


pE-800 Series

8-Channel LED
Illumination

 **pE-800** - 8-channel
illumination and lightning-
fast control (365-740 nm)



 **pE-800^{fura}** - Supercharged
calcium imaging and
beyond (340-635 nm)



Discover more with the most intuitive
and controllable 8-channel Illumination
Systems available

CoolLED 
Simply Better Control



www.CoolLED.com

pE-800 Series

8-Channel LED Illumination

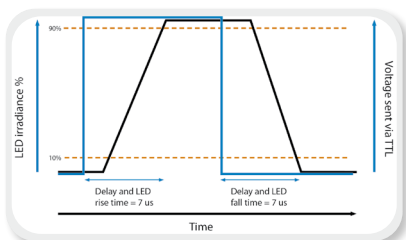
Lightning-Fast Microscopy

Backed by CoolLED's world-renowned support and warranty, the pE-800 Series delivers the highest quality data with minimum cost of ownership for applications ranging from calcium and pH imaging to ratiometric measurements and everyday fluorescence.

- 8 individually controllable channels
- Broad spectrum
- $<7 \mu\text{s}$ TTL triggering
- Sequence Runner
- Maximum compatibility via liquid light guide
- Software, digital & analogue control

Protect your samples

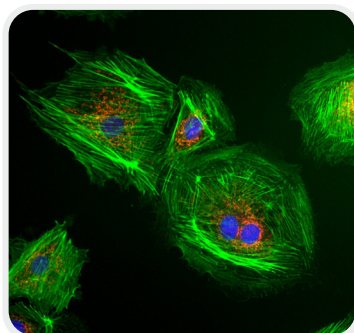
The pE-800 Series has been carefully designed to protect samples from phototoxicity and photobleaching, helping to deliver the highest quality data and push the limits of time-lapse studies. For example, hardware synchronisation restricts sample exposure to image acquisition and reduces 'illumination overhead'. Finding the lowest light levels while still maintaining image quality is also simple, thanks to fine irradiance control from 0-2%, and in 1% steps from 2-100%.



Industry-leading $<7 \mu\text{s}$ TTL triggering



USB-TTL Conversion Kit



Bovine pulmonary artery endothelial cells acquired using a pE-800

Capture high-speed events

Industry-leading $<7 \mu\text{s}$ TTL triggering is a breakthrough in live cell imaging and ratiometric measurements. Capturing dynamic events with the highest temporal resolution is possible thanks to precise hardware synchronisation for each channel and compatibility with the USB-TTL Conversion Kit (pE-6501-8 or pE-6501-8-FR). The ability to fit inline single-band excitation filters means expensive external filter wheels are no longer needed and when used alongside multi-band filters offers a low-cost approach to high-speed imaging.

Fluorescence freedom with eight channels

Eight powerful and efficient LEDs offer broad spectral coverage and mean that fluorophore choice is no longer limited to the light source, even as novel fluorophores become available in the future.

For everyday fluorescence and NIR applications, the pE-800 spans 365-740 nm for DAPI to Cy7. Alternatively, the pE-800^{fuara} is built for scientists monitoring calcium and pH or using optogenetics alongside everyday fluorescence, and spans 340-635 nm (covering Fura-2 to Cy5). Individual channel control makes it simple to maximise image quality by matching the fluorophore, LED channel and optical filter combination.

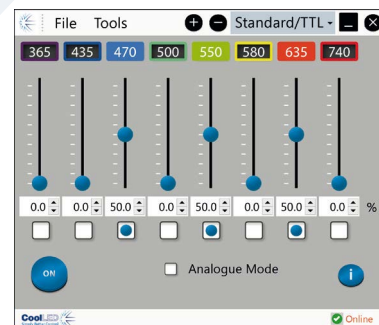
Intuitive software control

Benefit from fast USB 2.0 connectivity with full integration into most major software platforms or the user-friendly LightBridge Graphical User Interface to control:

- LED selection
- On/off
- Real time irradiance control
- Sequence Runner
- Save and load pre-sets
- pE-800 Series start-up settings
- Analogue settings for electrophysiology and optogenetics

Sustainable illumination

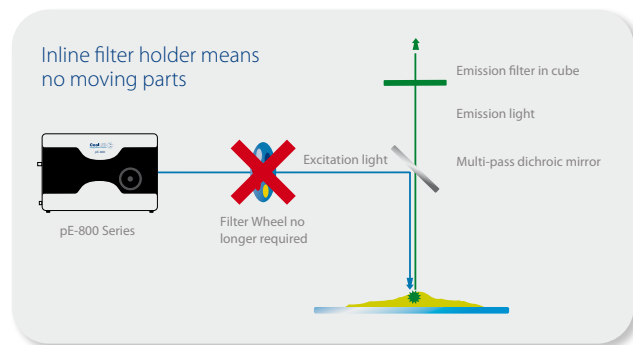
The compact and laser-free pE-800 Series builds on award-winning CoolLED technology, with stable and reliable performance and ultra-low power consumption. The sustainability benefits go beyond energy efficiency, and by removing the need for toxic mercury, the pE-800 Series is a natural choice for cleaner, greener labs.



The LightBridge

Affordable automation with Sequence Runner

The pE-800 Series is unique in offering the only 8-channel Sequence Runner available, enabling illumination sequences to be triggered with just a single TTL-out of a camera or external hardware. This is ideal for ratiometric imaging, and when combined with inline filters, transforms a manual microscope into an affordable and powerful eight-channel automated imaging system. As laboratory budgets become stretched, the cost-effective pE-800 Series makes high-end functionality more accessible to life science researchers.



pE-800 - 8-channel illumination and lightning-fast control

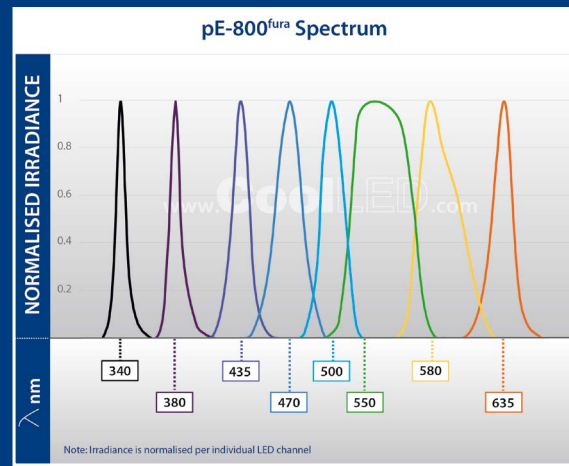
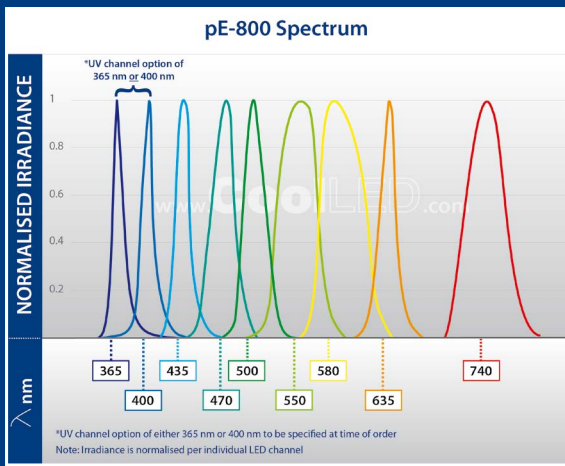
The versatility of true 8-channel control and industry-leading $<7 \mu\text{s}$ TTL triggering has never been so affordable or easy to use. Broad spectrum 365-740 nm.

pE-800^{fura} - Supercharged calcium imaging with lightning-fast, 8-channel control

Built for Fura-2 and beyond, the pE-800^{fura} is the go-to illuminator for calcium imaging, ratiometric assays, pH imaging and everyday fluorescence. Broad spectrum 340-635 nm.

Which Illumination System is right for you?

Features	pE-800	pE-800 ^{fura}
Broad spectrum from 365-740 nm, covering DAPI-Cy7	✓	
Broad spectrum from 340-635 nm (Fura-2-Cy5), covering popular calcium indicators, pH indicators, opsins and general fluorophores		✓
Dedicated 340 nm and 380 nm LEDs for Fura-2 imaging		✓
8 selectable channels offer versatility with any channels selectable simultaneously at 100 %	✓	✓
Individual control of selected LED wavelengths reduces background noise	✓	✓
Industry-leading $<7 \mu\text{s}$ TTL triggering for high-speed imaging	✓	✓
Sequence Runner for software control with speed of TTL	✓	✓
Removable inline excitation filter holders: no moving parts for high-speed imaging	✓	✓
Filters included for 340 and 380 nm		✓
Software, TTL, analogue control options for optimised illumination	✓	✓
Optimised irradiance control in 1 % steps (2-100 %) and fine control from 0-2 %	✓	✓
UV optimised optics		✓
Light delivery via liquid Light Guide for maximum compatibility	✓	✓



Specification

Choose variant to match UV excitation requirements.
Due to a programme of continual development, please contact CoolLED (<https://www.coolled.com/contact/contact-form/>) for performance data

Control & Interface

TTL & analogue: 8 TTL inputs allow independent on/off control of each channel
8 analogue inputs 0-10 V, 0-50 kHz for dynamic control of irradiance from external analogue signals
Global TTL for on/off synchronisation to camera
Triggering speed <7 µs

Graphical user interface (GUI): CoolLED LightBridge GUI operates via USB to allow: On/off control; LED selection; real time irradiance control; Sequence Runner; save and load pre-sets; pE-800 Series start-up settings; analogue settings

Imaging Software: Integrated into most major software platforms. For further details see <https://www.coolled.com/support/imaging-software/#third-party-imaging-software>

Sequence Runner: Single TTL input to step through sequence defined via LightBridge or compatible imaging software. Speeds <7 µs at full power

Connectivity: USB 2 for PC connection. All other TTL and analogue inputs via BNC or SMB. Additional control via RS-232

Light delivery: Light delivery via the standard 3 mm liquid light guide. An optional pE-Universal Collimator or pE-UV Universal Collimator and microscope adaptor can also be selected

To Order

pE-800-L-SB-SYS-ZZ: pE-800 Fluorescence Illumination System. SB (365 nm). For use with 3 mm Liquid Light Guide. Includes Light Source, Power Supply, Excitation Filter Holder (holds up to 8 filters), USB cable & ZZ Plug

pE-800-L-MB-SYS-ZZ: pE-800 Fluorescence Illumination System. MB (400 nm). For use with 3 mm Liquid Light Guide. Includes Light Source, Power Supply, Excitation Filter Holder (holds up to 8 filters), USB cable & ZZ Plug

pE-800-FR-L-SYS-ZZ: pE-800^{fura} Fluorescence Illumination System. For use with 3 mm Liquid Light Guide. Includes Light Source, Power Supply, Excitation Filter Holder (holds up to 8 filters), Excitation filters for 340 nm & 380 nm, USB cable & ZZ Plug

pE-1906: 1.5 m long, 3 mm diameter liquid light guide

pE-1908: 3 m long, 3 mm diameter liquid light guide

pE-10400-YYY: pE-Universal Collimator & customer specified adaptor

Scan here to find us on WeChat



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pE-340-FR-COLL-YYY:

pE-UV Universal Collimator & customer specified adaptor (for use with pE-800^{fura})

pE-CABLE-9WBNC:

BNC Breakout Cable for pE-800 - 15 pin male connector to 9 x BNC female. Suitable for analogue or digital

pE-CABLE-9WBNC-FR:

BNC Breakout Cable for pE-800^{fura} - 15 pin male connector to 9 x BNC female. Suitable for analogue or digital

pE-CABLE-9WSMB:

SMB Breakout Cable for pE-800 - 15 pin male connector to 9 x SMB female. Suitable for analogue or digital

pE-CABLE-9WSMB-FR:

SMB Breakout Cable for pE-800^{fura} - 15 pin male connector to 9 x SMB female. Suitable for analogue or digital

pE-6501-8:

USB-TTL Conversion Kit for TTL control of pE-800 with additional BNC for other peripherals (e.g. pT-100 for transmitted light). Connects to PC via USB and is compatible with range of imaging software

pE-6501-8S:

USB-TTL Conversion Kit when purchased with a pE-800 Illumination System

pE-6501-8-FR:

USB-TTL Conversion Kit for TTL control of pE-800^{fura} with additional BNC for other peripherals (e.g. pT-100 for transmitted light). Connects to PC via USB and is compatible with range of imaging software

pE-6501-8-FRS:

USB-TTL Conversion Kit when purchased with a pE-800^{fura} Illumination System

To specify local power cable (ZZ): 10 = Australia, 20 = Europe, 30 = UK, 40 = USA

Warranty

System = 36 months
LEDs = 36 months (NB 340 nm LED warranted for 3000 hours accumulated use)

Power

Power requirements:

100-240 V a.c. 50/60 Hz

Power consumption:

Max at 8-channel 100 % irradiance: 127 W
Standby: Max 6.4 W

Dimensions

pE-800 Series Light Source: 173 mm (w) x 247 mm (d) x 174 mm (h) – Weight 3.51 kg

pE-800 Series Power Supply: 164 mm (w) x 64 mm (d) x 35 mm (h) – Weight 0.58 kg

pE-Universal Collimator: 44 mm (w) x 86 mm (d) x 44 mm (h) – Weight 0.17 kg

pE-UV Universal Collimator: 44 mm (w) x 86 mm (d) x 44 mm (h) – Weight 0.17 kg

Environment & Safety

LED products help laboratories become more sustainable, saving energy and reducing the carbon footprint when compared with conventional illuminators. CoolLED's products have the following benefits:

- Mercury-free and laser-free
- Energy Efficient
- Long lifetime
- No bulb replacements
- Reduced risk of eye damage
- Quiet operation
- No special disposal regulations or issues



All data correct at time of publication

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