TT-12

Document Camera   **Teacher's ÷ Choice**

**ELMO CRA-1 Wireless Tablet
Sold Separately**

*A Revolutionary Document Camera—
Engage, Inspire, Make Learning an Adventure!*

TT-12 Virtually Limitless Camera Positions

300° Swivel

The TT-12 can capture images from all directions, thanks to an adjustable camera arm that can be swiveled to broaden the scope of classroom presentations. The solidly constructed camera arm holds it position and is easily operational for both left- and right-handed users.
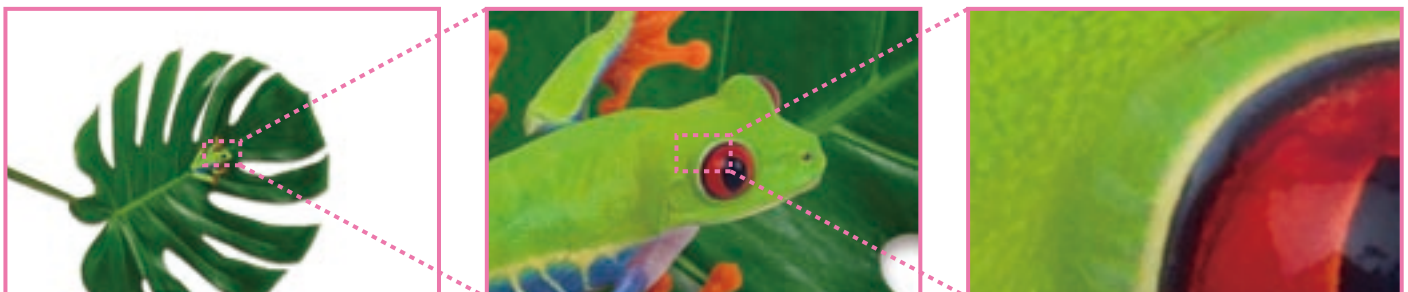
Command Attention with Big, Bright, Clear Images

Powerful 96X Zoom

Optical Zoom 12X	×	Digital Zoom 8X	=	96X

When the TT-12's high-magnification 12X optical zoom is combined with its 8X digital zoom, images can be enlarged up to 96 times for a clear, distortion-free display of even the tiniest details.

for Every Teaching Situation

Adjustable Free-Angle Camera Head & Arm

From above, from the side, up close—explore from any angle! The adjustable camera head and arm can be freely raised, lowered, and rotated to focus attention precisely where it's needed.
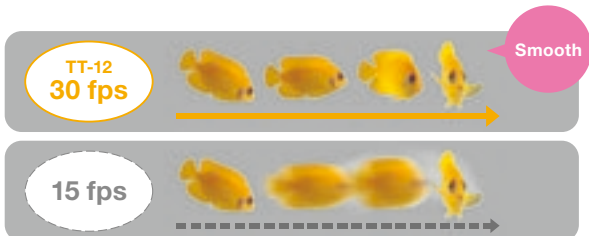

| From above | From the side | Up close |

Full HD 1080p

Breathtaking Images Made Easy

3.4-Megapixel CMOS Image Sensor

The TT-12's megapixel image sensor captures everything from fine text to three-dimensional objects in 1080p full HD.

Smooth Moving Images at 30 fps

The TT-12 captures and reproduces moving images at 30 fps (frames per second) for the display of truly smooth, natural-looking motion.
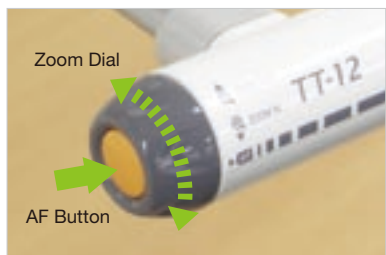
TT-12 30 fps — Smooth

15 fps

Other Key Features

- Slip-proof rubber feet
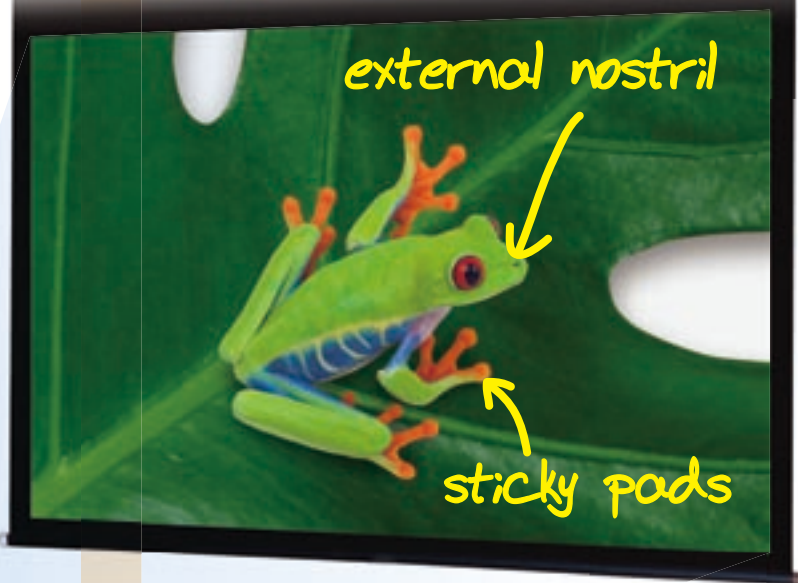- Wireless remote control

Zoom Dial & AF Button

A simple turn of the zoom dial is all that's needed to zoom in and out and make fine zoom adjustments. For added ease of use, the AF (Auto Focus) button enables easy one-touch auto focusing.

Zoom Dial

TT-12

AF Button

Get Your Point Across Effectively with the TT-12 + ELMO Tablet (sold separately)
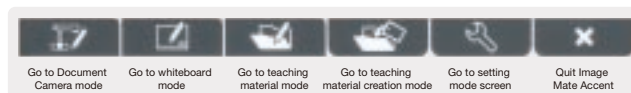
external nostril

sticky pads

Annotate Live Images

Partner the TT-12 with the ELMO CRA-1 Tablet for dynamic smooth-flowing lessons. Teachers can annotate on live images captured by the TT-12 while the image is displayed on a large screen. This empowers teachers with the tools to deliver detailed instructions and achieve greater student engagement.

1 Writable Area

The writable area on the ELMO Tablet corresponds to the screen area.

2 Shortcut Keys

Six shortcut keys ensure easy navigation of the ELMO Tablet.

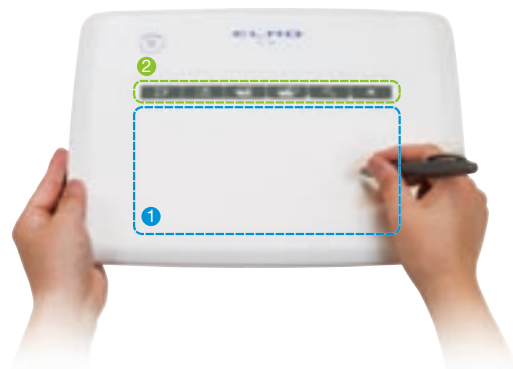| Go to Document Camera mode	Go to whiteboard mode	Go to teaching material mode	Go to teaching material creation mode	Go to setting mode screen	Quit Image Mate Accent

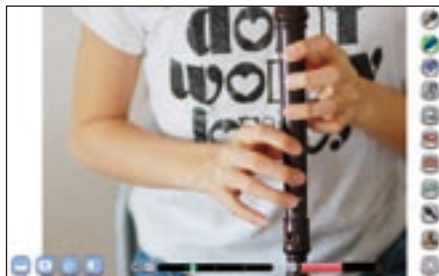## Move Around the Classroom

50 Feet

Because the ELMO Tablet is wireless and can remotely control the TT-12, teachers can move freely around the classroom (within 50 feet of the TT-12), making it possible to interact with the entire class and individual students.

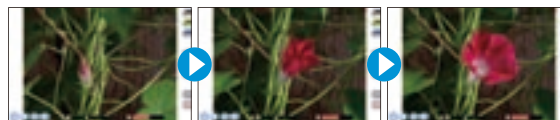**Wireless Adapter**

Record Teaching Materials

Video with audio, time-lapse photography, and still images saved on a computer can all be used to create high-impact teaching materials.

Video with audio

Process illustrations

Time-lapse photography

Note: A PC connection is required for intermittent recording and frame recording.

With ...

Use with a PC or Mac
Get added features with Image Mate Accent*
Access a variety of teaching materials
Analyze student progress

* Software supplied with the ELMO Tablet

or

Without! a Computer

Just plug and play for total ease of use!
Present and annotate without a computer!
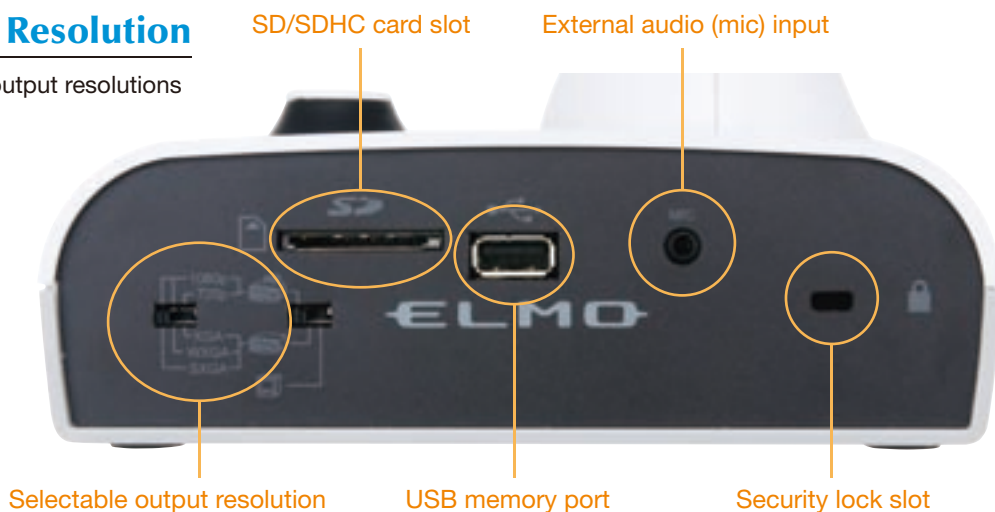Instantly engage students!

Save Full-HD Images with Audio

Selectable Output Resolution

The TT-12 offers a variety of output resolutions with a simple flip of a switch!

Resolution
1080p (1920 x 1080)
720p (1280 x 720)
SXGA (1280 x 1024)
WXGA (1280 x 800)
XGA (1024 x 768)
NTSC/PAL

SD/SDHC card slot

External audio (mic) input

Selectable output resolution

USB memory port

Security lock slot

Audio Input & Output

With the TT-12 audio enhancement can be added to classroom presentations via the built-in microphone or an external microphone input (Mic In/Line In). Audio output can be routed to the external HDMI or Audio Line Out port.

Built-In Microphone

External Audio Input

Save Classroom Presentations on External Memory

Both still images (jpg) and audio video files (mp4) can be saved on a USB flash drive or SD Memory Card for future use. Files may also be saved to a PC or Mac using Image Mate Software (included).

SD Memory Card

USB Flash Drive

Imagine What You Can Do with These Lesson Boosters

Presentation Support Tools

The TT-12's ergonomically designed remote control brings convenient functions to classroom presentations.
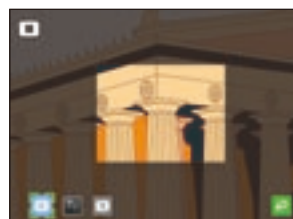
Split Screen
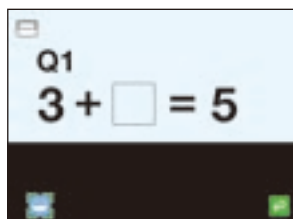Show a still image and a live image simultaneously.

Highlight
Draw attention to a particular section of an image.

Mask
Hide a selected part of an image from view.

Q1
3 + ☐ = 5

Mosaic
Give images a mosaic-like effect.

Picture-in-Picture
Display a quarter-size still image along with a live image.

Color Filter
Blacken specific colored parts of an image.

TT-12 Specifications

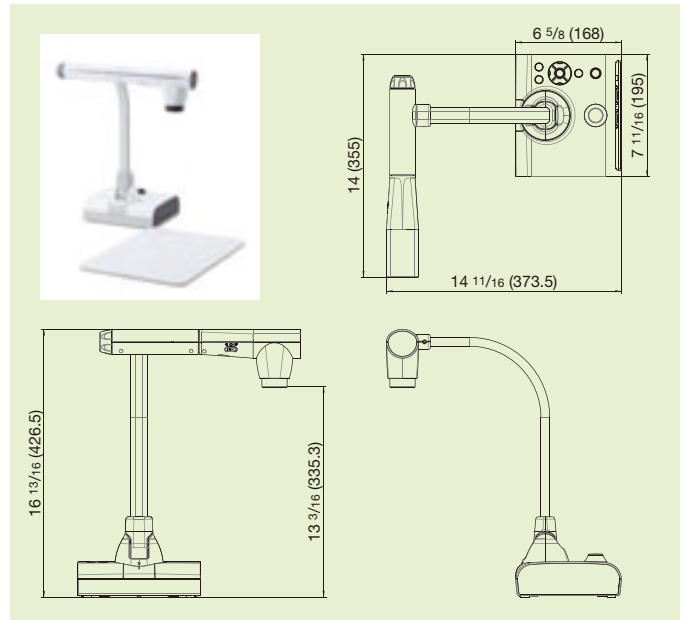| Model		TT-12
Camera	Image pick-up device	1/2.8" CMOS 3,400,000 pixels
	Total pixels	2,144 (H) x 1,588 (V)
	Effective pixels	1,920 (H) x 1,536 (V)
	Frame rate	30 fps
	Resolution	Analog RGB: 800 (H) x 800 (V) TV lines or more
		Video output: 500 (H) TV lines or more
Optics	Zoom	Powered, 12X optical
	Lens	F3.2–3.6, f=4.0 mm– 48.0 mm
	Shooting area	1080p: Max. 16 9/16" x 9 3/16" (420 x 233 mm) Min. 1 15/16" x 1 1/16" (48.5 x 27.5 mm)
		720p: Max. 16 9/16" x 9 3/16" (420 x 233 mm) Min. 1 15/16" x 1 1/16" (48.5 x 27.5 mm)
		SXGA: Max. 16 9/16" x 13 1/8" (420 x 334 mm) Min. 1 15/16" x 1 1/2" (48.5 x 38.5 mm)
		WXGA: Max. 16 9/16" x 10 3/16" (420 x 259 mm) Min. 1 15/16" x 1 3/16" (48.5 x 30.5 mm)
		XGA: Max. 16 9/16" x 12 5/16" (420 x 313 mm) Min. 1 15/16" x 1 7/16" (48.5 x 36.5 mm)
	Focus	Auto / Manual / Zoom Sync
Functions	White balance	Auto / One-Push /Manual
	Image mode	Text1 / Text2 / Text3 / Graphics1 / Graphics2
	Edge enhancement	Provided (only for graphics mode)
	Pause	Provided
	Still image storage	Provided
	Movie storage	Provided
	Digital zoom	8X
	Gamma setting	Provided (only for graphics mode)
	Graphical OSD (on-screen display)	Provided
	Slide show	Provided (image data)
	Image save	SD memory card / SDHC memory card / USB flash drive
	State presetting	Up to 3 user settings
	Annotation	Provided (on PC screen)
	Brightness control	Auto (with level adjustment) / Manual
	Support functions	Highlight, Mask, Scroll (in digital zoom), Mosaic,
		Split screen, PinP (Picture-in-Picture),
		Color filter, Microscope, Image rotation (0°/180°)
		Positive/negative conversion, Color/B&W selection
Interface	Input selection	Main / External
	Output terminals	RGB output mini D-sub 15-pin connector, female x 1
		Composite video output RCA pin jack / 75Ω unbalanced x 1
		(NTSC/PAL) HDMI output terminal x 1
		Line Out terminal 3.5 mm-diameter stereo mini jack x 1
	Input terminals	RGB input mini D-sub 15-pin connector, female x 1
		Mic In/Line Out terminal (shared), 3.5 mm-diameter stereo mini jack x 1
	Ext. control terminal	USB device (2.0 compliant) Mini-B receptacle x 1
	Analog RGB output	1080p: 1,920 x 1,080 @ 60 Hz
		720p: 1,280 x 720 @ 60 Hz
		SXGA: 1,280 x 1,024 @ 60 Hz
		WXGA: 1,280 x 800 @ 60 Hz
		XGA: 1,024 x 768 @ 60 Hz
	HDMI output	Image output: 1080p/720p
		Audio output: PCM 44.1 kHz sampling frequency
	Video output selection switch	Provided (NTSC/PAL)
	Memory interface	SD memory card slot x 1, USB host (2.0 compliant) Type A receptacle x1
Lighting	Illumination lamp	White LED
Others	Accessories	AC adapter, AC cord, RGB cable, USB cable (for connecting to PC)
		Anti-glare sheet, Remote control, Strap (for remote control),
		Stage, AAA batteries (for remote control), Dust cover,
		Image Mate CD-ROM, Image Mate installation manual,
		Instruction manual (CD-ROM), Basic startup guide, Warranty
	Security slot	Provided
	Power source	12V DC (AC adapter AC 100–240V)
	Power consumption	17.5 W (AC adapter included)
	Dimensions (W x D x H)	14" x 14 11/16" x 16 13/16" (355 x 373.5 x 426.5 mm) setup
		7 11/16" x 11 9/16" x 18 7/16" (195 x 294 x 469 mm) folded
	Weight	Approx. 7.1 lbs (3.2 kg) (main unit only)

H: horizontal, V: vertical

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ELMO's Helping to Provide a Greener Future for Our Children

This ELMO product complies with RoHS Directive 2002/95/EC (Restriction Of the use of certain Hazardous Substances in electronic equipment). This compliance helps to ensure a healthier and greener environment for all our children.

Profile

All dimensions in inches (mm)

6 5/8 (168)
7 11/16 (195)
14 (355)
14 11/16 (373.5)
16 13/16 (426.5)
13 3/16 (335.3)

Rear Panel

DC 12V In   Audio Out   HDMI Out   RGB Out   RGB In   Video   USB

Option

Microscope Attachment Lens

LET'S Start ICT in Education with "Document Camera"!

Visit the ELMO global website to understand what a document camera is in 13 different languages. The ELMO global website introduces you to the useful and effective ways of using the document camera and how the ELMO document camera is used and supported by teachers worldwide. http://www.elmoglobal.com

Touchboards

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