HORIBA
Scientific

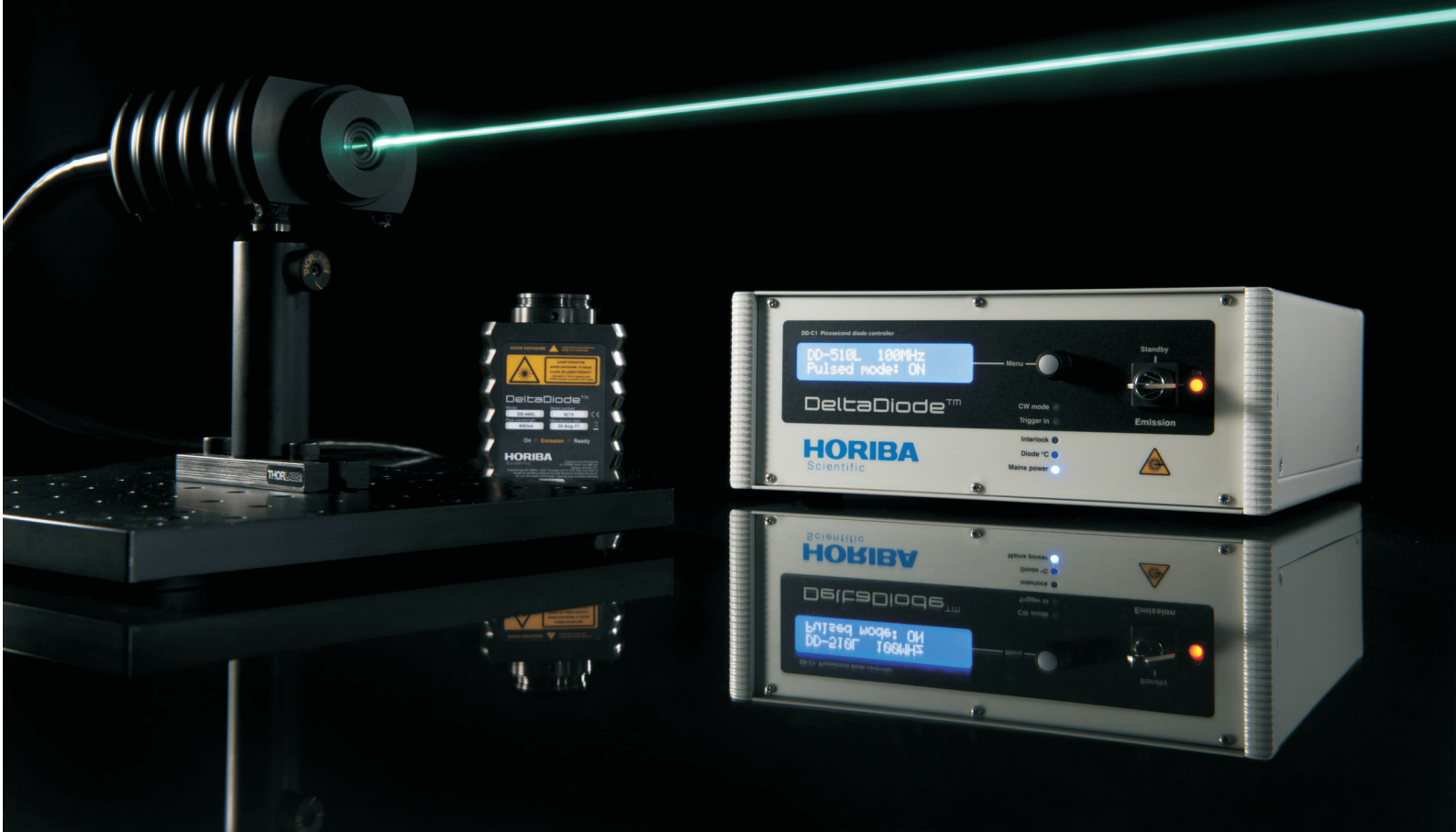# DeltaDiode™

The world's first 100MHz picosecond diode source with true plug-and-play interchangeable heads and USB interface

DeltaDiodes utilize laser diode and LED technology to generate short optical pulses over a very wide range of repetition rates and wavelengths. Optical pulses as short as 50ps can be generated at repetition rates up to 100MHz. State of the art features such as hot-swap heads, USB control and full software integration mean the DeltaDiode delivers the highest level of performance in the most user-friendly package available today.

DeltaDiode features

DeltaDiode heads operate at the highest repetition rates available - up to 100MHz. DeltaDiodes also produce the shortest pulses available from a commercial laser diode. Optical pulses as short as 45ps have been obtained (although the pulse width depends on the model).

DeltaDiodes are the only system featuring fully hot-swappable, plug-and-play heads. Each head contains factory calibration data to ensure optimum operation at each repetition rate without routine user intervention. This eliminates the need for the "Power" or "Intensity" dial adjustments commonly required on competing products each time a head is exchanged or repetition rate setting is changed.

Laser diode heads are available at a large number of wavelengths from 375nm to NIR. LED heads are available in the UV from 250nm to 370nm. New wavelengths are continually under development. CW operation is optionally available for most laser diode heads, in addition to pulsed operation. All deep UV and laser diode heads feature active temperature stabilization

The DeltaDiode is the only system with USB control.

DeltaDiode benefits

The DeltaDiode system has been designed to be as user friendly as possible and contains many convenient features not found elsewhere, for example:

★ Bayonet coupling - a quick and simple mechanical connection that allows the laser's plane of polarizations to be varied continuously
★ Built in lens - laser diode lens is aspheric and can be adjusted to correct the beam pointing angle
★ Full USB control
★ Stand-alone operation - the controller may be operated via front panel rather than PC
★ The most flexible range of trigger and synch connections
★ An expansion port allows customization

When the DeltaDiode is used with a FluoroHub TCSPC controller, DataStation automatically sets the DeltaDiode repetition rate (as well as other more advanced options) to suit the model of Hub and the time range in use. Useful maximum repetition rates are 100MHz for the Hub-B and 10MHz for the Hub-A.

Finally, with their high repetition rates and ultrashort pulses, DeltaDiodes are the optimum choice for use with MCP-PMT detectors.

DeltaDiode **hardware**

A typical DeltaDiode delivery includes:

DeltaDiode-C1 controller module
User guide, software on CD-ROM, cables and interlock connector
One or more DeltaDiode heads - refer to price list

Optional accessories include:

Bandpass filters are available at most wavelengths - refer to price list. Note all these accessories can be stacked for use on the same head.
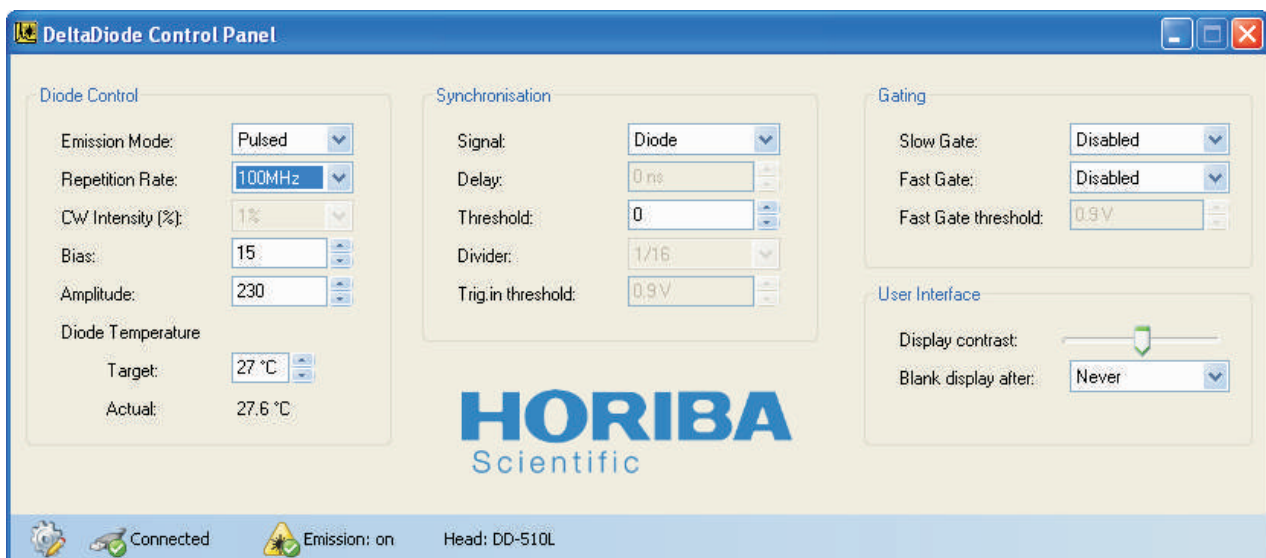
A mechanical shutter is included as standard on Class 3B laser heads and is available as an option for use with other heads.

Fiber launchers are available in three wavelength regions: <400nm, 400-600nm and >600nm. Please note that the fiber is not included in the price.

DeltaDiode **software**

DeltaDiode is provided with control panel software as shown. For customers with HORIBA Scientific TCSPC systems, the DeltaDiode may alternatively be controlled by DataStation for automatic selection of repetition rate to match the fluorescence lifetime of the sample under investigation. 32-bit and 64-bit drivers are provided and the control panel software operates on all versions of Windows from XP onward.