

Instruction Manual for Lens Heater 380-12V



Contents

A package of the lens heater 380-12V contains the items below. Check if all of them are included.



| 内容物 | 数量 |
|----------------------------|----|
| ① Lens heater band 380-12V | 1 |
| ② Trigger cable PD12V | 1 |
| ③ Controller | 1 |

3

Introduction

Thank you for purchasing a Vixen lens heater 360-12V. This instruction manual is prepared for the Lens Heater 380-12V. You should read the instruction

manuals supplied with your telescope, camera, or other relevant equipment along with this manual to ensure the correct and safe use of the product.

Outlines

- It is a dew prevention band that prevents a camera lens or telescope from getting dew.
- The lens heater is used to keep the lens warm. It is not intended to make the lens warm.
- It is used by wrapping the band of the heating elements around the lens.
- It is useful not only for a telescope's objective lens but also for a camera lens and an eyepiece.
- It works with a USB PD power supply (a mobile battery) or a DC12V power supply (2.1mm DC plug with a 2.1mm inside diameter, 5.5mm outside diameter, center plus polarity).
- The electricity consumption can be set in three stages using a provided controller.
- The surface of the lens heater is made of unique fastening materials that allow for soft-touch wearing.

2

Instructions and Directions for Use

⚠ WARNING

- ⊘ Before operating the lens heater 380-12V, please read the safety precautions below and do not attempt to apply for other usage not determined in this manual.

● Safety Precautions you must obey.

These are precautions to prevent injury to a person, property damage, and the product itself.

| | |
|---------------|---|
| Danger | Denotes the possibility of burns or serious injury. |
| | ⊘ Do not apply it for any other purpose than its intended use. |
| | ⊘ Do not use any power supply other than a USB PD standard or DC12V power supply. |

| | |
|----------------|---|
| Warning | Denotes the possibility of burns, damage to the equipment, or damage to the property. |
| | ⊘ Do not fold or roll the heater into a small ball or put it in your pocket while it is turned on the power. |
| | ⊘ Do not use this product together with other heating appliances or heaters. Also, keep this product away from fire. |
| | ⊘ Do not leave the heater powered for long hours without attaching it to the equipment. It may cause abnormal heat emissions. |
| | ⊘ If the heater is wet, dry it completely, and do not use it while it is wet. |
| | ⊘ If the heater fails to warm up or shows any irregularities, such as excessive heat emissions, turn off the power and stop using it. Then consult your local Vixen dealer. |
| | ⊘ Do not disassemble or modify the product. |

4

Caution

To ensure long-term use of the product, please observe the following precautions. If the product is misused or managed poorly, it may cause malfunctions, deterioration, etc.

- ⊘ Do not bend the product forcibly.
- ⊘ Do not use the heater with the power supply hanging down. (To reduce the load on power supply cords)
- ⊘ Do not use it when wet.
- ⊘ Do not pull it forcibly.

Handling and Storage

- If the heater gets wet, wipe it lightly with a tightly wrung cloth. When washing with water, avoid getting the power plug wet. After cleaning, be sure to dry it thoroughly before storing it.
- Do not use and store the product near a heater or other heat source.
- Unplugging the power supply cord when the product is not in use.
- When storing the product, curl it gently into a roll instead of folding it.
- Keep the product in a dry place.
- If the product does become wet, dry it off completely before putting it back in storage.

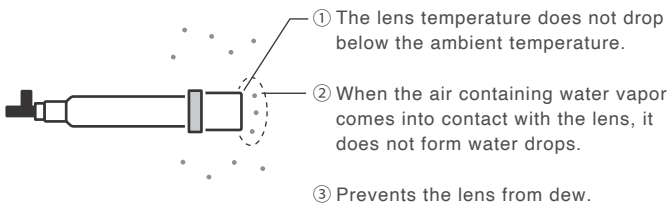
5

Principles for preventing condensation

When the temperature of an object is equivalent to or slightly higher than the ambient temperature, the temperature surrounding that object will not decrease, even if water vapor in the air comes into contact with it. So, the water vapor will not appear as dew condensation.

The lens heater 380-12V effectively prevents dew condensation by keeping the temperature of the telescope objective lens or other lens elements so that it does not fall below the outside air temperature.

If you use a lens heater

- 
- ① The lens temperature does not drop below the ambient temperature.
 - ② When the air containing water vapor comes into contact with the lens, it does not form water drops.
 - ③ Prevents the lens from dew.

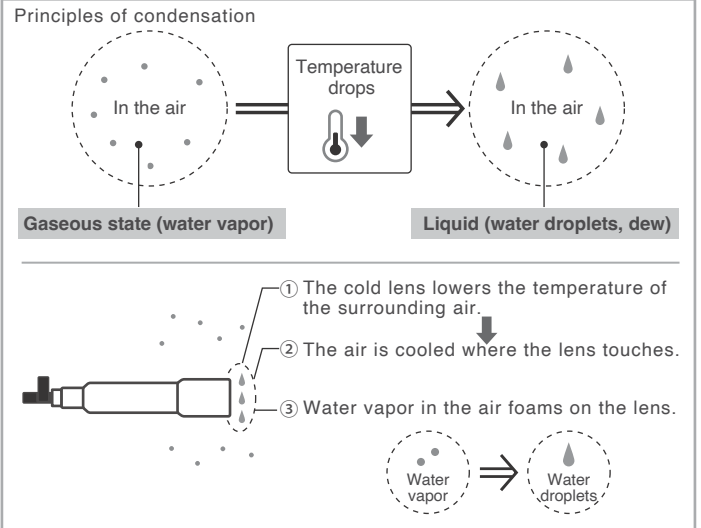
7

Important (Must read): Principle for preventing condensation (fogging) on lenses

The lens heater 380-12V is a device that prevents condensation (fogging) on telescope objective lenses, which is likely to occur in cold or humid environments. If you do not use it appropriately, you may not get full of the effect. Please understand how condensation occurs and how it can be prevented before using this product.

Principles of condensation

There is invisible water vapor in the air, and when the temperature drops, it becomes liquid (mist or water droplets) as a property. When an object is cooler than the ambient air temperature (e.g. a telescope objective lens), and it comes into contact with air that contains water vapor, the temperature of the surrounding water vapor decreases. Because of this, the water vapor changes into liquid to form on the object.



6

Important (Must read): Effective dew prevention through proper understanding

The lens heater 380-12V has a balanced design that appropriately limits electricity consumption so that you can use it securely for long hours to prevent condensation on the lens surface. Due to its nature, it does not emit heat enough to warm objects, and depending on the environment in use, you may not be able to feel the heat if you touch it.

It is hard to sufficiently warm up a telescope (objective lens) that has cooled down to a temperature lower than the ambient temperature. Please attach it to the telescope in advance, before beginning shooting, before it is cooled down, and turn on the power. Then, wait until sufficient time has passed before starting shooting.



We recommend attaching the objective lens cap until you begin to shoot. This is a key to preventing condensation.



8

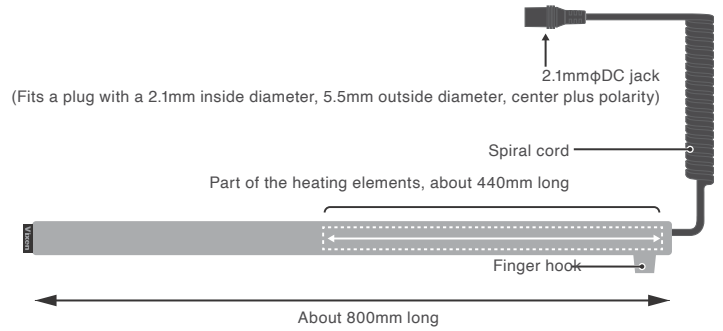
2 Most dew condensation occurs on the outer surface of the objective lens, which is in direct contact with the outside air. Preventing condensation is the most effective when you attach it slightly closer to the objective lens shield so that it covers the circumference of the objective lens. If attached anywhere else, it will not be sufficiently effective for warming.



9

Lens Heater 380-12V Components

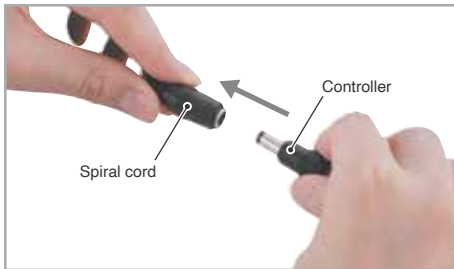
- The construction of the lens heater 380-12V is shown in the figure.
- Be sure to attach the lens heater band to let the heating elements contact the lens unit nearby.
- The part of the heating elements is shorter than the entire lens heater band. The lens heater may
- not work effectively if the heating elements are not covered properly.



10

Installing the Lens Heater 380-12V

1 Attach the plug cord from the controller to the jack of the spiral cord. Then, attach a trigger cable PD 12V to the jack on the other end of the cord from the controller.



2 The lens heater band has a non-slip surface near the power cord way out. As shown in the figure, start wrapping the lens heater band around the objective lens with the non-slip part facing up.



11

3 By holding down the finger hook part with your thumb and wrapping it with moderate force, the lens heater band stays securely attached and is hard to slip off. The finger hook can be secured by folding it over the heater band.



12

4 Connect the USB PD power supply (a mobile battery) and the installation is complete.



13

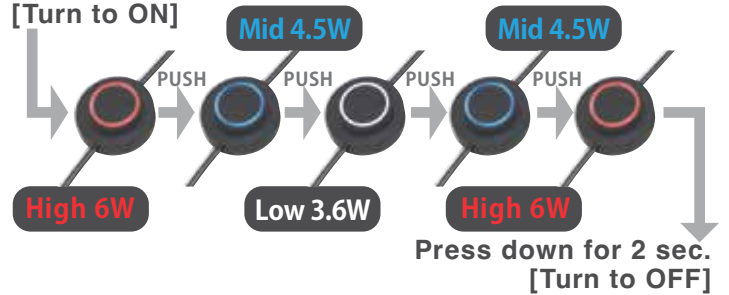
Using the Controller

Pressing the controller button for about 2 seconds will turn the power on or off at any stage. When the power is turned on, the indicator will light up red and the lens heater will begin operating at maximum power consumption. Power consumption changes in cycles each time the button is pushed during operation.



Three-stage power consumption and a change in the color of the indicator

Press down for 2 sec. [Turn to ON]



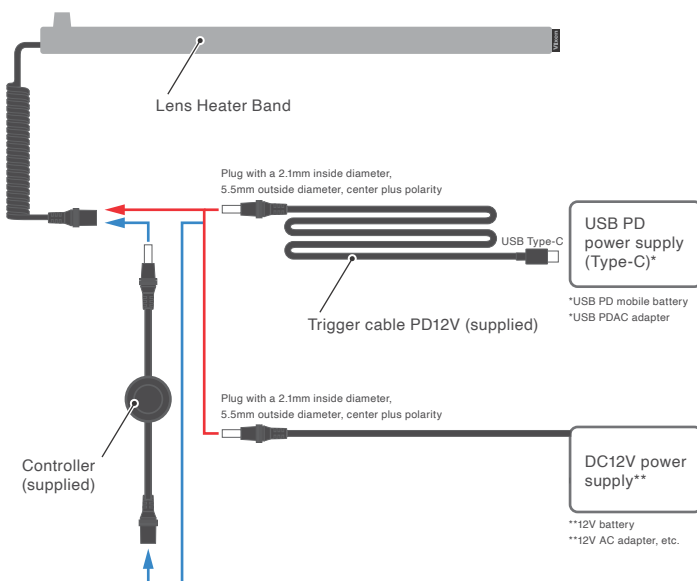
*If you do not want to light the indicator, connect the power cord directly to the lens heater without using the controller. If this is the case, it will always be operated at maximum power consumption (6W).

14

About Power Supply

This product is compatible with a DC 12V output (fits a plug with a 2.1mm inside diameter, 5.5mm outside diameter, center plus polarity) or USB PD (power delivery) power supply (AC adapter, USB PD mobile battery, etc.).

Although non-PD compatible products can be powered via USB, they will not obtain the necessary power and will not function properly.



15

Specifications:

| | |
|------------------------|--|
| Heater type | Carbon nanotube heater (Heating elements: 20mm x 440mm) |
| Temp. characteristics | 35 degrees Celsius above the outside air temperature (Heating elements at High power) *Temperature characteristics change due to heat transfer to attaching equipment while in use. |
| Power supply | USB PD power supply*1, DC 12V power supply (with a 2.1mm DC plug) |
| Power supply cord | 2.1mm dia. DC plug (inside 2.1mm, outside 5.5mm) – USB Type-C, cord 1,000mm long (+ spiral cord 200mm to 500mm), |
| Controller | 3-stage controller (OFF / Hi: 100% / Mid: 75% / Low: 60%), 300mm in length |
| Operating duration | About 6.1 hours at High power (100%), 8.2 hours at Mid. (70%), and 10.3 hours at Low(60%), Fully recharged at 20 degrees C ambient temperature (Depending on the outside temperature, usage environment, and battery condition and characteristics.) |
| Attachable to | A cylindrical shape between 45mm and 100mm in diameter, and 30mm and over in length |
| Accessory | Trigger cable PD12V, 3-stage controller |
| Heater band dimensions | 30mm x 800mm |
| Weight | 95g (Heater band: 46g, Controller: 24g, Cable: 25g) |

*1 AC adapter PD12V-3A (sold separately), USB-PD mobile battery (aftermarket products), etc.
*2 Celestron Power Tank Lithium, Celestron Power Tank Lithium Pro (sold separately), etc.

16