

UBerLED Series

Ultra High Brightness LED Fiber Optic Lightsources

- 50 & 100W LED Lamp Options
- Advanced Heat Pipe Thermal Management System
- Adjustable DC Current Regulation
- *LightLock*™ Light Feedback Option
- Manual and Serial Control
- RS-232 or Ethernet Interface
- 1.7 Times 150W Tungsten Output
- 90-240VAC 50/60Hz Operation
- Compact, Powerful Design
- DIN Rail Mounts



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CAUTION:

- **Read all of these instructions before operating the unit.**
- **Follow all warnings and instructions on this piece of equipment**
- **Failure to use this equipment in the manner specified in this manual may cause the protection features of the unit to be impaired.**

1. **Retain Instructions** - All safety and operating instructions should be retained for future reference.
2. **Follow Instructions** - All operating and use instructions should be followed.
3. **Water and Moisture** - The unit should not be used near water, or in any area where excessive moisture may come in contact with the unit.
4. **Mounting** - The unit should be mounted horizontally on a flat surface, or vertically via the DIN rail mounts as recommended by the manufacturer.
5. **Ventilation** - The unit should be positioned such that its surroundings do not interfere with its proper ventilation. **Ensure adequate air flow below (intake) and in the rear (exhaust) of the unit.**
6. **Intense Radiance** - This unit produces intense photonic radiance, which under certain conditions may cause permanent retinal damage. NEVER STARE DIRECTLY INTO BEAM. Do not expose retinas to indirect irradiance for extended periods of time.
7. **Power Source** - The unit should be connected to a power source only of the type described in the operating instructions and as indicated by the power entry module.
8. **Grounding** - Precautions should be taken to ensure that proper grounding of the unit is assured.
9. **Power Cord** - Use only the approved power cord supplied with the unit, or an equivalent IEC 320 power cord with proper certifications. Power cord should be routed such that it will not be pinched, severed or walked on.
10. **Fuse** - DO NOT DEFEAT FUSE. Replace only with fuses as described in the operating manual and as marked on the unit.
11. **Cleaning** - The unit should be externally cleaned using only standard glass type cleaners. Do not use solvents, cleansers or petroleum distillates. Disconnect power cord before cleaning.
12. **Liquid and Object Entry** - Care should be taken to avoid objects falling into, or liquids being spilled into the enclosure through openings.
13. **Nonuse Periods** - Disconnect power cord from outlet when unit will be left unused for a long period.
14. **Damage Requiring Service** - The unit should be serviced by qualified service personnel if it exhibits any marked change in performance; if the power cord or enclosure has been damaged; or if objects or moisture have entered the unit.
15. **Servicing** - The user should not service the unit beyond that described in this manual. Disconnect power cord before performing any service on the unit. All other servicing should be referred to qualified service personnel.

OPERATIONS

Figure 1 reveals the main features for this unit. On the front panel there is a fiber optic receptacle with a retaining thumbscrew that locks the fiberoptic accessories into the receptacle. In manual mode, the intensity of the LED is controlled by the manual intensity adjustment potentiometer, and power to the LED is controlled by the front panel LED enable switch. When the the LED Enable is in the "0" position, power to the LED is removed, however the internal electronics and cooling systems are still powered. If the unit is equipped with one of the remote interface controllers, the rear panel will have the appropriate interface connector installed, along with a remote switch for selecting between manual operating mode ("0") and remote operating mode ("1"). In the serial remote control mode the LED enable and intensity control are adjusted by digital commands through the rear panel connector. In this mode, the front panel potentiometer and the front panel LED Enable switch are disabled. Power to the entire unit is controlled via the power switch on the IEC320 power inlet module. The unit accepts any universal mains voltages using the appropriate IEC 320 cord set. The unit requires two (2) 5x20mm fuses for proper operation, which are located behind the fuse panel. The exhaust fan pulls air through the inlet at the base of the unit and exhausts the heated air out of the rear of the unit. Care must be taken to ensure that both the inlet and outlet air are not blocked to ensure proper cooling and long lifetime of the LED lamp.

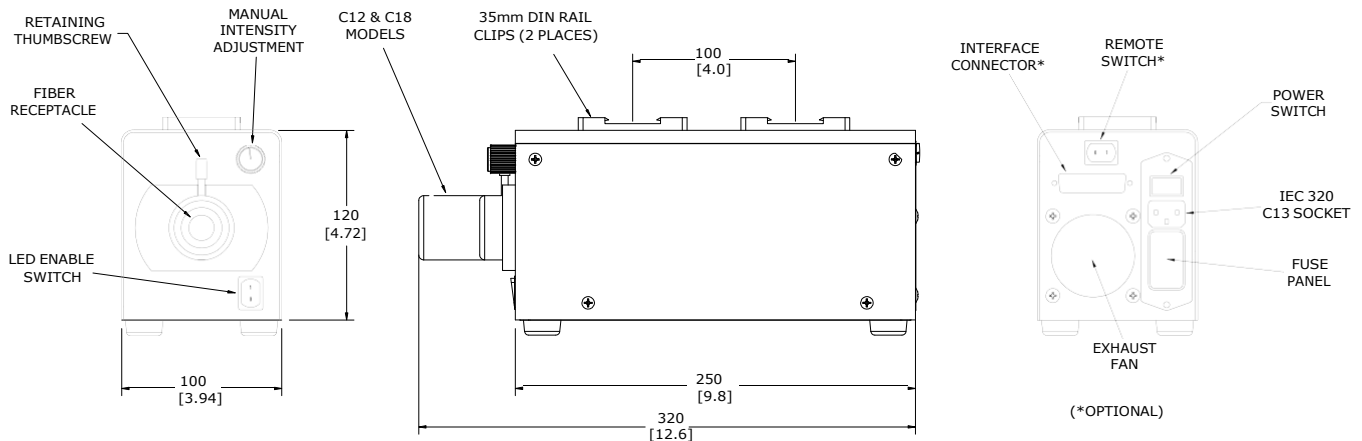


Figure 1: UBerLED 50/100 Lightsource Series

The unit incorporates the proprietary **UBerBallast™** adjustable current controller which precisely adjusts up to 18.0 Amps to the LED light engine. This DC regulated current ballast is controlled by either the front panel controls OR the remote interface. Models which have a remote serial interface also feature the exclusive **LightLock™** light feedback control circuitry. This feedback loop measures the light output in real time and adjusts for any changes in light output due to temperature or lamp degradation over the lifetime of the LED lamp (remote mode only). The LED lamp is guaranteed for 20,000 hour operation, and is field replaceable.

The **UBerLED™** series of lightsources have been developed using the latest in heatpipe thermal management technology, and are therefore incredibly compact and powerful compared to all other systems. The DIN rail clips on the top of the units allow the user to hang multiple units side-by-side from an overhead pair of DIN rails for highly efficient use of space, and ease of service.

OPERATIONS

The UBerLED family of lightsources offers a unique variety of output optics for a broad range of fiberoptic core sizes, and numerical aperture requirements. This allows the product line to address a wide range of applications, including large active fiber areas (up to $\phi 18\text{mm}$), small NA (<0.25) and even projector applications.

Each of these optical interface modules are slightly different in length and diameter, but they all accept a full range of standard fiberoptic assemblies from any of the major fiberoptic manufacturers.

The factory default receptacle inner diameter is $\phi 16\text{mm}$ ($\phi 0.63''$) [this is the Illumination Technologies standard]. The unit may also be ordered with several other industry standard receptacles sizes, or with a custom receptacle size (consult with factory). The unit may also be configured in the field to accept any fiberoptic assembly with outer diameter up to 20mm by simply changing the integral fiberoptic adapter insert as shown in Figure 2.

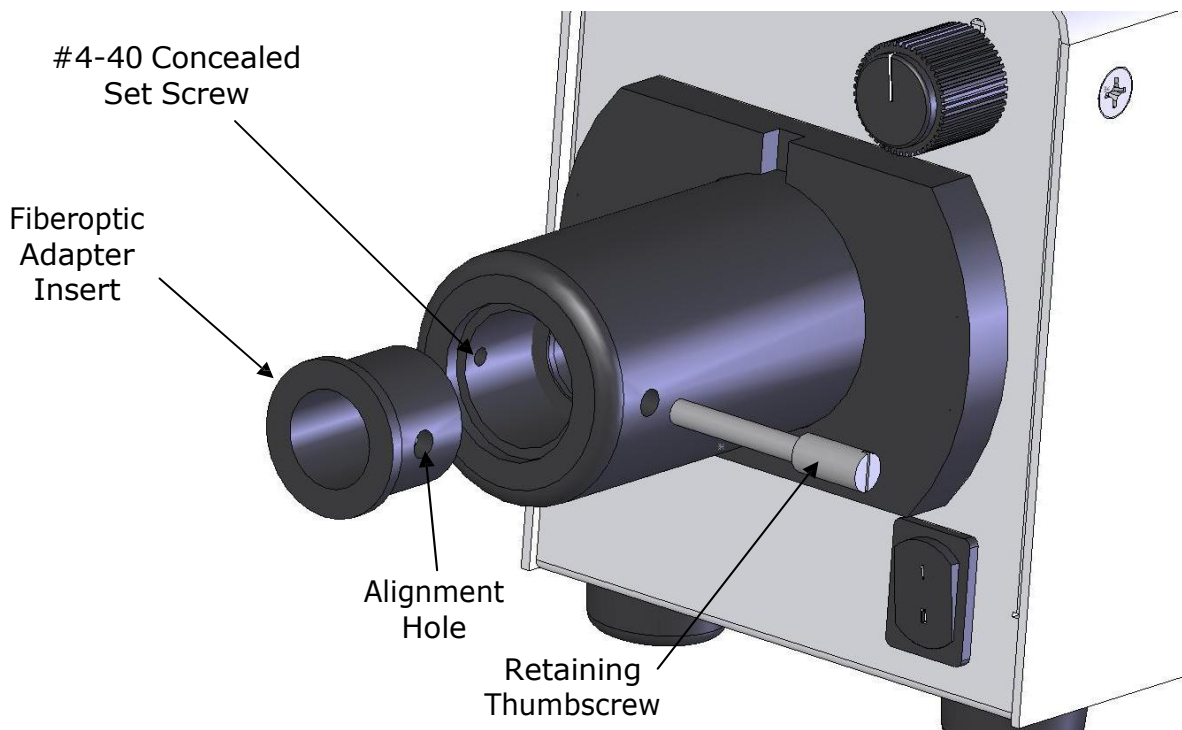


Figure 2: Field Retrofit of the Fiberoptic Adapter Insert

The fiberoptic adapter insert is held within the receptacle barrel by a small concealed hex set screw. To change the adapter size for a different fiberoptic assembly, loosen this set screw and the retaining thumbscrew until the adapter insert may be removed as shown. Please the new adapter insert into the barrel, positioning the alignment hole with the retaining thumbscrew. Tighten the thumbscrew until it passes completely through the alignment hole. Tighten the concealed set screw firmly to hold the insert in place. The following standard inserts are stocked (consult factory for custom sizes):

<u>IT Part Number</u>	<u>Inner Diameter</u>	
UB-FAI-15	15mm (0.590")	
UB-FAI-16	16mm (0.630")	*Factory Default
UB-FAI-18.5	18.5mm (0.725)	

OPERATIONS

The unit may be operated in a tabletop mode, or may be more rigidly mounted using the DIN rail hardware provided on the top surface. In either case, the user must ensure that sufficient airflow below (intake) and at the rear (exhaust) of the unit is observed to allow for proper cooling. The unit should also be mounted in a space that has sufficient air exchange to avoid having the ambient temperature rise above the operational specification. If the unit rises above the specified temperature, power to the LED will be removed (*LightLock™* mode only). Prior to reuse, the unit must be allowed to cool and then power cycled to reset.

An IEC 320 power inlet module is located on the rear panel. This module provides an internationally accepted power interface that can be used with a variety of power cords. The power entry module contains the main power switch and the fuse box. The fuse holder allows the use of dual 5x20mm fuses. In order to access the fuses the power cord must be removed.

To change the fuses, start by removing the power cord. Insert a small flat blade screwdriver into one of the notches near the socket and gently pry the door open. Pull the door straight out and swing it into the socket (as shown in Figure 3). Lift the fuse holder out of the housing.

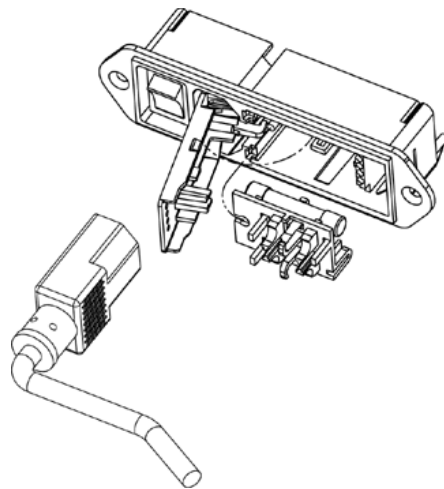


Figure 3: IEC 320 Power Entry Module

Replace the fuses with T2.0 Amp, 5x20mm fuses. The fuses should be placed in the fuse holder as shown in Figure 4. Replace the holder into the housing such that the fuses enter first. Swing the door closed and snap it back into place.

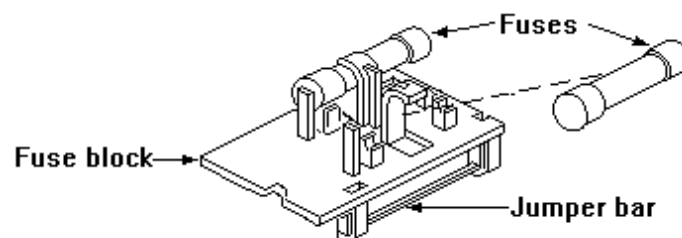


Figure 4: Fuse Arrangement

SPECIFICATIONS

Physical:

- Overall Dimensions

Height:	120mm [4.7"]
Width:	100mm [3.9"]
Length:	250 mm [9.8"]
Length (C12/C18):	320 mm [12.6"]

- Weight/Mass
(*C12/C18) 2.0 kg [4.4 lbs]
2.2 kg [4.9 lbs]

- Standard Cable Length: 6.0 feet (1.8 meters)

Electrical:

- Input Power: 90-240VAC 50/60 Hz
- Current Control: DC Regulated, 94% Eff.
- Serial Interface: RS-232 (standard)
USB (optional)
Ethernet (optional)
- Short Term Stability (minutes): 0.1 % (RMS)
- Mid Term Stability (days): < 1 %
- Long Term Stability (20,000 hrs): < 20% (Manual Mode)
< 1 % (*LightLock*[™])
- Power Consumption: 65 VA (UBerLED[™] 50)
110 VA (UBerLED[™] 100)

Environmental:

- Operating Temperature Range: 0 to 40°C
- Relative Humidity Range: 0 to 95% non-condensing

COMMUNICATIONS

RS-232 is the standard serial interface, and it has provisions for controlling the light intensity and power to the LED lamp. The RS-232 interface is equipped with a D-25 connection, and is wired as shown in Figure 5. It must be connected to a dedicated COM port. The USB option has a standard Mini USB receptacle (male), and creates its own COM port upon initialization, providing simple connection and multiple source control capabilities not limited by hardware.

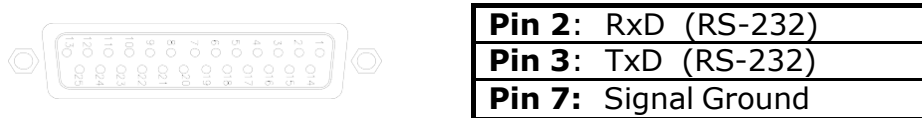


Figure 5: D-25 Serial Interface as seen from Rear of Lightsource Chassis

To operate the unit in RS-232 mode, configure a serial interface cable as shown. Remember that TxD and RxD signals are reversed between devices. Plug the cable into any standard serial COM port. If your unit has been configured with the optional USB interface, connect the lightsource and computer with the enclosed USB cable. The device will automatically be configured and assigned a unique COM port. You do not need any additional drivers or installation procedures. To determine the COM port number that has been assigned to the lightsource, open 'Device Manager' and expand the 'Ports' folder and you will see the lightsource with its associated COM Port number, shown as (COMX) where "X" is the port number. The lightsource will now communicate exactly as in the RS-232 mode using this COM port.

If your unit has been configured with the optional Ethernet interface module, insert a standard RJ45 connector into the Ethernet port and connect the other end to a network switch or hub. When using the Ethernet option, a maximum of 255 units may be operated on a single network. To operate the unit in remote mode (either RS-232, USB, or Ethernet) the rear panel remote switch must be in the "1" position.

Software Protocols

The interface controls the light intensity and power to the LED lamp using simple ASCII character text strings. These commands are the same for the RS-232, USB, or Ethernet interface. The only difference is the way in which the ports are opened and assigned prior to issuing commands and queries. Commands tell the lightsource what to do, and are followed by the "=" character. Queries inquire about the status and are followed by the "?" character.

Query/Command	Response	Function
HEL?	Ver X.X	Retrieves Firmware Version
SSR0?	0 or 1	LED Enable is OFF (0) or ON (1)
INT0=XXXX	OK	where XXXX = 0 to 4000
SSR0=Y	OK	Where Y = 0 or 1
INP=1	OK	Sets the last INT value as the INT value at power up (Default =4000)

The intensity of the lightsource is precisely controlled in 4000 linear steps (0.25% increments) by assigning the Intensity value (INT0) an integer value from 1 to 4000. The LED may also be turned ON and OFF by assigning the SSR0 command of either "1" or "0" respectively. The default INT value at power up may be set by establishing the desired INT value, and then sending the command INP=1 prior to shut down. This saves the particular INT value which is then used on power up.

COMMUNICATIONS

To test the lightsource (in either RS-232, USB, or Ethernet mode) the Microsoft® HyperTerminal software can be easily configured to test the lightsource functions. Make sure you set the program to "Echo Characters."

For serial interface operation your COM port must be set to run at 9600 Baud Rate, No Parity, 8 data bits, 1 stop bit. Flow Control should be set to none. The port configuration command should read: 9600, N, 8, 1.

Configure the correct COM port in HyperTerminal and type the following commands (followed by a "↵" which is a carriage return) to test the unit's communications interface and functionality.

Communications Test Routine

HEL?↵ (Opens communication with the device)

Response is Ver X.X (where X.X is the firmware revision number)

SSR0=1↵ (Enables the LED lamp)

INT0=4000↵ (Changes intensity to full scale setting)

The LED should now be at full intensity

INT0=1000↵ (Changes intensity to 25% of full scale output)

The LED should now be at 25% full intensity

SSR0=0↵ (Disables the LED lamp)

The LED should shut off completely

SSR0? (Queries the Solid State Relay Status)

The response should be "0" since the SSR is OFF

SSR0=1↵ (Enables the LED lamp again)

The LED should now return to 25% full intensity (the unit will always return to the last INT value stored when the SSR is activated)

You have now verified the communication interface and the LED driver electronics.

COMMUNICATIONS

Ethernet Option

The command structure for the Ethernet interface is exactly the same. However, the unit's Ethernet module must be set to the proper IP address to communicate within your specific network.

To identify and update the IP address of the Ethernet device to your network, you will need to do the following:

1. Download and installing the Lantronix Device Installer software
2. Check the current IP settings of your network and the lightsource
3. Changing the lightsource settings to match your network requirements

We use the Lantronix network interface module, which is supported by the Lantronix Device Installer software. Follow this link to download the latest version of the required software:

http://ltxfaq.custhelp.com/app/answers/detail/a_id/644/session/L3NpZC9kWWlqWjRsaw%3D%3D

***Note: If your security settings do not allow downloading and installing software, please contact your network administrator for assistance.**

The above link should take you to the following webpage:

The screenshot shows a support page with a search bar and a list of products. The main content area displays the answer to the question 'What is the latest version of DeviceInstaller?'. The answer states that the current version is 4.3.0.0 and provides links to download the application and release notes. Two tables are provided for downloading the application: one for the standard version (1.3 Mb) and one for a stand-alone version (60 Mb). An arrow points to the 'HTTP' link in the second table.

Home > Support

Support

Tech Support

Knowledgebase / FAQs

Submit a Tech Support Question

Documentation

Downloads

Product Registration

Product Bulletins

Online Product Tutorials

Live Assist

Cable / Adaptor / Lookup

Warranty Return, Policy & Procedure

Extended Support & Services

Spares Program

FTP Site

Customer Sales Support

P.O. Requirements

Answers Ask a Question My Stuff Login Help

Search by Product Search by Category Search by Keyword Search Tips

Search By Phrases

Powered by RIGHT NOW

Answer ID 644

Question What is the latest version of DeviceInstaller?

Answer The current version of DeviceInstaller is **4.3.0.0**. Click on the ftp or HTTP link in the table below to download the [Setup](#) application and [Release Notes](#).

Product	Download via FTP	Download via HTTP
DeviceInstaller Setup application for Windows (1.3 Mb) - requires internet access	ftp	HTTP
Release Notes	ftp	HTTP

If you need a stand-alone DeviceInstaller setup application for a host with no internet access, you can download it from here:

Product	Download via FTP	Download via HTTP
Stand-alone DeviceInstaller Setup application for Windows (60 Mb)	ftp	HTTP

Device Installer does not include firmware

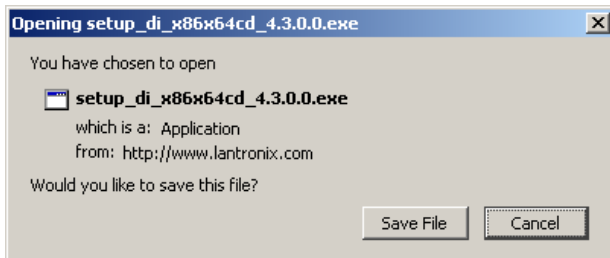
To download firmware for your Lantronix product, [Click Here](#)

If you would like to be notified when a new version of the Device Installer is available, click the button below titled "Notify Me by E-mail if this Answer is Updated"

Click Here

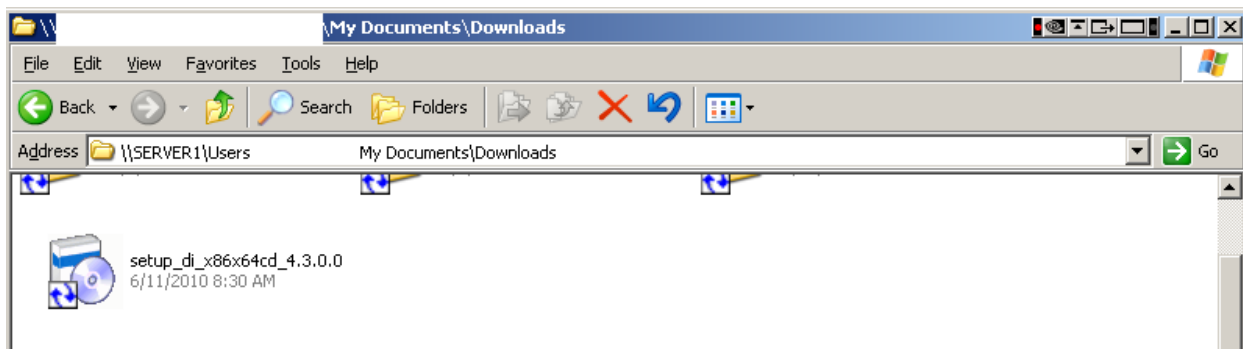
Click the link for "Standalone DeviceInstaller Setup application for Windows". Download the application via HTTP.

This opens up the following window:

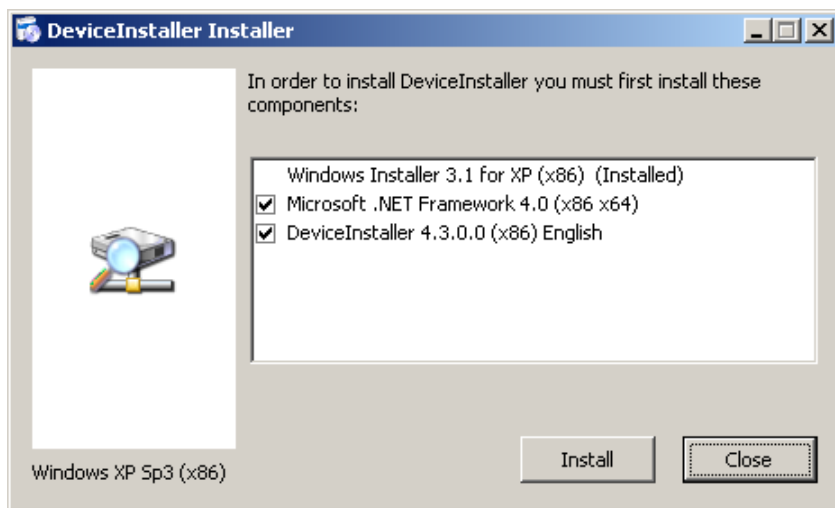


Click "Save File". This may take a few minutes, depending on your download speed.

When the download is finished, go to the folder in which it downloaded to and double left-click the icon to begin the installation process.

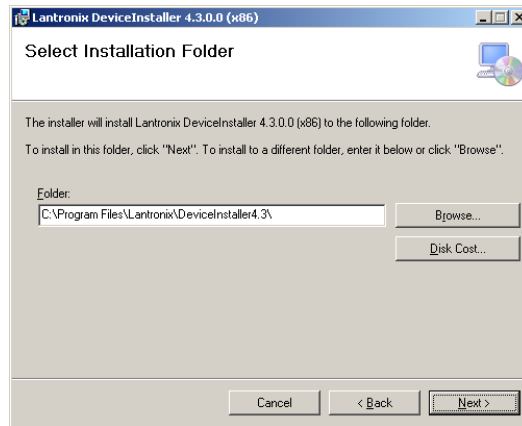


Choose your preferred language, and then choose to install all required components listed in the window.



If additional installation is needed, you will be required to restart your computer after completion.

Upon restart you will be asked to select a destination to save the program. By default, the Windows installer selects the path shown. You can accept the default or browse to find a more suitable location if you desire. You should make note of where you install this program to for future reference.



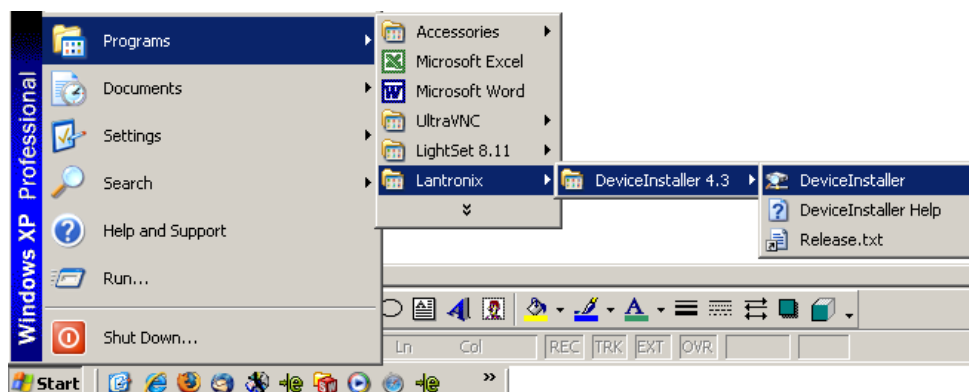
Select Next and Confirm the installation. Once the installation process is complete select Close and you will receive the successful installation window:



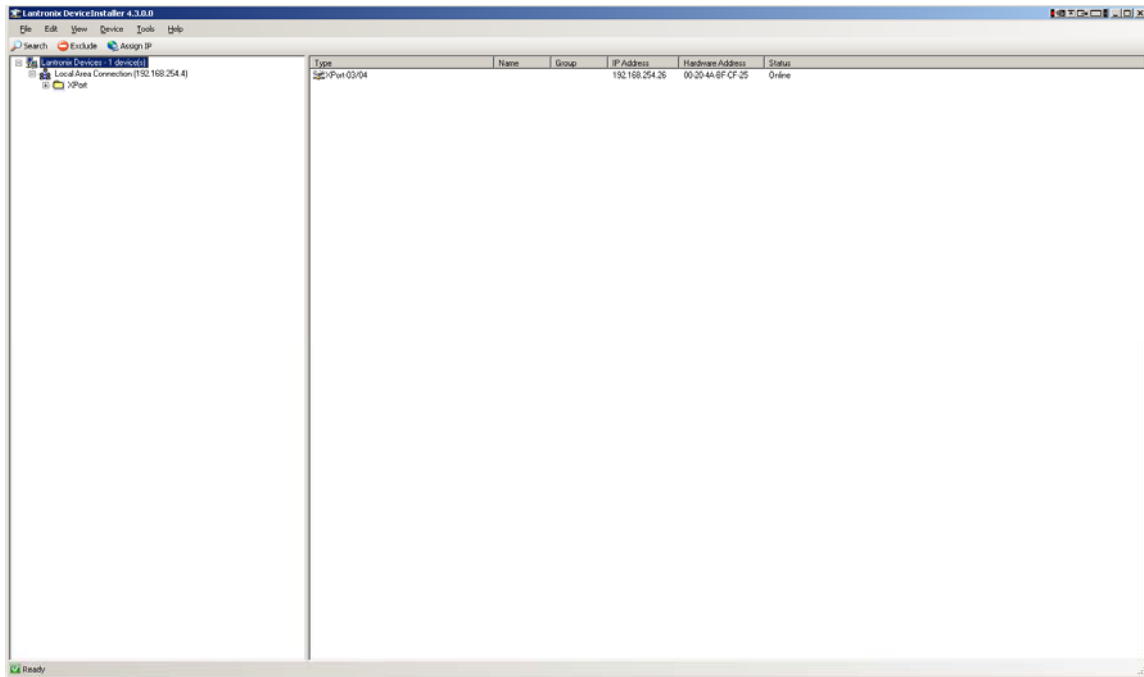
The DeviceInstaller is now installed on your computer and ready for you to use.

Connect the power to the device and power on. Connect an Ethernet cable from the lightsource to a network switch or hub into which this same computer is also attached. Ensure that the GREEN LED light on the lightsource Ethernet port is lit (indicates that the lightsource's Ethernet port is powered). The YELLOW LED should flash whenever a command is sent to the Ethernet port.

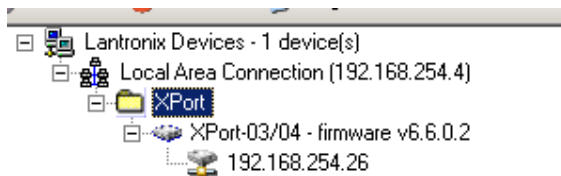
You can now launch DeviceInstaller in the "Start" Menu as shown under Programs/Lantronix/DeviceInstaller 4.3/DeviceInstaller (if you receive an error message from your firewall, you will need to allow the DeviceInstaller to have access to the Internet):



Once the installer launches, it will search the entire network and identify every lightsource attached. You should see the following screen:

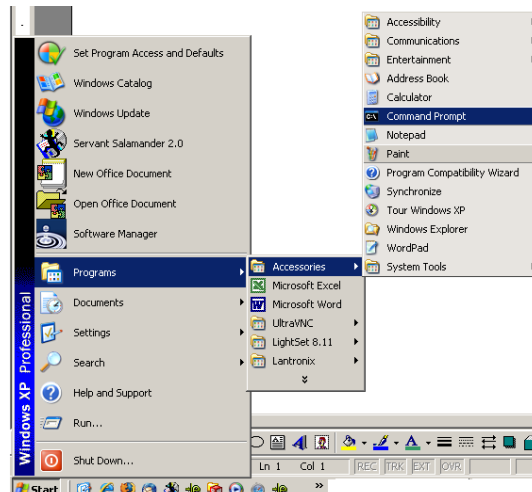


Expand the "Xport" folder on the left side to see the current IP address of the lightsource:

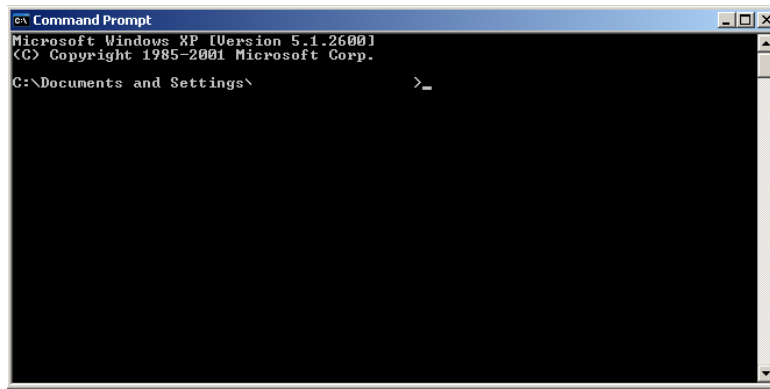


To assign a new IP address, you must first find out your network IP addresses and the subnet mask information using the following procedures:

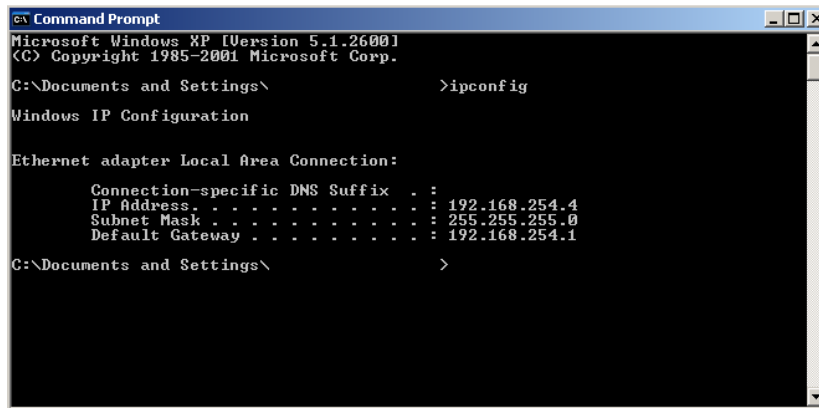
Open C:/Command Prompt by going thru the Start Menu/Programs/ and looking under Accessories.



The following window will open:



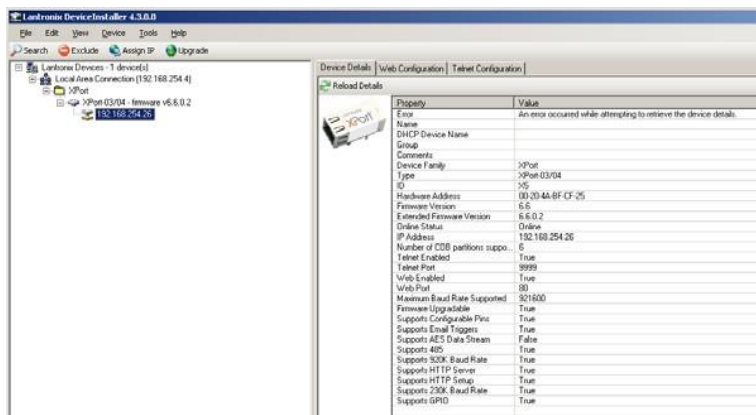
At the command prompt, type "ipconfig" and then Enter



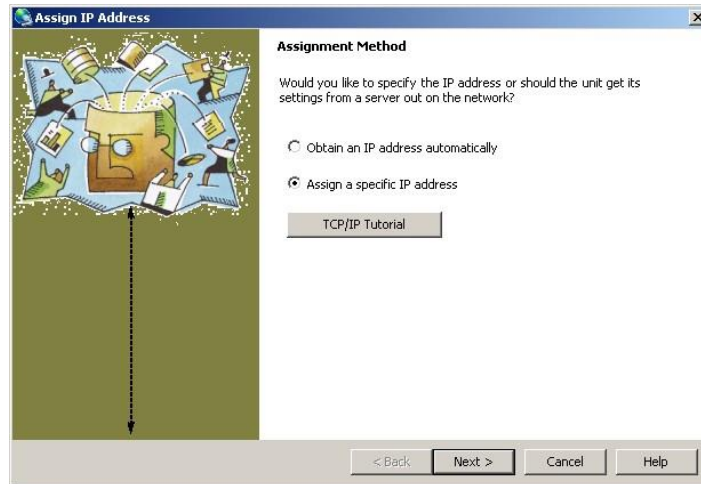
The IP address of your computer is listed in the first line. When assigning the new IP address to the lightsource, the first 3 "blocks" of the IP address must match your network's IP address (in this example 192.168.254) The last "block" however must be different than any other device on the network. This number must be unique.

When assigning the new Subnet Mask and Default Gateway to the lightsource, they both must match your network's Subnet Mask and Default Gateway exactly (in this example 255.255.255.0 and 192.168.254.1 respectively).

Returning to the DeviceInstaller, double click on the lightsources current IP address to see all of the parameters associated with the lightsource Ethernet port.



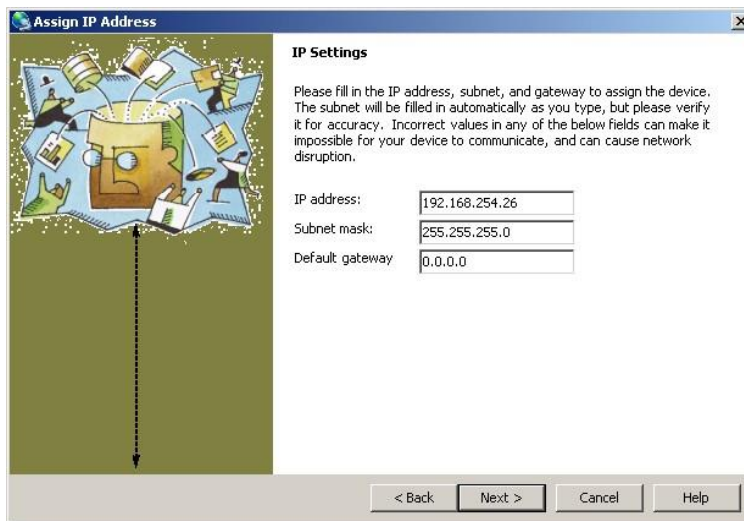
In the below the toolbar below the menu bar, click on the "Assign IP" button and the following window appears:



If you know the address you want to change the module to, keep the "Assign a specific IP Address" checked (RECOMMENDED). However, before you do this you should verify that the address is not used by any other device on the network.

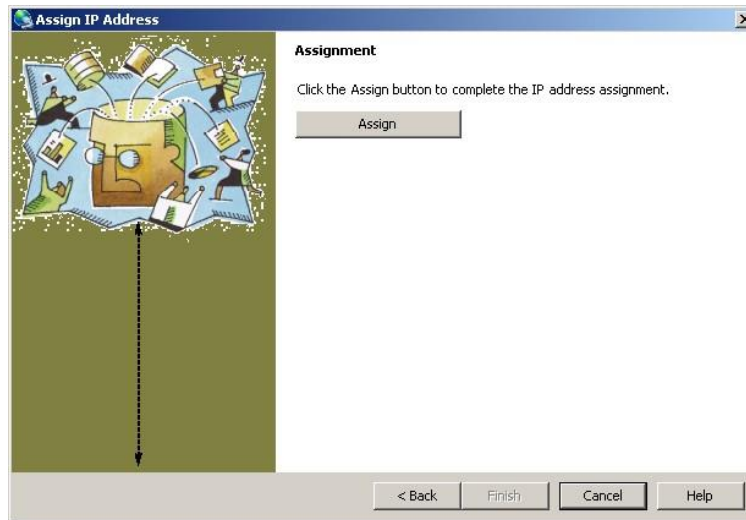
To verify that this is an available address, return to the C:/ Command prompt and type "ping XXX.XXX.XXX.XXX" where "XXX.XXX.XXX.XXX" is the IP address you wish to assign. If a device responds, do not use that address. If the ping returns a 'timeout' then this address is available.

If the address is available, then click Next and this will open the following window:

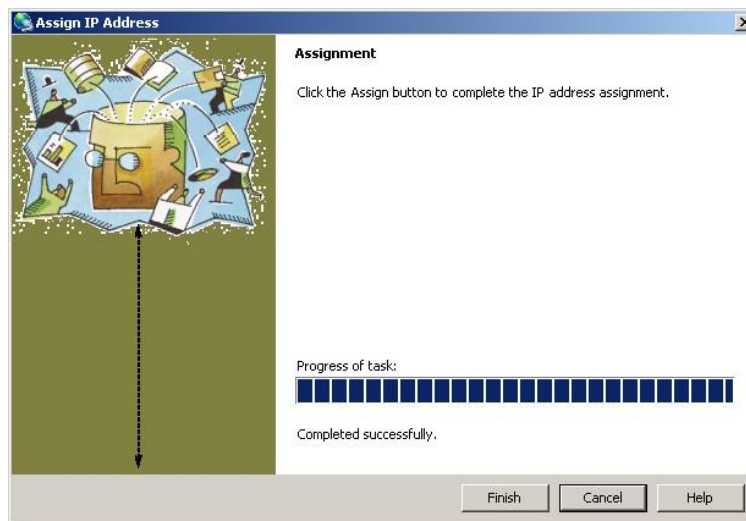


Change the IP address, Subnet Mask, and Default Gateway to your required network settings and click "Next".

The following window appears. Click "Assign".



Once complete, the following window appears and you are done.



You have now successfully changed your IP address of the Ethernet enabled device. Make note of the IP address of this device for future reference.

You can run a quick test of the lightsource using Microsoft® HyperTerminal.

- Open a HyperTerminal session and go to File/Properties.
- In the "Host Address" line, type in the IP address that you just assigned
- Set the "Port Number" to 10001
- Click: "OK".
- Go to "Call" and click on "Call" in the menu

Communications Test Routine

You are now ready to control the lightsource using HyperTerminal. Make sure you set the program to "Echo Characters."

To begin type the following commands (followed by a "\r" which is a carriage return) to test the unit's Ethernet communications interface and functionality:

HEL?\r (Opens communication with the device)

Response is Ver X.X (where X.X is the firmware revision number)

SSR0=1\r (Enables the LED lamp)

INT0=4000\r (Changes intensity to full scale setting)

The LED should now be at full intensity

INT0=1000\r (Changes intensity to 25% of full scale output)

The LED should now be at 25% full intensity

SSR0=0\r (Disables the LED lamp)

The LED should shut off completely

SSR0?\r (Queries the Solid State Relay Status)

The response should be "0" since the SSR is OFF

SSR0=1\r (Enables the LED lamp again)

The LED should now return to 25% full intensity (the unit will always return to the last INT value stored when the SSR is activated)

You have now verified the Ethernet interface and the LED driver electronics.

Warranty Statement

The Illumination Technologies products are warranted to the original purchaser to be free from defect for two years from the date of purchase of the product. Illumination Technologies, Inc. will repair or replace, at its discretion, any defective unit within two (2) weeks of its receipt. This warranty is void if the unit in question has been visibly damaged by accident or misuse, if the unit has been serviced or modified by anyone other than an authorized representative of Illumination Technologies, Inc., or if any warranty seal has been broken. This is the only warranty expressed or implied by Illumination Technologies, Inc. Specifically excluded from this warranty is damage resulting from improper installation or neglect in the operation of the unit or misunderstanding of the properties of the unit.

Service Statement

To return this product for service or repair, an RMA number (Return Materials Authorization number) must be obtained from Illumination Technologies. To receive the RMA number, visit our website at www.illuminationtech.com/support and fill out the RMA form. You will then receive an email with the RMA number and the shipping information. The RMA number must be affixed to the shipping label in plain sight, and the shipper must prepay all shipping. Illumination Technologies, Inc. or an Illumination Technologies Authorized Service Representative must perform any service required. All service outside the warranty period will be performed upon the purchaser's request according to normal service charges in affect at the time. Illumination Technologies, Inc. guarantees all repairs to be completed within two (2) weeks of receiving the approval of the customer. All shipping charges will be the responsibility of the purchaser.

Liabilities

Any warranty implied under State Law shall be limited to one year from original delivery to the original purchaser. Specifically excluded from Illumination Technologies, Inc. liability is damage resulting from acts of any deity, malicious mischief, vandalism, riots, wars, improper installation or neglect in the operation or maintenance of the unit or misunderstanding of the properties of the unit. Under no circumstances shall Illumination Technologies, Inc. be obligated for consequential or other damages of any kind or description, losses or expenses in connection with or by reason of the use of, or inability to use this unit for any reason. The stated warranty provides the purchaser with specific legal rights, and there may be additional rights that vary from state to state. Some states, for example, do not allow exclusion of consequential damage.