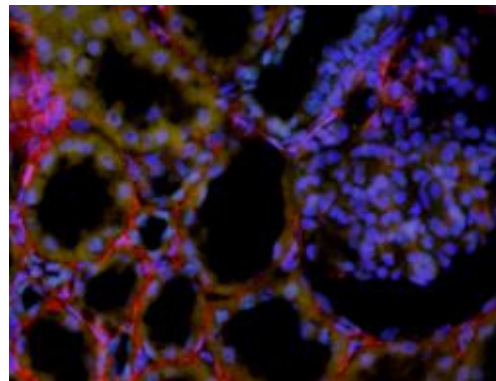
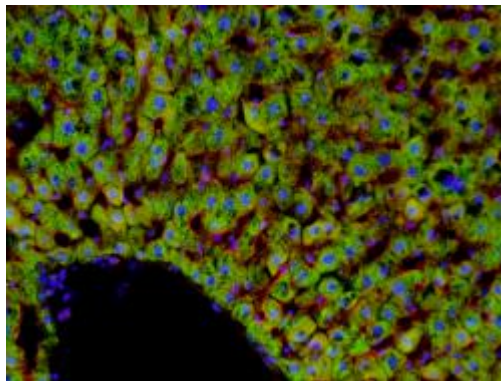
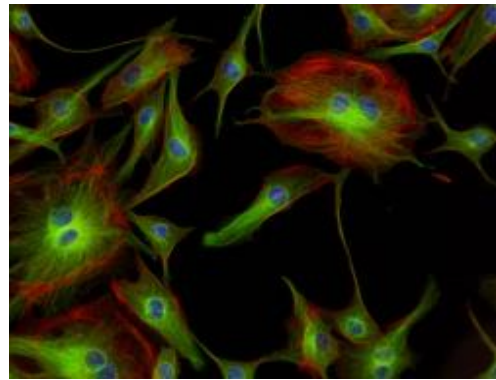
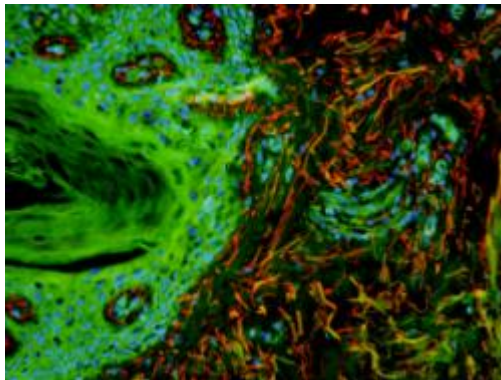


User Manual

pE-300 Series



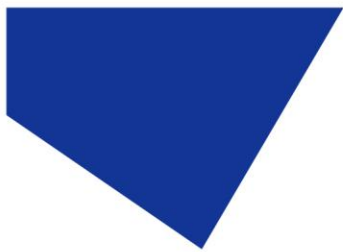


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1. Introduction

CoolLED's pE-300 Series illumination systems offer broad spectrum LED illumination for general use in fluorescence microscopy applications, while the pE-300^{opto} also provides optogenetic stimulation.

With a comprehensive range of microscope adaptors, the pE-300 Series can be fitted to most current and older microscopes. The result is a safe, convenient illumination system which will last for many years without any additional operating costs.

This User Manual provides all the information required to install and operate your new illumination system.

Additional information can be found on our website at www.cooled.com



2. Safety Precautions

While LEDs are a much safer illumination system than the mercury and metal halide lamps that they replace in microscopy applications, precautions should still be taken with this product.

When operating or maintaining this product, please observe the following safety precautions at all times. Failure to do so may result in personal injury or damage to other items.

Please ensure that only the power supply and cord supplied are used with this equipment.

The Light Source is for Indoor use only.

The AC cord supplied with this light source must only be used with the equipment supplied.

2.1.

UV light may be emitted from this product depending on the version/wavelength selected. Avoid eye and skin exposure. Never look directly into the light output beam from the Light Source or accessories. The emissions could damage the cornea and retina of the eye if the light is observed directly.

2.2.

Always ensure that the Light Source is securely attached to the microscope (either directly or with a light guide and collimator, depending on the version) prior to turning on the power. This will minimise the risk of injury and damage.

2.3.

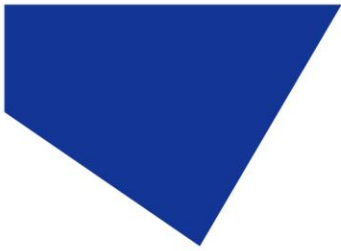
If for any reason the Light Source is to be operated when not attached to a microscope, all personnel should wear eye shielding and clothing to protect the exposed skin.

2.4.

Disconnecting the mains supply is achieved by unplugging the power cord from the power supply block or the Light Source. Only plug in the power cable, once the Light Source is attached to the microscope.

2.5.

There are no serviceable parts within the Light Source. Removing any of the screws and covers will result in the safety of the Light Source being impaired.



The DC power supply unit should be inspected periodically throughout the lifetime of the system.

2.6.

Any electronic equipment connected to this product must comply with the requirements of EN/IEC 60950.

2.7.

To clean the exterior of the Light Source, use a slightly dampened cloth with a simple water/detergent solution only. Avoid the optical surfaces and lenses. Cleaning of optics should only be carried out using optical wipes and fluids. Please note that the DC power supply unit should be isolated prior to cleaning.

2.8.

This product conforms to the requirements of the Safety Standards as follows:

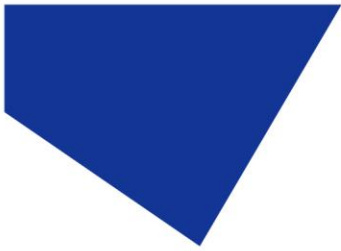
EN/IEC 61010-1:2010	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory use.
EN62471:2008	Photo-biological Safety of Lamps and Lamp Systems/Guidance on manufacturing requirements relating to non-laser optical radiation safety. Risk Group 3.

RISK GROUP 3
WARNING UV emitted from this product. Avoid eye and skin exposure to unshielded product.
WARNING Possibly hazardous optical radiation emitted from this product. Do not look at operating lamp. Eye injury may result.
CAUTION IR emitted from this product. Avoid eye exposure. Use appropriate shielding or eye protection

All warnings may not be applicable depending on the version/wavelength being used.

2.9. EMC compliance

This product is tested to the requirements of standard IEC/EN 61326-1 concerning electromagnetic compatibility. This is a Class B product.



3. pE-300 Series variants

All versions in the pE-300 Series offer intense, broad spectrum LED illumination, suitable for imaging most common fluorescent stains.

3.1. pE-300^{white}



The pE-300^{white} allows individual control of the three channels in the Illumination System. This can be controlled by the manual Control Pod, USB or a single global TTL. Light sources are available for either direct attachment to the microscope or via liquid light guide delivery.

3.2. pE-300^{lite}



The pE-300^{lite} is the simplest Illumination System in the pE-300 Series. This is controlled by the manual Control Pod, allowing global intensity control of the illumination system. Light sources are available for either direct attachment to the microscope or via liquid light guide delivery.

3.3. pE-300^{ultra}

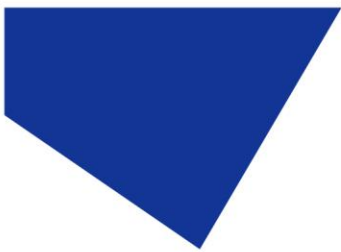


The pE-300^{ultra} allows control of the three channels using the Manual Control Pod, USB or by the four TTL inputs (one TTL input for each channel, as well as a global TTL). One additional method of TTL control is the ability to control a multi-channel sequence using a single TTL signal via the Sequence Runner feature. The pE-300^{ultra} also allows additional excitation filters to be placed in the light path of each of the three channels. Light sources are available for either direct attachment to the microscope or via liquid light guide delivery.

3.4. pE-300^{opto}



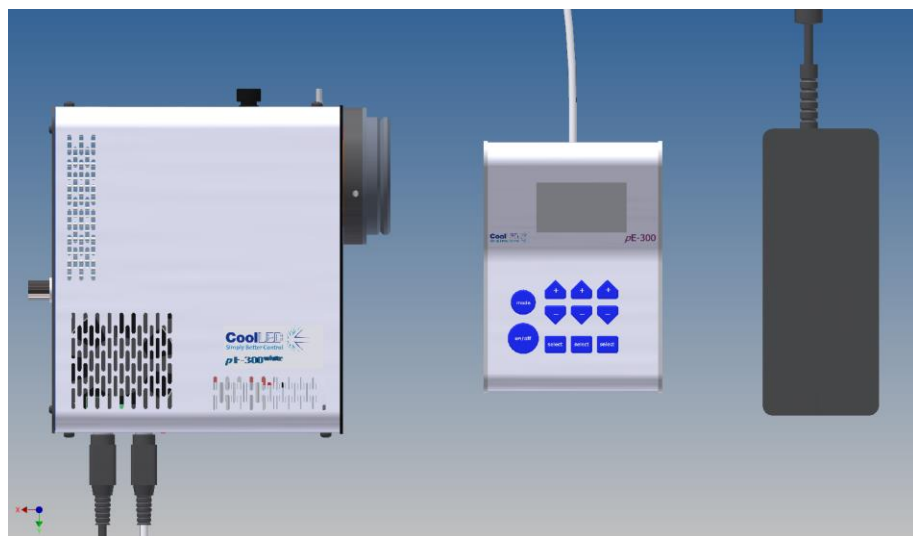
The pE-300^{opto} is designed for optogenetic stimulation, with three LEDs covering ChR2, NpHR and red-shifted dyes such as ChrimsonR. Control options are identical to the pE-300^{ultra}, with notable differences including updated chassis with connectivity on rear panel, and power on/off rocker switch. The Light Source is attached to the microscope via liquid light guide, or fibre with an optional fibre adaptor.



4. Getting Started – System Components

A typical CoolLED pE-300 Series Illumination System is supplied with the following components:

1. LED Light Source.
2. Manual Control Pod.
3. Microscope adaptor for specific microscope model (Direct fit only).
4. DC Power Supply Type GST120A12-R7B.
5. IEC Power Cable (not shown).
6. User Guide (not shown).



The image shows a typical direct fit pE-300^{white} system.

Note: The pE-300^{opto} may also be supplied with the optional interchangeable fibre (SMA) adaptor:



Optional interchangeable fibre adaptor for pE-300^{opto}

If any components are missing or appear damaged, please contact CoolLED immediately.

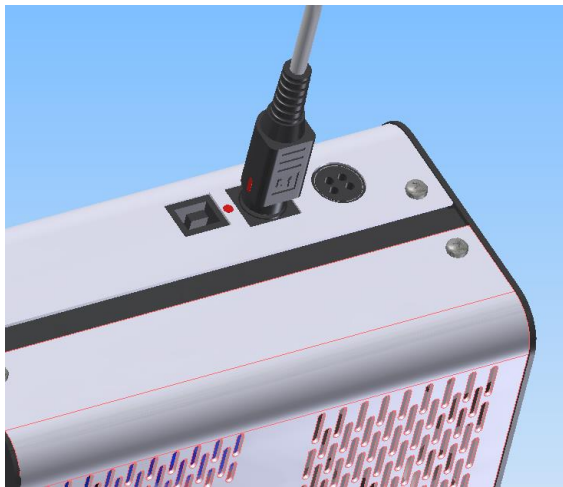
5. Installation and setup

5.1.

Carefully unpack the components. Note: the following instructions show the pE-300^{white} as an example – the positions on the pE-300^{opto} differ slightly.

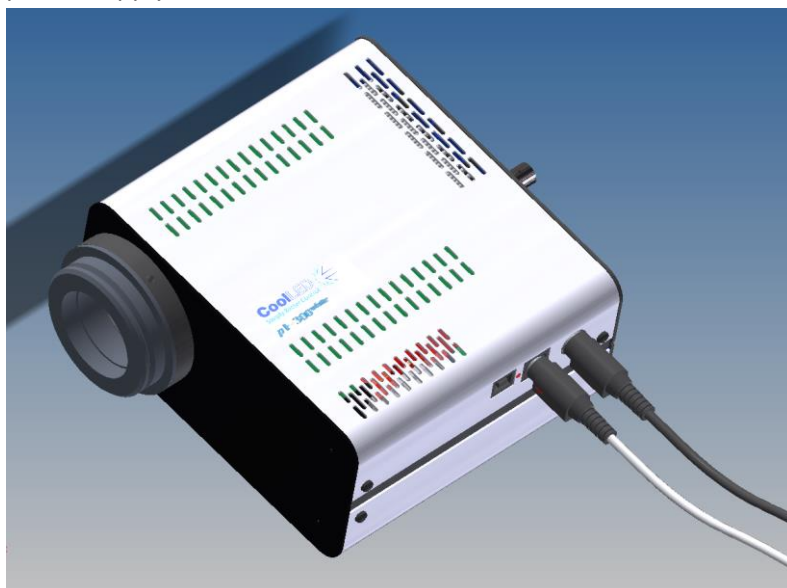
5.2.

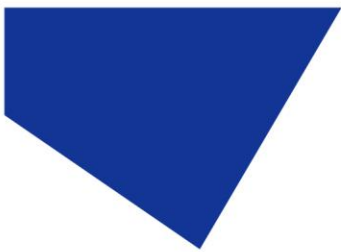
Insert the Control Pod cable into the LED Light Source using the red dots as a guide for orientation of the plug.



5.3.

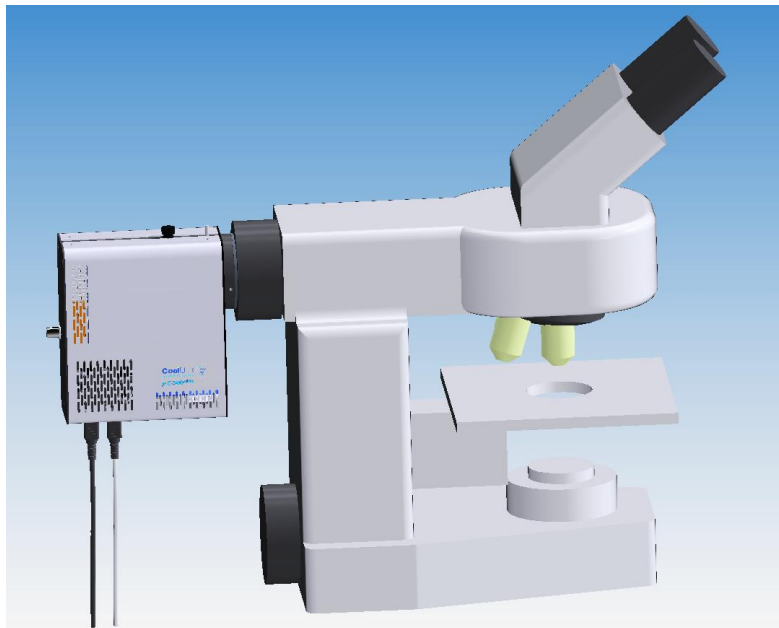
Connect the power connector from the DC power supply. Ensure that the DC power supply is the one supplied with the product. Using non-CoolLED power supplies may damage the Light Source and will invalidate the warranty. At this stage do not connect the mains power lead to the DC power supply.





5.4.

Attach the LED Light Source to the epi-fluorescence port on your microscope. Your pE-300 Series Light Source will have been supplied with a compatible fitting for the microscope you specified at order (if direct fit version). Attach the Light Source ensuring that it is secure and true/flush with the microscope.

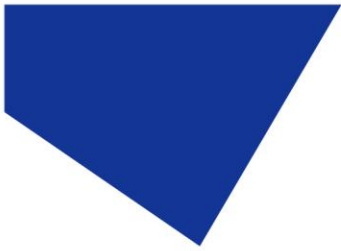


5.5.

Ensure that there is free airflow around the LED Light Source so that the cooling system is not impaired. A gap of 200 mm on either side is sufficient. The diagram shows the Light Source in the preferred orientation. However, it may be set with the cables at the top or at either side.

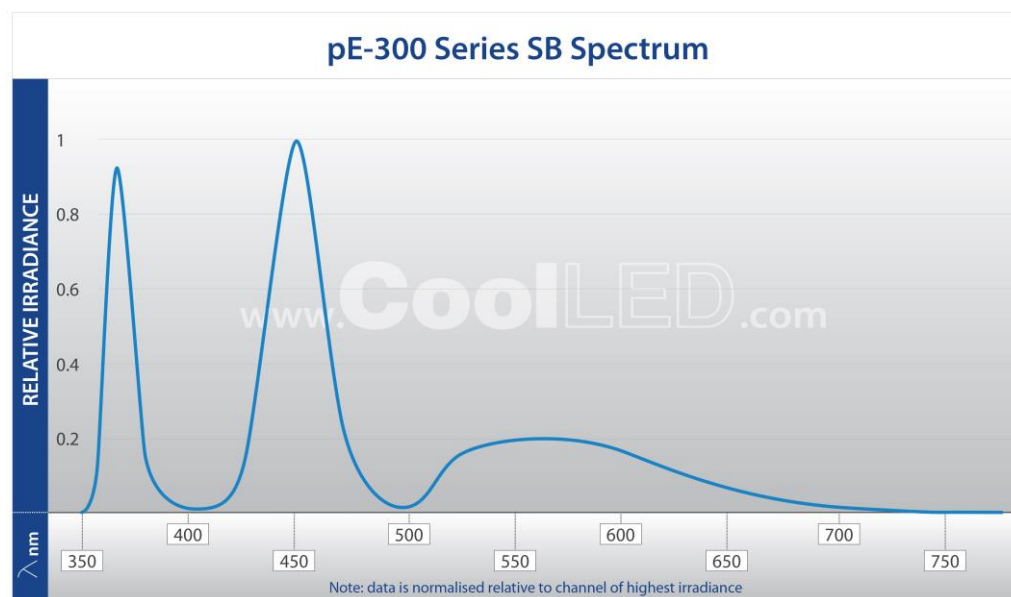
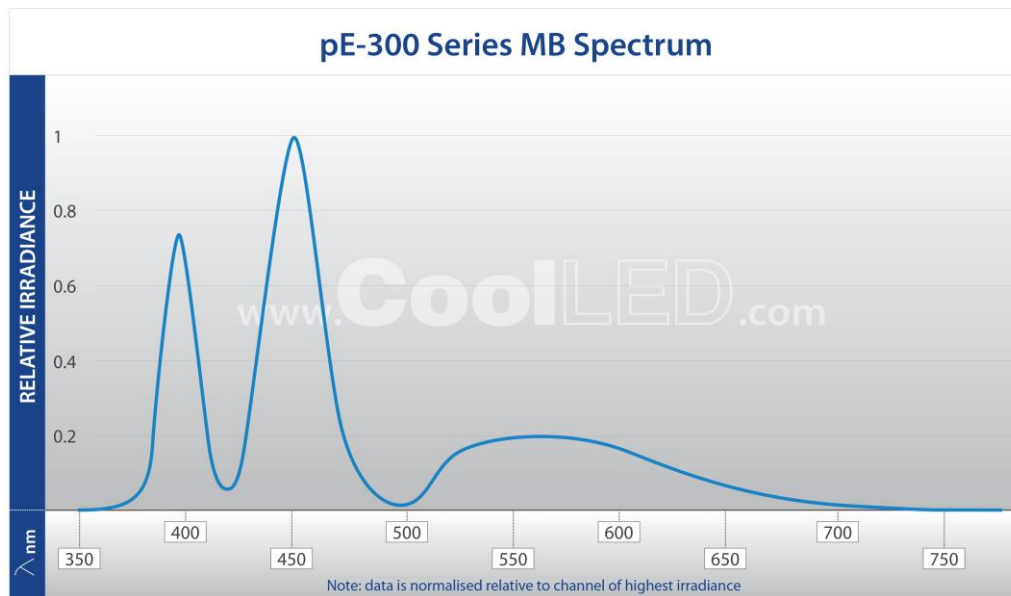
5.6.

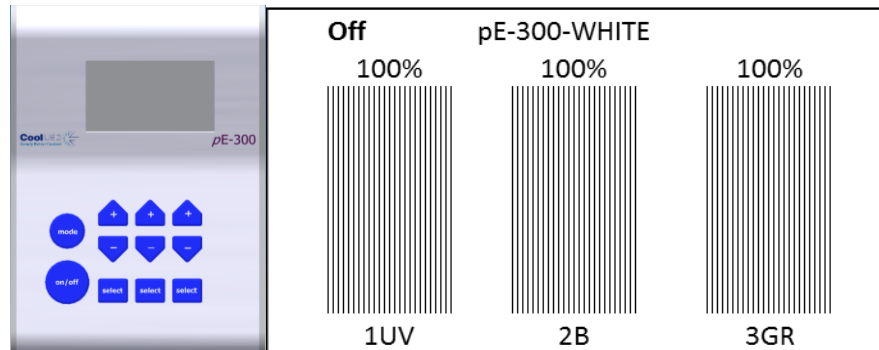
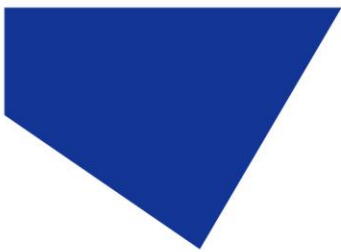
With the LED Light Source now attached to the microscope it is safe to connect the mains power. Connect the mains lead supplied to a convenient socket, plug in the IEC connector into the DC power supply and switch the power on at the socket. For the pE-300^{opto}, also switch the power rocker switch (found at the rear panel of the Light Source) to the on position.



6. LED Configuration

6.1. pE-300^{lite}, pE-300^{white}, pE-300^{ultra}

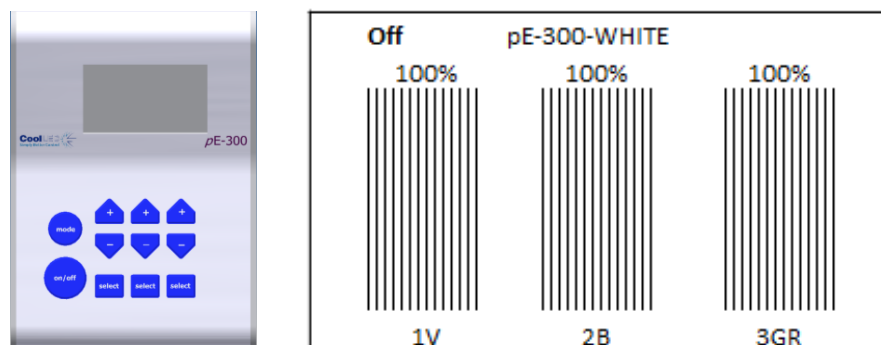




The pE-300^{white} and pE-300^{ultra} offer individual channel control, referred to as 1UV, 2B (blue) and 3GR (green, yellow, red).

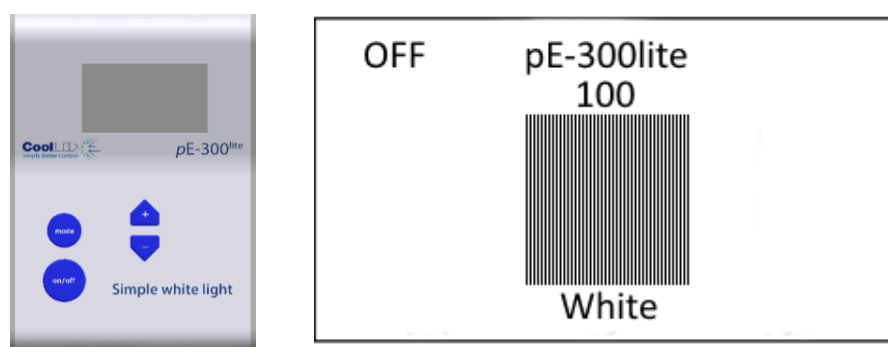
6.2.

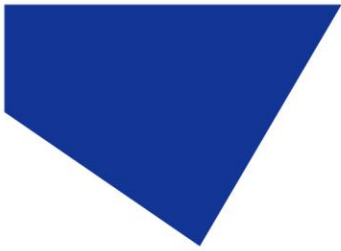
There is also a variant of the pE-300^{white} and pE-300^{ultra} which has been configured for use with multi-band filter sets where the first peak has been shifted from the UV region (1UV) to the violet (1V).



6.3.

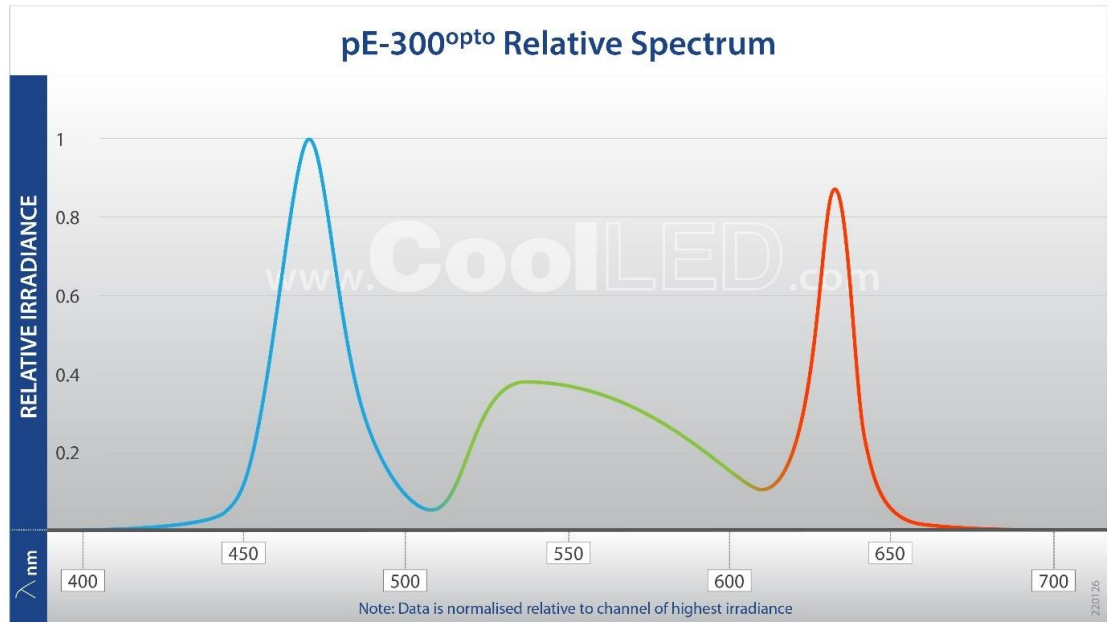
The pE-300^{lite} also allows the choice between an SB and an MB configuration to suit DAPI filter sets. The Control Pod however displays only one 'White' intensity control bar on the display. This will allow global intensity control of all installed LEDs at the same rate.



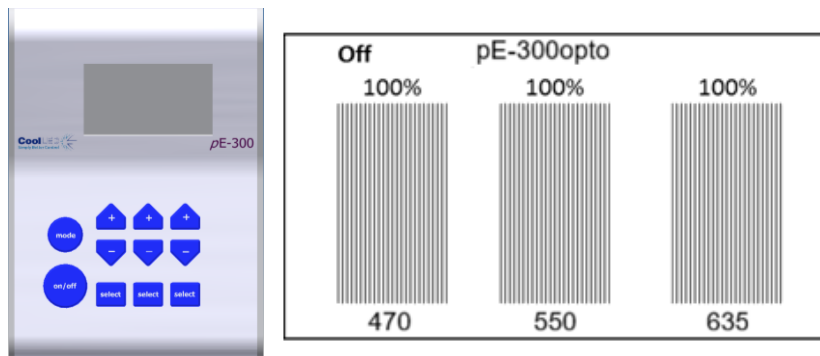


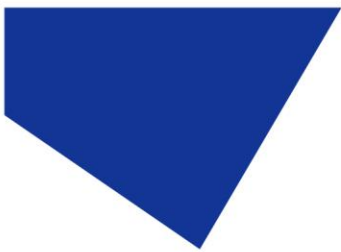
6.4. pE-300^{opto}

The pE-300^{opto} has only one LED configuration available, with LEDs centred at 470, 550 and 635 nm.



6.5.





7. Operation - Manual Control

7.1. pE-300^{white}, pE-300^{ultra}, pE-300^{opto}

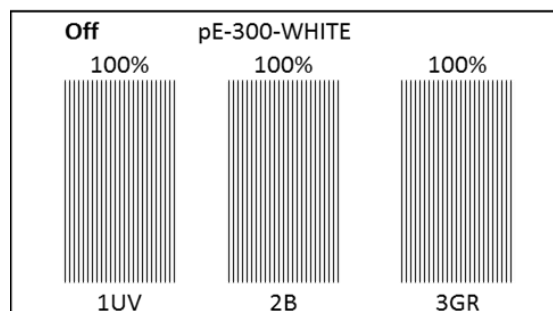
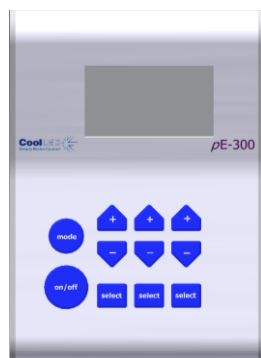
7.1.1.

Manual Control Pod Operation on/off.

The pE-300^{white}, pE-300^{ultra} and pE-300^{opto} are easily controlled from the manual Control Pod. LEDs are switched on and off by pressing the 'on/off' button. Note: the following instructions show the pE-300^{white} – the pE-300^{opto} LEDs are labelled with 470, 550 and 635.

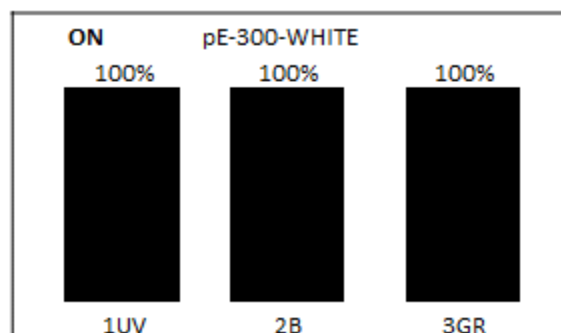
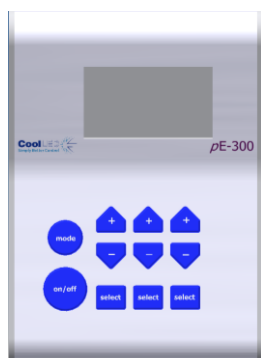
7.1.2.

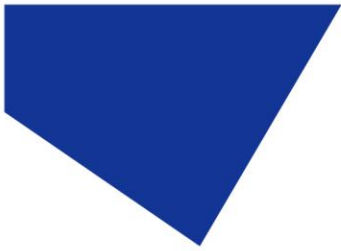
At start-up the Light Source will revert to the same settings that were set when it was last powered down. New Light Sources are supplied with the settings as shown.



7.1.3.

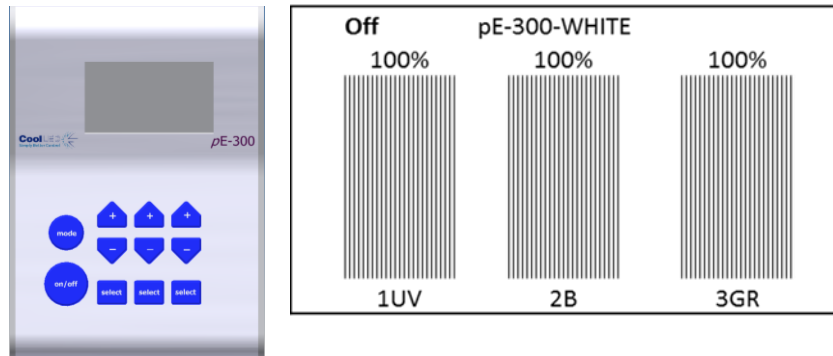
To switch on LEDs press 'on/off' once.





7.1.4.

To switch off the LEDs, press the 'on/off' once again.



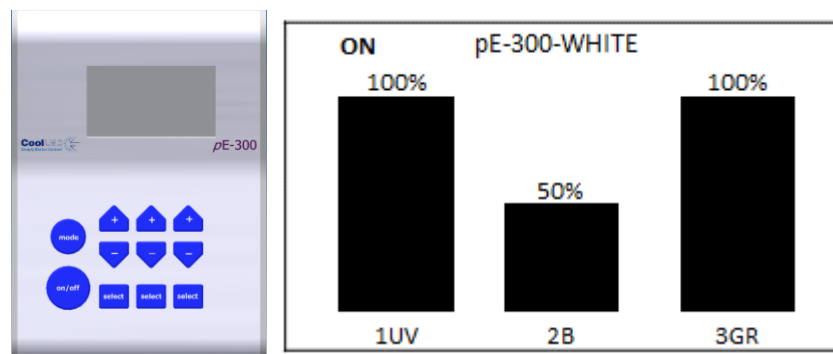
7.1.5.

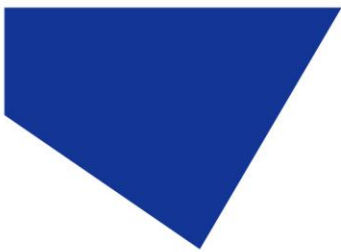
Intensity Control.

The Control Pod enables the user to control the intensity of the LEDs that are exciting different stains. This helps to balance the emissions so that one stain does not dominate another. This feature is very useful in multi-band work.

7.1.6.

Reduce intensity of one channel by pressing the down intensity button.

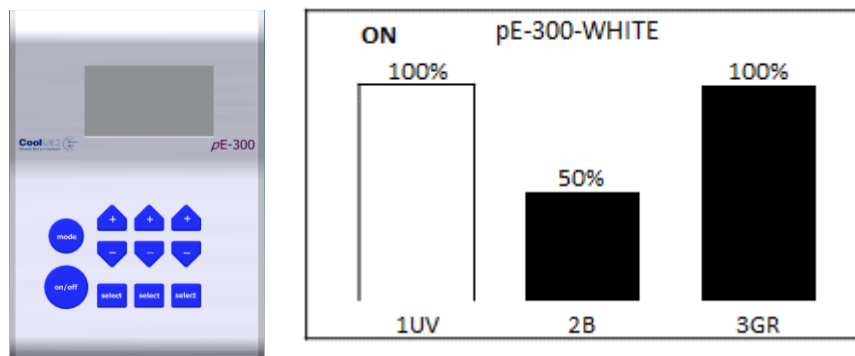




7.1.7.

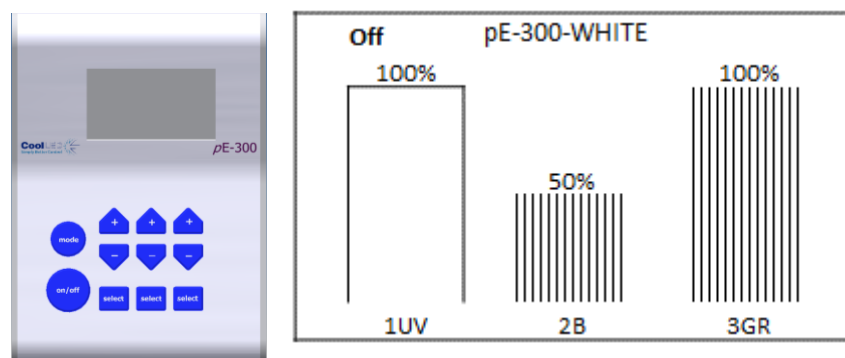
Individual bands can be switched off (de-selected) by pressing the 'select' button. Light is then only generated where it is required to excite the stains in use. This has many attractive benefits with improvements in contrast, cell viability and savings in energy.

Switching off UV will help to reduce damage to cells through photo-bleaching.



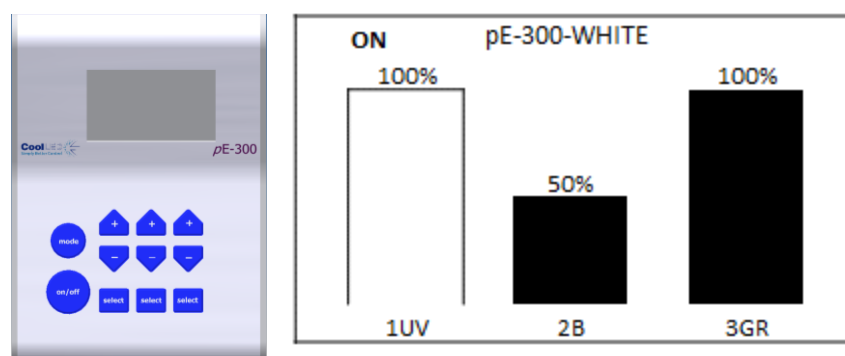
7.1.8.

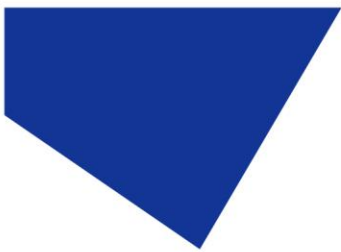
Switch off selected channels by pressing the 'on/off' button.



7.1.9.

Switch selected channels back on by pressing 'on/off' button again.

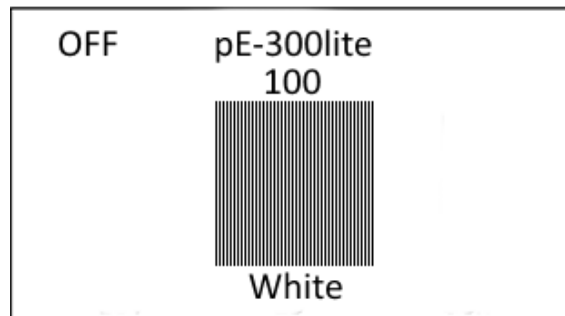
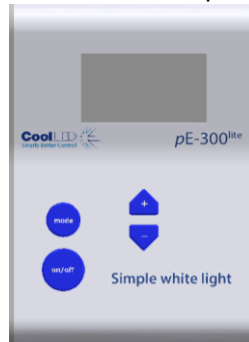




7.2. pE-300^{lite}

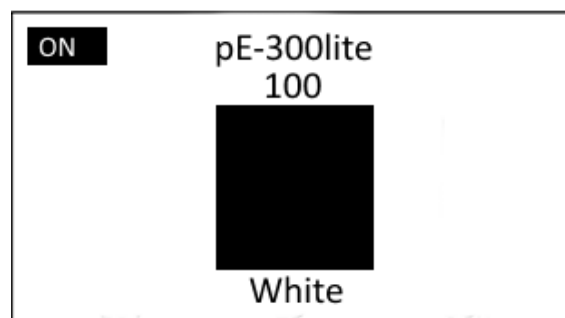
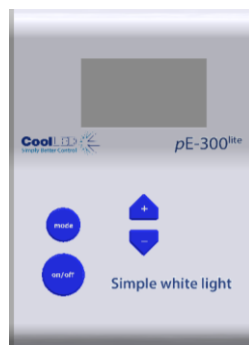
7.2.1.

At start-up the Light Source will revert to the same settings that were set when it was last powered down.



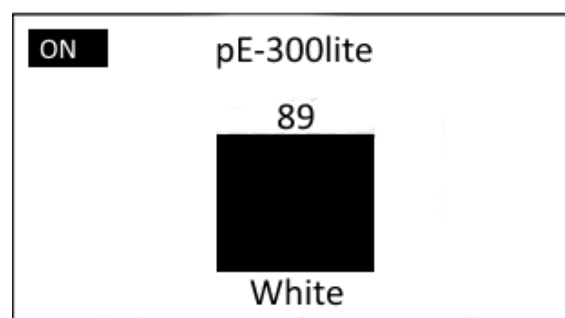
7.2.2.

To switch on the LEDs press the “on/off” button once.



7.2.3.

To control the intensity of the light output, use the “+” and “-” buttons to increase or decrease in 1 % steps.





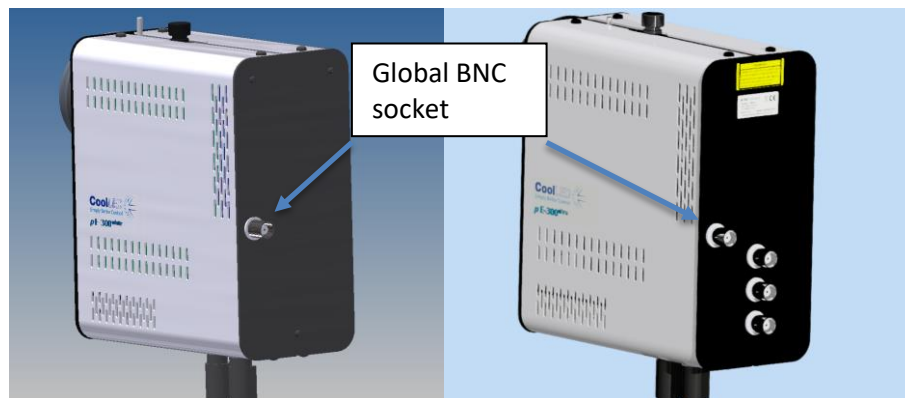
8. Remote Operation – TTL (pE-300^{white}, pE-300^{ultra}, pE-300^{opto})

The pE-300^{white}, pE-300^{ultra} and pE-300^{opto} can both be controlled remotely via a TTL signal.

8.1. Global triggering (pE-300^{white}, pE-300^{ultra}, pE-300^{opto})

8.1.1.

The pE-300^{white}, pE-300^{ultra} and pE-300^{opto} have a BNC socket which allows global control of the Illumination System.

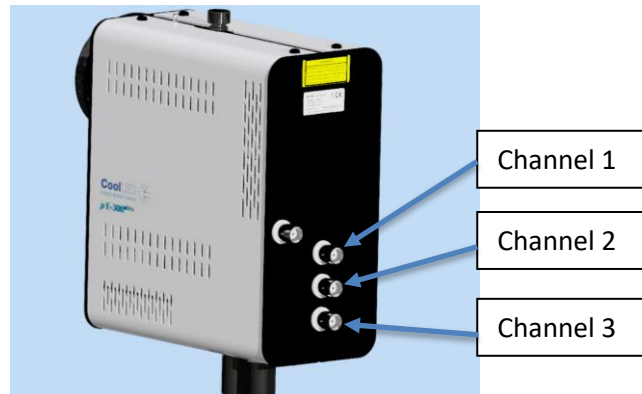


The TTL signal controls the on/off function of the Light Source. A TTL 'high' will cause the LEDs to be on, independent of the state of the on/off button. Only those bands which have been manually selected on the Control Pod (shown by a shaded intensity bar on the Control Pod display) will be switched by the TTL signal. The intensities of the selected bands are manually set on the Control Pod.

8.2. Individual channel triggering (pE-300^{ultra} and pE-300^{opto})

8.2.1.

In addition to the global TTL control available, the pE-300^{ultra} and pE-300^{opto} also have three additional BNC sockets that allow individual TTL channel control of the Illumination System.



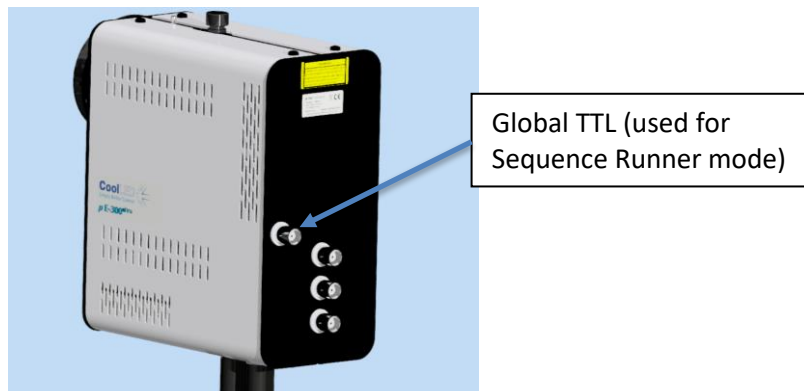
8.2.2.

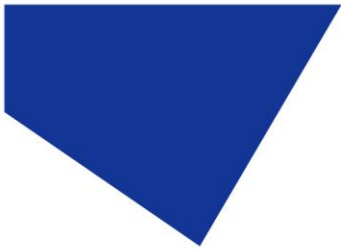
The TTL signal controls the on/off function of the Light Source. A TTL 'high' will cause the LEDs to be on. The channel controls shall trigger the corresponding channel regardless of its on/off state or whether it has been selected using the Control Pod. The intensities of the selected bands are manually set on the Control Pod.

8.3. Sequence Runner (pE-300^{ultra} and pE-300^{opto})

8.3.1.

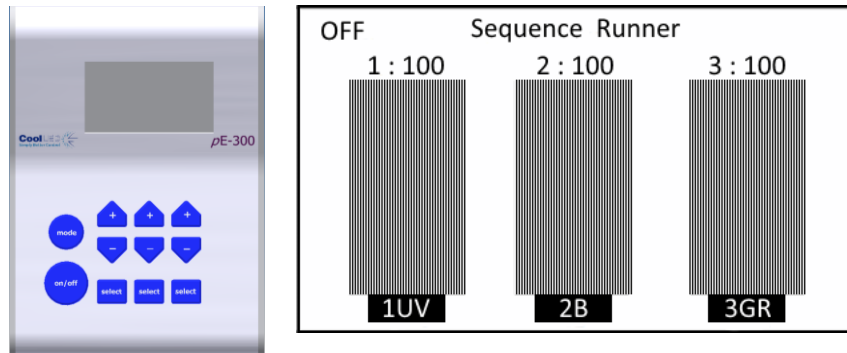
The pE-300^{ultra} and pE-300^{opto} allow the Illumination System to be controlled using the Sequence Runner mode. The Sequence Runner allows sequential triggering of multiple channels using a single TTL signal attached to the global BNC socket.



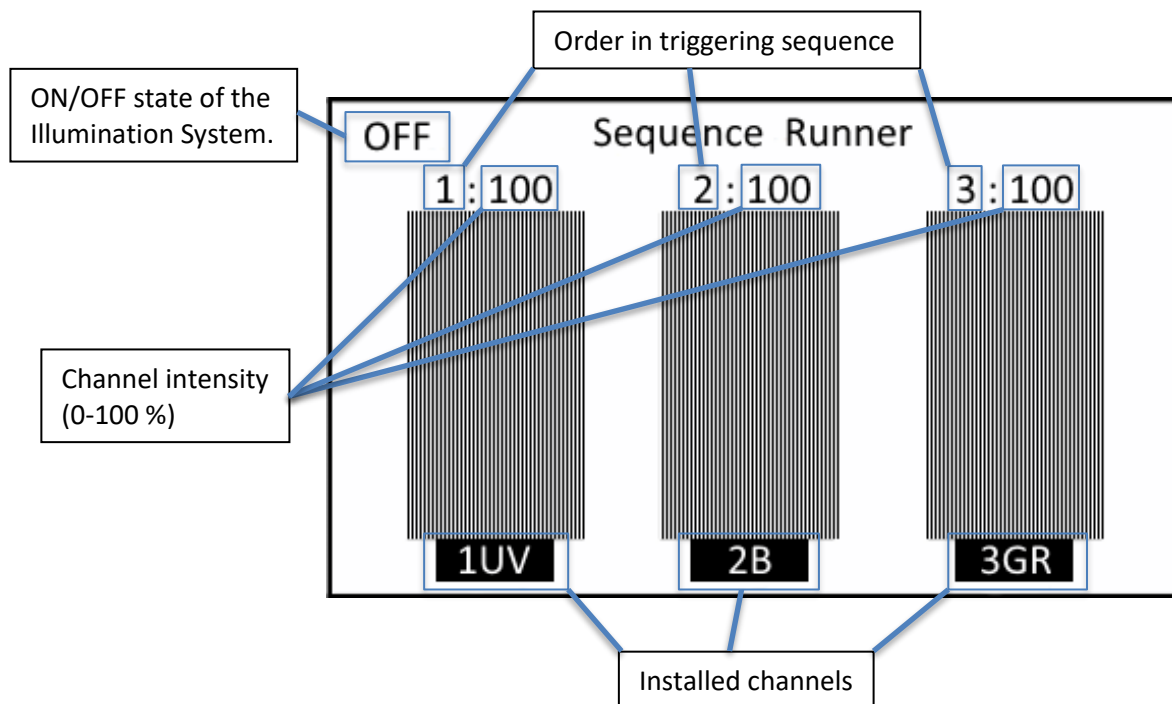


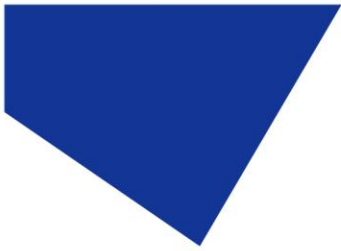
8.3.2.

The Sequence Runner mode is accessed by a short duration press of the mode button on the Control Pod.



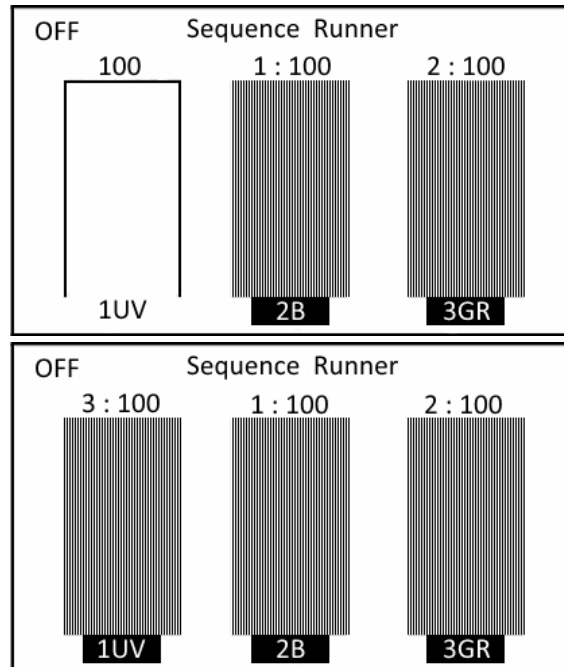
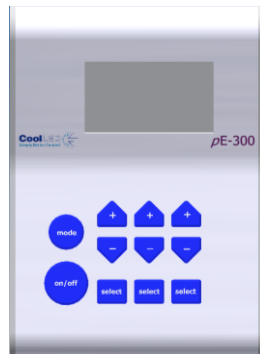
8.3.3.





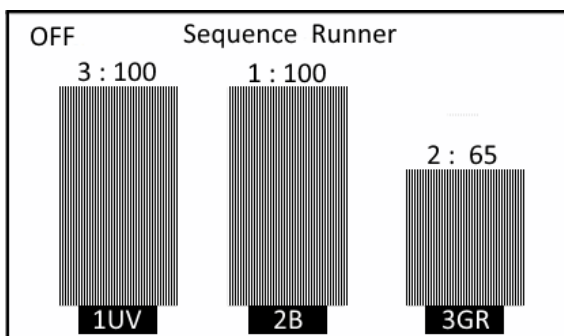
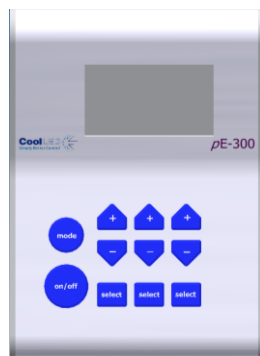
8.3.4.

Pressing the channel select button allows you to either deselect a channel or change the order that it triggers in the sequence.



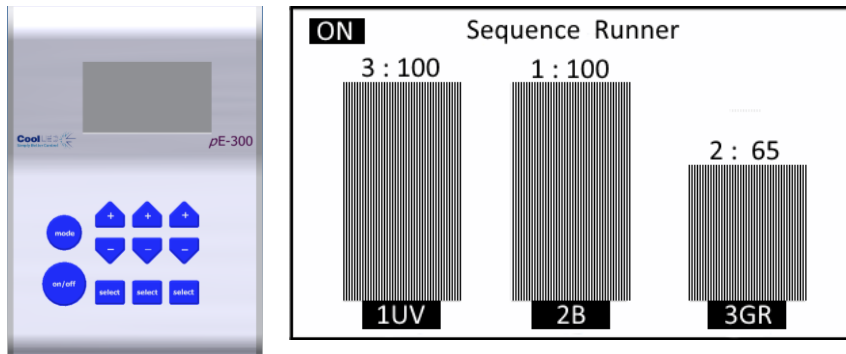
8.3.5.

Pressing the + & - buttons on the Control Pod will allow the light intensity of the corresponding channel to be increased or decreased.



8.3.6.

The sequence will not begin until the ON/OFF button on the Control Pod is pressed.



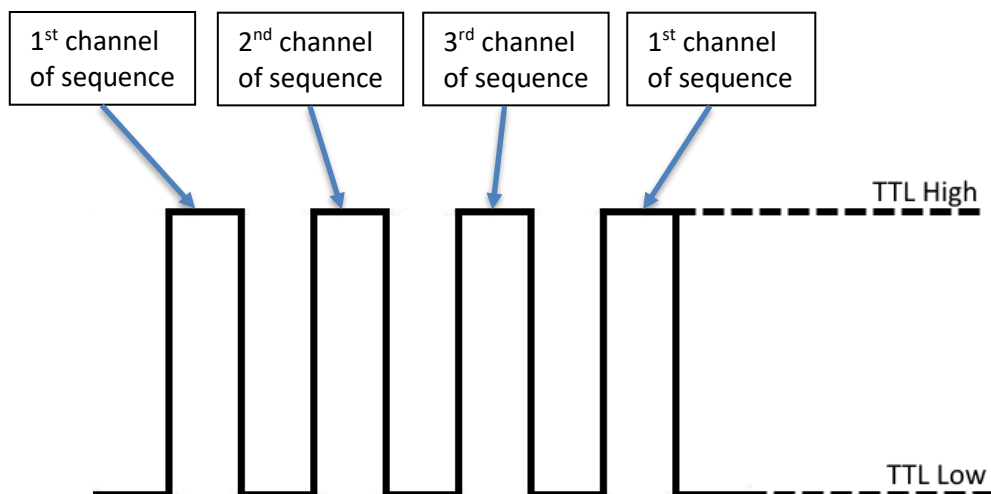
In this example channel 2 will pulse at 100 % intensity, channel 3 will pulse at 65 % and then channel 1 will pulse at 100 %. This Sequence will continue until the ON/OFF button is pressed again to stop the sequence.

8.3.7.

Whilst a sequence is running the ability to change the triggering order, select or deselect a channel and the mode button are disabled. The BNC sockets responsible for Individual channel triggering are also disabled whilst in Sequence Runner mode to avoid any conflicts.

8.3.8.

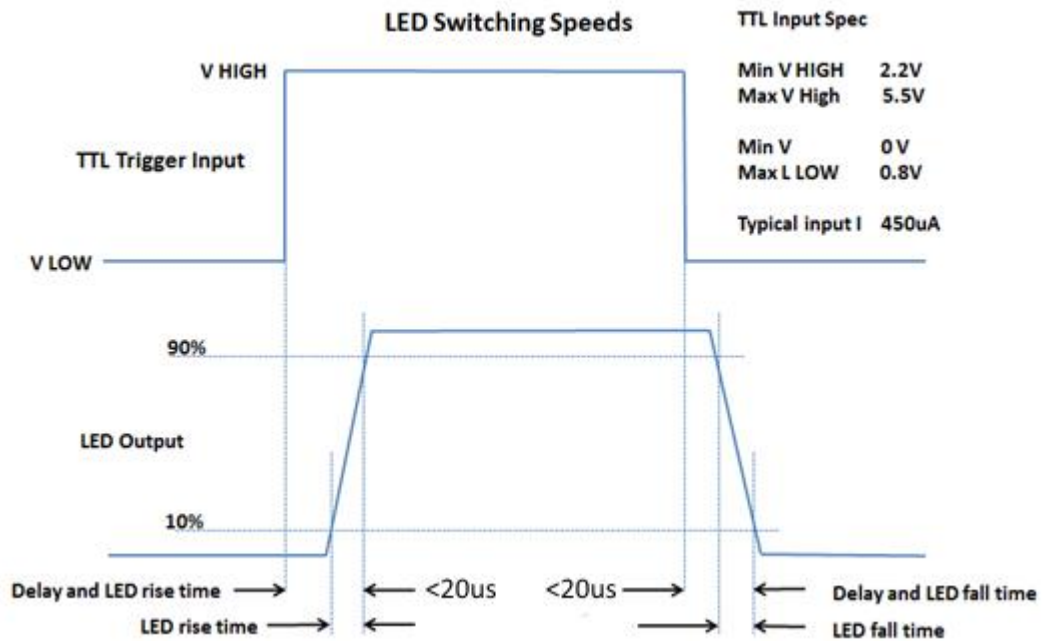
An example of the TTL signal is shown below with labels showing the effect on the light output during the sequence.



8.4. TTL triggering information

8.4.1.

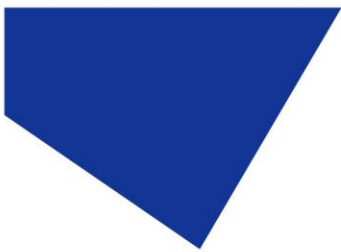
The TTL input circuit has been designed to maximise the switching speed of the LEDs to give the user precise control of the excitation light reaching the sample.



This diagram shows the worst case triggering speeds when triggered at 100% intensity. There will be slight differences in speed between channels and at different intensities.

8.4.2.

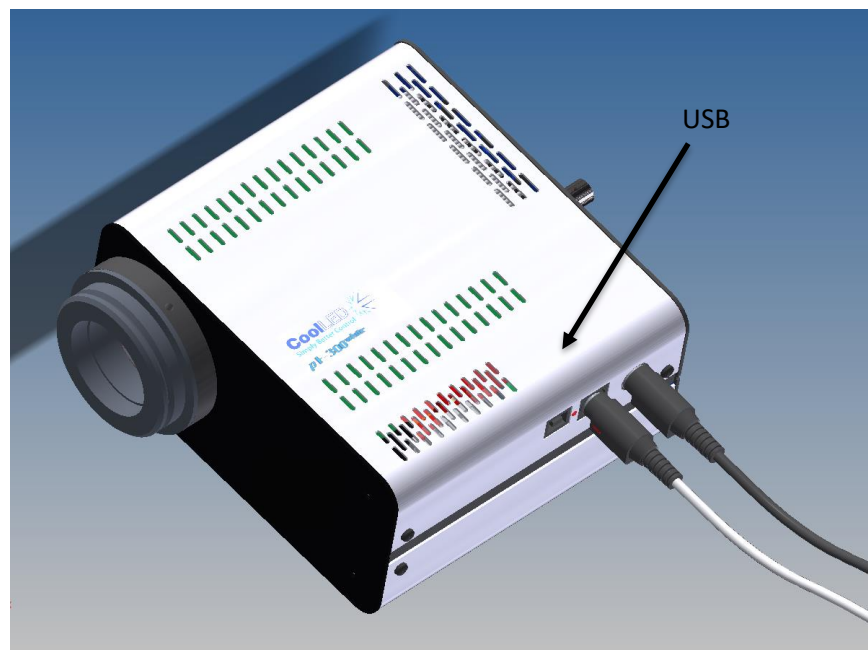
With fast repetitive switching, the Control Pod display will not be able to respond at the same speed. This can occasionally result in the Control Pod displaying the incorrect ON/OFF state. If this happens, simply press the ON/OFF button to reset the state on the display.



9. Remote Operation – USB (pE-300^{white}, pE-300^{ultra}, pE-300^{opto})

9.1.

For a remote control using software connection between the host computer and the Illumination system, a USB interface is used. The pE-300^{white} and pE-300^{ultra} Light Sources have a Type 'B' connector socket, whereas the pE-300^{opto} has a USB-C.



9.2.

Connect the Light Source to your computer using a USB cable. As with all USB remotely controlled devices, it may be necessary to set up the driver files on your system to allow the pE-300^{white}, pE-300^{ultra} or pE-300^{opto} to be recognised.

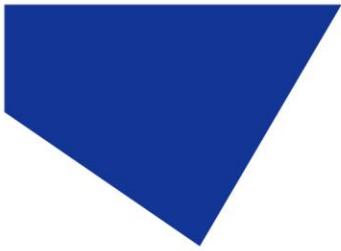
9.3.

When you first plug your CoolLED system into your PC with the USB cable, Windows may ask for a driver file unless one has already been installed. You should point Windows to the file available from CoolLED.

9.4.

If you do not have the driver file you can download this from the following page on the CoolLED website:

<https://www.cooled.com/support/imaging-software/>

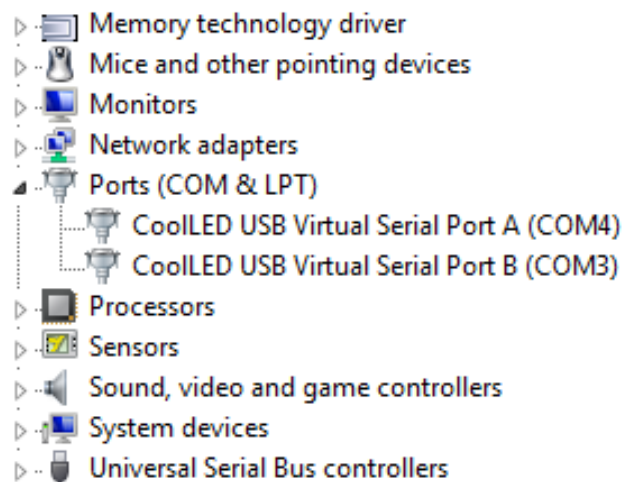


9.5.

Click on the CoolLED tab near the bottom of the page and you will see the link 'CoolLED pE Driver'. Just click on this link to download then unzip before pointing Windows to this file.

9.6.

Once the CoolLED device has been successfully installed into Windows you should look at the Virtual COM ports assigned by going into Device Manager. Look within Ports (COM & LPT).



In this example the Illumination System has been assigned two COM ports, COM3 and COM4. You may need this information to connect to the Light Source from your software control package. Either COM port may be used for control. Two COM ports have been assigned to allow for diagnostics to take place in parallel with communication and also allow for dual communication should it ever be desired.

9.7.

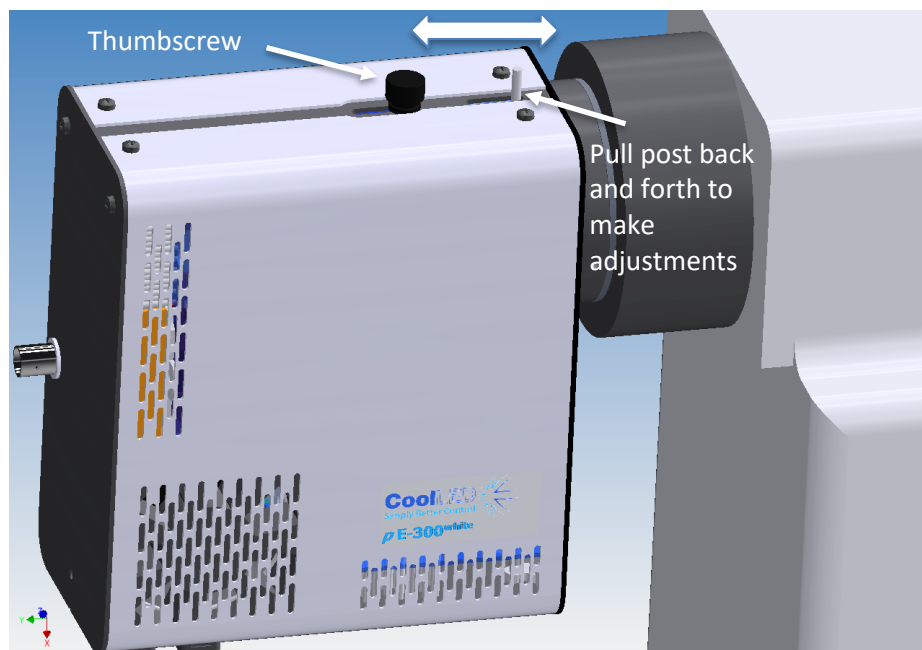
The majority of microscopy imaging software systems have integrated the pE-300^{white} and pE-300^{ultra} into their packages. The pE-300^{opto} is also supported, and will be recognised as a pE-300^{ultra}. If you are developing your own software, a Software Development Kit (SDK) is available giving the full instruction sets necessary. Contact support@cooled.com and request access to this information.

10. Optical setup

10.1. Direct fit version

10.1.1.

The pE-300 Series has been designed to work on the majority of fluorescence microscopes, both new and old. As would be expected, there is some variation in the optical path and elements within every microscope. In order to accommodate these variations, the pE-300 Series is supplied with a small adjustment which allows the user to optimise the performance of the illumination system when it is first fitted. This is a one-time adjustment. No further adjustment will be required during the life of the product unless changes are made to the microscope or the illumination system is fitted to a different microscope.



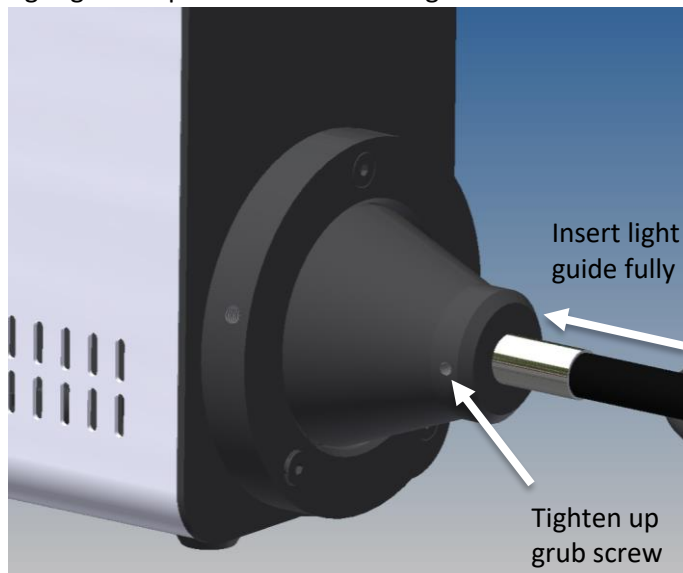
10.1.2.

To make the adjustment, set up a typical sample on the microscope that gives an image over the whole field of view. Loosen the thumbscrew and slide the post back and forth until you achieve the maximum brightness with an even field of view. Tighten the thumbscrew to prevent the setting from changing.

10.2. Liquid light guide version

10.2.1.

Fully insert light guide as shown and tighten up grub screw to ensure end of light guide is prevented from sliding out.



10.2.2.

Do not bend the liquid light guides through sharp corners. It is recommended to ensure a minimum bend radius of 75 mm. Ensure that the Light Source sits upright on a flat surface and keep the clearance of 200 mm on both sides to ensure adequate airflow for the cooling system.

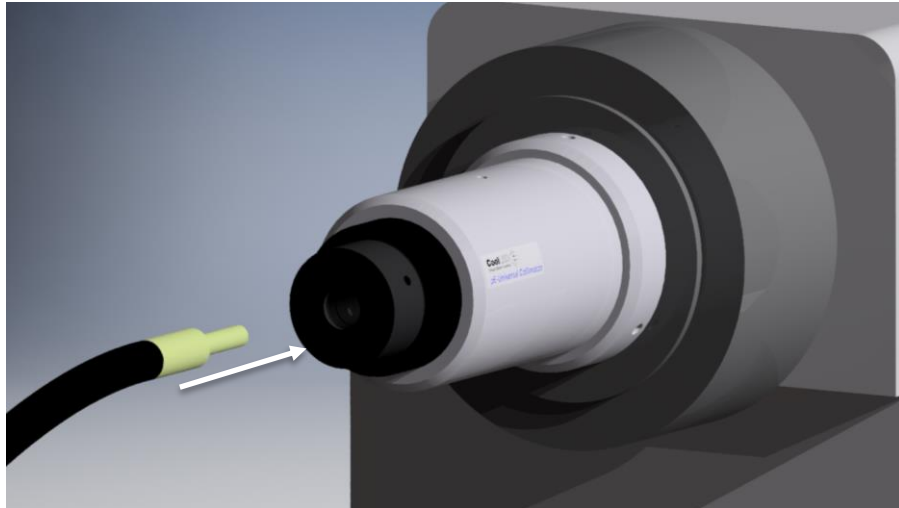
10.2.3.

The pE-300 Series Illumination Systems with liquid light guide output are provided with a 'cradle' to ensure that they remain in a stable position during operation, as shown in the image below.



10.2.4.

The use of a liquid light guide will be attractive for use in electrophysiology as this allows the light source to be placed outside the Faraday cage to reduce vibration and electrical noise close up to the samples. The pE-Universal Collimator is available for these applications. See [Product options and order codes](#) for details.



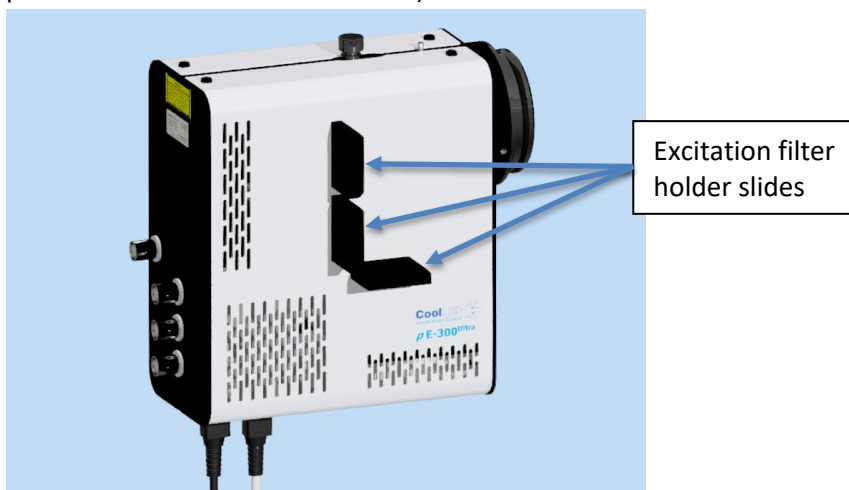
10.2.5.

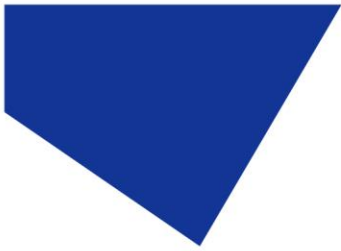
When using this collimator, it is important to set up the optics correctly to optimise the performance of the Illumination System. Full setup instructions are given in the separate User Manual for the pE-Universal Collimator.

11. Additional filtering (pE-300^{ultra} and pE-300^{opto})

11.1.

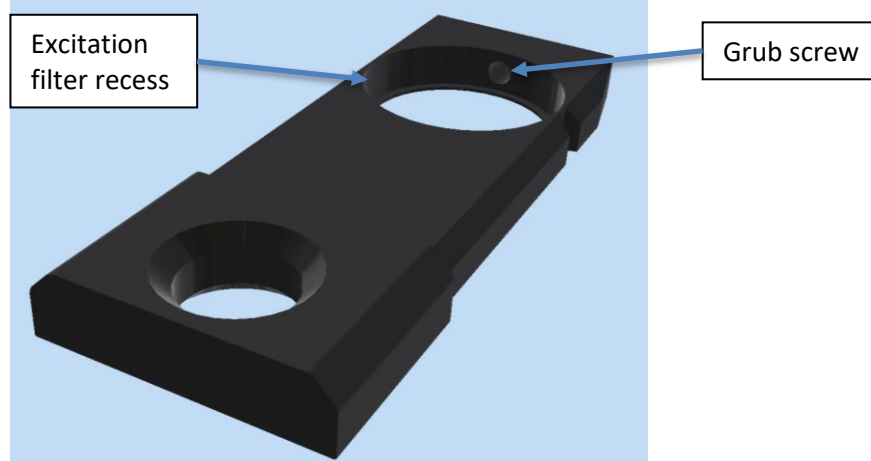
The pE-300^{ultra} and pE-300^{opto} allow additional filtering of excitation light through the use of three excitation filter holder slides (one in the optical path of each of the three channels).





11.2.

The excitation filter holder slides accept a standard 25 mm diameter filter and is secured in place with a ball ended grub screw.



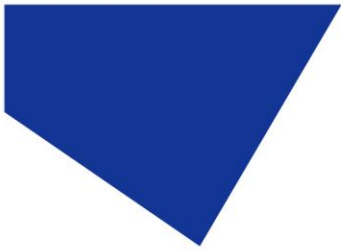
11.3.

Due to the shape of the excitation filter holder slide, it can only be fitted into the corresponding channel in one orientation.

11.4.

To install excitation filters in the optimal orientation, the direction of light through the Light Source should be observed. This is shown in the image below with arrows.

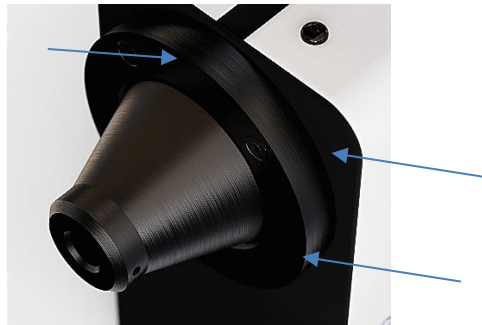




12. pE-300^{opto} Interchangeable Fibre Adaptor

The liquid light guide and fibre optic output adaptors can be easily interchanged by following the steps below. **Note:** The securing collar and output optics are separate, keyed components which will only fit together and to the light source in the correct orientation.

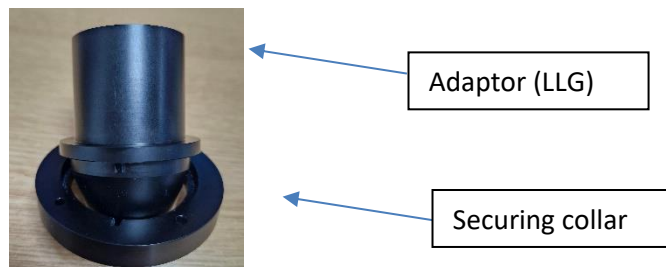
- 12.1. Loosen the grub screws securing the collar to the Light Source.



- 12.2. While supporting the adaptor and collar assembly, fully remove the screws and retain for future reuse.

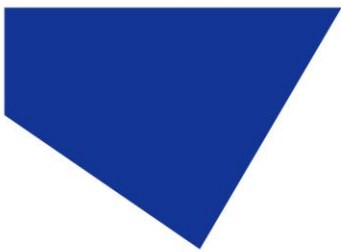
- 12.3. Carefully remove the adaptor and collar from the Light Source.

- 12.4. Separate the securing collar from the existing adaptor.



- 12.5. Fit the new adaptor to the collar, rotating until they align and engage.

- 12.6. Insert the new adaptor and collar assembly into the Light Source. Rotate until the screw holes line up with those on the Light Source.

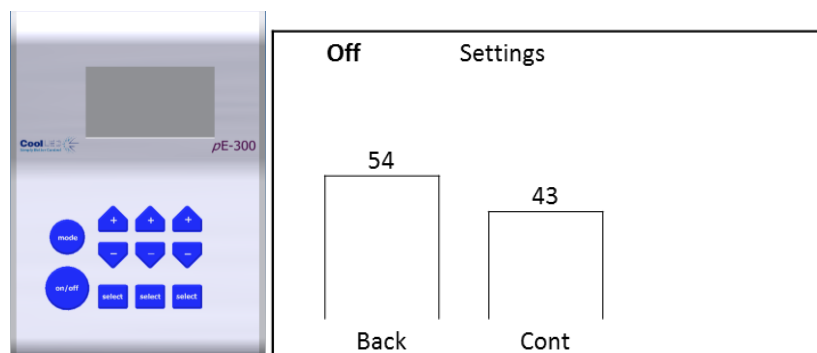


- 12.7. Refit the screws and gently tighten to secure the collar and adaptor.

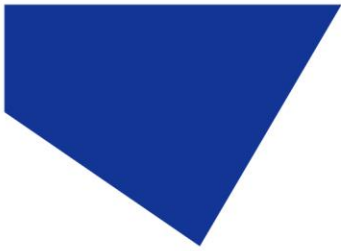


13. Settings / Additional Information

13.1. Display Backlight and Contrast settings

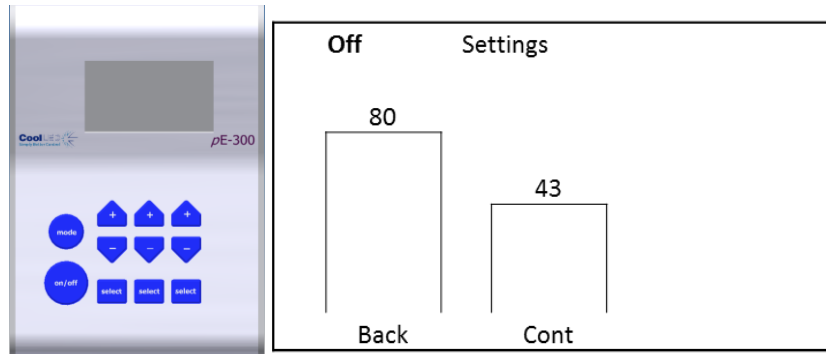


The Control Pod display settings can be adjusted to suit the lighting environment that the instrument is being operated in. To make adjustments, press and hold the 'mode' button for 3 seconds.

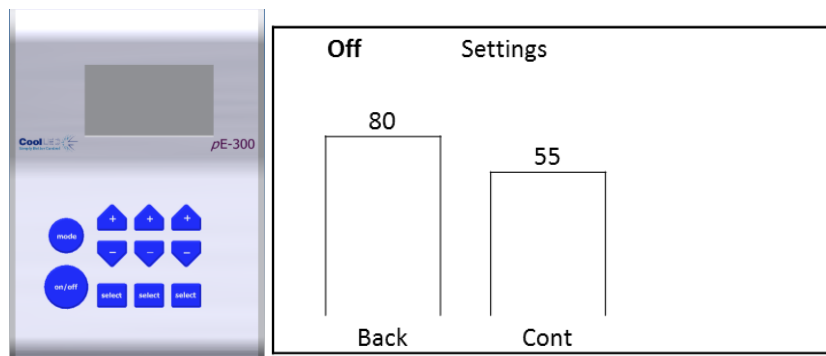


13.1.1. pE-300^{white} & pE-300^{ultra}

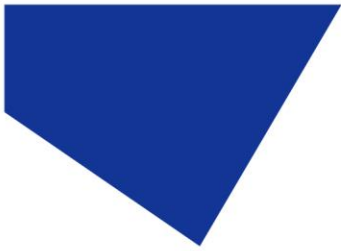
Use the first column up/down buttons to adjust the backlight to the desired level.



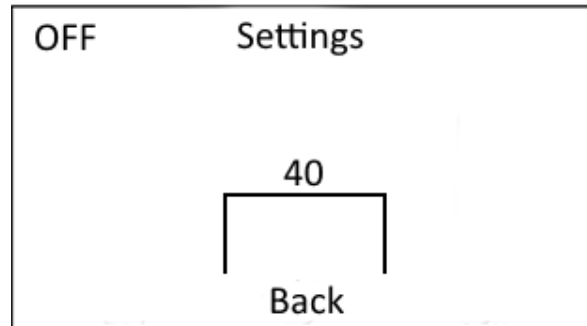
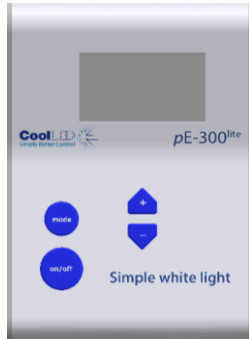
Use the second column up/down buttons to adjust the display contrast as required.



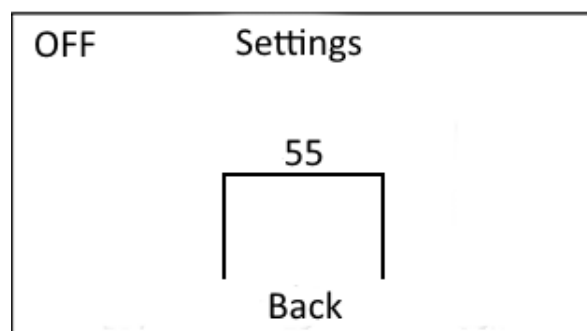
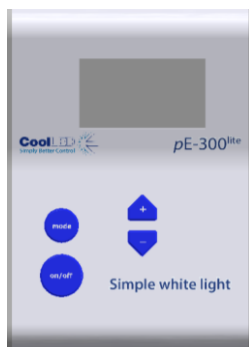
To return to the main screen, either press and hold the mode button for 3 seconds again or wait 10 seconds for the screen to automatically return.

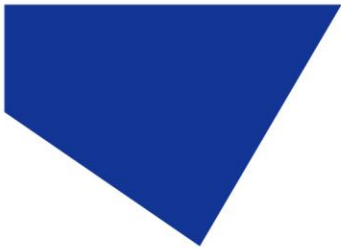


13.1.2. pE-300^{lite}



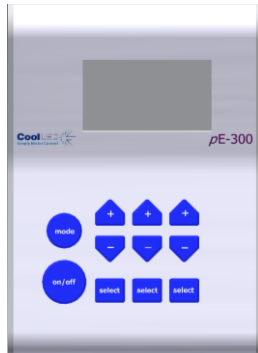
Use the “+” and “-” buttons to increase and decrease the backlight intensity. To return to the main screen, either press and hold the mode button for 3 seconds again or wait 10 seconds for the screen to automatically return.





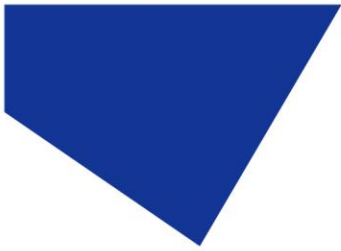
13.2. System Information

To interrogate the product on its hardware and firmware revisions, press and hold the 'mode' button for 3 seconds. Once the display settings screen appears as in 12.1, release the 'mode' button and then give it a second short duration press. The following display will appear.



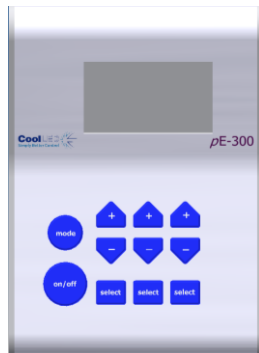
Off	Info
Model:	pE-300-Wh
Serial:	
Firmware:	1.0.10
Hardware:	1
Pod Ver:	1.0.6
Pod H/W:	3

To return to the main screen, either press and hold the Mode button for 3 seconds or wait for 10 seconds for the screen to automatically return.



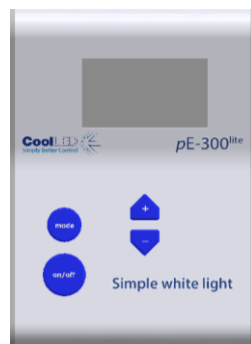
13.3. LED Usage

The system automatically records the total time that the LEDs are actually on. To retrieve this information, repeat the process in 12.2 above except give two short duration presses of the 'mode' button rather than a single one. The following screen will appear:



Off	Info 2
UV:	0.5h
BLU:	1.2h
GYR:	0.8h

pE-300^{white} & pE-300^{ultra}



OFF	Info 2
LED Usage:	12.2h

pE-300^{lite}

To return to the main screen, either press and hold the 'mode' button for 3 seconds or wait for 10 seconds for the screen to automatically return.

14. Routine Care and Maintenance

14.1.

The pE-300 Series Illumination System requires little or no maintenance throughout its life. There are no field serviceable parts so there is no need to remove the covers.

14.2.

Cleaning of the external surfaces can be carried out with a mild soap and water solution used to lightly dampen a lint-free cloth. Ensure that no liquid is allowed to enter the product through vents and panel edges. Avoid optical surfaces.

14.3.

Cleaning of optical surfaces may be necessary if debris or finger prints accidentally come into contact with the lens during installation. In the first instance remove any loose debris with an air duster (aerosol or rubber blower).

14.4.

Fingerprints or other liquid type contaminants should be removed using standard lens cleaning procedures. Do not flood the lens surfaces with fluid as liquid could enter the product and cause damage.

15. Fitting the pE-300 Series Illumination System to a different microscope

15.1.

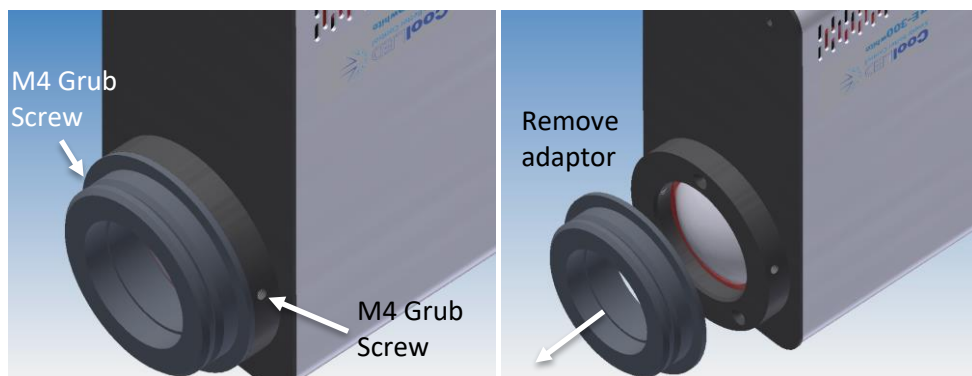
The pE-300 Series can be easily fitted to most fluorescence microscopes, both new and old. Every microscope manufacturer has one or a number of methods of attaching the fluorescence light source. CoolLED has designed a comprehensive range of adaptors to match these microscopes.

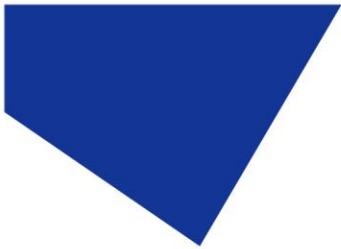
15.2.

There are a small number of microscopes which require additional optics or special settings internal to the pE-300 Series Light Source. Light Sources for these microscopes will be supplied with a label on the back panel, next to the serial number. These light sources cannot be transferred on to other microscopes without first returning them to CoolLED for internal modifications. Contact info@cooled.com if a light source needs this modification and ensure that the complete Illumination System is returned.

15.3.

The adaptor can be removed and replaced by simply unscrewing a pair of M4 grub screws as shown.





15.4.

Fit the new adaptor and tighten grub screws.

15.5.

A complete list of adaptors can be found on the CoolLED website using the link: www.coolled.com/product-detail/adaptors-2/

15.6.

The simple optical setup procedure will need to be followed when fitting the pE-300 to a different microscope. See the [Optical setup](#) section.

16. Product specifications

16.1.

Power requirements

110-240 V a.c 50/60 Hz 1.4 A

16.2.

Power consumption

Standby mode	max 2 W
Three bands at 100 % (pE-300 ^{lite} at 100 %)	max 46 W
Two bands at 100 %	max 38 W
Single band at 100 %	max 20 W

16.3.

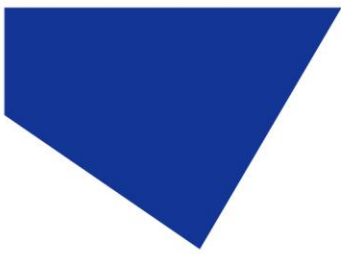
Dimensions

Light Source	77 mm (w) x 186 mm (d) x 162 mm (h)
-weight	1.40 kg
Control Pod	88 mm (w) x 125 mm (d) x 37 mm (h)
-weight	0.32 kg
Power Supply	167 mm (w) x 67 mm (d) x 35 mm (h)
-weight	0.62 kg

16.4.

Environmental Operating Conditions

Operating 5 – 35 °C



17. Product options and order codes

See website ([Microscope Illuminators | LED Illumination Systems | CoolLED](#)) for full details of product options and order codes.

18. Warranty and Repairs

Please refer to CoolLED's current Warranty Policy available on our website <https://www.coolled.com/support/coolled-warranty/>. Although warranty terms are fixed at the time of ordering according to the terms and conditions of sale in place, the Warranty Policy may be subject to periodic change so please check to avoid confusion.

For any warranty queries or in the event of the product developing a fault, make contact with support@coolled.com for further assistance. You shall be asked to provide your microscope make and model, the product serial number and a brief description of the issue. You shall then be issued with a Support Case to manage your issue.

19. Compliance and Environmental

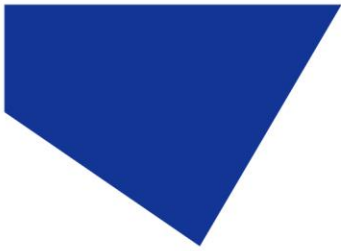
For current compliance statements and environmental information please refer to our website <https://www.coolled.com/support/environment/>

19.1. CoolLED's Recycling Program

At CoolLED, we recognize the importance of preserving the global environment. We are proud to provide a Recycling Program that enables CoolLED customers and end-users to send back used CoolLED Light Sources for recycling, free of charge.

Together we can reduce the burden on our environment through responsible disposal and recycling of End-of-Life Light Sources. You can help us by filling in our online contact form and providing us with your contact details and the serial number of the CoolLED Light Source that you wish to return and we will collect it free of charge.

If you are taking delivery of a replacement CoolLED Light Source, why not send the old one back in the packing box of the new one?



20. Contact Details

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 1-800-877-0128 (USA + Canada)

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