ACCLAIM
LIGHTING

Pixel Driver 400

User guide

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INTRODUCTION

WELCOME

Welcome to the Pixel Driver 400 from Acclaim Lighting, a self contained driver for up to eight Acclaim Lighting Flex Tube Pixel strips based upon eight universes received via Art-Net (up to and including Art-Net III). The Pixel Driver 400 is well suited to larger installations with multiple strips because it removes the need for individual Pixel Driver 1 units to be used.

SAFETY

- Ensure that the power input is supplied from a correctly fused, earthed and environmentally protected location.

MAINTENANCE

CAUTION: Always isolate mains power before starting maintenance operations.

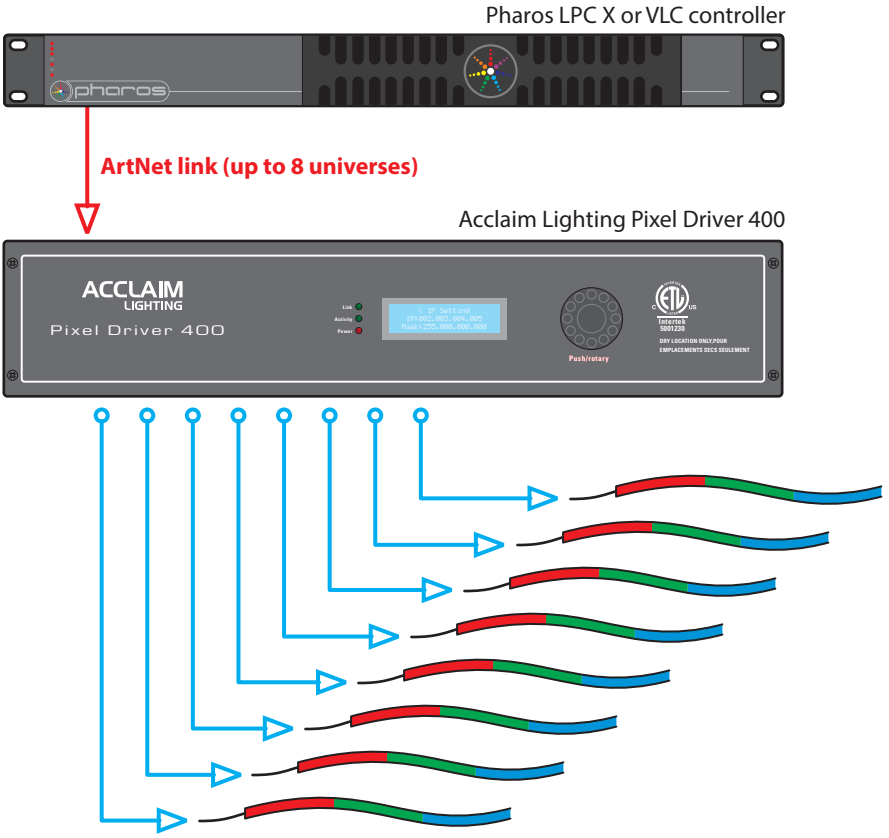
- Ensure that all mounting (and device) screws/bolts are fully tight and free of corrosion.
- Ensure there is no deformation to the housing, lenses or fixing points.
- Check that all power supply cables are free from physical damage or material fatigue.
- Use only genuine spare parts supplied by Acclaim Lighting.

CLEANING

- Use a moist, lint-free cloth when cleaning each fixture.
- Never use alcohol or solvents.

OVERVIEW

The Pixel Driver 400 accepts an Ethernet-based Art-Net input feed from any suitable source, including the Pharos® LPC and VLC controllers (up to and including Art-Net III). Eight consecutive universes are extracted from the incoming Art-Net feed and are used to drive the eight SPI ports located on the rear panel. A Flex Tube Pixel strip can be driven from each SPI port:



Flex Tube Pixel (SPI) outputs - one per universe

The eight SPI outputs are sub-divided into two groups, each of which can provide a maximum of 200W across the grouped outputs.

continued

ASSIGNMENT OF UNIVERSES AND CHANNELS

Eight consecutive Art-Net universes will be assigned to the eight SPI output ports, beginning with the universe defined in the Art-Net Setting page within the menu (see page 11).

The 512 channels of each received Art-Net universe are applied to the relevant SPI output ports, such that each attached Flex Tube Pixel strip will begin at channel 1 and increment from there to determine the color mix of each pixel.

CHANNEL ASSIGNMENT FOR RGB STRIPS

Pixel 1	**Pixel 2**	**Pixel 3**
Channel 1: Red	Channel 4: Red	Channel 7: Red
Channel 2: Green	Channel 5: Green	Channel 8: Green
Channel 3: Blue	Channel 6: Blue	Channel 9: Blue

CHANNEL ASSIGNMENT FOR RGBW STRIPS

Pixel 1	**Pixel 2**	**Pixel 3**
Channel 1: Red	Channel 5: Red	Channel 9: Red
Channel 2: Green	Channel 6: Green	Channel 10: Green
Channel 3: Blue	Channel 7: Blue	Channel 11: Blue
Channel 4: White	Channel 8: White	Channel 12: White

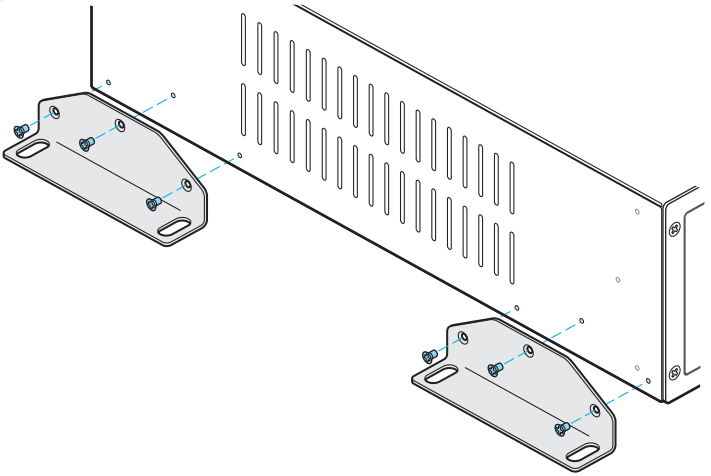
INSTALLATION

MOUNTING

The Pixel Driver 400 can simply be placed upon any flat surface or alternatively it can be fixed to a horizontal or vertical surface or placed within a standard 19" rack mount chassis. Four mount brackets are supplied together with twelve countersunk screws. The brackets can be used in two ways.

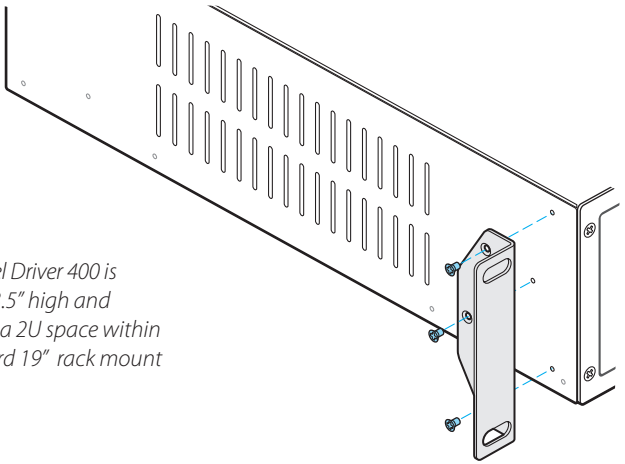
FOR SURFACE MOUNTING

On each side of the Pixel Driver 400 casing attach two of the supplied brackets to the holes shown:



FOR RACK MOUNTING

On each side of the Pixel Driver 400 casing attach one of the supplied brackets to the holes shown to create rack ears:

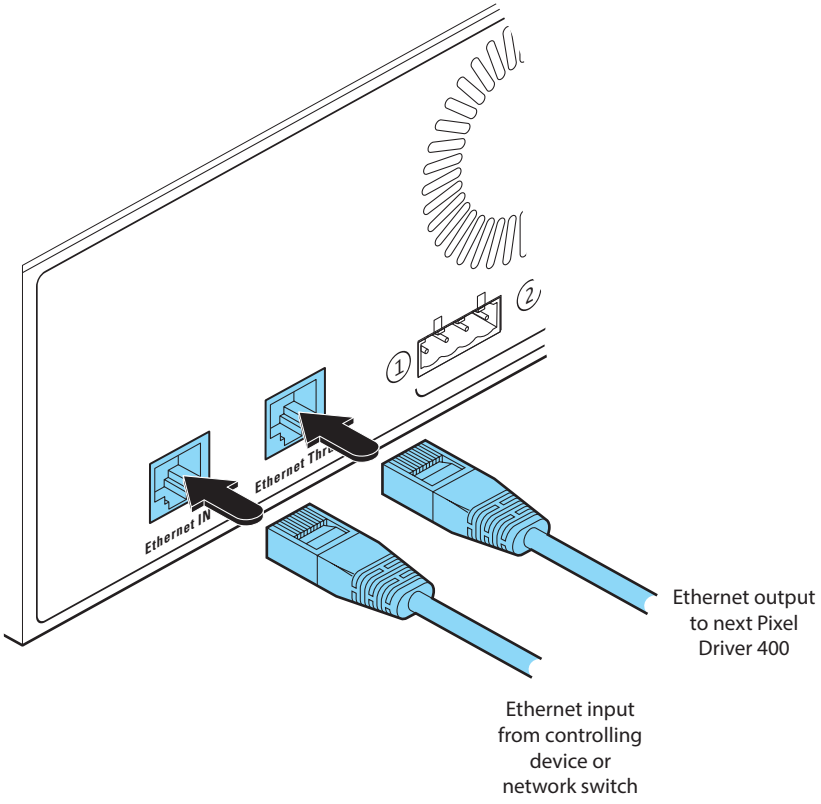


Note: Pixel Driver 400 is roughly 3.5" high and occupies a 2U space within a standard 19" rack mount chassis.

Each bracket has two slots measuring Ø 0.24 x 0.47" (Ø 6 x 12mm) which are spaced at 2.97" (75.5mm) centers.

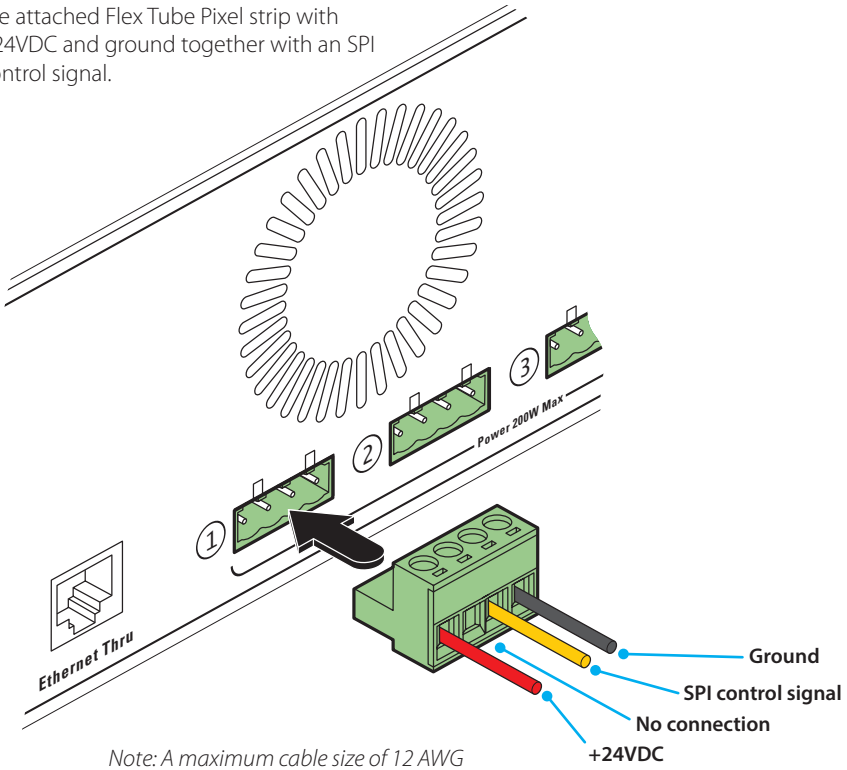
ETHERNET CONNECTIONS

Two RJ45 network sockets are provided on the rear panel, labeled **Ethernet IN** and **Ethernet Thru**. Use Ethernet IN to connect the Pixel Driver 400 to your controlling device or network switch and Ethernet Thru to link out to the next Pixel Driver 400 unit (if used).



OUTPUT PORT CONNECTIONS

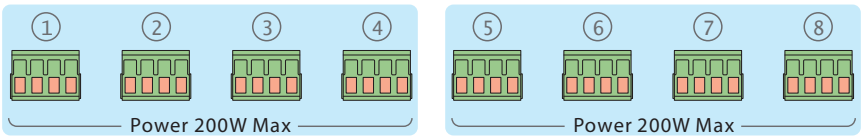
There are eight output ports on the rear panel, each of which uses a 4-pin terminal block (5.08mm pitch). Three of the four contacts are used at each port to provide the attached Flex Tube Pixel strip with +24VDC and ground together with an SPI control signal.



Note: A maximum cable size of 12 AWG (4mm²) can be used directly within the terminal block contacts.

OUTPUT PORT POWER LIMITS

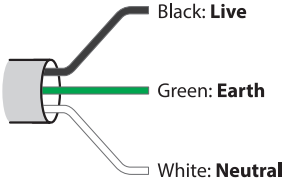
The output ports are fed with power in two groups: ports 1 to 4 and ports 5 to 8.



In each group of four output ports, ensure the total power draw does not exceed 200W (8.3A). Also ensure that the power draw on any single port does not exceed 92.4W (3.85A). When using Flex Tube Pixel G2 or Flex Tube Pixel SE, this equates to a maximum length of 13.7' (4.2m) on any single port.

INPUT POWER WIRING

The fixed power cord is roughly 5 feet (1.5m) in length and is supplied as standard with US color coding and bare tails. For international installations, wire according to local codes.



Power cord colors

Input supply range:	100-277VAC 50/60Hz
Power consumption:	840W maximum
Current (maximum):	7A at 120V 3.5A at 240V 3A at 277V

IN-RUSH CURRENT

The Pixel Driver 400 uses a switched mode power supply which exhibits a trait known as 'in-rush current' when first powered on. This is caused by the various capacitive components initially topping themselves up with power. The in-rush current period lasts only milliseconds, however, if you are using multiple units on a single supply, ensure that the breakers used are rated to support inrush currents without tripping during startup.

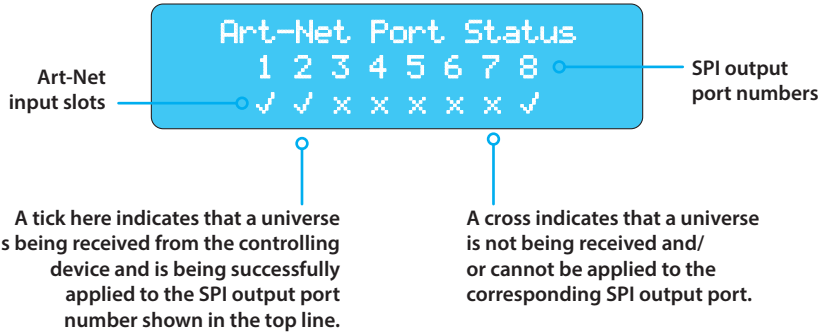
CONFIGURATION

THE FRONT PANEL

The Pixel Driver 400 front panel uses a clear LCD display plus multiple indicators to provide status information about its operation.

STANDBY SCREEN

When you are not performing a task within a menu, the Pixel Driver 400 will display a summary of the Art-Net universe inputs against SPI outputs:



Note: The standby screen will be unreadable if the backlight is off. See "Lock Setting" on page 12.

INDICATORS

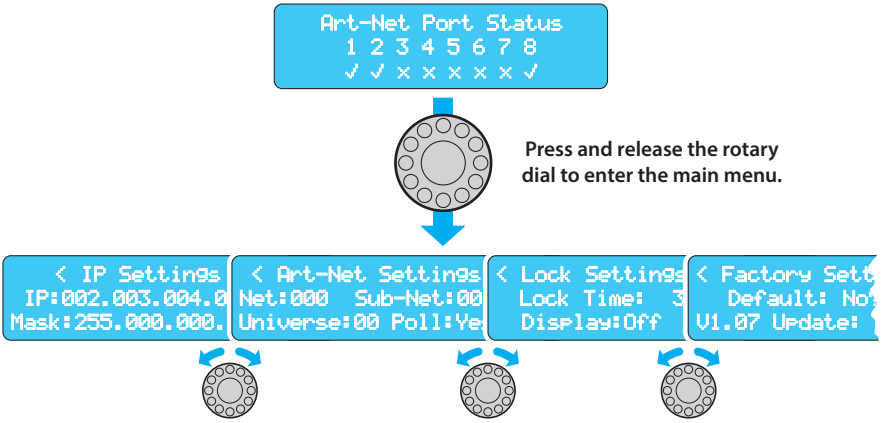
To the left of the screen are three indicators. The red **Power** indicator is on whenever Pixel Driver 400 has a valid power input. The other two green indicators relate to the Ethernet network links. The **Link** indicator is on whenever a valid network link is sensed. The **Activity** indicator will flash as network activity occurs.

THE MAIN MENU

The main menu is where all of the configuration details for Pixel Driver 400 are located.

TO UNLOCK AND USE A MENU PAGE

1 From the standby screen (or blank display, if the backlight is off), press and release the rotary dial. The Art-Net Setting page will be displayed:



Rotate the dial to move between menu pages. Press and release the dial to unlock a page.

2 Rotate the dial clockwise or counterclockwise to move between the four menu pages.

3 When the required page is shown, press and release the dial to unlock that page.

4 Rotate the dial to move the flashing cursor between the options within the page.

5 When the flashing cursor is over the required option, press and release the dial.

6 Rotate the dial to change the value of the option.

7 Press and release the dial to fix the chosen value of the option.

8 Repeat steps 4 to 7 for all options that need adjustment.

Notes:

Some pages require you to lock them again before your configuration changes are enacted.

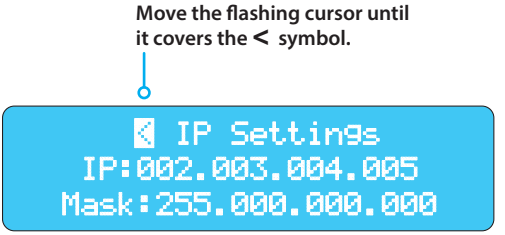
After a period of inactivity (selectable between 30 seconds and 8 minutes), the unit will return to the standby screen.

TO LOCK AND EXIT A MENU PAGE

1 Within a page, rotate the dial to place the cursor over the **<** symbol.

2 Press and release the dial to lock the page.

3 Rotate the dial to view other pages.



CONFIGURING THE UNIT

Please see "The main menu" on page 10 for general details about using the rotary dial control.

TO CONFIGURE THE UNIT

1 Press and release the dial to enter the menu. The Art-Net Setting page will be shown first.

Note: The following steps can be carried out in any order.

2 Press and release the dial to unlock the **Art-Net Setting** page:

Art-Net Setting

a Use the Net, Sub-Net and Universe options to align the eight ports of the Pixel Driver 400 with the required consecutive universes being output by the controlling Art-Net device.

- **Net** a value between 0 and 127
- **Sub-Net** a value between 0 and 15
- **Universe** a value between 0 and 15

Using these three addresses in combination it is possible to choose from 32,768 separate universes. The address that you chose here will define the first of eight consecutive universes being output by the controlling device. When valid universes are detected, they will be applied in sequence to the eight SPI output ports. The standby screen (see page 9) will indicate which universes are being successfully received and passed through - an '**x**' signifies that a universe is not being applied to an SPI output.

b If necessary, change the Poll option.

The correct setting of the Poll option relates to the use of controlling devices such as the Pharos system. If the Pharos system is outputting 32 universes or fewer, the Pixel Driver 400 Poll option should be set to **Yes**. If the Pharos system is outputting more than 32 universes, the Pixel Driver 400 Poll option should be set to **No**.

c Return the cursor to the **<** symbol. Press and release the dial to lock the page.

3 Rotate the dial to display the **IP Setting** page. Press and release the dial to unlock the page:

IP Setting

a Use the IP option to configure the IP (Ethernet) address that is being used by the Art-Net controller. Art-Net is most often broadcast across address spaces in the ranges 002.*.*.* or 010.*.*.* *(where *.*.* can be any series of IP octets)*.

b Use the Mask option to configure an Ethernet subnet mask that matches the IP address being used. The 2.*.*.* and 10.*.*.* address ranges require a Class-A subnet mask of 255.0.0.0

c Return the cursor to the **<** symbol and click the dial to lock the page.

4 The remaining two pages perform 'house keeping duties' that are not directly related to configuring inputs and outputs.

Lock Setting

a The Lock Time option determines the interval between the last use of the rotary dial and a return to the standby screen. Interval options range from 30 seconds to 8 minutes.

b The Display option determines whether the backlight will remain on or off once the standby screen is displayed. The standby screen is useful for diagnostic purposes but will be unreadable if the backlight is off.

c Return the cursor to the **<** symbol. Press and release the dial to lock the page.

Factory Setting

a Use the Factory Setting Default option to erase all configuration and return the unit to its default settings.

b The Update option is a factory option only.

c Return the cursor to the **<** symbol. Press and release the dial to lock the page.

FURTHER INFORMATION

TROUBLESHOOTING

If an issue arises, take steps to isolate the problem. At all times work from the basis of 'known good' before moving to the next step - data networks can become very complex in no time at all. Wherever possible, simplify the situation until a cause is isolated.

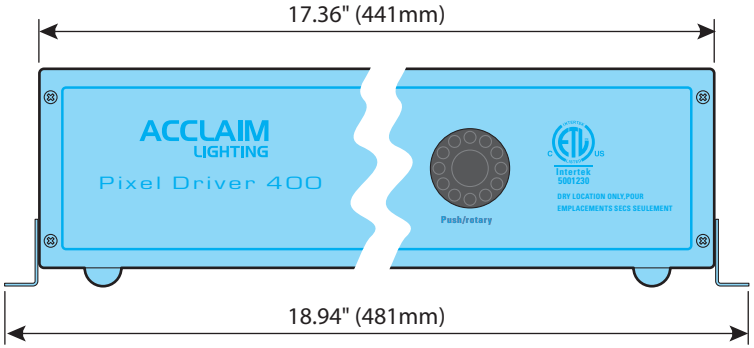
NO OUTPUT FROM CONNECTED FLEX TUBE PIXEL STRIPS

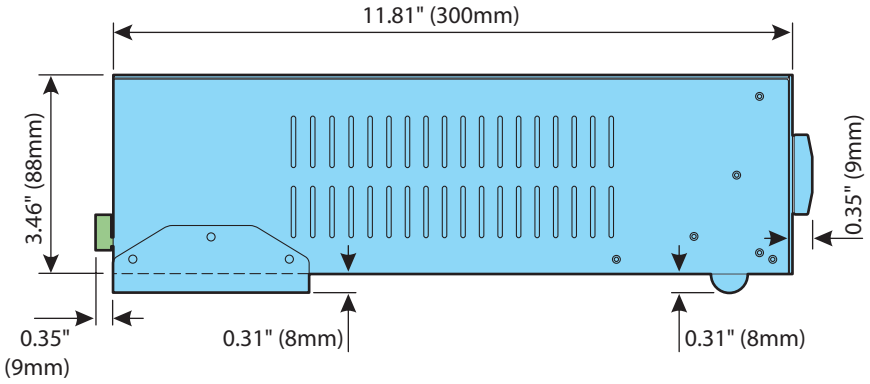
- Does the unit have power? Are the front panel indicators lit?
- Do you have an independent method to prove 'known good' the control feed?
- Do the IP address and subnet mask match those used by the controlling device? See page 11.
- Do the Art-Net settings match those used by the controlling device? See page 11.
- Check the standby screen to see whether valid universes are being received and applied to the SPI output channels. See page 9.
- Temporarily apply an intensity across all channels of the required Art-Net universes as you change the IP address and Art-Net settings within Pixel Driver 400. If you happen across the correct address, the connected Flex Tubes will then respond.
- Remember that while DMX universes are numbered from 1 upwards, Art-Net universes can start at 0. It is not uncommon for your universe transfer to be out by one.

SPECIFICATIONS

Power input	100 - 277VAC, 50/60Hz
Power consumption	7A maximum
Control connections	Ethernet in and thru (RJ45 sockets)
Output connections	8x 4-pin terminal blocks (5.08mm pitch) outputting 24VDC power plus SPI serial control data suitable for Flex Tube Pixel strips.
	Total power draw across all devices attached to ports 1 to 4 must not exceed 200W (8.3A)
	Total power draw across all devices attached to ports 5 to 8 must not exceed 200W (8.3A)
	Power draw on any single port must not exceed 92.4W (3.85A)
Operating temperature	35.6°F to 113°F (2°C to 45°C)
Housing	Powder coated steel
IP rating	IP20, indoor dry location
Certifications	

DIMENSIONS





Weight: 12.3 lbs (5.6kg)

LIMITED PRODUCT WARRANTY

A. Acclaim Lighting™ hereby warrants, to the original purchaser, Acclaim Lighting finished products to be free of manufacturing defects in material and workmanship for a standard period of:

- Fixtures: 5 Years (1,825 days) from the date of purchase.
- Drivers, power supplies and accessories: 5 Years (1,825 days) from the date of purchase.
- Flex Products: 3 Years (1,095 days) from the date of purchase.
- Controllers: 2 Years (730 days) from the date of purchase.

It is the owner's responsibility to establish the date and place of purchase and warranty terms by acceptable evidence, at the time service is sought.

B. For warranty service, send the product only to the Acclaim factory. All shipping charges must be pre-paid. If the requested repairs or service (including parts replacement) are within the terms of this warranty, Acclaim Lighting will pay return shipping charges only to a designated point within the United States. If the entire instrument is sent, it must be shipped in its original package. No accessories should be shipped with the product. If any accessories are shipped with the product, Acclaim Lighting shall have no liability whatsoever for loss of or damage to any such accessories, nor for the safe return there of. Acclaim reserves the right to replace the item with same or similar product at its discretion.

C. This warranty is void if the serial number has been altered or removed; if the product is modified in any manner which Acclaim concludes, after inspection, affects the reliability of the product; if the product has been repaired or serviced by anyone other than the Acclaim Lighting factory unless prior written authorization was issued to purchaser by Acclaim Lighting; if the product is damaged because not properly maintained as set forth in the instruction manual.

D. This is not a service contract, and this warranty does not include maintenance, cleaning or periodic check-up nor do we guarantee as part of this warranty any lumen performance during period. Parts not covered by this warranty include: fuses, external power supplies, third party items not manufactures by Acclaim lighting. During the period specified above, Acclaim Lighting will replace defective parts at its expense, and will absorb all expenses for warranty service and repair labor by reason of defects in material or workmanship. The sole responsibility of Acclaim Lighting under this warranty shall be limited to the repair of the product, or replacement thereof, including parts, at the sole discretion of Acclaim Lighting. At no time will installation or re-installation or products labor or liability costs will be assumed by Acclaim Lighting. All products covered by this warranty were manufactured after January 1, 2012, and bear identifying serial number marks to that effect.

E. Acclaim Lighting reserves the right to make changes in design and/or improvements upon its products without any obligation to include these changes in any products theretofore manufactured No warranty, whether expressed or implied, is given or made with respect to any accessory supplied with products describe above. Except to the extent prohibited by applicable law, all implied warranties made by Acclaim Lighting in connection with this product, including warranties of merchantability or fitness, are limited in duration to the warranty period set forth above. And no warranties, whether expressed or implied, including warranties of merchantability or fitness, shall apply to this product after said period has expired.

F. Marine or extreme weather location applications using Acclaim lighting products are subject to a 2 year limited warranty and Acclaim must be notified prior to delivery of units for such applications so that preventative treatment can be made to the products to ensure proper performance and product life with a special marine code coating / sealing process at an additional cost.

G. The consumer's and or dealer's sole remedy shall be such repair or replacement as is expressly provide above; and under no circumstances shall Acclaim Lighting be liable for any loss or damage, direct or consequential, arising out of the use of, or inability to use, this product. This warranty is the only written warranty applicable to Acclaim Lighting products and supersedes all prior warranties and written descriptions of warranty terms and conditions heretofore published.

www.acclaimlighting.com