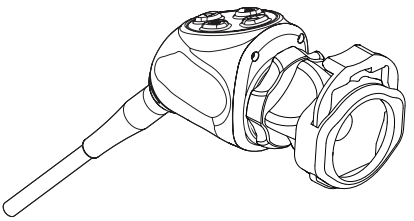
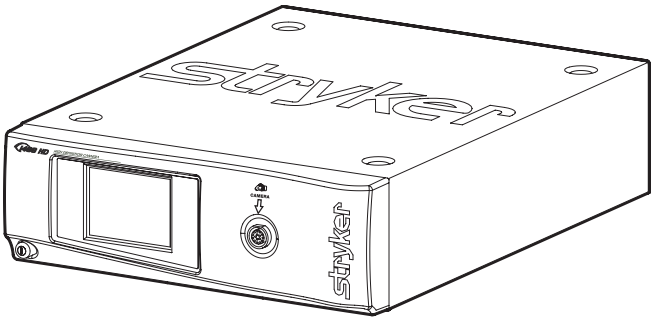
stryker®

1488 HD Video Camera





REF 1488010000
1488010001
1488210105
1488610122
1488710105

CE ℞ ONLY

Contents

Warnings and Cautions

Please read this manual and follow its instructions carefully. The words warning, caution, and note carry special meaning and should be carefully reviewed:

Warning	Indicates risks to the safety of the patient or user. Failure to follow warnings may result in injury to the patient or user.
Caution	Indicates risks to the equipment. Failure to follow cautions may result in product damage.

Note: Clarifies the instructions or presents additional useful information.

An exclamation mark within a triangle is intended to alert the user to the presence of important operating and maintenance instructions in the manual.

A lightning bolt within a triangle is intended to warn of the presence of hazardous voltage. Refer all service to authorized personnel.

IMPORTANT SAFETY NOTICE: Before operating this device, please read this operating manual thoroughly and carefully. When using this device with a light source, fire and/or severe injury may result to the patient, user, or inanimate objects if the instructions in this manual are not followed.

All light sources can generate significant amounts of heat (exceeding 41 °C/106 °F) at the scope tip, the scope light post, the light cable tip, and/ or near the light cable adapter. Higher levels of brightness from the light source result in higher levels of heat. Always adjust the brightness level of the camera and the monitor before adjusting the brightness level of the light source. Adjust the brightness level of the light source to the minimum brightness necessary to adequately illuminate the surgical site.

In addition, adjust the internal shutter of the camera higher in order to run the light source at a lower intensity. Avoid touching the scope tip or the light cable tip to the patient, and never place them on top of the patient, as doing so may result in burns to the patient or user. In addition, never place the scope tip, the scope light post, the light cable adapter, or the light cable tip on the surgical drapes or other flammable material, as doing so may result in fire.

Always place the light source in standby mode whenever the scope is removed from the light cable or the device is unattended. The scope tip, scope light post, light cable adapter, and light cable tip will take several minutes to cool off after being placed in standby mode, and therefore may still result in fire or burns to the patient, user, or inanimate objects.

Warnings

To avoid potential serious injury to the user and the patient and/or damage to this device, please note the following warnings:

1. Must be a qualified physician to use this equipment.
2. Carefully unpack this device and check if any damage occurred during shipment. If damage is detected, refer to the standard warranty.
3. Read this operating manual thoroughly, especially the warnings, and be familiar with its contents before connecting and using this device.
4. Test this equipment prior to a surgical procedure. This unit was fully tested at the factory before shipment.
5. The camera head surface may exceed 41 °C (106 °F) in operating conditions with high ambient temperatures and should be handled with caution.
6. Pay close attention to the care, cleaning, disinfection and sterilization instructions in this manual. Any deviation may cause damage.
7. Never sterilize the camera console, because the delicate electronics cannot withstand this procedure.
8. Ensure that the electrical installation of the relevant operating room complies with the NEC and CEC guidelines.
9. Do not position the console so that it is difficult to disconnect the power cord from the supply mains.
10. To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
11. Multiple portable socket-outlets shall not be placed on the floor.
12. Never use the camera system in the presence of flammable or explosive gases.
13. Always treat the camera system with care. The camera system contains sensitive parts that are precisely aligned and may suffer damage if dropped or mistreated.
14. Disconnect the console from the electrical outlet when inspecting fuses.
15. Do not remove covers on the console, as doing so may cause damage to electronics and/or electric shock
16. Do not disassemble any part of the camera head; doing so may break the seals, causing leakage and/or electric shock.
17. Attempt no internal repairs or adjustments not specifically detailed in this operating manual.
18. Ensure that readjustments, modifications, and/or repairs are carried out by persons authorized by Stryker Endoscopy.

The warranty is void if any of these warnings are disregarded.

Product Description and Intended Use

The Stryker 1488 HD 3-Chip Medical Video Camera is a high-definition camera used to produce still and video images of endoscopic surgical applications.

The camera system consists of three main components: a console, a camera head, and a coupler. Each is available in different models:

Consoles	
1488010000	1488 HD 3-Chip Camera Control Unit
1488010001	1488 HD 3-Chip Camera Control Unit with DVI Fiber Output
Camera Heads	
1488210105	1488 HD 3-Chip Camera Head, C-Mount
1488610122	1488 HD 3-Chip Camera Head with Integrated Coupler
1488710105	1488 HD 3-Chip Inline Camera Head, C-Mount
1488310130	1488 HD 3-Chip Pendulum Camera Head, Integrated Coupler[1]
Couplers	
1488020122	1488 HD Coupler, 18 mm, C-Mount[2]
1488020125	IDEAL EYES® Zoom Coupler, C-Mount[3]
Extension Cable (optional)	
1488000020	1488 HD 3-Chip Camera Extension Cable, 16 ft[4]

[1] Complete instructions are available in Stryker user guide P18970.

[2] Complete instructions are available in Stryker user guide P18968.

[3] Complete instructions are available in Stryker user guide P18969.

[4] Complete instructions are available in Stryker user guide P18971.

The 1488 HD console is also packaged with the following connection cables:

- Remote cables, 2.5 mm to 3.5 mm (Qty: 2)
- DVI-I cable (Qty: 1)
- Hospital-grade power cord (Qty: 1)

Contact your Stryker representative for availability of other cables that may be required for alternate configurations.

Indications/Contraindications

The 1488 HD Camera is indicated for use in general laparoscopy, nasopharyngoscopy, ear endoscopy, sinuscopy, and plastic surgery wherever a laparoscope/endoscope/arthroscope is indicated for use.

A few examples of the more common endoscopic surgeries are laparoscopic cholecystectomy, laparoscopic hernia repair, laparoscopic appendectomy, laparoscopic pelvic lymph node dissection, laparoscopically assisted hysterectomy, laparoscopic and thorascopic anterior spinal fusion, anterior cruciate ligament reconstruction, knee arthroscopy, shoulder arthroscopy, small joint arthroscopy, decompression fixation, wedge resection, lung biopsy, pleural biopsy, dorsal sympathectomy, pleurodesis, internal mammary artery dissection for coronary artery bypass, coronary artery bypass grafting where endoscopic visualization is indicated and examination of the evacuated cardiac chamber during performance of valve replacement.

The users of the camera are general surgeons, gynecologists, cardiac surgeons, thoracic surgeons, plastic surgeons, orthopedic surgeons, ENT surgeons and urologists.

There are no known contraindications.

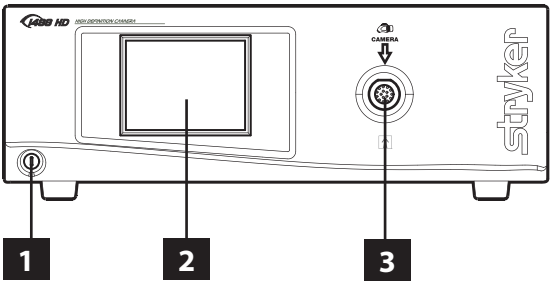
The Camera Console

The camera console—or Camera Control Unit (CCU)—is the control center for the 1488 HD Medical Video Camera, and it processes the video and photographic images produced during the surgical procedure.

Front Panel

The console front panel features a touchscreen, where different menus can be accessed, including the controls for adjusting the light level, zoom, and white balance, as well as allowing the selection of surgical specialty settings that optimize camera performance for specific surgical procedures. The front panel also allows activation of remote outputs, which are commonly used with a Stryker digital capture console to record images and video.

See the "Operation" section for more detail on using the front panel.

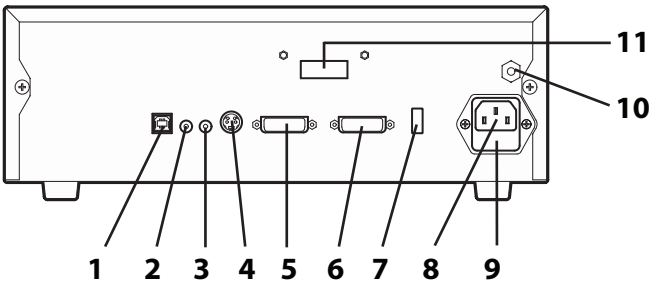


1.	**Power Switch**	Powers the camera ON and OFF
2.	**Touchscreen**	Allows navigation through different menus for controlling the camera and adjusting the video settings
3.	**Camera-Connector Port**	Connects to the 1488 HD Camera Head

Rear Panel

The console rear panel provides ports for connecting the 1488 HD Camera to viewing and recording equipment, such as video monitors and Stryker device control consoles.

See the "Product Description" section for the different console models that are available. The 1488 HD 3-Chip Camera Control Unit with DVI Fiber Output (1488010001) is shown below.

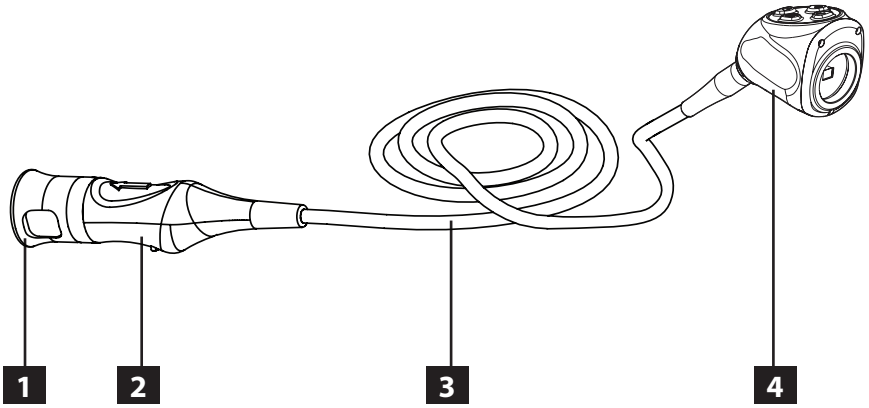


1.	**Device Control Port**	Connects to a Stryker device control console (such as the SDC3 or SIDNE®) to enable voice operation and/or graphic tablet control
2.	**Remote Out 1**	Connects to a video accessory remote input
3.	**Remote Out 2**	Connects to a video accessory remote input
4.	**S-Video Out**	Analog video output
5.	**DVI Out 1**	Digital video output
6.	**DVI Out 2**	Digital video output
7.	**Light Source Port**	Connects to Stryker L9000 Light Source (0220210000)
8.	**AC Power Inlet**	Connects to AC mains with separable power cord
9.	**Fuse Panel**	Contains two 0.63 A fuses
10.	**Equipotential Ground Plug**	Connects to a potential equalization conductor. The resulting medical electrical system shall follow all applicable IEC 60601-1 requirements.
11.	**Fiber Outputs (optical)**	DVI output for connection to Lucent connector fibers (optional: 1488010001)

The Camera Head

The camera head connects to the camera console and produces video and photographic images, which it relays to the camera console. It features several controls that are accessible through a button keypad located on the top of the camera head (see the "Operation" section).

See the "Product Description" section for the different camera head models that are available. The 1488 HD 3-Chip Camera Head, C-Mount (1488210105) is shown below.

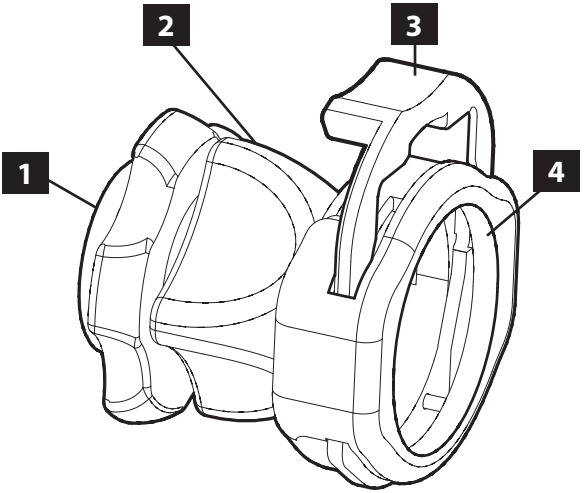


1.	**Soaking Cap**	Protects the cable connector during cleaning, disinfection, and sterilization
2.	**Cable Connector**	Connects the camera head to the camera console
3.	**Camera Cable**	The camera cable length is 10 feet (3.05 m)
4.	**Camera Head**	Produces photographic and video images, provides camera controls, and connects with a focusing coupler

The C-Mount Coupler

The C-mount coupler threads onto the face of the camera head, enabling a scope to be attached to the camera. It provides a focusing ring to adjust image sharpness.

See the "Product Description" section for the different coupler models that are available and their respective user guides, which provide additional instructions. The 1488 HD Coupler, 18 mm, C-Mount (1488020122) is shown below.



1.	**Rear Adapter**	Threads onto the camera head
2.	**Focusing Ring**	Adjusts the coupler focus
3.	**Endobody Clamp**	Secures the scope to the coupler
4.	**Scope End**	Receives the endoscope

Setup and Interconnection

Stryker Endoscopy considers instructional training, or inservice, an integral part of the 1488 HD Medical Video Camera. Your local Stryker Endoscopy sales representative will perform at least one inservice at your convenience to help set up your equipment and instruct you and your staff on its operation and maintenance. To schedule an inservice, contact your local Stryker Endoscopy representative after your equipment has arrived.

Setting up the 1488 HD Camera involves three steps:

1. **Setting up the console**
2. **Setting up the camera head**
3. **Setting up the coupler**

Always connect the console to an appropriate power source, using a hospital-grade power cord. Loss of AC power will cause the camera to shut down and the surgical image to be lost.

Only connect items to the camera that have been specified for use with the camera. Connecting incompatible equipment may cause unexpected results.

When the 1488 HD Camera is used with other equipment, leakage currents may be additive. Ensure that all systems are installed according to the requirements of IEC 60601-1-1.

Equipment which employs RF communications may affect the normal function of the 1488 HD Camera. When choosing a location for the 1488 HD Camera, consult the "Electromagnetic Compatibility" section to ensure proper function.

Always set up the console in a location that allows adequate ventilation (airflow) to the console. Insufficient ventilation may cause the console to overheat and shut down.

Setting Up the Console

Refer to the instructions below and the wiring diagram on the following page for a typical 1488 HD configuration.

1. Connect the console's AC power to a hospital-grade outlet.
2. Connect one of the console's DVI outputs to an available DVI input on a Stryker digital capture console such as the SDC3.
   - The 1488 HD console can also be connected to additional SDC video inputs or directly to one or more display monitors; the rear panel provides one analog and two digital-video outputs (or three with 1488010001):

Output Type	Output	Cable	Connector
Analog	S-VHS 1*	S-VHS	4 pin Mini-Din (push-only connectors)
Digital (standard)	DVI-I1** and DVI-I2**	DVI	29 pin (push-only connectors, with two tightening knobs)
Digital (optional in 1488010001)	DVI over optical Fiber	Fiber (×4)	Lucent connector fiber (×4) (push only)

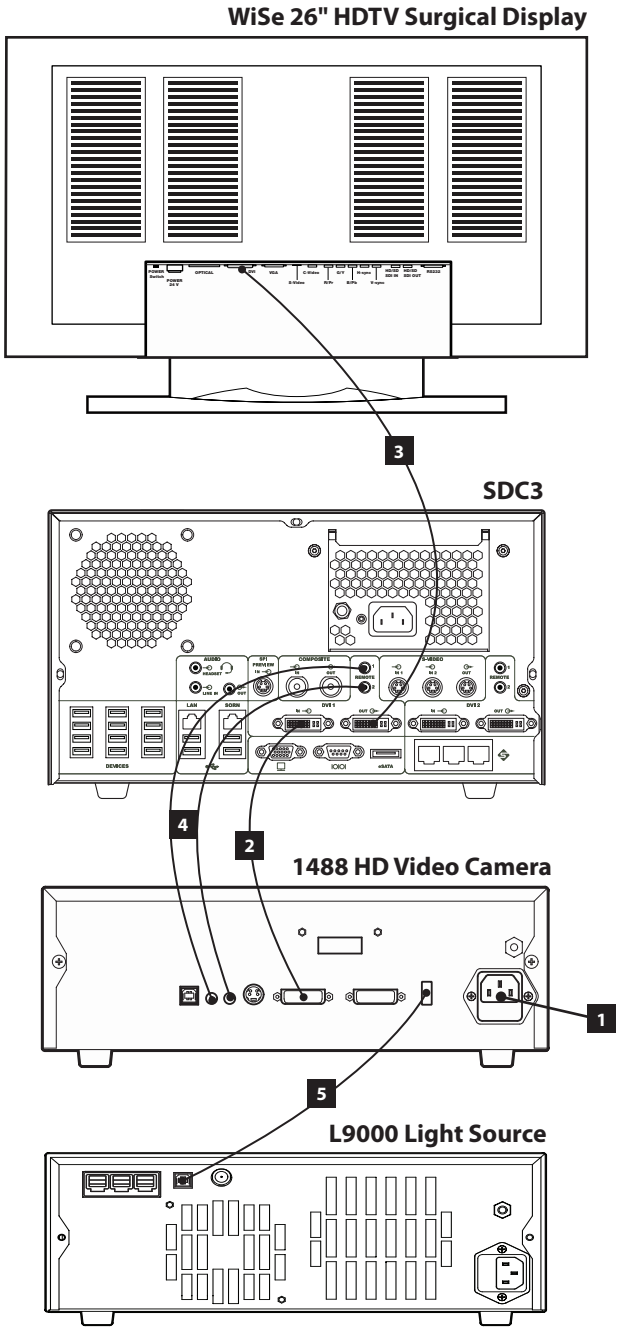
* On some monitors, S-VHS inputs may be labeled Y/C.

** The DVI connectors can also output analog SXGA signals through a DVI-I to VGA adapter.

When using any device with unterminated analog video inputs, connect a cable from the VIDEO OUT of that device to the VIDEO IN on the monitor.

3. Connect the DVI output from the Stryker digital capture console to the DVI input on the display monitor.
4. Using the provided remote cables, connect remote outputs 1 and 2 from the 1488 HD console to a Stryker digital capture console. (The remote inputs should be connected to the same channel as the video input.)
   - Devices connected to the remote outputs can be operated using the console touchscreen or the P button on the camera head. See the "Operation" section for details.
5. Connect a USB A-to-B cable (also available from Stryker, part 0105187988) from the console's Light Source output to the SIDNE input on the Stryker L9000 Light Source.
   - The 1488 HD camera head can be programmed to toggle "Run/Standby" controls on the L9000. Contact a Stryker representative for more information about enabling this advanced feature.

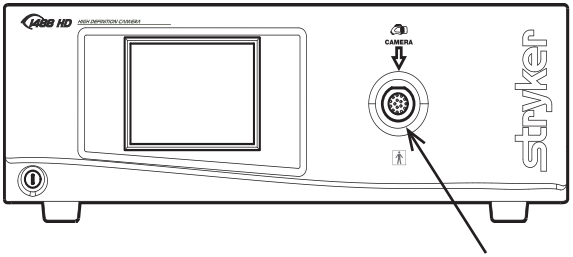
1488 HD Wiring Diagram



Setting Up the Camera Head

⚠	Do not severely bend the camera cable or damage may result.

1. Unscrew the soaking cap from the cable connector on the camera head.
2. Align the blue arrow on the cable connector with the arrow on the camera-connector port on the front console panel.
3. Push in the connector until it locks in place.



Note: To unplug the camera from the console, grasp the knobbed portion of the connector and pull straight out.

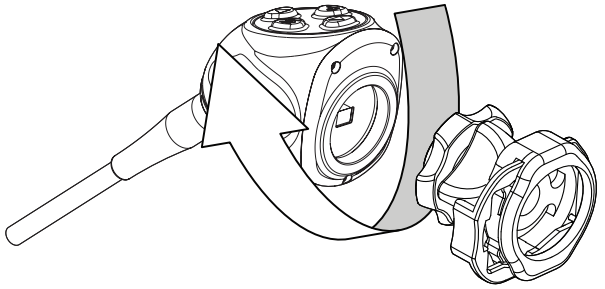
Setting Up the Coupler

Steps 1–3 below provide instructions for connecting 1488 HD camera heads to the 1488 HD Coupler, 18 mm, C-Mount (1488020122). Refer to the bullets below for possible system variations:

- When using the 1488 HD 3-Chip Camera Head with Integrated Coupler (1488610122), skip to step 2.
- When using the 1488 HD 3-Chip Pendulum Camera Head with Integrated Coupler (1488310130), see Stryker user guide P18970.
- When using the IDEAL EYES Zoom Coupler, C-Mount (1488010125), see Stryker user guide P18969.
- When using a direct-coupled C-Mount endoscope (a scope that requires no coupler), thread the endoscope directly into the camera head until it forms a tight seal, and skip to step 3. (C-Mount endoscopes are not compatible with camera heads that have an integrated coupler.)

⚠	When attaching or removing the coupler, grip only the rear adapter, as twisting other parts of the coupler with force may result in mechanical damage.
	Do not overtighten the coupler (or a direct-coupled C-mount scope), as this may damage the front window of the camera.

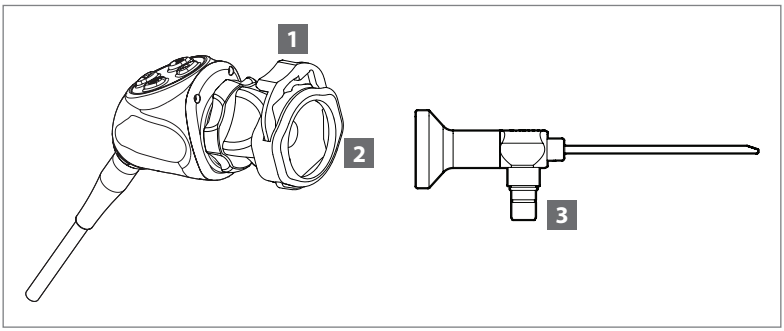
1. Attach the coupler to the camera head.
    - Gripping the rear adapter, screw the coupler clockwise onto the camera head until it forms a tight seal (1488210105 and 1488710105 only).



2. Attach an endoscope to the coupler.

Before each use, check the outer surface of the endoscope to ensure there are no rough surfaces, sharp edges, or protrusions.

- Remove the coupler dust cap if it is present.
- Depress the endobody clamp **1** and insert a scope into the endobody **2**.
- Release the endobody clamp to secure the endoscope.



3. Attach a light cable from the light source to the light post on the endoscope **3**.

Note: To remove the coupler, grip the rear adapter and unscrew the coupler counterclockwise from the camera head.

Connecting the DVI Fiber Outputs

Using adjustments or performing procedures differently than specified below may result in hazardous radiation exposure.

The 1488 HD Camera has the optional upgrade, the fiber output, for model 1488010001. This upgrade contains four laser diodes to transmit a DVI output over fiberoptic cables.

1. Connect four individual fibers (terminated in Lucent connectors) to the red (R), green (G), blue (B) and clock (C) laser diodes on the console rear panel.
2. Connect the four fibers to a compatible fiberoptic DVI receiver.
    - The four fibers should be connected to the camera console in the labeled order: RGBC
    - The fibers should be connected to the monitor in one of two configurations: CBGR (reverse order) or BGRC (R/B switched).

Note: The 1488 HD Camera model 1488010001 is a Class 1 laser product per IEC 60825-1 and 21 CFR 1040.

Operation

Note: Before operating the 1488 HD Camera, ensure all system components have been set up according to the instructions in the "Setup and Interconnection" section.

Operating the Camera with a Light Source

IMPORTANT SAFETY NOTICE: Before operating this device, please read this operating manual thoroughly and carefully. When using this device with a light source, fire and/or severe injury may result to the patient, user or inanimate objects if the instructions in this manual are not followed.

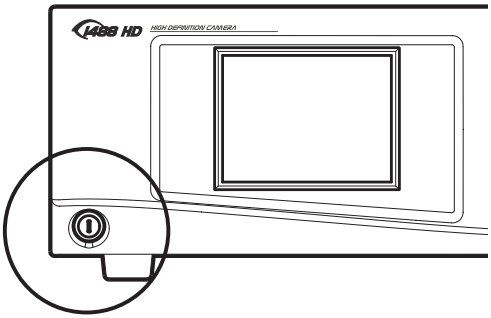
All light sources can generate significant amounts of heat (exceeding 41 °C/106 °F) at the scope tip, the scope light post, the light cable tip, and/or near the light cable adapter. Higher levels of brightness from the light source result in higher levels of heat. Always adjust the brightness level of the camera and the monitor before adjusting the brightness level of the light source. Adjust the brightness level of the light source to the minimum brightness necessary to adequately illuminate the surgical site.

In addition, adjust the internal shutter of the camera higher in order to run the light source at a lower intensity. Avoid touching the scope tip or the light cable tip to the patient, and never place them on top of the patient, as doing so may result in burns to the patient or user. In addition, never place the scope tip, the scope light post, the light cable adapter, or the light cable tip on the surgical drapes or other flammable material, as doing so may result in fire.

Always place the light source in standby mode whenever the scope is removed from the light cable or the device is unattended. The scope tip, scope light post, light cable adapter, and light cable tip will take several minutes to cool off after being placed in standby mode, and therefore may still result in fire or burns to the patient, user, or inanimate objects.

Powering the Console On/Off

Before using the 1488 HD Camera in a surgical procedure, test all system components to ensure proper function. Ensure that a video image appears on all video monitors before beginning any procedure.



1. Power on the monitor.
2. Press the power switch on the console to power the console on or off.

Note: A color bar pattern will appear on the monitor if the camera head is not connected to the camera console. If the color bar appears, refer to the "Setting Up the Camera Head" section to connect the camera head.

Controlling Remote Video Accessories

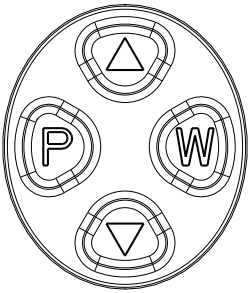
The 1488 HD Camera can remotely control up to two functions of a video accessory, such as a Stryker digital capture console. Commonly this enables the user to capture images or start and stop video recording.

Remote video accessories can be controlled with the camera head's P button or the console touchscreen. See the following sections, "Using the Camera Head Buttons" and "Using the Touchscreen Interface."

Note: Controls for capturing photos or recording video require connecting a video accessory to the console. See the "Setup" section for more detail.

Using the Camera Head Buttons

The camera head features a four-button keypad for controlling the 1488 camera. The button functions are described below.



Up and Down Buttons

The up and down buttons work together to increase or decrease the automatic-shutter light level in eight steps.

P (Picture) Button

The P button controls up to two functions of a remote video accessory. Commonly this enables the user to capture images or start and stop video recording. (See "Controlling Remote Video Accessories" above for connection requirements.)

- Press the P button for less than two seconds to select Remote 1. One beep will sound. When the camera is connected to a Stryker digital capture console, this will capture a photo.
- Press the P button for more than two seconds to select Remote 2. Two beeps will sound. When the camera is connected to a Stryker digital capture console, this will start or stop video recording.

W (White-Balance) Button

The W button activates the white-balance function or the zoom-cycle function.

- Press the W button for less than two seconds to activate the zoom-cycle function. Each press will raise the zoom level in eight steps. When the zoom level has reached its maximum, pressing the button again will cycle the level back to the lowest setting.
- Press the W button for more than two seconds to activate the white-balance function. White balancing will correct slight color differences that exist between different light sources or endoscopes. See "Performing the White-Balance Test" below.

Using the Touchscreen Interface

The touchscreen interface on the console provides controls for adjusting or capturing the video image. The menus are described below.

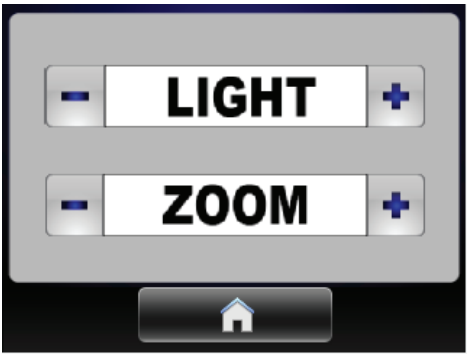
Home Screen

The Home screen is the default screen. Use the buttons below to choose surgical specialties and operate the camera head.

	Scroll through preset camera settings designed for **surgical specialties.** Choose from: • Arthroscopy • Cystoscopy • ENT/Skull • Flexi-Scope • Hysteroscopy • Laparoscopy • Laser • Microscope • Standard
	Press the camera button to **capture a photo.** A single beep will sound to indicate that a signal for capture/record has been sent to the digital capture console.
	Press the record button to **record a video.** Press again to stop recording. A double beep will sound to indicate that a signal for capture/record has been sent to the digital capture console.
	Press and hold the WB button for two seconds to activate **white balance**. See "Performing the White-Balance Test" below for more detail. A checkmark will appear on the button after the white-balance test is complete.
	Press the Menu button to navigate to the Menu screen.

Menu Screen

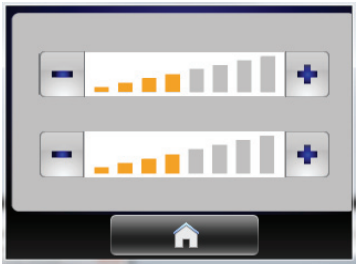
The Menu screen provides options for adjusting the camera picture.



Press the plus or minus buttons to increase or decrease:

- **Light** (automatic-shutter light level)
- **Zoom** (magnification)

While adjusting Light or Zoom, a meter will briefly appear on the touchscreen to indicate each selection level.



Press the Home button to return to the Home screen.

Performing the White-Balance Test

Before each surgical procedure, perform the white-balance test to adjust the camera's perception of white so it can display other colors correctly.

1. Ensure that a scope and light source are attached to the camera, and that the camera, light source and monitor are powered on.
2. Point the scope tip at several stacked white gauze pads, a white laparoscopic sponge, or any clean white surface.
3. Look at the monitor and make sure there is no visible glare off of the white surface of the image.
4. Press and hold the camera head W button (or "WB" on the touchscreen) until the monitor displays the message "WHITE BALANCE IN PROGRESS."
5. Continue pointing the scope at the white surface until the video monitor displays the message "WHITE BALANCE COMPLETE." The video picture may change color. If you cannot achieve an acceptable white balance, refer to the "Troubleshooting" section.

Advanced Features

The 1488 HD Camera has additional features that are not detailed in this guide:

- Video image settings
- Button programming
- Touchscreen language settings
- L9000 light source "Run/Standby" controls
- Other system settings

These advanced features require in-depth knowledge of the device and should be performed only by trained personnel. For access to advanced features, contact a Stryker representative.

Troubleshooting

Problem	Possible Solution
"Restart Camera Console" message (Color bar background)	• Camera head temporarily shut down due to overcurrent. Turn off the console, wait 3 seconds, and turn it back on. • After sterilization, ensure the camera head has cooled down before connecting it to the console.
"System Error" message (Light blue background)	• No video detected. • After sterilization, ensure the camera head has cooled down before connecting it to the console. • Return the system for repair.
No color bar	• Ensure the video-out from the console is connected to the video-in on the monitor. • Ensure all video systems are powered on. • Ensure that the camera head is not connected to the console. • Turn off the console, wait 3 seconds, and turn it back on.
No color bar (Optical DVI Fiber only)	• Same as "No color bar" above. • See the "Connecting the DVI Fiber Outputs" section.
Incorrect picture color	• Perform the white-balance test. (See the "Performing the White-Balance Test" section.) • Check the color settings on the monitor.
White-balance quality is not good	• See the solution for "Picture is too dark." • See the solution for "Picture is too bright." • Perform the white-balance test with the light source connected to the scope. Use metal-halide, xenon, or LED lighting (no fluorescent lighting).
Picture is too dark	• Increase the camera light level with the camera head. • Increase the light-source output. • Check the fiberoptic light cable for excessive broken fibers.
Picture is too bright	• Decrease the camera light level. • Decrease the light-source output.

Problem	Possible Solution
Noise or snow on picture when using electrocautery probes	• Plug the electrocautery generator into a separate electrical outlet and separate the 1488 HD power cord from the electrocautery power cord. • Separate the camera cable from the electrocautery cable. • Reposition the electrocautery grounding pad on the patient.
Noise or snow on picture when not using electrocautery probes	• Confirm all cable connectors are securely attached. • Check for and replace faulty video cables.
No video picture when the camera head is plugged in	• Check to ensure that all devices in the video system are plugged in and powered on. • Check the connector on the camera-head cable for broken pins. • Detach the camera head from the console and reconnect. • Turn off the console, wait 3 seconds, and turn it back on.
Image is not well centered	• Release the scope from the coupler and then reconnect it. Make sure the scope is seated correctly in the coupler.
Variability in color reproduction between different light sources or peripherals	• Perform the white-balance test. (See the "Performing the White-Balance Test" section.) • Check the settings on video peripherals. • Ensure the light source has a proper infrared filter (check with manufacturer specifications).
Foggy picture (loss of definition and clarity)	• Refocus the camera. • Refocus the coupler. • Clean and dry both the scope and the coupler windows. • Remove the coupler from the camera head and remove any moisture that has built up between the two components.

Problem	Possible Solution
Optics are dirty	• Rotate the scope. If dust particles in the picture rotate, the dust is located on the scope itself. Follow the manufacturer's instructions for cleaning the eyepiece and negative lens. • If particles in the picture do not move when you rotate the scope, the particles are located on the coupler or camera. Remove the scope and clean the window on the front of the coupler with a dry or alcohol-tipped cotton swab. • If dust particles lie between the coupler and camera, remove the coupler and clean the coupler and camera windows. • Ensure all components are completely dry before reassembling them, or fogging may result.
Blurry picture	• Ensure the coupler or C-mount scope is in focus. • On the Home screen, ensure the surgical specialty is not set to FLEXI-SCOPE unless you are using a flexible scope.
Camera head button error symbol appears on display monitor: 	• Return the camera head to Stryker for service. • If the symbol appears, the camera head buttons are non-functional but the camera head will still provide a video signal to the console. The camera can be operated from the console.
SIDNE device does not recognize 1488 camera head	• Contact your Stryker representative for compatibility settings.

Note: If this troubleshooting guide does not resolve the problem, call Stryker Technical Support at 1-877-478-7953 (inside the U.S.) or refer to the standard warranty.

Reprocessing

The camera console is not intended to come into contact with the patient. It may be cleaned, but not sterilized. The camera head and coupler may contact the patient and should both be cleaned and sterilized prior to every use. (Refer to the appropriate coupler user guide—identified in the "Product Description" section of this user guide—for instructions on reprocessing the coupler.)

Cleaning the Console

Should the camera console need cleaning, wipe it down with a sterile cloth and mild cleaning solution.

Disconnect the console from the AC power source before cleaning.

Never immerse or sterilize the camera console as this will damage the camera and void the warranty.

Cleaning, Disinfecting, and Sterilizing the Camera Head

These reprocessing instructions are provided in accordance with ISO 17664, AAMI TIR12, AAMI ST79, and AAMI ST81. While they have been validated by Stryker as being capable of preparing the device for re-use, it remains the responsibility of the processor to ensure that the reprocessing as actually performed, using equipment, materials, and personnel in the reprocessing facility, achieves the desired result. This normally requires validation and routine monitoring of the process. Stryker recommends users observe these standards when reprocessing medical devices.

Warnings

- This device must be cleaned and sterilized prior to the first use and after every subsequent use.
- Use only the sterilization cycles outlined in this document. Using unspecified sterilization cycles may damage the device or result in incomplete sterilization.
- Separate the camera head, coupler (1488210105 and 1488710105 only), and scope prior to cleaning, disinfection, or sterilization. If the coupler and camera head are cleaned, disinfected, or sterilized as a single unit, disconnecting the coupler during use will compromise the sterility of the two products. (Refer to the coupler and scope product manuals for reprocessing instructions.)
- Wear appropriate protective equipment: gloves, eye protection, etc.

- Sterilize only one camera head per tray, or incomplete sterilization may result. Follow any instructions provided with the sterilization tray or system regarding tray setup and other devices that may be sterilized within the same tray.

Cautions

- Always install the soaking cap prior to processing the camera. Failure to properly tighten the soaking cap will corrode the connector pins and void the warranty.
- Inspect the camera cable for cuts and breaks before soaking in any fluid. Return any damaged camera to Stryker for service.
- Never soak the camera in the same tray with sharp instruments.
- Do not use brushes or pads with metal or abrasive tips during manual cleaning, as permanent scoring or damage could result.
- To minimize galvanic corrosion, avoid soaking dissimilar metals in close proximity.
- The 1488 HD camera heads are not autoclavable. Steam sterilizing camera heads that are not marked **AUTOCLAVE** will result in product damage.
- Allow the camera head to cool before connecting it to the console. Connecting the camera head while it is hot may result in system error.
- When sterilizing with Steris® System 1E™, remove the camera head from the chamber once sterilization is complete, or moisture may condense inside the camera head and cause display defects.

Limitations on Reprocessing

- Do not cross-sterilize the device. Using multiple sterilization methods may significantly reduce the performance of the device.
- Prolonged sterilization via Ethlyene Oxide or Sterrad® 100NX™ may degrade the product appearance.
- Do not leave the device in solutions longer than necessary. This may accelerate normal product aging.
- Proper processing has a minimal effect on this device. End of life is normally determined by wear and damage due to use.
- Damage caused by improper processing is not covered by the warranty.

Instructions

Point of Use

- Wipe excess soil from the device using disposable paper towels.
- If an automated reprocessing method will be used, rinse any channels in the device with 50 mL of sterile distilled water immediately after use.

Containment and Transportation

- Reprocess the device as soon as reasonably practical following use[1].
- Transport the device in a tray to avoid damage.

[1] A 30 minute wait time was used during cleaning validation.

Preparation for Cleaning

1. Disassemble the coupler from the scope and camera head.
2. Prepare an enzymatic detergent according to the manufacturer's recommendations (one ounce per gallon of tap water at 35–40 °C)[2].
3. Wipe the entire device with the detergent, using a clean cloth.
4. Immerse the device in the detergent. Using a syringe, inject any inside regions of the device with 50 mL of the detergent to ensure all parts of the device are reached.
5. Soak the device in the detergent for a minimum of 15 minutes.

[2] ENZOL® Enzymatic Detergent is validated for cleaning efficacy.

Cleaning: Manual

1. Brush

- Prepare a fresh solution of enzymatic detergent according to the manufacturer's recommendations (one ounce per gallon of tap water at 35–40 °C).
- Thoroughly brush the exterior of the device with a soft-bristled brush, focusing on any mated or rough surfaces.
- Using a syringe, inject any lumen or mated surface a minimum of five times with 50 mL of the detergent.
- Brush any lumens a minimum of five times from each end, using an appropriate bottle brush.
- Brush any movable parts in all extreme positions.

2. Rinse

- Rinse the device with reverse osmosis/de-ionized (RO/DI) water at ambient temperature until all detergent residue is removed. Flush any lumens or mated surfaces a minimum of five times. Once all detergent residue is removed, continue to rinse for a minimum of 30 seconds.
- Drain excess water from the device and dry it using a clean cloth or pressurized air.
- Visually inspect the device for cleanliness, paying close attention to hard-to-reach areas. If visible soil remains, repeat steps 1 and 2.

3. Soak

- Prepare a non-enzymatic detergent according to the manufacturer's recommendations (0.125 ounces per gallon of tap water at 35–40 °C)[3].
- Fully immerse the device and use a syringe to inject any lumens and mated surfaces with 50 mL of the detergent.
- Soak the device for a minimum of 15 minutes.

4. Brush

- Thoroughly brush the exterior of the device using a soft-bristled brush.
- Using a syringe, inject 50 mL of the detergent into any cannulae, lumens, or mated surfaces a minimum of five times.
- Brush any lumens a minimum of five times from each end, using an appropriate bottle brush.
- Actuate the device, brushing around any movable parts in all extreme positions.

5. Rinse

- Thoroughly rinse the device with RO/DI water until all detergent residue is removed. Flush any lumens or crevices a minimum of five times. Once all detergent residue is removed, continue to rinse for a minimum of 30 seconds.
- Drain the excess water from the device and dry it using a clean cloth or pressurized air.

[3] Prolystica® 2x Neutral Detergent is validated for cleaning efficacy.

Cleaning: Automated

1. **Brush**
   - Using a syringe, inject 50 mL of the enzymatic detergent (from the "Preparation for Cleaning" section) into any lumen and mated surface a minimum of one time.
   - Brush from both ends of any lumens a minimum of five times, using an appropriate bottle brush.
2. **Rinse**
   - Rinse the device with RO/DI water at ambient temperature until there is no visible detergent residue. Continue to rinse for a minimum of 30 seconds after all detergent residue has been removed.
   - Place the device in the washer on an incline to facilitate drainage.
3. **Automated wash**
   - Program the washer using the following parameters:

Phase	Recirculation Time	Water Temperature	Detergent Type and Concentration (if applicable)
Pre Wash	2 minutes	Cold tap water	N/A
Enzyme Wash	2 minutes	Hot tap water	Enzymatic Detergent
Wash 1	2 minutes	Set point (66 ˚C)	Non-enzymatic Detergent[4]
Rinse 1	2 minutes	Hot tap water	N/A
Dry Phase	7 minutes	115 ˚C	N/A

   - If necessary, use pressurized air to aid in drying. Visually inspect each device for cleanliness.

[4] Prolystica® 2x Neutral Detergent is validated for cleaning efficacy.

Low Level Disinfection (optional)

1. Clean and prepare the camera head and cable as recommended in this user guide. Ensure the soaking cap is installed.
2. Disinfect the device in a disinfecting solution that has one of the following active Ingredients:
   - ≥ 2.4% glutaraldehyde[5] with a minimum soaking time of 45 min at 25°C
   - ≥ 3.4% glutaraldehyde[6] with a minimum soaking time of 20 min at 25°C
   - ≥ 0.55% ortho-phthalaldehyde[7] with a minimum soaking time of 12 min at 25°C.
3. Prepare the disinfecting solution according to the manufacturer's instructions.
4. Thoroughly rinse and flush all parts and lumens with running, demineralized water to remove the disinfectant.
5. Dry all parts with a lint-free towel immediately after rinsing.

[5] CIDEX Activated® is validated for disinfection efficacy.

[6] CIDEX Plus® is validated for disinfection efficacy.

[7] CIDEX® OPA is validated for disinfection efficacy.

Drying

- For automated drying, use the drying cycle provided with the washer/disinfector.
- For manual drying, use a lint-free cloth.
- Dry any lumens with compressed air.

Maintenance, Inspection, and Testing

- Inspect the device on a continual basis. If a problem is observed or suspected, the device should be returned for repair.
- Inspect all components for cleanliness. If fluid or tissue buildup is present, repeat the above cleaning and disinfection procedures.
- Inspect the camera cable for cuts and breaks. Return any damaged camera to Stryker for service.

Packaging

N/A

Sterilization

After performing the cleaning instructions specified above, perform one of the following sterilization cycles.

Ethylene Oxide (EO)

1. Clean and prepare the camera head and cable as recommended in this user guide. Ensure the soaking cap is installed.
2. If using a sterilization tray (optional), follow any additional instructions provided with the tray. Use only trays that are compatible with EO.[8]
3. Double wrap the camera head and cable (or tray) prior to sterilization.
4. Sterilize the camera head and cable using the parameters below.
5. Allow the camera head, cable, coupler, and scope to completely dry before reassembly. Any moisture on the threads will cause the camera and coupler windows to fog during use.

Preconditioning parameters	
Temperature	55 °C (131 °F)
Chamber Humidity	70% RH
Vacuum Set Points	1.3 psia
Time	30 minutes
Exposure	
Concentration (100% EO)	725 mg/L
Temperature	55 ± 2 °C (131 ± 5 °F)
Time	1 hour
Chamber Humidity	70% RH (50–80%) ± 5%
Aeration parameters	
Aeration Time	12 hours
Temperature	35–54 °C (95–129 °F)

Steris System 1E

1. Clean and prepare the camera head and cable as recommended in this user guide. Ensure the soaking cap is installed.
2. Sterilize the camera head and cable using Steris System 1E with S40™ Sterilant. Follow the manufacturer's instructions.
3. Remove the camera head and cable from the Steris chamber once sterilization is complete, or moisture may condense inside the camera head and cause display defects.
4. Allow the camera head, cable, coupler, and scope to completely dry before reassembly. Any moisture on the threads will cause the camera and coupler windows to fog during use.

Steris/Amsco V-PRO

1. Clean and prepare the camera head and cable as recommended in this user guide. Ensure the soaking cap is installed.
2. If using a sterilization tray (optional), follow any additional instructions provided with the tray. Use only trays that are approved for sterilization with Steris/Amsco V-PRO.[8]
3. Double wrap the camera head and cable (or tray) prior to sterilization.
4. Sterilize the device using the V-PRO maX Sterilizer (Non-Lumen or Standard cycle), the V-PRO 1 Plus Sterilizer (Non-Lumen or Standard cycle), or the V-PRO 1 Sterilizer (Standard cycle).
5. Allow the camera head, cable, coupler, and scope to completely dry before reassembly. Any moisture on the threads will cause the camera and coupler windows to fog during use.

Sterrad

1. Clean and prepare the camera head and cable as recommended in this user guide. Ensure the soaking cap is installed.
2. If using a sterilization tray (optional), follow any additional instructions provided with the tray. Use only trays that are compatible with Sterrad.[8]

Not all sterilization trays are compatible with Sterrad systems. Using an incompatible tray may result in incomplete device sterilization. Consult the instructions that came with your sterilization tray to determine which sterilization method is compatible with your tray and devices. If a compatible tray is not available, the devices can be double wrapped prior to using the Sterrad system.

3. Double wrap the camera head and cable (or tray) prior to sterilization.
4. Sterilize the camera head and cable following the instructions of the manufacturer, using the Sterrad 100S, NX™, or 100NX Sterilization System. Select the standard cycle.
5. Allow the camera head, cable, coupler, and scope to completely dry before reassembly. Any moisture on the threads will cause the camera and coupler windows to fog during use.

[8] Stryker sterilization trays 0233032105 and 0233032107 are validated for sterilizing the camera head using EO, V-PRO, and Sterrad. Consult user guides 1000400907 or 1000400926, respectively, for more information about using the trays.

Storage

Never store the device in a non-ventilated, humid environment such as a carrying case. This may present an infection control risk.

User Maintenance

Using Sterile Drapes

Using sterile drapes will ensure maximum longevity of your 1488 HD Camera Head. For best results, follow the instructions provided by the drape manufacturer.

Replacing the Fuses

To avoid the risk of fire, use only fuses of the value specified on the fuse label located on the rear panel of the transmitter.

1. Unplug the power cord from the wall outlet and remove the cord from the transmitter console.
2. Unlatch the fuse holder above the AC inlet and remove it. (You may need to press the tab on the fuse holder with a slender screwdriver to release the latch.)
3. Replace the fuse with the same value and rating.
4. Reinstall the fuse holder until the tab snaps in place.

Periodic Maintenance Schedule

To ensure safe operation of the Model 1488 HD Video Camera you should periodically perform the following procedure:

Every 12 months, check the earth leakage current to <500 µA (<300 µA in USA), ground protective earth impedance to <0.1 ohms, and power consumption less than or equal to rated power. Use a true RMS digital multimeter and safety analyzer to perform this test.

Note: Refer calibration and operating difficulties not detailed in this manual to your Stryker Endoscopy sales representative.

Disposal

This product contains electrical waste or electronic equipment. It must not be disposed of as unsorted municipal waste and must be collected separately in accordance with applicable national or institutional related policies relating to obsolete electronic equipment.

Dispose of the 1488 HD according to local laws and hospital practices.

Technical Specifications

60 Hz settings are displayed first. (50 Hz settings follow in parentheses.)

Imaging System	1/3″ Progressive Scan CMOS High Definition	
Scanning System	Horizontal: 64.00 kHz (60.00 kHz) Vertical: 60.02 Hz (50.00 Hz)	
Video Outputs	Digital/ Analog:	Two Digital Video Interface (DVI)/RGBHV 1280 × 1024 (HD), 720p, 1080p (HDTV) format
	Connector:	29-pin DVI-I
	Y/C:	One S-VHS
	Connector:	4-pin mini-DIN
	Digital Fiber:	HD, HDTV (R, G, B, Clk)
	Connector:	Four Lucent fiber connectors with 1.25 mm ferrules
Mounting	Endoscope eyepiece used with C-mount coupler C-mount camera head used with C-mount scopes (C-mount coupler/scope thread: 1-32″ UN 2A)	
Auto Shutter Range	1/60 (1/50) – 1/50,000 second	
Operating Conditions	Temperature: 10–30 °C Relative Humidity: 25–75%	
Transport and Storage Conditions	Temperature: -18–60 °C Relative Humidity: 15–90% Atmospheric Pressure: 700–1060 hPa	
Input Electrical Ratings	100–240 VAC (0.6 A) @ 50–60 Hz	
Total Shipping Weight	13 lb (6.0 kg) Camera console 0.5 lb (0.226 kg) Coupler 1.5 lb (0.680 kg) Camera head	

Dimensions	Camera Console: 12.5″ w × 4.0″ h × 15.25″ d (31.8 cm w × 10.2 cm h × 38.7 cm d) Camera Head Cable: 10.3 ft (3.15 m) sealed cable 20.7 ft (6.30 m) cable extension available
Classification	Class I Equipment Continuous Operation Type BF Applied Part Ingress Protection, IPX0—Ordinary Equipment (1488 HD Consoles) Ingress Protection, IPX7—Protected against the effects of temporary immersion in water (1488 HD Camera Heads)
Complies with Medical Safety Standards	IEC60601-1:1988 + A1:1991 + A2:1995 IEC60601-1-1:2000 IEC60601-1-4:1996 + A1:1999 IEC60601-2-18:1996 + A1:2000 UL 60601-1:2003 CAN/CSAC22.2 No. 601.1-M90:2008 + Corr2:2011
Complies with Medical EMC Standard	IEC 60601-1-2:2007; Class B for Radiated/ Conducted Emissions
Complies with Laser Product Standards	Class 1 Laser Product Contains four 850-nm laser diodes This product complies with IEC 60825-1:1993+A1:1997+A2:2001. This product complies with 21 CFR, Subchapter J, Parts 1040.10 and 1040.11, except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.

Electromagnetic Compatibility

Like other electrical medical equipment, the 1488 HD Camera requires special precautions to ensure electromagnetic compatibility with other electrical medical devices. To ensure electromagnetic compatibility (EMC), the 1488 HD Camera must be installed and operated according to the EMC information provided in this manual.

Note: The 1488 HD Camera has been designed and tested to comply with IEC 60601-1-2:2001 and 2007 + A1:2004 requirements for EMC with other devices.

Do not use cables or accessories other than those provided with the 1488 HD Camera, as this may result in increased electromagnetic emissions or decreased immunity to such emissions.

If the 1488 HD Camera is used adjacent to or stacked with other equipment, observe and verify normal operation of the 1488 HD Camera in the configuration in which it will be used prior to using it in a surgical procedure. Consult the tables below for guidance in placing the 1488 HD Camera.

Equipment which employs RF communications may affect the normal function of the 1488 HD Camera.

<table>
<tr><th colspan="3">Guidance and Manufacturer's Declaration: Electromagnetic Emissions</th></tr>
<tr><td colspan="3">1488 HD Camera is intended for use in the electromagnetic environment specified below. The customer or the user of 1488 HD Camera should ensure that it is used in such an environment.</td></tr>
<tr><th>Emissions test</th><th>Compliance</th><th>Electromagnetic Environment - guidance</th></tr>
<tr><td>RF emissions CISPR 11</td><td>Group 1</td><td>1488 HD Camera uses RF energy only for its internal function; therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.</td></tr>
<tr><td>RF emissions CISPR 11</td><td>Class B</td><td rowspan="3">The 1488 HD Camera is suitable for use in all establishments other than domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes, provided the following warning is heeded:

Warning: This system is intended for use by health care professionals only. This system may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as reorienting or relocating the system or shielding the location.</td></tr>
<tr><td>Harmonic emissions

IEC61000-3-2</td><td>Class A</td></tr>
<tr><td>Voltage Fluctuations/ flicker emissions IEC61000-3-3</td><td>Complies</td></tr>
</table>

Guidance and Manufacturer's Declaration: Electromagnetic Immunity			
1488 HD Camera is intended for use in the electromagnetic environment specified below. The customer or the user of 1488 HD Camera should ensure that it is used in such an environment.			
Immunity Test	**IEC 60601 Test Level**	**Compliance Level**	**Electromagnetic Environment: Guidance**
Electrostatic Discharge (ESD) IEC61000-4-2	±6kV contact ±8kV air	±2,4,6kV contact ±2,4,8kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/ burst IEC61000-4-4	±2kV for power supply lines ±1kV for input/output lines	±2kV line to ground ±1kV line to line	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC61000-4-5	±1kV differential mode ±2kV common mode	±0.5, 1kV differential mode ±0.5, 1, 2kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC61000-4-11	<5% Ut (>95% dip in Ut) for 0.5 cycle 40% Ut (60% dip in Ut) for 5 cycles 70% Ut (30% dip in Ut) for 25 cycles <5% Ut (>95% dip in Ut) for 5 sec.	<5% Ut (>95% dip in Ut) for 0.5 cycle 40% Ut (60% dip in Ut) for 5 cycles 70% Ut (30% dip in Ut) for 25 cycles <5% Ut (>95% dip in Ut) for 5 sec.	Mains power quality should be that of a typical commercial or hospital environment. If the user of 1488 HD Camera requires continued operation during power mains interruptions, it is recommended that 1488 HD Camera be powered from an uninterruptible power supply or a battery.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3 A/m	N/A	Power-frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: Ut is the AC mains voltage prior to application of the test level.			

Guidance and Manufacturer's Declaration: Electromagnetic Immunity			
1488 HD Camera is intended for use in the electromagnetic environment specified below. The customer or the user of 1488 HD Camera should ensure that it is used in such an environment.			
Immunity Test	**IEC 60601 Test Level**	**Compliance Level**	**Electromagnetic Environment:** **Guidance**
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz 3 V/m 80MHz to 2.5 GHz	3 V 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the 1488 HD Camera system, including its cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended Separation Distance** $d = 1.17 \sqrt{P}$ $d = 1.17 \sqrt{P}$ 80 MHz to 800 MHz $d = 2.23 \sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey [(a)], should be less than the compliance level in each frequency range[(b)]. Interference may occur in the vicinity of equipment marked with the following: 
NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.			
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			

Guidance and Manufacturer's Declaration: Electromagnetic Immunity
1488 HD Camera is intended for use in the electromagnetic environment specified below. The customer or the user of 1488 HD Camera should ensure that it is used in such an environment.
(a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast, and TV broadcast, cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the 1488 HD Camera system is used exceeds the applicable RF compliance level above, the 1488 HD Camera system should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the 1488 HD Camera unit. (b) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the 1488 HD Camera System
The 1488 HD Camera system is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The user of the 1488 HD Camera system can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the 1488 HD Camera system as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power (W) of transmitter	**Separation distance (m) according to frequency of transmitter**		
	150 kHz to 80 MHz d = 1.17 √P	**80MHZ to 800 MHz** d = 1.17 √P	**800 MHz to 2.5 GHz** d = 2.33 √P
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.70	3.70	7.37
100	11.70	11.70	23.30
For transmitters rated at a maximum output power not listed above, the recommended separation distance (d) in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			

Symbol Definitions

In addition to the cautionary symbols already listed, other symbols found on the 1488 HD Camera and in this manual have specific meanings that clarify the proper use and storage of the 1488 HD Camera. The following list defines the symbols associated with this product:

Consult instructions for use

Caution (consult instructions for use)

Federal law (USA) restricts this device to use by, or on order of, a physician

Device is shipped non-sterile and must be sterilized before use

Date of manufacture

Legal manufacturer

Product catalog number

Product serial number

The device meets requirements for safety and effectiveness set forth in MDD 93/42/EEC.

Stryker European representative

Denotes compliance to CAN/CSA C22.2 No 601.1- M90
UL60601-1

Type BF applied part

1488 camera head connection

Power on/off (alternates when button is pushed)

Class I laser product

Camera head button error (return for service if this appears on the display monitor)

Equipotentiality

Alternating current

Fuse rating

Device recycling code (applicable in China)

This product contains electrical waste or electronic equipment. It must not be disposed of as unsorted municipal waste and must be collected separately.

Consult instruction manual

stryker®

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EC REP

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