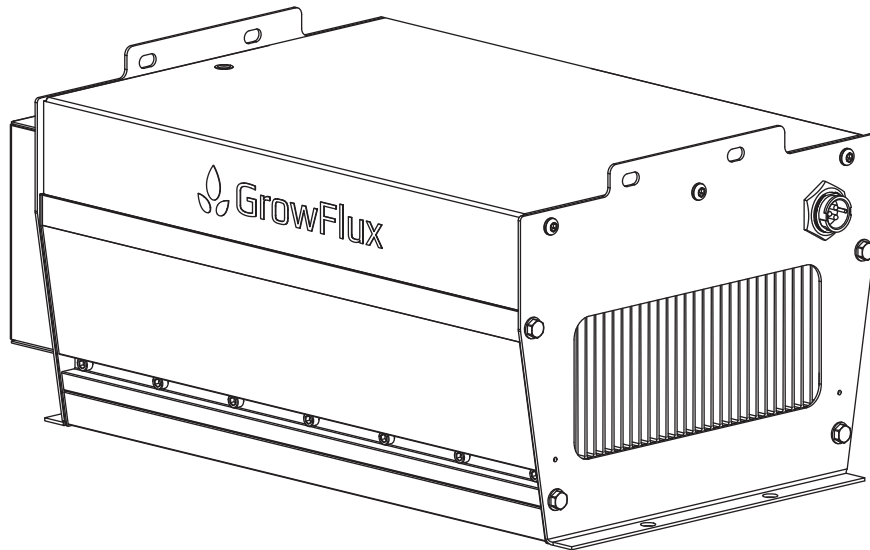


FluxScale™ 600TL v2.0

User Manual



Revision Information

Important changes to this document are detailed below.

Revision A	Initial draft revision released January 2018
Revision B	Updated manual with sanitation information

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Safety Precautions

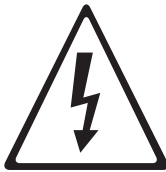
WARNING!

Read the safety precautions in this section before installing, powering, operating or servicing this product.

The following symbols are used throughout this document to indicate safety critical information:



DANGER!
Safety Hazard
Risk of severe injury or death.



DANGER!
Hazardous Voltage. Risk of lethal or severe electrical shock.



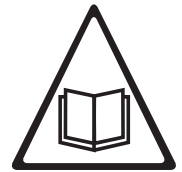
WARNING!
Fire Hazard.



WARNING!
Burn Hazard.
Hot Surface. Do not touch.



WARNING!
Intense light radiation.



WARNING!
Refer to User Manual.



WARNING! Risk group 2 product according to EN 62471. Do not stare at operating lamp. Do not view light output with optical instruments that may concentrate the beam.



CAUTION. UV emitted from this product. Eye or skin irritation may result from exposure. Use appropriate shielding. Never block fixture light output

CAUTION. Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eye.

CAUTION. IR emitted from this product. Do not stare at operating lamp.



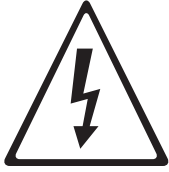
The latest version of this document is available on the FluxScale product page at <http://growflux.com>. Before installing or operating this product, check for the latest version of this document. The version can be found at the bottom of this page.

Fixture is for commercial use only, and is not intended for household use.

Respect all locally applicable laws, codes and regulations when installing, powering, operating or servicing the fixture.

This product presents risks of severe injury or death due to fire and burn hazards, electric shock and falls.

Contact GrowFlux customer support at 215-337-3999 or support@growflux.com for any safety related questions.



Electrical shock precautions

Do not remove any cover or panel from fixture except for Fan Assembly as described in “Fan Assembly Replacement” section of this document.

Disconnect fixture from AC power before performing maintenance on fixture or moving fixture.

Ensure AC power service to fixture is connected to (earth) ground.

Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault (earth-fault) protection.

If fixture is equipped with splash resistant twist lock power inlet (Model no. GFX-FXS-600TL-XX-XX-00), only use power cables supplied by GrowFlux.

If fixture is equipped with splash resistant twist lock power inlet (Model no. GFX-FXS-600TL-XX-XX-00), never connect power to fixture if fixture, power inlet, or power cable is wet. Dry all components with a dry cloth and allow to air dry until liquid water evaporates before connecting power. Never disconnect power from fixture if power cable or power inlet is wet.

If fixture is equipped with an IEC C14 power inlet (Model no. GFX-FXS-600TL-XX-XX-01), power cables must be of the IEC 60320 C13 type, must be rated for at least 10 amps, and must have 18 AWG minimum conductor size with type SJT or equivalent jacket. Ensure power inlet, fixture, and power cable are dry before connecting or disconnecting power.

Before operating fixture, ensure power cables are in perfect condition and free from defects, and are properly rated for current requirements for all equipment.

Isolate the fixture from power immediately if the power cable or any seal, cover, cable, or other component is damaged, defective, deformed, wet or showing signs of overheating. Do not reapply power until repairs have been completed.

If fixture is equipped with an IEC C14 power inlet (Model no. GFX-FXS-600TL-XX-XX-01), do not expose fixture to rain or moisture.



Burn and fire precautions

WARNING. Fixture emits high levels of visible and invisible light radiation which may cause injury or damage objects placed near glass window. Never operate fixture without at least 12” (300mm) open air clearance in front of glass window.

Exterior surfaces of fixture may become hot during operation. Use caution when handling.



Provide at least 10” (250mm) clearance around all vents, allowing for free and unobstructed airflow around fixture.

Do not operate the fixture if the ambient temperature (Ta) exceeds 40° C (104° F).

Keep all combustible materials (e.g. fabric, wood, paper) at least 12” (300mm) away from the fixture.

Keep flammable materials away from the fixture.

Do not modify the fixture in any way not described in this manual or the product’s User Guide or install other than genuine GrowFlux parts. Do not apply filters, diffusers or other materials to glass window. Use only accessories approved by GrowFlux to modify the light beam.



Eye and skin injury precautions

Fixture emits high levels of visible and invisible light radiation which can adversely affect vision. Never look into glass window during operation. Use proper vision protection when working near fixture. Use caution in presence of children.

Never look into glass window with concentrating optics such as binoculars, telescopes, or magnifying glasses.

Use caution near idle fixtures which can suddenly illuminate on schedule or by remote control.



Fixture emits high levels of visible and invisible light radiation which can have adverse effects on tissues, including skin, when working in close proximity to operating fixtures. Use light blocking protective clothing when working directly below operating fixtures.

Fixture emits high levels of visible blue light radiation, which has been shown to have adverse effects on the human circadian rhythm, resulting in shift work dysfunction and other circadian rhythm disorders. Use blue light filtering protective eyewear when working near operating fixtures within four hours before normal scheduled bed time.



Fan injury precautions

Fixture contains high power fans, which can catch and pull hair, jewelry, and other objects, causing serious injury:

- Never insert foreign objects into fixture.
- Keep hair, jewelry, and clothing away from fan intake.
- Never remove fan guards from fixture.
- Never remove fan assembly from fixture during operation.
- Keep fingers away from fan guard during operation.



Moving and mounting safety precautions

Fasten the fixture securely to a fixed surface or structure when in use. The fixture is not portable when installed.

Ensure area below fixture is clear before attempting to mount or move fixture. Block access to area below fixture and warn occupants of falling equipment hazard.

When suspending the fixture, ensure that the supporting structure and all hardware used can hold at least 10 times the weight of all equipment suspended from them.

Do not secure or fasten power cables to hanging hardware such as chains or cables.

Do not move or adjust the position of fixture during use.

Before moving, disconnect the power cable from fixture.

Never perform maintenance on a mounted fixture. Move fixture to a flat surface before attempting to perform maintenance.

Do not drag fixture across surfaces.

Avoid shocks and impacts while moving or re-positioning fixture which may result in glass breakage.

When moving or storing fixture, ensure the unit is placed on a flat surface, and no



foreign objects are touching glass.

Do not clean unit during operation.

Unplug fixture before attempting to clean. Do not clean glass window during operation.

Do not place objects on top of fixture.

Only place accessories provided by GrowFlux on top of fixture. Do not place foreign objects on top of fixture during operation.



Glass precautions

The glass windows within fixture are specifically designed to meet safety requirements and prevent injury to persons in the event of breakage. In the event of breakage, do not attempt to repair or replace glass, which may result in injury and damage to product.

Do not operate fixture with broken glass. Do not clean glass during operation.

Regulatory Notices

FCC Part 15 Notice

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

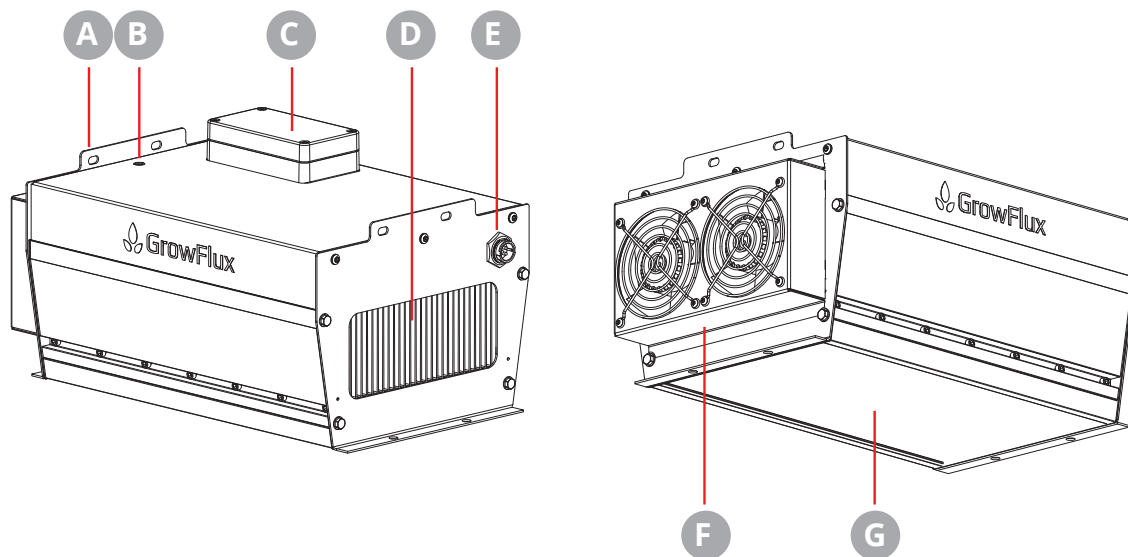
Introduction

Thank you for selecting FluxScale for your horticultural lighting needs. Please ensure you have read all of the safety information at the beginning of this document before installing or operating fixture.

This product features:

- Robust wireless control with AetherMesh Sub-GHz mesh connectivity
- Extended tunability range encompassing the entire photosynthetic radiation (PAR) spectrum
- Far red tuneability, allowing for advanced manipulation of phytochrome response
- PrecisionPAR™ capable - FluxScale is ready to be used with our exclusive PAR maintenance service, ensuring years of consistent performance
- Industry leading ingress protection
- Industry leading energy efficiency

Product Overview



- A End plate with V-hook mounting holes
- B 1/4-20 thread mounting holes
- C Wireless controls & antenna
- D Cooling fins (air exhaust)
- E AC power entry
- F Fan assembly (air intake)
- G Glass window

Maintenance

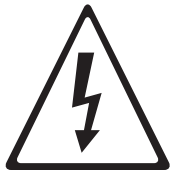


Fan Assembly Replacement

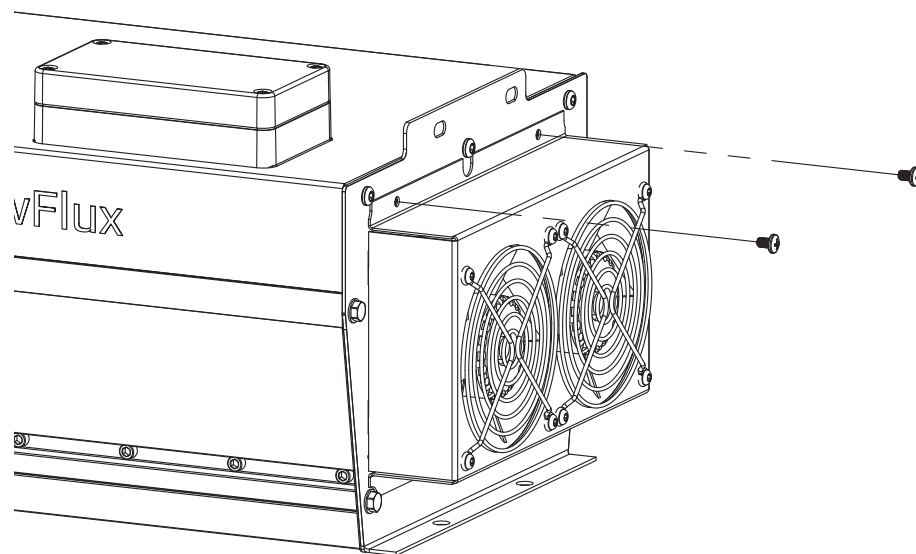
Disconnect power from FluxScale. Never attempt to replace fan assembly during operation.

Check to make sure power cables are dry before attempting to disconnect power.

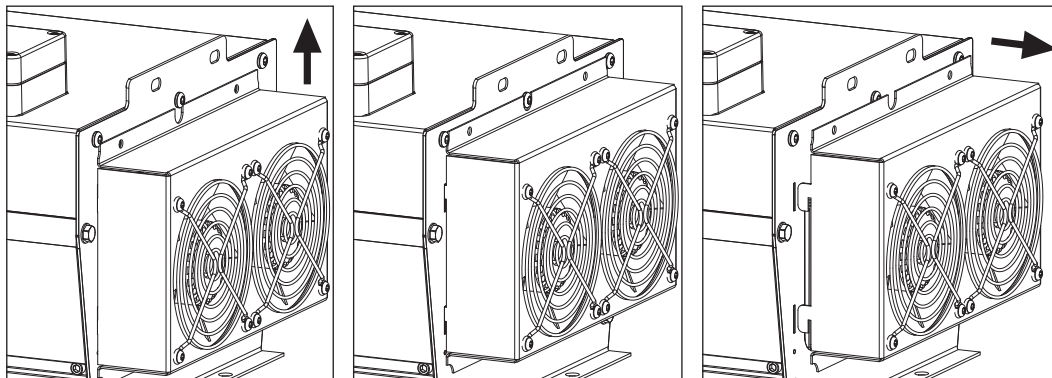
Move FluxScale from its hanging position to a flat surface before attempting to replace fan assembly.



Step 1: Unscrew two 8-32 size Philips head screws securing fan assembly.

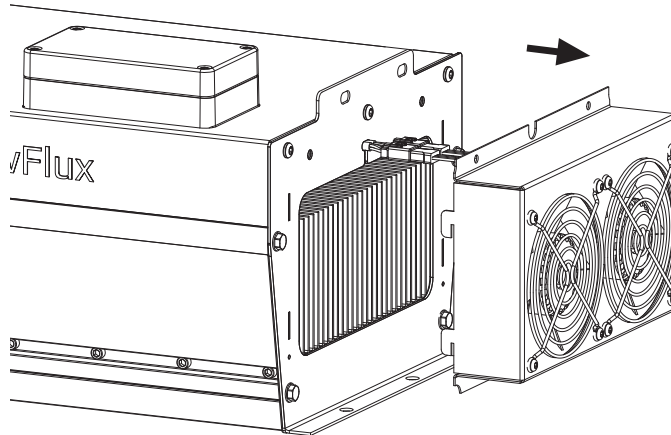


Step 2: With two hands, draw fan assembly upward until fan assembly stops, then draw fan assembly straight outward away from FluxScale.

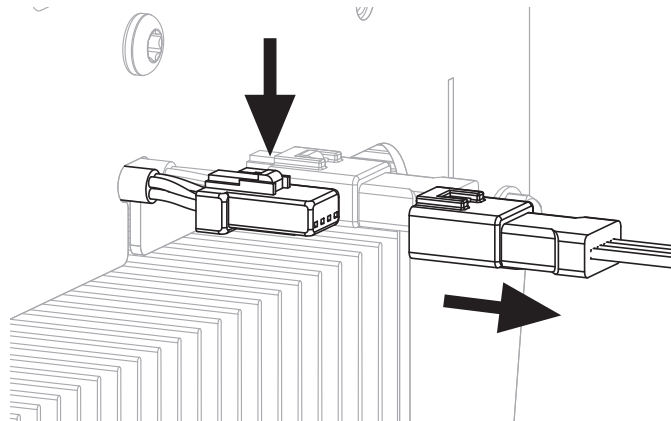


Fan Assembly Replacement (continued)

Step 3: Carefully separate fan assembly from FluxScale; do not apply tension to fan cables.

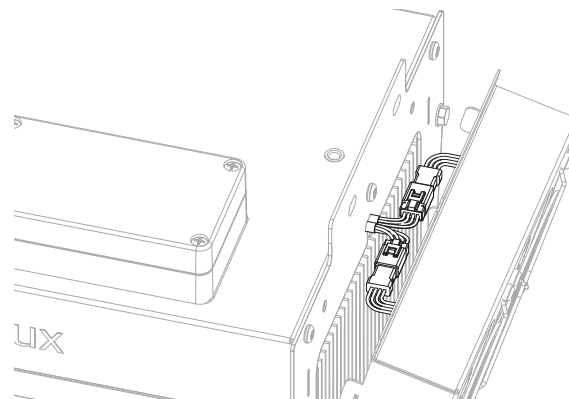


Step 4: Depress locking tab on power connector and separate connector. Repeat for the second connector.



Step 4: Connect each power connector on new fan assembly.

Step 5: Orient connectors and fan wires as shown below. Wiring and connectors should be tucked into the empty space within the fan assembly.



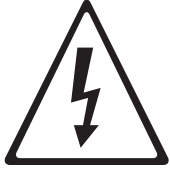
Step 6: Carefully position new fan assembly against FluxScale end plate, taking care to ensure all wires are tucked into fan assembly. Insert mounting tabs into end plate and slide fan assembly downward to lock its position. Install two 8-32 Philips head screws to secure new fan assembly.



Cleaning

Do not attempt to clean FluxScale while under operation. Unplug FluxScale before cleaning.

Do not clean glass with alkaline or acidic cleaners such as bleach, ammonia, or vinegar, as the specialty coatings applied to the glass surface may be damaged.



Do not clean glass with Green Shield II, Phisan 20, or other ammonia based sanitizers. These products may be used in the vicinity of FluxScale, however liquid application of these agents to the glass will damage specialty coatings.

NEVER PRESSURE WASH FLUXSCALE. Pressure washing will damage critical seals and void the Limited Warranty.

General cleaning & sanitation:

Never use abrasive brushes, scrub pads, abrasive cleaning cloths, or cleaners containing abrasive powders and particles on FluxScale. If challenging debris must be removed from any part of FluxScale, use a plastic scraper to gently free debris. Challenging residue can be removed with a simple cleaning solution:

purified or filtered water	3 parts	750ml	3 cups
70-99% isopropyl alcohol	1 part	250ml	1 cup
hand dish soap		5ml	1 teaspoon

Mix the above ingredients thoroughly and pour into a clean spray bottle. Using a soft cloth, clean paper towel, or cotton rag, spray the cleaning solution onto cloth and wipe debris from surface of FluxScale. This solution can be used on all exterior surfaces of FluxScale, including the glass window and accessory reflectors. Apply solution as a fine mist with a handheld spray bottle or with a cleaning cloth.

Heat Sanitation

FluxScale 600TL can be safely operated up to 40° C (104° F) with little degradation in output.

If necessary, cultivation rooms containing FluxScale units can be heat sanitized up to 75° C (167° F) for 24 hours without physical damage to seals and electronics, however affected zones of fixtures must be powered down during and after heat sanitation until aluminum exterior of fixtures are no longer warm to the touch.

Dust cleaning

Dust accumulation is not typical under normal conditions, however in some dusty environments, extreme dust accumulation may affect the performance of FluxScale due to reduced cooling performance. To remove dust from FluxScale, follow the procedure described below:

Step 1: Disconnect power from FluxScale

Step 2: Use compressed air or a vacuum with brush attachment to loosen and remove dust from fan inlet area

Step 3: Inspect cooling fins; look through fans to other end of fixture; a flashlight may help during inspection. A straight line of sight through the cooling fins to the other end of the fixture should be present in a clean FluxScale unit.

Step 4 (if necessary): If a large amount of dust is still present, remove FluxScale from its mounted position and place the unit on a flat surface. Remove fan assembly per instructions in previous section (but do not disconnect cables) and remove remaining dust with compressed air or a vacuum.

Glass cleaning

The glass windows within FluxScale are specially designed for exceptionally high light transmission, while offering ingress protection, safety, and finger print resistance. In the event of glass breakage, immediately remove the affected FluxScale fixture from operation and have the fixture serviced by an authorized GrowFlux service provider. Operating FluxScale with shattered, broken, or removed glass will void the warranty as the LED emitters may be exposed to harmful environmental conditions.

Unauthorized replacement of the glass within FluxScale will void the warranty and will result in a safety hazard and severe degradation of performance.

The glass windows within FluxScale are coated with specialty anti-reflective and finger print resistant coatings. Improper cleaning of the glass surface may result in damage to these coatings and degradation of performance. Following the recommended glass care instructions will ensure a high level of performance and durability for many years.

- Only clean the glass on FluxScale with a dry cloth, a damp cloth, or the cleaning solution detailed in the previous section.
- Never use an abrasive pad, steel wool, or abrasive cloth on glass
- Never clean glass during operation