



Picosecond Ultraviolet Light Source

Small-size OEM Module, 40 mm x 40 mm x 120 mm

Picosecond pulsed LED

Pulse width 500 ps to 800 ps

Pulse repetition rate 20 MHz, 50 MHz, 80 MHz

Wavelengths from 250 nm to 330 nm

Free-beam output

Power approx. 50 μ W at 50 MHz

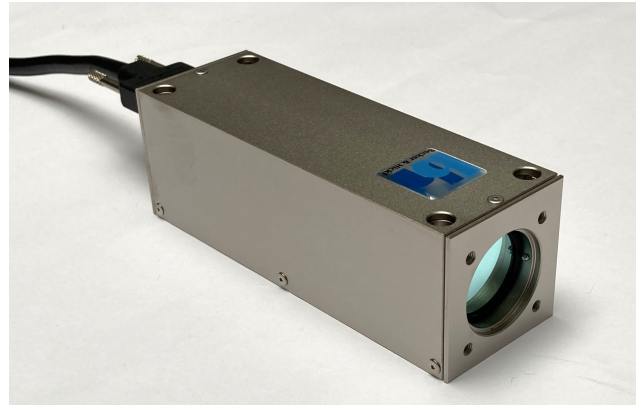
Fast ON / OFF and multiplexing capability

All electronics integrated

No external driver unit required

Simple +12 V power supply

Compatible with all bh TCSPC devices



Applications:

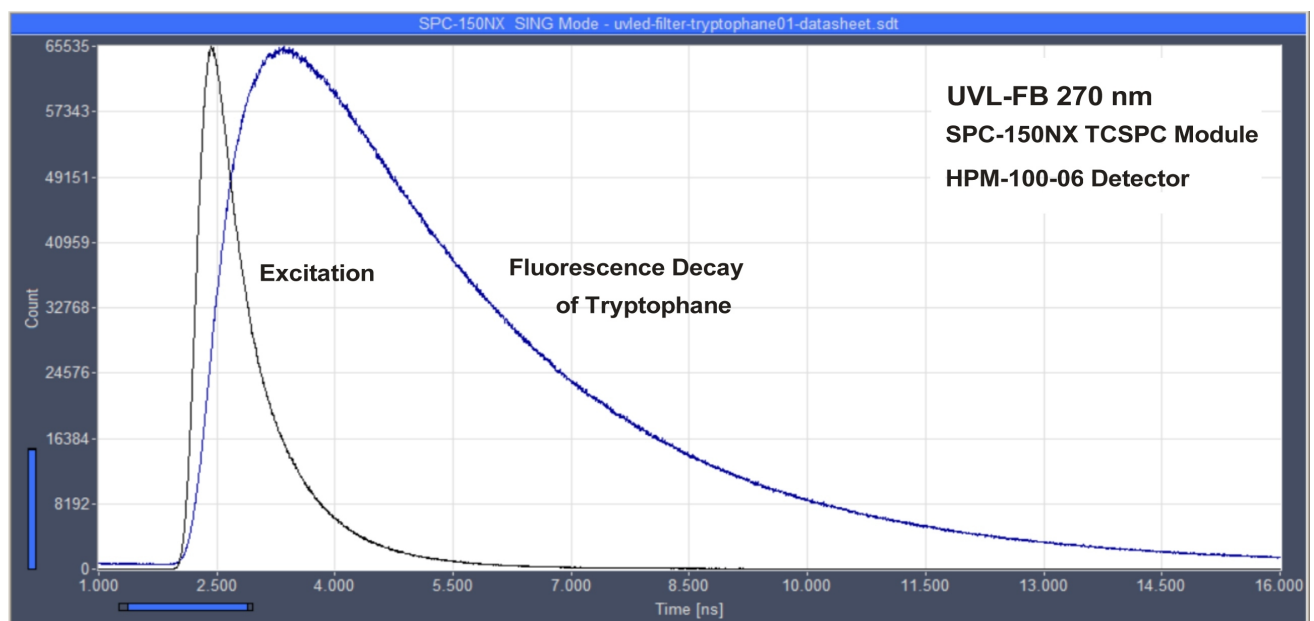
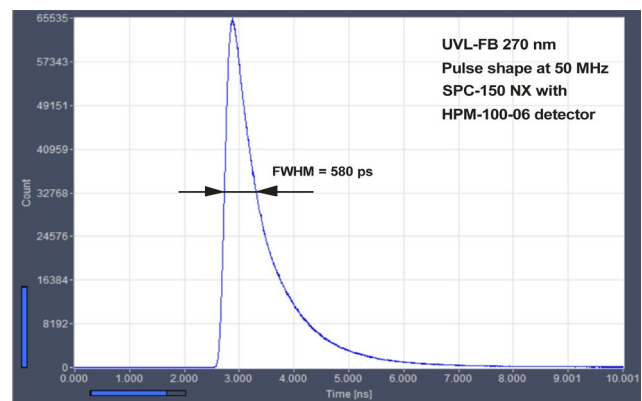
Fluorescence lifetime measurement

of deep-UV fluorophores

Tryptophane fluorescence decay

Environment surveillance

Water purity monitoring



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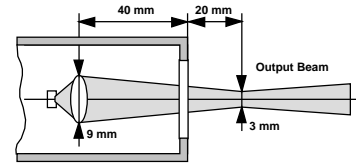


UVL-FB

Optical

Repetition Rate
Available wavelengths
Pulse width (FWHM, at medium power)
Pulse width (FWHM, at maximum power)
Optical power
Power control range
Optical beam dimensions

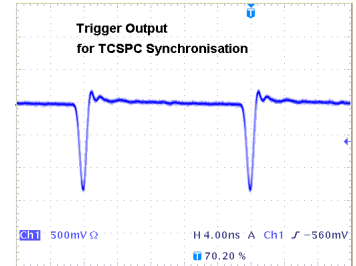
20 MHz, 50 MHz, 80 MHz
250 nm, 270 nm, 290 nm, 310 nm, 330 nm
typ. 580 ps
typ. 700 ps
approximately 50 μ W
10 to 100 %
see figure on the right



Trigger Output, to TCSPC Modules

Pulse Amplitude
Pulse Width
Output Impedance
Connector
Jitter between Trigger and Optical Pulse

-1.5 V (peak) into 50 Ω
1 ns, see figure on the right
50 Ω
SMA
< 10 ps



Synchronisation Input

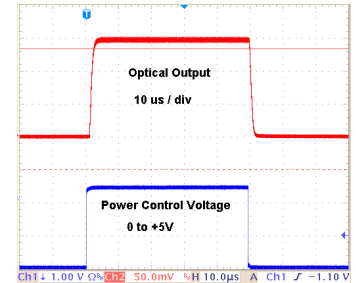
Input amplitude
Duty cycle
Input frequency
Connector
Switch between internal clock and sync input

+3.3 V to +5V into 50 Ω
10 to 30 %. DC equivalent must be < 2.5 V
20 to 80 MHz
SMA
automatic, by average voltage at trigger connector

Control Inputs

Emission ON / OFF
Response of optical output to emission ON/OFF signal
External power control
Response time of optical output to power control
Frequency 80 MHz
Frequency 50 MHz
Frequency 20 MHz

TTL / CMOS, 'low' means 'off', internal pull-up
< 1 μ s
analog input, 0 to +10 V
< 4 μ s for power 10 to 100%, see figure on the right
active H, internal pull-down resistor
active H, internal pull-up resistor
active H, internal pull-down resistor
Device runs at 50 MHz when frequency inputs unconnected



Power Supply

Power Supply Voltage
Power Supply Current at 12V

+ 9 V to +15 V
300 mA to 400 mA

Mechanical Data

Dimensions
Mounting holes
Heat sink requirements¹

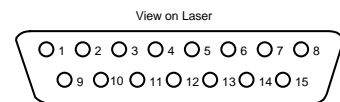
40 mm x 40 mm x 120 mm
four holes for M3 screws
< 2 $^{\circ}$ C / W

¹ Device must be mounted on heat sink. Case temperature must remain below 40 $^{\circ}$ C

Connector Pin Assignment

Connector
Power supply +12V
GND
Power control voltage
Laser ON/OFF (TTL/CMOS, active H)
Frequency 20 MHz (active H, int. pull-down resistor)
Frequency 50 MHz (active H, int. pull-up resistor)
Frequency 80 MHz (active H, int. pull-down resistor)
Do not connect:

Mini Sub-D 15 pin
1, 2
4, 5, and case
8
6
3
7
10
9, 11, 12, 13, 14, 15



Maximum Values

Power Supply Voltage
Voltage at 'Laser On/Off' and 'Frequency' inputs
Voltage at 'Laser Power' input
Ambient Temperature

0 V to +15 V
-2 V to +7 V
-12 V to +12 V
0 $^{\circ}$ C to 40 $^{\circ}$ C 3)

Related Products

BDS-SM and BDS-MM picosecond diode lasers, BDL-SMN picosecond diode lasers. Please see <https://www.becker-hickl.com>.

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