions manual for more information.



Camera Control Software interface

Camera Control Unit (Optional)

7. Install W10x_HD Camera Control software onto your computer.

8. Start the W10x_HD Camera Control software. You need to select the camera (Highlight camera) first in order to establish the communication.

Quick Help for W10x Camera Control Software

Main Window

Camera Controls

Control	Description
Optical Zoom	1x-10x optical zoom. In standard W10x-HD camera, the horizontal angle of view is approximately 45 degrees at 1x and 4.5 degrees at 10x.
Sharpness	Adjusts enhancement of edges of the objects in the picture.
Brightness	Gain (electronic amplification of the video signal) and iris (mechanical aperture of the lens system) is adjusted using an internal algorithm. Exposure time of the camera is controlled by adding Gain when the object is dark or its illumination level is low and by decreasing the aperture of iris when object is bright or illumination intensity is high. When **Auto** is selected, Gain and iris of the camera are automatically adjusted.
Bright/Iris Level	Offsets the internal reference brightness level +/- 7 steps with 1 step resolution. Each step corresponds to increase/decrease of the Gain by 1.5dB. When **Iris** is enabled iris can be controlled from F1.8 to F26. Higher F-number will increase depth of focus. Lower F-number will increase light sensitivity.
Focus	When **Auto** is selected, focus position is automatically adjusted to the high frequency content of the picture in a centre measurement area, taking into consideration the high luminance and strong contrast components. If camera cannot focus automatically user should focus manually or readjust Brightness.
Night Vision	Manual **ON** button enables/disables the Night Vision mode and sets the picture to black and white. At Night Vision mode the built-in near infrared cut-off filter is removed from optical system of the camera. The camera becomes therefore sensitive to near infrared light (?: 680-980 nm).
Freeze	Freezes the live picture
Adjust	Opens adjust window
Resets	Resets camera settings to initial (default) configuration. Zoom:1x, Brightness:Auto, Sharpness:8, Brightness Level:0, Focus:Auto, White Balance:Auto, Picture effect:Normal
Save	Saves the user defined camera configuration
On-top	Keeps the W10x control window always on-top of the other program windows

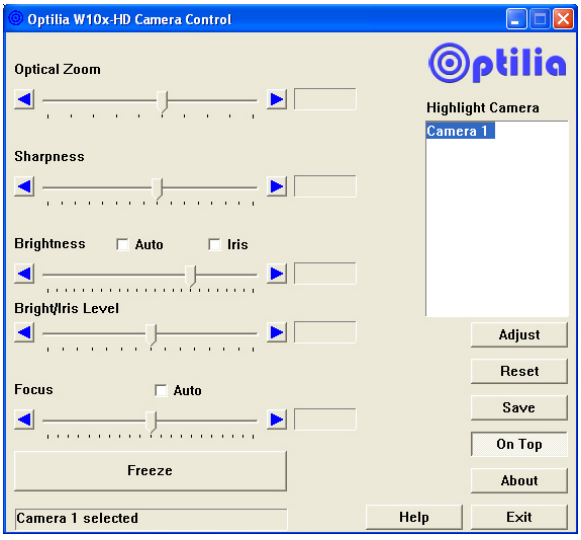
Adjust Window

Control	Description
White Balance	**Cold**: White balance is fixed at 3200K **Warm**: White balance is fixed at 5800K **One Push**: White balance is automatically readjusted once when user selects One Push: The One Push White Balance mode is a fixed white balanced mode that is automatically readjusted only when this trigger (button) is pushed. Put a white object in correct lighting

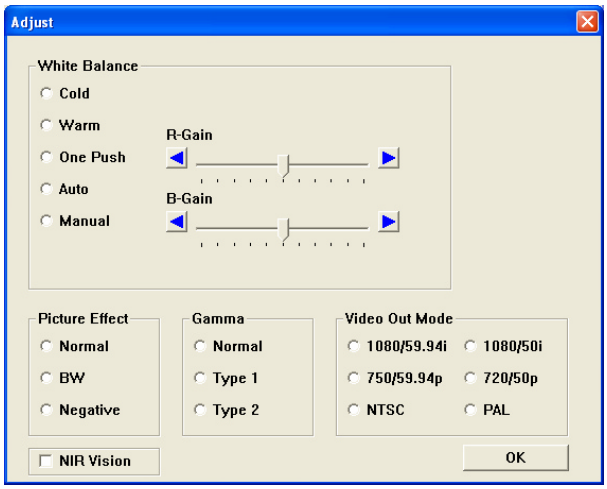
	condition and occupying more than 50% of the image when you set the white balance at this mode. **Auto**: This mode computes the white balance output using colour from the entire screen **Manual**: Manual Control of R- and B-gain
Picture Effect	Sets the picture to Normal, Black & White or Negative
Gamma	**Normal**: Produces images with the standard video gamma curve **Type 1**: Reproduces images with more dept **Type 2**: Reproduces images with deeper contrast
NIR Vision	Enables the Near Infra Red mode. Camera will be sensitive to light wavelengths from 400nm (blue) to 980nm (NIR).
Video Out Mode	Sets the video output system to 1080/59.94i (Interlaced), 1080/50i (Interlaced), 750/59.94p (Progressive), 720/50p (Progressive), NTSC (Corp) or PAL (corp). **Hardware restart** is required in order to apply the video out mode changes.

Keyboard Hotkeys

Keys	Action
Arrow Up/Down	Move cursor between controls
Arrow Left/Right	Adjust controls
Tab	Move cursor between all
Enter	Run buttons
Spacebar	Freeze/Unfreeze picture
F1-F12	Select cameras



Camera Control interface



Camera Adjust interface