



Leica ICA Integrated video module

The ergonomic and economical
documentation system for
Leica stereomicroscopes

Leica
MICROSYSTEMS

High-End quality video microscopy

New perspectives in observation

Nowadays, more and more stereomicroscopes are being equipped with video cameras, TV monitors, video printers and recorders, for very good reason: The ability to see images on the monitor, and to record them, greatly expands the user benefits in terms of both ergonomics and versatility.

The Leica ICA is a reasonably-priced, high-performance video module for Leica M-stereomicroscopes which is a useful addition to the work station. The Leica ICA opens up new perspectives in industrial quality control, in the interpretation of thin section images, in education, in the demonstration of images to large groups of people, and in digital post-processing.



Main menu



"Windows" menu

Leica ICA: Top-quality video microscopy

Ergonomic to install

The Leica ICA video module fits directly between the optics carrier and the binocular tube, where the CCD chip is totally protected from dust and damage. The module does not need an additional video-/phototube. The Leica ICA is compatible with the Leica MS5, MZ6, MZ75, MZ95, MZ125, MZAPO, MZ FLIII and with previous models, in terms of both function and appearance, and does not interfere with work at the stereomicroscope. Together with the ErgoTubes™ and ErgoModules™ from the Leica ergonomics program, the Leica ICA forms a compact unit for alternating the observation mode between 3D viewing down the binocular tube and use of the TV monitor.

The Leica IC A-180 camera version with reorientation of image position provides an erect, laterally-correct image when the stereomicroscope (e.g. a Leica colposcope) is positioned horizontally.

Perfect image quality

The concentric alignment of the center of the chip with the center of the image in the beam path of the stereomicroscope ensures that the image is of high quality right to the edge and that the image seen through the binocular tube is free of reflexes. The field coverage, and the sharpness, are the same on the monitor as through the eyepieces. Zooming does not displace the center of the image. The digital control of the camera ensures perfect reproduction quality, precision and reliability for many years to come.

Economical in use

The image creation by electronic means cuts out many of the production steps found in classical photography and, is in line with the trend of environmentally-conscious procedures. The image can be inspected on the monitor and corrected as required. The video printer ensures that results are available immediately. This eliminates the need for large quantities of film and chemicals and, there is no need to spend time and money on developing and retouching. Direct coupling to a PC enables images to be processed and stored immediately, or to be used for direct transmission.

Easy to use

The sharpness, brightness and color reproduction of the images produced by the Leica ICA video module are all adjusted to the requirements of the microscope application. The user can work with the basic settings defined by Leica or can modify them in accordance with individual needs. For example, the brightness and contrast can be altered for the entire image (integral) or for just a small part of it (spot). Light or dark areas can be emphasized. Red and blue can be weakened or strengthened. The changed parameters can be stored, and recalled at any time. Four keys on the video module, coupled with the guidance menu displayed on the video monitor, make the unit extremely easy to use.

ErgoTube™
10°-50°



ErgoWedge™
5°-25°



Operating keys



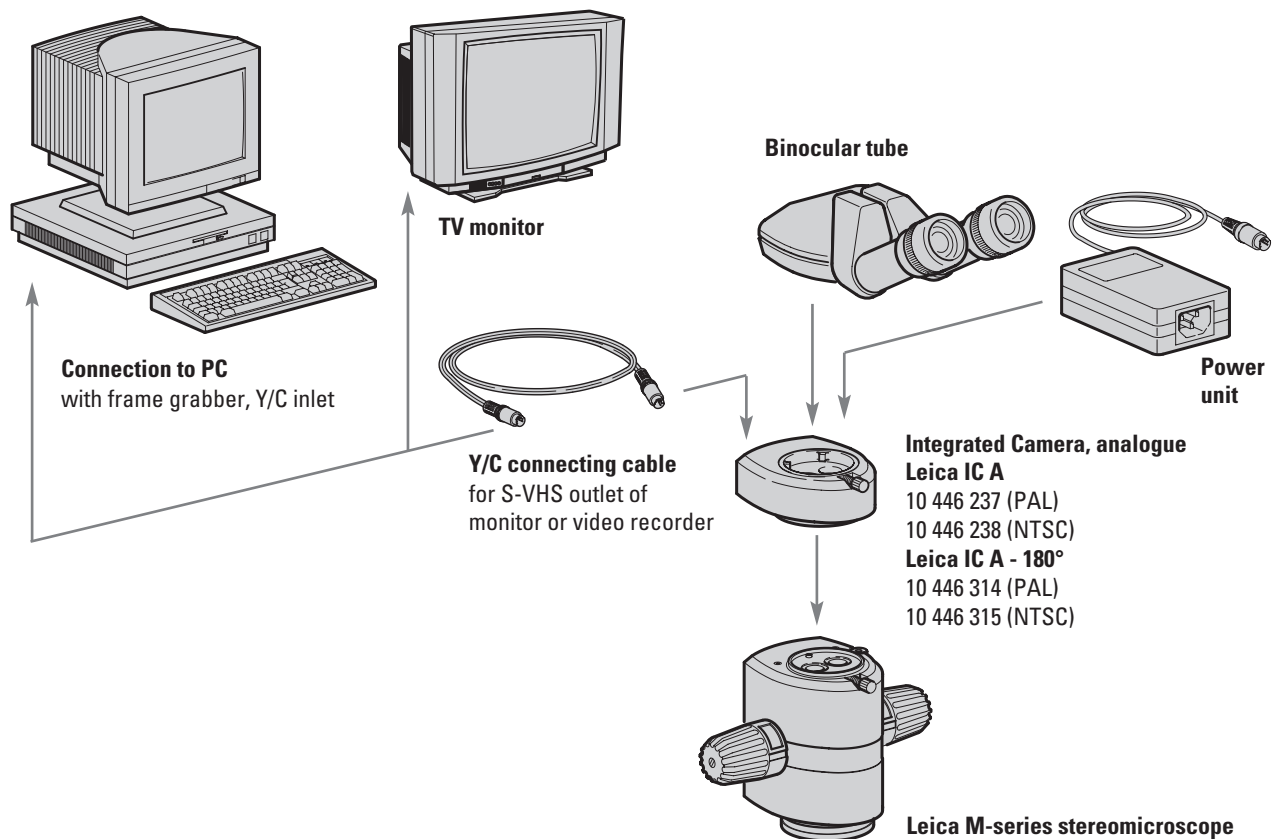
Freely-positionable window (spot)



Viewed objectively: The performance of the Leica IC A

- Extremely easy installation, without additional photo-/video tubes and without adjustment; ready for action
- Maximum sharpness and general image quality without vignetting and without reflexes
- The field coverage, the centering and the sharpness are the same on the monitor as through the binocular tube
- During zooming, the image remains centered and its sharpness does not change
- Basic settings are preadjusted to the requirements of microscopy
- User-defined settings for individual composing of complete images or details. One memory setting
- Freely-positionable window for the individual exposure of parts of the image
- Easy operation with keys on the video module, assisted by the monitor menu
- Very reliable, camera settings remain unchanged during use, servicing is easy
- Design compatible with Leica "M"-Series stereomicroscopes and with the Leica ergonomics program

Assembly diagram





Leica IC A video system with Leica MZ6 stereomicroscope

Clear and unmistakable: The advantages of video microscopy

- The interchange between viewing through the binocular tube and on the TV monitor creates ideal working conditions, also from the ergonomic standpoint
- Option of multi-station viewing for training and for technical discussions
- High-quality images are created easily, inexpensively and quickly on a video printer without test exposures, without using films, without laboratory work, and without wasting materials
- Moving images can be captured with a video recorder or printer or directly with a PC for processing and data transfer
- Video presentations are independent of time and location

Leica Design
by Ernest Igl/Christophe Apothéloz

Leica ICA: The technical data

Image take-up module

Camera type	Analog camera with digital control for Leica M-Series stereomicroscopes
IC A-180	Version for horizontally-positioned stereomicroscope, with image correction
CCD sensor	1/3" interline transfer CCD with color mosaic filter
Video standards	PAL or NTSC
Tube factor	46mm/160mm = 0.29x; Stereo base 24mm
Partition of light	20% video, 80% observation
Field coverage	Corresponds to diameter of intermediate image (21mm)
Resolution	440'000 pixels, >450 horizontal lines on TV monitor
Number of pixels	PAL: 752Hx582V/NTSC: 868Hx492V
Pixel size	PAL: 6.5µm x 6.25µm/NTSC: 6.35µm x 7.4µm
Signal-to-noise ratio	>49 db (with AGC=6db and shutter 1/2'000'000s)
Video outlet	Y/C (S-VHS)
Electronic shutter	Shutter: 1/50s to 1/2'000'000s/AGC: 6db to maximum of 30db
Human-machine interface	Four keys on video module, menu on monitor
Menu text on monitor	Choice of black or white
White balance	Automatic/manual
Three factory-adjusted basic settings	For incident light, transmitted-light bright field, transmitted-light dark field
Memory for one user-defined setting	For brightness, sharpness, red, blue
Range of validity for user-defined settings	For either the entire image or for a part of it (size and position can be freely determined). For bright or dark features in the object
Height/Weight	40mm/75g
EMV standards	EN55011, EN50082-1, EN6100-3-2, EN61000-3-3
Power unit	
Power	12V/200mA / Power plug IEC 320/Low-voltage plug Mini DIN 5pol.
Monitor	At least S-VHS
Input voltages	85-264V/47-63Hz/Secondary voltage 12VDC
Stock no.	
10 446 237	Leica ICA video module, PAL, with integrated CCD and camera control, for MS5/MZ6/MZ75/MZ95/MZ125/MZAPO/MZ FLIII and for earlier models*
10 446 238	Leica ICA video module, NTSC, with integrated CCD and camera control, for MS5/MZ6/MZ75/MZ95/MZ125/MZAPO/MZ FLIII and for earlier models*
10 446 314	Leica IC A-180 video module, PAL, with integrated CCD and camera control, for colposcope and MS5/MZ6/MZ75/MZ95/MZ125/MZAPO and for earlier models*
10 446 315	Leica IC A-180 video module, NTSC, with integrated CCD and camera control, for colposcope and MS5/MZ6/MZ75/MZ95/MZ125/MZAPO and for earlier models*

* with power unit and low-voltage cable (connecting power unit to video module), with monitor cable.

To find out about more products of this type, please ask for the following brochures:

Leica ICC A integrated video camera for Leica microscopes, no. M1-393-2en

Leica digital imaging systems, no. M1-398-0en

The Business Units in Leica Microsystems hold the management system certificates for the international standards ISO 9001 and ISO 14001 relating to quality management, quality assurance and environmental management.

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