New Feature

PRE-FILLED LIQUID COOLING

DIMMING VIA PWM OR CURRENT CONTROL

LIFETIME >50,000 HOURS

LONG STABLE LAMP LIFE

TTL AND ANALOG CONTROLS

INTEGRAL SHUTTERING

NEW FEATURE – WHITE LIGHT AND UV COMBINATION AVAILABLE

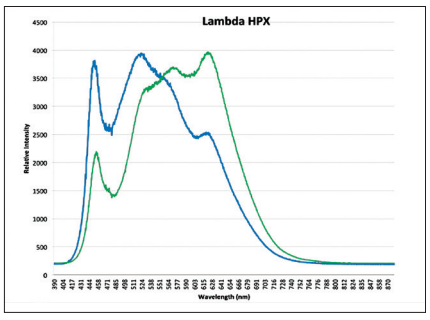
LAMBDA HPX: LIQUID COOLED LED LIGHT SOURCE

The **Lambda HPX** represents the latest generation of liquid-cooled high-output LED light sources. Designed around a single 90W 4.25mm LED die, the **Lambda HPX** provides light output comparable to a 200W xenon arc lamp. A quiet, vibration-free liquid cooling head (pre-filled at the factory) allows us to maintain the low junction temperatures required to reach the manufacturer's projected bulb life of 60,000 hours. The HPX is expected to retain 95% of its original output at 5000 hours, and 80% after 10,000 hours. The lightweight precision-machined LED head is designed to mount directly on the epi port of a microscope using an included microscope adapter (specify at time of order). This affords the maximum amount of light coupled directly to the scope, without the losses associated with a liquid light guide.

Because LEDs exhibit color shift with current change, the **Lambda HPX** was designed to dim the LED using either PWM or current control. PWM will be preferable for most applications, and allows the LED to run cooler. PWM switching is at 28KHz, high enough for use with most high speed cameras. For those with applications intolerant of pulsed output, dimming via current control is also available. PWM and current information are conveniently displayed on the front panel display, and are manually selectable via control knobs. Integral shuttering time is 10 microseconds to turn on and off.

PWM can also be controlled externally via analog input. TTL input and output allows for triggering from either software or directly from another device such as a camera or digital IO board. The LED cable and cooling lines are easily removable from the chassis with no-drip quick connectors. This allows for easy setup and routing of cables through your setup. Active temperature monitoring insures that the LED life will be maximized.

Light output is in the visible spectrum from 430nm to 700nm. A cool white LED is available. Special order units are available with 630nm, 530nm, 460nm, and 405nm wavelength specific LEDs. The **Lambda HPX** can also be combined with our TLED to create a two-channel system with any combination of wavelengths.



Blue: Cool White Green: Tungsten White

Lambda HPX System

HPX-Y	Lambda HPX LED for Olympus
HPX-N	Lambda HPX LED for Nikon
HPX-Z	Lambda HPX LED for Zeiss
HPX-L	Lambda HPX LED for Leica

Available Wavelengths

WC-HPX	LED, Cool White
460-HPX	LED, 460nm
530-HPX	LED, 530nm
630-HPX	LED, 630nm

Lambda HPXUV System

HPXUV-Y	Lambda HPX UV LED for Olympus
HPXUV-N	Lambda HPX UV LED for Nikon
HPXUV-Z	Lambda HPX UV LED for Zeiss
HPXUV-L	Lambda HPX UV LED for Leica
HPXUV-C	Lambda HPX UV LED with C-mount

Available Wavelengths

385-HPX	UV LED, 385nm
405-HPX	UV LED, 405nm

Lambda HPX-DC*

HPX-DC-Y	Lambda HPX and TLED+ for Olympus
HPX-DC-N	Lambda HPX and TLED+ for Nikon
HPX-DC-Z	Lambda HPX and TLED+ for Zeiss
HPX-DC-L	Lambda HPX and TLED+ for Leica

** Suitable for additional DAPi channel*

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New Feature

- VIBRATION-FREE COUPLING VIA LIQUID LIGHT GUIDE
- DIMMING VIA PWM OR CURRENT CONTROL
- LIFETIME >50,000 HOURS
- LONG STABLE LAMP LIFE
- TTL AND ANALOG CONTROLS
- INTEGRAL SHUTTERING
- NEW FEATURE – WHITE LIGHT AND UV COMBINATION AVAILABLE

LAMBDA HPX-L5: HIGH-OUTPUT LED LIGHT SOURCE

The **Lambda HPX-L5** was created as a liquid light guide coupled version of the HPX, our newest high power LED light source. The liquid light guide allows for LED cooling via an internal heatsink with a whisper fan. This requires less maintenance that the liquid-cooled direct mount version. Designed around a single 90W 3mm LED die, the **Lambda HPX-L5** provides light output comparable to a 150W xenon arc lamp when using the same light guide. The **Lambda HPX-L5** is optimized for coupling to an optional 5mm liquid light guide, and off-the-shelf microscope adapter. The **Lambda HPX-L5** is expected to retain 95% of its original output at 5000 hours, and 80% after 10,000 hours.

Because LEDs exhibit color shift with current change, the **Lambda HPX-L5** was designed to dim the LED using either PWM or current control. PWM will be preferable for most applications, and allows the LED to run cooler. PWM switching is at 28KHz, high enough for use with most high speed cameras.

For those with applications intolerant of any pulsed output, dimming via current control is also available. PWM and Currentinformation are conveniently displayed on the front panel display, and are manually selectable via control knobs. Integral shuttering time is 10 microseconds to turn on and off. TTL input and output allows for triggering from either software or directly from another device such as a camera or digital IO board. PWM can also be controlled externally via analog input. Active temperature monitoring insures that the LED life will be maximized.

Light output is in the visible spectrum from 400nm - 729nm. Special order units are available with 630nm, 530nm, 460nm, and 405nm wavelength specific LEDs. The **Lambda HPX-L5** can also be combined with our TLED to create a two-channel system with any combination of wavelengths.

Lambda HPX-L5 System

HPX-L5[1] Lambda HPX-L5 LED Light Source

Available Wavelengths

WC-HPX-L5 LED, Cool White
460-HPX-L5 LED, 460nm
530-HPX-L5 LED, 530nm
630-HPX-L5 LED, 630nm

Lambda HPX-L5UV System

HPX-L5UV Lambda HPX-L5UV LED Light Source

Available Wavelengths

405-HPX-L5 LED, 405nm

Accessories

0777648 Liquid light guide (2 meters, 5mm diameter)
Trigger USB trigger box

[1] *Compatible with Micro-Manager software*

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