

# Network Camera VB-M741LE / VB-M740E Installation Guide

Please be sure to read the "Safety Precautions" section for correct use. After reading this Installation Guide, keep it in a readily accessible location for future reference.  
\* Some cameras are not available in certain countries or regions.

**Caution** Request a professional installer for all installation work. Never try to install the camera yourself. Doing so may result in unforeseen accidents such as dropping the camera or electric shock.

## Check Included Items

- Camera, Screws (M4) x 4
- Installation Guide (This document)
- Warranty Card
- Notice
- Safety Wire, Screws (M3) x 1
- I/O Interface Cable (BK2-0035-000) **M741LE**
- Power Interface Cable **M741LE**
- Template
- Setup CD-ROM
- Ceiling Plate
- Dedicated wrench

## Symbols Indicating Camera Model

Camera specific functions will be listed using the symbols below.

**M741LE**: VB-M741LE **M740E**: VB-M740E

## Accessories

The following accessories can be purchased separately as necessary. Some accessories are not available in certain countries or regions.

### Conduit Box CB740-VB

Dedicated accessory used to protect wiring cables that cannot be stored above the ceiling. This can be attached to the composite pipe.

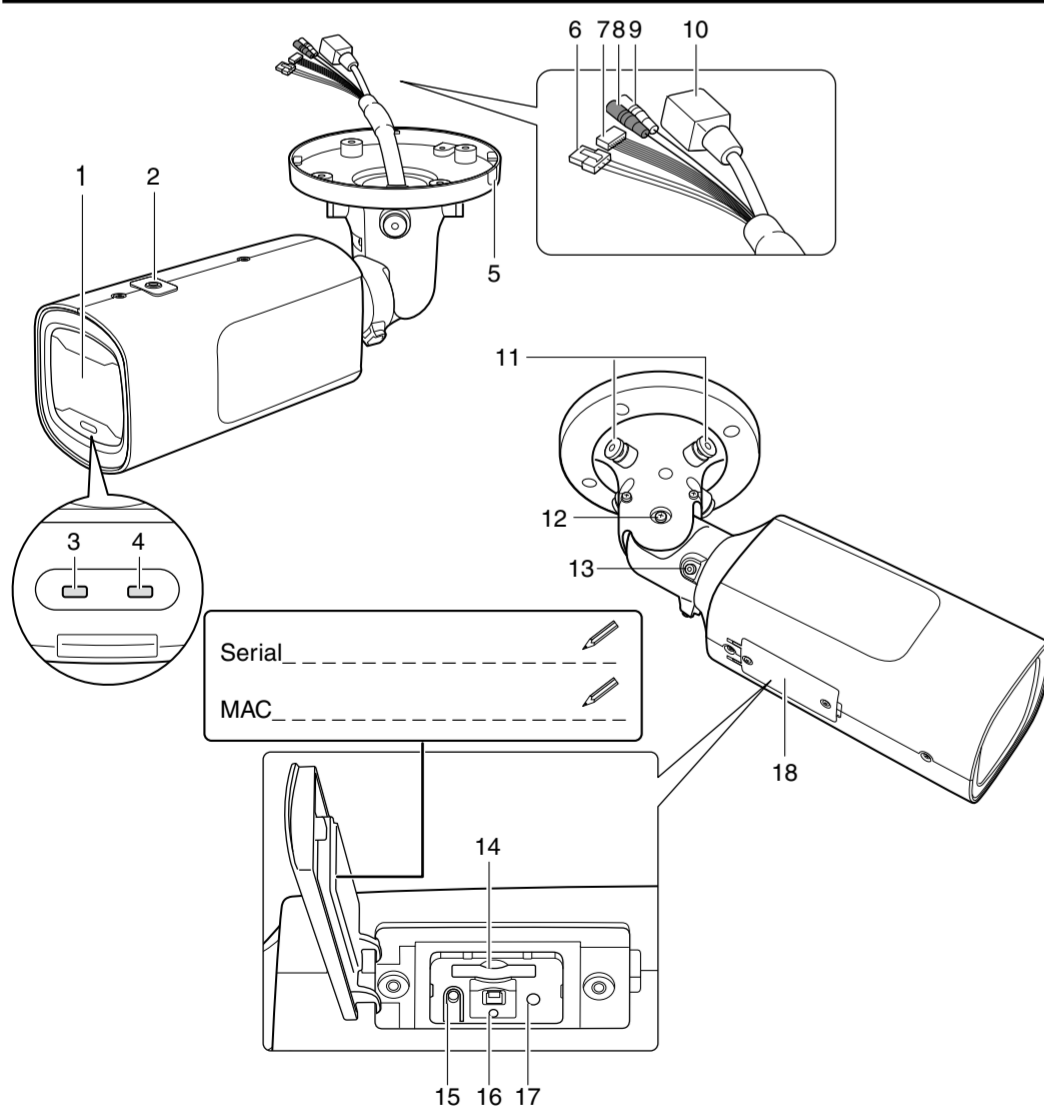
### Pendant Mounting Kit PC640-VB

Dedicated accessory used to install the camera to the end of pipe that extends from high ceilings, such as in big-box stores.

### Canon AC Adapter PA-V18 **M741LE**

Dedicated AC adapter for this camera.

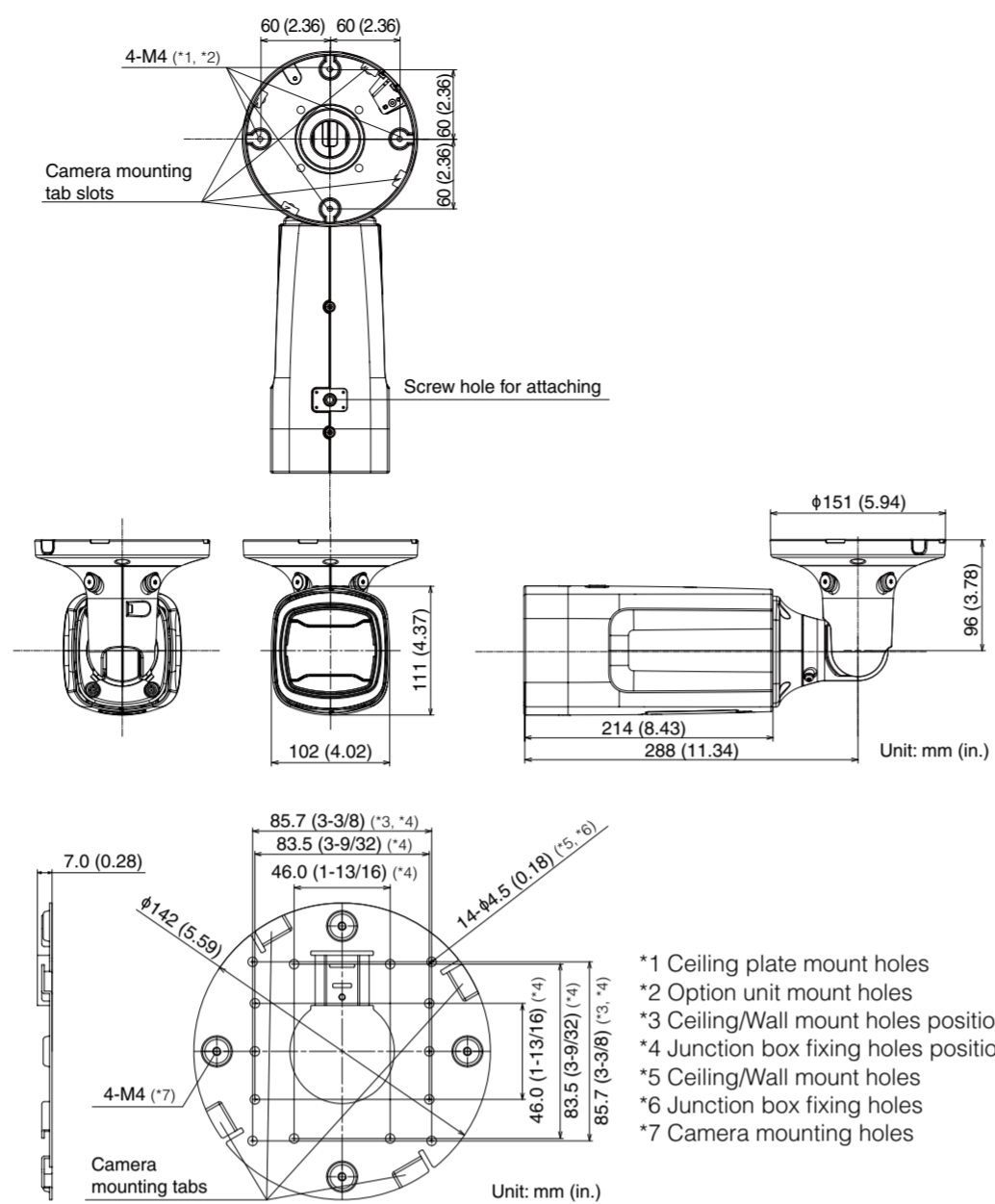
## Part Names



- 1. Lens protector / 2. Screw hole for attaching / 3. LED (Orange) / 4. LED (Blue)\* / 5. Notched cap / 6. Power connection terminal **M741LE** / 7. External device I/O terminals **M741LE** / 8. Audio input terminal (Black) (common LINE IN and MIC IN) **M741LE** / 9. Audio output terminal (White) (LINE OUT) **M741LE** / 10. 100Base-TX LAN connector
  - 11. Pan axis adjustment screw / 12. Tilt axis adjustment screw / 13. Rotation axis adjustment screw / 14. Memory card slot / 15. Reset switch / 16. LED (Blue)\* / 17. Reboot switch / 18. Memory card cover
- \* On: when powered on, during reboot, during normal use / Off: when [Turn Off] is selected (please refer to the "Operation Guide")

The contents of this guide are subject to change without any prior notice.

## External Dimensions

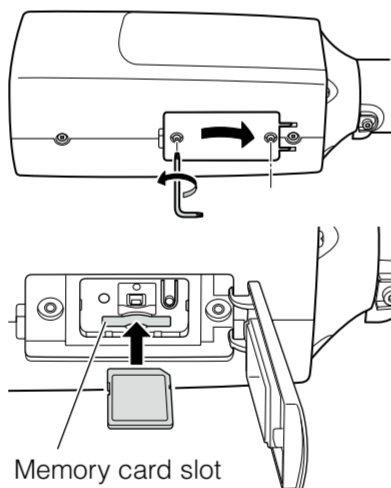


- \*1 Ceiling plate mount holes
- \*2 Option unit mount holes
- \*3 Ceiling/Wall mount holes position
- \*4 Junction box fixing holes position
- \*5 Ceiling/Wall mount holes
- \*6 Junction box fixing holes
- \*7 Camera mounting holes

## Before Installing the Camera

Set the IP address and other network information on the camera using the "Camera Management Tool" on the Setup CD-ROM. For details on how to operate the "Camera Management Tool", please refer to the "Camera Management Tool User Manual".

## Using a Memory Card



Loosen the screws with the dedicated wrench, open the memory card cover, and then place the memory card in the memory card slot. Once the memory card is in place, close the memory card cover and tighten the screws with the dedicated wrench. To remove the memory card, push it in all the way until the card slightly pops out and remove.

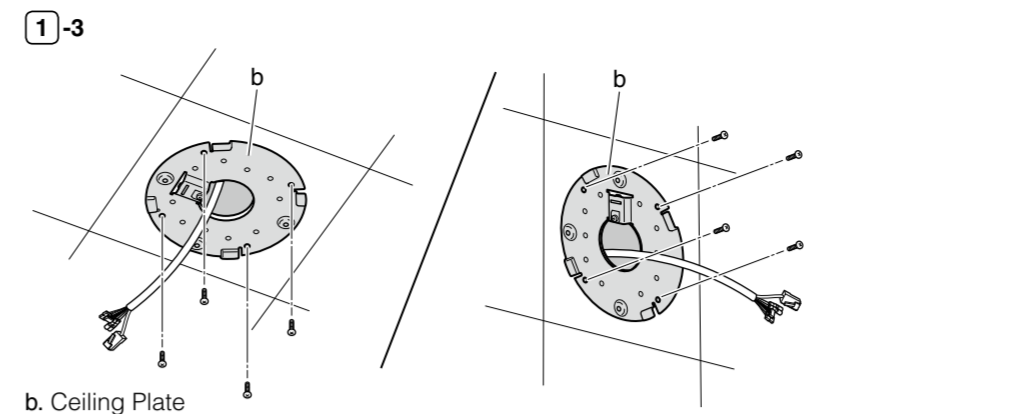
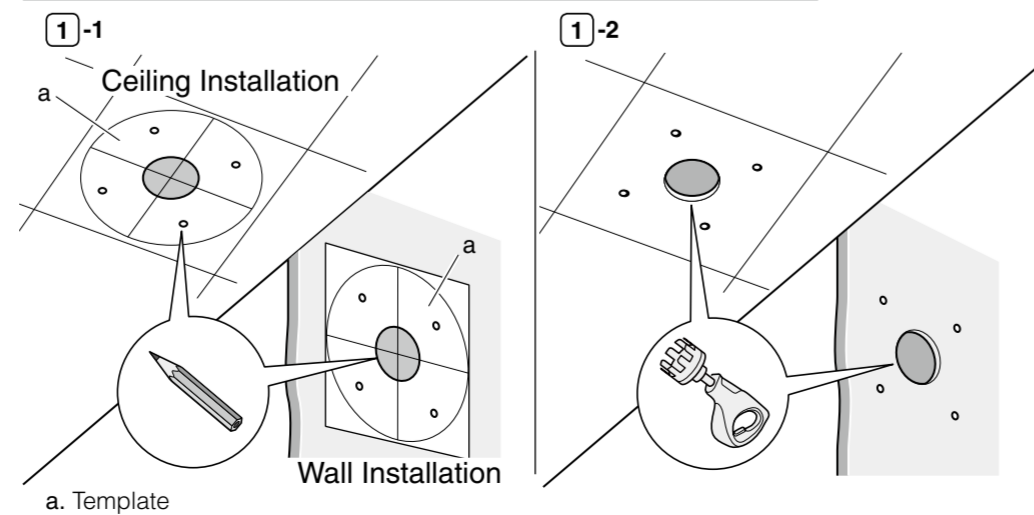
### Important

- Insert a memory card before installing the camera.
- When using a memory card with the camera for the first time, it is recommended to format the card after inserting it into the camera (please refer to the "Operation Guide" > "Setting Page" > "Memory Card").
- Always unmount the memory card before removing it (please refer to the "Operation Guide" > "Setting Page" > "Memory Card").

Once this has been completed, close the memory card cover and tighten the screws with the dedicated wrench.

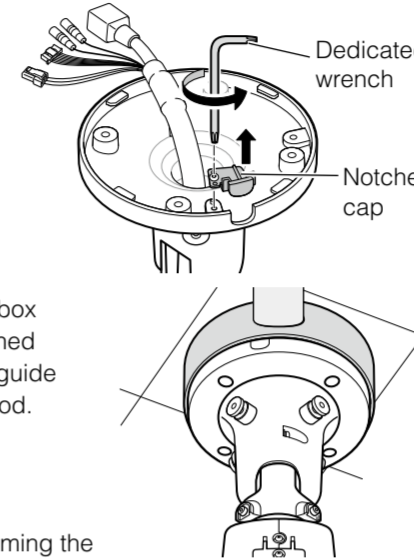
## Installing the Camera

### 1 Directly attached to ceilings/Directly attached to walls



### If the cables cannot be stored above a ceiling

If the cables cannot be stored above the ceiling, such as with concrete ceilings, remove the notched cap at the camera joint section with the dedicated wrench, and create an opening for the cable to pass through.



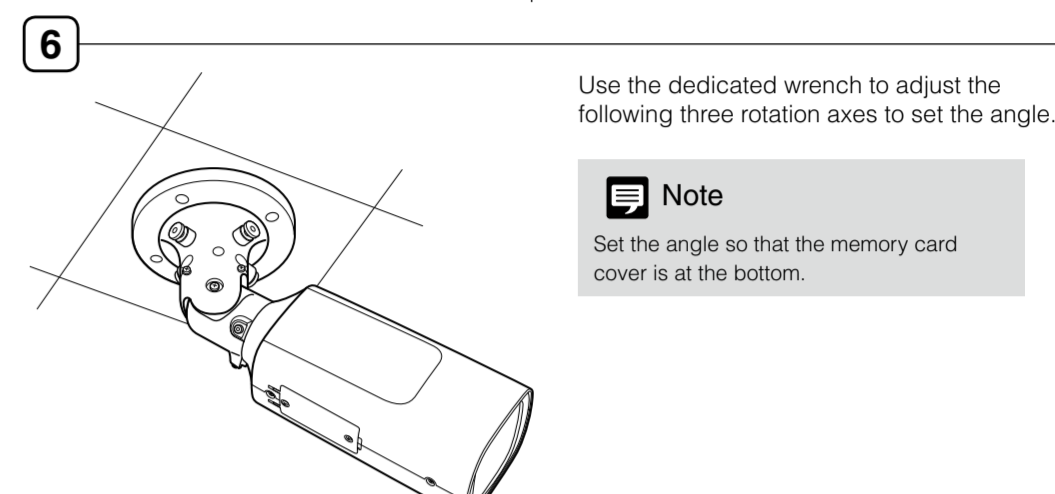
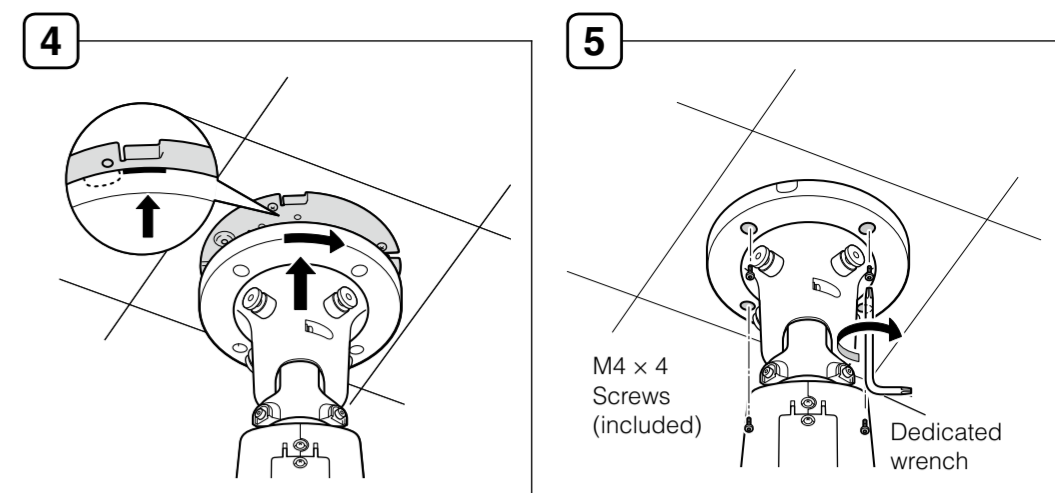
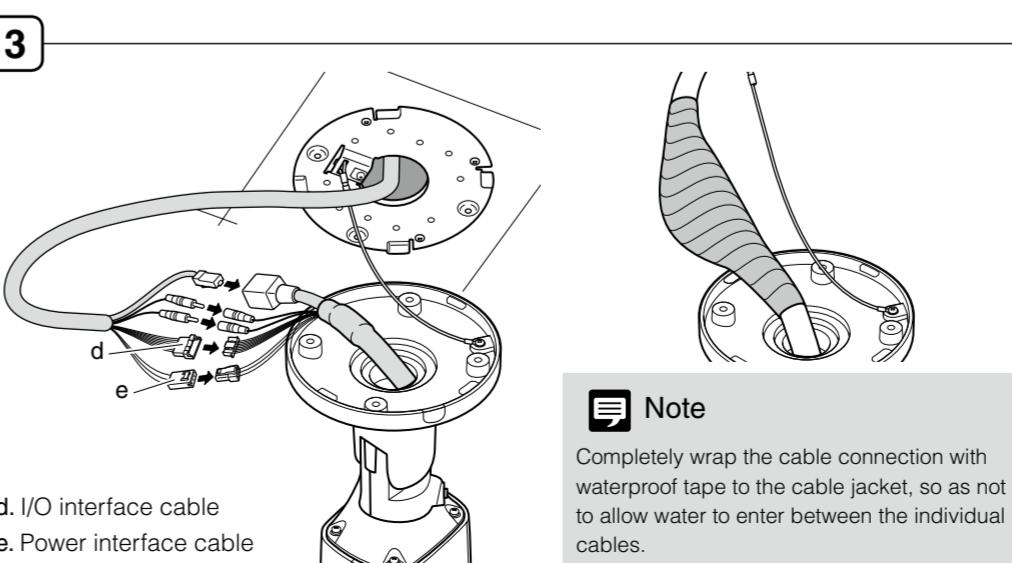
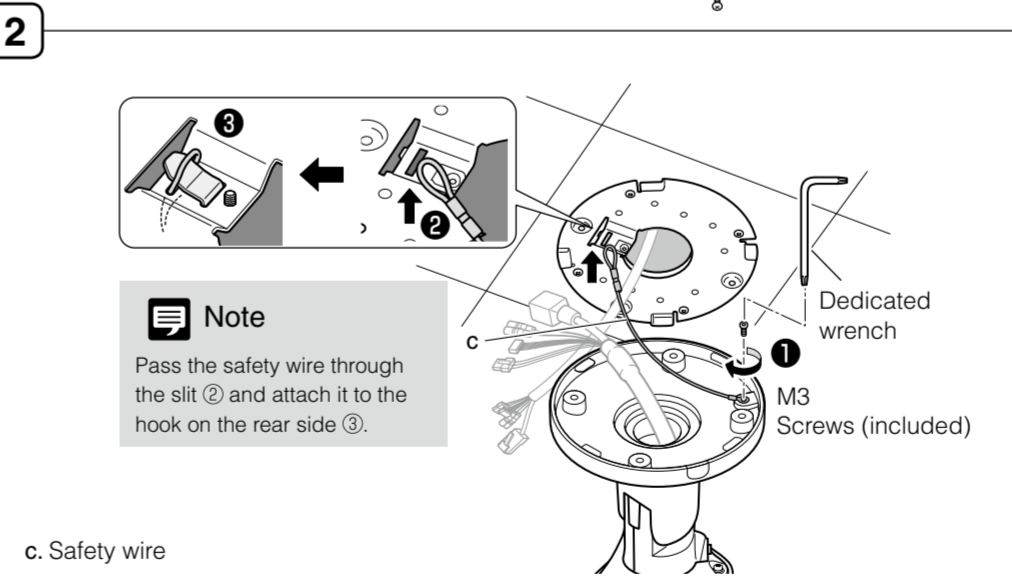
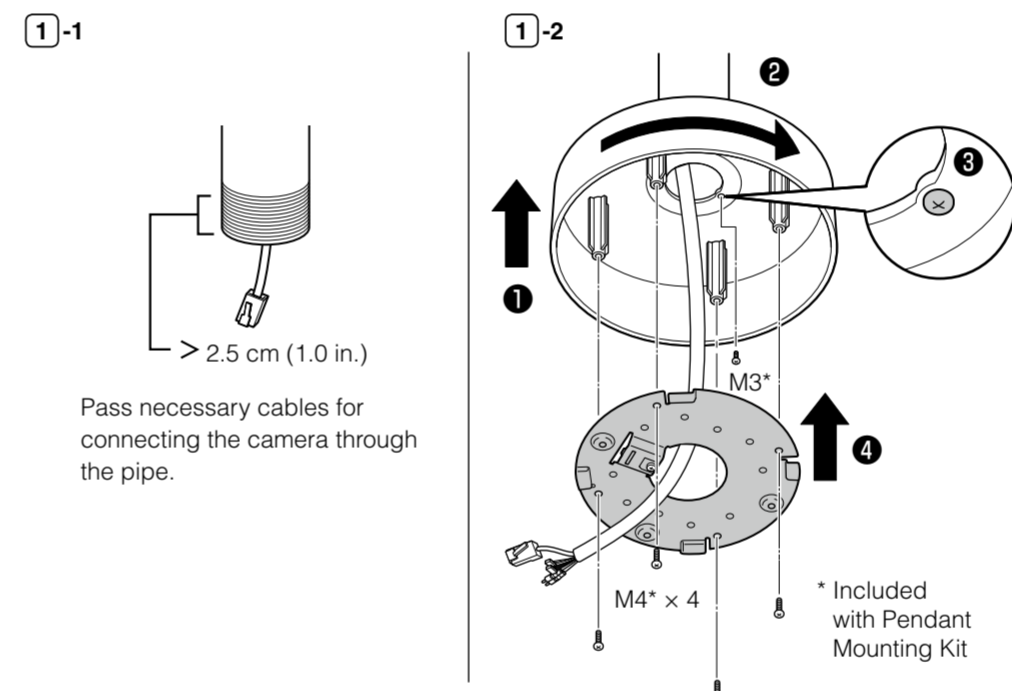
The cables can be stored with the use of the conduit box CB740-VB (sold separately), which can also be attached to the composite pipe. Please refer to the installation guide included with the conduit box for the installation method.

### Attaching to a junction box

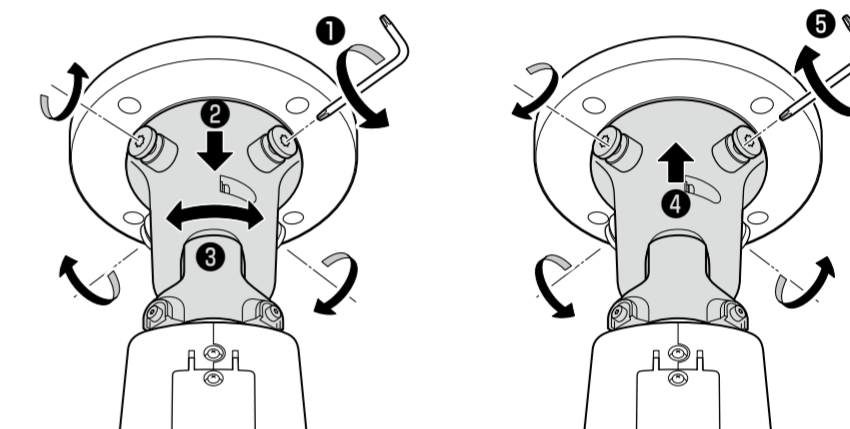
Attach the ceiling plate to the junction box after confirming the fixing holes locations with the external dimensions diagram.

### Ceiling pendant mounting

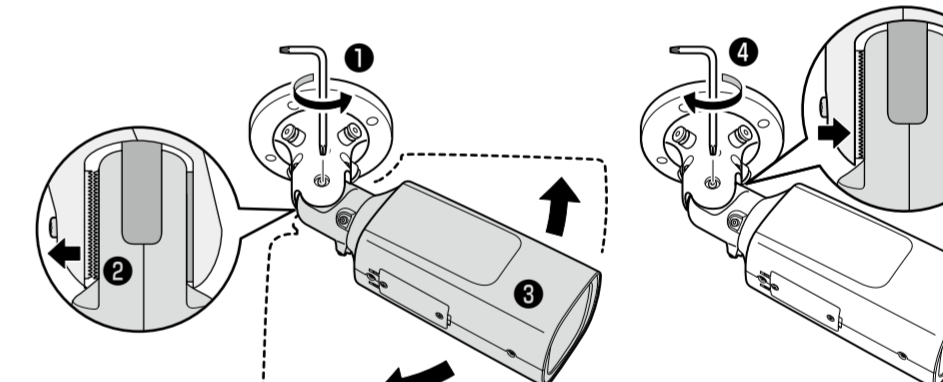
Mount using the Pendant Mounting Kit (sold separately). For details please refer to the Installation Guide included with the kit.



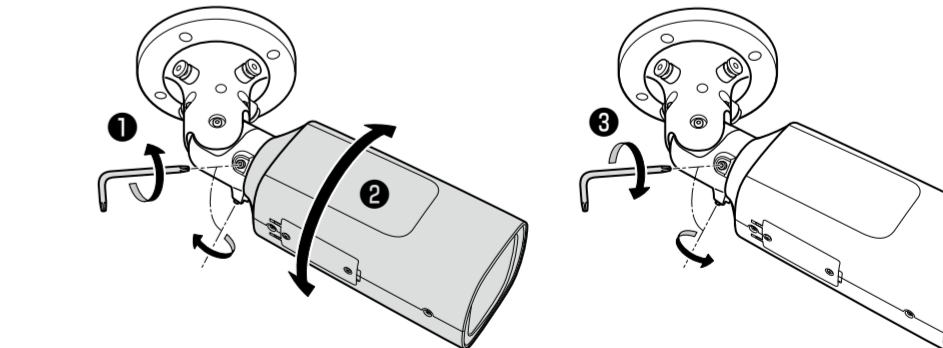
### Adjusting the pan axis



### Adjusting the tilt axis



### Adjusting the rotation axis

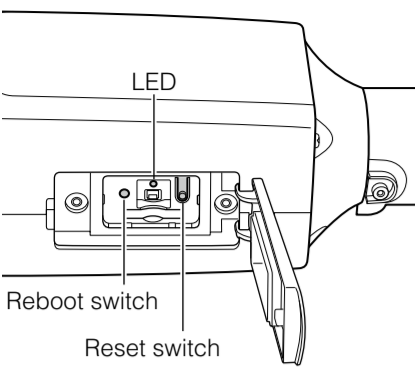


When the installation has finished, please adjust the angle using the "Camera Angle Setting Tool", found in the Setup CD-ROM.

### When the temperature within the camera is low (heater activated) **M741LE**

When the unit is powered by a 24 V AC/PoE+ power source, the heater unit can be used. The heater unit's orange LED will turn on, when the unit has been activated due to the low temperature within the camera, and the transfer of video is also not possible. Once the temperature within the camera has reached the level where it can transfer the video once again, the orange LED will turn off.

## Rebooting/Resetting the Camera



### Rebooting

To reboot the camera by turning its power off and on, open the memory card cover and press the reboot switch.

#### Note

Rebooting can be done from the camera settings page as well (please refer to the "Operation Guide" > "Setting Page" > "Maintenance").

### Resetting

To reset the camera to its factory default settings, press the reset switch and the reboot switch while checking the LED in the following order.

- Hold the reset switch down, and press the reboot switch with a pointed object.
- After holding down the reset switch for at least three seconds, release the reboot switch.
- After the LED starts to blink, release the reset switch. When the blinking has stopped, the unit has finished resetting.

Once this has been completed, close the memory card cover and tighten the screws with the dedicated wrench.

## Connecting the Camera

### Power Connection

Power can be supplied to the camera in the three ways described below. Please be sure to read the user manual for the dedicated power supply before use.

#### Note

- Power supply should conform to all local codes.
- The power supply should also comply with IEC/UL60950-1 (SELV/LPS) standards.

#### PoE+M741LE /PoE (Power over Ethernet)

Power can be supplied to the camera by using a LAN cable connected to a PoE HUB that conforms to the IEEE802.3at Type 2 (PoE+)/Type 1 (PoE) standard.

#### Important

- Check with your dealer for more information about PoE+/PoE HUB and Midspan technology. Midspan (a LAN cable power supply device) is a device that, like a PoE+/PoE HUB, supplies power to the camera via a LAN cable.
- Some PoE+/PoE HUBs allow the limitation of currents for each port, but applying limits may interfere with performance. If using this type of PoE+/PoE HUB, do not limit the operating current.
- Some PoE+/PoE HUBs have limits for the total current consumption for the ports which can interfere with performance when multiple ports are in use. For more information, check the instruction guide for your PoE+/PoE HUB.
- M741LE** When the camera is connected to both a PoE+/PoE HUB and an external power supply (12 V DC or 24 V AC), power will be supplied in the following order of precedence. External power supply (24 V AC) > PoE+/PoE HUB > External power supply (12 V DC) However, when connecting power from both, certain combinations could cause problems such as unstable network connections. If a problem arises, either set the PoE+/PoE HUB power supply to "disabled" or use the optional AC adaptor as the external power supply.

#### External Power Supply M741LE

12 V DC or 24 V AC input can be used. Use the included interface cable to connect to the camera power connection terminal.

	1: BROWN	Power 24 V AC / 12 V DC non-polar
	2: BLUE	Power 24 V AC / 12 V DC non-polar
	3: GREEN	FG (frame ground)

12 V DC can be connected in a non-polar configuration.

#### Important

- The power supply should be within the following voltage range.
- 24 V AC: Voltage fluctuation within ±10% of 24 V AC (50 Hz or 60 Hz ±0.5 Hz or less)
  - Current supply capacity of at least 1.0 A per camera
- 12 V DC: Voltage fluctuation within ±10% of 12 V DC
  - Current supply capacity of at least 1.5 A per camera
- When using a 12 V DC battery power supply, be sure to connect resistors of at least 0.5 – 1.0 Ω/20 W in series to the power line.
- For an external power supply, use a double-insulated device.

#### Recommended Power Cables [Reference]

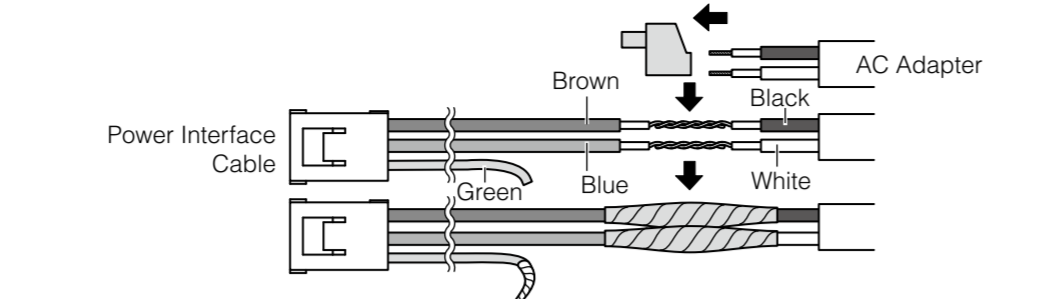
Cable (AWG)	24	22	20	18	16
12 V DC maximum cable length	5	9	14	23	32
(ft.)	(16.4)	(29.5)	(45.9)	(75.5)	(105.0)
24 V AC maximum cable length	11	18	29	46	64
(ft.)	(36.1)	(59.1)	(95.1)	(150.9)	(210.0)

Please use UL cable (UL-1015 or equivalent) for 12 V DC or 24 V AC wiring.

#### AC Adapter M741LE


Please use the dedicated AC Adapter (sold separately).

Remove the power connector attached to the AC adaptor, then connect the power interface cable from the power connector included in the package, as shown in the following diagram. Wrap the cable connection with waterproof tape.



### External Device I/O Terminals M741LE

External device I/O terminals consist of two input and output systems each. The Viewer can be used to check external device input status and control output to an external device (Please refer to the "Operation Guide" > "External device output operation" and "Event display panel."). Use the included I/O interface cable to connect to external device input/output terminals.

	1: BROWN	External device input 1 IN1 (+)
	2: BLACK	External device input 1 IN1 (-)
	3: RED	External device input 2 IN2 (+)
	4: BLACK	External device input 2 IN2 (-)
	5: ORANGE	External device output 1 OUT1
	6: YELLOW	External device output 1 OUT1
	7: GREEN	External device output 2 OUT2
	8: BLUE	External device output 2 OUT2

**External Device Input Terminals (IN1, IN2)**  
External device input terminals consist of two sets (IN1, IN2) of two terminals, with the negative terminals connected to the camera interior GND. Connecting cables to the positive and negative terminals and opening or closing the circuit notifies the Viewer.

#### Important

- When connecting sensors and switches, connect terminals that are electrically isolated from the respective power and GND.

#### External Device Output Terminals (OUT1, OUT2)

External device output terminals consist of two sets (OUT1, OUT2) of two terminals. The sets have no polarity. Controls from the Viewer can be used to open and close the circuit between the terminals. Using optical couplers, the output terminals are isolated from the camera's internal circuit.

The load connected to the output terminals should be within the following rating range.

Rating between output terminals:  
Maximum voltage 50 V DC  
Continuous load current at or below 100 mA  
On resistance: Max. 30 Ω



### Audio Input/Output Terminals M741LE

Each audio input/output terminal has one input system and one output system. Connecting the camera to an audio input/output device such as a microphone or a speaker with an amplifier allows you to send/receive audio through the Viewer. Use the φ3.5 mm (φ0.14 in.) monaural mini-jack connector to connect an audio input/output device.

#### Audio Input Terminal Common LINE IN/MIC IN (monaural input)

Although the camera only has a single audio input system, it supports two types of microphone input: LINE IN and MIC IN. Before using the audio input, please confirm the [Audio Input] on the Setting Page (please refer to the "Operation Guide" > "Audio Input"). LINE IN is selected by default.

Input terminal: φ3.5 mm (φ0.14 in.) mini jack (monaural)





- Dynamic MIC IN
  - Input impedance: 1.5 kΩ ±5%
  - \* Supported microphones: Output impedance: 400 – 600 Ω
- Condenser MIC IN
  - Input impedance (microphone bias resistance): 2.2 kΩ ±5%
  - Microphone power supply: plug-in power (voltage: 2.3 V)
  - \* Supported microphones: Condenser microphones with plug-in power support
- LINE IN
  - Input level: Max. 1 Vp-p
  - \* Please use a microphone with an amplifier.

#### Audio Output Terminal LINE OUT (monaural output)

Connect the camera to a speaker with an amplifier. Audio can be sent to the speaker from Viewer. Output terminal: φ3.5 mm (φ0.14 in.) mini jack (monaural)  
Output level: Max. 1 Vp-p  
\* Please use a speaker with an amplifier.

## Symbols Indicating Safety Precautions

This Installation Guide uses the following symbols to indicate important information the user should know in order to use the product safely. Explanations are provided for each symbol so that users will understand the level of importance for each. **Be sure to observe these items.**

	<b>Warning</b>	Failure to follow the instructions accompanied by this symbol may result in death or serious injury.
	<b>Caution</b>	Failure to follow the instructions accompanied by this symbol may result in injury.
<b>Caution</b>		Failure to follow the instructions accompanied by this symbol may result in property damage.
	<b>Important</b>	This symbol indicates important or restricted items.
	<b>Note</b>	Contains reference information for operation or additional explanations.

## Safety Precautions

### Installation Precautions

#### Warning

**Do not install in the following places:**

- Places in strong direct sunlight, near heat-generating objects, or locations subject to high temperatures
- Places near fire sources or flammable solvents (alcohol, thinner, fuel, etc.)
- Places subject to oily smoke or steam
- Confined or enclosed places

**Failure to do so may result in fire or electric shock.**

- M741LE** Insulate the ends of cables you are not using.

**Failure to insulate will cause fire or electric shock.**

#### Notes on Power Supply

- M741LE** Only use the dedicated AC Adapter (sold separately) for AC power.
  - Do not set any heavy objects on the power cable (or the LAN cable for a PoE+/PoE power supply).
  - Do not pull, forcibly bend, scratch, or modify the power cable (or the LAN cable for a PoE+/PoE power supply).
  - M741LE** Do not cover or wrap the AC adapter (sold separately) with cloth or blankets.
- Failure to do so may result in fire or electric shock.**

#### Caution

**For installation or inspection of this camera, consult the dealer where you purchased the product.**

- This installation should be made by a qualified service person and should conform to all local codes.
- When installing, make sure the surface is capable of withstanding the total weight of the camera and accessories, and that it is sufficiently reinforced.
- Be sure to use installation screws designed for the type of surface the camera is to be installed.
- Periodically check the parts and screws for rust and loosening, in order to prevent injuries and equipment damage due to falling items.

- Do not install in unstable places, places subject to significant vibration or impact, or places subject to salt damage or corrosive gas.
  - Do not install in places subject to strong winds.
  - Do not install where snow can accumulate directly on the camera.
  - Be sure to attach the safety wire when installing the camera.
- Failure to do so may result in the camera falling or other accidents.**

- Do not touch the edges of metal parts with bare hands.
  - Take care not to catch your fingers when installing.
- Failure to do so may result in injuries.**

- M741LE** Avoid looking directly at the infrared illumination at close distances for long periods of time.
- Intense infrared illumination can cause eye damage.**

### Caution

- Do not install on an unstable surface.
  - After turning off the power, do not turn the power on again for at least five seconds.
  - Take measures to remove static electricity before performing any procedures.
  - If there is condensation, please wait to power on, until the condensation dissipates.
  - Please waterproof and dust-proof camera as necessary, when installing outdoors.
- Failure to do so may result in malfunctions.**

- Take care not to damage wiring or piping.
- Failure to do so may result in damage to peripheral items.**

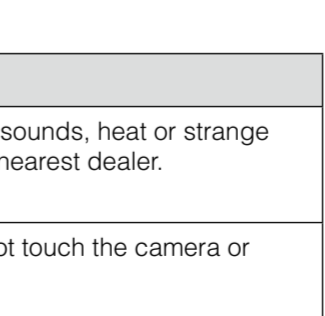
#### Important

- We recommend the installation of a lightning arrester (a surge protection device) as a measure against failures caused by lightning strikes. Please refer to our website for details.

### Precautions for Installing the Camera Outdoor

When installing the camera outdoors, observe the following precautions to retain waterproof/dustproof capabilities.

- Waterproof the cable connections and the ends of cables you are not using, including their connectors.
- When mounting the camera onto a wall or other upright surface, position the cables straight down to prevent rain infiltration.
- If wiring by connecting the camera to the composite pipe, bridge the gap using the conduit box (sold separately). When connecting the conduit box and the pipe, apply silicon sealant as necessary to seal it tightly after attaching the pipe to prevent rain infiltration.



### Precautions for Use

#### Warning

- If you discover defective conditions such as smoke, strange sounds, heat or strange odors, immediately stop using the camera and contact your nearest dealer.
- Fire or electric shock may result from continued use of the product.**

- If thunder starts, stop installation or inspection etc. and do not touch the camera or continue connecting the cable.
  - Do not disassemble or modify the camera.
  - Do not damage the connecting cable.
  - Do not insert foreign objects such as water or metal into the camera.
  - Do not use flammable sprays near the camera.
  - Do not leave LAN cables, external power supply, or the power connector for the AC adaptor (sold separately) connected when the camera is not in use for long periods.
  - Do not use flammable solvents such as alcohol, paint thinner or benzine when cleaning the camera.
- Failure to do so may result in fire or electric shock.**

## Specifications

Please refer to the installation procedures or the Appendix – Specifications for specifications not listed below.

<b>Camera</b>	
<ul style="list-style-type: none"><li>Lens</li> <li>Viewing Angle</li></ul>	2.4x optical zoom (4x digital zoom) lens (electric drive) <ul style="list-style-type: none"><li>For 16:9 aspect ratios</li> <li>Horizontal: 113.4° (W) – 46.5° (T)</li> <li>Vertical: 61.4° (W) – 26.2° (T)</li> <li>For 4:3 aspect ratios</li> <li>Horizontal: 113.4° (W) – 46.5° (T)</li> <li>Vertical: 83.0° (W) – 34.9° (T)</li></ul>
<ul style="list-style-type: none"><li>Min. Subject Illumination</li></ul>	<b>M741LE</b> <ul style="list-style-type: none"><li>Day Mode (color):</li> <li>0.02 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</li> <li>Night Mode (monochrome):</li> <li>0 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE with IR lamp on)</li> <li>0.001 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</li></ul> <b>M740E</b> <ul style="list-style-type: none"><li>Day Mode (color):</li> <li>0.02 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</li> <li>Night Mode (monochrome):</li> <li>0.001 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</li></ul>
<ul style="list-style-type: none"><li>Pan Angle Range</li> <li>Tilt Angle Range</li></ul>	344° (±172°) <ul style="list-style-type: none"><li>93° (-3° – +90°) Camera is at 0° when attached to the ceiling and facing straight down, and 90° when at a horizontal position.</li></ul>
<ul style="list-style-type: none"><li>Rotation Angle Range</li></ul>	344° (±172°)
<b>Interface</b>	
<ul style="list-style-type: none"><li>Network Terminal</li> <li>Audio Input Terminal (Common LINE IN &amp; MIC IN)</li></ul>	<ul style="list-style-type: none"><li>LAN x 1 (RJ45, 100Base-TX (auto/full-duplex/half-duplex))</li> <li><b>M741LE</b> φ3.5 mm (φ0.14 in.) mini-jack connector (monaural) <ul style="list-style-type: none"><li>LINE IN (connect to an amplifier microphone) or MIC IN (connect to a microphone w/o amplifier)</li> <li>Switch LINE IN/MIC IN in the setting page.</li></ul></li> <li>φ3.5 mm (φ0.14 in.) mini-jack connector (monaural)</li> <li>LINE OUT (connect to an amplifier speaker)</li></ul>
<ul style="list-style-type: none"><li>Audio Output Terminal (LINE OUT)</li> <li>External Device I/O Terminal</li> <li>Memory Card *</li></ul>	<ul style="list-style-type: none"><li><b>M741LE</b> Input x 2, Output x 2</li> <li>SD Memory Card, SDHC Memory Card, SDXC Memory Card Compatible.</li> <li>Recorded Content: Log, Video (Event, Manual, ONVIF, Timer, Upload)</li> <li>Frame Rate: Max. 1 fps (JPEG) <ul style="list-style-type: none"><li>Max. 30 fps (H.264)</li></ul></li></ul> <p>* Use CLASS 10 cards. Cards under CLASS 10 may not have sufficient performance for tasks such as video recording.</p>
<b>Others</b>	
<ul style="list-style-type: none"><li>Operating Environment</li></ul>	<b>M741LE</b> <ul style="list-style-type: none"><li>Temperature <ul style="list-style-type: none"><li>Operating Temperature Range (including direct sun exposure):</li> <li>AC, PoE+: -50°C – +55°C (-58°F – +131°F)</li> <li>DC, PoE: -10°C – +55°C (+14°F – +131°F)</li></ul></li> <li>Start-up Temperature Range (including direct sun exposure):</li> <li>AC, PoE+: -30°C – +55°C (-22°F – +131°F)</li> <li>DC, PoE: -10°C – +55°C (+14°F – +131°F)</li></ul> <ul style="list-style-type: none"><li>Humidity: 5% – 85% (without condensation)</li></ul>
	<b>M740E</b> <ul style="list-style-type: none"><li>Temperature <ul style="list-style-type: none"><li>Operating Temperature Range (including direct sun exposure):</li> <li>PoE: -10°C – +55°C (+14°F – +131°F)</li> <li>Humidity: 5% – 85% (without condensation)</li></ul></li> <li>Humidity: 5% – 90% (without condensation)</li></ul>
<ul style="list-style-type: none"><li>Storage Environment</li></ul>	<ul style="list-style-type: none"><li>Temperature: -30°C – +60°C (-22°F – +140°F)</li> <li>Humidity: 5% – 90% (without condensation)</li></ul>
<ul style="list-style-type: none"><li>Installation Method</li> <li>Power Supply</li></ul>	<ul style="list-style-type: none"><li>Ceiling mount/Surface mount</li> <li><b>M741LE</b> PoE: PoE power supply via LAN connector (IEEE802.3at Type1/Type2 compliant) <ul style="list-style-type: none"><li>AC Adapter: PA-V18 (100 – 240 V AC) (sold separately)</li> <li>External power source: 24 V AC/12 V DC</li></ul></li> <li>PoE: PoE power supply via LAN connector (IEEE802.3at Type1 compliant)</li></ul>
<ul style="list-style-type: none"><li>Power Consumption</li></ul>	<b>M741LE</b> <ul style="list-style-type: none"><li>PoE+: Max. approx. 21.2 W<sup>1</sup></li> <li>PoE: Max. approx. 10.1 W<sup>2</sup></li> <li>AC Adapter PA-V18: Max. approx. 12.8 W (100 V AC) <ul style="list-style-type: none"><li>Max. approx. 12.8 W (240 V AC)</li></ul></li> <li>DC: Max. approx. 11.1 W</li> <li>AC: Max. approx. 22.2 W</li></ul> <p><sup>1</sup> Class 4 power sourcing equipment (requests 30.0 W) <sup>2</sup> Class 0 power sourcing equipment (requests 15.4 W)</p>
	<b>M740E</b> <ul style="list-style-type: none"><li>PoE: Max. approx. 7.4 W<sup>*</sup></li> <li>* Class 0 power sourcing equipment (requests 15.4 W)</li></ul>
<ul style="list-style-type: none"><li>Weight</li></ul>	<b>M741LE</b> <ul style="list-style-type: none"><li>Approx. 2120 g (4.68 lb.)</li></ul> <b>M740E</b> <ul style="list-style-type: none"><li>Approx. 2040 g (4.50 lb.)</li></ul>
<ul style="list-style-type: none"><li>Dust-resistant/</li> <li>Waterproof Specification</li></ul>	IP66 rated

#### Only for European Union and EEA (Norway, Iceland and Liechtenstein)

These symbols indicate that this product is not to be disposed of with your household waste, according to the WEEE Directive (2012/19/EU), the Battery Directive (2006/66/EC) and/or national legislation implementing those Directives. If a chemical symbol is printed beneath the symbol shown above, in accordance with the Battery Directive, this indicates that a heavy metal (Hg = Mercury, Cd = Cadmium, Pb = Lead) is present in this battery or accumulator at a concentration above an applicable threshold specified in the Battery Directive.

This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (EEE) and batteries and accumulators. Improper handling of this type of waste could have a possible impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.

For more information about the recycling of this product, please contact your local city office, waste authority, approved scheme or your household waste disposal service or visit [www.canon-europe.com/weee](http://www.canon-europe.com/weee), or [www.canon-europe.com/battery](http://www.canon-europe.com/battery).

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