PHOTONTEK XT 1000W CO2 Pro Linear Multi-Light Bar LED Fixture User Manual

PHOTONTEK
HORTICULTURAL LIGHTING

XT 1000W CO2 Pro
Linear Multi-Light Bar LED Fixture
User Manual

Contents

INTRODUCTION

Thank you for purchasing the XT 1000W CO2 Pro linear multi-light bar LED fixture. This manual describes how to install and use the XT 1000W fixture; please read this manual thoroughly before attempting to install or operate any XT Series LED system.

PRODUCT DESCRIPTION

The XT 1000W CO2 Pro LED is an electronic horticultural LED fixture using a linear array design with ten 100W LED light bars. The XT 1000W CO2 Pro is a highly efficient ultra-high intensity full-cycle grow lighting solution for commercial horticulture cultivation.
The XT 1000W CO2 Pro has the power and flexibility to scale from vegetative growth to higher light intensities in bloom.
Designed for use in a CO^2 enriched environment, the XT 1000W CO^2 Pro LED can be positioned closer to the plant canopy for very high PPFD levels which require supplemental carbon dioxide (CO^2) for crops to fully utilise for photosynthesis.
The XT 1000W CO2 Pro LED can be used without supplemental CO^2 but should be positioned at a greater hanging height from plant canopy, increasing the light footprint but reducing the PPFD level.
In this manual the XT 1000W CO2 Pro LED will be referred to as: “the LED fixture

PRODUCT INFORMATION AND SPECIFICATIONS

3.1 General Product Information

PRODUCT NAME	Photontek XT 1000W CO2 Pro LED
MANUFACTURER	PhotonTek Horticultural Lighting
PRODUCT CODE	PTEKLED020
EAN	5060560030997
PLUG TYPE	NEMA 5-15P – 120V mains supply

3.2 Technical Specifications

PARAMETER	VALUE	PARAMETER	VALUE
INPUT VOLTAGE	120 – 277V, 50/60Hz AC	Waterproof/Dustproof	IP65 – Fixture IP67 – Driver
INPUT POWER (100%)	1025W	Dimensions	46.5” x 42.95” x 4.16”
INPUT CURRENT @ 120V, 100% O/P	8.4A max	Weight	39.68lbs
@ 277V, 100%	3.6A max		
POWER FACTOR	>0.97	Life Span	>50000H
PPF	2925 µmol/s	Working Temperature LED Driver Attached	-20º — +40ºC
		Working Temperature LED Driver Remote 5m ext	0º — 40ºC
EFFICACY	2.9 µmol/J	Working Humidity	20% – 90%
SPECTRUM	Full Spectrum	Manual dim/External lighting controller	0-10V Analog Protocol
LIGHT SOURCE	LUMILEDS & Osram diodes	Beam angle	120º

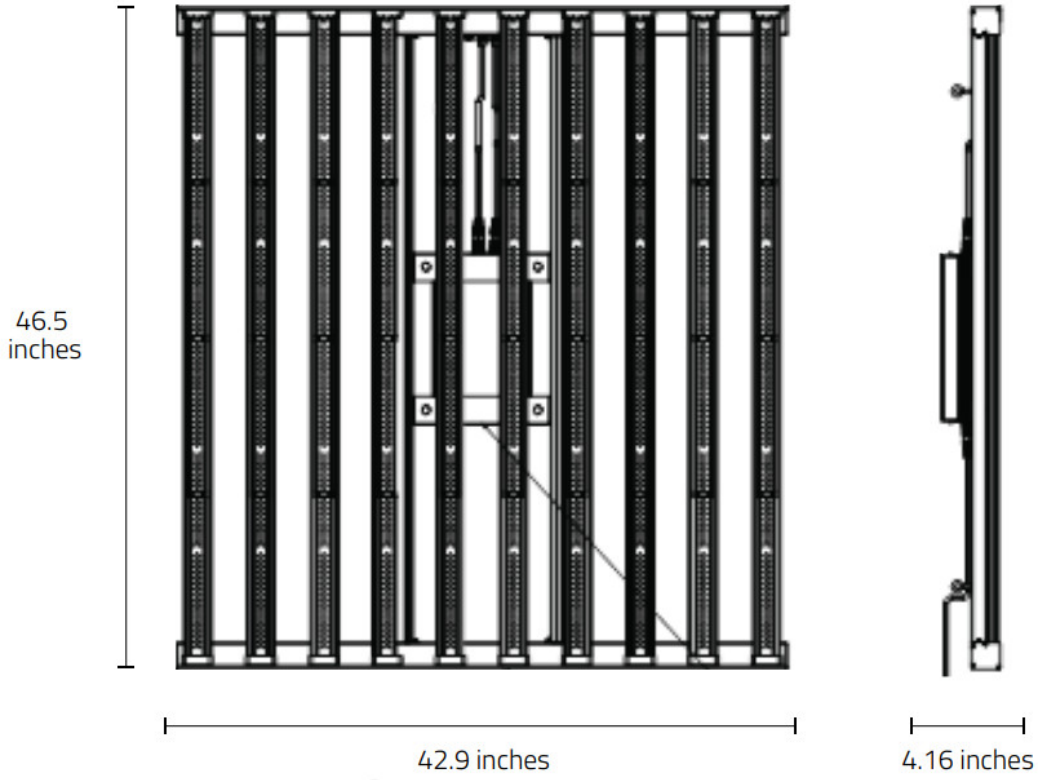

Fig1. Fixture dimensions.

3.3 Spectra

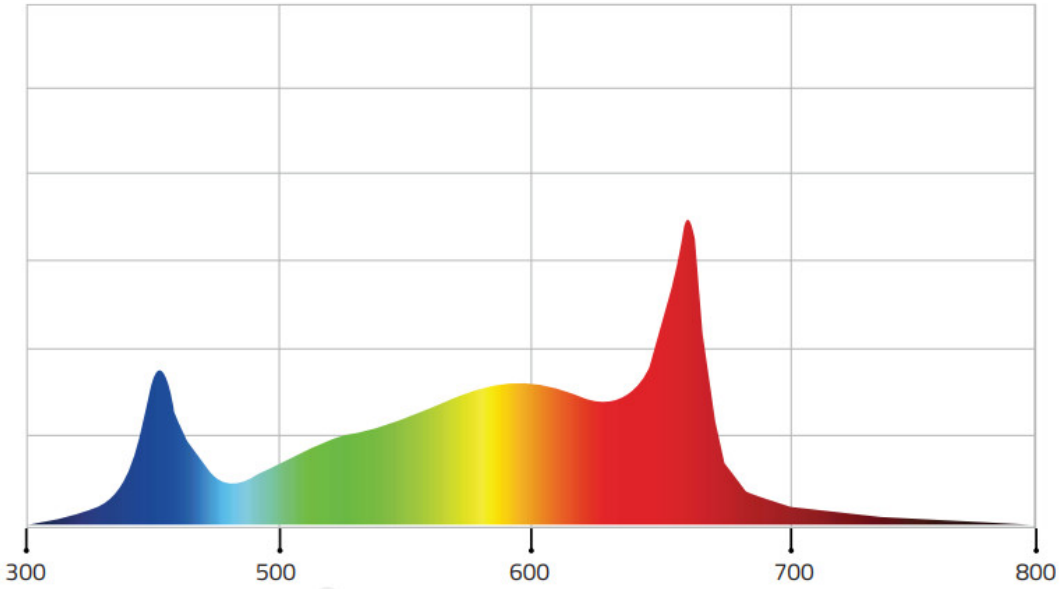

Fig2. Full Spectrum.

3.4 Light distribution curve

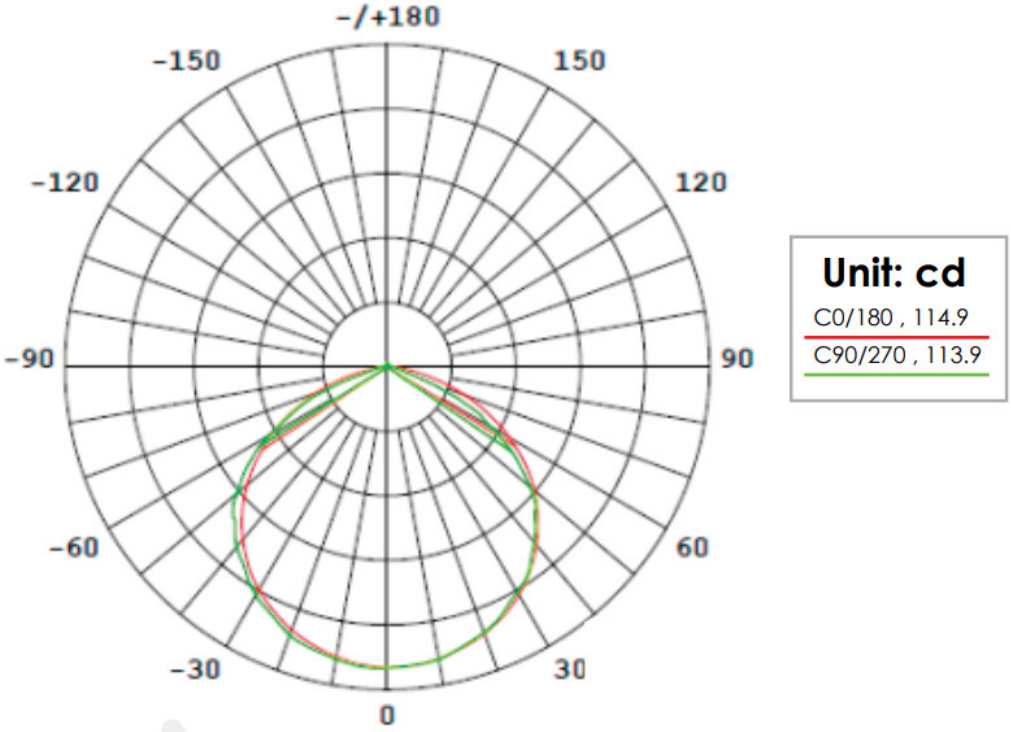

Fig3. Light distribution plot.

3.5 Environment

The LED fixture is intended to be used in climate-controlled grow rooms and indoor farms. The product may be used in damp environments but may not be used in wet environments or outdoors.
The product will operate in ambient temperatures from -20ºC to 40ºC but will function at optimal level between 20ºC to 30ºC.
The product will operate in 20% – 90% humidity, non-condensing.

3.6 Legal

This product is FCC, IC, CSA & CE certified compliant with LVD and EMC directive test standards.

SAFETY RECOMMENDATIONS AND WARNINGS

WARNING!
Carefully read the warnings below before using or working with the product!

- Always adhere to the local rules and regulations when installing or using the LED fixture.
- Do not open or disassemble the LED fixture as it contains no serviceable parts inside. Opening or modifying the LED fixture can be dangerous and will void the warranty.
- Do not use the LED fixture when either the LED fixture or its power cord are damaged. Replace the power cord with correctly rated cord only.
- Modifications to the cabling can lead to unwanted electromagnetic effects which may make the product not comply with legal requirements.
- Do not expose the LED fixture to:
  Condensing humidity, heavy mist or direct spray;
  Ambient temperatures outside the specified range;
  Dust and contamination;
  Direct sunlight during use or HID light that may heat up the driver.
- Always disconnect the LED fixture from mains before performing any maintenance.
- Always allow for a cool down period of at least 20-30 minutes before touching the LED light bars. Touching the LED bars when the fixture is lit or immediately after may result in burns!
- Natural convection removes heat away from the heatsink. In order for the system too properly cool itself, at least 5cm of space is required between the fixture and the roof of your grow area.
- Do not use abrasive materials or aggressive cleaning agents to clean the LED fixture as this may damage the secondary optics. Instead use a clean dry fabric/cloth.
- Do not use the LED fixture near flammable, explosive or reactive substances. The LED fixture can reach tempera tures of 40ºC.
- Do not use sulphur vaporizers or water misters.
- The installation and use of the LED fixture is the responsibility of the end user. Incorrect use or installation can lead to failure and damage to the LED fixture. Damage to the LED fixture and electronic circuitry as a result of incorrect installation and use revokes the warranty.

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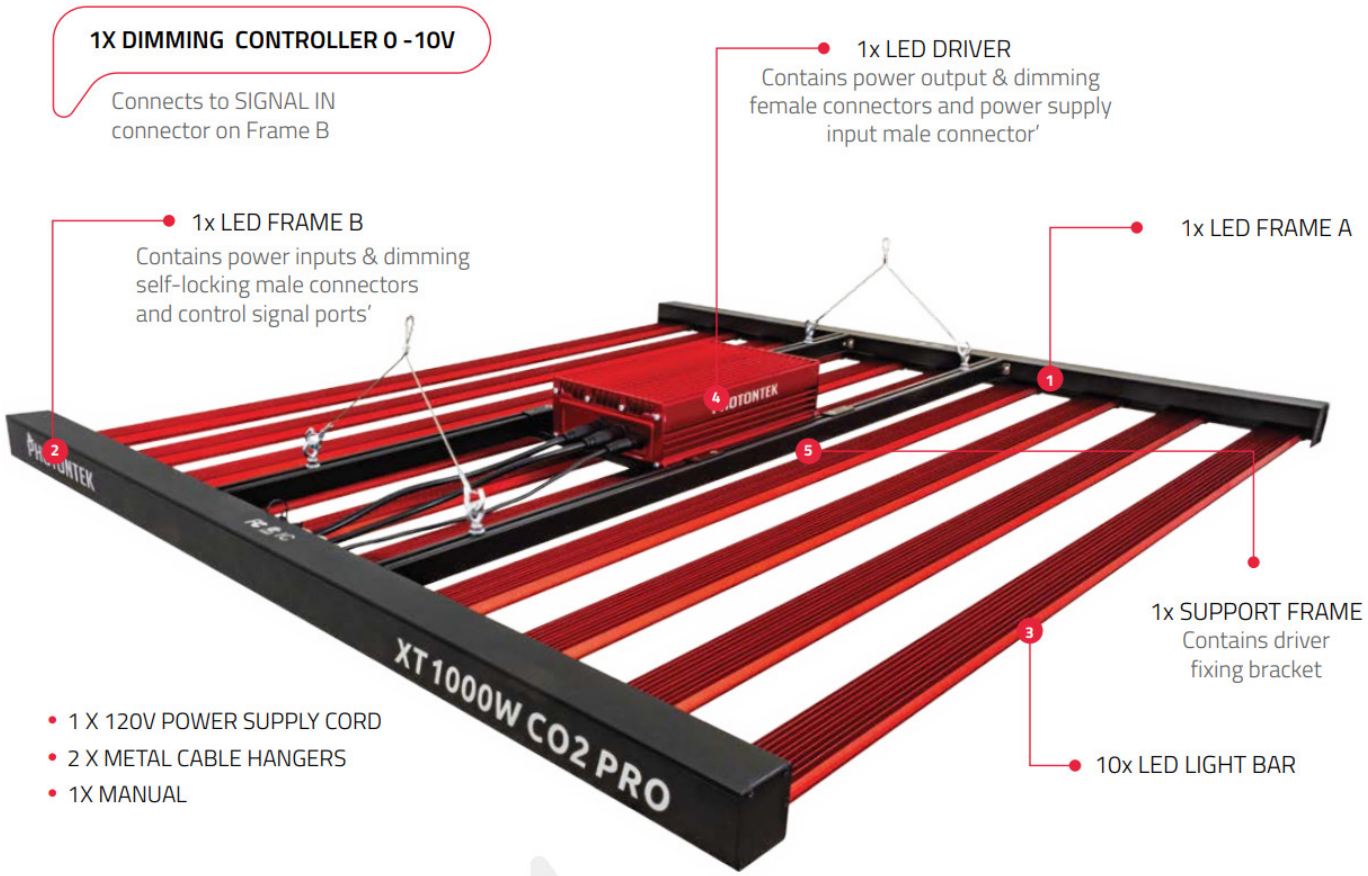


Fig4. Fixture components

INSTALLATION

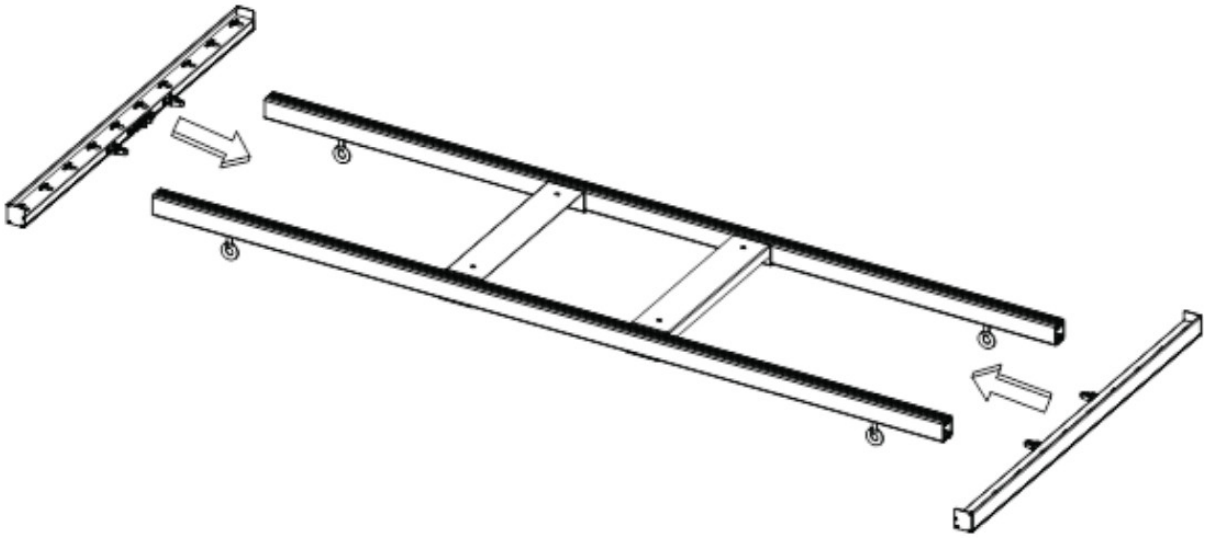
WARNING!	Mounting and installing the LED fixture must be in accordance with the applicable local laws and regulations.
WARNING!	The installer is responsible for correct and safe installation.
WARNING!	Ensure the local cabling can support the voltage and current requirements of the LED fixture.
WARNING!	Avoid coiled cords and keep mains leads separated to help prevent electromagnetic interference.
WARNING!	Do not connect or disconnect the LED fixture under load.

6.1 Fixture assembly & installation

Please take care when assembling fixture and ensure all connections are true and secure

6.1.1 Assemble the frame

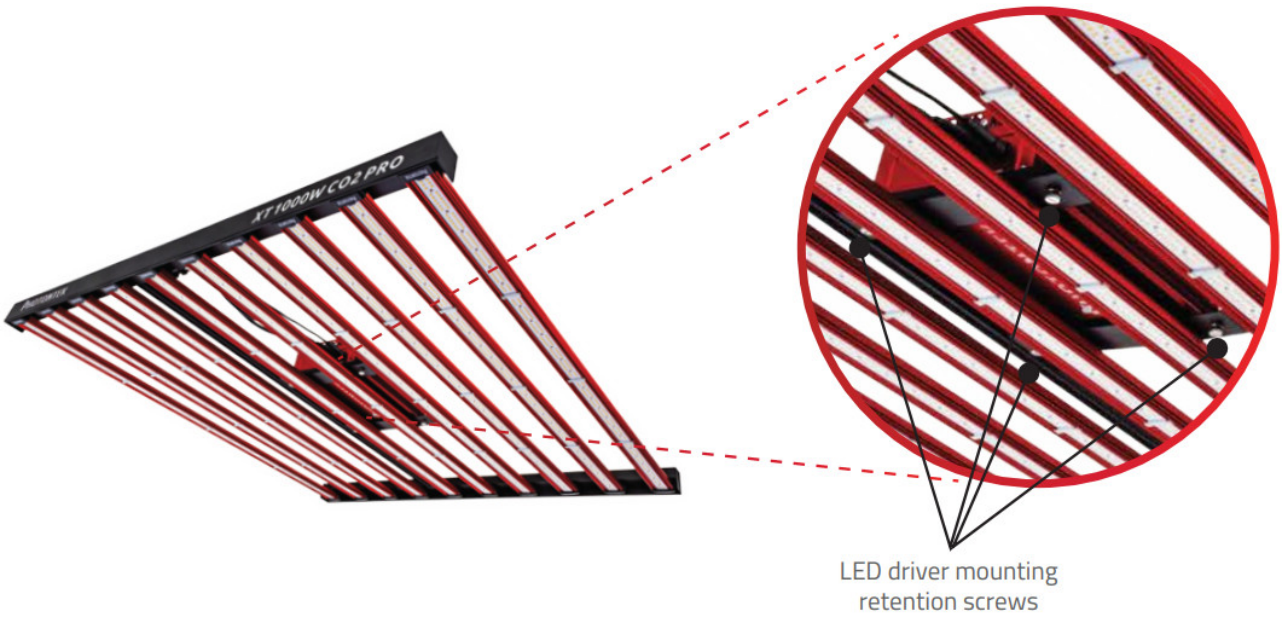
Connect Frame A and B to the support frame by pressing button on frame connector and inserting into support frame socket and lock. Ensure button clicks into hole socket to lock.



Connect Frame B to support frame end near LED driver power output & dimming female connectors.
Note the direction when installing; the LED driver mounting bracket is on top when the fixture is hung.

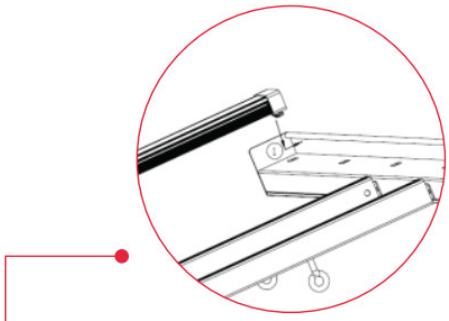
6.1.2 Connect & disconnect the driver

The LED driver is fixed to the mounting bracket with four retention screws through bracket into driver base plate. For greater flexibility the driver can be disconnected from the fixture and used remotely using Photontek 5m LED driver extension cables (sold separately).

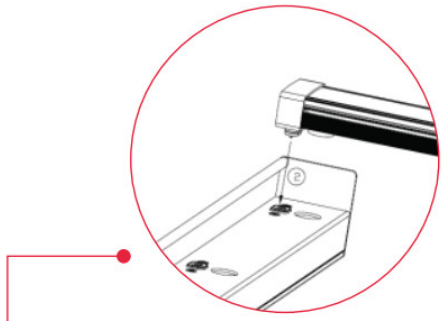


To connect driver output and dimming to fixture; ensure the power and dimming self-locking male connectors are correctly aligned with corresponding female connectors on driver and push together until click-locked.
To disconnect; turn male connector anti-clockwise to unlock and pull apart from female.

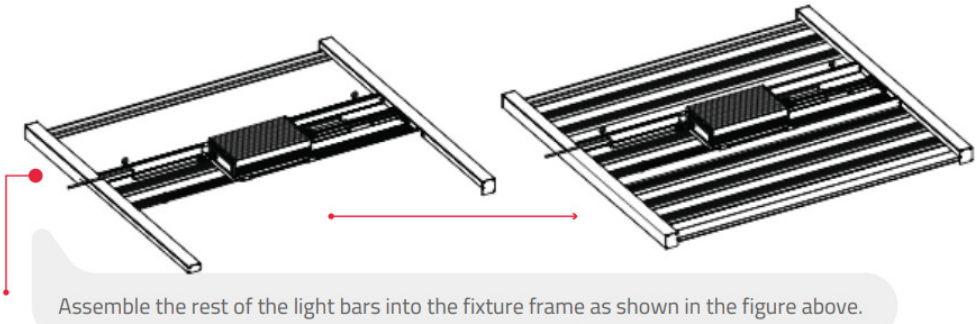
6.1.3 Connect the LED light bars



Ensure the driver is secured and flip the fixture over so the driver is now underneath. Insert the end of the light bar with the hook into the square hole in Frame A



Then insert the other end; align the round hole on Frame B with the light bar's magnetic end and insert male pin into female socket. Ensure magnetic connection is secure.



Assemble the rest of the light bars into the fixture frame as shown in the figure above.

WARNING!
The light bars are shipped with protective plastic covers over the diodes.
Please ensure these protective covers are removed before use!

6.2 Changing and replacing light bars and modular use
Individual 100W light bars are available to purchase as replacements or with different spectral ratios to adjust fixture spectral output.
The LED fixture's modular design uses an intelligent LED driver which can decrease or increase power to match the amount of 100W light bars installed on the fixture automatically. If not all light bars are required, the driver will only draw power required for the amount of light bars connected eg if six light bars are connected the driver will only draw 600W at 100% to power them.
WARNING!
At least one light bar must be installed in the fixture before switching on.
6.3 Installing the fixture
WARNING!
Mount the system to something that can hold the weight of the LED fixture.
Ensure all light bars are installed correctly and are secure. Carefully turn the fixture over and attach the metal cable hangers to the mounting hooks. Hang the fixture in required position and height. Ensure the fixture is hung horizontally.
For shorter hanging heights (50cm) from plant canopy and a 5 x 5ft footprint; supplemental carbon dioxide (CO^2) is recommended so that the plants can photosynthesize the very high level PPFD produced at this height.
For PPFD over 1000µmol/s/m^2 up to max 1500µmol/s/m^2 supplemental CO^2 at a 1:1 ratio is recommended. i.e. at 1500µmol/s/m^2 PPFD supplemental CO^2 at 1500ppm is advised.
Warning! Exposing crops to ultra high PPFD without supplemental CO^2 can be detrimental to plant growth.
The LED fixture can be used without supplemental CO^2 at greater hanging heights (1m+) as this will decrease PPFD and will increase light footprint to 6 x 6ft.

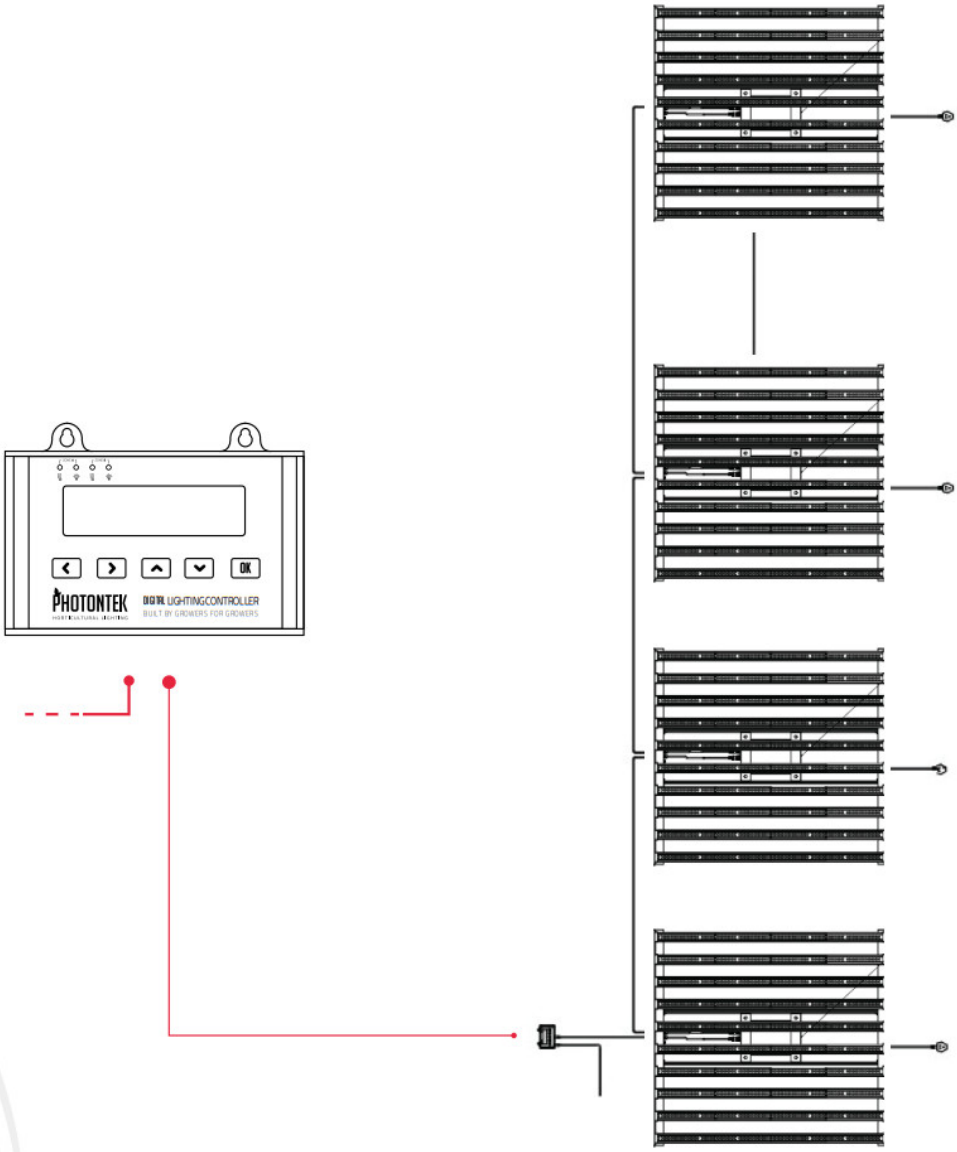
6.4 Connecting the manual dimmer or external lighting controller

The dimmer control or lighting controller is connected to the Signal IN connector on the fixture. This enables light intensity (PPF level) to be adjusted according to requirement. The LED fixture light intensity can be adjusted without changing spectral power distribution or losing efficiency.

6.5 Connecting Fixtures in series for External Control

For detailed instructions please refer to the PhotonTek Digital Lighting Controller manual.
The LED Fixture uses 0-10V signal protocol for control.
Position and hang each fixture appropriately.

- Connect controller output signal wire to fixture 1 SIGNAL in connector. Connect signal wire from fixture 1 SIGNAL OUT connector to fixture 2 SIGNAL IN connector.
- Continue to connect fixtures in series for up to 100 fixtures per controller, see figure below..



6.6 Connecting the LED fixture to the mains

WARNING!
Make sure mains power is switched off.
WARNING!
Ensure the power supply cord is not coiled and does not touch any hot surfaces.
WARNING!
Connect the cabling according to local rules, safety regulations and electrical code.
WARNING!
If not using an external lighting controller ensure external switching gear can cope with the inrush current of the LED fixture. Always use a timer contactor suitable for switching a capacitive load. Never use household timers to switch the LED fixture!
WARNING!
Ensure power cord rating matches mains supply voltage.

- The LED fixture is supplied with a 120V power cord for 120V power supply. 240V and 277V power cords are not included and must be purchased separately.
- Select the correctly rated cord for your mains power supply and connect driver power input socket to switching gear/power supply.
- Ensure the LED driver power supply cord self-locking female connector is correctly aligned to the corresponding male connector on driver and push together until click-locked. To disconnect; turn female connector anti-clockwise to unlock and pull apart from driver
- Connect mains power plug to switching gear/power supply.

- Switch on mains power.

WARNING!
Do not connect or disconnect the LED fixture under load.

PRECAUTIONS WHEN USING THE LED FIXTURE

WARNING!
Always ensure at least one light bar is connected to the fixture before switching on. LED Fixture has an intelligent LED driver which will increase or decrease power to match the amount of light bars connected to the system.
WARNING!
Always wait 20 – 30 minutes for the LED light bars to cool down.

INSPECTION, MAINTENANCE AND REPAIR

WARNING! Disconnect the LED fixture from mains before performing any maintenance or repairs.
WARNING! Do not connect or disconnect the LED fixture under load
WARNING! Do not open or disassemble the LED fixture, it contains no serviceable parts inside.
Opening the LED fixture can be dangerous and will void the warranty.
WARNING! Always wait 20 – 30 minutes for the LED light bars to cool down.
CAUTION! Do not clean the LED fixture with detergents, abrasives or other aggressive substances.

- Regularly check the LED fixture for dust or dirt build up. Clean if necessary. Contamination may cause overheating and decreased performance.
- Clean the outside of the LED fixture using a dry or damp cloth.
- Regularly check the cords of the LED fixture to ensure it is undamaged.

STORAGE AND DISPOSAL

Store the LED fixture in a dry and clean environment, with an ambient temperature of -25ºC to 55ºC.
The product must not be discarded as unsorted municipal waste but must be collected separately for the purpose of treatment, recovery and environmentally sound disposal.

WARRANTY

PhotonTek warrants the mechanical and electronic components of their product to be free of defects in material and workman-ship if used under normal operating conditions for a period of five (5) years from the original date of purchase. If the product shows any defects within this period and that defect is not due to user error or improper use PhotonTek shall, at its discretion, either replace or repair the product using suitable new or reconditioned products or parts. In case PhotonTek decides to replace the entire product, this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e. five (5) years from the date of purchase of the original product. For service; return the product to your shop with the original sales receipt.

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Documents / Resources

	PHOTONTEK XT 1000W CO2 Pro Linear Multi-Light Bar LED Fixture [pdf] User Manual PTEKLED020, XT 1000W CO2 Pro Linear Multi-Light Bar LED Fixture, XT 1000W CO2 Pro, Linear Multi-Light Bar LED Fixture, Multi-Light Bar LED Fixture, Bar LED Fixture, LED Fixture, Fixture

References

- Sustainable LED lighting solutions | Philips lighting

- PHOTONTEK Lighting | LED lighting | LED grow lights | LED Fixtures