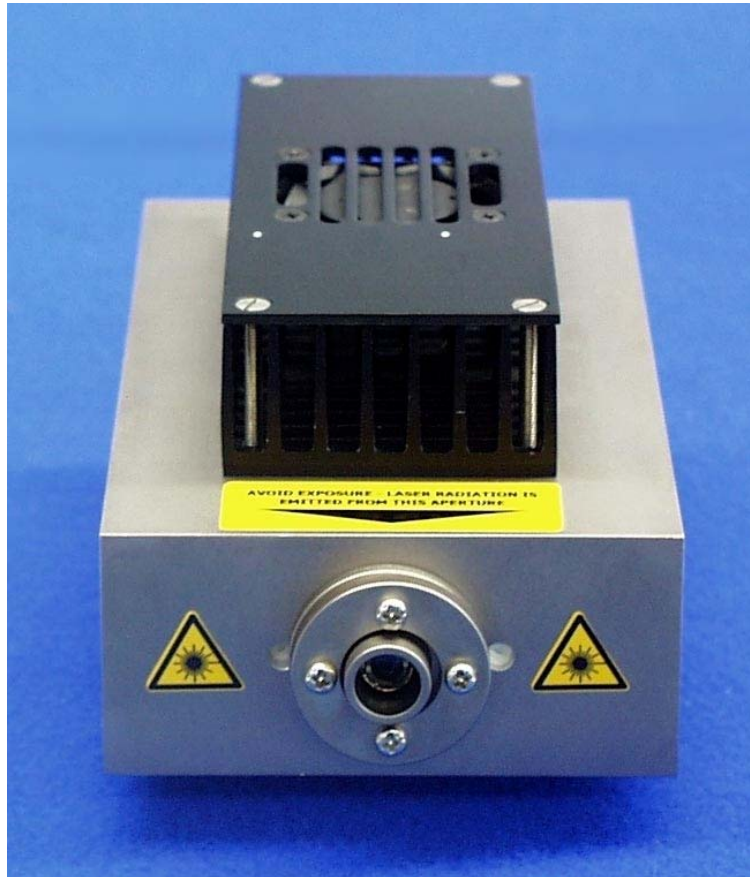


# ***PICOSECOND LIGHT SOURCES***



**From Becker & Hickl GmbH**



**Boston Electronics Corporation**

91 Boylston Street, Brookline MA 02445 USA  
(800)347-5445 or (617)566-3821 fax (617)731-0935

[www.boselec.com](http://www.boselec.com)

[tcspc@boselec.com](mailto:tcspc@boselec.com)

This page intentionally blank.

# BDL-375

## Ultraviolet Picosecond Diode Laser

**Pulse width down to 60 ps**

**Repetition rate 20-50-80 MHz**

**Wavelength 375 nm**

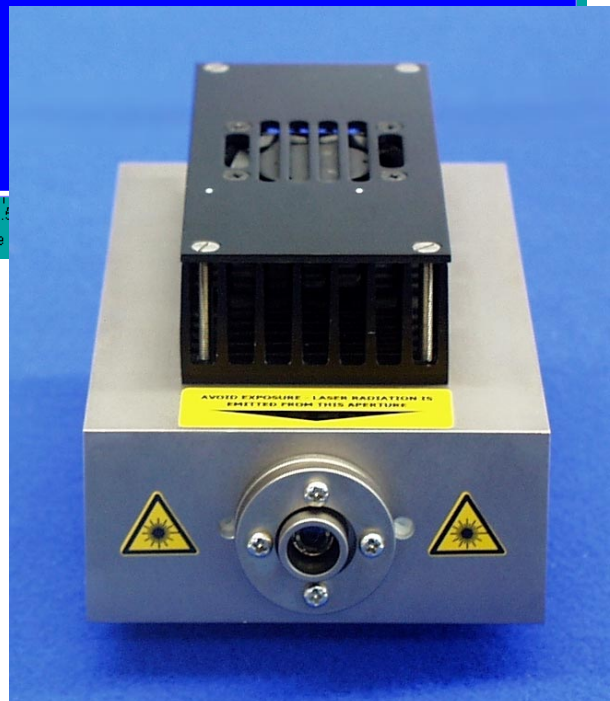
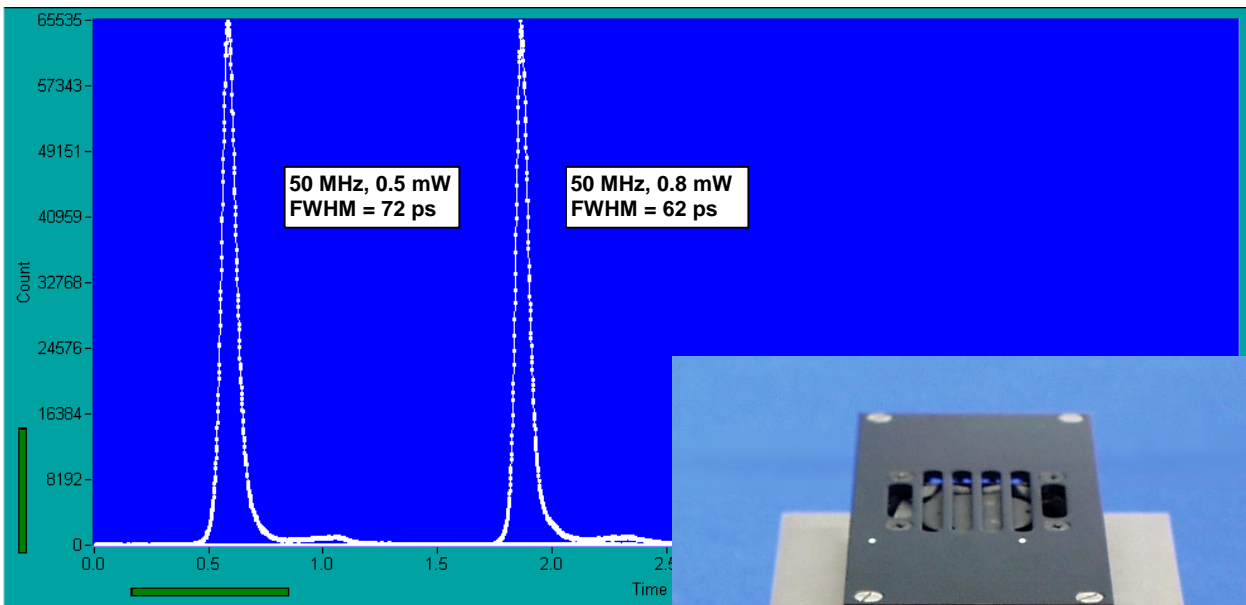
**Low skew trigger output**

**Extremely low RF noise**

**Cooled laser diode**

**Simple + 9 V to +12V power supply**

**Compact design - no external controller unit**



**Luminescence lifetime experiments**  
**Picosecond lifetime microscopy**  
**Fluorescence correlation**  
**Time-correlated single photon counting experiments**



**Becker & Hickl GmbH**  
Nahmitzer Damm 30  
12277 Berlin, Berlin  
Tel. +49 / 30 / 787 56 32  
Fax. +49 / 30 / 787 57 34  
email: [info@becker-hickl.com](mailto:info@becker-hickl.com)  
[www.becker-hickl.com](http://www.becker-hickl.com)



US Representative:  
**Boston Electronics Corp**  
[tcspc@boselec.com](mailto:tcspc@boselec.com)  
[www.boselec.com](http://www.boselec.com)



UK Representative:  
**Photonic Solutions PLC**  
[sales@psplc.com](mailto:sales@psplc.com)  
[www.psplc.com](http://www.psplc.com)

# BDL-375

## Optical

|   |  |
|---|--|
| Repetition Rate   | 20-50-80 MHz, selectable               |
| Wavelength  | 370 nm to 380 nm, typ. 375 nm          |
| Pulse Width (FWHM, Power 0.5 mW, 50 MHz)                    | 60 to 90 ps                            |
| Peak Power  | 125 mW <sup>1)</sup>                   |
| Optical Power   | 20 MHz: 0.1 mW to 0.3 mW <sup>2)</sup> |
| (Average or CW-equivalent power, adjustable)                | 50 MHz: 0.2 mW to 0.8 mW <sup>2)</sup> |
|   | 80 MHz: 0.3 mW to 0.8 mW <sup>2)</sup> |
| Stability of Repetition Rate                                | ± 100 ppm                              |
| Pulse-to-Pulse Jitter                                       | < 10 ps                                |
| Power and pulse shape stabilisation after 'Laser on' signal | 1 µs                                   |
| Power and pulse shape stabilisation after switch-on         | 3 min                                  |

## Trigger Output

|  |                          |
|--|--------------------------|
| Pulse Amplitude                          | +100 mV (peak) into 50 Ω |
| Pulse Width                              | 1 ns                     |
| Output Impedance                         | 50 Ω                     |
| Connector                                | SMA                      |
| Delay from Trigger to Optical Pulse      | < 500 ps                 |
| Jitter between Trigger and Optical Pulse | < 10 ps                  |

## Control Inputs

|                     |                               |
|---------------------|-------------------------------|
| Frequency 20 MHz    | TTL / CMOS high <sup>3)</sup> |
| Frequency 50 MHz    | TTL / CMOS high <sup>3)</sup> |
| Frequency 80 MHz    | TTL / CMOS high <sup>3)</sup> |
| /Laser Off          | TTL / CMOS low <sup>3)</sup>  |
| External Bias Input | analog input, -10 V to +10V   |

## Power Supply

|                      |   |
|----------------------|---|
| Power Supply Voltage | + 9 V to +12 V  |
| Power Supply Current | 300 mA to 1 A <sup>4)</sup>                                   |
| Power Adapter        | AC-DC power adapter, with key switch and control box in cable |

## Mechanical Data

|                 |                        |
|-----------------|------------------------|
| Dimensions      | 160 mm x 90 mm x 60 mm |
| Mounting Thread | two M6 holes           |

## Maximum Values

|                                   |                             |
|-----------------------------------|-----------------------------|
| Power Supply Voltage              | 0 V to +15 V                |
| Voltage at Digital Control Inputs | -2 V to +7 V                |
| Voltage at Ext. Bias Input        | -12 V to +12 V              |
| Ambient Temperature               | 0 °C to 30 °C <sup>5)</sup> |

1) Typical values, sample tested. Depends on pulse width and selected power.

2) Recommended power adjust range. Lower power gives broader pulses, higher power gives ringing in pulse shape. Power levels above the given range can be selected, but may impair the lifetime of the laser diode.

3) All inputs have 10 kΩ pull-up resistors. Open input is equivalent to logic 'high'.

4) Dependent on ambient temperature. Cooling current changes due to temperature regulation of laser diode

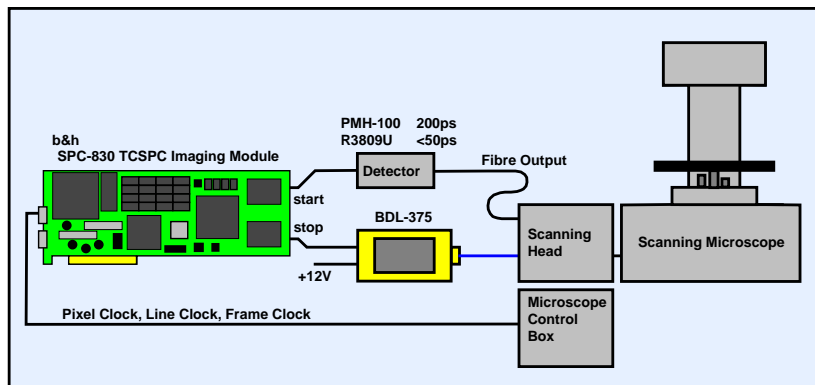
5) Operation below 13 °C may result in unstable power or extended warm-up time.



**Caution: Class 3B laser product. Avoid exposure to beam. Light emitted by the device may be harmful to the human eye and skin. Please obey laser safety rules when operating the devices. Complies with US federal laser product performance standards.**

## Application: TCSPC lifetime imaging with laser scanning microscopes

The BDL-375 laser excites the sample with 50 MHz, 75 ps pulses. The microscope scans the sample in y-x direction, and the SPC-830 TCSPC imaging module records the photon distribution versus time and the coordinates of the scanning area. The setup detects single and double exponential lifetimes down to a few 10ps. Typical applications are ion concentration, pH, or oxygen saturation measurements by fluorescence quenching, FRET experiments and distinguishing of autofluorescence components. Please see [www.becker-hickl.com](http://www.becker-hickl.com) for detailed information.



Becker & Hickl GmbH  
 Nahmitzer Damm 30  
 12277 Berlin  
 Tel. +49 / 30 / 787 56 32  
 Fax. +49 / 30 / 787 57 34  
<http://www.becker-hickl.com>  
 email: [info@becker-hickl.com](mailto:info@becker-hickl.com)

# BDL-405

## 405 nm Picosecond Diode Laser

**Pulse width down to 60 ps**

**Repetition rate 20-50-80 MHz**

**Wavelength 405 nm**

**Low skew trigger output**

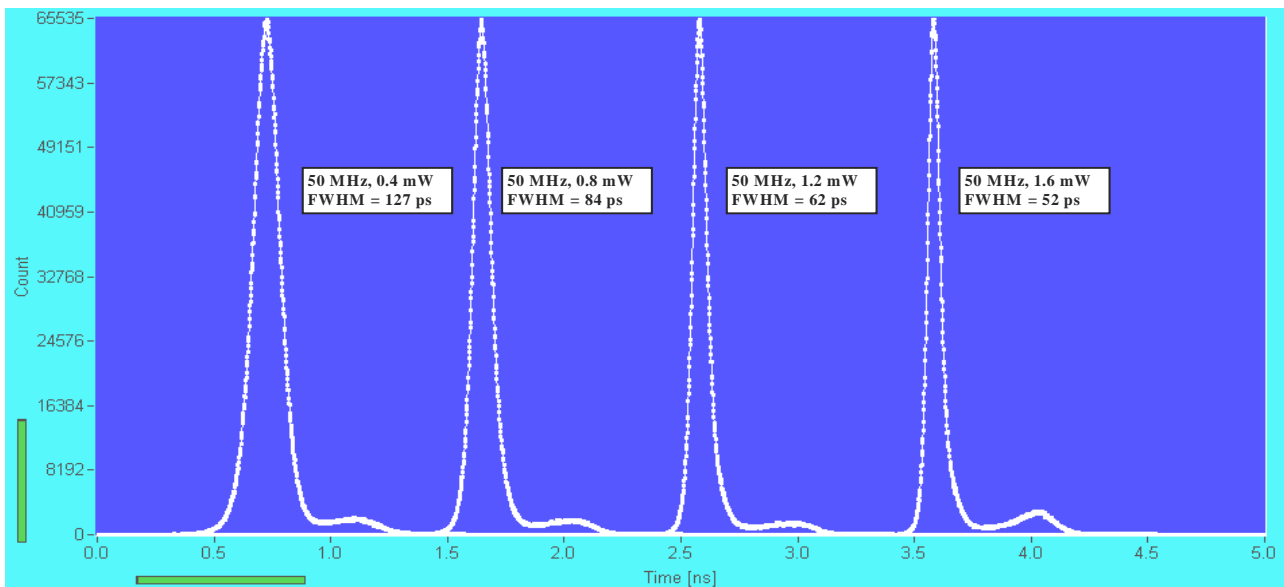
**Extremely low RF noise**

**Cooled laser diode**

**Fast on / off / multiplexing capability**

**Simple + 9 V to +12V power supply**

**Compact design - no external controller unit**



**Luminescence lifetime experiments**

**Picosecond lifetime microscopy**

**Fluorescence correlation**

**Time-correlated single photon**

**counting experiments**



**Becker & Hickl GmbH**  
Nahmitzer Damm 30  
12277 Berlin, Berlin  
Tel. +49 / 30 / 787 56 32  
Fax. +49 / 30 / 787 57 34  
email: info@becker-hickl.com  
www.becker-hickl.com



US Representative:  
**Boston Electronics Corp**  
tcspc@boselec.com  
www.boselec.com



UK Representative:  
**Photonic Solutions PLC**  
sales@psplc.com  
www.psplc.com

# BDL-405

## Optical

|   |   |
|---|---|
| Repetition Rate   | 20-50-80 MHz, selectable                |
| Wavelength  | 401 nm to 410 nm, typ. 405 nm           |
| Pulse Width (FWHM, at 1 mW power, 50 MHz)                   | 50 to 90 ps                             |
| Peak Power  | 80 to 500 mW <sup>1)</sup>              |
| Optical Power   | 20 MHz: 0.12 mW to 0.6 mW <sup>2)</sup> |
| (Average CW equivalent power, adjustable)                   | 50 MHz: 0.3 mW to 1.6 mW <sup>2)</sup>  |
|   | 80 MHz: 0.4 mW to 2.4 mW <sup>2)</sup>  |
| Stability of Repetition Rate                                | ± 100 ppm                               |
| Pulse-to Pulse Jitter                                       | < 20 ps                                 |
| Power and pulse shape stabilisation after 'Laser on' signal | 1 µs                                    |
| Power and pulse shape stabilisation after switch-on         | 3 min                                   |

## Trigger Output

|  |                                  |
|--|----------------------------------|
| Pulse Amplitude                          | +100 to +300 mV (peak) into 50 Ω |
| Pulse Width                              | 1 ns                             |
| Output Impedance                         | 50 Ω                             |
| Connector                                | SMA                              |
| Delay from Trigger to Optical Pulse      | < 500 ps                         |
| Jitter between Trigger and Optical Pulse | < 10 ps                          |

## Control Inputs

|                                     |                               |
|-------------------------------------|-------------------------------|
| Frequency 20 MHz                    | TTL / CMOS high <sup>3)</sup> |
| Frequency 50 MHz                    | TTL / CMOS high <sup>3)</sup> |
| Frequency 80 MHz                    | TTL / CMOS high <sup>3)</sup> |
| Laser ON / Off                      | TTL / CMOS low <sup>3)</sup>  |
| External Bias Input (Power Control) | analog input, -10 V to + 10V  |

## Power Supply

|                      |   |
|----------------------|---|
| Power Supply Voltage | + 9 V to +12 V  |
| Power Supply Current | 300 mA to 1 A <sup>4)</sup>                                   |
| Power Adapter        | AC-DC power adapter, with key switch and control box in cable |

## Mechanical Data

|                 |                        |
|-----------------|------------------------|
| Dimensions      | 160 mm x 90 mm x 60 mm |
| Mounting Thread | two M6 holes           |

## Maximum Values

|                                   |                             |
|-----------------------------------|-----------------------------|
| Power Supply Voltage              | 0 V to +15 V                |
| Voltage at Digital Control Inputs | -2 V to +7 V                |
| Voltage at Ext. Bias Input        | -12 V to + 12 V             |
| Ambient Temperature               | 0 °C to 30 °C <sup>5)</sup> |

1) Typical values, sample tested. Depends on pulse width and selected power.

2) Recommended power adjust range. Lower power gives broader pulses, higher power gives ringing in pulse shape. Power levels above the given range can be selected, but may impair the lifetime of the laser diode.

3) All inputs have 10 kΩ pull-up resistors. Open input is equivalent to logic 'high'.

4) Dependent on ambient temperature. Cooling current changes due to temperature regulation of laser diode

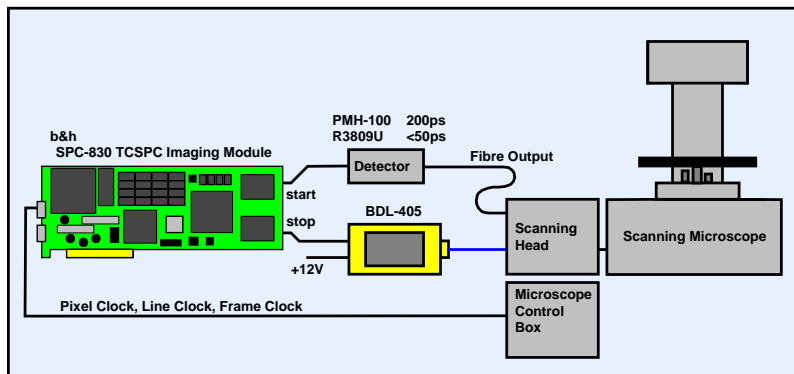
5) Operation below 13 °C may result in unstable power or extended warm-up time.



**Caution: Class 3R laser product. Avoid direct eye exposure. Light emitted by the device may be harmful to the human eye. Please obey laser safety rules when operating the devices. Complies with US federal laser product performance standards.**

## Application: TCSPC lifetime imaging with laser scanning microscopes

The BDL-405 laser excites the sample with 50 MHz, 75 ps pulses. The microscope scans the sample in y-x direction, and the SPC-830 TCSPC imaging module records the photon distribution versus time and the coordinates of the scanning area. The setup detects single and double exponential lifetimes down to a few 10ps. Typical applications are ion concentration, ph, or oxygen saturation measurements by fluorescence quenching, FRET experiments and distinguishing of autofluorescence components. Please see [www.becker-hickl.com](http://www.becker-hickl.com) for detailed information.



Becker & Hickl GmbH  
 Nahmitzer Damm 30  
 12277 Berlin  
 Tel. +49 / 30 / 787 56 32  
 Fax. +49 / 30 / 787 57 34  
<http://www.becker-hickl.com>  
 email: [info@becker-hickl.com](mailto:info@becker-hickl.com)

# BDL-475

## Blue Picosecond Diode Laser

**Pulse width down to 60 ps**

**Repetition rate 20-50-80 MHz**

**Wavelength 473nm**

**Low skew trigger output**

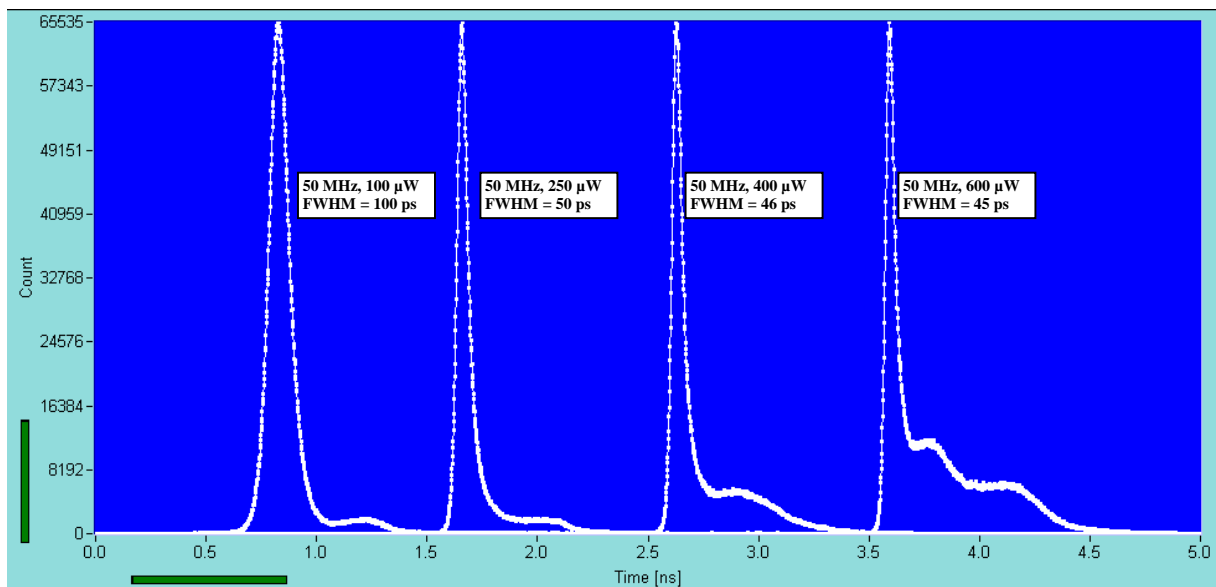
**Extremely low RF noise**

**Cooled laser diode**

**Fast on / off / multiplexing capability**

**Simple + 9 V to +12V power supply**

**Compact design - no external controller unit**

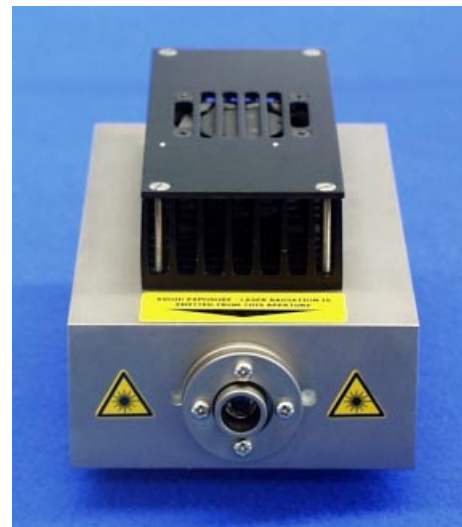


**Luminescence lifetime experiments**

**Picosecond lifetime microscopy**

**Fluorescence correlation**

**Time-correlated single photon counting experiments**



**Becker & Hickl GmbH**  
Nahmitzer Damm 30  
12277 Berlin, Berlin  
Tel. +49 / 30 / 787 56 32  
Fax. +49 / 30 / 787 57 34  
email: info@becker-hickl.com  
www.becker-hickl.com



US Representative:  
**Boston Electronics Corp**  
tcspc@boselec.com  
www.boselec.com



UK Representative:  
Photonic Solutions PLC  
sales@psplc.com  
www.psplc.com

# BDL-475

## Optical

|   |   |
|---|---|
| Repetition Rate   | 20-50-80 MHz, selectable                |
| Wavelength  | 468 nm to 482 nm, typ. 473 nm           |
| Pulse Width (FWHM, Power 0.2 to 0.4 mW, 50 MHz)             | 45 to 60 ps                             |
| Peak Power  | 25 to 150 mW <sup>1)</sup>              |
| Optical Power   | 20 MHz: 0.1 mW to 0.24 mW <sup>2)</sup> |
| (Average CW equivalent power, adjustable)                   | 50 MHz: 0.2 mW to 0.6 mW <sup>2)</sup>  |
|   | 80 MHz: 0.3 mW to 0.9 mW <sup>2)</sup>  |
| Stability of Repetition Rate                                | ± 100 ppm                               |
| Pulse-to Pulse Jitter                                       | < 10 ps                                 |
| Power and pulse shape stabilisation after 'Laser on' signal | 1 µs                                    |
| Power and pulse shape stabilisation after switch-on         | 3 min                                   |

## Trigger Output

|  |                          |
|--|--------------------------|
| Pulse Amplitude                          | +100 mV (peak) into 50 Ω |
| Pulse Width                              | 1 ns                     |
| Output Impedance                         | 50 Ω                     |
| Connector                                | SMA                      |
| Delay from Trigger to Optical Pulse      | < 500 ps                 |
| Jitter between Trigger and Optical Pulse | < 10 ps                  |

## Control Inputs

|                     |                               |
|---------------------|-------------------------------|
| Frequency 20 MHz    | TTL / CMOS high <sup>3)</sup> |
| Frequency 50 MHz    | TTL / CMOS high <sup>3)</sup> |
| Frequency 80 MHz    | TTL / CMOS high <sup>3)</sup> |
| /Laser Off          | TTL / CMOS low <sup>3)</sup>  |
| External Bias Input | analog input, -10 V to + 10V  |

## Power Supply

|                      |                             |
|----------------------|-----------------------------|
| Power Supply Voltage | + 9 V to +12 V              |
| Power Supply Current | 300 mA to 1 A <sup>4)</sup> |

## Mechanical Data

|                 |                        |
|-----------------|------------------------|
| Dimensions      | 160 mm x 90 mm x 60 mm |
| Mounting Thread | two M6 holes           |

## Maximum Values

|                                   |                             |
|-----------------------------------|-----------------------------|
| Power Supply Voltage              | 0 V to +15 V                |
| Voltage at Digital Control Inputs | -2 V to +7 V                |
| Voltage at Ext. Bias Input        | -12 V to + 12 V             |
| Ambient Temperature               | 0 °C to 30 °C <sup>5)</sup> |

1) Typical values, sample tested. Depends on pulse width and selected power.

2) Recommended power adjust range. Lower power gives broader pulses, higher power gives ringing in pulse shape. Power levels above the given range can be selected, but may impair the lifetime of the laser diode.

3) All inputs have 10 kΩ pull-up resistors. Open input is equivalent to logic 'high'.

4) Dependent on ambient temperature. Cooling current changes due to temperature regulation of laser diode

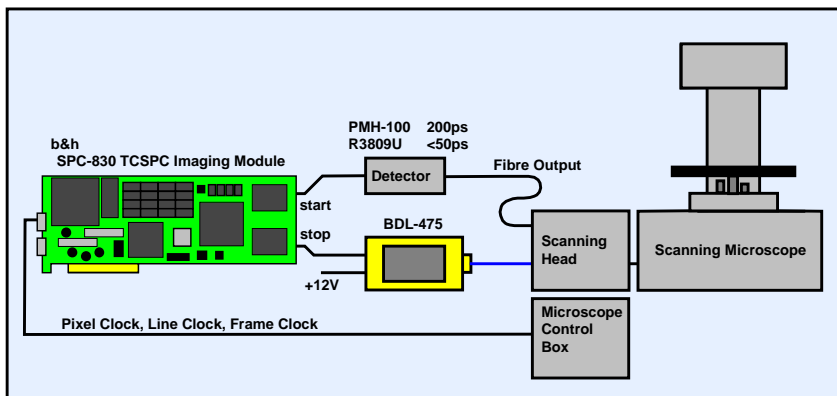
5) Operation below 13 °C may result in unstable power or extended warm-up time.



**Caution: Class 3R laser product. Avoid direct eye exposure. Light emitted by the device may be harmful to the human eye. Please obey laser safety rules when operating the devices. Complies with US federal laser product performance standards.**

## Application: TCSPC lifetime imaging with laser scanning microscopes

The BDL-475 laser excites the sample with 50 MHz, 50 ps pulses. The microscope scans the sample in y-x direction, and the SPC-830 TCSPC imaging module records the photon distribution versus time and the coordinates of the scanning area. The setup detects single and double exponential lifetimes down to a few 10ps. Typical applications are ion concentration, ph, or oxygen saturation measurements by fluorescence quenching, FRET experiments and distinguishing of autofluorescence components. Please see [www.becker-hickl.com](http://www.becker-hickl.com) for detailed information.



Becker & Hickl GmbH  
 Nahmitzer Damm 30  
 12277 Berlin  
 Tel. +49 / 30 / 787 56 32  
 Fax. +49 / 30 / 787 57 34  
<http://www.becker-hickl.com>  
 email: [info@becker-hickl.com](mailto:info@becker-hickl.com)

# BHL-600

## Red and NIR Picosecond Diode Laser Modules

Pulse width down to 50 ps

Average power up to 0.5 mW

Repetition rate 50 MHz

Wavelengths 635 nm to 1300 nm

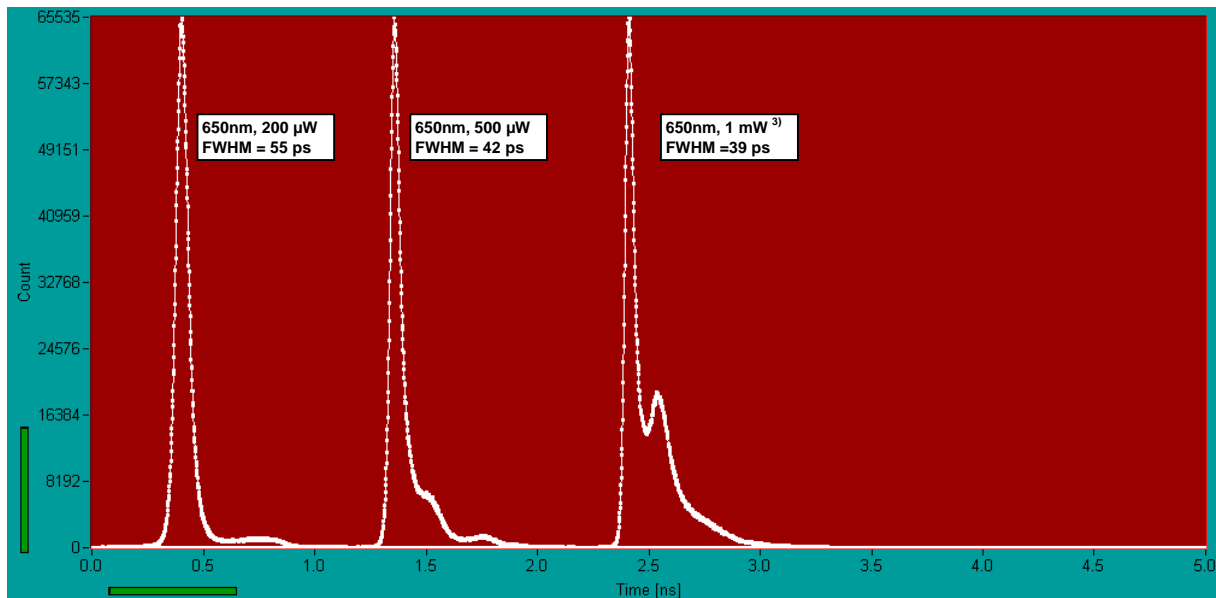
Low skew trigger output

Extremely low RF noise

Simple + 9 V to +12V power supply

Compact design - no external controller unit

Interfaces directly to all bh TCSPC modules



Photon migration experiments  
Luminescence lifetime of NIR fluorophores  
Fluorescence correlation  
Testing of optical detectors  
Time-correlated single photon counting experiments



Becker & Hickl GmbH  
Nahmitzer Damm 30  
12277 Berlin, Berlin  
Tel. +49 / 30 / 787 56 32  
Fax. +49 / 30 / 787 57 34  
email: info@becker-hickl.com  
www.becker-hickl.com



US Representative:  
Boston Electronics Corp  
tcspc@boselec.com  
www.boselec.com



UK Representative:  
Photonic Solutions PLC  
sales@psplc.com  
www.psplc.com

# BHL-600

## Optical

|  |   |
|--|---|
| Repetition Rate                                    | 50 MHz  |
| Wavelength   | 635, 650, 660, 670, 785, 808, 830, 980, 1300 nm <sup>1)</sup> |
| Average power (adjustable)                         | 0.1 mW to 0.5 mW <sup>2)</sup>                                |
| Maximum CW power                                   | 1 mW <sup>3)</sup>  |
| Average power for best pulse shape (typical value) | 0.2 mW  |
| Minimum pulse width (FWHM)                         | 40 ps to 100 ps <sup>4)</sup>                                 |
| Pulse Width (FWHM, Power 0.5 mW)                   | <150 ps <sup>4)</sup>   |
| Peak Power   | 100 mW <sup>4,5)</sup>  |
| Stability of Repetition Rate                       | ± 100 ppm   |
| Pulse-to-Pulse Jitter                              | < 10 ps   |
| Power regulation                                   | within 2% <sup>5)</sup>                                       |
| Collimator focal length                            | 8 mm  |

## Trigger Output

|  |                          |
|--|--------------------------|
| Pulse Amplitude                          | -100 mV (peak) into 50 Ω |
| Pulse Width                              | 1 ns                     |
| Output Impedance                         | 50 Ω                     |
| Connector                                | SMA                      |
| Delay from Trigger to Optical Pulse      | < 500 ps                 |
| Jitter between Trigger and Optical Pulse | < 10 ps                  |

## Power Supply

|                      |                  |
|----------------------|------------------|
| Power Supply Voltage | +9 V to 12 V     |
| Power Supply Current | 100 mA to 200 mA |

## Mechanical Data

|                 |                        |
|-----------------|------------------------|
| Dimensions      | 110 mm x 66 mm x 38 mm |
| Mounting Thread | two M6 holes           |

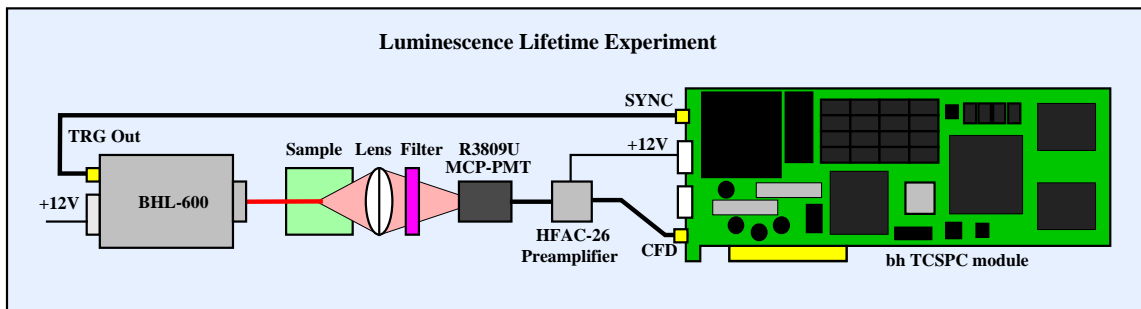
## Maximum Values

|                      |                    |
|----------------------|--------------------|
| Power Supply Voltage | 0 V to +15 V       |
| Ambient Temperature  | 0 °C to 30 °C      |
| Maximum CW power     | 1 mW <sup>3)</sup> |

- 1) Other wavelengths are available, but pulse width may differ from values given
- 2) Recommended power adjust range. Please note that the pulse width changes with the power. Permanent operation above the given range may impair the lifetime of the laser diode.
- 3) Absolute maximum of CW power. It is not guaranteed that all versions actually reach this power.
- 4) Pulse width varies with wavelength version and power. Please contact bh for detailed information.
- 5) Typical value, sample tested only.
- 6) Power is regulated via internal monitor photodiode. Reflecting the beam back or shining other light into the laser diode may impair power stability or even shutdown the laser.



**Caution: Class 3R laser product. Avoid direct eye exposure. Light emitted by the device may be harmful to the human eye. Please obey laser safety rules when operating the devices. Complies with US federal laser product performance standards.**

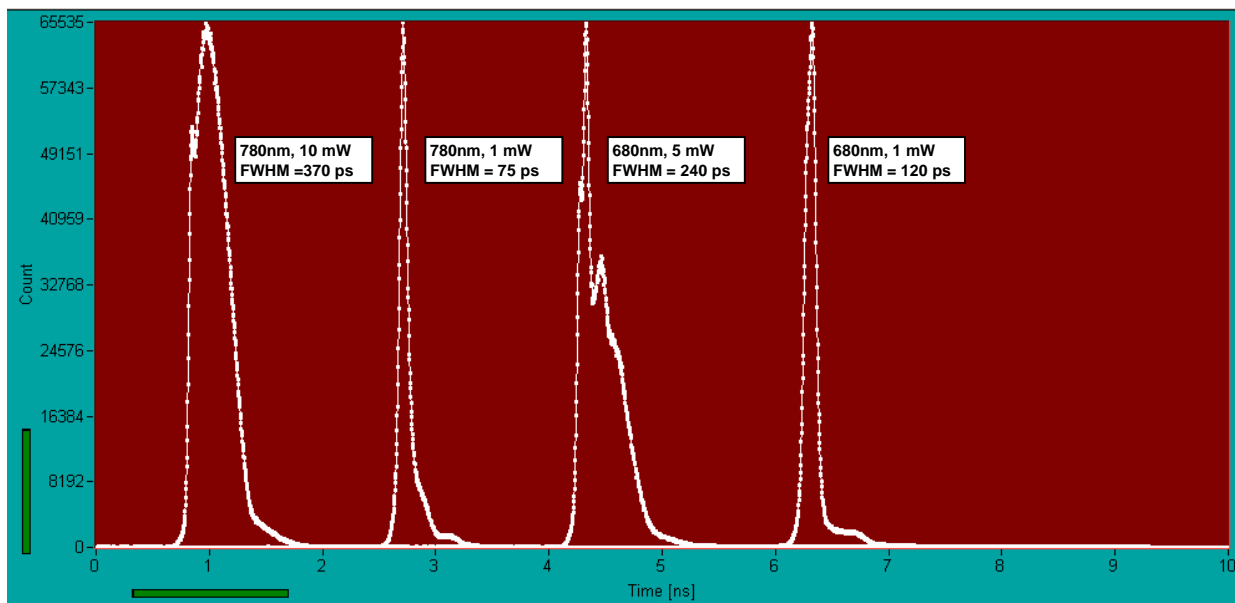


Becker & Hickl GmbH  
 Nahmitzer Damm 30  
 12277 Berlin  
 Tel. +49 / 30 / 787 56 32  
 Fax. +49 / 30 / 787 57 34  
<http://www.becker-hickl.com>  
 email: [info@becker-hickl.com](mailto:info@becker-hickl.com)

# BHLP-700

## Red and NIR Picosecond Diode Laser Modules

**Pulse width down to 100 ps**  
**Average power up to 10 mW**  
**Repetition rate 50 MHz**  
**Wavelength 685 nm, 785 nm**  
**Low skew trigger output**  
**Extremely low RF noise**  
**Cooled laser diode**  
**Shutdown / startup within 2 $\mu$ s - fast multiplexing capability**  
**Simple +12V power supply**  
**Compact design - no external controller unit**  
**Interfaces directly to all bh TCSPC modules**



**Diffuse Optical Tomography**  
**Luminescence Lifetime of NIR Fluorophores**  
**Fluorescence Correlation**  
**Time-Correlated Single Photon Counting**  
**Experiments**



**Becker & Hickl GmbH**  
Nahmitzer Damm 30  
12277 Berlin, Berlin  
Tel. +49 / 30 / 787 56 32  
Fax. +49 / 30 / 787 57 34  
email: [info@becker-hickl.com](mailto:info@becker-hickl.com)  
[www.becker-hickl.com](http://www.becker-hickl.com)



US Representative:  
**Boston Electronics Corp**  
[tcspc@boselec.com](mailto:tcspc@boselec.com)  
[www.boselec.com](http://www.boselec.com)



UK Representative:  
**Photonic Solutions PLC**  
[sales@psplc.com](mailto:sales@psplc.com)  
[www.psplc.com](http://www.psplc.com)

# BHLP-700

## Optical

|   |                               |
|---|-------------------------------|
| Repetition Rate   | 50 MHz                        |
| Wavelength  | 685 nm, 785 nm <sup>1)</sup>  |
| Pulse Width (FWHM, Power 1 mW, typical value)               | 120 ps                        |
| Pulse Width (FWHM, Power 5 mW, typical value)               | 300 ps                        |
| Peak Power  | 300 mW <sup>2)</sup>          |
| Average CW power (adjustable)                               | 0.2 mW to 10 mW <sup>3)</sup> |
| Stability of Repetition Rate                                | ± 100 ppm                     |
| Pulse-to Pulse Jitter                                       | < 10 ps                       |
| Power and pulse shape stabilisation after 'Laser on' signal | 2 µs                          |
| Power and pulse shape stabilisation after switch-on         | 2 min                         |

## Trigger Output

|  |                          |
|--|--------------------------|
| Pulse Amplitude                          | -100 mV (peak) into 50 Ω |
| Pulse Width                              | 1 ns                     |
| Output Impedance                         | 50 Ω                     |
| Connector                                | SMA                      |
| Delay from Trigger to Optical Pulse      | < 500 ps                 |
| Jitter between Trigger and Optical Pulse | < 10 ps                  |

## Control Inputs

|   |                              |
|---|------------------------------|
| /Laser Off (Shutdwn)  | TTL / CMOS low <sup>4)</sup> |
| Shutdwn delay   | < 100 ns                     |
| Power and pulse shape stabilisation after end of '/Laser Off' | 2 µs                         |
| External Power Control  | analog input, 0 to +5 V      |

## Power Supply

|                      |                             |
|----------------------|-----------------------------|
| Power Supply Voltage | +12 V                       |
| Power Supply Current | 200 mA to 1 A <sup>5)</sup> |

## Mechanical Data

|                 |                        |
|-----------------|------------------------|
| Dimensions      | 110 mm x 66 mm x 78 mm |
| Mounting Thread | two M6 holes           |

## Maximum Values

|                             |                             |
|-----------------------------|-----------------------------|
| Power Supply Voltage        | 0 V to +15 V                |
| Voltage at /Laser Off input | -2 V to +7 V                |
| Voltage at Ext. Bias Input  | -2V to +7V                  |
| Ambient Temperature         | 0 °C to 30 °C <sup>6)</sup> |

1) Other wavelengths from 635nm to 1300nm are available. Power and pulse width parameters may differ for wavelengths other than specified above. Please contact bh.

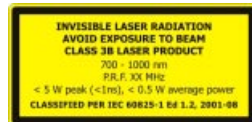
2) Typical value, sample tested only.

3) Recommended power adjust range. Please note that the pulse width changes with the power. Power levels above the given range can be selected, but may impair the lifetime of the laser diode.

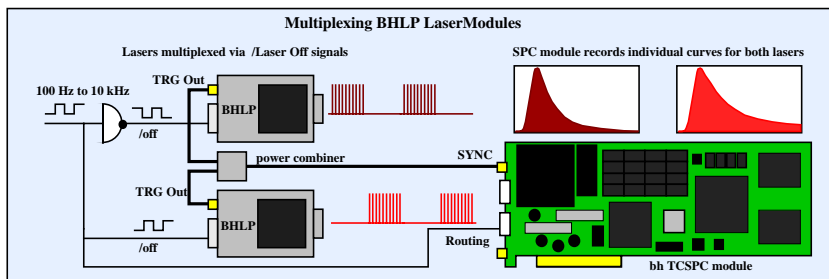
4) All inputs have 10 kΩ pull-up resistors. Open input is equivalent to logic 'high'.

5) Dependent on ambient temperature. Cooling current changes due to temperature regulation of laser diode

6) Operation below 13 °C may result in unstable power or extended warm-up time.



**Caution: Class 3B laser product. Avoid exposure to beam. Light emitted by the device may be harmful to the human eye and skin. Please obey laser safety rules when operating the devices. Complies with US federal laser product performance standards.**



Becker & Hickl GmbH  
 Nahmitzer Damm 30  
 12277 Berlin  
 Tel. +49 / 30 / 787 56 32  
 Fax. +49 / 30 / 787 57 34  
<http://www.becker-hickl.com>  
 email: info@becker-hickl.com