SUNLU FC01

SUNLU Filament Connector FC01 User Manual

Model: FC01

Brand: SUNLU

1. Introduction

The SUNLU Filament Connector FC01 is designed to fuse remaining 3D printer filament, maximizing material usage and reducing waste. It allows for the creation of multi-color prints by joining filaments of the same material but different colors. Featuring fast and precise heating, a wide range of compatibility, and user-friendly operation, this device enhances the 3D printing experience.

2. Safety Information

- **Caution Hot Surface:** The heating element reaches high temperatures (up to 240°C). Avoid direct contact with the heating element during and immediately after operation to prevent burns.
- **Power Supply:** Use a 5V 2A power adapter (not included) to ensure correct operation. Using an incorrect power adapter may damage the device or pose a safety risk.
- **Ventilation:** Ensure adequate ventilation when fusing filaments, especially materials like ABS, which may release fumes.
- **Children and Pets:** Keep the device out of reach of children and pets.

3. Package Contents

Verify that all items are present in your package:

- Filament Connector device
- USB Cable
- PTFE Sleeves (200 pieces) for fusing filament ends
- Usage Instructions Manual

Figure 3.1: SUNLU Filament Connector FC01 Package Contents. Includes the main unit, USB cable, PTFE sleeves, and user manual.

4. Specifications

Feature	Detail
Brand	SUNLU
Model Number	FC01

Filament Diameter	1.75 mm
Compatible Materials	PLA, PETG, ABS, PA, Nylon, PC
Maximum Heating Temperature	240°C
Typical Heating Time (to 185°C)	Approx. 3 minutes
Power Input Recommendation	5V 2A (Adapter not included)
Dimensions	3.94 x 3.15 x 1.18 inches
Item Weight	4.9 ounces

5. Setup

1. **Connect Power:** Connect the provided USB cable to the Filament Connector. Plug the other end into a 5V 2A power adapter (not included) and then into a power outlet.
2. **Power On:** Press the power button on the device. The display screen will illuminate.
3. **Select Filament Type:** Use the setting key to cycle through filament types (PLA, PETG, ABS, PA/PC, PCL). The device will automatically set a default fusion temperature for the selected material.
4. **Adjust Temperature (Optional):** If needed, use the up/down keys to fine-tune the fusion temperature. The maximum temperature is 240°C.
5. **Wait for Heating:** Allow the device to heat up to the set temperature. The display will show the current temperature (PV) and the set temperature (SV). The device will beep once the target temperature is reached.

Figure 5.1: Basic Setup and Operation Steps.

6. Operating Instructions

Follow these steps to effectively fuse 1.75mm 3D printer filaments:

1. **Prepare Filaments:** Ensure both filament ends to be joined are of the same material. Cut both ends at an oblique angle (approximately 45 degrees) to maximize contact area.
2. **Insert PTFE Sleeve:** Slide one of the provided PTFE sleeves over one of the filament ends.

3. **Align Filaments:** Insert the other filament end into the PTFE sleeve, ensuring the cut ends meet inside the sleeve. Rotate the filaments to find the appropriate angle that minimizes the gap at the joint.
4. **Place in Heating Slot:** Once the device has reached the set temperature and beeped, open the heating cover. Carefully place the connected portion of the filament (with the PTFE sleeve) inside the heating slot.
5. **Apply Pressure During Heating:** Close the heating cover. During the heating process (typically 7-10 seconds for PLA), hold both sides of the filament and gently push inwards for 1-2 seconds to ensure proper fusion. The device will beep again when the fusion time is complete.
6. **Remove and Cool:** Once the fusion time is reached, slowly remove the fused filament from the heating slot. Turn off the power to prevent accidental burns. Allow the fused filament to cool for 5-10 seconds, optionally using a fan to speed up cooling.
7. **Trim Excess Sleeve:** Once cooled, place the filament ends into the cutting slot on the device. Press the top cover down firmly. The blade under the cutting slot will cut the PTFE sleeve. Remove the filament and the cut sleeve.

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Video 6.1: Detailed step-by-step instructions for using the SUNLU Filament Connector FC01 to fuse 3D printer filaments. This video demonstrates power connection, temperature setting, filament preparation, fusion process, cooling, and trimming of the PTFE sleeve.

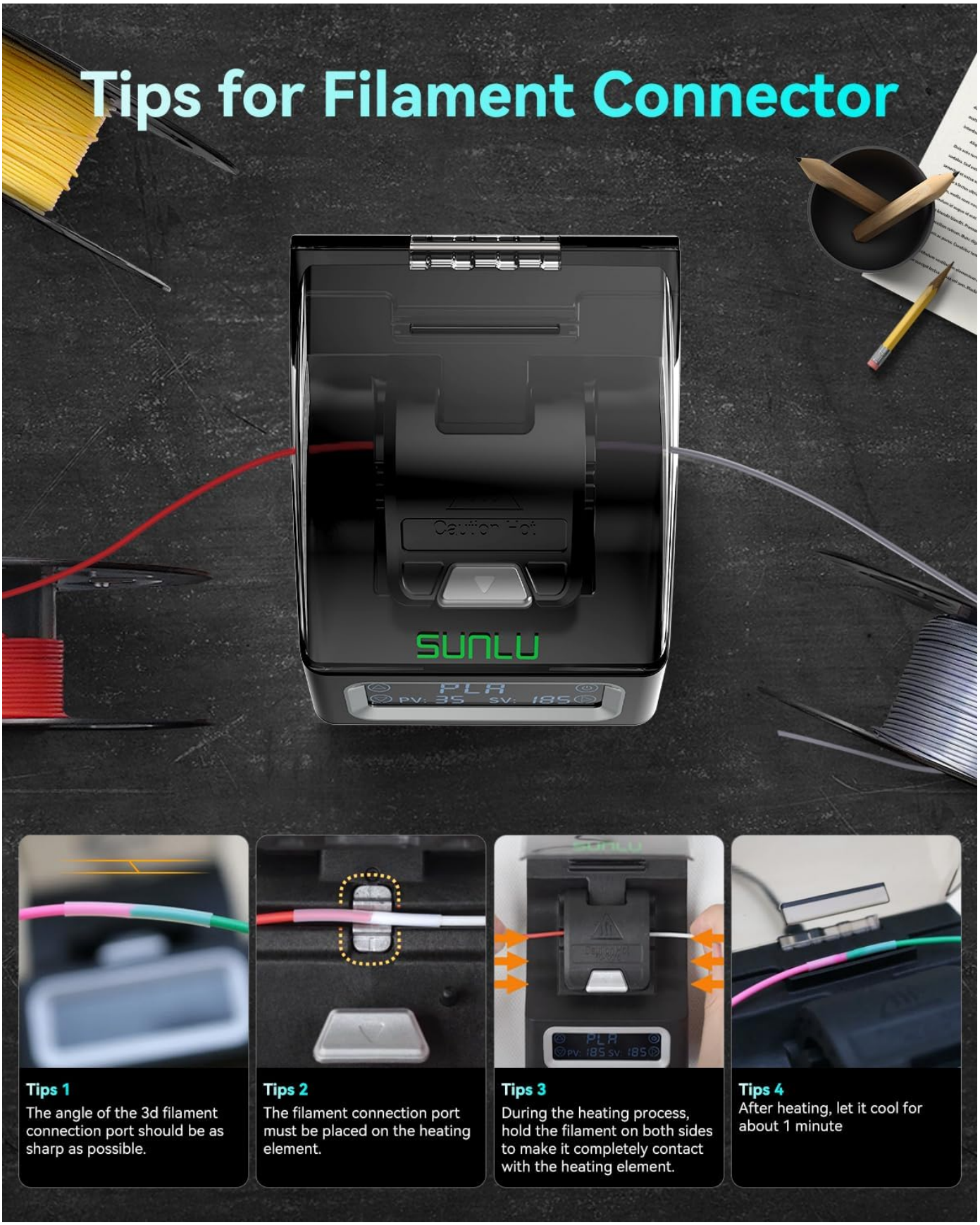

Figure 6.2: Tips for optimal filament fusion, including proper cutting, placement, pressure application, and cooling.

7. Filament Compatibility and Temperature Settings

The Filament Connector FC01 is compatible with various 1.75mm 3D printing filaments. Refer to the table below for default melting temperatures and recommended fusion times:

Filament Type	Default Melting Temp	Heating-up Time	Recommended Melting Time

PCL Series	85°C	1 min.	5s to 6s
PLA Series	185°C	3 min.	7s to 8s
ABS Series	220°C	3 to 4 min.	7s to 8s
PETG Series	210°C	3 to 4 min.	7s to 8s
PA/PC Series	230°C	5 min.	9s to 10s

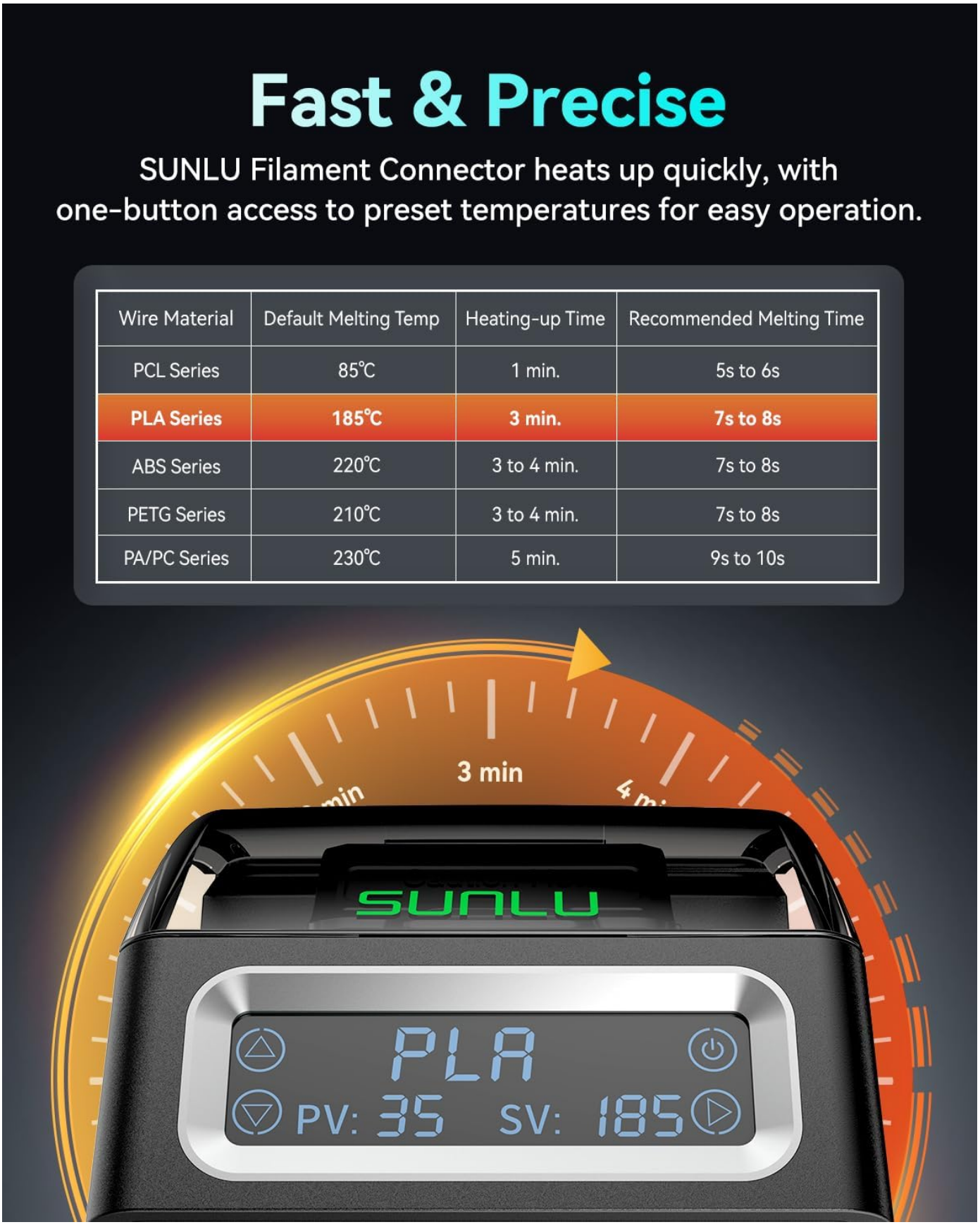

Figure 7.1: Filament Compatibility and Recommended Settings.

8. Maintenance

To ensure the longevity and optimal performance of your Filament Connector FC01:

- **Cleaning:** After use, ensure the heating element and surrounding areas are free from any filament residue. Use a soft, dry cloth to clean the device. Do not use liquids or abrasive cleaners.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and moisture.

- **PTFE Sleeves:** Replace PTFE sleeves as needed. The package includes 200 sleeves for extended use.

9. Troubleshooting

- **Filament Not Fusing Properly:**
  - Ensure the filament ends are cut at a sharp oblique angle for maximum contact.
  - Verify that the correct temperature for the filament type is selected.
  - Apply gentle, consistent pressure during the fusion process.
  - Ensure the filament is properly centered in the heating slot.
- **Device Not Heating:**
  - Check if the USB cable is securely connected.
  - Ensure the power adapter is 5V 2A and properly plugged into a working outlet.
  - Press the power button to turn on the device.
- **Filament Snapping After Fusion:**
  - Allow sufficient cooling time after fusion before handling or applying tension.
  - Avoid excessive pressure during the fusion process, which can deform the filament.

10. Warranty and Support

For warranty information and technical support, please refer to the official SUNLU website or contact their customer service directly. Keep your purchase receipt for warranty claims.