Instruction Manual for VideoLabs Cameras

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Introduction

VideoLabs Cameras	**General Specifications**
Image Pick-up Device	1/4" Inter-line transfer CCD
TV System	NTSC, PAL
Total Pixels	NTSC - 542(H) x 492(V) Total: 270K PAL - 542 (H) x 582(V) Total: 320K
Effective Pixels	NTSC - 512(H) x 492(V) Total: 250K PAL- 512(H) x 582(V) Total: 300K
Resolution	Horizontal: NTSC - 310+ TV Lines; PAL - 310 TV Lines Vertical: NTSC - 350+ TV Lines; PAL - 350 TV Lines
S/N Ratio	46 dB Condition : AGC off, high-pass filter 10 kHz, Fsc trap on, weighting filter on, light shield, low-pass filter (NTSC - 4.2 MHz; PAL - 5.0 KHz)
Minimum Illumination	20 lux Condition: ITE gray scale chart (Gamma = 1.0), Y signal amplitude - 350 mV
White Balance	Auto, TTL auto tracing; range: 2,800 to 6,800 ˚K
Iris Control PAL - EE, 1/120 sec. (fixed)	NTSC - EE, 1/100 sec. (fixed);
Gamma Correction	Approximately 0.6
Auto Gain Control	Yes; backlight compensation, switch selectable
Sub-carrier Frequency	NTSC - 3.57954 MHz ± 200 Hz PAL - 4,43361875 MHz ± 200 Hz
Sync. System	Internal only

VideoLabs Cameras   General Specifications - Continued

Output Video Signal:

Y (Condition 1)*	NTSC - 1.0 Vp-p/75 ; PAL - 1.0 Vp-p/75
Y Amplitude	NTSC - 714 mV, ± 100mV ; PAL- 700 mV, ± 100mV
Sync. Amplitude	NTSC - 286 mV, ± 80 mV; PAL - 300 mV, ± 80 mV
C (Condition 2) **	NTSC - Impedance 75 ; PAL - Impedance 75
R Amplitude	NTSC - 88.25 IRE ± 25%; PAL- 94.8 IRE ± 25%
R Phase	NTSC - 103.4˚ ± 15˚; PAL - 103.4˚ ± 15˚
B Amplitude	NTSC - 62.2 IRE ± 25%; PAL - 67.2 IRE ± 25%
B Phase	NTSC - 347.1˚ ± 15˚ ; PAL - 347.1˚ ± 15˚
Burst Amplitude	NTSC - 286 mV, ± 90 mV ; PAL- 300 mV, ±90 mV
Power Supply	DC 12 V ± 10%, 200 mA at DC 12 V
Operating Temperature	-10 to + 50˚ C
Storage Temperature	-20 to + 60˚ C
Dimension	41(H) x 46(V) x 42(D) mm
Indicator	Power on/off
Microphone Amplifier Circuit	Electret Condenser Microphone

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*   Condition 1: ITE gray scale chart (Gamma = 1.0)
** Condition 2: Line select   NTSC - 141st line , PAL- 166TH line
        Y (white) amplitude   NTSC - 714 mV, PAL- 700 mV
        Color temp.   5,100 ˚K

FEATURE/ SPECIFICATION		ScholasticCam	StudentCam	TeachCam w/ IllumaBase	DocCam	MedCam	IDCam	MicroscopeCam
Optics		5.7mm	8mm	8mm	6mm	8mm	16mm	8mm
Resolution:	(V)	350	400	400	350	400	400	350
	(H)	310	370	370	300	370	370	300
Pixel Count		270K	291K	291K	270K	291K	291K	270K
C-Mount Lens			•	•		•	•	
Inverted CCD		•			•			
Electronic Iris			•	•		•	•	
Mechanical Iris					•			•
Manual Iris Control			•	•			•	
Focal Length		1/4" to ∞	1/4" to ∞	1/4" to ∞	4" to ∞	1/4" to ∞	1/4" to ∞	1" to ∞
S-Video/Composite		•	•	•	•	•	•	•
NTSC		•	•	•	•	•	•	•
PAL		•	•	•	•	•	•	•
Gooseneck		18"/45cm	18"/45cm	27"/65cm	18"/45cm		18"/45cm	18"/45cm
Cable Neck						8'/2.4m		
Exterior Color		Platinum	Black	Black	Black	Black	Black	Black
Microphone		•	•	•	•	•	•	•
5' Cable		•	•	•	•		•	•
20' Extension Cable			•	•				•
3 Microscope Adapters			•	•		•		•
Lux		1.5	1.5	1.5	1.5	1.5	1.5	1.5

Warranty

Warranty Information on Hardware
One (1) year limited warranty on all parts
VideoLabs, Inc. warrants this product against defects in materials and workmanship for a period of one (1) year from the date of purchase. If VideoLabs, Inc. receives notices of such defects during the warranty period, VideoLabs, Inc. will either, at its option, repair or replace products which prove to be defective.

Five (5) year limited warranty on camera neck
VideoLabs, Inc. provides a five (5) year warranty on the camera neck from the date of purchase only when the registration card is filled out and mailed in. Retain a copy of your camera registration card and the dated invoice which shows VideoLabs serial number.

* VideoLabs, Inc. manufactures its hardware products from parts and components that are new or equivalent to new in accordance with indus - try-standard practices.

Exclusions
The above warranty shall not apply to defects resulting from: improper or inadequate maintenance by customer, customer-supplied software or interfacing; unauthorized modifications or misuse; operation outside of the environment specifications for the product; or improper site operation and maintenance.

Obtaining Warranty Service
To obtain warranty service, products must be returned to a service facility designated by VideoLabs, Inc. Customer shall prepay shipping charges for products returned to VideoLabs, Inc. for warranty service and VideoLabs, Inc. shall pay all shipping charges, duties and taxes for products returned to VideoLabs, Inc. from another country.

VideoLabs Customer Service
If the camera is still under warranty, VideoLabs will test, repair or replace the camera without charge. If the camera is out-of-warranty, VideoLabs will test, then repair, the camera for the cost of parts and labor.

Charges will be estimated and confirmed by the customer **prior** to repair by aVideoLabs' technician.

Repair time for all cameras is a **maximum of 2 business days** from receiving to outbound shipping. VideoLabs, Inc. will **not** accept responsibility for shipment after the camera has left our premises.

VideoLabs Technical Support
VideoLabs technicians will determine and discuss with the customer the **criteria** for repair costs and/or replacement. Contact VideoLabs Technical Support through one of these sources: phone: 800-467-7157 (US only) or 612-542-0061 or email: support@videolabs.com.

RMA (Return Merchandise Authorization) Number
Before returning a camera for repair or replacement, request an RMA Number from VideoLabs Technical Support.

Provide the technician with a return phone number, email or web site and a shipping address. Describe the type of camera, the reason for repair or return, and the date of purchase.

Include your RMA Number on **all** correspondence to VideoLabs.
Write your RMA Number on the outside of the box when you return the camera.

Voided Warranty
This warranty does not apply if the VideoLabs serial number has been removed or if the camera has been disassembled or damaged through misuse, accident, modification, or unauthorized repair.

Shipping and Handling
VideoLabs, Inc. will **not** pay for **inbound** shipping, transportation, or insurance charges, or accept any responsibility for loss and/or damage from inbound transit.
VideoLabs requires that all overseas returns are shipped via UPS.

VideoLabs, Inc. will pay for **outbound** shipping, transportation, and insurance charges but will **not** assume responsibility for loss and/or damage by the outbound freight carrier.

Products Not Under Warranty
Payment arrangements are required before outbound shipping for all products that are out of warranty.

Declaration of Conformity

In accordance with ISO / IEC Guide and EN 45014:

Manufacturer's Name: VideoLabs, Inc.
Manufacturer's Address: 5960 Golden Hills Drive
                          Golden Valley, MN 55416-1040

Declares that products: Product Name: Image Capture Devices
                          Model Numbers: VideoLabs Cameras

Conform to the following product specifications:

       Safety International: IEC 950: 1991
       Europe: EN 60950: 1992

The products comply with the requirements of the Low Voltage Directive 72 / 23 / EEC.

       EMC CISPR 22: 1985 / EN55022: 1988 Class B

EN 50082-1:   1992
IEC 801-2:   1992/pr EN55024-2: 1992 - 3 KV CD, 8KVAD
IEC 801-3:   1994/pr EN55024-3: 1991 - 3 V/m
IEC 801-4:   1988/pr EN55024-4: 1992 - .5KV Signal Lines, 1 KV Power Lines

The products comply with the requirements of the EMC Directive 89 / 336 / EEC.

Golden Valley, MN
July, 1998

Safety Notes

Handling: All VideoLabs cameras are for indoor use only. Use only VideoLabs power supply source and a wall-mounted, indoor, electrical outlet. Do not use cameras next to food, beverages, liquid or dry chemicals, solvents. However, cameras have been tested and approved for use in chemistry labs.Do not use cameras near working TV, radio, motor, transformer, magnetic field. Do not turn the camera head more than 30˚ right or 30˚ left.

Cleaning: Turn camera power OFF and disconnect VideoLabs power supply source before cleaning. Clean exterior surfaces only. Use soft, non-abrasive cloth and non-abrasive detergents. Interior components are pre-assembled and cleaned during on-site manufacturing.

Storage: Keep cameras away from direct natural or artificial light, extreme temperatures (0˚ C to 40˚ C), inclement weather, high humidity, dust, severe vibrations.

Operation

Cautions

• Do not touch, attempt to clean, or tamper with any interior or electronic components.
• Do not use any cameras outdoors or connect cameras to outdoor or auxiliary power sources.
• Do not loosen or remove screws or pre-manufactured/pre-assembled units on any of the cameras.
• When hooking up VideoLabs cameras to computers, ensure that software programs and drivers are installed correctly by following instructions provided by the manufacturer of these products.

Warnings

• Internal thermal protection is built-in. Use only VideoLabs power supply source.
• Do not loosen or remove exterior assemblies (keypads, electrical connectors, audio units, camera lens).
• Do not disassemble any exterior or interior components of any camera.
• Any camera lens will be permanently damaged if it is overtightened.

VideoLabs Technical Support

From 8 a.m. to 5 p.m. (CST), Monday - Friday, VideoLabs technical support is available by: (phone) 1-800-467-7157, (email) support@videolabs.com, (web site) www.videolabs.com Toll Free number (800) is US only, International customers call 612-542-0061.

VideoLabs technicians can only verify warranty conditions over the telephone. If the telephone lines are busy, leave a voice mail and your call will be returned as soon as possible.

Troubleshooting

Ensure all camera adapter/cable connections and electrical connections are done correctly and completely. Check your computer, video capture cards, digitizer boards, VCR, TV set, etc. for faulty operation. Check all settings on your camera and adjust them for viewing conditions in the presentation room. If any component of any camera is damaged, call VideoLabs Technical Support for repair information.

Compatibility

VideoLabs cameras can be used with either a VCR, TV monitor or computer. Do not use all three at once. All VideoLabs cameras are compatible with standard computer video capture cards and digitizer boards. When using VideoLabs cameras with VCRs and TV sets, use the pigtail composite video adapter if the VCR or TV set **does not** have S-video capabilities.

VCR
Attach the camera to the monitor by connecting the S-Video plug into the VCR **video-in jack.** If the VCR is an older model, use the pigtail adapter to convert to composite video. Connect the audio leads to the **audio-in jack.** *NOTE: If there is only 1 audio-in jack, use **either** the left **or** right audio-in jack. Put the VCR in the video-in mode. Turn the camera power ON. Turn the VCR / TV switch to VCR and the TV to Channel 3.*

TV
Attach the camera to the TVmonitor by connecting the S-video cable into the **video-in jack** of the TV, located on the back of the TV. Switch the TV to **video mode.** If the TVis an older model, use the pigtail adapter to convert to composite video. *NOTE: To change to video mode, use **either** the switch on the TV front panel **or** select the corresponding command on the remote control menu. (Consult **your TV operator's manual** for exact switch locations and remote control menu commands.)*

Computers
Windows: Read the direction booklet enclosed in the box with the StingerPro Video Capture Card. To hook up the computer to the camera, plug in the **video-in jack** at the back of the computer. Insert video image software. First install the video capture card according to the manufacturer's directions. Install software and drivers. Plug the camera into the available PCI video-in jack. Plug in the power supply and turn on.

AV Macs: Plug the camera into the video-in jack. NOTE: Check your computer video capture cards and digitizer boards for faulty operation. (See section Operation; Compatibility.)

Notes on Various Models

C-Mount Lens Models
TeachCam, StudentCam and MedCam have a standard <u>8mm</u> C-Mount lens. IDCam has a standard <u>16mm</u> C-Mount lens.

Other C-Mount lenses are available for purchase: 3.5mm, 6mm, 8mm, 12mm, zoom 6-12mm, 16mm, 25mm, 50mm. If additional C-Mount lenses are purchased, install them by unscrewing the **old lens counter clockwise**, screwing in the **new lens clockwise**.

Focus Ring Models
DocCam and ScholasticCam can focus their lenses with an **optional** focus ring.

Assemble the focus ring by carefully pushing the smaller end of the ring onto the focus knob at the center of the camera head. (The focus ring will **not** be flush with the camera head.) Turn the focus ring to the **left for close-up, right for distance**.

TeachCam w/ IllumaBase
TeachCam is the only VideoLabs camera with a lighted base. First turn the <u>camera power switch</u> ON. All lights in the IllumaBase come on briefly as a self-check.

There are 3 buttons on the IllumaBase keypad. The **first button** (light bulb symbol) controls all base lighting. The **second button** (wheel symbol) controls image contrast. The **third button** (sun symbol) controls image brightness. On the keypad at the camera bezel, press the <u>first key pad button</u> **once** for side lights, **twice** for bottom light, **three time**s for both side lights and bottom light, **four times** to turn off all lights. Press the <u>second keypad button</u> for contrast and <u>third keypad button</u> for brightness control.

IllumaSlides
Three IllumaSlides are included with the TeachCam w/ IllumaBase. Remove the cover on the slide and fill with drops of pond water or various specimens for viewing. Place the IllumaSlide on the top of the IllumaBase and adjust the focus as needed.

IllumaBoxes
The rectangle-shaped plastic box holds laboratory specimens for viewing. Turn all IllumaBase lights
ON. Place the specimen in the box and close the box lid tightly. Next, **with cover side up**, **insert**
the plastic box **lengthwise** into the IllumaBase.

MedCam
MedCam has an S-video cable attached to the camera module.

Except for MedCam, all VideoLabs cameras ship with a <u>detachable</u> S-video cable and a <u>detach-
able</u> composite cable adapter (pigtail adapter).

All cables with VideoLabs cameras are color-coded according to function.

The <u>pigtail adapter</u> cable (black, 3" to 4", with RCA jack) converts S-video to composite video.
Use the pigtail adapter if your VCR or TV set does not have S-video capabilities.

S-Video Cable:	**Composite Cable:**
Main cable - green/blue	Main cable - gray
Power - black	Video - yellow
Left audio - white	Power - black
Right audio - red	Left audio - white
	Right audio - red

At the camera base, behind the gooseneck, an 8-pin power connector holds 2 power pins (black), 4
video pins (yellow), 1 left audio pin (white), 1 right audio pin (red).

Procedures

Camera Attachments

Microscope Adapters / Couplers
TeachCam w/ IllumaBase, StudentCam, MedCam and Microscope Cam <u>include</u> a custom-metal
eyepiece adapter and 28mm and 34mm plastic couplers.

To use the custom eyepiece adapter, unscrew and remove the microscope eyepiece and replace it
with the custom eyepiece adapter by sliding the narrow end into place in the microscope. Gently
push the C-Mount lens into position.

Plastic couplers (28mm and 34mm) can be attached to a microscope by placing the coupler over the microscope's eyepiece. Turn the C-Mount lens to the right before placing in the coupler for viewing.

Extension Cable
TeachCam w/ IllumaBase, StudentCam, and MicroscopeCam include a standard 20-foot black extension cable. This extension cable is also an optional accessory to all other camera models. This cable plugs directly into the standard 5-foot cable to allow for more mobility around a class-room, laboratory or conference room.

FlexLite
FlexLite is **optional** for all cameras. Remove the 5 adhesive feet from the camera base. Align and insert the holes on the camera base to fit into the pegs of the FlexLite base. Plug the FlexLite power supply into the outlet and press the ON/OFF button. Position the 2 side flexible light bulbs to illuminate your subject.

Getting Started

What To Do First

Plug In:	Plug in all cables as shown in the section, Camera Features and Functions (on the next page). Use only VideoLabs power supply source and a wall-mounted, indoor, electrical outlet.
Turn On:	Turn ON your camera with the ON/OFF switch located at the camera bezel.
Position:	The camera head is swivel-mounted. Do not turn it when past the natural resistance. Adjust the camera head to maximum 30˚ left or maximum 30˚ right. Adjust the flexible gooseneck (maximum 90˚) until the camera is aligned with subject.
Lighting:	Avoid strong background lighting. Adjust auxiliary lighting in presentation room. A single light source in front of the subject is sufficient for video images.
Audio:	All microphones are highly sensitive and located under the lens on the camera head. Audio levels are optimal when the camera is pointed toward your face <u>at an arms distance away</u>. If your image moves out-of-the-picture, the sound level will begin to drop off.
Focus:	A focus ring is included with <u>only</u> the DocCam and ScholasticCam. All other cameras feature a C-Mount lens. (See section, Notes on Various Models.)

Camera Features and Functions

Wall-mounted Power Supply Source
Use the wall mount power supply provided with the camera. Using a different wall mount supply may cause the camera not to function properly or damage to the camera

VideoLabs Serial Number
Serial numbers for all cameras are located on the camera base. Warranty is voided if this number is tampered with or removed.

Camera Base
The camera base contains 5 rubber feet for non-slip support of the camera. The rubber feet also protect screw holes made on-site at pre-assembly.

Camera Head
This pre-assembled unit contains the camera lens, lens holder, focus ring attachments, connections to gooseneck and all cables. Do **not** turn it more than 30˚ left or 30˚ right. **(Figure 3)**

Camera Lens & Lens Holder
The camera lens is a pre-manufactured unit held in place by the lens holder. Both are attached to the camera head at the VideoLabs manufacturing site. Do not try to rethread or unscrew the lens holder.

Gooseneck
The flexible gooseneck adjusts the camera head/ camera lens over the projected image. Do **not** bend the gooseneck more than 90˚ in **any** direction or attempt to tie it in a knot. Do **not** attempt to repair any cracks in the vinyl coating. The gooseneck is non-detachable and can be replaced only by VideoLabs.

Switches
Switches for cameras are located behind the goose-neck on the top of the bezel(ScholasticCam and StudentCam switches are located on camera head). These switches control power ON/OFF for all cameras and all auxiliary functions.

Plug(s)
The main plug for all VideoLabs cameras is located
on the camera bezel, an 8-pin power connector behind and below the gooseneck. Insert only VideoLabs connectors and cables in this plug. Tampering with the connector will void warranty.

Connector Pins
Detachable VideoLabs cables (S-video and composite) have color-coded wires and connector pins. (See section Notes on Various Models; Models & Cables.) Tampering with these connector pins will void warranty.

Jack(s)
An RCA jack is attached to the pigtail adapter cable. Do not force the jack in your TV or VCR plug if there is resistance. **Align then insert** the jack.

Cable Adapter
Use the pigtail adapter if your VCR or TV set does not have S-video capabilities.

Microphones
All microphone amplifiers are located under the lens on the camera heads. These microphones are highly-sensitive, electronic equipment. (See section Procedures; Audio.) Tampering with the audio unit will void warranty.

Microphone Adapters
Adapters for microphones are included with all cameras. This adapter is inserted on the pigtail adapter for increasing audio output.

Monitor/Screen
Check the contrast, brightness, white balance of your monitor or screen before focusing your subject in the presentation room.

FlexLite Base
Each camera has 5 adhesive, removable rubber feet on the camera base. To use with the FlexLite, remove these rubber feet, **align** the holes of the camera base onto the pegs of the FlexLite base. Plug in the power supply and turn the FlexLite ON.

FlexLite Power Supply
Plug the FlexLite power supply into the outlet on the FlexLite base. Plug in the power supply and switch to ON.

FlexLite Bulbs
Position the 2 side flexible light bulbs over the FlexLite surface and projected document. Replacement Bulbs may be purchased. Adjust the focus as needed.

ScholasticCam
A full-motion, color, analog camera to take color pictures, videoconferencing, make color QT (Quick Time) movies and view 3-dimensional objects as well as documents and photographs.

PLANETVIEW
PLANETVIEW includes the ScholasticCam, StingerPro Video Capture Card and Enhanced CU-SeeMe software. These features allow complete Internet and Intranet videoconferencing, data collaboration, face-to-face communication, sharing data and images.

IDCam
IDCam takes head-and-shoulders photos compatible with any ID badging system. It features a 2-button Iris Control System (ICS) that adjusts to any lighting environment. ID Cam is also a full-motion, S-video, color, analog camera.

TeachCam w/ IllumaBase
TeachCam w/ IllumaBase has an 8mm lens with a 1:1.6 aperture. This camera displays precise images, slides, x-rays, and small scientific objects under any lighting. It includes a self-contained lightbase for viewing of 35mm slides, microscope slides or used with IllumaSlides or IllumaBoxes. It is full-motion, color, S-video/analog camera.

StudentCam
Student Cam has a 8mm lens and 1: 5.6 aperture. This camera displays precise images, slides, x-rays, and small scientific objects under any lighting. It is full-motion, color, S-video/composite compatible.

DocCam
DocCam has a 6mm inverted lens for right-side up viewing by the presenter. This camera enables a teacher to focus directly on an open textbook, object, map, etc, while projecting the same document page for students to view on a TV or projection screen.

MedCam
MedCam has a 8mm lens and an adjustable aperture.
The camera module is attached to an 8'cable. This cable allows mobility in capturing images through attachment to various medical equipment.

MicroscopeCam
MicroscopeCam has a 6mm lens and is designed for use on fluorescent microscopes. This camera is suitable for any academic or professional laboratory. The camera head will project screen images of laboratory specimens or instructional material.

StingerPro Video Overlay & Capture Card
Use this capture card for Internet videoconferencing, motion video capture, still frame capture, video editing. Tampering with this card or its circuitry voids warranty.
NOTE: The cameras work with all industry-standard video capture cards.