

USER MANUAL

MICROSCOPE

PCE-VMM 50

ENGLISH



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski) can be found via our product search on:
www.pce-instruments.com

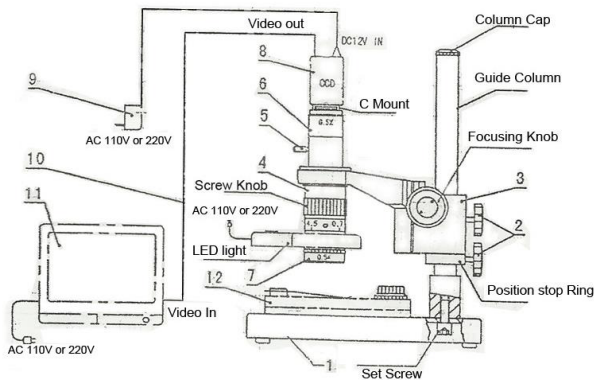
SUMMARIZE

Model PCE VMM 50 video microscope is a monocular zooming microscope, which adopts with the high definition color CCD camera & TV together. Having long working distance. Wide field of view, fine definition image. Continuing adjustment of field of view, Central position and definition remain unchanged (parfocalization) when continuing adjust zoom multiple According to the different requirement in different condition. Users can select the supplementary objective :0.3X ,0.5X,0.75X,1.5X, and microphoto eyepiece: 0.35X,0.5X,0.75X,1.5X,2X . There are also several kinds of illumination including adjustable LED light and fluorescent ring light.

APPLICATION

As its function: high ability and complete accessories, easy operation and uses, the instrument is widely used in the areas of micro-electronics, precision electronic inspection, PCB solder testing industries, hardware & precision parts, criminal investigation and life sciences, as well as plant morphology, jewelry inspection and teaching demonstration (choose the universal stand)

CONSTRUCTION



1. Stand
2. Tightening knob
3. Elevator
4. Object len
5. Milled screw
6. Micro photo eyepiece
7. Supplementary lens
8. CCD Camera(Optional)
9. CCD power adapter
10. Data cable
11. TV or VGA monitor(optional)
12. XY Moving carrier

MAIN SPECIFICATION

Optic data:

Video microscope's magnification working distance, diameter of object field of view. The following parts will be contributed to the magnification from bottom to top: Supplementary lens; objective; microphoto eyepiece; CCD camera; television (or displayer). The front three parts produce the optic magnification; the back two parts produce the digital magnification. The total magnification can get 2210 X the largest working distance is 156 mm. The largest diameter of field of view is 92 mm

- A. Total magnification = optic magnification X digital magnification X digital magnification
 Optic magnification = objective (0.75X ~ X microphoto eyepiece X supplementary lens. The digital magnification is connected with the specification of CCD camera and television.
- B . Working distance: only contacted with the supplementary lens (see the form 1.)
- C. Diameter of object field of view = the size of supplementary lens /Optic magnification

Form 1: Optic magnification

Supple- mentary lens	Microphoto eyepiece						Working distance (mm)
	0.35 X	0.5 X	0.75 X	1 X	1.5 X	2 X	
0.5 X	0.12... 0.79 X	0.18... 1.13 X	0.26... 1.69 X	0.35... 2.25 X	0.53... 3.38 X	0.70... 4.5 X	156 mm
1 X	0.25... 1.58 X	0.35... 2.25 X	0.53... 3.38 X	0.70... 4.50 X	1.05... 6.75 X	1.40... 9.00 X	95 mm
1.5 X	0.37... 2.36 X	0.53... 3.38 X	0.79... 5.06 X	1.05... 6.75 X	1.58... 10.13 X	2.10... 13.5 X	44 mm
2 X	0.49... 3.15 X	0.70... 4.5 X	1.05... 6.75 X	1.40... 9.00 X	2.10... 13.5 X	2.80... 18.00 X	30 mm

Form 2: Digital magnification

CCD Camera	LCD Monitor					
	14"	15"	17"	21"	25"	29"
1/3"	59.2 X	63.5 X	72.0 X	88.5 X	105.8 X	122.8 X
1/2"	44.5 X	47.6 X	54.0 X	66.7 X	79.4 X	92.1 X

Form 3: Digital magnification

CCD Camera	1/3"	1/2"	2/3"
CCD Camerasize	6 mm	8 mm	11 mm

2. Range of focusing: 60 mm
3. Range of elevator (pillar): 290 mm
4. Object platform size: 380 mm X 225 mm X 20 mm

CCD camera:

- » Size of lens: 1/3 inch
- » Display chip: SONY
- » Horizontal visual resolution: 720 TVL
- » Video output: 1.0Vp - p 75 Ω
- » Video mode: PAL / NTSC
- » Working Voltage: DC 12 V

LCD display:

- » Size: 8 inches (4:3 Data screen TFT LCD)
- » Pixel: 800 * 600
- » Signal input: VGA/AV/TV with BNC
- » Video mode: PAL /NTSC
- » Work power: DC 12V (10 W)

LED circular lamp:

- » Input volatage: 110...240 V/AC
- » Lightness :0...100 % adjustable
- » Power consumption: 4 ... 6 W
- » LEDs: 48 SMD led
- » Inner circular diameter: 65 mm

ASSEMBLING & OPERATION

In order to know the instrument's function and parts assembling rad the book as well as read the instrument manual of colour LCD and the instruction manual of CCD camera.
The book do not include above content.

Assembling:

- a) Take out the stand and parts from the package , for instance, the pillar stand (Fig1), tigh tening the knob (2) on the stand to prevent the elevator (3) from sliding down, put the zooming objective (4) into the holder on the stand (1),then insert the microphoto eyepiece (6), tighten the milled screw. If there is supplementary lens (7), screw it into the bottom of zooming
- b) Screw CCD camera (8) on to the eyepiece (6), connect the transformer of CCD power and signal thread with CCD camera; the other side the signal thread connect with the VIDEO port of the color television.
- c) Check the input voltage. The rated voltage of the CCD camera , colour TV and microscope should be same with the local electrified wire netting. The socket must have the grounded terminal.

2. Operation:

- a) Focus: turn the focusing knob (2) to change the elevator height to focus.
- b) Rotate the shifting sleeve (10) of the objective (4) to get zooming magnification. The zooming magnification are from 0.7X to 4.5X, the power magnification has the larger field of view and depth of field. In order to find the specimen image easily. Suggest observing by the lower magnification first.
- c) The parts have been adjusted well before it sale to make sure the observation in zooming synchrony
- d) By using inclined (or transmitted) illumination, put the specimen to the stage, then adjust the brightness.
- e) Using the ring fluorescent lamp to the objective (4), tighten the screw.
- f) Working stage: According to the object colour and illumination. Choose the stage (black / white stage, frosted or transparent stage), put the stage into the holder in the base and press it. Tighten the milled screw in the base.

MAINTANCE

1. **Change the bulb:** Pull out the plug before changing the bulb and cool it enough. Unscrew the cover of inclined light and drag out the bulb with cup to change the new one. Open the window in the base to change the halogen bulb or fluorescent lamp of the transmitted light.
2. **If the instrument is not in use:** Clean the instrument first, then cover it with dustcover and store it in the dry place.
3. **Clean the lens:**
 - a) Don't touch the optical parts
 - b) Wipe the dust off by soft brush or gauze.
 - c) To the smudge and fingerprint or oil, clean it with soft cotton or lens paper with some mixture of alcohol and either.

FULL SET OF INSTRUMENTS

Please check the contents of the PCE-VMM 50 package and confirm that all the items listed below are included.

- » A Stand
- » Guide column
- » Elevator and Tightening knob
- » Zoom objective
- » 0.5X microphoto eyepiece
- » 12V 6W Adjustable LED lamp
- » 8 Inch LFT LCD
- » Hex wrench
- » Instruction manual

Note:

1. PCE-VM Series is pillar and, can extra equip with supplementary lens: 0.35X, 0.75X, 1X, 1.5X, 2X
2. The Instrument can also equip with 0.35X, 0.75X, 1X, 1.5X, 2X micro-photo eyepiece, the default is 0.5X micro-photo eyepiece (selective)

The design would be developing, the manual can not completely reelect it. PCE Instruments reserves the right to change the above content without notice.

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law. For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations. If you have any questions, please contact PCE Instruments.

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