

ELMO

VISUAL PRESENTER

MX-P

INSTRUCTION MANUAL



4K
Ultra High Definition

HDMI
HIGH DEFINITION MULTIMEDIA INTERFACE

■ IMPORTANT SAFEGUARDS

- **Read Instructions**

All the safety and operating instructions should be read before the appliance is operated.
- **Retain Instructions**

The safety and operating instructions should be retained for future reference.
- **Heed Warnings**

All warnings on the product and in the operating instructions should be adhered to.
- **Follow Instructions**

All operating and use instructions should be followed.
- **Cleaning**

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- **Attachments**

Do not use attachments not recommended by the product manufacturer as they may cause hazards.
- **Water and Moisture**

Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
- **Placement**

Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
- **Ventilation**

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
- **Power Sources**

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home consult your appliance dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
- **Grounding or Polarization**

This product may be equipped with either a polarized 2-wire AC line plug (a plug having one blade wider than the other) or a 3-wire grounding type plug, a plug having a third (grounding) pin. If the 2-Wire polarized plug will not fit in the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. The 3-wire grounding type plug will fit into a grounding type power outlet.

This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.
- **Power-Cord Protection**

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
- **Lightning**

For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

■ Overloading

Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

■ **A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.**



■ Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

■ Servicing

Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

■ Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance - this indicates a need for service.

■ Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

■ Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

■ Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.



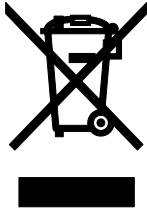
SA 1965

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



SA 1966

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



This symbol [crossed-out wheeled bin WEEE Annex IV] indicates separate collection of waste electrical and electronic equipment in the EU countries.

Please do not throw the equipment into the domestic refuse. Please use the return and collection systems available in your country for the disposal of this product.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification or Declaration of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

FOR UNITED STATES USERS: INFORMATION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

USER-INSTALLER

CAUTION:

Your authority to operate this FCC verified equipment could be voided if you make changes or modifications not expressly approved by the party responsible for compliance to Part 15 of the FCC rules.

BEFORE YOU USE

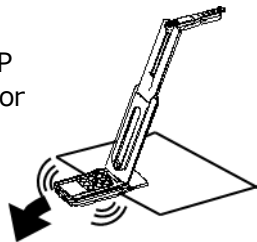
- Be sure to use the cable supplied with the product.
- The supplied power cord and AC adapter are designed for exclusive use with this product. Do not use them with other products.
- Be sure to use the power cord applicable to your local power specifications. If the product was sold in Japan, use the AC adapter sold with the product with 100 VAC and 50 or 60 Hz.
- When storing the product, do not leave it under direct sunlight or by heaters. It may be discolored, deformed, or damaged.
- Do not place this product in any humid, dusty, salt bearing wind, or vibrating locations. Use it under the following environmental conditions:
Temperature : 0°C~ 40°C Humidity : 30%~ 85%(No condensation)
- Use a soft, dry cloth for cleaning. Do not use any volatile solvent such as thinner or benzene.
- Luminescent and Black Spots
There may be some pixels that do not properly operate due to the use of CMOS Area Image Sensors made-up of many pixels.
Though luminescent or black spots may be found on the screen, it is a phenomenon peculiar to the CMOS Area Image Sensors and is not a malfunction.
- Follow the guidelines below to prevent the unit from dropping or overturning.
 - Use the product on a stable base, desk, or table. Do not place the product on an unstable base or slanted location.
 - Place or wire the product so as to prevent the cables from being pulled or drawn.
- Do not point the lens directly to the sun. It could degrade the imaging capability.
- Do not look directly into the LED light. If you look directly into it at pointblank range, your eyes may be injured.
- If this product is used for longer than the warranty period, its performance and quality may deteriorate due to the lifetime of its parts. For parts replacement (on chargeable basis), consult the dealer from whom you purchased this product or our branch/office near your location.
- Copyright
Unless used for personal use, it is prohibited strictly under copyright law to use any photo files without the prior consent of the copyright holder. Even if using for personal use, be careful that there could be a situation where video or audio recording is restricted or illegal.
- The contents of this document are subject to change without notice. The latest version is available from the following official website:
<https://www.elmoussa.com> <https://www.elmoeuropa.com>
- It is prohibited under copyright law to use or copy any part or the whole of this document without our prior written consent.
- ELMO shall not be liable for any claim for damage or loss of earnings or any claim raised by a third person due to the use, malfunction or repair of this product.

HANDLING PRECAUTIONS

The followings are special precautions against mishandling of the product. Pay close attention to them.

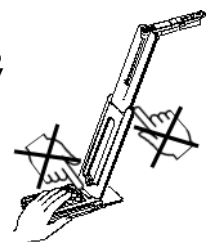
① Installation

Do not place the MX-P on an unstable place or slanted surface



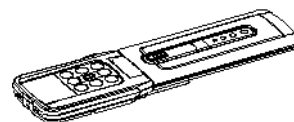
② Setting up

When setting up the MX-P, hold the body around the operating panel. Be careful not to pinch your fingers.



③ Carrying the MX-P

Carry the MX-P by folding the arm so as not to damage the camera.
Do not carry by holding the arm or camera head.



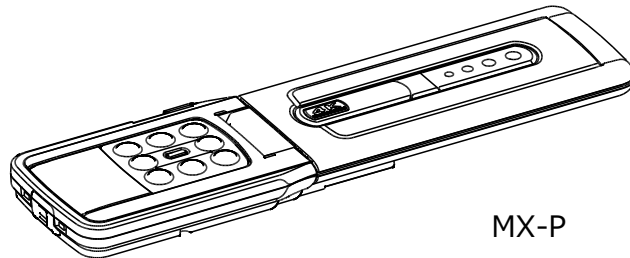
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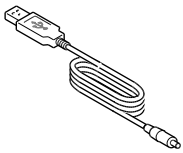
1 PREPARATION

◆ PACKAGE CONTENTS

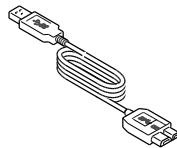
The items below are included with this product. If any item is missing, contact the dealer from whom you purchased this product.



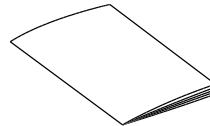
MX-P



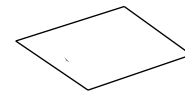
DC power cord



USB3.0 cable

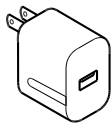


Quick Start Guide

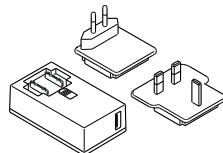


Warranty Card
(For Japan/ North America only)

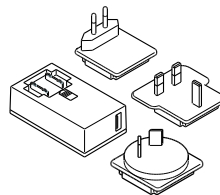
(For Japan/ North America only)



(For Europe only)



(For Australia only)



AC adapter

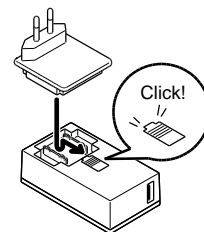
● Only Europe and Australia

Press and slide the plug into the groove of the AC adapter as shown in the drawing.

※Slide it until it clicks.

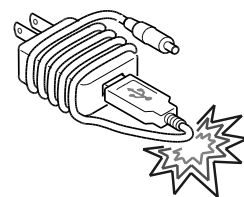
※Choose the correct plug according to the outlet.

When removing the plug from the AC adapter, slide and pull the plug in the opposite direction while pressing the lock button.



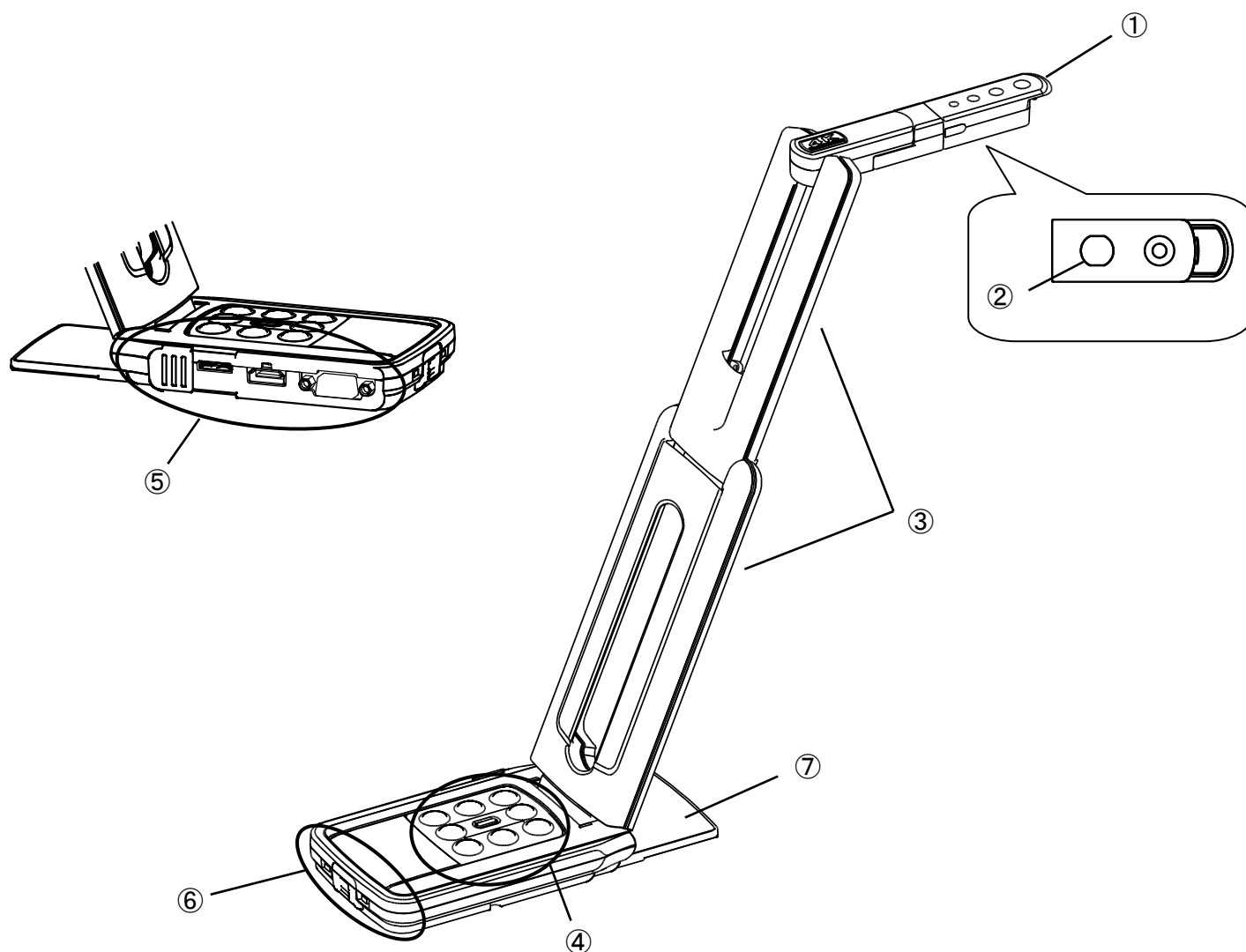
CAUTION

- Do not wrap the power cable tightly around the AC adapter while the power cable is connected to the AC adapter. The cable could be damaged (disconnected) or the inside of the cable could be exposed and result in an accident.



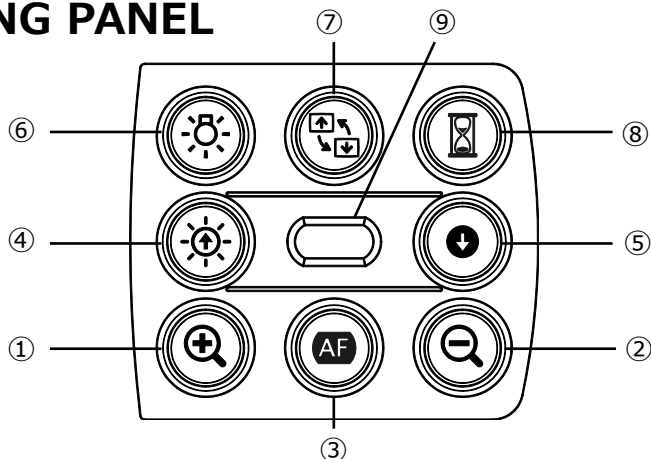
② BASIC OPERATIONS

◆ THE NAME OF EACH PART



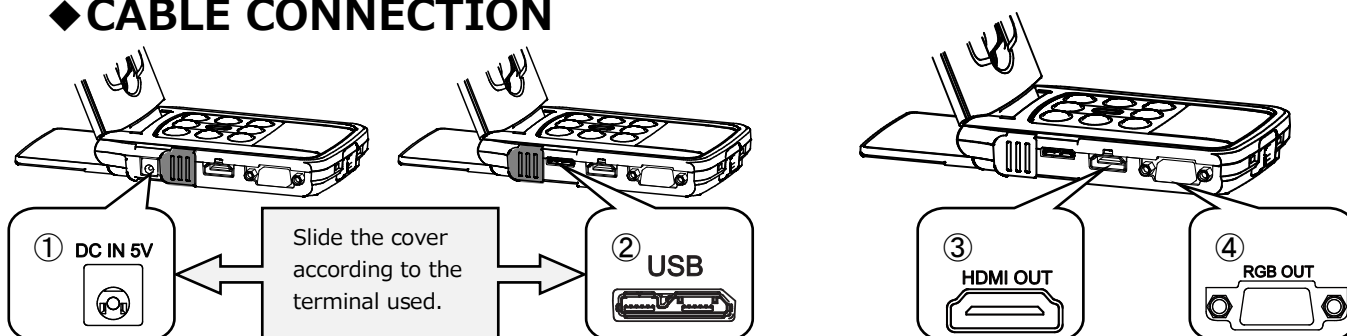
| | Name |
|---|------------------|
| ① | Camera head |
| ② | LED lighting |
| ③ | Arm |
| ④ | Operating panel |
| ⑤ | Connection ports |
| ⑥ | Setting switches |
| ⑦ | Stage |

◆ OPERATING PANEL



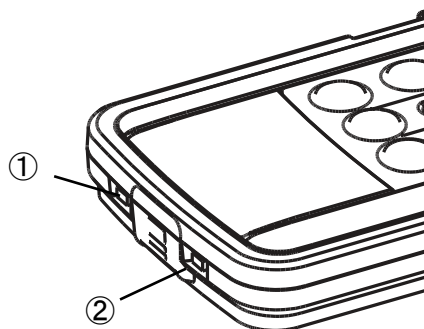
| | Function | Description |
|-----|----------------------------------|--|
| ① | ZOOM-IN | To enlarge the image. |
| ② | ZOOM-OUT | To shrink the image. |
| ③ | One-push AF | To focus automatically. |
| ④ | Brightness+ | To brighten the image |
| ⑤ | Brightness- | To darken the image. |
| ④+⑤ | Initialization of the brightness | To initialize the brightness level by pressing ④ and ⑤ together. |
| ⑥ | LED lighting | On / Off |
| ⑦ | Image rotation | To rotate the image. (0°/180°) |
| ⑧ | Freeze | To pause or restart the image. |
| ⑨ | Status LED | Turns blue: when connecting with USB3.0 or when connecting the AC adapter Turns green: when connecting with USB2.0 Flashes yellow: during freeze while supplying power with the AC adapter |

◆ CABLE CONNECTION



| | Mark | Description |
|---|--------------|--|
| ① | DC IN 5V | To connect the supplied DC power cable. |
| ② | USB | To connect a PC and the MX-P to save images. (USB3.0 cable is included in the package.) Max. resolution 4 : 3 = UXGA1600×1200 16 : 9 = 1920×1080 |
| ③ | HDMI OUT | To output digital images by connecting to a monitor via the HDMI cable. (The HDMI cable is not included.) |
| ④ | RGB OUT | To output RGB images by connecting to a monitor via the RGB cable. (The RGB cable is not included.) |

◆SETTING SWITCHS



| | Function | Description |
|---|-----------------------------|--|
| ① | UXGA ← → XGA Normal Full | To change the resolution and output mode. When connecting RGB only : XGA⇔UXGA When connecting HDMI : Full⇔Normal (For details about changing the aspect ratio, refer to Page11.) |
| ② | 60 ← → 50 | Flicker correction Select the same value as used for the power supply frequency.(50Hz / 60Hz) ※The Flicker correction feature works when outputting HDMI or RGB. To reduce flickers when outputting UVC, change the flicker correction setting from your UVC software. |

◆RESOLUTION / FRAME RATE (WHEN DISPLAYING ON A PC VIA USB)

The following table shows the output resolution and frame rate when connecting with USB3.0 and USB2.0.

In the following case, the actual frame rate may be slower than what is specified in the table.

- A low-spec computer is used.

| Resolution | USB3.0 | | USB2.0 | |
|------------|------------|----------|------------|----------|
| | MJPEG[fps] | YUV[fps] | MJPEG[fps] | YUV[fps] |
| 4160x3120 | 21 | 6 | – | – |
| 3840x2160 | 30 | 15 | – | – |
| 2048x1536 | 30 | 20 | 18 | 3 |
| 1920x1080 | 60/30 | 60/30 | 30 | 5 |
| 1280x960 | 30 | 30 | 30 | 10 |
| 1280x720 | 60/30 | 60/30 | 30 | 5 |
| 1024x768 | 30 | 30 | 30 | 20 |
| 640x480 | 30 | 30 | 30 | 30 |

◆ OUTPUT RESOLUTION

The output resolution can be changed with the Resolution/Output mode selection switch.

The MX-P can capture aspect ratio ①. Pay attention to the shooting conditions.

RGB output and HDMI output

- The video output is automatically set to 720p when a monitor which does not support 1080p is connected.
- When HDMI output is possible, both RGB output and HDMI output are output in the same resolution.

| Setting switches | UXGA/Normal | | XGA/Full | |
|------------------|---------------------|------|---------------------|-----|
| | Yes | No | Yes | No |
| HDMI connection | | | | |
| RGB output | 1080p or 720p | UXGA | 1080p or 720p | XGA |
| HDMI output | | | | |

Aspect ratio

① Full(4 : 3)



② Normal(16 : 9)



| | Aspect ratio | |
|----------|--------------|----------|
| | UXGA/Normal | XGA/Full |
| HDMI | ② | ① |
| RGB | ① | ① |
| HDMI+RGB | ② | ① |

※The Resolution/Output mode selection switch works as the Full/Normal selection switch when outputting HDMI.

※Setting method of arms, The maximum angle of view capture will change.

※The aspect ratio of the output image is 16:9 when the switch is set to Normal. Depending on the monitor used, you will see black bars on the top and bottom of the image.

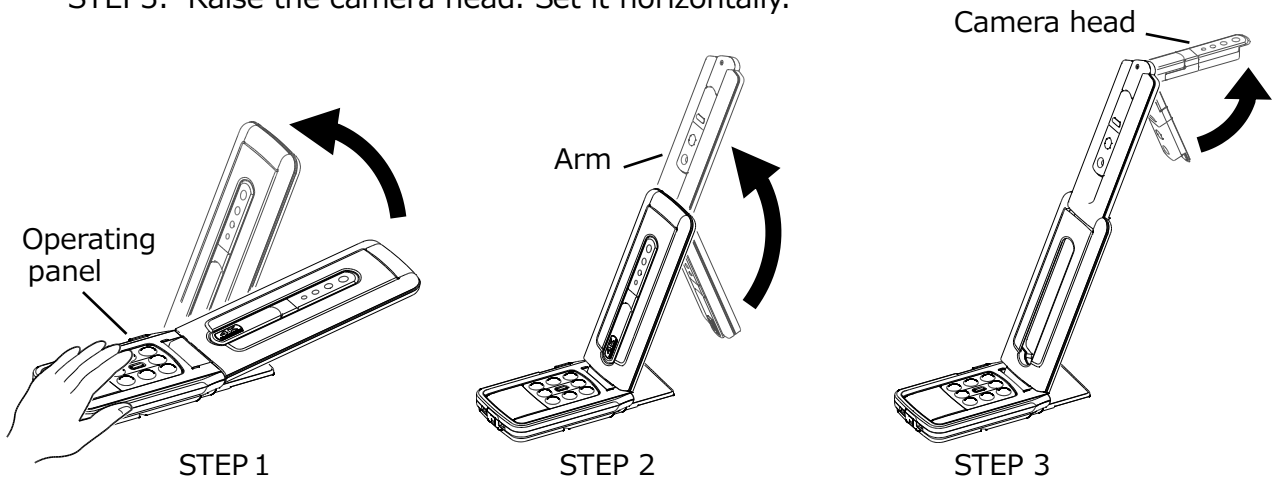
③ PREPARATION AND CONNECTION

◆ SETTING UP

STEP1. Raise the body while holding the operating panel.

STEP2. Raise the arm as indicated by an arrow.

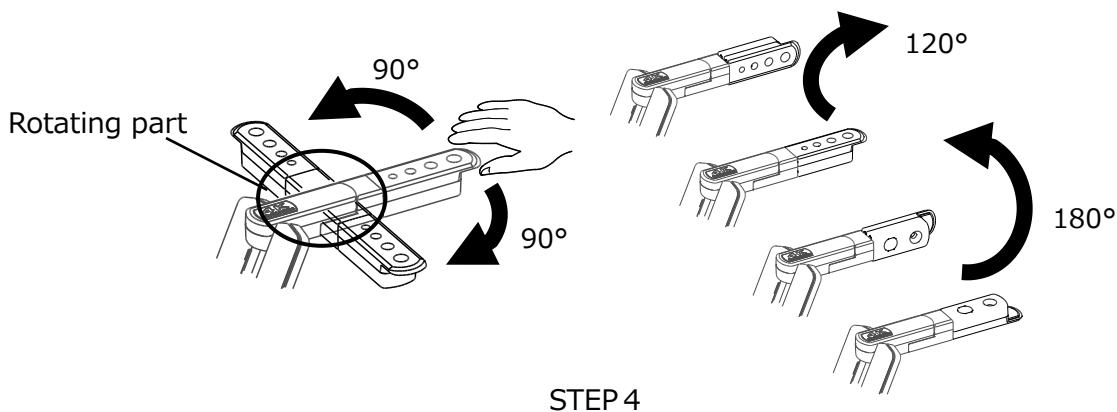
STEP3. Raise the camera head. Set it horizontally.



CAUTION

- Be careful not to pinch your fingers when moving the arm.
- Do not hold the arm or camera head when carrying the MX-P.
- Be careful not to give an impact to the camera head.

STEP4. Rotate the camera head according to the shooting direction.

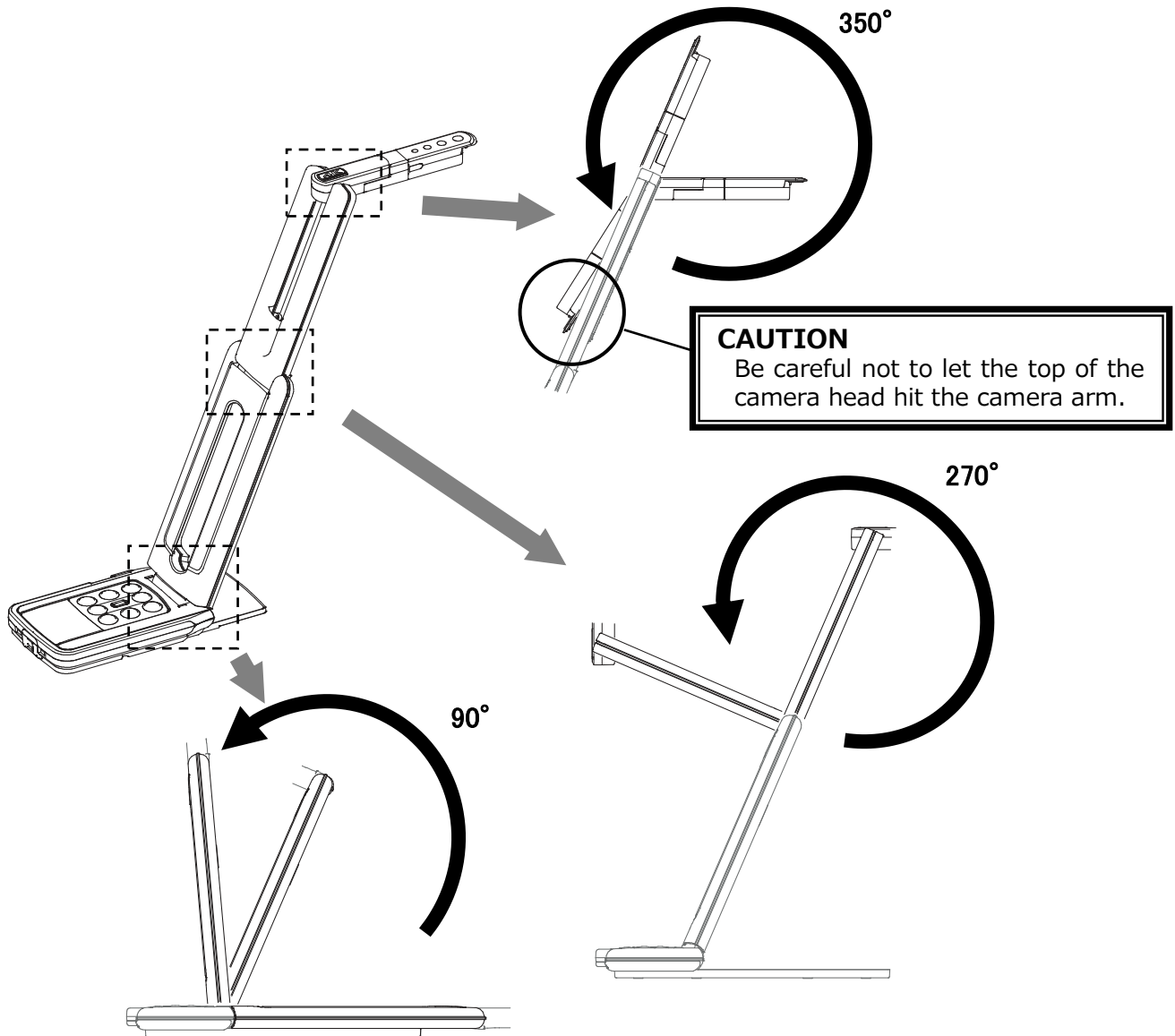


CAUTION

This product uses static electricity sensitive components. In order to avoid malfunction from static electricity, hold the edge of the camera head to rotate the camera head. Do not touch the rotating part.

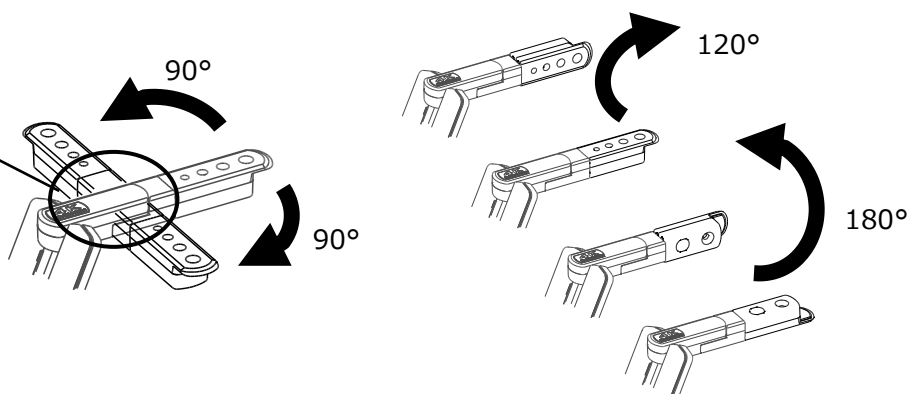
◆ MOVING PARTS OF THE MX-P

The MX-P can be moved as shown below.

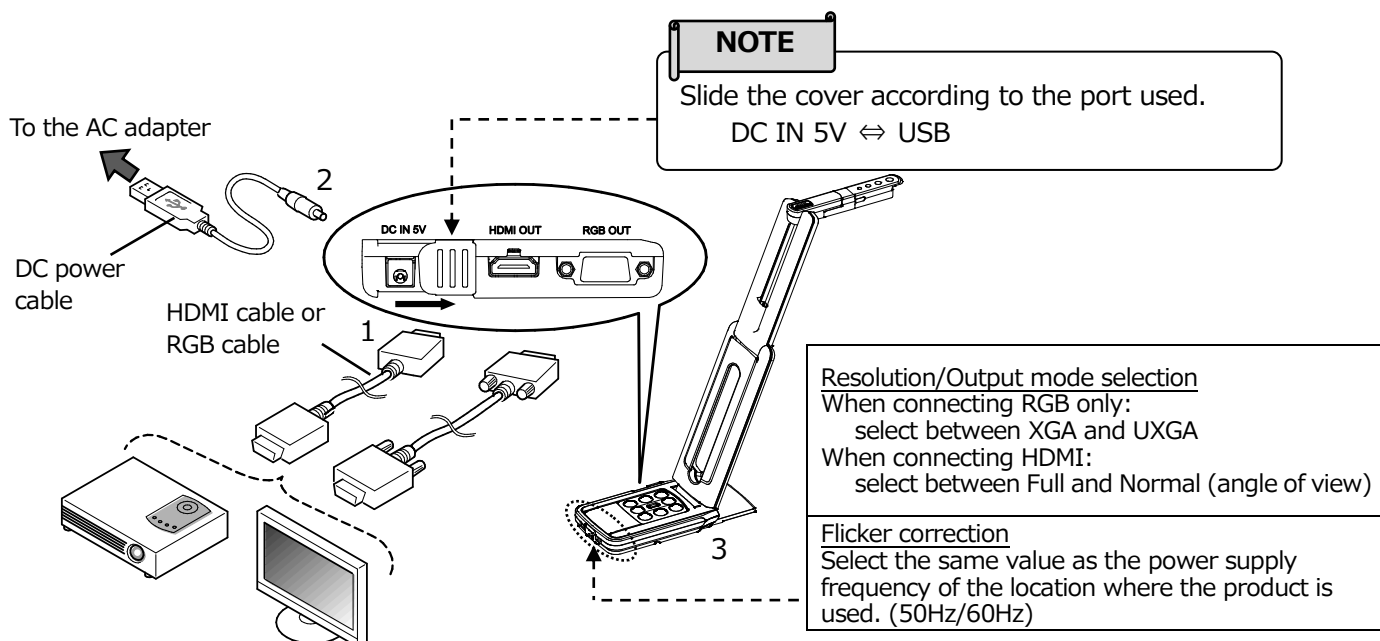



Camera head

Rotating part



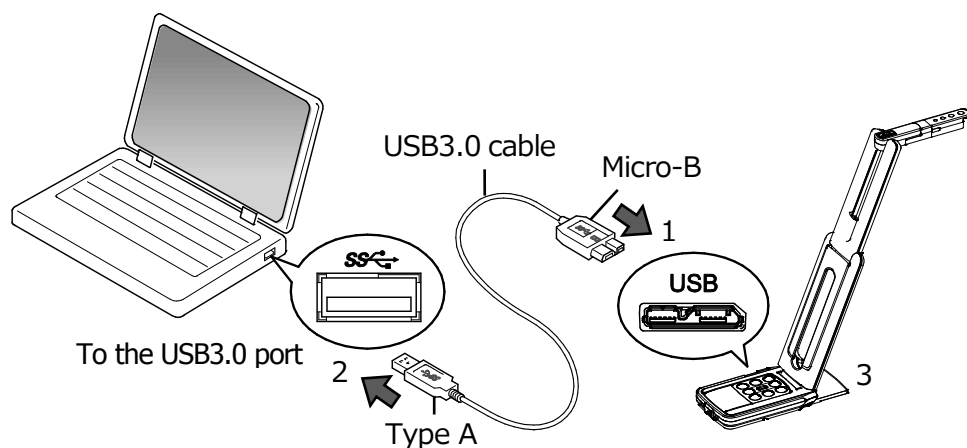
◆CONNECTING TO A PROJECTOR OR MONITOR




1. Connect the MX-P to a projector or monitor with the HDMI cable or RGB cable.
2. Connect the supplied DC power cable to []. Connect the USB plug to the supplied AC adapter. Then connect it to a wall outlet.
3. The MX-P turns on. (MX-P of LED : blue)

◆CONNECTING TO A COMPUTER

The MX-P is compliant to uvc (video class) standard. You can transfer the image via USB by connecting the MX-P to a computer using the USB3.0 cable (bus power).





1. Connect the microB connector terminal of the USB3.0 cable to [] connector in the side of the MX-P.
2. Connect the typeA terminal of the USB3.0 cable to the USB port of your running computer.
3. The MX-P will be turned on after the connection is established. (MX-P of LED : blue)

CAUTION

- When using the USB cable, no video is output from the RGB/HDMI ports.
- When connecting to the USB2.0 port (MX-P of LED : green), the frame rate may be decreased depending on the output resolution.
- The frame rate may be decreased depending on the computer used.

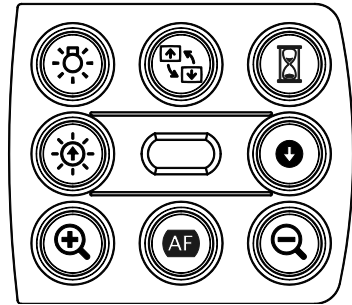
4 USING THE PRODUCT

◆ ADJUSTING THE SIZE



The size of the image can be adjusted using [ / ] buttons on the operating panel.

NOTE

The maximum zoom ration is 16x (digital zoom).
The image quality will be degraded when using the digital zoom.




◆ ADJUSTING THE BRIGHTNESS


The brightness of the image can be adjusted using [ / ] buttons on the operating panel. The brightness does not change automatically according to the brightness of the shooting environment.

To initialize the brightness level, press these buttons at the same time.

◆ ADJUSTING THE FOCUS


Press [] on the operating panel to automatically focus on the subject.

◆ PAUSING THE IMAGE


Press [] on the operating panel to pause the camera image.
Press the button again to restart.

※The Status LED flashes yellow when the camera image is paused while the power is supplied with the AC adapter.

◆ ROTATING THE IMAGE

Press [] on the operating panel to rotate the image by 180°.

◆ TURNING THE LED LIGHTING ON/OFF

Press [] on the operating panel to ON/OFF the LED lighting.

CAUTION

- To take shots of people, turn the LED lighting OFF.
- Make sure that the light from the LED lighting does not shine directly into your eyes.
- This product is equipped with a high-brightness LED. You can safely use it to light up the object. The brightness will gradually decrease with long-term use. This is not a malfunction but a characteristic of the LED.
- Do not touch the LED lighting while it is on as it may become very hot.

5 ABOUT IMAGE MATE4

The following operations can be performed by connecting the MX-P to a computer with Image Mate 4 installed via the USB cable:

- Save live video streaming or still images to a computer
- Operate the MX-P from a computer, etc.

※If Image Mate 4 is already installed in your computer, update the version of Image Mate 4.

※You can view the camera image with a commercially available software. With Image Mate 4, you can also use other functions such as zoom and freeze.

For details of the control software Image Mate4 and its instruction manual, visit the following website.

<https://www.elmoussa.com/>

<https://www.elmoeurope.com/download>

● SYSTEM REQUIREMENTS

The Image Mate 4 can be used in the following computer environments.

| | |
|-------------------|---|
| OS | Windows 10 64bit |
| CPU | Core i7(3840x2160@30fps) Core i5 or higher (1920x1080@60fps) |
| Memory | 16GB(3840x2160@30fps) 4GB or more (1920x1080@60fps) |
| Screen resolution | 3840x2160(3840x2160@30fps) 1920x1080 or higher (1920x1080@60fps) |
| Graphic board | Possible to output 3840x2160 GeForce GTX750 or higher. |
| USB | USB3.0 |

NOTE

If your computer does not meet these requirements or depending on the performance of your computer, the recording frame rate may be decreased.

◆ INSTALLING IMAGE MATE 4

Install Image Mate 4 to your computer.

※Image Mate 4 can be downloaded from Elmo official website.

※If Image Mate 4 is already installed in your computer, update the version of Image Mate 4.

1. Access the following Elmo official website.

<https://www.elmousing.com/> <https://www.elmoeurope.com/download>


2. Choose Image Mate 4.

3. Click "Download" and read the "Precautions on the handling of the downloaded data".

Click "Agree".

4. Downloading will start.

5. Run the downloaded file (ImageMate4Setup.msi) after the downloading is completed. Follow the instructions displayed on the screen to install Image Mate 4.

6. The icon  will be created on the desktop after the installation is completed.

Caution

- Do not connect/disconnect the USB cable while operating the MX-P. It may cause malfunction.
- We recommend using the supplied USB cable.
- It may take some time to display the image after the resolution is changed via UVC (with the USB cable). Do not turn off the power of the MX-P or disconnect the USB cable before the image is displayed.
- The displayed image may pause for a brief second when the object moves quickly. This is not a malfunction.
- The displayed image may be distorted depending on the object being displayed.

The image distortion may be improved by the following measures:

- Reduce the resolution
- Reduce the frame rate
- Changing image format to MJPG
- Setting the priority mode to binned
- Reducing sharpness or brightness in the camera setting
- Enabling the noise reduction feature

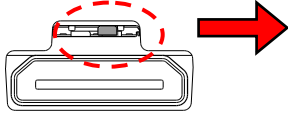


Note



- Depending on the computer's USB environment or the peripheral equipment, image transfer may be disrupted.
- We do not guarantee the operation of all types of devices with the MX-P.

6 TROUBLE SHOOTING

■ SYMPTOMS AND CONFIRMATION

Check the following items. If any abnormality is found, consult the dealer from whom you purchased this product or our nearest branch/office.

| Symptom | Possible cause/ remedy |
|--|--|
| No image is displayed. | <ul style="list-style-type: none"> The cable is not correctly connected. The AC adapter is disconnected from the power supply socket of the unit. Zoom is set at the TELE side, displaying only the white or black part of the document. If you turn the power ON immediately after turning it OFF, the unit may not start. Wait for several seconds after turning the power OFF, and then turn it back ON. The USB cable is disconnected. The output setting does not match the cable connected to the unit. Set the correct output setting. The switch in the connection ports is set to the left. Make sure that the switch is set to the right.  <ul style="list-style-type: none"> Reconnect the AC adapter and the power cable. The monitor is not turned on. The input source of the monitor is not set correctly. Image Mate 4 is not started correctly. Restart Image Mate 4 and try to connect again. The MX-P is not selected in the setting of Image Mate 4. |
| The output image (resolution) changes automatically. | <ul style="list-style-type: none"> When the HDMI monitor is connected to the MX-P, the output image (resolution) is automatically changed based on information from the connected monitor. |
| The image is out of focus. | <ul style="list-style-type: none"> The document (object) is too close to the lens. Move the document (object) slightly away from the lens. |
| The image is too dark. | <ul style="list-style-type: none"> The intensity of the lighting is insufficient. Press the  button on the operating panel to adjust the brightness. Or press the  button to turn on the LED lighting. |

| | |
|--|---|
| <p>The image does not move.</p> | <ul style="list-style-type: none"> • The "Freeze" function is selected by pressing  button on the Operating panel. Cancel the freeze status by pressing  button again. • The "Freeze" function is selected by Image Mate 4. Cancel the freeze status to resume the live image feed. • Please reconnect all the cables |
| <p>The image is striped.</p> | <ul style="list-style-type: none"> • This may be interference fringes between dots of printed matter and TV scanning lines or CMOS pixels. Changing the shooting range may improve the problem. • The image may be distorted when shooting a monitor screen while the live image feed is displayed. • Vertical stripes may appear on an LCD projector image. Manually adjusting the dot clock at the projector side may help the problem. • Vertical stripes may appear when shooting in dark conditions. Making the shooting environment brighter may reduce the vertical stripes. |
| <p>The UVC video stream is upside down.</p> | <ul style="list-style-type: none"> • Verify that the graphic driver and other device drivers of your computer are the latest version. You can download the latest version of device drivers from the official website of the manufacturer of your computer. |
| <p>Other image than the camera image overlaps on the UVC video stream.</p> | <ul style="list-style-type: none"> • Depending on your software, OS or the connection status, other images than the camera image may be overlapped on the camera image. This can be solved by reconnecting the MX-P or restarting the software. |
| <p>No UVC video stream is displayed. (An error message appears.)</p> | <ul style="list-style-type: none"> • The software may recognize it as error when it takes time to prepare the image output. Restart the MX-P and reconnect it to the computer. Then restart the software. |
| <p>Fails to output the UVC video stream.</p> | <ul style="list-style-type: none"> • Disconnect the USB cable and restart the software. Then connect the USB cable again. |
| <p>The UVC video stream sometimes freezes.</p> | <ul style="list-style-type: none"> • The displayed image may pause for a brief second when the object moves quickly. In that case, adjusting the brightness manually may improve the problem. |
| <p>There is a distortion of the image.</p> | <ul style="list-style-type: none"> • Use a high-spec computer. Also, reducing the resolution or frame rate may improve the distortion of the image. |
| <p>4K image cannot be displayed.</p> | <ul style="list-style-type: none"> • The system requirements to display 4K image are as follows: CPU: Intel® Core™ i7 and 3GHz or higher Memory: 16GB Graphic board: GeForce GTX750 or higher |

About the light (LED lighting)

The brightness of the LED lighting will diminish with long-term use. If its brightness has significantly diminished, consult the dealer from whom you purchased this product or our nearest branch/office for replacement (subject to charge).

About long-term usage of this product

Due to the lifetime of its parts, if this product is used for longer than the warranty period, its performance and quality may deteriorate. In this case, we will replace the parts for a charge. Consult the dealer from whom you purchased this product or our nearest branch/office.

7 SPECIFICATION

MAIN CAMERA

| Item | Specifications |
|-----------------------|---|
| Power source | DC5V |
| Power consumption | 3.2W (when connecting USB) 4.6W (when connecting HDMI/RGB) |
| Outside dimensions | W: 343mm D: 82mm H: 302mm (When setup) |
| | W: 290mm D: 82mm H: 22mm (When folded) |
| Weight | Approx. 550g (Main body only) |
| Ext. control terminal | USB3.0 type microB × 1 |
| Lens | F=2.0 |
| Frame rate | 60fps (in high frame rate mode at 1080P) |
| Focus working range | From lens surface: 100mm ~ ∞ |
| Focus | Auto (One-push) |
| Exposure | Auto (Possible to adjust exposure level) |
| Image pick-up element | 1/3.1 inch CMOS 13,000,000 pixels |
| Effective pixels | H: 4160, V: 3120 |
| Resolution | H: 1300TVlines or more V: 1300TVlines or more |
| Digital zoom | Max. 16x (when outputting HDMI/RGB) |
| Imaging area | 374mm×281mm (Height: 286mm) 4:3 |

FUNCTIONAL SPECIFICATION

| Item | Content | Operation panel | IM4 |
|----------------|---|-----------------|-----|
| Brightness | Possible (Set value 7 levels) Default value: 8 | ✓ | |
| Image rotation | 0°/180° Default setting: 0° (The image rotation function is not available when the image freeze function is used.) | | ✓ |
| LED lighting | ON/OFF Default setting: OFF | ✓ | |
| AF (focus) | Manual (One-push) | | ✓ |
| Zoom | Possible | | ✓ |
| Video still | Possible | | ✓ |
| Resolution | Manual | | ✓ |
| Flicker | 60Hz / 50Hz (Default setting: 60Hz) USB: select with IM4 HDMI/RGB: select with the Slide switch | | ✓ |
| Contrast | Possible (Set value 0~20) Default value: 12 | | ✓ |

| | | | |
|-----------------|---|--|---|
| Hue | Possible (Set value -180~180) Default value: 0 | | ✓ |
| Saturation | Possible (Set value 0~31) Default value: 10 | | ✓ |
| Definition | Possible (Set value 5~15) Default value: 10 | | ✓ |
| Gamma | Possible (Set value 100~200) Default value: 160 | | ✓ |
| WhiteBalance | Auto/Manual (Set value 2000~8000) Default setting: Auto 6500 | | ✓ |
| Backlight | ON/OFF Default setting: OFF | | ✓ |
| Exposure | Auto/Manual (Set value -10~1) Default setting: Auto -4 | | ✓ |
| Low-light | ON/OFF Default setting: OFF | | ✓ |
| Color Mode | Normal/Gray/Negative/Black-and-White Default setting: Normal | | ✓ |
| Scene Mode | Normal/Document Default setting: Normal | | ✓ |
| Priority Mode | Binned/Resized Default setting: Resized | | ✓ |
| NoiseReduction | Auto/Manual (Set value 0~10) Default setting: Auto 0 | | ✓ |
| Anti-flicker | ON/OFF Default setting: OFF | | ✓ |
| Factory setting | Possible | | ✓ |

■ ILLUMINATION DEVICE

| Item | Specifications |
|--------------|----------------|
| Illumination | White LED |

■ FUNCTION

| Item | Specifications |
|-----------------------|---|
| USB | USB 2.0 compliant / USB 3.0 compliant |
| Transfer speed | USB3.0 Super Speed (5Gbps) USB2.0 High Speed (480Mbps) ※The actual transfer speed may vary depending on the performance of your computer and the status of the USB bus. |
| Operating temperature | 0°C~+40°C |
| Humidity | 30~85% (No condensation) |

■ TRADEMARKS AND LICENSES

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This product is licensed under the AVC Visual Patent Portfolio License (AVC Video) for the personal and non-commercial use of a consumer to (i) play AVC Video that was recorded by a consumer engaged in a personal and a non-commercial activity and/or, (ii) play AVC Video that was obtained from a video provider licensed from MPEG-LA, LLC. Additional information including that relating to promotional and commercial uses may be obtained from MPEG-LA, LLC.

ATTENTION

- Unless used for personal use, it is prohibited by copyright law to record slides, books and photos without the prior consent of copyright holder.
- This product is designed to be used in industrial environment. If it is used in a residential area or in an adjacent area thereto, harmful interference to radio or television reception may occur.
- Repair parts
Repair parts are the items which are needed to maintain product functionality. The holding period of such repair parts is 3 years after the product discontinuation, which is equal to the repair period we will accept.
- Any image, which is obtained by this product, and which can be identified, is considered to be private information. Be forewarned that the person who makes use of such images shall be liable for disclosing of such images.

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