

CoCoon Instruction

1. Precautions

- (1) Keep the product out of reach of children to ensure safety.
- (2) Handle desiccants carefully to prevent the non-woven fabric from tearing and causing leaks.
- (3) Desiccants are not for consumption. Wash hands immediately after handling.
- (4) This device operates on three AAA alkaline batteries or can be powered via a 5V USB port using a Type-C cable. When utilizing USB power, please ensure the battery compartment is disconnected or the batteries are removed.
- (5) Replace or remove batteries promptly when depleted or damaged to prevent unnecessary loss or damage.
- (6) Confirm that the filament is dry prior to use to guarantee optimal performance.
- (7) To maintain the efficacy of the drying process and extend the desiccant's lifespan, avoid opening the device's door during operation, as this could allow moisture to enter.
- (8) Carefully load the filament to prevent it from scattering or slipping out of the spool, which could result in print failure.
- (9) Protect the filament entry and Type-C communication port with the provided plugs when not in use to block moisture ingress, preserving the drying efficiency and desiccant longevity.
- (10) The device includes an integrated weighing module. Avoid dropping the device from any height to prevent potential damage.
- (11) The silica gel desiccant included is reusable. Follow the provided instructions for proper desiccant usage.

(12) Should the device malfunction or become inoperable, remove the batteries and contact customer support for assistance.

2. Introduction

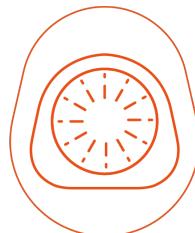


CoCoon is a dryer designed for standard 1KG filament spools, providing a drying environment of below 15% RH for filaments during the 3D printing process. It features the following capabilities:

1) Fully Enclosed Seal Design

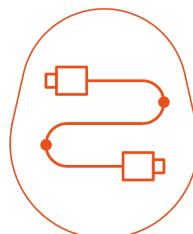
The fully enclosed seal design prevents air flow from both inside and outside, featuring an independent large space specifically for desiccants. It can evenly

store up to 400 grams of desiccant, maintaining a long-term drying environment with relative humidity below 15%, thus providing lasting protection for the lifespan of your filament.



2) USB Type-C Connection for Smart Printing

Through a Type-C USB connection, CoCoon can transmit data to your printer or computer using a designated serial protocol. This feature makes your filament monitoring system more intuitive.

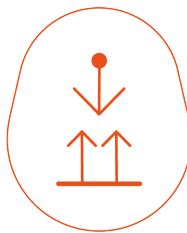


3) Real-Time Monitoring and Smart Alerts

CoCoon proactively alerts you to replace the desiccant when it becomes ineffective. Real-time monitoring of the storage chamber temperature gives users a comprehensive understanding of the filament storage environment. It is equipped with a weighing module that displays the current weight of the filament in real-time through the user interface.

4) Multiple DIY Placement Options

The dual filament port design and flexible filament feed system provide a variety of DIY placement options.



5) Low Power Consumption, Eco-friendly and Safe

With a power consumption of less than 1W, it only requires three AAA batteries for nearly a month of use under normal conditions. It can also be powered via a DC 5V source through the Type-C port. It does not generate heat during operation, making catastrophic failures unlikely. Moreover, it is more environmentally friendly compared to active heating filament dryers.



3. Specification

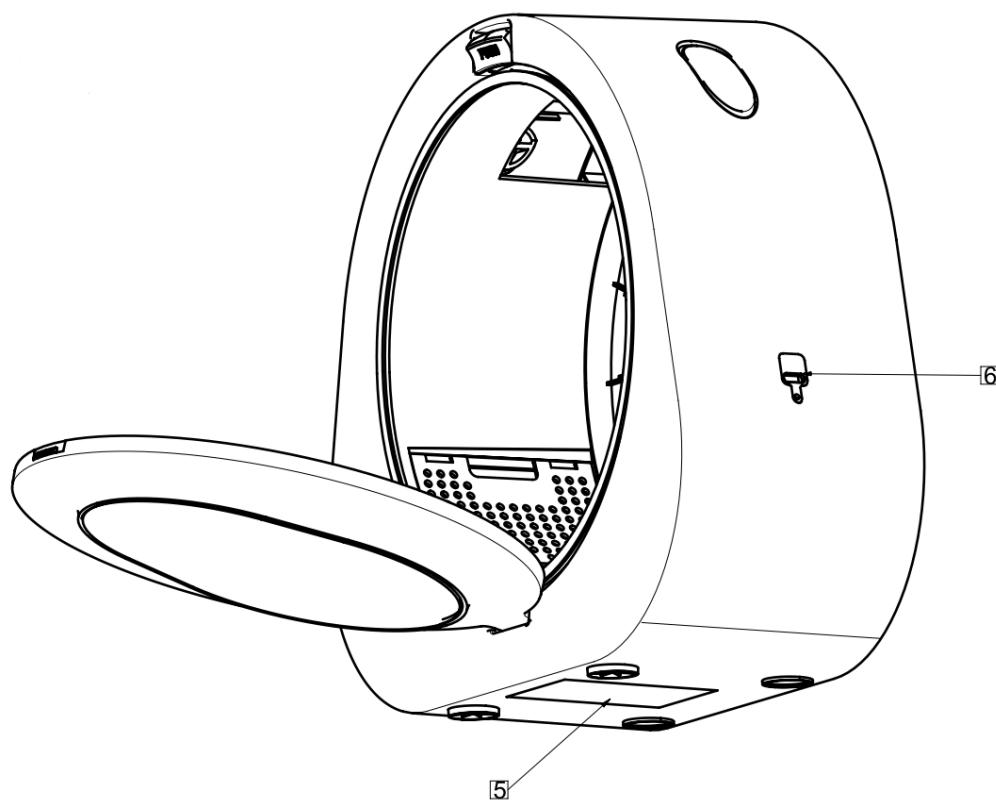
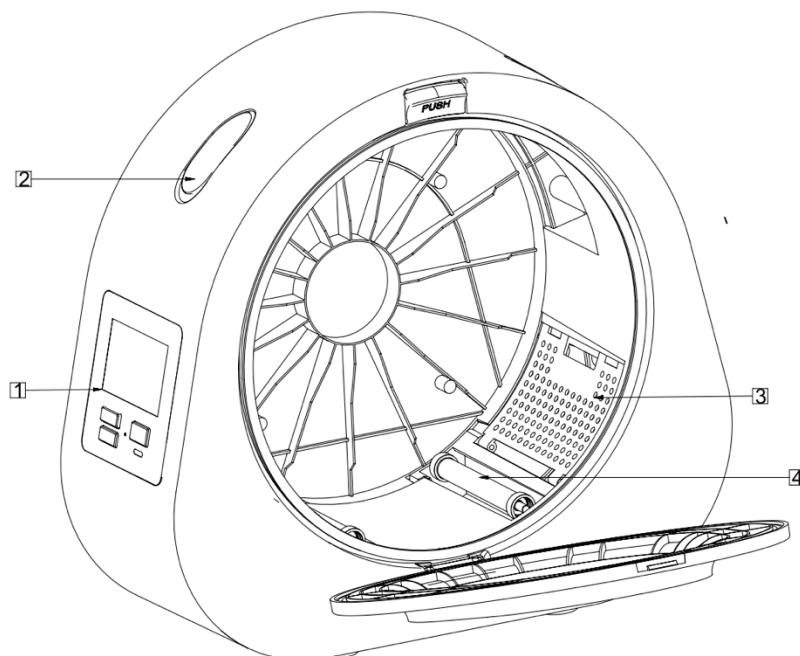
| Item | Specification |
|-----------------------------------|---|
| Dimension | 300mm (L) x 120mm (W) x 277mm (H) |
| Net Weight | 1450g |
| Product Capacity | 1KG filament spool, within dimension: Φ204mm*70mm |
| Suitable Filament Diameters | 1.75mm/2.85mm/3mm |
| Recommended Operating Temperature | 0°C~35°C |
| Recommended Operating Humidity | ≤90%RH |
| Power | AAA*3 or DC-5V |
| Standby Power | 0.001W |
| Maximum Operating Current | 0.02A |
| Recommended Desiccant Dosage | 400g |

4. Main Functions

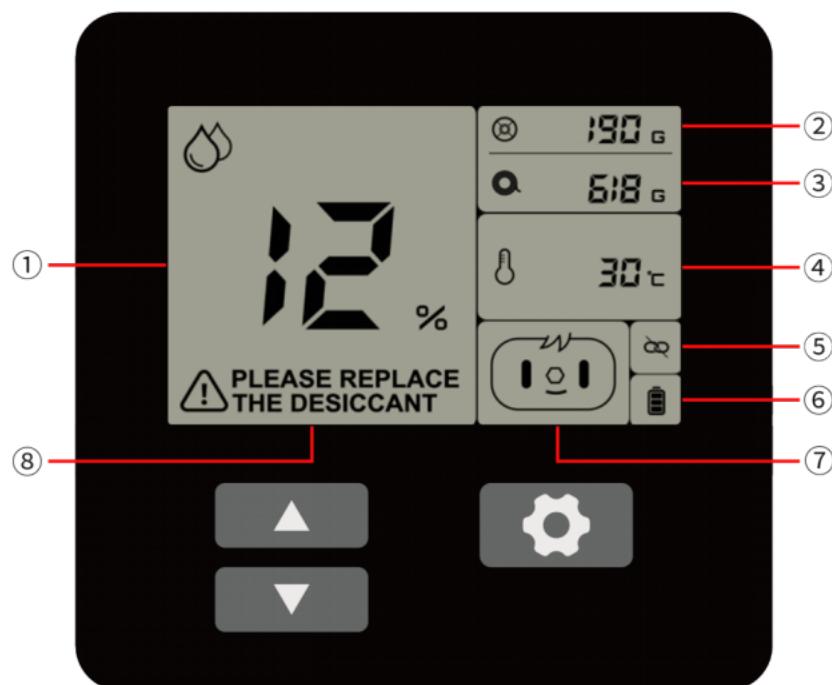
| Item | Description |
|----------------------------|---|
| Drying | Fully enclosed seal design, independent extra-large space to store up to 400grams of desiccants. The dry environment of 15%RH can be maintained for 1 month under reasonable use. |
| Weight Monitoring | Range: 0-3000g; Accuracy: ±3g |
| Empty Spool Weight Setting | Setting Range: 0-990g (in 10g increments) |
| Manual Zero Setting | Clear spool set weight and current weight, reset zero point |
| Temperature Sensor | Range: -10°C-45°C; Accuracy: ±1°C |
| Humidity Sensor | Range: 0-100%RH; Accuracy: ±3%RH |
| Display Screen | LCD display screen (Segment code formula) : 54mmx34mm |
| Type-C Port | Read the real-time detected data through the serial protocol (See web tutorial for more details). Supply power via a DC 5V input. |

5. Instruction

(1) Product Composition



| No. | Name | Function |
|-----|-------------------|---------------------------|
| ① | Screen | Real-time data display |
| ② | Filament Outlet | Filament output channel |
| ③ | Desiccant Chamber | Desiccant storage |
| ④ | Arbor | Spool weighing support |
| ⑤ | Battery Pack | Power input |
| ⑥ | Type-C Port | Power Input / Data Output |



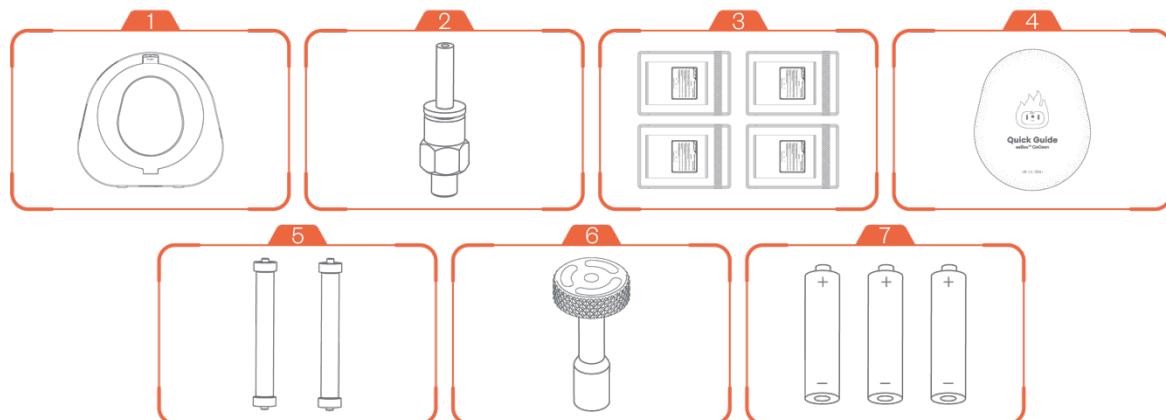
(2) UI Operating Instruction

| No. | Name | Description |
|-----|----------------------------|--|
| 1 | Real-time Humidity Display | 15% RH as the default boundary set. Better to maintain humidity within 15% RH during use. |

| | | |
|---|--------------------------------|--|
| 2 | Spool Weight | Set the weight of the spool, with a range of 0-990g in accuracy of 10g. |
| 3 | Net Weight | Real-time filament net weight |
| 4 | Temperature | Real-time temperature (in 0.1°C) |
| 5 | Type-C Port Connection Status | Display when connects; Display when unconnects |
| 6 | Battery Level | Four levels displaying in , , , . Replace the batteries when it is the fourth status, and the indicator light turns blue. |
| 7 | Dr.AE Emoji Status | Face displays in "angry" when the humidity is higher than 15% RH and fails to improve for three hours, or the battery level is ; "Smile" in the rest of the time. |
| 8 | Alerts for Replacing Desiccant | "PLEASE REPLACE THE DESICCANT" warning appears when the humidity value over 15% and lasting for more than 3 hours. The indicator light turns red in blinking. |
| 9 | Setup Key | Click the setup button to enter "Spool Weight" setting mode, the value becomes flashing. After value inputting, click the setup key to complete the setting. |

| | | |
|-----------|----------|---|
| | | Long press the setup key to reset the weight, clear the setup weight of the spool and current weight, and reset the zero point. |
| 10 | Up Key | Used to increase the value at the spool weight setting by 10g per press. |
| 11 | Down Key | Used to decrease the value at the spool weight setting by 10g per press. |

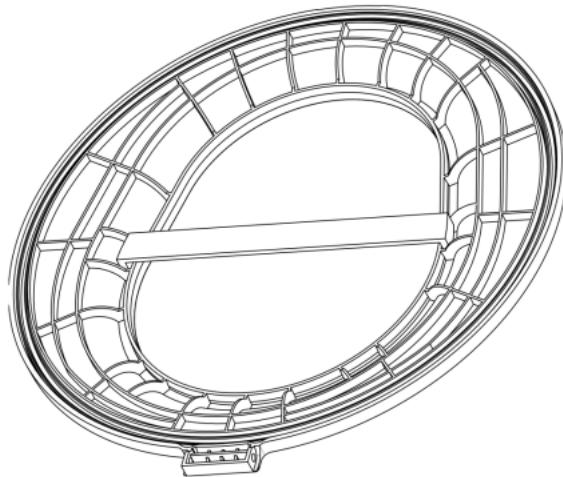
(3) Packing List



| No. | Name x Quantity | No. | Name x Quantity |
|-----|---|-----|------------------|
| 1 | CoCoon x 1 | 5 | Roller x 2 |
| 2 | Wire connector x 1 ((pneumatic connector + Teflon tube) | 6 | Socket wrench x1 |
| 3 | Silica desiccant 100g x 4 | 7 | AAA Battery x 3 |
| 4 | User Guide x 1 | | |

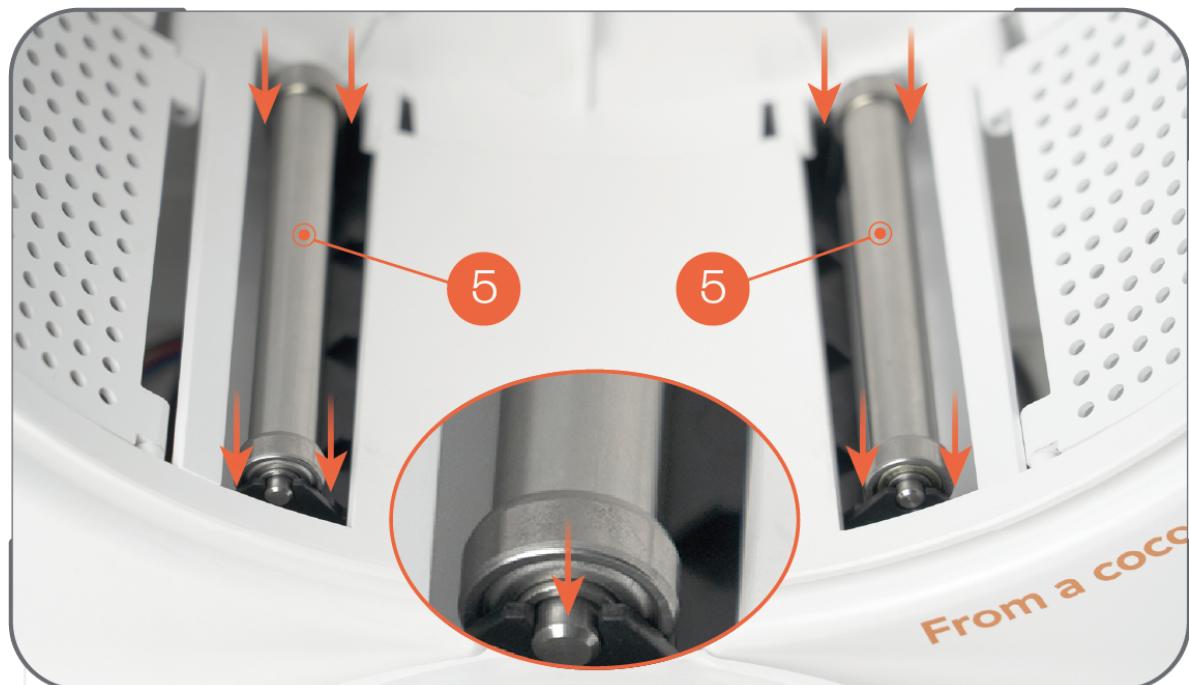
(2) Operating Procedure

Note: After unpacking, please open the front cover first to remove the bumper and accessory kit and follow the quick installation guide.



1. Roller Installing

Install the two rollers onto the weighing bracket.



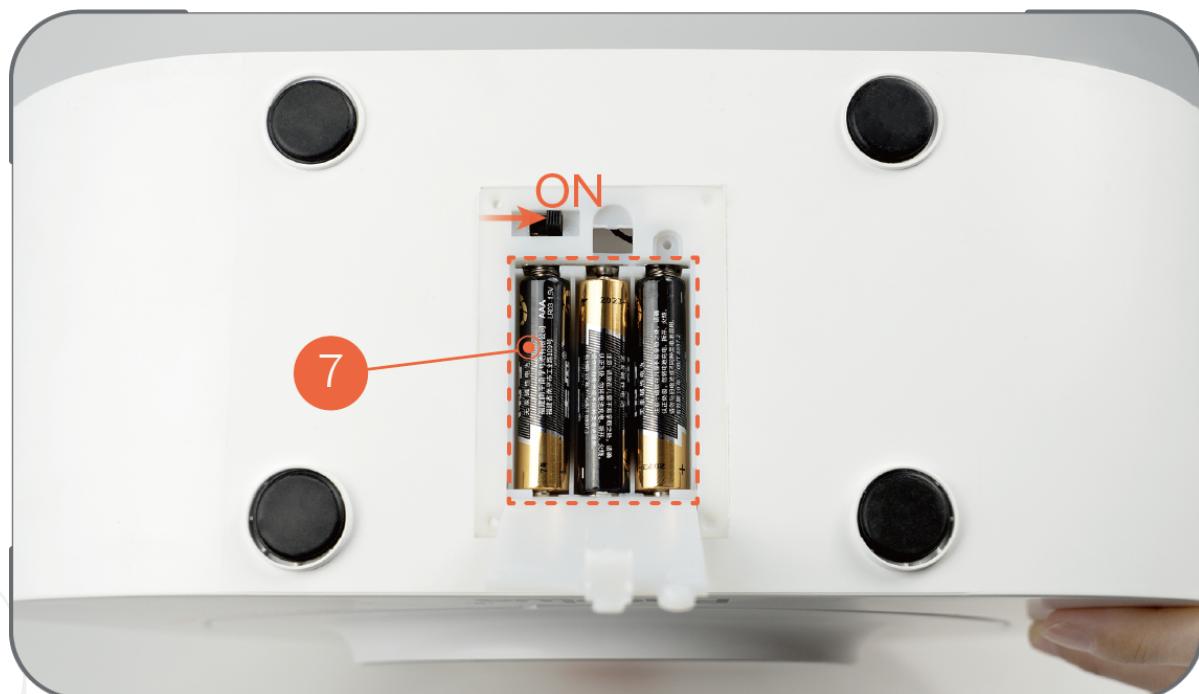
2. Filament Connector Installing

According to the placement position, select the matching outlet to install the wire connector.



3. Battery Placing

Place the three batteries and turn on the switch.



4. Silica Desiccant Placing

Take out the silica desiccant out from the aluminum foil bag and place two sachets in each storage compartments.



5. Filament Placing

Thread filament through the joint and pull gently, then input the filament on the rollers to close the front door.



6. Setting the Spool Weight

Due to the different manufacturers of the spools, the weight varies. In order to accurately weigh the filament, please obtain the weight of the spool and set it before use.

Setting method: Press set button. When the spool weight value flashes, use the up/down buttons to adjust. Each press changes the weight by 10g. Set it to the nearest whole number to the spool's weight and press the set button to confirm; the value will stop flashing. The setting range is 0-990g, with a precision of 10g.

7. Resetting the Weight

Initial weight may change due to the impact of different gravitational forces or physical impacts. Long press the set button to reset the weight, clearing the set tray weight and current weight, and re-establish the zero value.

6. Usage Tips

(1) Type-C Port Usage

Type-C has the following two functions:

- ① Power Supply through Type-C Port

The CoCoon accepts a DC-5V input. Do not exceed this voltage to avoid damage or safety hazards.

Disconnect or remove batteries when powering via Type-C.

- ② Data Communication through Type-C Port

Use the appropriate serial protocol to read data detected by CoCoon through the Type-C port.

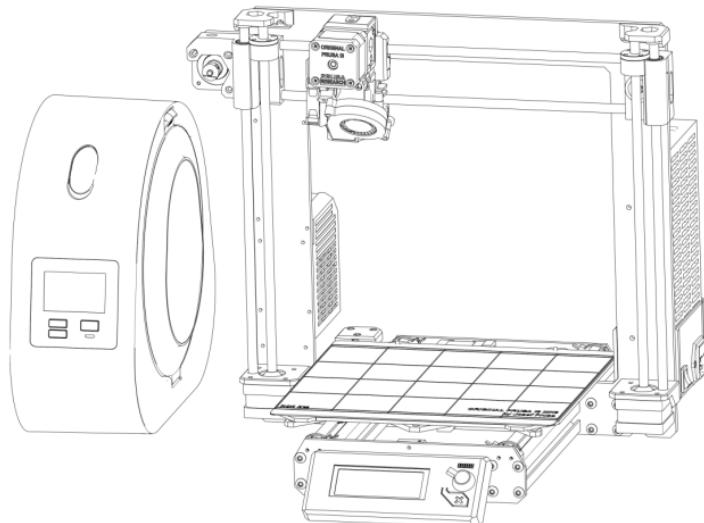
Serial Port Functions

When connected, the system sends current data at a set frequency of 0.2Hz, including TrayWeight, RealWeight, Temperature, and Humidity information.

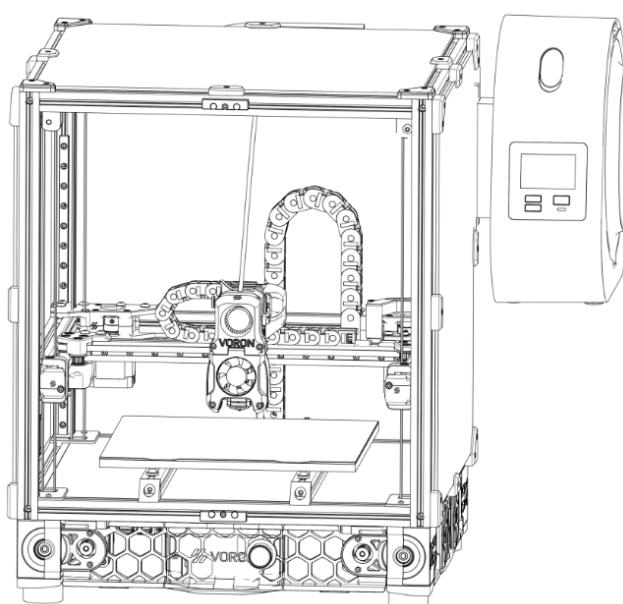
| | |
|-------------|------------------------------|
| Baud Rate | 19200 |
| TrayWeight | Spool Setting Weight |
| RealWeight | Filament Real weight |
| Temperature | Temperature Value (in 0.1°C) |
| Humidity | Humidity Value |

(2) Multiple Placement Options

- ① Flat placement



- ② Hanging



(3) Desiccant Regeneration

The provided silica gel desiccant is regenerable. When it can no longer maintain effective drying, regenerate by heating in an oven at 120°C with blast air for 6-12 hours. Use immediately or store sealed after cooling.

(4) Obtaining Spool Weight

Use CoCoon's weighing feature as a scale by setting the spool weight to zero, then placing the empty spool on the roller. The displayed filament weight is the actual spool weight, which can be set for future use with the same kind of spool.

7. Common Issues

Screen Freeze/Unresponsive Buttons: Try restarting the power source.

Irregular Weighing Data: Empty the storage chamber and restart the power. If restarting via the battery switch, ensure the device is level during the process.

For further assistance, contact support@phaetus.com.

8. Maintenance

(1) Battery Replacement

Replace batteries promptly when the indicator light is blue, using AAA alkaline batteries.

(2) Desiccant Replacement

If humidity exceeds 15% for more than 3 hours, the display will show "PLEASE REPLACE THE DESICCANT" with a flashing red indicator light, signaling it's time to replace the desiccant.