FAQs

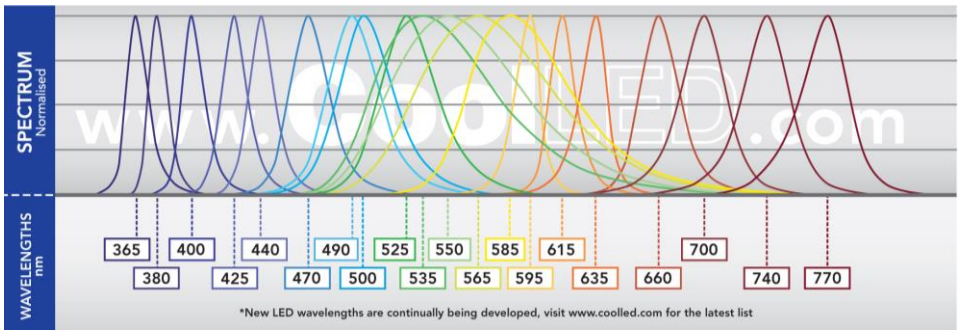
pE-100

Can it be controlled through software?

Not directly. The pE-100 Control Pod does have a BNC connector to allow for TTL triggering.

What are the combination options?

There is currently a choice of 20 different LED wavelengths ranging from 365nm to 770nm.



Is there a fiber/LLG version?

The pE-100 is available as a liquid light guide version. This is fitted with a 3mm diameter light guide which is available in a variety of lengths.

Also available as a fiber version. This accepts an SMA connector and can be ordered with a choice of SMA or cleaved end output. Fibers can be ordered in a variety of core diameters, numerical apertures and lengths.

pE-300^{white}

How many LEDs are inside?

There are three arrays of LEDs in the pE-300^{white}. A choice of UV or Violet, as well as Blue and GYR (green to red excitation light).

Can you control or trigger each channel?

Yes, the system is fitted with a single BNC for TTL triggering. This will trigger any wavelength that has been selected using the control pod.

Is it software controllable?

The pE-300^{white} can be operated under the most popular imaging software packages. See the CoolLED website for a comprehensive list. Imaging Software - CoolLED

Is it okay for FISH applications?

The pE-300^{white} is suitable for many FISH applications. This depends on whether well suited filter sets are used in conjunction with the Light Source.

Is there a fiber/LLG version?

The pE-300^{white} is available as a light guide version. This allows a 3mm core liquid light guide to be fitted, which is available in a variety of lengths.

Is there intensity loss in the light guide?

The specifications of the light guide states that between 400-700nm roughly 75% of the light entering the light guide is transmitted through. This percentage is lower in the UV and IR wavelengths, but still greater than 60% transmission.

If comparing the direct fit to the light guide version however, you can expect the light guide version to deliver roughly half of the power of the direct fit.

What does SB/MB stand for?

SB and MB stand for single band and multi-band. This refers to the filter sets that are fitted in the microscope. This choice is necessary as DAPI can be excited at either 365nm or 400nm and microscopes typically have a filter set which allows one of these wavelengths to be transmitted.

A microscope which is populated with a number of single band (SB) filter sets will typically have DAPI excitation at 365nm and a microscope with a multi-band (MB) filter has excitation at 400nm. The user can specify the configuration which is appropriate for their microscope.

pE-2

Can all channels be used simultaneously?

Wavelengths greater than and including 595nm cannot be used in simultaneous mode.
All other channels can be used in simultaneous mode.

Is there intensity loss in the light guide?

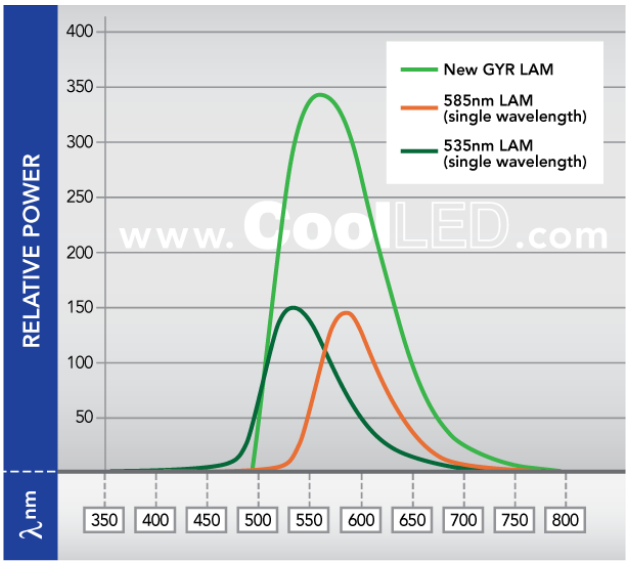
The specifications of the light guide states that between 400-700nm roughly 75% of the light entering the light guide is transmitted through. This percentage is lower in the UV and IR wavelengths, but still greater than 60% transmission.

Can it be controlled by Imaging Software?

The pE-2 is recognized and able to be controlled by most common imaging software packages (such as µManager, CellSens, NIS Elements, MetaMorph etc.). See the CoolLED website for further details- Imaging Software - CoolLED.

Is the GYR better than individual LAMs?

The GYR delivers roughly twice the power output of a single dedicated LAM in the green region. This is illustrated in the graph. Please note that the GYR LAM will take up two of the four positions in a pE-2 system.



Can the pE-1 be upgraded to pE-2?

Yes. Please contact CoolLED's support team (support@coolled.com) about upgrading a system. They will provide further details about this process.

What does analogue control mean?

The analogue function is no longer an available option for the pE-2 system.

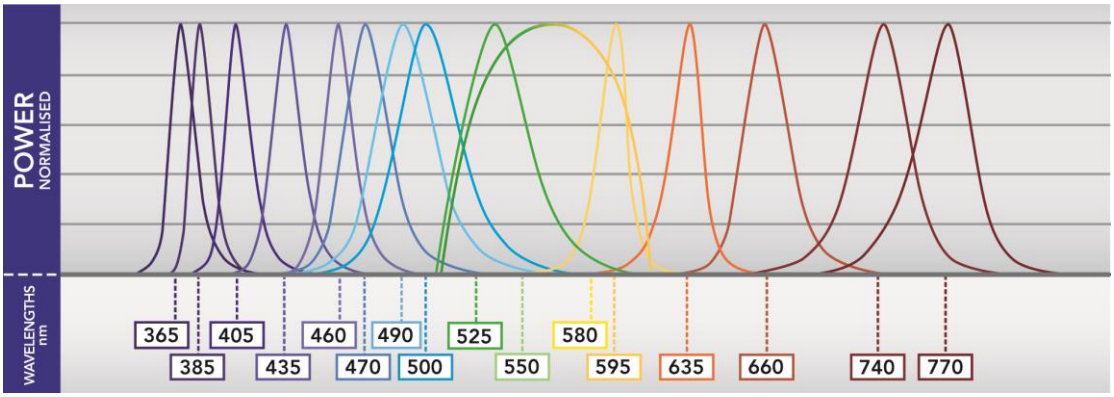
How fast can wavelengths be changed?

When using TTL control, a switching time of 300 microseconds is achieved.
When controlling through the USB, a switching time of <10 milliseconds can be achieved.

pE-4000

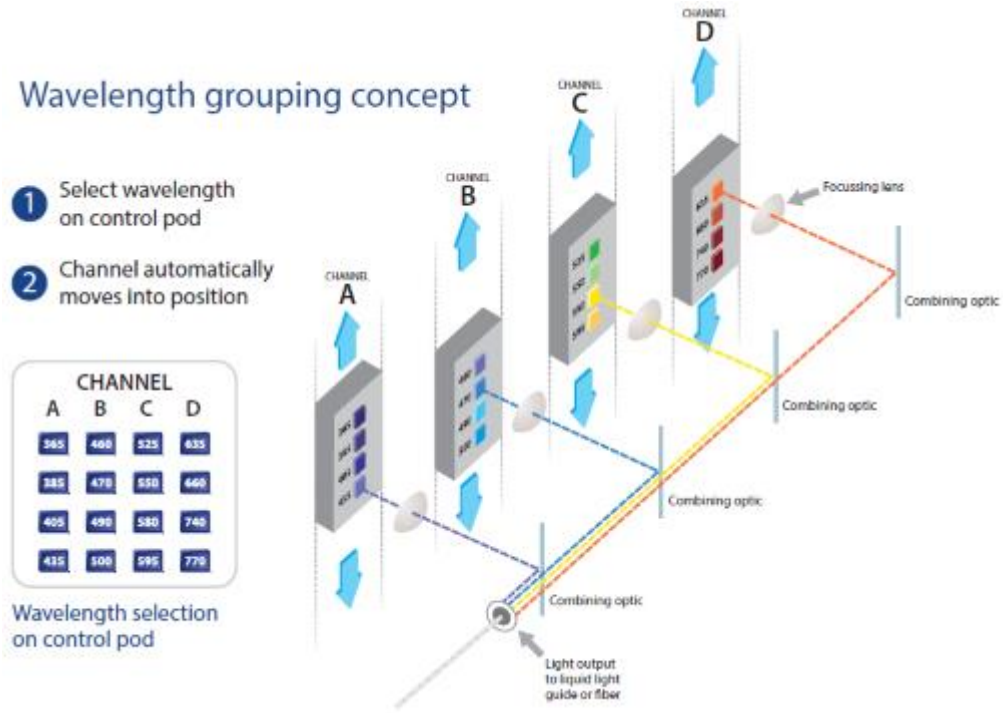
Have I really got 15/16 wavelengths installed?

Yes, there are 16 selectable wavelengths (15 installed LAMs). These are installed as standard.



Can you use all wavelengths simultaneously?

You can have up to four wavelengths switched on simultaneously at any time. One from each of the four channels. This is shown below in the wavelength grouping concept diagram.



Can it be controlled by Imaging Software?

The pE-4000 can be controlled by most common imaging software. The majority of these providers have now fully integrated the pE-4000 to allow all functions to be controlled in software. Some of these providers have not fully integrated the pE-4000. In which case the system will be viewed as a pE-2 by the software and only allow limited functions. Please view the CoolLED website for further information Imaging Software - CoolLED.

Is there a focus problem with all wavelengths using the same light guide/fiber?

No, there should be no issue focusing the light output from a fiber or light guide between wavelengths.

Is the light guide/fiber damaged by certain wavelengths?

The use of certain wavelengths (particularly UV & IR) can decrease the lifetime of the light guide. This is not by a significant amount however, in comparison to a metal halide system due to some of the advantages of LED systems:

- No warm up time (the light won't be transmitting through the light guide for as long of a period).
- Independent wavelength selection (only the spectral region(s) of interest will be transmitted through the light guide, eliminating any additional wavelengths that may potentially be damaging).

Can you change/alter LAMs inside the pE-4000?

LAMs inside the pE-4000 cannot be altered or changed. Due to the large choice of wavelengths that cover from the UV to the IR part of the spectrum, the pE-4000 should be suited to most typical filter sets as standard.

Can a single trigger sequentially trigger channel 1,2,3,4?

This cannot presently be done with a single trigger, but a sequence can be setup in software to cycle through the channels in this way.

What does analogue control mean?

Analogue control is a mode on the pE-4000 that allows a selected wavelength to be controlled by a voltage of 0-10V that is applied to the corresponding analogue input pin of the 25 way D-type connector. A voltage of 0-10V relates to an intensity of 0-100% intensity of the selected wavelength. For example, if a voltage of 6.2V is applied to a corresponding analogue input pin of a wavelength set to analogue mode, then the wavelength will be set to 62% intensity.

Can you put excitation filters in front of all of the LEDs in the pE-4000?

Excitation filter holders that accept 25mm filters can be added to the pE-4000. Four filters can be added to the system at any one time (one in the optical path of each of the four channels).

How easy is it to put in filters?

Fitting excitation filters into the pE-4000 is a straight forward process. A side panel needs to be removed (held in place by two catches) to gain access to the slots. Filters then fit in to the filter holder slides (not supplied as standard) and easily push into the correct position. Arrows are displayed next to the filter slots to indicate the direction of light.

How quickly can the LEDs change in the same channel (e.g. 365 & 385nm)?

Wavelengths on the same channel can be moved between in <2 seconds.

Does the system get hot?

The system should not get externally hot. As long as sufficient space of at least 200mm is allowed either side of the Light Source then the system shall be able to effectively cool itself.

Is the system noisy?

There is noise from the cooling fans intermittently to stabilize the Light Source temperature and from the stepper motors during initialization and when changing wavelength.