



Installation Guide for

RoboSHOT 12E NDI and RoboSHOT 30E NDI

High-Performance PTZ Cameras

Document 411-0038-31 Rev. B
November 2020

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Contents

Overview	1
What's in this Guide	1
Camera Features	1
Unpacking the Camera	2
A Quick Look at the Camera	3
Front of the Camera	3
Back of the Camera	4
Installing the Camera	5
Don't Void Your Warranty!	5
Before You Start	5
Cabling Notes	6
Functional Check	6
Status Light	7
Video Resolution Setting	7
About Ceiling-Mounted Cameras	7
Installing the Wall Mount	8
Connecting the Camera	9
Installing the Camera	10
Powering Up the Camera	10
Operation, Storage, and Care	11
Compliance and Conformity Statements	12
FCC Part 15 Compliance	12
ICES-003 Compliance	12
European Compliance	13
Photo Credits	14
Index	15

Overview

This guide covers RoboSHOT® NDI® cameras:

- RoboSHOT 12E NDI, North America – 999-99407-000 (black), 999-99407-000W (white)
- RoboSHOT 12E NDI, Europe/UK – 999-99407-001 (black), 999-99407-001W (white)
- RoboSHOT 12E NDI, Australia/New Zealand – 999-99407-009 (black), 999-99407-009W (white)
- RoboSHOT 30E NDI, North America – 999-99437-000 (black), 999-99437-000W (white)
- RoboSHOT 30E NDI, Europe/UK – 999-99437-001 (black), 999-99437-001W (white)
- RoboSHOT 30E NDI, Australia/New Zealand – 999-99437-009 (black), 999-99437-009W (white)



For information about NewTek NDI technology and products, please visit NewTek Inc.'s website:

<https://www.newtek.com/ndi/>

What's in this Guide

This guide covers:

- Unpacking the camera
- Tips for a successful installation
- Camera power-on

Complete product information is available in the **Complete Manual for RoboSHOT 12E NDI and RoboSHOT 30E NDI High-Performance PTZ Cameras**.

Download manuals, dimensional drawings, and other information from www.legrandav.com.

Camera Features

- Deploy directly into an NDI® AV-over-IP environment; no extension or bridging device required
- Native 1080p/60 NDI streaming with ultra-low latency – under 100 msec
- Courtesy HDMI output
- Exmor R™ back-lit 1/2.5 type, high-speed, low-noise image sensor
- RoboSHOT 30E NDI: 30x zoom with 70° horizontal field of view (wide end)
RoboSHOT 12E NDI: 12x zoom with 70.2° horizontal field of view (wide end)
- Tri-Synchronous Motion™ simultaneous 3-axis pan/tilt/zoom movement between presets
- Smooth, silent direct-drive motors – ultra-accurate positioning, from 120° per second down to 0.35° per second
- Web interface for remote administration and operation, integration-ready Telnet or serial RS-232 control, presenter-friendly IR remote control

Unpacking the Camera

Make sure you received all the items you expected.



Caution

Always support the camera's base when picking it up. Lifting the camera by its head or mounting arm will damage it.

RoboSHOT 12E NDI, North America – 999-99407-000 (black), 999-99407-000W (white)

RoboSHOT 12E NDI, Europe/UK – 999-99407-001 (black), 999-99407-001W (white)

RoboSHOT 12E NDI, Australia/New Zealand – 999-99407-009 (black), 999-99407-009W (white)

- RoboSHOT 12E NDI camera (black or white)
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- PoE+ mid-span power injector with AC cord set(s)
- Quick-start guide



RoboSHOT 30E NDI, North America – 999-99437-000 (black), 999-99437-000W (white)

RoboSHOT 30E NDI, Europe/UK – 999-99437-001 (black), 999-99437-001W (white)

RoboSHOT 30E NDI, Australia/New Zealand – 999-99437-009 (black), 999-99437-009W (white)

- RoboSHOT 30E NDI camera (black or white)
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- PoE+ mid-span power injector with AC cord set(s)
- Quick-start guide



A Quick Look at the Camera

RoboSHOT NDI cameras are available in black or white.

Front of the Camera



- **Camera and Zoom Lens**
 - **RoboSHOT 12E NDI:** 12x zoom is ideal for classrooms and small to medium sized conference rooms.
 - **RoboSHOT 30E NDI:** 30x zoom delivers superb clarity and detail even in large spaces.
- **IR Sensors:** Sensors in the front of the camera base receive signals from the remote. Make sure there's nothing directly in front of the camera base, and point the remote at the camera.
- **Status indicator:** The multicolored LED indicates the camera's current state.
- **Really Cool Logo Badge (RCLB):** Attractive and shiny, with a sophisticated brushed-metal finish.

Back of the Camera

The connector panels of the RoboSHOT 12E NDI and RoboSHOT 30E NDI cameras are identical.



From left to right:

- **Network PoE+:** RJ-45 connector. Connect to the network via PoE+ injector for power, control, and video.
- **HD Video Select switch:** Rotary switch to select the HDMI output resolution. See [Video Resolution Setting](#).
- **HDMI:** Courtesy HDMI video output connector.
- **RS-232:** RJ-45 connector. Typically not used.

Note

A label on the bottom of the camera lists the rotary switch settings.

Installing the Camera

This section covers:

- Selecting the location for the camera
- Pre-installation functional check
- Information on cables and (if applicable) RS-232 communication
- Connection diagram
- Settings for physical switches (if any)
- Installing the camera mount
- Mounting the camera

And a required safety note here:

Note

PoE type networks connected to this equipment are for intra-building use only and should not be connected to lines that run outside of the building in which this product is located.

Don't Void Your Warranty!



Caution

Always support the camera's base when picking it up. Lifting the camera by its head or mounting arm will damage it.

Caution

This product is for indoor use only. Use an appropriate protective enclosure if installing it outdoors or in a humid environment. Do not install or operate this product if it has been dropped, damaged, or exposed to liquids. If any of these things happen, return it to Vaddio for safety and functional testing.

Before You Start

Things to keep in mind when deciding where to install the camera:

- Consider camera viewing angles, lighting conditions, line-of-sight obstructions, and in-wall obstructions.
- If the IR Remote Commander will be used, ensure that nothing blocks the IR lens in the camera's base.
- Ensure that the camera body can move freely and will normally point away from the ceiling and lights.

The video image may appear off-level in any of these situations:

- The mount is not level
- The mount is not installed on the centerline of the room
- The back wall of the room is not perpendicular to the centerline of the room

Prepare for a successful installation:

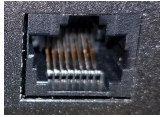
- Be sure you can identify all cables correctly.
- Check Cat-5 cables for continuity.
- Ensure that the video resolution rotary switch is set appropriately.
- *Talk to the network administrator.* If installing the camera in a non-DHCP network (one that does not automatically assign IP addresses), you may need to configure the camera with a static IP address as directed by the network administrator before connecting it to the network. Work with the network administrator to determine how to configure the equipment.

Cabling Notes

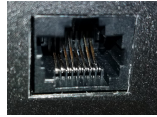
Use Cat-5e or better cable. Cat-6 or Cat-7 cabling allows longer maximum cabling distance, and may provide better performance in noisier RF or EMF environments. We recommend shielded cabling if the cables will be coiled, run tightly with other cables, or routed near sources of electromagnetic interference such as power lines or fluorescent light fixtures. When in doubt, use shielded Cat-6 cable or better.

Caution

When making cables for Vaddio products, do not use pass-through RJ-45 connectors. If they are crimped incorrectly, they can damage the connectors on the product, cause intermittent connections, and degrade signal quality. Physical damage to the connectors will void your warranty.



Intact – Contact fingers will make reliable contact with the cable connector



Damaged – Some contact fingers are bent and will NOT make reliable contact with the cable connector

We recommend using high-quality connectors and a high-quality crimping tool.

Caution

Check your cables. Connecting a cable to the wrong port or using the wrong pin-out can result in equipment damage and will void the warranty.



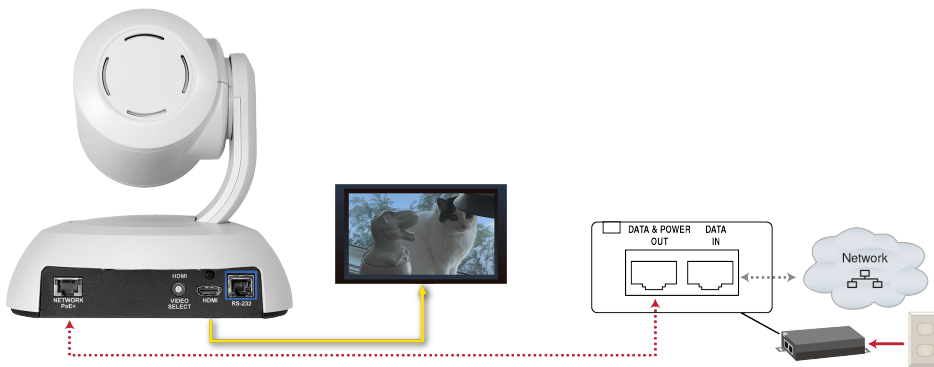
Pro Tip

To prevent tragic mishaps, label both ends of every cable.

Functional Check

Before you install the camera, you may want to verify functionality.

1. Connect the camera in its minimum functional configuration.
2. Connect power. The camera moves, the indicator light turns blue, and video is available on the connected display.
3. If the camera turns on and sends video, continue with the installation.



Status Light

The light in the camera's base indicates its current state.

- **Blue:** Normal operation (blinks once when the camera receives a command from the remote)
- **Red:** On-air tally (signal provided by external device via serial connection)
- **Blinking red:** Video is muted (UC color scheme only)
- **Purple:** In standby mode or booting
- **Yellow:** Firmware update in progress

Caution

Do not remove power or reset the camera while the indicator is yellow, showing a firmware update in progress. Interrupting a firmware update can make the camera unusable.

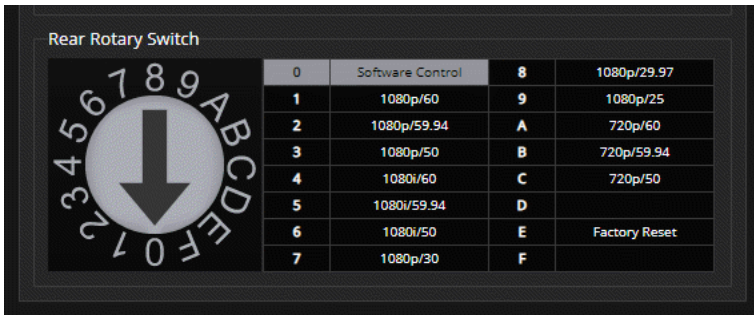
Note

By default, the camera's status light is active during normal operation; however, it can be configured to remain off when the camera is powered up. The camera may be sending video even if the indicator light is off.

Video Resolution Setting

Set the desired video output resolution with the rotary switch before installing the camera.

Position 0 selects software control, which allows you to set the video output resolution in the web interface. The default resolution for this setting is 1080p/59.94.



About Ceiling-Mounted Cameras

If you use an inverted mount, you will need to use the Image Flip setting to orient the video image correctly and set the tilt motors to respond appropriately to tilt commands from the remote, web interface, and connected control devices. After the camera has power, this setting is available to the administrator on the System page of the web interface, under the DIP Switches tab.

Note

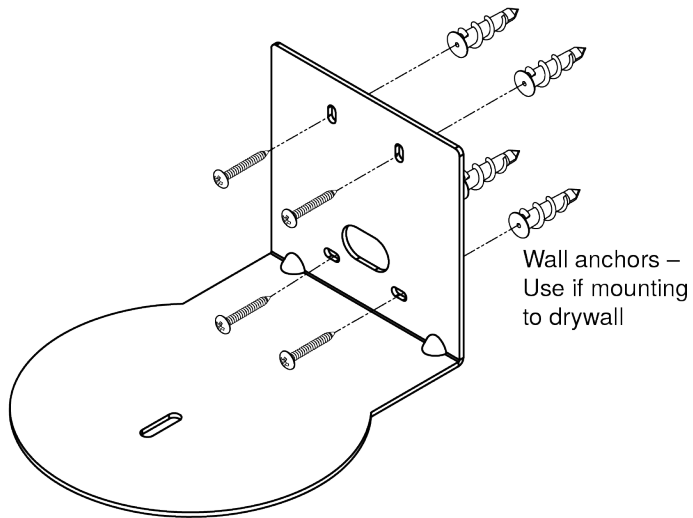
If mounting this camera using the Half-Recessed Ceiling Mount, you will need to power the mount's IR receiver separately to use the IR remote with the camera. Use Power Extension Module 999-1005-021. This camera does not supply power to the mount's IR receiver.

Installing the Wall Mount

The camera is shipped with a Thin Profile Wall Mount. Other mounting options are available as well. Contact us if you don't have the camera mount you need.

You can install the camera wall mount to a 2-gang wall box or directly to the drywall.

- If you mount it to drywall, use the wall anchors provided with the wall mount.
- If you mount it to a wall box, use the cover plate screws supplied with the wall box.



Connecting the Camera

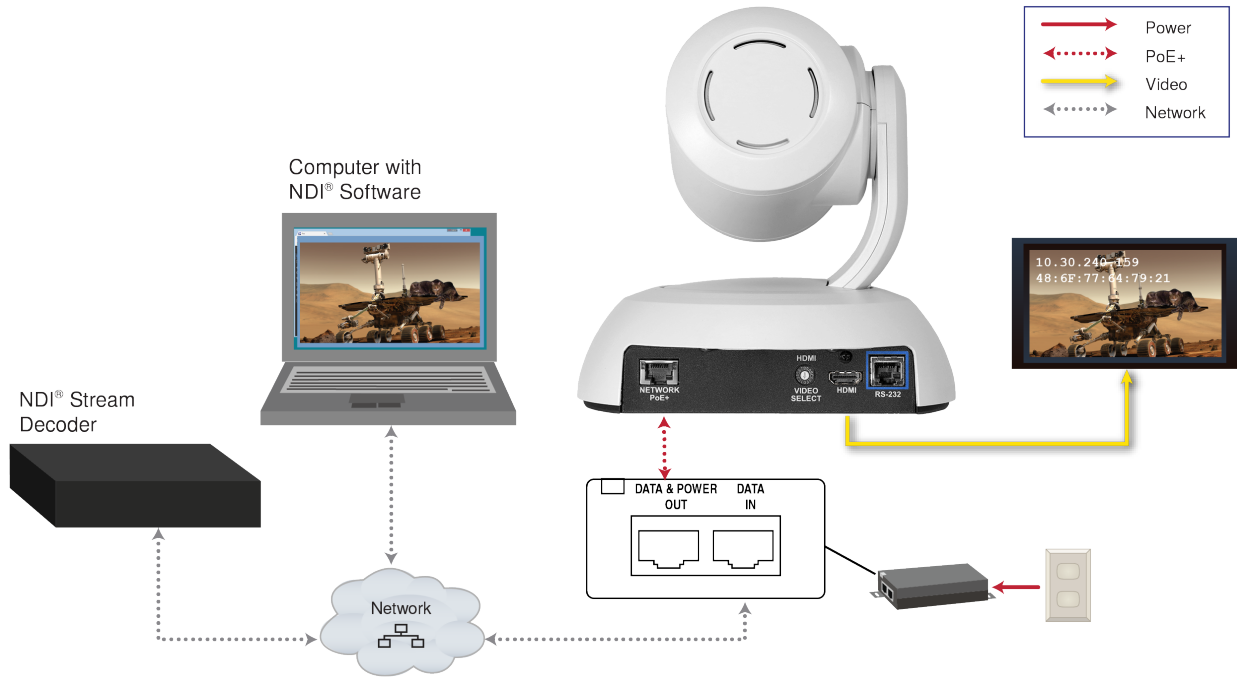
Note

Talk to the network administrator before you connect the equipment.

If you install this equipment on a non-DHCP network (one that uses only static IP addresses), you may need to configure the camera with a static IP address before you connect it to the network. Work with the network administrator to determine how to configure the equipment.

Refer to the **Complete Manual for RoboSHOT 12E NDI and RoboSHOT 30E NDI High-Performance PTZ Cameras** (System Administration section) for information on configuring static IP addresses.

This diagram shows a simple installation for a RoboSHOT NDI camera.



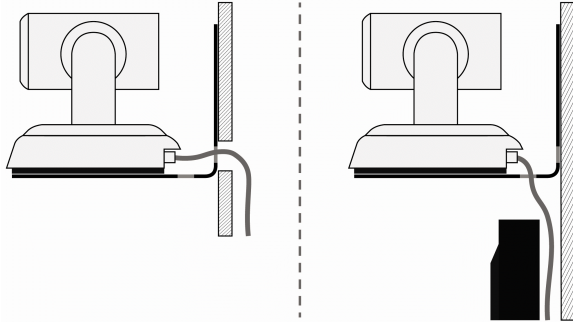
Installing the Camera

Be sure you have already set the camera's video resolution switch.

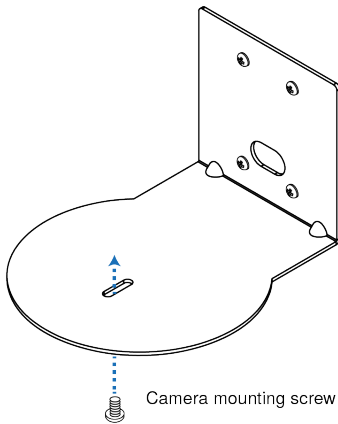
Caution

Check your cables. Connecting a cable to the wrong port or using the wrong pin-out can result in equipment damage and will void the warranty.

1. Route the cables to the camera location.
2. Route the cables through the mount, and install the mount on the wall or attach it to the wall box. Leave the screws loose enough to adjust the position of the mount.
3. Level the mount and tighten the mounting screws.
4. Connect the cables to the camera.
5. Place the camera on the mount.



6. Attach the camera to the mount using the 1/4"-20 x .375 mounting screw supplied with the camera.



Images for illustration only; not to scale. Camera and mount details may differ.

Powering Up the Camera

Connect camera power.

The camera will run a self-test routine and move. This will take a few seconds.

When the camera is initialized and ready, video is available and the status light is blue. At this point, the camera is ready to accept control information.

Note

Wait until the camera finishes initializing before trying to operate or control it.

Operation, Storage, and Care

For smears or smudges on the product, wipe with a clean, soft cloth. Use a lens cleaner on the lens. Do not use any abrasive chemicals.

Keep this device away from food and liquids.

Do not operate or store the device under any of the following conditions:

- Temperatures above 40°C (104°F) or below 0°C (32°F)
- High humidity, condensing or wet environments
- Inclement weather
- Severe vibration
- Suspended by a fraying rope above a vat of acid
- Dry environments with an excess of static discharge

Do not attempt to take this product apart. There are no user-serviceable components inside.

And a friendly reminder from our Training department...

As much as you might love our gear, do not attempt to romance your camera. As a robot it cannot return your love.



Compliance and Conformity Statements

Compliance testing was performed to the following regulations:

FCC Part 15 (15.107, 15.109), Subpart B	Class A
ICES-003, Issue 54: 2012	Class A
EMC Directive 2014/30/EU	Class A
EN 55032: 2015	Class A
EN 55024: November 2010	Class A
KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)	Class A
IEC 60950-1:2005 (2nd Edition); Am 1: 2009 + Am 2: 2013	Safety
EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013	Safety

FCC Part 15 Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15, Subpart B, of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by Vaddio can affect emission compliance and could void the user's authority to operate this equipment.



ICES-003 Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.



European Compliance

This product has been evaluated for Electromagnetic Compatibility under the EMC Directive for Emissions and Immunity and meets the requirements for a Class A digital device. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Standard(s) To Which Conformity Is Declared:



EMC Directive 2014/30/EU

EN 55032: 2015

Conducted and Radiated Emissions

EN 55024: November 2010

Immunity

EN 61000-4-2: 1995 + Amendments A1: 1998 + A2: 2001

Electrostatic Discharge

EN 61000-4-3: 2006 + A1: 2008

Radiated Immunity

EN 61000-4-4: 2004 + Corrigendum 2006

Electrical Fast Transients

EN 61000-4-5: 2006

Surge Immunity

EN 61000-4-6: 2009

Conducted Immunity

EN 61000-4-8: 2010

Power Frequency Magnetic Field

EN 61000-4-11: 2004

Voltage Dips, Interrupts and Fluctuations

KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)

IT Immunity Characteristics

EN 61000-4-2

Electrostatic Discharge

EN 61000-4-3

Radiated Immunity

EN 61000-4-4

Electrical Fast Transients

EN 61000-4-5

Surge Immunity

EN 61000-4-6

Conducted Immunity

EN 61000-4-8

Power Frequency Magnetic Field

EN 61000-4-11

Voltage Dips, Interrupts and Fluctuations

IEC 60950-1: 2005 (2nd Edition); Am 1: 2009 + Am 2: 2013

Safety

EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013

Safety

Photo Credits

This manual may include some or all of these photos.

European Space Agency (ESA) astronaut Samantha Cristoforetti, a Flight Engineer with Expedition 42, photographs the Earth through a window in the Cupola on the International Space Station

By NASA - https://blogs.nasa.gov/ISS_Science_Blog/2015/03/06/women-in-space-part-two-whats-gender-got-to-do-with-it/, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=38834990>

Carl Sagan, Bruce Murray, Louis Friedman (founders) and Harry Ashmore (advisor), on the occasion of signing the papers formally incorporating The Planetary Society

By credit NASA JPL - JPL, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=1180927>

Main Control Room / Mission Control Room of ESA at the European Space Operations Centre (ESOC) in Darmstadt, Germany

By European Space Agency - ESOC flickr, Credit: ESA - Jürgen Mai, CC BY-SA 3.0-igo,

<https://commons.wikimedia.org/w/index.php?curid=36743173>

Expedition 42 on orbit crew portrait, International Space Station, Mar. 7, 2015 – Barry Wilmore (Commander) Top, Upside down, to the right cosmonaut Elena Serova, & ESA European Space Agency Samantha Cristoforetti. Bottom center US astronaut Terry Virts, top left cosmonauts Alexander Samokutyaev and Anton Shkaplerov.

By NASA - <https://www.flickr.com/photos/nasa2explore/16166230844/>, Public Domain,

<https://commons.wikimedia.org/w/index.php?curid=38931301>

European Space Agency astronaut Luca Parmitano, Expedition 36 flight engineer, outside the International Space Station

By NASA - <http://spaceflight.nasa.gov/gallery/images/station/crew-36/html/iss036e016704.html>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=27263573>

Chris Cassidy, Luca Parmitano, and Karen Nyberg, ISS, 2013. Photo Credit: NASA

Nicolas Altobelli, Rosetta Scientist at ESA's European Space Astronomy Centre, Villanueva de la Cañada, Madrid, Spain

By European Space Agency - Nicolas Altobelli talks to the media, CC BY-SA 3.0-igo,

<https://commons.wikimedia.org/w/index.php?curid=36743144>

Andrea Accomazzo, ESA Rosetta Spacecraft Operations Manager, providing a live update from the Main Control Room at ESA's European Space Operations Centre, Darmstadt, Germany during the Rosetta wake-up day.

By European Space Agency - Live update from the Main Control Room, CC BY-SA 3.0-igo,

<https://commons.wikimedia.org/w/index.php?curid=36743150>

Sleeping goose

By ladypine - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=1695227>

STS-123 and Expedition 16 crews on the STS-123 crew's last full day onboard the International Space Station.

By NASA - <http://www.spaceflight.nasa.gov/gallery/images/shuttle/sts-123/html/iss016e033684.html>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=3773505>

Photo AS11-40-5948, Aldrin assembles seismic experiment, by National Aeronautics and Space Administration, courtesy of the NASA History Office and the NASA JSC Media Services Center

Author's own cats, photos by author, you're welcome.

Index

A

anatomy of the camera 3-4

B

behavior on power-up 10

C

cable 4, 6
 connectors 4, 6
 please check them (PLEASE) 6
 recommendations 6
camera mount, installing 8
capabilities 1
ceiling-mounted cameras 7
cleaning 11
color codes for status light 7
connection example 9
connector identification 4

D

damage, preventing 5-6

H

HDMI resolution, setting 7

I

indicator light 3, 7
 location 3
 meaning of colors 7
installation, typical 9
inverted installation 7
IP address 9
 preventing conflicts 9
 static, configuring before installation 9

L

LED 3, 7
 location 3
 meaning of colors 7
light, status indicator 3, 7
 location 3
 meaning of colors 7
locations of connectors 4

M

mounting cameras 5, 7-8, 10

O

operating environment 11
output resolution 7

P

packing lists 2
power 10
 on and off 10
product capabilities 1

R

resolution 7
RJ-45 connectors 6
rotary switch 7

S

safety requirements 5
shelf-mounted cameras 10
shelf, camera mount 8
status light 3, 7
 location 3
 meanings of colors 7
storage environment 11
switch settings 7
 Image Flip 7
 video resolution 7

T

temperature, operating and storage 11
typical installation 10

V

video resolution 7

W

wall-mounted cameras 10
wall mount 8
warranty 5

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