STELLINA ST80

Instruction Manual v1.4 EN 2022-09

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I. Package contents

The original packaging contains the following elements:
- 1 Stellina telescope
- 1 short tripod
- 1 external battery 10 000mAh
- 1 USB-C male / USB-C male cable

We recommend that you keep the packaging pack (both boxes) of your telescope so that you can use it to store the telescope when not in use or to send it back in case of a product return.

II. Product presentation

Stellina is a new generation telescope: compact, intuitive, smart and connected. With its multiple features, it allows you to discover and share with your family and friends the marvels of the night sky.

Due to its compact dimensions and optimized weight, the telescope is easy to carry in a hiking or cabin bag. Its exceptional ease of use offers the user an unforgettable viewing experience whatever the conditions.

Once installed on its levelled tripod, Stellina unfolds and automatically geolocalizes itself. It can be powered by an external battery (supplied) or an external power adapter (not supplied).

As soon as you have connected to the telescope, you can browse the mobile application on your smartphone or tablet and choose an object among the catalogue. Stellina is remotely controlled thanks to our Singularity application and in a few minutes, the telescope is ready to photograph your chosen deep sky object.

Thanks to its built-in computer, Stellina pushes the limits of embedded intelligence by automatically managing star alignment, pointing and tracking of stars, image processing and application updates. The telescope also uses live stacking technology to provide images of optimal quality.

With an Internet connection on your mobile device you will have the opportunity to instantly share your photos on social networks and interact with the community of Stellina users around the world to improve your skills.

III. Warnings

Before use, please read these operating instructions carefully and observe all the precautions and warnings.

Keep the documentation in a place that is easy to access and ensure that all users read it.
If you give or lend the device to another person, be sure to send them the instruction manual.

The content of this document is subject to change. For the latest instructions on using this product, please refer to the manual available online at https://vaonis.com/documents
If you have any questions about your product, please go to our website https://www.vaonis.com or send an e-mail to support@vaonis.com

- Stellina should never be pointed at the sun without an adequate filter placed on the lens.

- When using an external power adapter, you are responsible for its proper use. You must therefore respect all the usage recommendations made by the manufacturer of the adapter. Vaonis can not be held responsible for any damage caused by a mains AC power supply.

- External batteries used for powering Stellina must comply with French and European regulations. Vaonis can not be held responsible for any damage caused by an external power supply that does not comply with the specifications detailed in Section VIII. Technical characteristics.

- This instrument is composed of fragile optical, mechanical and electronic elements. Keep the instrument as safe as possible from shock and vibration to improve the lifespan of your Stellina.

- Do not open the device. Do not attempt to disassemble, modify or repair the unit as this may void the warranty. Contact support by email at support@vaonis.com

- Use only the accessories supplied by Vaonis and respect the conditions of use recommended by Vaonis.

- Unplug the device during lightning storms or when unused for long periods of time.

- Only use the product at temperatures between 0°C and 40°C.

- Store the product in a clean and dry place.

- Do not immerse the product in water.

- Stellina is not a toy.

- The product is not intended for use by children under 14 years of age.

- The device can be used by children aged 14 or older and by persons with reduced physical, sensory or mental capacity or lack of experience or knowledge, if they are properly supervised or if instructions for the safe use of the device have been given to them and the risks involved have been fully understood.

- Children must not play with the device.

- Cleaning and maintenance by the user should not be performed by unattended children.

- Do not use chemical solvents (e.g. alcohol, solvent, thinner) or other flammable cleaning fluids to clean the product.

IV. Installation

<u>**Positioning the tripod**</u>

1. Look for the flattest and hardest ground possible. Avoid stony or loose soil to ensure maximum stability.

2. Unfold the tripod legs and lock them in the desired position with the adjustable wedge system. To ensure the best stability, we recommend that the tripod legs be unfolded to their second notch.

3. Level the tripod by using the bubble level and adjustable legs. To do this, unscrew the rubber knobs, move in or out a leg at a time and then tighten each knob to fix the leg in position.

4. To make sure the tripod is stable, apply vertical pressure to the top of the tripod.
If it does not move, you can go to the next step. If not, move the tripod and try again on more stable ground.

5. Once securely in place, make sure that the locking lever on the mounting plate is loosened to ensure easy assembly.

<u>**Installing Stellina**</u>

1. Lift Stellina by its black sides, with the telescope's supporting base facing downwards.

2. Check that the tripod mounting plate is securely attached to the Stellina's base.

3. Hold the telescope upright and place it on the tripod, making sure that the Stellina mounting is centered in relation to the tripod head. You must hear a "click" corresponding to the safety pin engaging which ensures the correct attachment of Stellina.

4. For the instrument to be stable, you need to tighten the locking lever on the mounting plate. If any play persists, tighten this lever again using the notches on the knob for leverage.

<u>**Installation of the power supply**</u>

Stellina requires a power source delivering at least 5.1 +/- 0.1V and at least 2.4A in direct current ($\overline{\cdots}$) on a USB Type-C connector.

For that, two solutions exist: - an external power adapter
                                                  - an external battery

<u>Mains AC external power adapter (not supplied):</u>

1. Plug the external power adapter into the AC outlet and the USB Type-C plug into the dedicated USB port behind the battery compartment cover on the side of Stellina.

2. When plugged in, the button on the side of the instrument turns blue and flashes to indicate that the power supply is connected and functional.

3. Then close the compartment cover and pass the cable through the dedicated hole to ensure the protection of the connectors.

⚠ **If Stellina is powered by an external power adapter, the AC socket outlet must be installed near the equipment and must be easily accessible.**

⚠ **Provide sufficient cable length to allow a 360° rotation of Stellina. A cable that is too tight could damage the connectors and/or the motorization of the instrument.**

⚠ **Make sure that the power cable can not get caught on any external elements.**

⚠ **For increased security concerning the electrical connection, make sure that the external power adapter can not come in contact with liquids or other conductive elements.**

External battery (supplied):

Case 1: The external battery fits in the battery compartment.

1. Plug the cable into the USB socket of your external battery and then into the dedicated Type-C port. The button on the side of the instrument turns blue and flashes to indicate that the power supply is connected and functional.

2. Once the battery is connected, close the flap to keep it firmly in place.

Case 2: The external battery does not fit in the battery compartment.

1. Connect the cable to the USB socket of your external battery positioned near Stellina and then to the dedicated Type-C port.
The button on the side of the instrument turns blue and flashes to indicate that the power supply is connected and functional.

2. Once the battery is connected, close the compartment cover and pass the cable through the dedicated hole to ensure the protection of the connectors.

⚠ **If Stellina is powered by an external battery, it must comply with the IEC 62133 standard.**

⚠ **Provide sufficient cable length to allow a 360° rotation of Stellina. A cable that is too tight could damage the connectors and/or the motorization of the instrument.**

⚠ **Make sure that the power cable can not get caught on any external elements.**

⚠️ **For increased security concerning the electrical connection, make sure that the external battery can not come in contact with liquids or other conductive elements.**

Note: If the button does not light up, check the connection.
To do this, unplug and replug the power cable.
  ⇨ If the button on the side of the instrument turns blue and flashes, try starting the instrument again.
  ⇨ If nothing happens, the power supply is defective.

V. Operation

Getting started

To start the instrument, press the Start button located on the side of the instrument for 1 second. The button that is initially blinking will then start to rotate (search for a connection with your device in progress).

The light becomes static when Stellina is connected to your device.

Connecting to Stellina

Once switched on, Stellina creates its own Wi-Fi network.

To connect, first download the "Singularity" app from the App Store or Google Play.

Please refer to the FAQ on our website to know the software versions supported by the application

Activate your Wi-Fi connection and then connect to "Stellina-XXXXX".

Control from the mobile app

Start the mobile app and let yourself be guided by the tutorial.

The 5 main steps are:
- Initialization
- Star choice
- Object aiming and fine tuning
- Stargazing
- Image backup and sharing

Standby Stellina

To put the instrument on standby, it is possible :
- either from the application,
- by pressing the On/Off button on the side of the instrument for 2 seconds. The light will start to flash slowly until the Stellina arm is folded down.

Remove the battery so that the instrument is completely turned off.

VI. Accessories (optional)

AC013 Solar Filter

⚠️ **Never point Stellina at the sun without a Vaonis solar filter installed.**

⚠️ **Ensure the product is level.**

⚠️ **Only handle the filter by its edge to avoid dirtying or damaging it.**

⚠️ **An "alert" window may appear:**
   ⇨ If the instrument detects too much light, the observation will be interrupted for safety reasons. Ensure the filter is properly positioned.
   ⇨ If the instrument detects the solar filter was removed, the observation will be interrupted for safety reasons. Ensure the filter is properly positioned.

Installing the filter :

1. Turn the product on.

2. Connect to Stellina via the Singularity application.

3. In the application, go to the "Space center" page.

4. Press "Sun pointing".
   ⇨ For the first observation, read the information, then press "Close".

5. Select your observatory.

6. Press the "Start" button: the arm will open to 90°.

7. Position the solar filter.

8. If properly assembled :
   ⇨ Press the "Confirm filter installation" button.
   ⇨ Follow application instructions to properly position the instrument.
   ⇨ Press the "Confirm arm orientation" button for Stellina to start the solar observation.

9. If improperly assembled or defective :
   ⇨ The "Confirm filter installation" button will not be available.
   ⇨ "Filter not detected" will appear instead.
   ⇨ Remove the filter and reassemble. If the problem persists, contact support.

Stopping the observation :

1. Remove the solar filter by pushing one of the triangle symbols.

2. Put the cover back on and press the "Close the arm" button.

Note:
 ⇨ For optimal storage, we recommend storing the filter in its original plastic box.
 ⇨ Cleaning and maintenance must be performed with caution. Only use wipes specifically intended for optical lenses.

VII. Care and maintenance

Stellina is an optical instrument, it is therefore fragile and requires a lot of caution when being used.

The front lens should not come in contact with fingers, fabrics, glasses cleaning cloths, liquids etc.. Only specific wipes for optical lenses can be used.

The plastic shell can be cleaned with a soft cloth and soapy water.

Do not open the device under any circumstances. Do not attempt to disassemble, modify or repair the device, otherwise the warranty may be void and the instrument may malfunction. In case of any problems, please contact our assistance on +33 (0)4 84 98 00 21 or +1(646) 956-5933 or by email at support@vaonis.com.

VIII. Transport and storage

Shocks and vibrations must be limited as much as possible when transporting Stellina.

Do not transport Stellina unless it's in a dedicated bag or suitcase.

The telescope should be stored in a clean, dry place. If moisture is present on the instrument, it is recommended to let it dry before storing it in its box to prevent the risk of mold growth.

IX. Technical characteristics

General	
Weight	11.2kg (24.7 lbs)
Dimensions (H x W x D)	48.5 x 38.5 x 12.6cm
Operating temperature	0°C to 40°C
Power supply	USB type-C / 5.1V +/- 0.1V minimum and 2.4A minimum in direct current ===
Battery life	Approx.10 hours of use with a 20,000mAh external battery
Image processing	Integrated and adapted to target
Polar alignment	Automated
Accessories included	Tripod and its accessories
Control	Smartphone / Tablet via mobile app
Device connection	WiFi 2,4GHz Frequency band : 2400 – 2483,5 MHz Modulation : 802.11 b/g/n Maximum power emitted : 6 dBm (EIRP) Software : brcmfmac version 7.45.41.46
Mobile application	Singularity compatible with iOS and Android
External devices	1 USB type-C (power), 2 USB type-A for USB storage by external accessories (not included)
Stargazing	Deep sky objects (galaxies, nebulae, star clusters), the moon, the sun (with an adapted filter), comets, asteroids
Warranty	2 years
Optics	
Objective	ED doublet refractor
Aperture	80mm (3.15 in)
Focal length	400mm (15.75 in)
Focal ratio	F 5
Focus	Integrated autofocus
Image sensor	Sony CMOS 1/1.8"
Resolution	3096 x 2080 pixels (6.4 megapixels)
File formats	JPEG, TIFF, FITS (16-bit raw images)
Field of view	1° x 0,7°
Magnification	Equivalent to 50x and up to 100x depending on the connected device's screen
Filters	Light pollution filter
Mount	
Type	Alt-azimuth
Object aiming	Automated with star field detection technology
Field de-rotator	Built-in and controlled by the onboard computer
Dew control	Integrated dew control system

X. Warranty

Vaonis warrants that the necessary precautions have been taken in the design and manufacture of this material.

Vaonis warrants that the telescope will be free from material and manufacturing defects for a period of two years from the date of delivery of the equipment.

Vaonis will repair or replace this product or a part of it when it has been determined, following a diagnosis with the Vaonis support service, that the product is defective due to a material or manufacturing defect.

The product will then be returned to Vaonis together with the proof of purchase according to the conditions agreed upon with Vaonis concerning the transport and insurance costs.

The terms of this warranty are limited to the repair or replacement of the equipment.
Vaonis assumes no liability for theft or loss, damage, consequential or incidental costs resulting directly or indirectly from the use of the equipment.

This warranty shall be null and void where the design or function of a product covered by this warranty has been changed, or where the product has been subjected to misuse, improper handling or an unauthorized repair.

Vaonis is not responsible for damage caused by improper use of the device.

Damage due to improper use, non-compliance with these operating instructions or interference by unauthorized persons is not covered by the warranty.

Failure or deterioration of the product due to normal wear and tear is not covered by this warranty.

If any warranty issues arise, or if you need assistance using your telescope, contact support at support@vaonis.com.

Note: This warranty is valid for European customers who have purchased this product from an authorized Vaonis dealer in Europe. The warranty outside Europe is only valid for customers who have purchased the product from an international distributor of Vaonis or an authorized distributor in the country in question. Please contact them for any warranty repairs.

XI. Regulatory compliance

EU declaration of conformity

Vaonis S.A.S declares that the radio equipment type Stellina is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: https://vaonis.com/documents

Federal Communications Commission (FCC) Statement

Contains FCC ID : ABCB-RPI32

This device complies with FCC 47 CFR Part 15

This equipment has been tested and found to comply with the limits for a Class B radio device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

The equipment must be installed and used with a minimum distance of 20cm between the radiation source and your body.

XII. Disposal and recycling

This symbol affixed to the product, its packaging, its instructions or other document or accessories of the product means that the product belongs to the family of electrical and electronic equipment. It indicates that throughout the European Union, this product, when it is at the end of its life, should not be thrown away with household products.

To avoid potential damage to the environment and human health from uncontrolled waste disposal, recycle the product responsibly to promote the sustainable reuse of material resources.

The European regulations ask you to proceed with its selective collection:
- in distribution points in case of purchase of an equivalent product,
- in collection points made available to you locally (waste collection, selective collection, etc.)

In this way you are participating in the reuse and recovery of Waste Electrical and Electronic Equipment (WEEE).