Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for SONY HANDYCAM HDR-CX290/B. You'll find the answers to all your questions on the SONY HANDYCAM HDR-CX290/B in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual SONY HANDYCAM HDR-CX290/B
User guide SONY HANDYCAM HDR-CX290/B
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Instruction manual SONY HANDYCAM HDR-CX290/B

SONY

4-447-514-**12**(1)

Digital HD Video
Camera Recorder

Operating Guide

Please also refer to :
http://www.sony.net/SonyInfo/Support/

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AVCHD HDMI
Progress

HANDYCAM.

InfoLITHIUM V   MEMORY STICK   SD XC CLASS

HDR-CX220/CX220E/CX230/CX230E/CX280/CX280E/CX290/CX290E/
PJ220/PJ220E/PJ230/PJ230E

You're reading an excerpt. Click here to read official SONY
HANDYCAM HDR-CX290/B user guide
http://yourpdfguides.com/dref/5026449

Manual abstract:

@@Model No. HDRSerial No. Model No. ACSerial No. WARNING To reduce the risk of fire or electric shock, 1) do not expose the unit to rain or moisture. 2) do not place objects filled with liquids, such as vases, on the apparatus. Do not expose the batteries to excessive heat such as sunshine, fire or the like. GB
☐ IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS. DANGER - TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY FOLLOW THESE INSTRUCTIONS. ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Read these instructions.
Keep these instructions. Heed all warnings. Follow all instructions. Do not use this apparatus near water. Clean only with dry cloth.
Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. @@@@A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety.
@@@@Only use attachments/accessories specified by the manufacturer. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. ☐ ☐ ☐ Unplug this apparatus during lightning storms or when unused for long periods of time. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. If the shape of the plug does not fit the power outlet, use an attachment plug adaptor of the proper configuration for the power outlet. ☐ GB Representative plug of power supply cord of countries/regions around the world. A Type (American Type) B Type BF Type B3 Type (British Type) (British Type) (British Type) C Type (CEE Type) SE Type (CEE Type) O Type (Ocean Type) The representative supply voltage and plug type are described in this chart. Depend on an area, Different type of plug and supply voltage are used.

Attention: Power cord meeting demands from each country shall be used. ☐ For only the United States Use a supplied power cord. Europe Countries/regions Austria Belgium Czech Denmark Finland France Germany Greece Hungary Iceland Ireland Italy Luxemburg Netherlands Norway Poland Portugal Romania Russia Slovak Spain Sweden Switzerland UK Voltage 230 230 220 230 230 230 230 220 220 230 230 220 230 230 230 220 230 220 220 220 127/230 230 230 240 Frequency (Hz) 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 Plug type C C C C C C C C C C C C/BF C C C C C C C C C C C C BF Asia Countries/regions China Hong Kong India Indonesia Japan Korea (rep) Malaysia Philippines Singapore Taiwan GB Voltage 220 200/220 230/240 127/230 100 220 240 220/230 230 110 Frequency (Hz) 50 50 50 50 50/60 60 50 60 50 60 Plug type A BF C C A C BF A/C BF A ☐ Countries/regions Thailand Vietnam Voltage 220 220 Frequency (Hz) 50 50 Plug type C/BF A/C Oceania Countries/regions Australia New Zealand Voltage 240 230/240 Frequency (Hz) 50 50 Plug type O O North America Countries/regions Canada USA Voltage 120 120 Frequency (Hz) 60 60 Plug type A A Central America Countries/regions Bahamas Costa Rica Cuba Dominican (rep) El Salvador Guatemala Honduras Jamaica Mexico Nicaragua Panama Voltage 120/240 110 110/220 110 110 120 110 110 120/127 120/240 110/220 Frequency (Hz) 60 60 60 60 60 60 60 50 60 60 60 Plug type A A A/C A A A A A A A South America Countries/regions Argentina Brazil Chile Colombia Peru Venezuela Voltage 220 127/220 220 120 220 120 Frequency (Hz) 50 60 50 60 60 60 Plug type C/BF/O A/C C A A/C A Middle East Countries/regions Iran Iraq Israel Saudi Arabia Turkey UAE Voltage 220 220 230 127/220 220 240 Frequency (Hz) 50 50 50 50 50 50 Plug type C/BF C/BF C A/C/BF C C/BF Africa Countries/regions Algeria Congo (dem) Egypt Ethiopia Kenya Nigeria South Africa Tanzania Tunisia Voltage 127/220 220 220 220 240 230 220/230 230 220 Frequency (Hz) 50 50 50 50 50 50 50 50 50 Plug type C C C C C/BF C/BF C/BF C/BF C ☐ GB CAUTION Battery pack If the battery pack is mishandled, the battery pack can burst, cause a fire or even chemical burns. Observe the following cautions. ☐ ☐ Even if your camcorder is turned off, AC power source (mains) is still supplied to it while connected to the wall outlet (wall socket) via the AC Adaptor. Note on the power cord (mains lead) The power cord (mains lead) is designed specifically for use with this camcorder only, and should not be used with other electrical equipment. ☐ ☐ ☐ ☐ ☐ ☐ ☐ Do not disassemble. Do not crush and do not expose the battery pack to any shock or force such as hammering, dropping or stepping on it. Do not short circuit and do not allow metal objects to come into contact with the battery terminals. Do not expose to high temperature above 60°C (140°F) such as in direct sunlight or in a car parked in the sun.
Do not incinerate or dispose of in fire. Do not handle damaged or leaking lithium ion batteries. Be sure to charge the battery pack using a genuine Sony battery charger or a device that can charge the battery pack. Keep the battery pack out of the reach of small children. Keep the battery pack dry.
Replace only with the same or equivalent type recommended by Sony. Dispose of used battery packs promptly as described in the instructions. For customers in the U.S.A.
and CANADA RECYCLING LITHIUM-ION BATTERIES Lithium-Ion batteries are recyclable. You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you. For more information regarding recycling of rechargeable batteries, call toll free 1-800-822- 8837, or visit http://www.rbrc.org/ Caution: Do not handle damaged or leaking Lithium-Ion batteries. Replace the battery with the specified type only. Otherwise, fire or injury may result. Battery pack This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This Class B digital apparatus complies with Canadian ICES-003.

AC Adaptor Do not use the AC Adaptor placed in a narrow space, such as between a wall and furniture. Use the nearby wall outlet (wall socket) when using the AC Adaptor. Disconnect the AC Adaptor from the wall outlet (wall socket) immediately if any malfunction occurs while using your camcorder. GB ☐ For Customers in the U.S.A. UL is an internationally recognized safety organization. The UL Mark on the product means it has been UL Listed. If you have any questions about this product, you may call: Sony Customer Information Center 1-800-222-SONY (7669) The number below is for the FCC related matters only.

On recording □ □ □ □ □ Before starting to record, test the recording function to make sure the image and sound are recorded without any problems. Compensation for the contents of recordings cannot be provided, even if recording or playback is not possible due to a malfunction of the camcorder, recording media, etc.

TV color systems differ depending on the country/region. To view your recordings on a TV, you need a TV that supports the signal format for your camcorder. For details on the signal format, refer to "How to use this manual" (p. 12). Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the copyright laws. The LCD screen is manufactured using extremely high-precision technology, so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue, or green in color) that appear constantly on the LCD screen. These pointsems, the descriptions are explained with the model name.
□ Safety Regulation (p. 2) □ Parts and controls (p. 16) □ Menu lists (p. 37) □ Specifications (p. 46) 13 GB Table of contents Read this first.

Parts and controls

Figures in ( ) are reference pages.

□ LCD screen (21) If you rotate the LCD panel 180 degrees, you can close the LCD panel with the LCD screen facing out. This is convenient during playback operations. □ Multi selector (11) □ (View Images) button □ PROJECTOR FOCUS lever (29) □ Projector lens (29) HDR-CX220/CX220E/CX230/CX230E/ CX280/CX280E/CX290/CX290E □ Lens (Carl Zeiss lens) □ LENS COVER switch □ Built-in microphones HDR-PJ220/PJ220E/PJ230/PJ230E HDR-PJ220/PJ220E/PJ230/PJ230E □ Speaker □ PROJECTOR button (29) □ HDMI OUT jack (28) 16 GB To fasten the grip belt □ Power zoom lever (25) □ PHOTO button (24) □ POWER/CHG (charge) lamp (19) □ Battery pack (18) □ START/STOP button (24) □ DC IN jack (19) □ Multi/Micro USB Terminal Supports Micro USB compatible devices. □ Grip belt □ Built-in USB Cable (19) □ Memory card access lamp (22) While the lamp is lit or flashing, the camcorder is reading or writing data. □ Tripod receptacle Attach a tripod (sold separately: the length of the screw must be less than 5.5 mm (7/32 in.)). Depending on the specifications of the tripod, your camcorder may not attach in the proper direction.

□ Memory card slot (22) □ BATT (battery) release lever (18) 17 GB Getting started Charging the battery pack For information on your camcorder model, see the following page: Functions and equipment □ p.12 Supplied items □ p.13 Attaching/Removing the battery pack Close the LCD screen and attach the battery pack. □ □ Align the indentation on the camcorder and projection on the battery pack, then slide the battery pack upwards. To remove the battery pack, close the LCD screen, then slide the BATT (battery) release lever and remove the battery pack.

Battery pack 18 GB Charging the battery using the AC Adaptor (Models with an AC Adaptor) Connect the AC Adaptor (□) and the power cord (mains lead) (□) to your camcorder and the wall outlet (wall socket). □ □ □ □ To the wall outlet (wall socket) The POWER/CHG (charge) lamp turns orange. The POWER/CHG (charge) lamp turns off when the battery pack is fully charged. DC plug Getting started Align the □ mark on the DC plug with that on the DC IN jack POWER/CHG (charge) lamp DC IN jack Charging the battery using your computer Connect the camcorder to a running computer using the Built-in USB Cable. □ □ □ The POWER/CHG (charge) lamp turns orange.

The POWER/CHG (charge) lamp turns off when the battery is fully charged. Use the USB connection support cable when the Built-in USB Cable is too short for connection. Built-in USB Cable To the wall outlet (wall socket) 19 GB To charge the battery using an AC-UD10 USB charger/AC Adaptor (sold separately) You can charge the battery by connecting the Built-in USB Cable to a wall outlet (wall socket) using an AC-UD10 USB charger/AC Adaptor (sold separately). You cannot use a Sony CPAH2R, CP-AL, or AC-UP100 portable power supply device (sold separately) to charge the camcorder. *Notes In the default setting, the power turns off automatically if you leave your camcorder without any operation for about 2 minutes, to save battery power ([Power Save], p. 39). Charging time Approximate time (min.) required when you fully charge a fully discharged NP-FV30 battery pack (supplied). When using the AC Adaptor (models with an AC Adaptor): 115 min. When using your computer connected with the Built-in USB Cable*: 150 min.*

*The charging times shown above are measured when charging the camcorder at a room temperature of 25 °C (77 °F). It is recommended that you charge the battery in a temperature range of 10 °C to 30 °C (50 °F to 86 °F). * The charging times are measured without using the USB connection support cable. 20 GB Setting For information on your camcorder model, see the following page: Functions and equipment p.12 Supplied items p.13 Preparing your camcorder 1 Open the LCD screen of your camcorder and turn the power on. Getting started To turn off the power, close the LCD screen. 2 Select the desired language, the geographical area, and the time using the multi-selector. To turn off the beep sound Select [Setup] [General Settings] [Beep] [Off]. *
Notes The recording date and time are recorded automatically on the recording media.
They are not displayed during recording. However, you can check them as [Data Code] during playback. To display them, select [Setup] [Playback Settings] [Data Code] [Date/Time].

Changing the recording media (Models with internal memory) In the default setting, movies and photos are recorded on the internal memory. You can change the recording media to a memory card.

▢ [Setup] ▢ [Media Settings] ▢ [Media Select] ▢ the desired medium. Select 21 GB Inserting a memory card Open the cover, and insert the memory card until it clicks. ▢ Access lamp To eject the memory card, lightly push the memory card in once. Insert the card with the notched corner in the direction as illustrated. Notes To ensure stable operation of the memory card, it is recommended to format the memory card with your camcorder before the first use (p. 38). Formatting the memory card will erase all the data stored on it and the data will be irrecoverable. Save your important data on your PC, etc. Confirm the direction of the memory card. If you forcibly insert the memory card in the wrong direction, the memory card, memory card slot, or image data may be damaged. When inserting or ejecting the memory card, be careful so that the memory card does not pop out and drop. ▢ ▢ ▢ Types of memory card you can use with your camcorder SD Speed Class "Memory Stick PRO Duo" media (Mark2) "Memory Stick PRO-HG Duo" media "Memory Stick XC-HG Duo" media SD memory card SDHC memory card SDXC memory card ▢ Capacity (operation verified) Up to 32 GB Up to 64 GB Described in this manual "Memory Stick PRO Duo" media — Class 4 or faster Up to 64 GB SD card Operation with all memory cards is not assured. Notes A MultiMediaCard cannot be used with this camcorder. Movies recorded on "Memory Stick XC-HG Duo" media and SDXC memory cards cannot be imported to or played back on computers or AV devices not supporting the exFAT* file system by connecting the camcorder to these devices with the USB cable. Confirm in advance that the connecting equipment is supporting the exFAT system.

If you connect an equipment not supporting the exFAT system and the ▢ ▢ 22 GB format screen appears, do not perform the format. All the data recorded will be lost. * The exFAT is a file system that is used for the "Memory Stick XC-HG Duo" media and SDXC memory cards. Getting started 23 GB Recording For information on your camcorder model, see the following page: Functions and equipment ▢ p.12 Supplied items ▢ p.13 Recording/Playback 1 Open the lens cover. 2 Open the LCD screen and select [MODE] ▢ the desired shooting mode. Movie: Photo: 3 Movie: Press START/STOP. ▢ You can record photos during movie recording by pressing PHOTO (Dual Capture). Photo: Press PHOTO.

To display items on the LCD screen Items on the LCD screen disappear if you do not operate the camcorder for a few seconds after you turn the camcorder on or switch between the movie recording and photo shooting modes. You can display the icons and indicators by pressing the multi-selector if they are not shown. STBY STBY 2 h 25 m 00:00:00 14 h 48 m 60i >9999 16:9 L 8.9M MODE 24 GB AUTO ▢ Notes The following states will be indicated if data is still being written onto the recording media after recording has finished. During this time, do not apply shock or vibration to the camcorder, or remove the battery or AC Adaptor.

▢ Access lamp (p. 22) is lit or flashing ▢ The media icon in the upper right of the LCD screen is flashing Zooming Move the power zoom lever to magnify or reduce the size of the image. W (Wide angle): Wider range of view T (Telephoto): Close view In the default setting, you can magnify images up to the following: ▢ 27 times optical zoom (models with electronic SteadyShot) ▢ 50 times extended zoom (models with optical SteadyShot) ▢ Move the power zoom lever slightly for a slower zoom. Move it further for a faster zoom. Recording/Playback To magnify images further (Extended Zoom) (Models with electronic SteadyShot) Set [▢ SteadyShot] to [Standard] or [Off] (p.

37). You can magnify images up to 32 times the original size by extending the wide angle. To select the suitable setting automatically for the recording situation (Intelligent Auto) Select ▢ [On] ▢ at the subject and record it. on the recording screen of movies or photos, then point your camcorder 25 GB Playback For information on your camcorder model, see the following page: Functions and equipment ▢ p.12 Supplied items ▢ p.13 You can search for recorded images by date and time of recording (Event View). 1 Open the LCD screen and press the button on the camcorder to enter the playback mode. ▢ You can enter the playback mode by on the LCD screen. selecting 2 Select / to move the desired event to the center (▢) and then select it (▢). ▢ MENU The camcorder displays recorded images as an event automatically, based on the date and time.

1 1 2013 2013 1-2 Highlight 3 Select the image. ▢ 1 1 2013 12 00:00:00 The camcorder plays from the selected image to the last image in the event. 1 18 2013 1 19 4 Select the appropriate buttons on the LCD screen for various playback operations. Volume Delete Context Stop ▢ GB / / / Previous/Next Fast-reverse/fast-forward Play/Pause Start/stop slide show Some buttons described above may not appear, depending on the image being played back. 26 ▢ ▢ ▢ As you repeat selecting / during playback, movies are played as fast as about 5 times ▢ about 10 times ▢ about 30 times ▢ about 60 times. / during pause to play movies slowly. Select ▢ [Slideshow Set] when is selected with the Switch Image Type To repeat Slideshow, select button. Notes To prevent your image data from being lost, save all your recorded images on external media periodically. (p. 35) In the default setting, a protected demonstration movie is pre-recorded (HDR-PJ230/PJ230E).

▢ ▢ To play back images with other devices ▢ ▢ Recording/Playback You may not be able to play back with other devices images that were recorded on your camcorder normally. Also, you may not be able to play back images recorded on other devices with your camcorder. Standard definition image quality (STD) movies recorded on SD memory cards cannot be played on AV equipment of other manufacturers. To delete images Select on the playback screen of movies or photos. 27 GB Playing images on a TV For information on your camcorder model, see the following page: Functions and equipment ▢ p.

12 Supplied items ▢ p.13 Connection methods and the image quality viewed on the TV screen differ depending on what type of TV is connected, and the connectors used. 3 ▢ ▢ ▢ Play a movie or a photo on the camcorder (p. 26). ▢ High definition Standard definition Yellow White ▢ Red HDMI Cable (supplied) AV Cable (sold separately) ▢ Notes Refer to the instruction manuals of the TV as well.

You should use the AC Adaptor as the power source (models with an AC Adaptor) (p. 19). If the TV does not have the HDMI input jack, use an AV Cable (sold separately) for connection.

When movies are recorded with standard definition image quality (STD), they are played back in standard definition image quality (STD) even on a high definition TV. When you play back standard definition image quality (STD) movies on a 4:3 TV that is not Wide compatible with the 16:9 signal, set [Mode] to [4:3] to record movies with 4:3 aspect ratio. If you connect your camcorder to the TV using more than one type of cable to output images, HDMI output takes priority. On "Photo TV HD" This camcorder is compatible with the "Photo TV HD" standard. "Photo TV HD" allows for highly-detailed, photo-like depiction of subtle textures and colors. By connecting Sony's Photo TV HDcompatible devices using an HDMI cable*, a whole new world of photos can be enjoyed in breathtaking HD quality. * The TV will automatically switch to the Signal flow appropriate mode when displaying photos.

1 2 28 GB Switch the input on the TV to the connected jack. Connect the camcorder to a TV. Using the built-in projector (Models with a projector) For information on your camcorder model, see the following page: Functions and equipment ☐ p.12 Supplied items ☐ p.13 You can use a flat surface such as a wall as a screen to view recorded images using the built-in projector. 3 Adjust the focus of the projected image using the PROJECTOR FOCUS lever. 4 Move the selection frame using the power zoom lever, then press PHOTO. Zoom lever Recording/Playback 1 Face the projector lens towards a surface, such as a wall, and then press PROJECTOR. PHOTO button ☐ 2 When the operating guide screen appears, select [Project]. You can also use the multi-selector for the operations above while projecting images.

To turn off the projector, press PROJECTOR. ☐ ☐ ☐ This screen appears the first time you use the built-in projector after the camcorder is turned on. ☐ Notes The LCD screen turns off while projecting images. Be careful of the following operations or situations while using the projector. ☐ Make sure not to project images towards the eyes.

☐ Make sure not to touch the projector lens. ☐ The LCD screen and the projector lens become hot while in use. @@@@@@@@@@@@@For details, visit the following URL. @@@@*2 64-bit editions and Starter (Edition) are not supported. @@*3 Starter (Edition) is not supported. @@Functions that can be used with this camcorder will then be available. If the "PMB (Picture Motion Browser)" software is installed on your computer, it will be overwritten by the "PlayMemories Home" software. In this case, you cannot use some functions that were available with "PMB" with this "PlayMemories Home" software. Starting the "PlayMemories Home" software 1 Double-click the "PlayMemories Home" icon on the computer screen. To disconnect your camcorder from the computer 1 Click the icon at the bottom right of the desktop of the computer ☐ [Safely remove USB Mass Storage Device]. Saving movies and photos with a computer ☐ 2 Select screen. ☐ ☐ [Yes] on the camcorder When using Windows 8, select the "PlayMemories Home" icon from the start screen. 3 Disconnect the USB cable. If you are using Windows 7 or Windows 8, click , then click . Notes When you access the camcorder from the computer, use the "PlayMemories Home" software.

Operation is not guaranteed if you operate the data using software other than the "PlayMemories Home" software or you directly manipulate files and the folders from a computer. @@@@You cannot create a disc with movies recorded MP4] mode. @@@@@@@19). Refer to the instruction manual supplied with the device connected. You cannot copy images to recorders connected with an HDMI cable. @@@@@@@38) Using 4:3 screen size display device: [TV Type] (p. @@@@@@@@@@@@@@@@@@@@@Records movies. Photo...

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. @@Adjusts the color balance to the recording environment. . Exposure.......

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Adjusts the brightness of movies and photos. If you select [Manual], adjust . / . the brightness (exposure) using to adjust Focus.......

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.... Adjusts the focus manually. If you select [Manual], select to adjust the focus for a distant the focus for a nearby subject and subject. Low Lux.

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.... Records bright color images in the dim.

Camera Settings Scene Selection..........

.... Selects an appropriate recording setting according to the type of scene, such as night view or beach.

Fader.....

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....

.. Fades scenes in or out. Self-Timer..

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....

. Sets the self-timer when your camcorder is in photo recording mode. Tele Macro........

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.... @@@@@@☐ Select ☐ [Setup] ☐ [General Settings] ☐ [Initialize].
@@@@@@@@This is not a malfunction. @@This is not a malfunction. The power abruptly turns off. ☐ ☐ ☐ ☐ You may need to initialize or change the current internal memory (models with internal memory) of your camcorder depending on the problem. If you do so, the data stored on the internal memory will be deleted.
Be sure to save the data on the internal memory on other media (backup) before sending your camcorder for repair. We will not compensate you for any loss of internal memory data. During repair, we may check a minimum amount of data stored on the internal memory in order to investigate the problem. However, your Sony dealer will neither copy nor retain your data. See the "Handycam" User Guide (p. 11) for details on the symptoms of your camcorder, and "PlayMemories Home Help Guide" (p. 33) on connecting your camcorder to a computer. ☐ Use the AC Adaptor (models with an AC Adaptor) (p. 19). In the default setting, the camcorder turns itself off when no operations are performed for about 2 minutes ([Power Save]) (p. 39), or turn on the power again. Charge the battery pack (p. 18). Pressing START/STOP or PHOTO does not record images. ☐ ☐ ☐ The playback screen is displayed.

Stop the playback, and select ☐ [Shooting Mode] ☐ [Movie] or [Photo]. Your camcorder is recording the image you have just shot on the recording media. You cannot make new recording during this period. The recording media is full. Delete unnecessary images (p. 27). 40 GB ☐ Total number of movie scenes or photos exceeds the recordable capacity of your camcorder. Delete unnecessary images (p. 27). Self-diagnosis display/Warning indicators For information on your camcorder model, see the following page: Functions and equipment ☐ p.
12 Supplied items ☐ p.13 If indicators appear on the LCD screen, check the following. If the problem persists even after you have tried to fix a couple of times, contact your Sony dealer or local authorized Sony service facility. In this case, when you contact them, give them all the numbers of the error code beginning with C or E. You may hear a melody when some warning indicators appear on the screen.
C:04:☐☐ ☐ "PlayMemories Home" cannot be installed. ☐ ☐ An Internet connection is required to install "PlayMemories Home." Check the computer environment or installation procedure required to install "PlayMemories Home." "PlayMemories Home" does not work correctly. ☐ Quit "PlayMemories

Home" and restart your computer.

The camcorder is not recognized by the computer. ☐ ☐ ☐ Disconnect all USB devices from the USB jack of your computer except the keyboard, mouse, and your camcorder. Disconnect the Built-in USB Cable from the computer, and restart the computer, then connect the computer and your camcorder again in the correct order. When both the Built-in USB Cable and the USB jack of the camcorder are connected to the external devices at the same time, disconnect the one that is not connected to a computer. ☐ The battery pack is not an "InfoLITHIUM" battery pack (V series). Use an "InfoLITHIUM" battery pack (V series) (p. 18). Connect the DC plug of the AC Adaptor (models with an AC Adaptor) to the DC IN jack of your camcorder securely (p. 19). Others/Index C:06:☐☐ ☐ The battery pack temperature is high.

Change the battery pack or place it in a cool place. C:13:☐☐ / C:32:☐☐ ☐ Remove the power source. Reconnect it and operate your camcorder again. E:☐☐:☐☐ ☐ Follow the steps from ☐ on page 40. ☐ ☐ The battery pack is nearly used up. 41 GB About handling of your camcorder ☐ The battery pack temperature is high. Change the battery pack or place it in a cool place. For information on your camcorder model, see the following page: Functions and equipment ☐ p.12 Supplied items ☐ p.13 ☐ ☐ ☐ No memory card is inserted (p. 22). When the indicator flashes, there are not enough free spaces for recording images. Delete unnecessary images (p. 27), or format the memory card after storing the images on other media (p. 38).

The image data base file may be damaged. Check the data base file by selecting ☐ [Setup] ☐ [Media Settings] ☐ [Repair Img. DB F.] ☐ the recording medium (models with internal memory). On use and care ☐ ☐ The camcorder is not dustproofed, dripproofed or waterproofed. Do not hold the camcorder by the following parts, and also do not hold the camcorder by the jack covers. LCD screen Battery pack ☐ ☐ The memory card is damaged. Format the memory card with your camcorder (p. 38). Built-in USB Cable ☐ Incompatible memory card is inserted (p. 22). ☐ ☐ ☐ The memory card is write-protected. Access to the memory card was restricted on another device. ☐ ☐ The camcorder is unsteady, so camera-shake easily occurs. Hold the camcorder steady with both hands and record the image.

However, note that the camera-shake warning indicator does not disappear. ☐ ☐ ☐ The recording medium is full. Photos cannot be recorded during processing. Wait for a while, then record. Do not aim the camcorder at the sun. Doing so might cause your camcorder to malfunction. Take images of the sun only in low light conditions, such as at dusk. Do not use or store the camcorder and accessories in the following locations: ☐ Anywhere extremely hot, cold or humid. Never leave them exposed to temperatures above 60 ☐C (140 °F), such as under direct sunlight, near heaters or in a car parked in the sun. They may malfunction or become deformed.

☐ Near strong magnetic fields or mechanical vibration. The camcorder may malfunction. ☐ Near strong radio waves or radiation. The camcorder may not be able to record properly. 42 GB ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ tuner devices such as TVs or radio.

Noise may occur. ☐ On a sandy beach or anywhere dusty. If sand or dust gets in your camcorder, it may malfunction. Sometimes this malfunction cannot be repaired. ☐ Near windows or outdoors, where the LCD screen, or the lens may be exposed to direct sunlight.
This damages the LCD screen. For DC or AC operation, use the accessories recommended in these operating instructions. Do not let your camcorder get wet, for example, from rain or sea water. If your camcorder gets wet, it may malfunction. Sometimes this malfunction cannot be repaired. If any solid object or liquid gets inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further. Avoid rough handling, disassembling, modifying, physical shock, or impact such as hammering, dropping or stepping on the product. Be particularly careful with the lens. Keep the LCD screen closed when you are not using your camcorder. Do not operate your camcorder with it wrapped in an object such as a towel.

When disconnecting the power cord (mains lead), pull it by the plug and not the cord (models with an AC Adaptor). Do not damage the power cord (mains lead) such as by placing anything heavy on it (models with an AC Adaptor). Do not use a deformed or damaged battery pack. Keep metal contacts clean. If the battery electrolytic liquid has leaked: ☐ Consult your local authorized Sony service facility. ☐ Wash off any liquid that may have contacted your skin. ☐ If any liquid gets in your eyes, wash with plenty of water and consult a doctor. ☐ Near When not using your camcorder for a long time ☐ ☐ To keep your camcorder in optimum state for a long time, turn it on and let it run by recording and playing back images about once a month. Use up the battery pack completely before storing it. Note on the camcorder/battery pack temperature ☐ When the temperature of the camcorder or battery pack becomes extremely high or extremely low, you may not be able to record or play back on the camcorder, due to the protection features of the camcorder being activated in such situations.
In this case, an indicator appears on the LCD screen. Others/Index Notes on charging through the USB cable ☐ ☐ ☐ Charging may not be possible with all computers. If you connect the camcorder to a laptop computer that is not connected to a power source, the battery of the laptop computer will continue to use up its charge. Do not leave the camcorder connected to a computer in this manner. Charging with a personally assembled computer, with a converted computer, or through a USB hub are not guaranteed.
The camcorder may not function correctly depending on the USB device which is used with the computer. 43 GB When the camcorder is connected to a computer or accessories ☐ LCD screen ☐ ☐ ☐ Do not try to format the recording media of the camcorder with a computer. If you do so, your camcorder may not operate correctly. When connecting the camcorder to another device with communication cables, be sure to insert the connector plug in the correct way. Pushing the plug forcibly into the terminal will damage the terminal and may result in a malfunction of the camcorder.
When the camcorder is connected to other devices through a USB connection and the power of the camcorder is turned on, do not close the LCD panel. The image data that has been recorded may be lost. ☐ ☐ Do not apply excessive pressure on the LCD screen, as it may cause uneven color and other damage. If your camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction. While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction. To clean the casing and the projector lens (Models with a projector) ☐ Notes on optional accessories ☐ ☐ ☐ We recommend using genuine Sony accessories. Genuine Sony accessories may not be available in some countries/regions. ☐ On handling the LCD screen ☐ ☐ ☐ If you leave fingerprints, hand cream, etc.

on the LCD screen, the coating of the LCD screen will come off easily. Wipe those off as soon as possible. If you wipe the LCD screen strongly with a tissue, etc., the coating of the LCD screen may be scratched. If the LCD screen becomes dirty with fingerprints or dust, it is recommended that you gently remove those from the screen then clean it with a soft cloth, etc. Wipe the casing and the lens gently with a soft cloth such as a cleaning cloth or eyeglass cleaning cloth. If the casing and the projector lens is very dirty, clean the camcorder casing and the lens with a soft cloth lightly moistened with water, and then wipe the casing and the projector lens with a dry soft cloth. Avoid the following so as not to deform the casing, damage the finish or scratch the lens: ☐ Using chemicals such as thinner, benzine, alcohol, chemical cloths, insect repellent, insecticide and sunscreen ☐ Handling the camcorder with the above substances on your hands ☐ Leaving the camcorder in contact with rubber or vinyl objects for a long period of time About care and storage of the lens ☐ ☐ ☐ 44 GB Wipe the surface of the lens clean with a soft cloth in the following instances: ☐ When there are fingerprints on the lens surface ☐ In hot or humid locations ☐ When the lens is exposed to salty air such as at the seaside Store in a well-ventilated location subject to little dirt or dust. To prevent mold, periodically clean and store the lens as described above. On charging the pre-installed rechargeable battery Your camcorder has a pre-installed rechargeable battery to retain the date, time, and other settings even when the LCD screen is closed.
The pre-installed rechargeable battery is always charged while your camcorder is connected to the wall outlet (wall socket) via the AC Adaptor (models with an AC Adaptor) or while the battery pack is attached. The rechargeable battery will be fully discharged in about 3 months if you do not use your camcorder at all. Charge the pre-installed rechargeable battery before you start using your camcorder. However, even if the pre-installed rechargeable battery is not charged, the camcorder operation other than date recording will not be affected. Note on disposal/transfer the ownership of the camcorder (Models with internal memory) Even if you delete all movies and still images, or perform [Format] (p.
38), data on the internal memory may not be completely erased. It is recommended that ☐ [Setup] ☐ [Media you select Settings] ☐ [Format] ☐ [Empty] to prevent the recovery of your data. Others/Index How to charge the pre-installed rechargeable battery Connect your camcorder to a wall outlet (wall socket) using the AC Adaptor (models with an AC Adaptor) or attach the fully charged battery pack, and leave it with the LCD screen closed for more than 24 hours.
45 GB Specifications System Signal format: NTSC color, EIA standards (HDR-CX220/ CX230/CX280/CX290/PJ220/PJ230) PAL color, CCIR standards (HDR-CX220E/ CX230E/CX280E/CX290E/PJ220E/PJ230E) HD TV Movie recording format: AVCHD (AVCHD format Ver.

2.

0 compatible): Video: MPEG-4 AVC/H.264 Audio: Dolby Digital 2ch Dolby Digital Stereo Creator*1 MPEG-2 PS: Video: MPEG-2 (Video) Audio: Dolby Digital 2ch Dolby Digital Stereo Creator*1 MP4: Video: MPEG-4 AVC/H.264 Audio: MPEG-4 AAC-LC 2ch *1 Manufactured under license from Dolby Laboratories. Photo file format: DCF Ver.2.0 Compatible Exif Ver.2.3 Compatible MPF Baseline Compatible Recording media (Movie/Photo): Internal memory HDR-CX230/CX230E/CX290/CX290E/ PJ230/PJ230E: 8GB "Memory Stick PRO Duo" media SD card (Class 4 or faster) The capacity that a user can use HDR-CX230/CX230E/CX290/CX290E: Approx. 7.75 GB*6 HDR-PJ230/PJ230E: Approx.

7.75 GB*2 *6 1 GB equals 1 billion bytes, a portion of which is used for system management and/or application files. *2 1 GB equals 1 billion bytes, a portion of which is used for system management and/or application files. Only preinstalled demonstration movie may be deleted. Image device: 3.1 mm (1/5.8 type) CMOS Sensor Recording pixels (photo, 16:9): Max. 8.9 mega (3 984 □ 2 240) pixels*3 Gross: Approx. 2 390 000 pixels Effective (movie, 16:9)*4: Approx.

2 150 000 pixels (HDR-CX220/ CX220E/CX230/CX230E/PJ220/PJ220E/ PJ230/PJ230E) Approx. 2 290 000 pixels (HDR-CX280/ CX280E/CX290/CX290E) Effective (photo, 16:9): Approx. 2 290 000 pixels Effective (photo, 4:3): Approx. 1 710 000 pixels Lens: Carl Zeiss Vario-Tessar Lens HDR-CX220/CX220E/CX230/CX230E/ PJ220/PJ220E/PJ230/PJ230E: 27× (Optical)*5, 32× (Extended, while recording movies)*4, 320× (Digital) HDR-CX280/CX280E/CX290/CX290E: 27× (Optical)*4, 50× (Extended, while recording movies)*5, 320× (Digital) F1.9 ~ F4.

0 Focal length: f= 2.1 mm ~ 57.0 mm (3/32 in. ~ 2 1/4 in.) When converted to a 35 mm still camera For movies*4: 29.

8 mm ~ 953.6 mm (1 3/16 in. ~ 37 5/8 in.) (16:9) (HDR-CX220/CX220E/CX230/ CX230E/PJ220/PJ220E/PJ230/PJ230E) 29.8 mm ~ 804 mm (1 3/16 in. ~ 31 3/4 in.) (16:9) (HDR-CX280/CX280E/CX290/ CX290E) For photos: 29.8 mm ~ 804 mm (1 3/16 in. ~ 31 3/4 in.) (16:9) Color temperature: [Auto], [One Push], [Indoor], [Outdoor] Minimum illumination: 6 lx (lux) (in default setting, shutter speed 1/30 second (HDR-CX220/CX230/CX280/ CX290/PJ220/PJ230) or 1/25 second (HDRCX220E/CX230E/CX280E/CX290E/PJ220E/ PJ230E)) 3 lx (lux) ([Low Lux] is set to [On], shutter speed 1/30 second (HDR-CX220/CX230/ CX280/CX290/PJ220/PJ230) or 1/25 second (HDR-CX220E/CX230E/CX280E/CX290E/ PJ220E/PJ230E)) *3 The unique image processing system of Sony's BIONZ allows still image resolution equivalent to the sizes described.

4 * [SteadyShot] is set to [Standard] or [Off]. 5 * [SteadyShot] is set to [Active]. Input/Output connectors HDMI OUT jack: HDMI micro connector USB jack: Type A (Built-in USB) Multi/Micro USB Terminal* * Supports Micro USB compatible devices. 46 GB □ USB connection is only for output (HDRCX220E/CX230E/CX280E/CX290E/PJ220E/ PJ230E). LCD screen Picture: 6.7 cm (2.7 type, aspect ratio 16:9) Total number of pixels: 230 400 (960 □ 240) Projector (HDR-PJ220/PJ220E/PJ230/ PJ230E) Projection type: DLP Light source: LED (R/G/B) Focus: Manual Throw Distance: 0.5 m (1.6 feet) or over Contrast ratio: 1500:1 Resolution (output): nHD (640 □ 360) Continuous projection time (when using the supplied battery pack): Approx. 50 min.

58 mm □ 57 mm □ 125 mm (2 3/8 in. □ 2 1/4 in. @@□ 1 3/16 in. @@□ 2 1/4 in. @@□ 2 1/4 in. @@□ 2 1/4 in. □ 4 5/8 in.) (w/h/d) including the projecting parts Others/Index Rechargeable battery pack NP-FV30 Maximum output voltage: DC 8.4 V Output voltage: DC 7.2 V Maximum charge voltage: DC 8.

4 V Maximum charge current: 2.12 A Capacity Typical: 3.6 Wh (500 mAh) Minimum: 3.6 Wh (500 mAh) Type: Li-ion Design and specifications of your camcorder and accessories are subject to change without notice. 47 GB Expected running times for the supplied battery pack (in minutes) These tables show the approximate available running times when you use a fully charged battery pack. HDR-CX220/CX220E/CX230/CX230E □ □ The maximum recording time of movies and number of photos that can be recorded, are displayed on the screen (p.50). The recordable time may vary depending on REC the recording and subject conditions, [Mode]. Recording media Continuous recording time Typical recording time Playing time HDR-CX230/CX230E Internal memory 95 45 145 HDRCX220/ CX220E 95 45 145 On trademarks □ □ Memory card □ HDR-CX280/CX280E/CX290/CX290E/PJ220/ PJ220E/PJ230/PJ230E Recording media HDRCX280/ HDR-CX290/CX290E/PJ230/ CX280E/ PJ230E PJ220/ PJ220E Internal memory Memory card 90 45 135 90 45 135 □ □ □ □ □ □ Continuous recording time Typical recording time Playing time □ □ □ □ □ Each recording time is measured when the camcorder is recording high definition image REC Mode] set quality (HD) movies with [ ]. to [Standard Typical recording time shows the time when you repeat recording start/stop, switching the movie or photo mode, and zooming.

When using a Sony memory card. Times measured when using the camcorder at 25 □C (77 °F). 10 □C to 30 □C (50 °F to 86 °F) is recommended. @@@@@@ "InfoLITHIUM" is a trademark of Sony Corporation. @@ "BIONZ" is a trademark of Sony Corporation. "BRAVIA" is a trademark of Sony Corporation. Blu-ray Disc□ and Blu-ray□ are trademarks of the Blu-ray Disc Association. Dolby and the double-D symbol are trademarks of Dolby Laboratories. The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries. Microsoft, Windows, Windows Vista, and DirectX are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

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48 GB Screen indicators □ □ □ □ □ " " and "PlayStation" are registered trademarks of Sony Computer Entertainment Inc. SDXC logo is a trademark of SD-3C, LLC. MultiMediaCard is a trademark of MultiMediaCard Association. Facebook and the "f " logo are trademarks or registered trademarks of Facebook, Inc. YouTube and the YouTube logo are trademarks or registered trademarks of Google Inc.

The following indicators appear when you change the settings. Center Left Right All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies.

Furthermore, ☐ and ☐ are not mentioned in each case in this manual. Bottom Left Add further enjoyment with your PlayStation 3 by downloading the application for PlayStation 3 from PlayStation Store (where available.) The application for PlayStation 3 requires PlayStation Network account and application download. Accessible in areas where the PlayStation Store is available. Indicator Meaning MENU button (36) Self-timer recording (37) Wide Mode (37) Fader (37) [Face Detection] set to [Off] (37) [Smile Shutter] set to [Off] (37) Manual focus (37) Scene Selection (37) White Balance (37) SteadyShot off (37) Tele Macro (37) Destination (39) Intelligent Auto (face detection/scene detection/ camera-shake detection) (25) Meaning Slideshow Set Warning (41) Playback mode (26) Others/Index ☐ ☐ ☐ Center Indicator ☐ ☐ 49 GB Right Indicator 60i 720 Meaning Recording image quality (HD/MP4/STD), frame rate (60p/50p/60i/50i), recording mode (PS/FX/ FH/HQ/LP) and movie size (37) Remaining battery Recording/playback/ editing media (21) Counter (hour:minute: second) Estimated remaining recording time Approximate number of recordable photos and photo size (38) Playback folder Current playing movie or photo/Number of total recorded movies or photos Connection to the external media device (34) Meaning [Micref Level] low (37) [Wind Noise Reduct.] (37) Blt-in Zoom Mic (37) Low Lux (37) Exposure (37) Intelligent Auto (25) Data file name Protect (38) 60min 0:00:00 00min 9999 8.9M 100/112 Bottom Indicator 101-0005 ☐ ☐ ☐ *Indicators and their positions are approximate and may differ from what you actually see. Some indicators may not appear, depending on your camcorder model.*

You will find the menu lists on pages 37 to 39. 51 GB GB Additional information on this product and answers to frequently asked questions can be found at our Customer Support Website. http://www.sony.net/ ☐ 2013 Sony Corporation Printed in China .