

Professional Disc Drive Unit

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

PDW-U4

XDCAM™


Professional Disc
XL-QD ≡

MPEG HD422

XAVC

MPEG HD

MPEG IMX

DVCAM™

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Overview

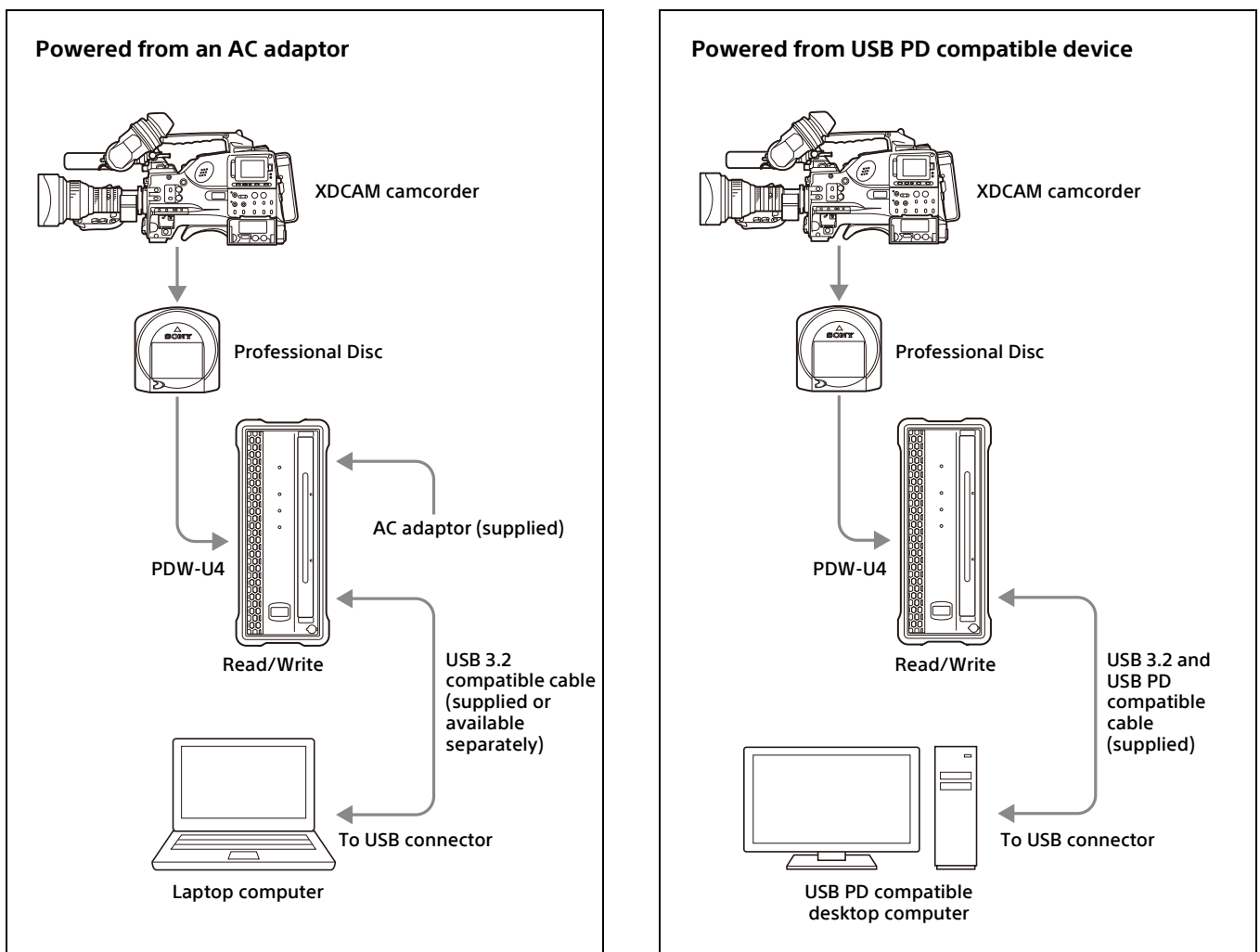
Features

The features of the unit include the following.

- Supported for all XDCAM formats
- Supported for mixed format recording mode (XAVC mixed recording not supported)
- Supports single-layer to quad-layer Professional Discs
- IT-friendly system through USB interface
- User data recording as computer data
- Equipped with two DCHS optical heads for high transfer rates
 - * DCHS: Dual Channel Head System
- Compact and lightweight
- Menu operation from a computer using the utility software
- XDCAM preview environment
- Supports power delivery via a USB cable when connected to a computer can deliver 60 W or higher using the USB PD 3.0 standard.

Example of Use

The following figure shows an example system for reading or writing material recorded with a XDCAM camcorder on a computer connected to this unit.



Recommended Software

List of software

Download the following software from the Sony Professional Products web site for use with this unit.

Software	Supported OS	Function	Source
XDCAM Drive Software	Windows/Macintosh	Basic software that allows you to connect this unit to a computer and handle video and audio data recorded with an XDCAM camcorder as files.	Download from the Sony Creative Software web site ^{a)} or the Sony Professional Products web site ^{b)} .
Utility software (XDCAM Drive Utility)	Windows/Macintosh	Provides the following functions on a computer connected to this unit. <ul style="list-style-type: none"> • Displaying device and disc information • Disc format and recovery • Firmware updates • Making settings • Finalize discs (when using a quad-layer WO disc) <p>Note</p> <p>The utility software is installed automatically when you install the XDCAM Drive Software.</p>	
Catalyst Browse	Windows/Macintosh	Allows you to view and operate on clips recorded on Professional Discs. For an overview of Catalyst Browse and installation instructions, visit the Sony Creative Software web site ^{a)} or the Sony Professional Products web site ^{b)} .	

a) Sony Creative Software web site

<http://www.sonycreativesoftware.com/>

b) Sony Professional Products web site

- U.S.A. <http://pro.sony.com>
- Canada <http://www.sonybiz.ca>
- Latin America <http://sonypro-latin.com>
- Europe <http://www.pro.sony.eu/pro>
- Middle East and Africa <http://sony-psmea.com>
- Russia <http://sony.ru/pro/>
- Brazil <http://sonypro.com.br>
- Australia <http://pro.sony.com.au>
- New Zealand <http://pro.sony.co.nz>
- Japan <http://www.sonybsc.com>
- Asia Pacific <http://pro.sony-asia.com>
- Korea <http://bp.sony.co.kr>
- China <http://pro.sony.com.cn>
- India <http://pro.sony.co.in>

System requirements

For details on the functions of the above recommended software and their system requirements, refer to the following file and manual (available on the download page of each respective software).

XDCAM Drive Software: ReadMe.txt

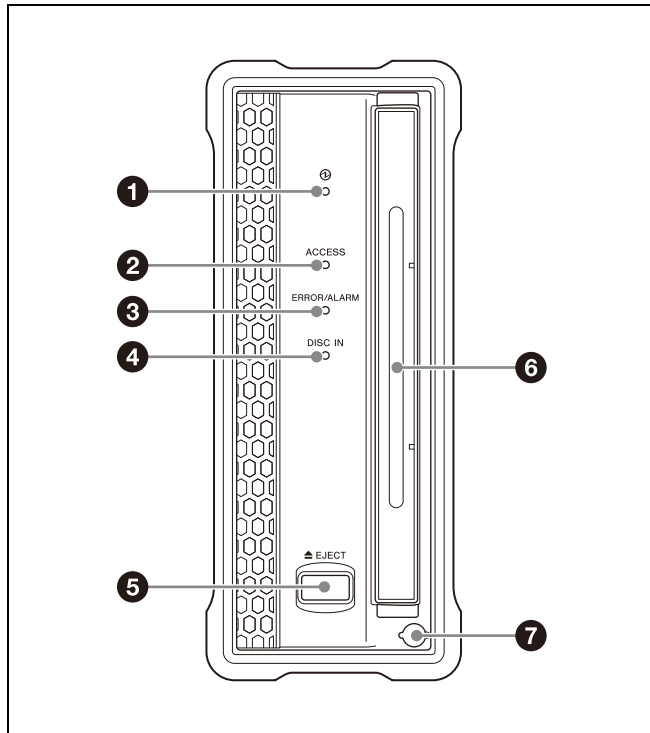
Catalyst Browse: Installation Guide

Note

Operation has not been verified using a USB hub connection and USB 2.0 connection.

Names and Functions of Parts

Front Panel



1 (power) indicator

Lights green when an AC adaptor (supplied) or USB PD (60 W or higher) compatible computer is connected and the (power) button on the rear panel is on.

2 ACCESS indicator

Lights blue when the disc is being accessed from the computer.

After the access finishes, an appropriate hold time is maintained, according to each disc type, in order to write the management data efficiently.

If the next recording starts during the hold time, the combined management data is instead written after the end of the recording.

You can request to eject or read the disc during the hold time, but the operation is performed after writing the management data.

The duration when the disc management data writing is being held varies with the disc type as shown below.

Disc	Data write hold time
PFD23A	Approx. five seconds
PFD50DLA	Approx. five seconds
PFD100TLA	Approx. five seconds
PFD128QLW	Approx. four minutes

Upon expiration of the data write hold time shown above, the disc management data writing begins even if you do not eject the disc or perform any operation from the computer.

Notes

- As the PFD128QLW is a write-once only type disc, it has a longer hold time than other types of discs for saving to the management data area.
- Do not press the (power) button on the rear panel to turn off, or do not disconnect either the power cord or USB cable while the ACCESS indicator is lighting or flashing. Doing so may lead to a loss of data on the disc. It is recommended that the disc be ejected before turning off the power or disconnecting the cable.

3 ERROR/ALARM indicator

If a fault occurs in the unit, this flashes red, as shown in the following table.

Indicator	Meaning
Flashing four times a second	An error occurred (principally a hardware default).
Flashing once a second	An alarm not listed above occurred.

You can check alarms generated by this unit, using the alarm log of the utility software. For details, refer to the help file of the utility software.

If the indicator is flashing four times a second, and it is not possible to check the alarm log, a malfunction may have occurred. In this case, contact your Sony service representative.

When the error is eliminated, the indicator goes off.

4 DISC IN indicator

Lights green when a disc is loaded.

5 EJECT button

Ejects a disc (see page 9).

Notes

- This button is disabled while the disc is being accessed. Either stop accessing the disc before ejecting, or eject by an operation from the computer.
- When this unit is connected to a Macintosh computer, this button is disabled.

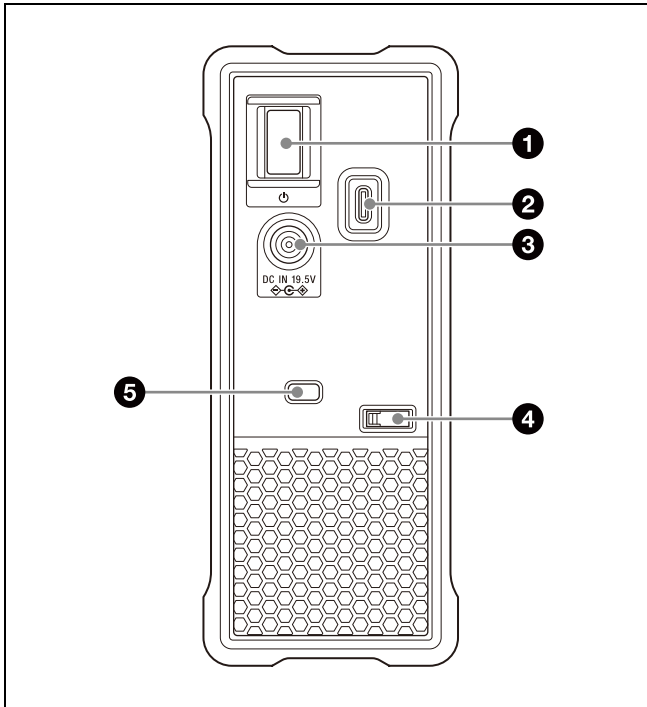
6 Disc slot

With the label surface on the right, insert the disc (see page 9).

7 Manual eject mechanism

For details, see "To eject discs with the unit powered off" (page 9).

Rear Panel



1 (power) button

This switches the power on and off.

2 USB connector (USB 3.2 10 Gbps compatible, USB PD 3.0 compatible (Sink mode, 20 V/3 A or higher)) (USB Type-C[®])

Use the supplied USB cable to connect to the computer.

* USB Type-C[®] is a registered trademark of USB Implementers Forum.

Notes

- Always use the supplied USB cable or the USB cables referred to in "Optional accessories" (page 11). Do not use any other cables.
- If the video and audio are not output on a computer connected using the USB connector, disconnect the USB cable, and reconnect making sure it is fully inserted.

3 DC power inlet connector

Connect to the AC power using the supplied AC adaptor and a power cord (not supplied).

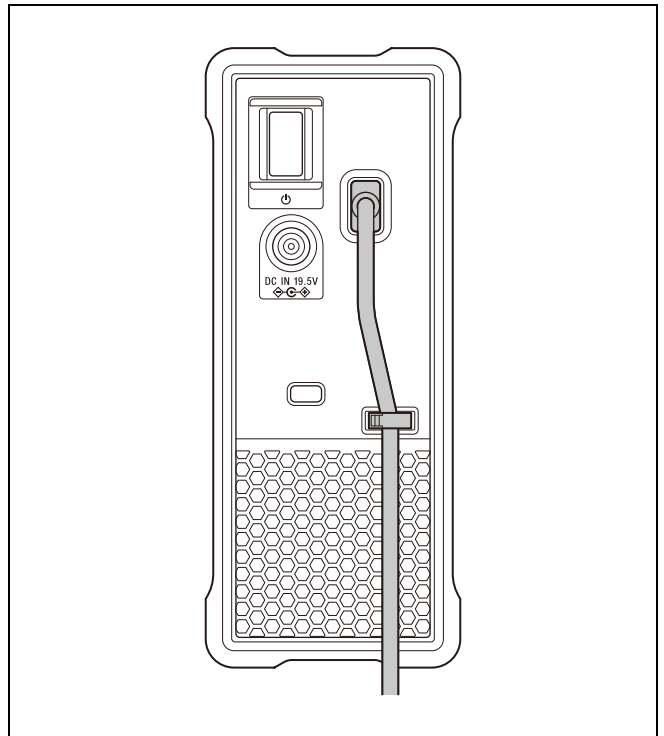
Note

The unit supports power supply from an AC adaptor or by USB Power Delivery.

4 Cable clamber

Use this clamber to secure the USB cable.

Clip the cable with the clamber as shown in the following figure.



5 Security slot

You can fit a commercially available security cable into this slot.

For information about how to use your security cable, refer to the instructions provided with the security cable.

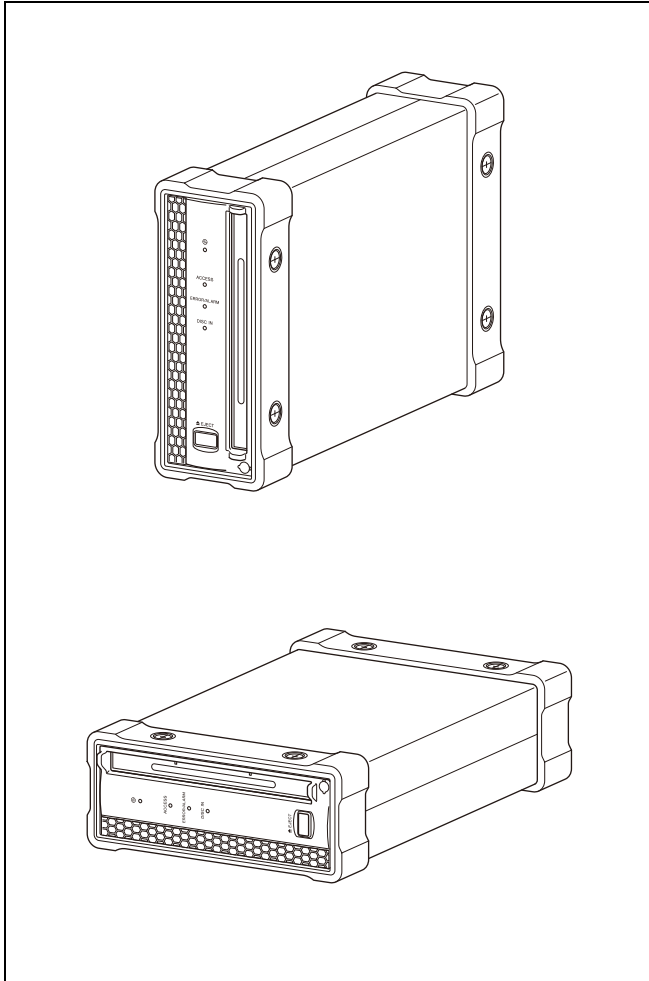
Preparations

Installation of the Unit

When installing the unit, place the unit so that the disc slot is on the right hand side when installing vertically, or at the top when installing horizontally.

Note

If installed in the incorrect orientation, recording and playback may not operate normally.



Software Installation

To use this unit, the necessary software must first be installed on the computer to which it is connected.

Note

Operation of the XDCAM Drive Software may be unstable if it is installed together with some anti-virus software, spyware tools, or UDF2.5 file system drivers other than the operating system standard.

If the installation cannot be completed successfully, check the settings for conflicts with this other software, then try reinstalling.

On a Windows computer

To install the XDCAM Drive Software and utility software

Download the XDCAM Drive Software from the Sony Creative Software web site or the Sony Professional products web site (page 4).

Run the downloaded file and follow the instructions that appear on the screen to install both the XDCAM Drive Software and the utility software.

Notes

- If an old version of the XDCAM Drive Software is already installed, it must be uninstalled before you install the new version. Use "Add or Remove Programs" on the Control Panel to remove the old version of the Sony XDCAM Drive Software. After doing so, be sure to restart the computer.
- After installation, the previous settings return to their default values.

On a Macintosh computer

To install the XDCAM Drive Software and utility software

Download Catalyst Browse from the Sony Creative Software web site or the Sony Professional products web site (page 4).

Extract the downloaded file, run the installation package, and follow the instructions that appear on the screen to install both the XDCAM Drive Software and the Utility Software.

Note

Installing the XDCAM Drive Software and utility software overwrites a previous installation. If you are using version 1.0 of the utility software installed somewhere other than the factory default, remove it manually. Settings from version 2.1 and later are preserved after the new installation.

Connections and Settings

Connecting to a computer

By connecting this unit to a computer, you can use the utility software and other software.

For a connection example, see "Example of Use" (page 3).

Notes

- The XDCAM Drive Software (see page 7) must be installed in advance.
- To disconnect the PDW-U4 from a Windows computer, run the "Safely Remove Hardware" dialog, and then disconnect the cable.
- If you start a Windows computer with the supplied Professional Disc Drive Unit CD-ROM loaded, the computer may fail in normal operation or run sluggishly.

Power Preparations

Electrical power is supplied using the DC power inlet connector or USB connector (page 6) on the rear panel of the unit.

When supplying power using the DC power inlet connector, connect the supplied AC adaptor and a power cord (not supplied).

When supplying power using the USB connector, connect to a computer that can supply 60 W or higher via the USB PD 3.0 standard or to a computer equipped with an expansion board using the supplied USB Type-C cable.

Power cannot be supplied from a computer other than those specified above.

Note

The unit supports power supply from an AC adaptor or by USB Power Delivery.

Connection of an AC adaptor is not required when powered from a USB PD compatible device.

If both a USB PD compatible device and AC adaptor are connected, power supply from the AC adaptor takes precedence. Both cannot be used together for redundancy.

Handling Discs

Read/write discs

This unit uses the following professional discs for reading and writing:

Disc	No. of files which can be created	Max. data capacity for user data recording
PFD23A	5,000	21 GB
PFD50DLA	6,000	46 GB
PFD100TLA	20,000	92 GB
PFD128QLW	20,000	120 GB

Note

- This unit cannot read or write the following discs.
 - Blu-ray Disc
 - Professional Disc for Data
- PFD128QLW is a quad-layer WO disc. Pay due attention to the following points.
 - Even if you delete any files written to the disc, no available storage space will be increased.
 - Reformatting the disc will not increase the available storage space.
 - Repetitive file writing will consume the recordable resource space (for writing the disc management data, etc.) on the disc. If no available recordable resource space is left on the disc, file writing may be disabled even with sufficient available storage space remaining.
 - No file can be written after the disc is finalized.
- The operation which you can execute varies depending on the file type stored in each directory. For details, refer to the help file of the utility software.
- Discontinued Sony single-layer discs and some third-party single-layer/dual-layer discs made in 2013 or earlier can only be played.
For details, download the release notes from the Sony Creative Software web site (page 4).

Notes on handling

Handling

The Professional Disc is housed in a cartridge, and is designed to allow handling free of risk from dust or fingerprints. However, if the cartridge is subjected to a severe shock, for example by dropping it, this can result in

damage or scratching of the disc. If the disc is scratched, it may be impossible to record video/audio, or to play back the content recorded on the disc. The discs should be handled and stored carefully.

- Do not touch the surface of the disc itself within the cartridge.
- Deliberately opening the shutter may cause damage.
- Do not disassemble the cartridge.
- The supplied adhesive labels are recommended for indexing discs. Apply the label in the correct position. If the sticker is peeled off or not put in the correct position, it may damage the unit. Also, stacking stickers may cause damage to the unit.

Storage

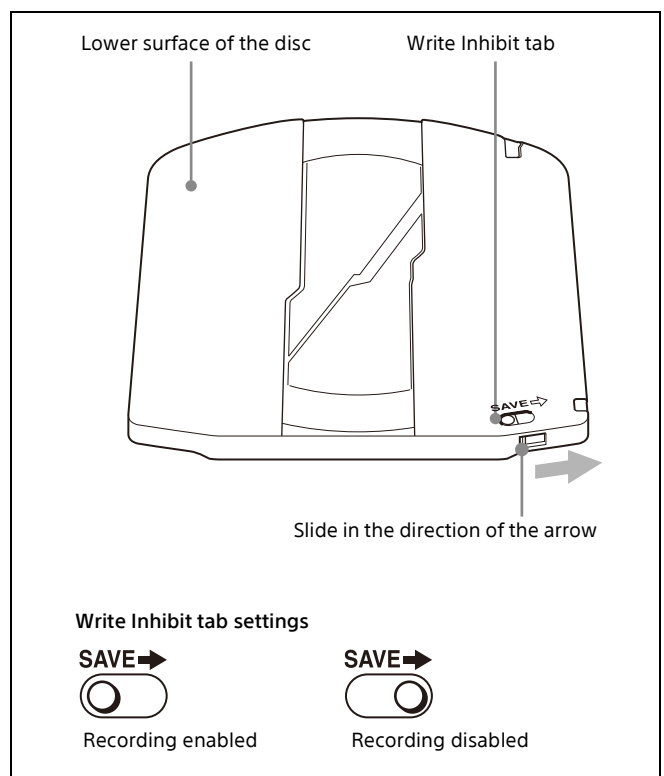
- Do not store discs where they may be subjected to direct sunlight, or in other places where the temperature or humidity is high.
- Do not leave cartridges where dust may be able to gain ingress.
- Insert cartridges in their cases and store vertically.

Care of discs


- Remove dust and dirt on the outside of a cartridge using a soft dry cloth.
- If condensation forms, allow ample time to dry before use.

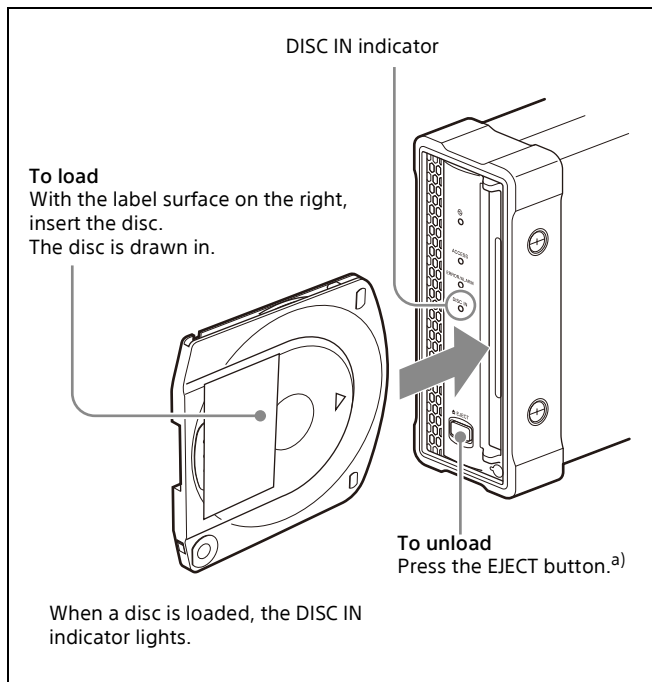
Write-protecting discs

To protect the content recorded on the disc from accidental erasure, move the write-protect tab on the lower surface of the disc in the direction of the arrow, as shown in the following figure.



Loading and unloading discs

To load and unload a disc, press the  (power) button to turn the unit on and light the indicator, and follow the procedures indicated in the next illustration.



a) Windows only

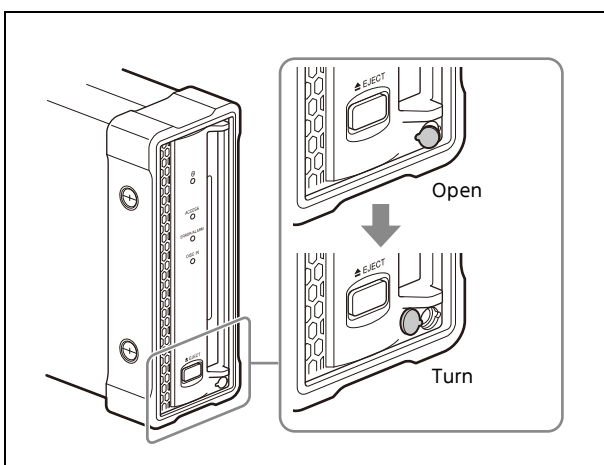
Notes

- If the unit is connected to a Macintosh computer, use the utility software to unload the disc.
- When a file on the disc is being operated, disc unloading is restricted by the software on the Windows/Macintosh computer.

To eject discs with the unit powered off

If you need to eject a disc in an environment where power cannot be supplied, you can use the following as an emergency procedure to eject a disc manually.

- 1 Power the unit off.**
- 2 Uncover the manual eject mechanism on the front panel as shown in the figure.**



- 3 Insert a Phillips screwdriver 4 mm or less in diameter or the like straight in the hole.**

- 4 Push the internal manual eject lever 10 mm or so, and release it.**

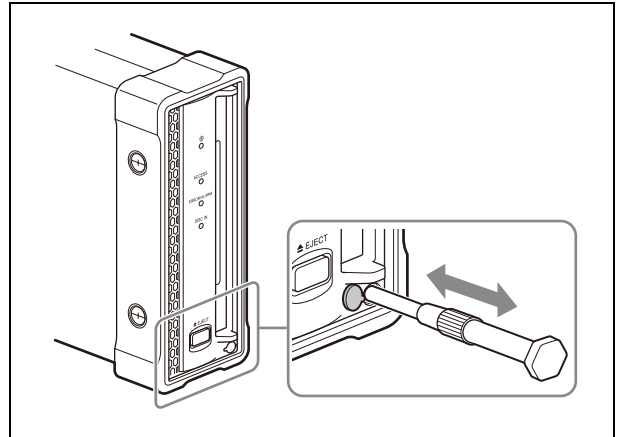
Note

Be careful not to insert the screwdriver at an oblique angle or use excessive force to push the lever.

- 5 Repeat step 4 until the disc is ejected.**

Note

You may need to repeat the step about 80 times.



After ejecting the disc, it is not necessary to return the lever to its original position. The next time the unit is powered on, normal operation will resume.

- 6 Replace the cover.**

Using the Software

Starting and Exiting the Utility Software

Starting/displaying

First make sure that this unit is connected to the computer.
For connection details, see "Connecting to a computer" (page 7).

On a Windows computer

With the computer connected to this unit, carry out any of the following.

- Double-click the Utility icon which appears in the task tray. Alternatively, right-click the icon to open the menu, and select "Open Console" from the menu.
- If you created a shortcut icon on the desktop when you installed this software, double-click the icon.
- Click the [Start] button on the computer and then select "Sony XDCAM Drive" > "XDCAM Drive Utility".

On a Macintosh computer

Open the folder in which the utility software is installed, and then double click on the executable file of the Utility Software.

This displays the home window of the utility software.

Closing the console window (Windows only)

With the computer connected to this unit, carry out any of the following.

- Click the × (close) button in the top right corner of the window.
- Right-click the title bar, and select "Close" from the context menu.
- With this software activated, press Alt + F4 (press the F4 key while holding down the Alt key).
- Select "View" → "Close" from the menu bar.

Exiting

On a Windows computer

Right-click the Utility icon (XDCAM Drive Utility Software) in the task tray, and select "Exit".

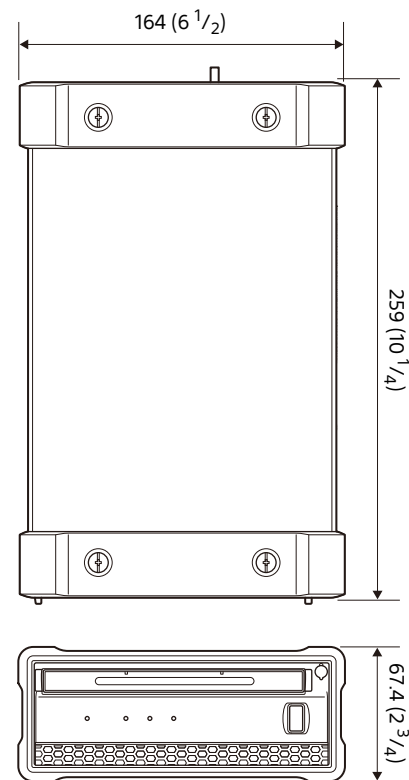
On a Macintosh computer

Select "Quit XDCAM Drive Utility" from the XDCAM Drive Utility menu.

Specifications

General	
Power requirements	DC 19.5 V, USB PD 20 V
Power consumption	30 W
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Operating humidity	20% to 90% (relative humidity)
Mass	2.0 kg (4 lb 6.5 oz)

External dimensions



Unit: mm (inches)

System	
Read/write formats	
Video	XAVC AI 422 (100 Mbps), MPEG HD (50/35/25/18 Mbps), MPEG IMX (50/40/30 Mbps), DVCAM (25 Mbps)
Proxy video	MPEG-4
Audio	XAVC AI 422: 24 bits/48 kHz (8 ch) MPEG HD: 16 bits/48 kHz (2/4 ch) or 24 bits/48 kHz (8 ch) MPEG IMX: 16 bits/48 kHz (8 ch) or 24 bits/48 kHz (4 ch) DVCAM: 16 bits/48 kHz (4 ch)
Proxy audio	A-law (8 ch, 8 bits, 8 kHz)

Recording/playback times (single layer disc)

XAVC AI 422	100 Mbps: Approx. 21 min.
MPEG HD422	50 Mbps: Approx. 43 min.
MPEG HD	35 Mbps: Approx. 65 min.
	25 Mbps: Approx. 85 min.
	18 Mbps: Approx. 112 min.
MPEG IMX	50 Mbps: Approx. 45 min.
	40 Mbps: Approx. 55 min.
	30 Mbps: Approx. 68 min.
DVCAM	Approx. 85 min.

Recording/playback times (dual-layer disc)

XAVC AI 422	100 Mbps: Approx. 46 min.
MPEG HD422	50 Mbps: Approx. 95 min.
MPEG HD	35 Mbps: Approx. 145 min.
	25 Mbps: Approx. 190 min.
	18 Mbps: Approx. 248 min.
MPEG IMX	50 Mbps: Approx. 100 min.
	40 Mbps: Approx. 120 min.
	30 Mbps: Approx. 150 min.
DVCAM	Approx. 185 min.

Recording/playback times (triple-layer RE disc)

XAVC AI 422	100 Mbps: Approx. 92 min.
MPEG HD422	50 Mbps: Approx. 190 min.
MPEG HD	35 Mbps: Approx. 290 min.
	25 Mbps: Approx. 380 min.
	18 Mbps: Approx. 496 min.
MPEG IMX	50 Mbps: Approx. 200 min.
	40 Mbps: Approx. 240 min.
	30 Mbps: Approx. 300 min.
DVCAM	Approx. 370 min.

Recording/playback times (quad-layer WO disc)

XAVC AI 422	100 Mbps: Approx. 120 min.
MPEG HD422	50 Mbps: Approx. 240 min.
MPEG HD	35 Mbps: Approx. 360 min.
	25 Mbps: Approx. 480 min.
	18 Mbps: Approx. 600 min.
MPEG IMX	50 Mbps: Approx. 240 min.
	40 Mbps: Approx. 300 min.
	30 Mbps: Approx. 360 min.
DVCAM	Approx. 450 min.

Note

Actual time may differ from the values shown above depending on the recording conditions.

Output/input connector

USB connector (USB 3.2 10 Gbps compatible, USB PD 3.0 compatible (Sink mode, 20 V/3 A or higher)) (USB Type-C®)

Note

For power supply operation using USB Power Delivery, a computer that supports USB PD (60 W or higher) is required. Power cannot be supplied from a computer that does not support USB PD (60 W or higher).

Supplied accessories

Before Using This Unit (1)

AC adaptor

Part No.: 1-493-482-4x (1)

USB cable (USB Type-C® - USB Type-C®, USB 3.2 10 Gbps compatible, USB PD 3.0 (20 V/5 A) compatible)

Part No.: 1-005-566-1x (1)

Power cord (250 V/2.5 A, 2 m) (China only)

Part No.: 1-846-103-8x/1-846-433-7x (1)

Optional accessories

Power cord

Japan (125 V/7 A, 2 m)

Part No.: 1-846-099-7x/1-846-099-8x

North America (125 V/7 A, 2 m)

Part No.: 1-757-562-1x/1-011-040-1x

Europe (250 V/2.5 A, 2 m)

Part No.: 1-846-102-8x/1-846-428-7x

PFD23A Professional Disc

PFD50DLA Dual-layer Professional Disc

PFD100TLA Triple-layer Professional disc

PFD128QLW Quad-layer Professional Disc (write-once type)

USB cable (USB Type-A - USB Type-C®, USB 3.2 10 Gbps compatible)

Part No.: 1-912-358-1x

Design and specifications are subject to change without notice.

Open Source Software Licenses

TOPPERS/ASP Kernel (Release 1.7.0)

TOPPERS/JSP Kernel (Release 1.4.3)

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