

PROSIDIO



**LS-Series 4K All-in-One
Endoscopy Camera Systems**
24-inch & 32-inch Models
User Manual

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This manual is intended to serve as an aid in the proper installation, connection, and operation of the LS-Series 4K All-in-One Endoscopy Camera Systems. All the necessary details and actions are clearly explained. We therefore ask that you read this manual carefully before proceeding to work with the instrument. Keep this manual available for easy reference.

WARNING: Prosidio medical devices are not cleaned and disinfected when delivered. These hygiene measures must be performed before the first use/set-up. Cleaning/disinfection of the surfaces is part of the ongoing disinfection measures.

Prosidio is continuously working on the further development of all products. Please appreciate that changes to the scope of supply in form, equipment and technology are possible for this reason. Therefore, no claims may be derived from the information, figures and descriptions in this manual.

<i>Item No.</i>	<i>Prosidio Model</i>	<i>Configuration</i>	<i>HDMI Input</i>	<i>Flexible compatibility</i>
1	PLS24UHD1	24" 4K UHD Standard	Yes	—
2	PLS24UHDFLEX1	24" 4K UHD Distal-Chip Ready	Yes	Yes
3	PLS32UHD1	32" 4K UHD Standard	Yes	—
4	PLS32UHDFLEX1	32" 4K UHD Distal-Chip Ready	Yes	Yes

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Caution: Federal law restricts this device to sale by or on the order of a physician.

Carefully read all instructions prior to use.

Device Classification: class I

FDA Establishment Registration Number: 3019110366

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FWL (Surgical Camera and Accessories, 21 CFR 878.4160)

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1. Introduction & Intended Use

1.1 Introduction

This manual provides instructions for the safe and effective setup, operation, cleaning, and maintenance of the LS-Series 4K All-in-One Endoscopy Camera Systems. These systems integrate a camera control unit (CCU), 4K camera head, LED cold light source, internal storage, and medical-grade display (24-inch or 32-inch 4K UHD) into a single unit for ultra-high-definition endoscopic visualization.

This IFU applies to the following models: PLS24UHD1, PLS24UHDFLEX1, PLS32UHD1, and PLS32UHDFLEX1. Read this manual thoroughly before operating the equipment. Retain this manual for future reference.

1.2 Intended Use

The LS-Series 4K All-in-One Endoscopy Camera System is intended to be used by trained healthcare professionals in clinical institutions during endoscopic procedures for image acquisition, processing, storage, and display of the field of view within human body cavities, hollow organs, and canals. The system connects to compatible optical rigid endoscopes and, for models PLS24UHDFLEX1 and PLS32UHDFLEX1, compatible distal chip endoscopes, to capture, process, store (via USB and internal storage), illuminate, and display ultra-high-definition (4K UHD, 3840×2160) endoscopic images.

The system provides illumination via an integrated 80W LED cold light source transmitted through a fiber optic light guide cable to the endoscope. The camera head interfaces with the endoscope via a C-mount optical coupler; the light source interfaces via a fiber optic light guide cable. Neither the camera head nor light cable are intended for direct patient contact.

1.3 User Profile

This device is intended for use only by trained medical professionals (e.g., physicians, surgeons, nurses) familiar with endoscopic procedures and the operation of endoscopic camera systems. Users must have the necessary qualifications and comply with relevant healthcare regulations and institutional policies.

1.4 Expected Service Life

The expected service life of this system is 5 years from the date of manufacture, when used, maintained, cleaned, and stored in accordance with this manual. LED light source operational life: 30,000 hours. Display panel: 50,000 hours MTBF.

2. Symbols Glossary

The following symbols may appear on the device, packaging, or in this manual:

2.1 Symbols

Symbol	Meaning	Standard Reference
	DC Power Direct current power input	IEC 60417-5031
	Type BF Applied Part Body-contact floating applied part; protection against electric shock	IEC 60417-5840
IPX6	Protection against powerful water jets	IEC 60529
IPX0	No protection against water ingress	IEC 60529
	Class I Equipment Equipment with protective earth connection	IEC 60417-5019
	Equipotential Terminal Functional earth/equipotential bonding terminal	IEC 60417-5021
	Caution Refer to accompanying documents; risk of danger	ISO 7010-W001
	ON/OFF (Power) Mains power switch	IEC 60417-5010
Standby	Standby mode	IEC 60417-5009
	Fragile/Keep Dry/This Way Up Shipping handling symbols	ISO 780
	WEEE Separate collection for electronic waste	Directive 2012/19/EU
	Manufacturer Identifies the legal manufacturer	ISO 15223-1
	Date of Manufacture Year and month of manufacture	ISO 15223-1
	Serial Number Unique device identifier	ISO 15223-1
	Consult IFU Read Instructions for Use before operating	ISO 15223-1
Rx Only	Rx Only Federal law restricts to sale by/on order of physician	21 CFR 801.109
	UDI Unique Device Identifier — Machine-readable device identifier on label	FDA 21 CFR Part 830
Catalogue / Model Number	Catalogue, reference, or model number	ISO 15223-1

Symbol	Meaning	Standard Reference
	Catalogue/Model Number Catalogue, reference, or model number	ISO 15223-1
	CE Marking European conformity marking, if present on product labeling	Regulation (EU) 2017/745
	Alternating Current (~) Alternating current; may appear on the external power adapter	IEC 60417-5032
	Non-ionizing Radiation Non-ionizing electromagnetic radiation; potential for RF interference	IEC 60417-5140
	Temperature Limit Storage / transport temperature limitation	ISO 15223-1
	Humidity Limit Storage / transport humidity limitation	ISO 15223-1
	Atmospheric Pressure Limit Storage / transport atmospheric pressure limitation	ISO 15223-1

3. Warnings and Precautions

Read and understand all warnings and precautions before operating the LS-Series 4K system.

3.1 Warnings

Situations that could lead to serious injury or death if not avoided:

-  **Electrical Shock Hazard:** This is Class I Equipment requiring connection to a supply mains with protective earth. Do not remove the grounding conductor. Do not use extension cords or adapters that defeat grounding. Connect the equipotential grounding conductor if required by facility protocol.
-  **Modification Hazard:** Do not modify this equipment without written authorization from the manufacturer. Unauthorized modifications may compromise safety and essential performance and will void the warranty.
-  **Explosion Hazard:** This equipment is NOT classified as AP or APG. Do NOT use in the presence of flammable anesthetics or in oxygen-enriched environments.
-  **HF Surgical Equipment:** When using HF surgical equipment concurrently: Ensure patient return electrode is properly applied. Keep active HF accessories away from endoscope tip. Use lowest effective power setting. The camera head is Type BF but does not provide HF isolation for the endoscope. Use only endoscopes rated for HF use.
-  **Laser Safety:** If used with laser equipment, follow all laser manufacturer safety precautions including appropriate eye protection.
-  **Thermal Hazard:** The light output port and connected endoscope distal tip can become hot. Avoid prolonged tissue contact at high light intensity. Use lowest clinically acceptable intensity.
-  **Incorrect Connections:** Ensure correct alignment before connecting. Do not force connectors.

-  **Patient Monitoring:** The endoscopic image is an adjunct to, not a replacement for, appropriate patient monitoring and clinical judgment.
-  **Real-Time Image:** Always verify the displayed image is live (not frozen or recorded) and correctly oriented before and during a procedure.
-  **No User-Serviceable Parts:** Refer all servicing to qualified personnel authorized by Prosidio. There are no user-serviceable parts inside the main unit, camera head, or power adapter. Opening any unit will void the warranty.
-  **Do Not Hot-Plug Camera Head:** Do not connect or disconnect the camera head while the system is powered on. Power off the system first to prevent short circuit or component damage.

3.2 Precautions

Situations that could lead to minor injury or equipment damage:

-  **Compatibility:** Use only accessories, endoscopes, and cables specified as compatible by Prosidio (see **Appendix A**).
-  **Inspection:** Before each use, inspect all components for damage. Do not use damaged equipment.
-  **Environment:** Operate only within specified conditions (**Section 6.3**). Max altitude: 2,000 m (6,562 ft).
-  **Ventilation:** Ensure at least 10 cm (4 in) clearance. Do not block vents.
-  **Power Source:** Connect only to 100–240V AC, 50/60 Hz. Use only the provided adapter (LXCP398–240) or Prosidio-approved replacement.
-  **EMI:** Maintain recommended separation distances from RF sources (**Section 14**).
-  **Cleaning:** Follow Section 9 precisely. Power off and disconnect before cleaning.
-  **Liquid Ingress:** Main unit: IPX0 (no liquid protection). Camera head: IPX6 (jet-protected, NOT immersible).
-  **White Balance:** Perform before each procedure or when optical components change.
-  **Storage Media:** USB 3.0 ports; FAT32/NTFS; max 2 TB. FAT32 imposes a 4 GB per-file limit; use NTFS for extended recording sessions. Internal 256 GB SSD. Back up important data. Do not remove USB during recording.

4. Contraindications

This device is contraindicated for use in patients for whom endoscopic procedures are medically contraindicated. Refer to the relevant endoscope IFU and clinical guidelines.

5. Product Description

5.1 System Components

The LS-Series 4K system includes:

Component	Description	SKU
Main Unit	Integrated CCU, 80W LED light source, 4K video processing, 256 GB SSD, 24" or 32" 4K UHD display.	See model table
4K Camera Head 24-inch models	Sony 1/1.8" CMOS, 8 MP, 3840×2160, integral cable; PLS24UHD1 / PLS24UHDFLEX1	LS4K24CMRH
4K Camera Head PLS32UHD1	Sony 1/1.8" CMOS, 8 MP, 3840×2160, integral cable	LS4K25CMRH
4K Camera Head PLS32UHDFLEX1	Sony 1/1.8" CMOS, 8 MP, 3840×2160, integral cable	LS4K25CMRH
Optical Coupler (F20)	C-mount adapter, 20 mm focal length; standard, included	LSCPL20mm
Universal LED Light Guide Cable	Fiber optic, 2.5 m length	LSCLEDLCReg
US Power Adapter	LXCP398–240; 100–240V AC in, 24V DC 9.2A out; confirm linkage to the newly supplied Tuyou identifier (Appendix A).	LSPWRCBLR
32 GB USB Drive	USB 3.0; FAT32/NTFS; included	LSCUSB32GB
HDMI Cable	High-Speed HDMI 2.0 cable; user-supplied or contact Prosidio	LSCBHDMI
Instructions for Use	This document; replace [system SKU] with the applicable system SKU	LSIFU–[system SKU]

NOTE: Models PLS24UHDFLEX1 and PLS32UHDFLEX1 include a Distal Chip Camera Input Port for compatible flexible endoscopes.

5.2 24" Models (PLS24UHD1, PLS24UHDFLEX1)

Both 24" models share a similar main unit structure. PLS24UHDFLEX1 adds a distal chip input port.

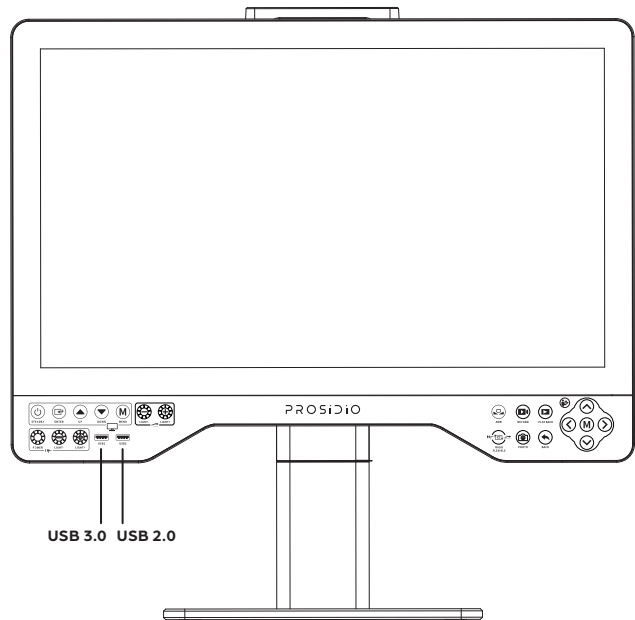
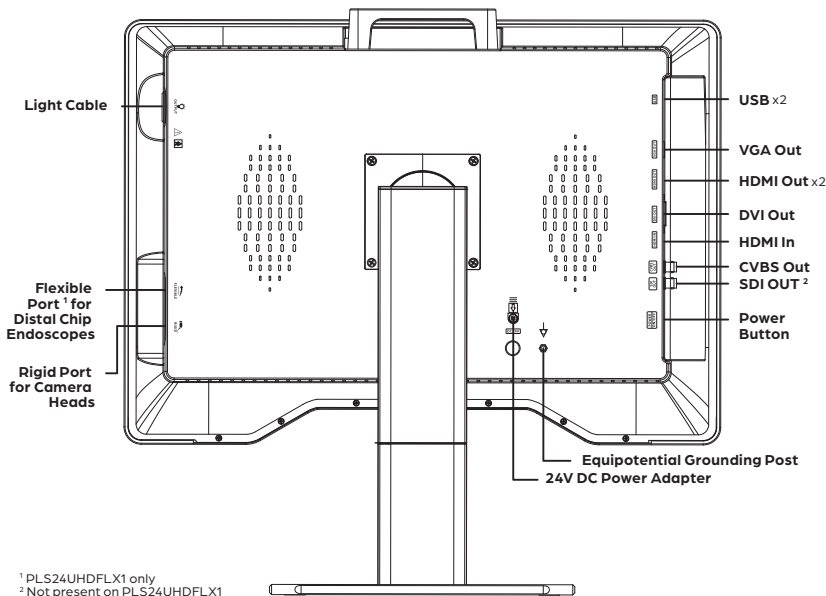


Figure 1: LS 24" 4K System – Front Panel



¹ PLS24UHDFLX1 only
² Not present on PLS24UHDFLX1

Figure 2: LS 24" 4K System – Back Panel

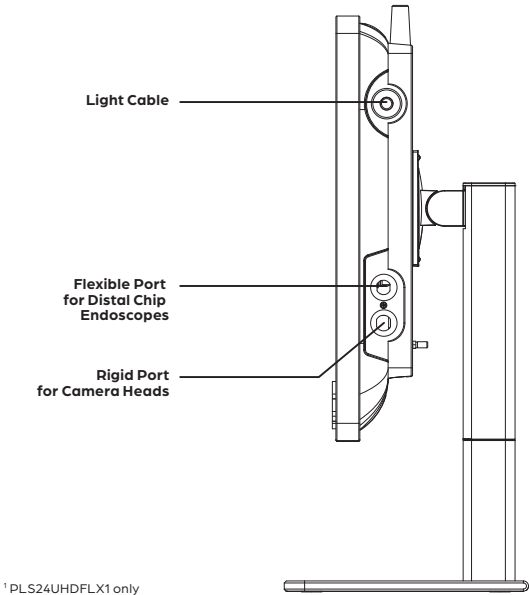


Figure 3: LS 24" 4K System — Right Panel

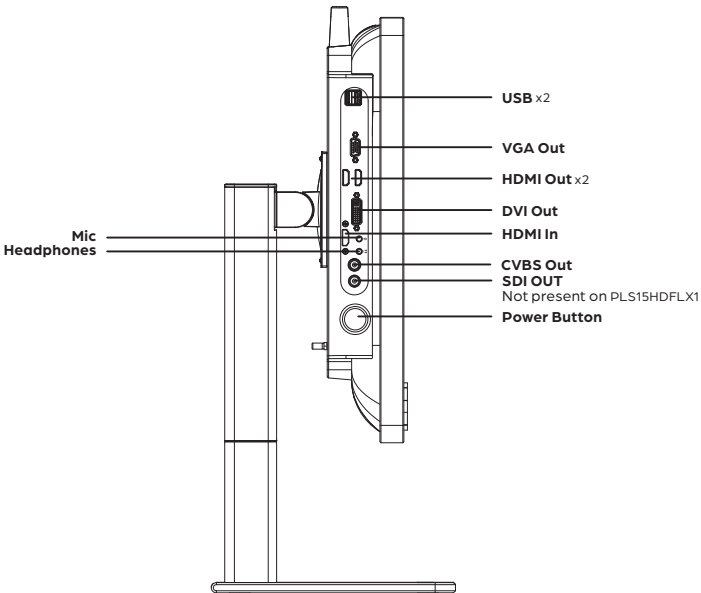


Figure 4: LS 24" 4K System — Left Panel

5.3 32" Models (PLS32UHD1, PLS32UHDFLEX1)

PLS32UHD1 is the 32-inch 4K UHD Standard model. PLS32UHDFLEX1 is the 32-inch 4K UHD Distal-Chip Ready model with HDMI input and flexible compatibility.

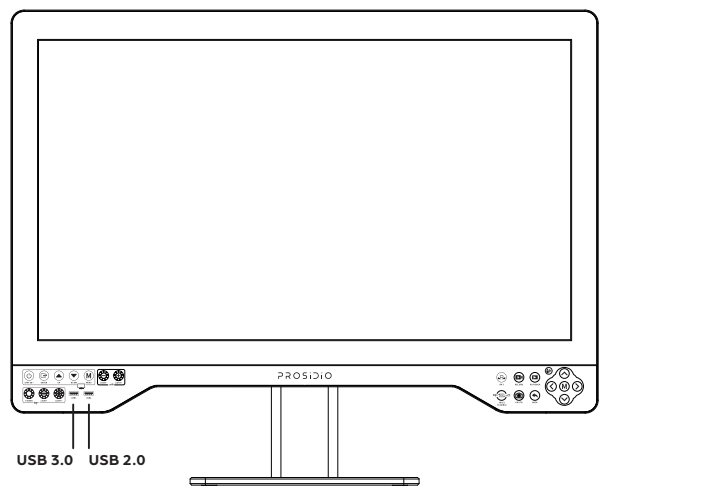


Figure 5: LS 32" 4K System – Front Panel

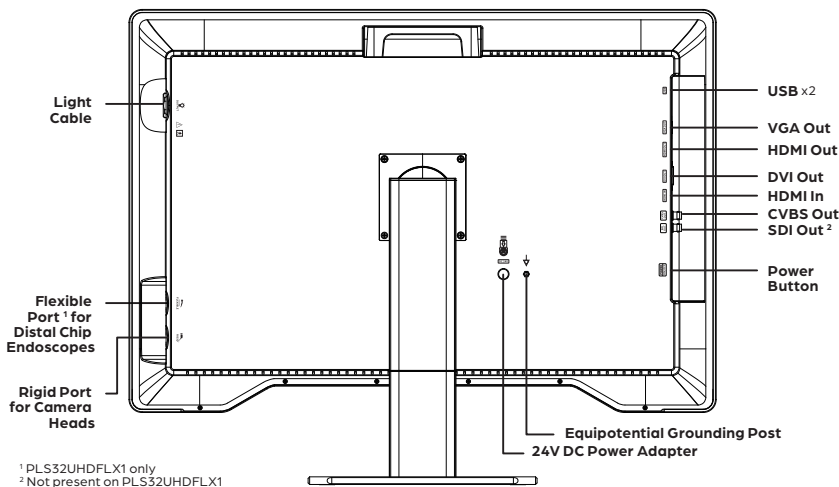


Figure 6: LS 32" 4K System – Back Panel

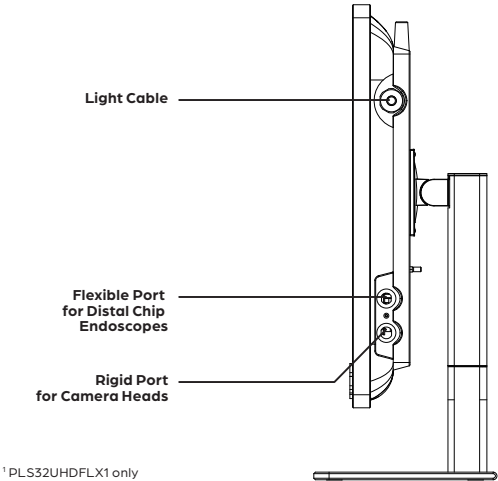


Figure 7: LS 32" 4K System – Right Panel

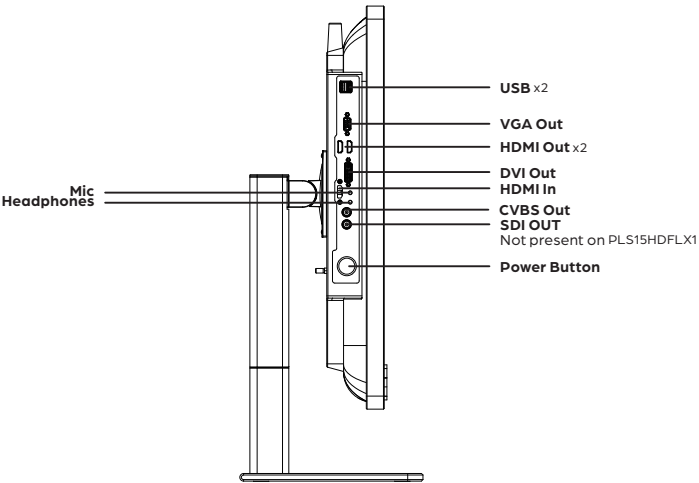


Figure 8: LS 32" 4K System – Left Panel

5.4 4K Camera Head

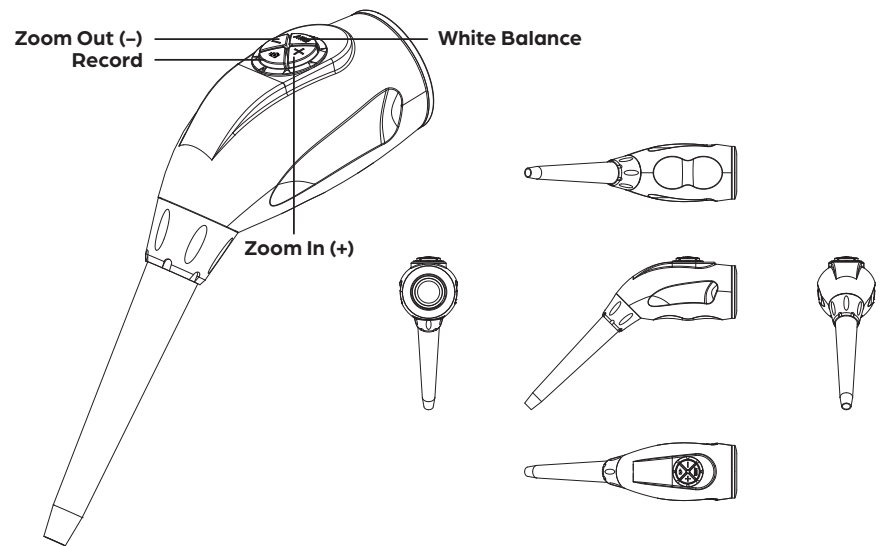


Figure 9: 4K Camera Head

Camera Head Features:

Feature	Detail
Optical Interface	C-Mount thread
Control Buttons	AWB, Photo/Video, Zoom Out (-), Zoom In (+)
Cable	Integral cable, not detachable
Applied Part Classification	Type BF
Ingress Protection	IPX6 (jet-protected; NOT immersible)

5.5 Distal Chip Ready Port
(PLS24UHDFLEX1 and PLS32UHDFLEX1 Only)

Models PLS24UHDFLEX1 and PLS32UHDFLEX1 feature a dedicated input port for compatible distal chip flexible endoscopes. Use only manufacturer-specified compatible endoscopes.

5.6 Panel Controls

Front Panel Controls — Left Side (Monitor Controls):

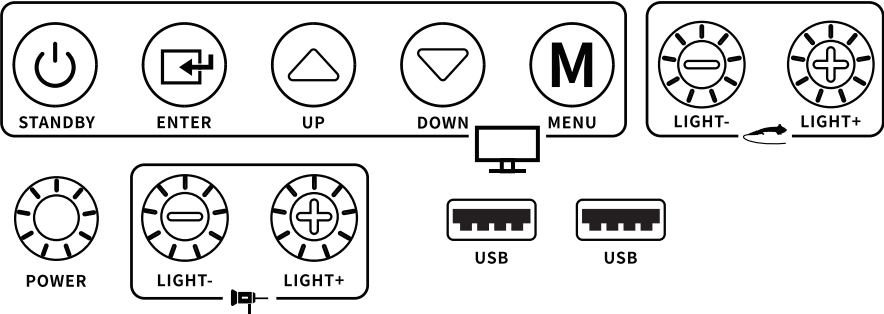


Figure 10: Left Panel Control Buttons

Button	Function	
	STANDBY	Toggles between powered-on and standby modes
	MENU	Opens Monitor OSD (Left Menu). In submenu, steps back one level.
	UP/DOWN	Scrolls menu items or adjusts setting values
	MENU / ENTER	Confirms highlighted option or toggles a setting. In submenu, steps back one level/exits.
	LIGHT +/-¹	Adjust LED light intensity of an attached distal-chip flexible endoscope
	LIGHT +/-	Adjusts intensity of integrated light source on/off
	POWER	Toggles integrated light source on/off
USB 1 & 2		USB data/storage ports

¹ PLS24UHDFLEX1/PLS32UHDFLEX1 Only

Front Panel Controls – Right Side (Capture, Playback & Camera):

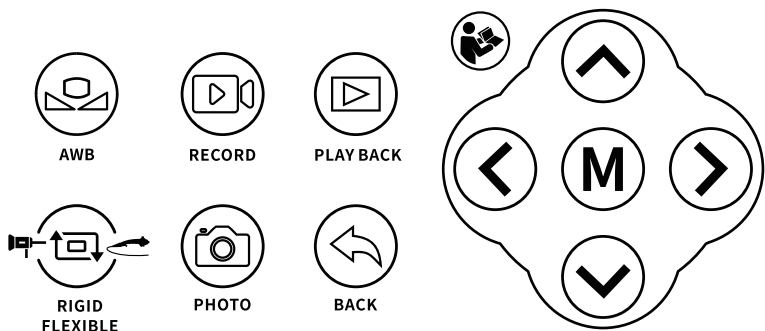


Figure 11: Right Panel Control Buttons

Button/Port	Function	
	AWB	One-touch Auto White Balance
	Record	Starts/stops video recording (REC indicator on screen)
	Playback	Opens Playback Manager for internal/USB files
	Rigid Flexible	Switches between rigid and flexible modes (PLS15UHDFLX1, PLS24UHDFLX1, PLS32UHDFLEX1 Only)
	Photo	Captures a still screenshot (JPG)
	Back	Returns to previous screen or cancels operation
	Menu	Opens Camera Menu (Right Menu)
	Direction Keys	UP/DOWN: scroll. LEFT/RIGHT: adjust values or switch panes.

Side/Rear Panel Connections:

Port/Connection	Specification
Video Outputs	HDMI Out x2 (4K per original source; confirmation pending), DVI-D Out x1 (1080p), VGA Out x1 (1080p), SDI Out x1 (1080p), CVBS Out x1 (SD)
Video Input	HDMI In x1
Camera Input	Standard 4K Camera Input x1 (all models)
Distal Chip Input	x1 (PLS24UHDFLEX1 and PLS32UHDFLEX1 ONLY)
Light Source Output	x1

Power	DC Input Socket x1, Main Power Switch
Other	Equipotential Grounding Post x1, Mouse USB x1, Keyboard USB x1

6. Technical Specifications

6.1 Performance Specifications

Parameter	Specification
Camera Sensor	Sony 1/1.8" CMOS
Effective Pixels	8 Megapixels
Output Resolution	3840 × 2160 (4K UHD)
Frame Rate	4K 60P / 4K 50P (selectable)
Horizontal Resolution	≥ 1600 TV lines
Minimum Illumination	< 3 Lux
Signal-to-Noise Ratio	≥ 50 dB
Digital Zoom	1x to 8x, selected in nine menu steps (00 = 1x, 08 = 8x)
Display (24")	24" IPS LCD, 3840 × 2160, 16:9 / 4:3 / 1:1 / Auto
Display (32")	32" IPS LCD, 3840 × 2160, 16:9 / 4:3 / 1:1 / Auto
LED Light Source	Integrated 80W LED cold light
CRI	≥ Ra 90
Color Temperature	3,000 K to 7,000 K
LED Life	30,000 hours (rated)
Internal Storage	256 GB SSD
USB Storage	USB 2.0 x2; FAT32/NTFS; max 2 TB
Recording	Video: H.265/MP4; Photo: JPG
Video Outputs	HDMI Out x2 (4K), DVI-D / VGA / SDI (1080p), CVBS (SD)
Video Input	HDMI In x1
Software Version	There are 2 software versions for the 4k: V1.1.1 and V2.0.0
Noise Level	≤ 55 dB(A)
Endoscope Presets	E.N.T. / Laparoscope / Cystoscope / Hysteroscope / Arthroscope / Diskoscope / Fiberscope / User
Total Luminous Flux	1,200 lm at LED output port (measured before endoscope coupling; delivered lumens at distal tip depend on light guide length, diameter, and endoscope optical losses)

6.2 Electrical Safety and Classification

<i>Parameter</i>	<i>Classification/Value</i>
Protection (Equipment)	Class I (requires protective earth)
Protection (Applied Part)	Type BF Applied Part (camera head)
Mode of Operation	Continuous — Thermal stability verified per IEC 60601-1 Clause 11 at rated operating conditions (ambient up to +35°C)
Flammable Anesthetics	Non-AP/APG (NOT suitable)
Power Adapter Input	100–240V AC, 50/60 Hz, 6.5A Max
Power Adapter Output	24V DC, 9.2A (220W max)
Adapter Model	LXCP398-240
EMC Classification	Group 1, Class A
IP Rating — Main Unit	IPX0
IP Rating — Camera Head	IPX6
Safety Standard	IEC 60601-1:2005+A1:2012+A2:2020 (Edition 3.2); Test Report CHTSM23110314

6.3 Environmental Conditions

<i>Condition</i>	<i>Operating</i>	<i>Storage and Transport</i>
Temperature	+5°C to +35°C (41°F to 95°F)	–20°C to +55°C (–4°F to +131°F)
Relative Humidity	10% to 80% (non-condensing)	10% to 80% (non-condensing)
Atmospheric Pressure	87 kPa to 106 kPa	87 kPa to 106 kPa
Maximum Altitude	2,000 m (6,562 ft)	N/A

6.4 Physical Specifications

<i>Parameter</i>	<i>24" Models</i>	<i>32" Models</i>
Models	PLS24UHD1, PLS24UHDFLEX1	PLS32UHD1, PLS32UHDFLEX1
Display Size	24 inches	32 inches
Dimensions (L × W × H)	586 × 417 × 75 mm	769 × 528 × 75 mm
Weight (with base)	17.3 kg (38.1 lbs)	24 kg (52.9 lbs)
Mounting	Desktop stand; VESA 100×100 (M4)	Desktop stand; VESA 100×100 (M4)

7. Installation and Setup

7.1 Unpacking and Inspection

1. Carefully unpack all components.
2. Inspect for shipping damage. Contact Prosidio if damage is found.
Do not use damaged equipment.
3. Verify all components from **Section 5.1** and packing list are present.
4. Retain original packaging for future transport.

7.2 Mounting (24" Models)

1. **Desktop:** Place unit (~17.3 kg) on stable surface with ≥ 10 cm clearance for ventilation.
2. **VESA (Optional):** VESA 100×100 mm. M4 screws of appropriate length. Ensure mount supports 17.3 kg plus accessories.

7.3 Mounting (32" Models)

1. **Desktop:** Place unit (~24 kg) on stable surface with ≥ 10 cm clearance for ventilation.
2. **VESA (Optional):** VESA 100×100 mm. M4×12 mm screws. Ensure mount supports 24 kg plus accessories.

7.4 Connecting Power

WARNING: Ensure main power switch (side panel) and front **POWER** button are OFF before connecting.

1. Connect DC output plug from adapter (LXCP398–240) to DC Input Socket on main unit.
2. Connect AC power cord to the adapter.
3. Plug AC cord into a grounded hospital-grade outlet (100–240V AC, 50/60 Hz).
4. Connect equipotential grounding post to facility busbar if required.

WARNING: Use only the supplied adapter or identical Prosidio-approved replacement.

7.5 Connecting Video Outputs

Connect HDMI Out (x2, 4K), DVI-D Out, VGA Out, SDI Out, or CVBS Out to compatible medical-grade monitors using shielded cables. Use High-Speed HDMI 2.0 cables for 4K output.

7.6 Connecting External Systems (HDMI Input)

All 4K models include an HDMI Input port for displaying external video sources on the integrated display.

1. Connect external source HDMI output to HDMI In port using a High-Speed HDMI 2.0 cable.
2. Use Display Settings (Left Menu) > Input Source > HDMI2 to view the external input.
3. To return to camera view: select HDMI1 or use Auto Source.

NOTE: HDMI passthrough displays the external signal on the integrated screen only. It does not mix with the camera image. Camera outputs continue independently.

7.7 Connecting the 4K Camera Head

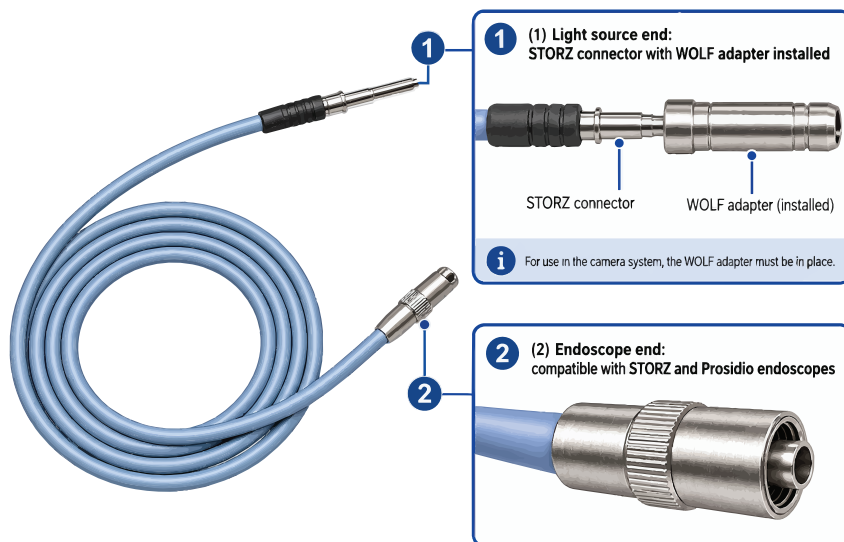
WARNING: Power off before connecting or disconnecting the camera head.

1. Align connector key (red dot) with Camera Input Port mark.
2. Push straight in until it clicks. Do not force.
3. To disconnect: Power off, grasp connector, retract lock, pull straight out.



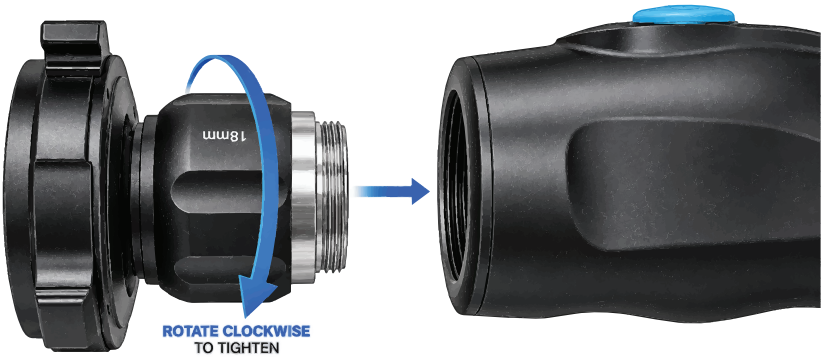
7.8 Connecting Light Guide Cable

Insert instrument end into endoscope light post. Insert light source end into Light Source Output Port.



7.9 Connecting an Endoscope

1. First attach the coupler to the camera head as shown:



2. Attach optical coupler to camera head (C-mount, clockwise). Clean eyepiece. Insert endoscope into coupler and lock.

Pinch both flanges to open the securing mechanism.



7.10 Connecting Distal Chip Endoscope (PLS24UHDFLEX1 and PLS32UHDFLEX1 Only)

Use only compatible distal chip endoscopes. Align and push into Distal Chip Input Port until locked.

Compatible distal chip endoscopes

- PLSHSF930 — Flex Nasopharyngoscope, Reusable
- PLSHSFD930 — Flex Nasopharyngoscope, Disposable

Distal chip camera interface: 8-pin aviation connector (2B series), MIPI CSI-2 (4-lane), 720p @ 60 fps. Brightness adjustment for flexible scopes uses a 4-step scale (0–3) via the dedicated front-panel control.

8. Operating Instructions

8.1 Powering On/Off

- **Power On:** Ensure connections secure. Turn on external monitors. Turn on rear main switch (if present). Press front Power button. LED turns green. System boots, live image appears.
- **Power Off:** Stop any recording. Press front Power button. Turn off rear main switch. Disconnect AC for extended storage.

8.2 Pre-Use Checks

1. Verify all connections secure
2. Confirm a clear, stable, correctly oriented image on the integrated display and on each connected external monitor.
3. Verify correct image orientation
4. Verify light source functions
5. Perform White Balance (**Section 8.3**)
6. Test camera head buttons
7. Verify sufficient storage space

8.3 Performing White Balance

1. System on with camera, endoscope, coupler, and light active.
2. Point endoscope at clean white surface (sterile gauze), fill entire view.
3. Adjust light brightness (avoid glare).
4. Press **AWB** button (camera head or front panel).
5. "AWB SETTING..." appears. Hold until message disappears.
6. Verify color accuracy.
7. See **Figure 11** for the right panel controls.

8.4 Camera Head Controls

See **Section 5.4** for illustrations.

Button	Function
AWB (Button 1)	Initiates auto white balance
Photo/Video (Button 2)	Quick press: photo. Hold 1s: start/stop video
Zoom – (Button 3)	Digital zoom out
Zoom + (Button 4)	Digital zoom in

NOTE: CAMERA HEAD button functions can be reassigned via SYSTEM > SHORTCUT KEY menu (**Section 8.6**).

8.5 Display Settings - Left Menu (Monitor OSD)

The Left Menu controls the integrated display panel settings. Access via the dedicated display buttons on the left side of the front panel (**MENU, UP, DOWN, ENTER, STANDBY**). These settings adjust the monitor panel properties independently of the camera image processing. The display operates at 3840×2160 @ 60 Hz native resolution. See **Figure 10** for the left panel controls.

NOTE: Display settings do not affect the video signal sent to external monitors via HDMI/DVI/VGA/SDI outputs.

LEFT MENU STRUCTURE:

Menu Category	Setting	Values/Range
INPUT SOURCE	Auto Source	Automatically detects active input
	HDMI1	Internal camera feed (default)
	HDMI2	External HDMI input (see Section 7.6)
	DP	Stock panel menu label only; not wired to an external input
	DVI	Stock panel menu label only; not wired to an external input
	AUTO Scan Input	On / Off – Auto-detect first live input
BRIGHTNESS / CONTRAST	Backlight	1 – 100 – Panel LED intensity
	Brightness	0 – 100
	Contrast	0 – 100
	DCR (Dynamic Contrast)	On / Off

Menu Category	Setting	Values/Range
COLOR SETTING	Gamma	2.0 / 2.2 / 2.4
	Picture Mode	Standard / Photo / Movie / Game / FPS / RTS / sRGB / AdobeRGB / DCI-P3
	Color Temperature	Normal / Warm / Cool / User
	Hue	0 – 100
	Saturation	0 – 100
	Low Blue Light	0 – 100
PICTURE QUALITY	Sharpness	0 – 100
	Response Time	Off / High / Middle / Low
	Noise Reduction	Off / Low / Middle / High
	Dynamic Luminous Control	Off / On
	Blacklevel	0 – 100
DISPLAY	Aspect Ratio	Wide Screen (16:9) / 4:3 / 1:1 / Auto
AUDIO	Mute	On / Off
	Volume	Adjustable
OTHER	OSD	Language
	FreeSync	On / Off
	HDR	On / Off / Auto Detect
	LightEffect	On / Off
	Reset	Restore all display settings to defaults
INFORMATION	Info Panel	Software version, Hardware version, Total runtime (h), Current resolution, Active input (read-only)

NOTE: DVI, DP, DP1 and DP2 may appear in the Left Menu because the integrated panel uses stock monitor-scaler firmware. These labels do not correspond to external video inputs wired on the chassis. The only external video input is HDMI In x1. DVI-D is an output (1080p).

CAUTION: Modifying Picture Mode, Color Temperature, Gamma, or Saturation may affect clinical image appearance. For endoscopy, Standard or sRGB modes are recommended.

NOTE: To check firmware version: Right Menu > System > Info. Name: PROSiDIO, Version: V1.1.1 or V2.0.0.

NOTE: Two firmware variants exist for the display panel. Not all settings listed above may appear on every unit. If your unit's Display Menu appears different from this description, contact Prosidio.

8.6 Camera Settings - Right Menu (Camera OSD)

The Right Menu controls camera image processing settings. Access via the **M** button and direction keys (**UP/DOWN/LEFT/RIGHT**) on the right side of the front panel. These settings directly affect the endoscopic camera image. See **Figure 11** for the right panel navigation controls.

Main Camera Menu

Menu Item	Setting	Values/Range
1. ENDOSCOPE	Procedure preset selector	E.N.T. / Laparoscope / Cystoscope / Uteroscope / Arthroscope / Diskoscope / Fiberscope / User
2. BRIGHTNESS	Camera image brightness	0 – 20
3. SHARPNESS	Edge enhancement / sharpness	0 – 10
4. COLOR GAIN	Color saturation level	0 – 20
5. BACKLIGHT		
5. DEHAZE	Digital haze/smoke reduction	Off / On
6a. DEMESH	Digital mesh/moiré reduction	On / Off
6. VEIN & EDGE	Vein / tissue edge enhancement	Level 1 / Level 2 / Level 3 / Level 4
7. DNR	Digital Noise Reduction	Off / Low / Middle / High
9. COLOR TEMP	Camera color temperature preset	Standard / Cold / Warm
10. SYSTEM	System settings submenu	See System Submenu below
11. EXIT	Close menu, return to live view	—

NOTE: Each ENDOSCOPE preset stores optimized defaults for items 2–8. After selecting a preset, individual parameters can still be adjusted.

Endoscope Preset Default Values

Preset	Bright.	Sharp.	Color G.	Dehaze
E.N.T.	2	3	5	Off
Laparoscope	6	6	5	Off
Cystoscope	6	5	5	Off
Uteroscope	6	6	5	Off
Arthroscope	6	6	5	Off
Diskoscope	6	6	5	Off
Fiberscope	2	6	5	Off
User	2	6	5	Off

Preset	V&E	DNR	Color T.
E.N.T.	Lv 1	Middle	Standard
Laparoscope	Lv 1	Middle	Standard
Cystoscope	Lv 1	Middle	Standard
Uteroscope	Lv 1	Middle	Standard
Arthroscope	Lv 1	Middle	Standard
Diskoscope	Lv 1	Middle	Standard
Fiberscope	Lv 1	Middle	Standard
User	Lv 1	Middle	Standard

System Submenu

Setting	Description	Values / Range
FRAME RATE	Output frame rate	4K 60P / 4K 50P
LANGUAGE	Camera menu language	ENG / CHN / JPN / KOR / GER
AWB	White Balance mode	Preset / User / Auto / On
COLOR ADJ	Advanced color channels	R/G/B/Y Gain and Hue: 0–255 each
DEMESH		
INFO	Device info (read-only)	Name: PROSIDIO, Version: V1.1.1
RESET	Factory reset all camera settings	Select ON to confirm
RETURN	Back to main Camera Menu	—

Shortcut Key Configuration (System > SHORTCUT KEY)

Button	Default	Available Assignments
UP KEY	AWB	AWB / Photo-Video / DZoom+ / OFF / Freeze

Button	Default	Available Assignments
DOWN KEY	Photo/Video	AWB / Photo·Video / DZoom– / OFF / Freeze
LEFT KEY	DZoom–	AWB / Photo·Video / DZoom– / OFF / Freeze
RIGHT KEY	DZoom+	AWB / Photo·Video / DZoom+ / OFF / Freeze

8.7 Advanced Settings in Service Menu

A hidden service menu can be accessed by pressing and holding the **M** button on the right side of the front panel for 5 seconds.

The Service Menu provides access to:

- Main Menu options:** Info, Upgrade, Play, Exit
- Info page displays:** GuideTime (system date/time), ShowTime (on/off), Language, Disk Info (internal storage capacity), USB Info (connected USB status).

NOTE: The Service Menu is intended for advanced configuration and service use. Changes made here may affect system operation. Contact Prosidio before modifying settings.

To open the Service Menu:

1. Power on the system and wait for the live camera image.
2. On the right-hand navigation D-Pad, press and hold the **M (MENU)** button for approximately 5 seconds. The Service Menu overlay will appear on screen.
3. Use the **UP/DOWN** arrows to navigate, the **RIGHT** arrow or **M** button to enter a setting, and the **LEFT** arrow/**BACK** button to exit. Pressing **BACK** from the top level closes the Service Menu and returns to the live image.

WARNING: Time Setting, Time ON/OFF, and Language may be adjusted by qualified end users. Firmware Upgrade is for authorized service use ONLY; incorrect firmware changes may impair system performance or safety. Do not perform a firmware upgrade without guidance from Prosidio service.

Setting the date and time:

The system date and time stamp recorded image and video files and appear on screen when the timestamp overlay is enabled. Set the date and time on first use, after a long unpowered storage period, or after a Factory Reset, as follows:

1. Open the **Service Menu** (hold the **M** button on the right-hand navigation D-Pad for approximately 5 seconds).
2. From the System Info pane of the **Main Menu**, select **Time Setting**.
3. Use the **UP/DOWN** arrows to change each field (Y/M/D/H/M/S – Year, Month, Day, Hour, Minute, Second) and the **LEFT/RIGHT** arrows to move between fields.
4. Press **M** (or SAVE) to apply, then select Quit to return to the live image.

Time ON/OFF: The Time ON/OFF entry controls whether the date/time stamp is displayed and recorded with images and video. Set Time ON/OFF to ON to enable the timestamp overlay, or OFF to disable it.

NOTE: The system retains date and time settings across power cycles via an internal real-time clock. Verify the displayed date and time annually and after extended storage.

Main Menu layout:

The Main Menu has a left-hand navigation pane and a right-hand settings pane. The left pane lists the menu sections, and the right pane shows the fields for the selected section.

Left-hand navigation pane (sections):

Section	Description
System Info	System settings (Time Setting, Time ON/OFF, Language) and storage status (Hard Disk, USB).
Upgrade	Firmware update via USB (authorized service use only).
Playback	Opens the Playback Manager for reviewing recorded files (see Section 8.10).
Quit	Closes the Main Menu and returns to the live camera image.

NOTE: Internal playback will not be applicable if an external storage device such as a USB drive is connected.

System Info pane (settings shown when System Info is selected):

Menu Item	Description
Time Setting	System date and time, with separate fields for Year (Y), Month (M), Day (D), Hour (H), Minute (M), and Second (S). Used for file timestamps and the on-screen clock. See procedure above.
Time ON/OFF	Enables (ON) or disables (OFF) the date/time stamp overlay on recorded images and video and the on-screen clock.
Language	Selects the on-screen menu language (English shown).
Hard Disk	Displays the available free space on the internal 256 GB storage.
USB	Displays the available free space on the connected USB storage device, or 0 GB if no device is connected.
Quit	Closes the System Info pane and returns to the Main Menu top level.

Info page displays: Guide Time (system date/time), ShowTime (open/close), Language (ENGLISH), Disk Info (internal storage capacity, e.g. Left Cap223G), USB Info (connected USB status).

NOTE: The Service Menu is intended for advanced configuration and service use. Changes made here may affect system operation. Contact Prosidio before modifying settings.

8.8 Flexible Scope Mode

(PLS24UHDFLEX1 and PLS32UHDFLEX1 Only)

When a compatible flexible distal chip endoscope is connected to a distal-chip-ready model, the **Camera Menu** (Right Menu) automatically switches to a simplified interface optimized for flexible scope operation.

Flexible Scope Camera Menu:

<i>Menu Item</i>	<i>Setting</i>	<i>Values/Range</i>	<i>Description</i>
1. BRIGHTNESS	Image brightness	0–20	Adjusts overall image brightness
2. SHARPNESS	Edge enhancement	0–10	Adjusts image edge sharpness/clarity
3. COLOR GAIN	Color saturation	0–20	Adjusts color intensity/saturation
4. GAMMA	Contrast curve	auto, manual, presets	Sets the gamma correction value
5. AWB	Automatic white balance	PRESET	Applies the preset white balance setting
6. SYSTEM	System settings	Submenu	Opens the System submenu
7. RATIO	Display ratio	MODE1	Sets the display ratio mode
8. EXIT	Menu command	—	Closes the camera menu

System Submenu (Flexible Scope Mode):

<i>Menu Item</i>	<i>Setting</i>	<i>Values/Range</i>	<i>Description</i>
1. FRAME RATE	Video output format	720P 60	Sets the video resolution and frame rate
2. LANGUAGE	Menu language	ENG	Sets the menu language to English
3. COLOR ADJ	Color adjustment	Submenu	Opens the color adjustment submenu
4. EDGE FRAME	Edge enhancement level	0	Sets the edge enhancement level
5. RESET	Restore default settings	ON	Resets the system settings
6. MEDIC ID	Medical ID	0000-0000-00-00	Displays or sets the medical identification number
7. ABOUT	Device information	Submenu	Opens the device information screen
8. RETURN	Menu command	—	Returns to the previous menu

About screen: Name: PROSIDIO-A10, Version: V1.0.3

Flexible Scope Connection and Input Selection

When a compatible distal chip flexible endoscope is connected to the Distal Chip Camera Input Port, the system can be switched to Flexible Scope Mode.

1. Connect the distal chip endoscope to the Distal Chip Camera Input Port (ensure system is OFF before connecting).
2. Power on the system.
3. Navigate to the **Camera Settings** Right Menu.
4. Select **SOURCE** or **INPUT** and change to the Distal Chip / Flexible input.
5. The display will switch to the distal chip endoscope image.
6. Flexible scope image is processed at 720p @ 60 fps via 8-pin aviation connector (2B series), MIPI CSI-2 (4-lane), 720p @ 60 fps.

Compatible flexible endoscopes:

PLSHSF930 — Flex Nasopharyngoscope, Reusable

PLSHSFD930 — Flex Nasopharyngoscope, Disposable

NOTE: Light brightness in flexible scope mode is controlled in 4 steps (0–3) instead of 0–100.

8.9 Recording Images and Video

- **Storage Priority:** Internal 256 GB SSD by default. If USB inserted, system prioritizes USB.
- **Capture Image:** Press **PHOTO** button on front panel to capture an image. Saved as JPG.
- **Record Video:** Press **RECORD** button on front panel to record a video. Indicator appears. Saved as MP4.
- **Stop Recording:** Press the **RECORD** button again. Wait until saving is complete.

CAUTION: Do not remove USB during or immediately after recording. Large files may auto-split at the 4 GB boundary on FAT32-formatted drives. Use NTFS to avoid file splitting.

8.10 Video Playback

1. Press **PLAYBACK** button.
2. System shows files from active storage (USB if present, else internal).

PLAYBACK NAVIGATION NOTES:

- Default view shows recordings from today's date only.
- Use Search to change the start date/time and end date to filter recordings from other dates.
- Press the **RIGHT** direction button to delete the selected recording.
- Press **M** to select/confirm the highlighted item.

3. Navigate and select file with **UP/DOWN/LEFT/RIGHT**.
 4. Press **ENTER/M** to play video or view image.
 5. Use menu for playback controls, Search, Backup, Format, Exit.
- See **Figure 11:** PLAYBACK opens the Playback Manager; BACK returns to live view.

Playback Manager Navigation:

- **UP/DOWN:** Scroll through video and photo entries.
- **LEFT/RIGHT:** Switch between internal storage (HDD) and USB panes. USB pane appears only when a drive is inserted.
- **ENTER/M:** Play or pause a video, or view an image full-screen.
- **BACK:** Return to live camera view.

Modify Submenu

Highlight “Modify” in the Playback Manager, then press **ENTER** to access:

- **Search:** Filter file list by date or filename pattern.
- **Export to USB:** Copy selected files to the USB drive.
- **Format:** Erase and re-initialise the selected storage device.
- **Quit:** Close the Modify window without changes.

Renaming Recordings:

- **Keyboard workflow:** Press **PLAYBACK**. Press **LEFT/RIGHT** to focus HDD or USB pane. Highlight target file, press **DOWN** to highlight Modify, then press **M** to confirm. Connect a USB keyboard, type the new filename, and press **M** to save.
- **Mouse workflow:** Right-click to open the context menu. Click Playback, then Modify. Select file, type new name, click OK.

WARNING: Format permanently erases ALL data on selected storage.

9. Cleaning, Disinfection, and Sterilization

9.1 General Guidelines

WARNING: Disconnect power before cleaning and disinfection.

WARNING: Prevent any liquid ingress into the Main Unit (IPX0).

CAUTION: Use only compatible cleaning agents. Avoid abrasives, solvents, and corrosive chemicals.

CAUTION: Camera Head (IPX6) is jet-protected but NOT immersible.

This device is supplied non-sterile and does not contact the patient directly.

9.2 Main Unit Cleaning and Disinfection

Cleaning (after each use):

- Power off and disconnect from AC power.
- Wipe exterior and screen with soft lint-free cloth lightly dampened with mild detergent or 70% isopropyl alcohol.
- Wipe with water-dampened cloth to remove residue.
- Dry thoroughly. Ensure vents are clear.
- Do not spray or pour liquid directly onto the unit.

Disinfection (per institutional protocol):

- **After cleaning, wipe with compatible intermediate-level disinfectant:**
 - 70% Isopropyl Alcohol wipe, or Quaternary ammonium compound wipe.
 - Verify compatibility with ABS, polycarbonate, and metal surfaces.
 - Follow disinfectant instructions for contact time. Rinse if required. Air dry.

9.3 Camera Head and Cable Cleaning and Disinfection

Cleaning (after each use):

- Disconnect camera head (system powered off). Remove coupler.
- Wipe body and cable with enzymatic cleaner or mild detergent.
- Soft brush for crevices. Rinse by wiping with water-dampened cloth.
- Clean optical window with lens cleaning solution and lint-free tissue.
- Dry thoroughly, especially the connector.

Disinfection (after cleaning):

- Wipe with compatible intermediate or high-level disinfectant (Glutaraldehyde, OPA, accelerated hydrogen peroxide).
- **AVOID:** Alcohol immersion, phenolics, iodine, bleach unless validated by Prosidio.
- Follow agent instructions for concentration, contact time, rinsing.
- Dry thoroughly with sterile lint-free materials.

9.4 Sterilization

Main Unit and 4K Camera Head are NOT suitable for steam autoclave or EtO sterilization.

Sterility assurance level (SAL) validation has not been performed. No validated low-temperature sterilization process or parameters are specified in this manual.

9.5 Optical Coupler and Light Guide Cable

Optical Coupler:

1. Remove the coupler from the camera head.
2. Clean with an enzymatic detergent solution and rinse with water.
3. Disinfect with 70% IPA or a high-level disinfectant per the manufacturer's instructions.
4. Autoclavable couplers may be steam sterilized per the coupler's own IFU — verify compatibility before autoclaving.
5. Inspect optical surfaces for scratches or damage; replace if damaged.

Light Guide Cable:

1. Disconnect from both the main unit and the endoscope.
 2. Clean with an enzymatic detergent and rinse.
 3. Disinfect or sterilize per the light guide cable's IFU.
 4. Inspect the fiber-bundle ends for broken fibers (dark spots when illuminated); replace if more than 30% of fibers are broken.
- Always follow the specific manufacturer's instructions for the coupler and light guide cable in use.

10. Maintenance

WARNING: Refer servicing only to qualified Prosidio-authorized personnel. Disconnect power before maintenance.

10.1 Routine Checks

1. Perform pre-use checks (**Section 8.2**) before each procedure.
2. Visually inspect all components regularly for damage.
3. Keep equipment clean (**Section 9**) and vents unobstructed.

10.2 Periodic Maintenance

<i>Interval</i>	<i>Activity</i>
Annually	Professional inspection and electrical safety testing by qualified service personnel
As needed	LED light source: Contact Prosidio if significant dimming occurs. Rated life: 30,000 hours.
As available	Software updates: Contact Prosidio. Current version: V1.1.0.
Monthly	Clean all external surfaces thoroughly per Section 9.2

10.3 Fuse Information

No user-replaceable fuses. Fuses are sealed within the power adapter (LXCP150-1201250). Contact Prosidio for adapter replacement.

10.4 Service Contact

Prosidio Service Department
Phone: 914-510-2314
Email: service@prosidio.com
Web: https://prosidio.com
Have device model number and serial number ready.

11. Troubleshooting

If problems persist after recommended actions, discontinue use and contact Prosidio (Section 10.4).

Symptom	Possible Cause	Action
No power/ LED off	Power cord disconnected; switch off; adapter fault. Wrong power adapter fitted — HD and 4K adapters are not interchangeable.	Check all connections and switches. Try different outlet. Confirm the adapter matches the unit before powering on. 15.6-inch and 24-inch HD units use 12 V DC . 24-inch and 32-inch 4K units use 24 V DC . Do not mix adapters between HD and 4K units. If the adapter is mismatched or suspect, contact Prosidio (Section 10.4) — fuses are sealed in the adapter and are not user-replaceable.
No image on display	Camera not connected; input source wrong. Dirty or intermittent camera-head connector pins. Display input silently switched (e.g. to HDMI 2).	First Attach an HDMI cable between the HDMI in and out, if the image is not restored then move on to press ENTER , press the DOWN ARROW button, and then press ENTER again to select the correct input source. Power off and inspect the camera-head connector for debris, moisture, or bent pins. Clean the pins, ensure they are dry, reseal with red-dot alignment, and restart. Toggle the input in the Monitor (Left) Menu — switch to HDMI 2 and then back to HDMI 1. If no image is restored, test with a known- good camera head; if the screen still reads No Signal, contact Prosidio (Section 10.4).
Dark/dim image	Light source off or low; light guide loose	Turn on light, increase intensity, check cable seating.
Poor color	White balance not performed	Perform white balance (Section 8.3). Clean optics.
Image flicker/ noise	EMI; loose cables	Increase distance from RF sources. Check cables.
Frozen image	FREEZE button active; system error. Camera-head button reassigned to the freeze function.	Press FREEZE to return to live. Restart if needed. If the image freezes when the camera- head photo/video button is pressed and unfreezes when pressed again, the button assignment has changed. Verify SHORTCUT KEY assignments in the Camera (Right) Menu. If the assignments cannot be corrected, contact Prosidio (Section 10.4). Report any freeze that recurs after restart, including freezes that occur while the light source is not in use.

Symptom	Possible Cause	Action
Cannot record	Storage full; incompatible USB device. USB drive left inserted — when a USB drive is connected the system records to the USB drive and internal Playback is disabled.	Check space. Try different USB (NTFS, USB 2.0). To use internal Playback, remove the USB drive first, then press PLAYBACK .
External monitor blank	Wrong cable; wrong input	Verify cable type, check monitor input setting.
Light not illuminating	Light off; LED end of life	Press LIGHT ON/OFF . Contact service if persistent.
Overheating	Vents blocked; ambient too hot	Clear vents. Verify temp within +5°C to +35°C. Power off and cool.
Halo, overexposure, or washed-out highlights	Light intensity too high; Camera BRIGHTNESS too high; Dirty or damaged distal lens, coupler, or light guide endfaces; White balance not performed or stale; Focus not set; Incompatible coupler or scope. Fluid or blood on the distal scope tip creating optical glare. Faulty or foggy coupler.	Lower the light intensity (0–100 steps in rigid mode; 0–3 in flexible mode). Reduce camera BRIGHTNESS in the Camera Settings Right Menu. Clean the distal lens, coupler, and both ends of the light guide with a lint-free optical wipe and 70% IPA. Perform White Balance. Verify focus on the coupler/camera. Verify a Prosidio- approved coupler and scope are in use (Appendix A). If halo persists, contact Prosidio service (Section 10.4). Reduce front light intensity to approximately 20–40 (rigid mode). Wipe blood and fluid from the distal scope tip; repeat during the procedure as needed. If halo persists, perform a Factory Reset from the Monitor (Left) Menu and then re-adjust BRIGHTNESS. Swap in a known-good coupler. If the halo clears with the second coupler, replace the original coupler.
Recorded video will not play back from a USB drive on a computer	LS HD systems record in AVI, which cannot be played back from the USB drive. USB drive not formatted NTFS	Use internal Playback on the system with the USB drive removed. Format the USB drive as NTFS before use. Note: LS 4K systems record in MP4.
Recording splits into multiple files, or stops unexpectedly	File-size limit reached — recordings split at the FAT32 4 GB boundary. USB drive removed during or immediately after recording.	Format the USB drive as NTFS to avoid splitting. Do not remove the USB drive during recording or immediately after stopping. Wait for the write to complete.

Symptom	Possible Cause	Action
Pixelated or grainy image	Camera head not fully mated, or a camera head other than the one supplied with the system is fitted.	Disconnect and reconnect the camera head, confirming red-dot alignment. Confirm the camera head supplied with the system is the one in use. If the image does not clear with the original head, contact Prosidio (Section 10.4).
Image sits too high, off-centre, or the top of the image is cut off	Broken or misaligned coupler holding the endoscope.	Do not attempt to compensate using preset or position settings – if setting changes do not fully centre the image, the coupler is the likely cause. Swap in a known-good coupler. If the image centres correctly with the second coupler, replace the original coupler. If the image is still off-centre with a known-good coupler, contact Prosidio (Section 10.4).
Image brightness drops when blood enters the field of view	Auto-brightness metering area too large – the camera meters on the darker blood in the field and reduces overall brightness.	Change Central Peak from 1 (larger metering area) to 2 (smaller metering area) in the Camera (Right) Menu. Wipe blood and fluid from the distal scope tip. If brightness still drops, contact Prosidio (Section 10.4).
Camera-head buttons do not capture a photo or video, do not zoom, or perform the wrong function	SHORTCUT KEY assignments changed. Camera head not matched to the system (version mismatch). Cable or connector fault.	Check the camera-head connection. Verify SHORTCUT KEY assignments in the Camera (Right) Menu against the defaults: UP = AWB, DOWN = Photo/Video, LEFT = Digital Zoom –, RIGHT = Digital Zoom +. Confirm the camera head supplied with the system is the one in use. If the buttons still do not respond correctly, contact Prosidio (Section 10.4). Do not attempt to reconfigure button functions outside the SHORTCUT KEY menu.
White balance has to be redone at every power-on	White balance calibration not retained – camera calibration or sensor fault.	Perform white balance (Section 8.3) using the AWB key. White balance is expected to persist across power cycles. If it must be repeated at every power-on, the unit requires service – contact Prosidio (Section 10.4).
Menu or on-screen display in the wrong language	Language setting changed or not set to English.	Set the language in the Monitor (Left) Menu under OSD > General > Language. If the recording interface remains in the wrong language after the monitor language is corrected, contact Prosidio (Section 10.4).

Symptom	Possible Cause	Action
Image mirrored, inverted, or upside down	Flip Mode set for a different scope orientation.	Set Flip Mode (Vertical / Horizontal / Both) in the Monitor (Left) Menu to match the scope orientation in use. Note: OSD Rotation rotates only the menu overlay, not the live image — do not use it to correct image orientation.
Grey/ washed-out image; mesh or honeycomb pattern (flexible fiberoptic endoscope)	System set to rigid endoscope mode; Flexiscope mode not selected.	Press the UP navigation button to enter Flexiscope mode. Flexiscope mode reduces sharpness and brightness for fiberoptic image bundles. Press UP again to return to rigid endoscope mode.
	DEMESH off in Flexiscope mode.	The system in Flexiscope mode, press M to open the settings menu and set DEMESH to ON . Demesh reduces the fiber-bundle pattern produced by flexible fiberoptic endoscopes. If the image does not improve, verify the endoscope type and light guide seating, then perform white balance (Section 8.3). If the appearance persists, contact Prosidio (Section 10.4).
Soft or over-smoothed image (rigid endoscope)	DEMESH left on after using a flexible fiberoptic endoscope.	Press UP to exit Flexiscope mode. Confirm DEMESH is OFF for rigid endoscope use. Demesh is not intended for rigid endoscopes.

NOTE: When a USB drive is connected to the device, recordings are saved to it, but simultaneous video playback is unavailable.

NOTE: Video playback is only available for recordings saved to a USB drive. Videos will not save to device hard drive.

12. Storage and Transport

12.1 Storage

Condition	Limit
Temperature	–20°C to +55°C (–4°F to +131°F)
Relative Humidity	10% to 80% (non-condensing)
Atmospheric Pressure	87 kPa to 106 kPa

- Disconnect all cables. Protect connectors and optics.
- Avoid direct sunlight, heat sources, shock.
- Store in original packaging or Prosidio Pelican case.

12.2 Transport

- Use original or equivalent protective packaging.
- Transport within storage environmental limits.
- Handle per markings: Fragile, This Way Up, Keep Dry.



- Allow acclimation to room temperature before powering on.

13. Disposal



This device bears the WEEE symbol. Do not dispose with unsorted municipal waste. Dispose per local, state, and federal electronic waste regulations. Contact Prosidio for take-back information.

14. Electromagnetic Compatibility (EMC)

WARNING: Use of accessories or cables other than those specified by Prosidio could result in increased emissions or decreased immunity.

WARNING: Avoid use adjacent to or stacked with other equipment. If necessary, observe both devices for normal operation.

WARNING: Portable RF communications equipment should be used no closer than 30 cm (12 in) to any part of the system.

This system complies with IEC 60601-1-2:2014+A1:2020 (EN 60601-1-2:2015+A1:2021) and IEC 60601-2-18:2009 (EN 60601-2-18:2015) EMC sections. Test Reports: CHTeM23110369 (IEC/EN format) and CHTeM23110368 (YY 9706.102-2021 format). Testing Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd. CISPR 11 Classification: Group 1, Class A. Intended Environment: Professional healthcare facility.

Table 14-1: Electromagnetic Emissions

Test	Compliance	Guidance
RF Emissions (CISPR 11)	Group 1	RF energy for internal function only. Very low emissions.
RF Emissions (CISPR 11)	Class A	Suitable for all establishments other than domestic.
Harmonics (IEC 61000-3-2)	Class A – Complies	Tested per IEC 61000-3-2:2018+A1:2020. All harmonics (2nd–40th) within Class A limits with large margins.

Test	Compliance	Guidance
Flicker (IEC 61000-3-3)	Complies	Tested per IEC 61000-3-3:2013. Pst ≤ 0.049, Plt ≤ 0.031, dmax ≤ 0.165%. All well within limits.

Table 14-2: Electromagnetic Immunity

Test	Test Level	Compliance	Guidance
ESD (61000-4-2)	±8kV contact; ±15kV air	Compliant	Wood/concrete/ceramic floors; if synthetic, RH>30%
EFT/Burst (61000-4-4)	±2kV power	Compliant	Typical commercial/hospital mains quality
Surge (61000-4-5)	±1kV diff; ±2kV CM	Compliant	Typical commercial/hospital mains quality
Voltage Dips (61000-4-11)	Per IEC 60601-1-2	Compliant	Use UPS for critical applications
PF Magnetic (61000-4-8)	30 A/m	Compliant	Typical hospital environment
Conducted RF (61000-4-6)	3 Vrms	Compliant	Maintain recommended separation distances
Radiated RF (61000-4-3)	3 V/m, 80 MHz–2.5 GHz	Compliant	Maintain recommended separation distances

Table 14-3: Recommended Separation Distances

Transmitter Power (W)	150kHz–80MHz (m)	80MHz–800MHz (m)	800MHz–2.7GHz (m)
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters not listed, estimate separation distance d in metres using the appropriate equation below, where P is the transmitter manufacturer’s maximum rated output power in watts (W).

Frequency Range	Separation Distance
150 kHz – 80 MHz	$d = 1.2 \sqrt{P}$
80 MHz – 800 MHz	$d = 1.2 \sqrt{P}$
800 MHz – 2.5 GHz	$d = 2.3 \sqrt{P}$

Minimum recommended separation for portable RF communications equipment (including peripherals such as antenna cables and external antennas): 30 cm (12 in) from any part of the system, including cables.

Table 14-4: Immunity to RF Wireless Communications Equipment

The system was tested for immunity to proximity fields from RF wireless communications equipment per IEC 60601-1-2 Table 9. All tests PASSED at the following levels:

Test Frequency (MHz)	Service/ Band	Max Power (W)	Immunity Test Level (V/m)	Distance (m)
385	TETRA 400	[Not supplied]	27 – PASS	[Not supplied]
450	GMRS/FRS 460	[Not supplied]	28 – PASS	[Not supplied]
710 / 745 / 780	LTE Band 13, 17	[Not supplied]	9 – PASS	[Not supplied]
810 / 870 / 930	GSM 800/900, CDMA 850, LTE Band 5	[Not supplied]	28 – PASS	[Not supplied]
1720 / 1845 / 1970	GSM 1800/1900, DECT, LTE Band 1/3/4/25, UMTS	[Not supplied]	28 – PASS	[Not supplied]
2450	Bluetooth, WLAN 802.11 b/g/n, LTE Band 7	[Not supplied]	28 – PASS	[Not supplied]
5240 / 5500 / 5785	WLAN 802.11 a/n	[Not supplied]	9 – PASS	[Not supplied]

15. Cybersecurity and Data Security

Security measures:

- Internal storage encrypted (AES 128-bit or higher) – verified per Software Verification Test Record, test cases C39 and H10 (PASS)
- Serial debug interfaces (UART, JTAG) removed from production
- Root account access restricted; shell login disabled
- Network services (Telnet, TFTP, HTTPD) disabled
- USB debug mode disabled in production firmware
- No network connectivity (no Wi-Fi, Ethernet, or Bluetooth)

The system does not transmit, receive, or store data over any network connection. All data is stored locally on the internal storage or on removable USB devices. Patient-data management (backup, archival, deletion) is the responsibility of the healthcare facility in accordance with HIPAA and other applicable regulations.

CAUTION: USB ports are physically accessible. Follow institutional policies for removable media. Format internal storage before transferring system to another institution or returning for service.

16. Adverse Event Reporting

Report device-related adverse events to:

1. Prosidio, Inc.

Phone: 914-510-2314

Email: service@prosidio.com

2. FDA MedWatch

Online: www.fda.gov/medwatch

Phone: 1-800-FDA-1088

Fax: 1-800-FDA-0178

Mail: MedWatch, 5600 Fishers Lane, Rockville, MD 20852-9787

Include device name, model, serial number, event description, and relevant patient information.

17. Warranty and Service Information

17.1 Warranty

Prosidio warrants this product against defects in materials and workmanship for one (1) year from original purchase. The warranty is limited to repair/replacement at Prosidio's discretion.

Excludes: misuse, abuse, neglect, accident, improper installation/maintenance, unauthorized modification, normal wear, incompatible accessories, use outside specified conditions.

17.2 Service

Prosidio Service Department

Phone: 914-510-2314

Email: service@prosidio.com

Web: <https://prosidio.com>

18. Manufacturer Information

Prosidio, Inc.

168B Irving Ave, Suite 302C

Port Chester, NY 10573

United States

Phone: 914-510-2314

Email: service@prosidio.com

Web: <https://prosidio.com>

FDA Establishment Registration:

3019110366

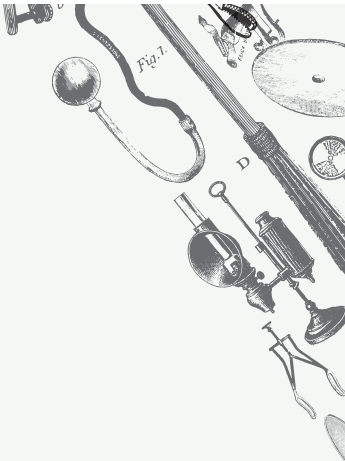
FDA Listing Number: D445182

Appendix A: Compatible Accessories

Accessory	SKU	Description
4K camera head — 24-inch models	LS4K24CMRH	PLS24UHD1 / PLS24UHDFLEX1; Sony 1/2.8" CMOS, IPX6, 8 MP, integral cable
4K camera head — 32-inch Standard	LS4K25CMRH	PLS32UHD1; Sony 1/2.8" CMOS, IPX6, 8 MP, integral cable
4K camera head — 32-inch Flex	LS4K25CMRH	PLS32UHDFLEX1; Sony 1/2.8" CMOS, IPX6, 8 MP, integral cable
F16 coupler	[Not supplied]	C-mount, 16 mm focal length
F18 coupler	[Not supplied]	C-mount, 18 mm focal length
F20 coupler (standard, included)	LSCPL20mm	C-mount, 20 mm focal length
F22 coupler	[Not supplied]	C-mount, 22 mm focal length
F25 coupler	[Not supplied]	C-mount, 25 mm focal length
F28 coupler	[Not supplied]	C-mount, 28 mm focal length
F32 coupler	[Not supplied]	C-mount, 32 mm focal length
Universal LED light guide cable	LSCLEDLCReg	Fiber optic, 3 m
US power adapter	LSPWRCBLR	Source electrical specification: LXCP398–240; 100–240V AC to 24V DC 9.2A. Identifier linkage pending confirmation.
HDMI cable	LSCBHDMI	High-Speed HDMI 2.0; user-supplied or contact Prosidio
32 GB USB drive	LSCUSB32GB	USB 2.0 flash drive; included
Pelican carrying case, 24" (optional)	LSCPELICAN24	Optional 24-inch carrying case
Pelican carrying case, 32" (optional)	LSCPELICAN32	Optional 32-inch carrying case
IFU	LSIFU-[system SKU]	Substitute the applicable system SKU; identifier pattern supplied by client
Flex Nasopharyngoscope — Reusable	PLSHSF930	Upcoming per source; flexible-model compatibility and availability awaiting confirmation
Flex Nasopharyngoscope — Disposable	PLSHSFD930	Upcoming per source; flexible-model compatibility and availability awaiting confirmation

CAUTION: Use only Prosidio-specified accessories.





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