

SO²FIELITE™

USER MANUAL

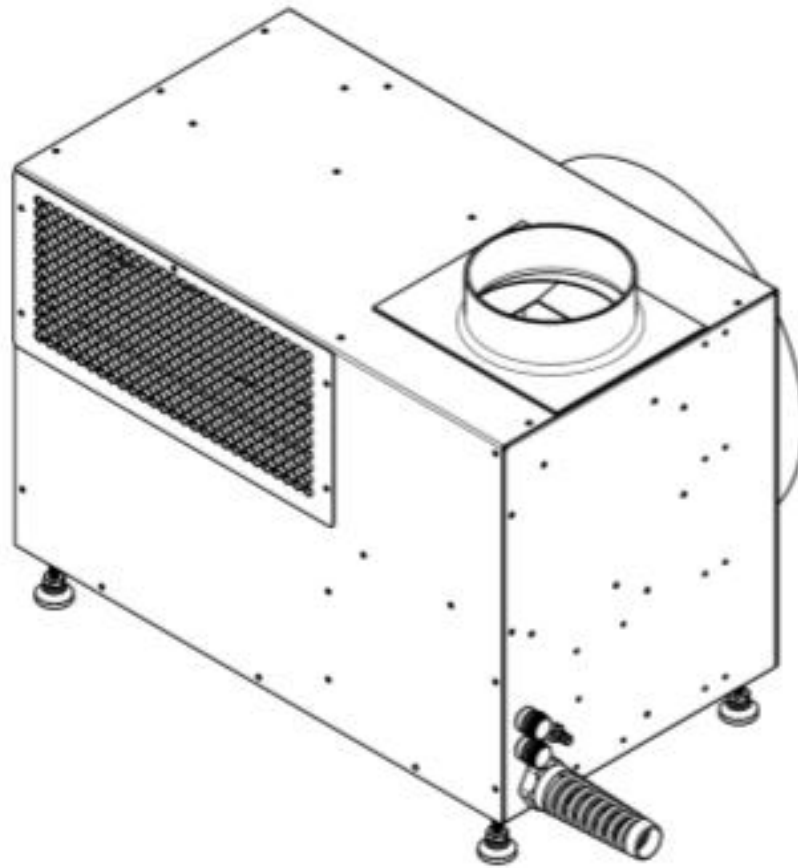


Table of Contents

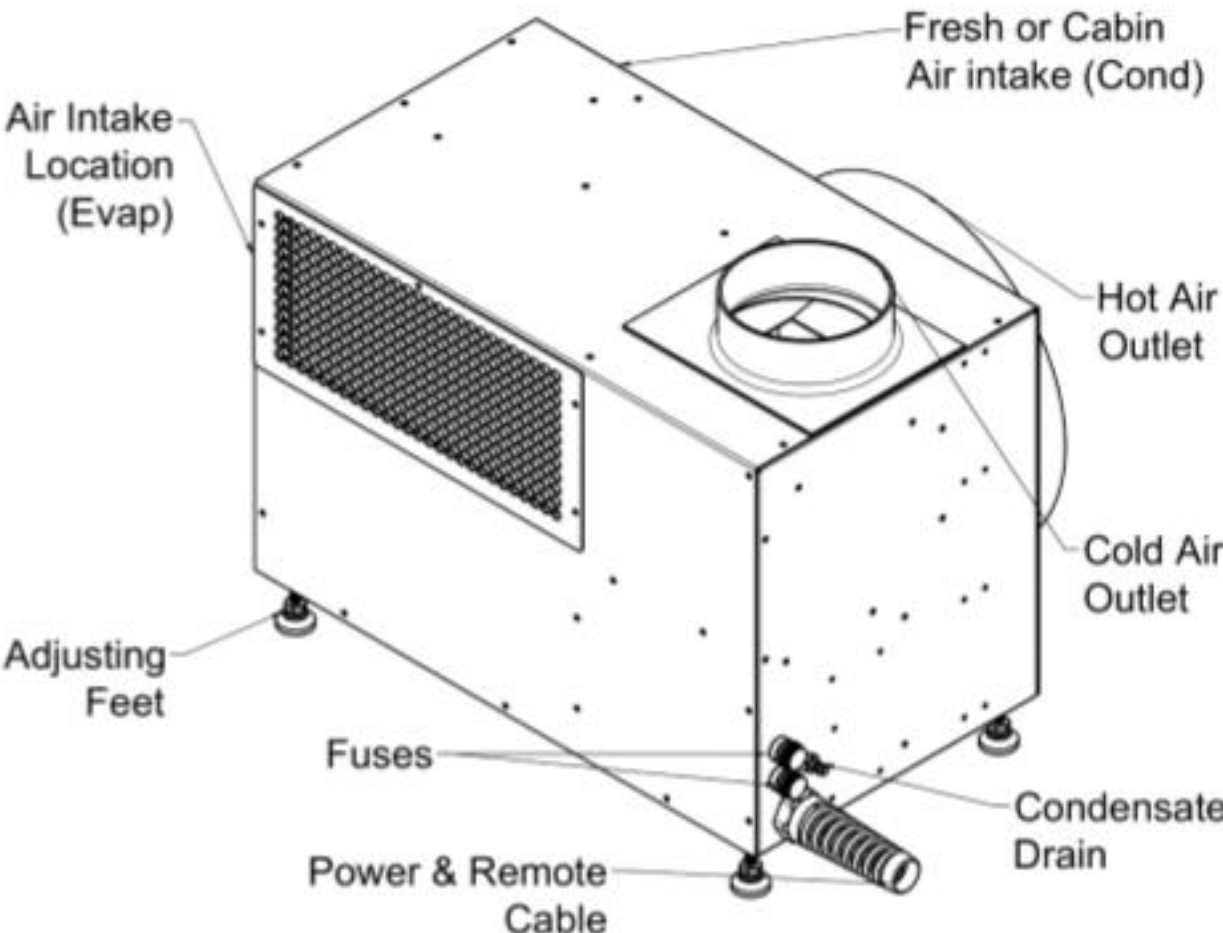
Introduction.....	3
Overview.....	4
Safety Information.....	5
System Components.....	6
Operating Instructions.....	7
Automatic Operational Sequences.....	8
Maintenance & Care.....	9
Troubleshooting.....	10 & 11
Technical Specifications.....	12 & 13
Warranty Information.....	14
Contact Information.....	15

Introduction

The SofieLite™ is an electric all-in-one air conditioner for smaller aircraft. It does not have the liquid interface of the standard Sofie™. SofieLite™ is positioned just forward of the aft cabin bulkhead. Outside cooling air comes from a scoop mounted on tail, which is a non-required option, but does increase performance of air conditioning of the aircraft. The scoop may be located in the baggage door. This unit can also operate with cabin air cooling the condenser.

The SofieLite™ hot air is exhausted through the rear bulkhead. The total system is 10 pounds lighter than a standard Sofie™. SofieLite™ comes both in 12 and 24 VDC versions. The unit has a built-in condensate pump. This unit is controlled from a 9 foot extension remote control, showing the digital battery bus voltage. Ducts can be attached to the cold air outlet of the SofieLite™ to direct the cold air flow forward. The SofieLite™ can not be used on pressurized aircraft. The SofieLite™ System is **not FAA certified**. It is intended as a non-permanent installation that is to be removed from the aircraft for annual inspections and is subsequently replaced in the aircraft when needed.

Overview



Safety Information

- **Electrical Safety:**
 - Ensure that the unit is plugged into the proper MS Plug that meets the voltage and current requirements specified in the user manual.
 - If the power cord or plug is damaged, discontinue use immediately and contact a qualified technician for repairs.
 - Use only the provided power cord and accessories.
 - Unplug the unit before cleaning or performing maintenance.
 - Do not run SofieLite™ during engine start or shutdown.
 - In the event of a Alternator/Generator failure shut the unit off and remove power via breaker or remote solenoid switch.
- **Installation Safety:**
 - When installing the unit, ensure that it is placed on a stable and level surface to prevent tipping and is properly secured.
 - Use caution when handling the unit and its components, as they may be heavy or have sharp edges.
 - Do not block the airflow around the unit or obstruct the condenser exhaust, as this may cause overheating or damage to the unit.
 - Ensure to follow the installation manual for proper install.
- **Gas Safety (R-134a):**
 - R-134a is a refrigerant gas used in the SofieLite™ system. While it is generally safe when handled properly, it can pose risks if mishandled.
 - If you suspect a refrigerant leak, immediately turn off the unit and contact a qualified technician for repairs.
 - Never attempt to repair refrigerant leaks or recharge the system yourself. Only trained professionals should handle refrigerant-related tasks.
- **Ventilation Safety:**
 - Do not block the air intake or outlet vents.

System Components

- **STANDARD COMPONENTS SUPPLIED BY PSA with SofieLite™**
 - Installation Kit**
 - Condensate Drain Feed Through P/N 55010 (Condensate Drain)
 - Amphenol Electrical P/N 55100 (Female Power Plug)
 - 3 ft. of ¼ in. ID Silicone Tubing P/N 55011 (Condensate Drain Line)
 - Tie Down Strap P/N 55020 (Securing Unit)
 - (2) Tie Down Brackets P/N 55021 (Securing Unit)
 - SofieLite™ Remote & 9 ft. cable P/N 55110
 - SofieLite™ Main Unit P/N 55000
- **OPTIONAL COMPONENTS SUPPLIED BY PSA with SofieLite™**
 - Outside Air Aircraft Scoop P/N 55200
 - Outside Air duct Inlet P/N 50205 (For Main Unit)
 - Cabin Air Screen Inlet P/N 50215 (For Main Unit)
 - Condenser Outlet Shroud P/N 55205 (For Main Unit)
 - Evap 4 ½ in. Duct Outlet P/N 50220 (For Main Unit)
 - Evap Dual 3 in. Duct Outlet P/N 50221 (For Main Unit)
 - 12v GPU Power Pack P/N 55101 (For Engine Off Operations)
 - 24v GPU Power Pack P/N 55102 (For Engine Off Operations)
 - 5 ft. Remote Extension Cord P/N 55111
 - 10 ft. Remote Extension Cord P/N 55112
 - 3 in. Pliaduct P/N 55230 (Length is Provided by Customer)
- **Additional AIRCRAFT INSTALLATION PARTS INSTALLER Direct- Aircraft Spruce Part Numbers- 877-477-7823**
 - 80 Amp Klixon Breaker- Recommended: P/N 11-08401 / Installers Discretion
 - #6 AWG MIL-W-22759/16-06-9 P/N 11-14506 (24V Unit)
 - #4 AWG MIL-W-22759/16-06-9 P/N 11-14504 (12V Unit)
 - 5" Diameter Ducting P/N 05-30520 (If using intake scoop)
 - 6" Diameter Ducting P/N 05-29824 (If Ducting Exhaust to Bulkhead)
 - 3" Diameter Ducting P/N 05-29812
 - Rivets/ Hardware
- **SofieLite™ Maintenance items**
 - SofieLite™ Evaporator Intake Filter P/N 50290

Operating Instructions

- Ensure the main power plug, wired remote, and condensate drain are connected before use.
- GND setting is recommended for low rpm during taxi, pattern flight, and approach/ landing.
- If displayed voltage is low on remote during taxi, increasing engine rpm can stabilize voltage (1000 rpm recommended)
- FAN only runs the evaporator blowers for a low power setting that keeps airflow in the cabin

Note: Amperage draw increases with high ambient temperatures

Power Settings

During ground operation and taxi, power use is limited by the electrical power available from the alternator. Under less than ideal circumstances, lower power settings achieve more cooling than a maximum power setting. When the engine is at higher rpm in flight, higher power settings can be used.

Automatic Operational Sequences

- **TURN ON-** Unit must have power for at least 5 seconds to initialize before switched on. An automated turn-on sequence maintains low power "GND" for the first 30 seconds and then proceeds to the selected rpm/power setting within two minutes. SofieLite™ will shut off if there is a low voltage or high temperature occurrence within the first 30 seconds of turn-on.
- **AUTO POWER-** This feature causes a reduction in power compared to the selected dial setting for an instance of low bus voltage (specifically at 12.0 volts or 24.0 volts), depending on the particular 12 or 24 volt model.
- **Orange LED Light-** for low voltage <12.0 / 24.0 VDC buss: - then if condition persists, reduces automatically to 1/2 power
 - or after 10 seconds, reduces to minimum power
 - ramps back up after 2 minutes
 - for low voltage at minimum power settings, shuts down with orange alarm light.
- **Yellow LED Light-** for overheating, usually during ground operation (300 psi) - shuts OFF for 30 sec, then starts on LOW for 2 minutes - ramps back up after 2 minutes - for high pressure at <70% power, shuts down with yellow light.
- **Manual shut down-** When Off is selected, the condensate pump and condenser blowers run for 25 seconds to purge the unit and then the system powers off.
- **System Reset-** To reset the system: select OFF, pull the associated breaker, wait 5 seconds, push the breaker in, wait 5 seconds, then turn the system back on.

Maintenance & Care

- Clean the evap intake air filter to maintain optimal performance annually or every 100 hours of use.
- Check the condenser intake screen at back of the unit and the scoop (if applicable) for obstructions regularly.
- Check for any obstructions in the exhaust hose and remove them if necessary.
- Wipe down the unit with a damp cloth as needed.
- Store the unit in a dry place when not in use.

Troubleshooting

Troubleshooting for resolving issues that may arise while operating the SofieLite™ Air Conditioning System. Below are some typical problems you may encounter, along with possible solutions:

- Unit Does Not Turn On:
 - Ensure that the power cord and remote are securely plugged in.
 - Inspect the power cord and remote wire for any signs of damage. If damaged, contact PSA.
 - Ensure that the breaker has not popped. If it has, push it back in and monitor the unit closely to make sure everything is functioning normal.
- Inadequate Cooling:
 - Check that the air filter is clean and not clogged with dust or debris. Clean or replace the filter if necessary.
 - Verify that the condenser exhaust hose is properly installed and not obstructed, allowing hot air to exhaust outside of the cabin.
 - Verify that the air intakes are properly installed and not obstructed, allowing air into the unit.
- Unit Shuts Off Unexpectedly:
 - (Yellow Temp LED) Check if the unit is overheating. Ensure that there is sufficient condenser airflow in & out of the unit and that the vents are not blocked.
 - (Orange Volt LED) check to see sufficient airflow in & out of the unit and ensure that you are operating in the proper particular setting at the proper engine RPM.
 - For excessively high ambient temperatures, reduce power setting to prevent automatic shutdown.
 - Inspect the power cord, remote wire, and plug for any signs of damage. Replace if necessary.
 - Reset the unit by resetting the breaker (Check Automatic Operational Sequences for instructions)

Troubleshooting

- Unusual Noises or Vibrations:
 - Check for any damaged parts, such as fan blades.
 - Ensure that the unit is placed on a level surface to prevent vibrations.
 - Clean the unit's fan blades and motor to remove any accumulated dirt or debris that may be causing the noise.
 - If the problem persists, contact customer support for further assistance.
- Remote Control Malfunction:
 - Make sure the remote control cable is fully connected.
 - Check for any damage to the remote control or the cable.
 - If the remote control still does not function properly, contact customer support
- Water Leakage:
 - Check for any blockages in the unit's drainage system, such as the condensate drain. Clear any obstructions.
 - Ensure that the unit is installed level to allow proper drainage of condensate.

If you encounter any issues that cannot be resolved using the troubleshooting steps provided, please contact customer support for further assistance. Provide PSA with detailed information about the problem and any troubleshooting steps you have already taken.

Technical Specifications

Main Module

14 VDC Model: 8,000 BTU

28 VDC Model: 13,000 BTU

35-75 Amperes- Adjustable

25-65 Amperes- Adjustable

Cold Air Output: 240 CFM

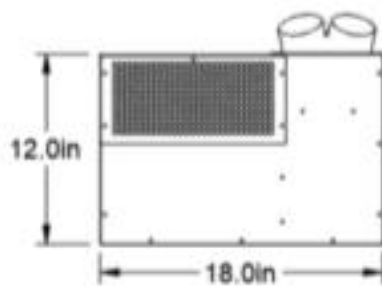
Cold Air Output: 300 CFM

100 Amp Alternator Recommended

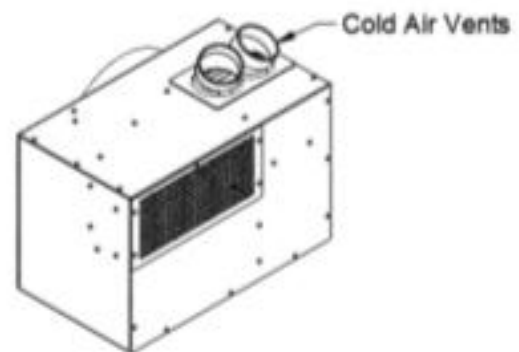
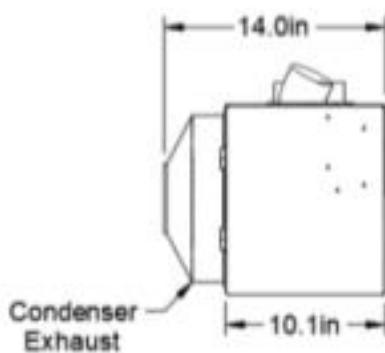
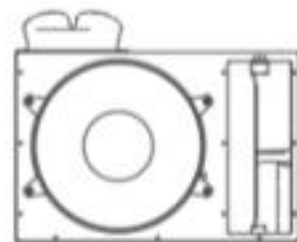
Weighs 35 Lbs.

Note: All dimensions are in inches.

Front



Rear



Technical Specifications

Remote

Remote Cord Length: 9 ft.

Weight: 8.5 oz.

Optional 5 ft. Extension Cord Weight: 3 oz.

Optional 10 ft. Extension Cord Weight: 5 oz.

Note: All dimensions are in inches.



Warranty Information

The SofieLite™ unit comes with six months labor (prior approval required), 1 year parts from date of purchase.

Covers defects in materials and workmanship in this product. Continued operation of defective unit that is not cooling, indicating possible loss of refrigerant, can void warranty.

Contact Information

For questions or assistance, please contact:

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