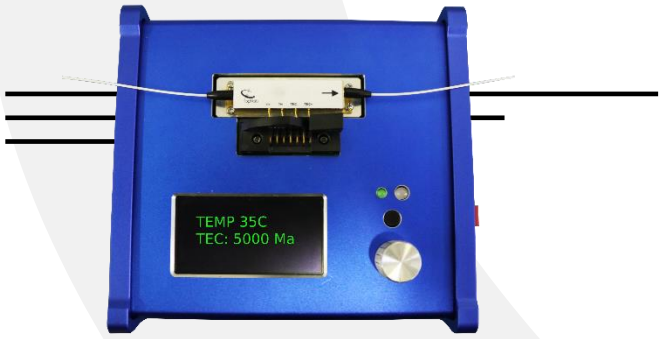
PTC-5000-MC



Precision Temperature Controller for SPDC/SFG Module Evaluation

OVERVIEW

PTC-5000-MC is a fully integrated Precision Temperature Controller designed for Optilab's Spontaneous Parametric Down-Conversion (SPDC) / Sum Frequency Generation (SFG) 4 pins waveguide modules. It features micro controller base circuit that control TEC up to 5A current. Also included is an external lid over the module, which provides stabilized temperature oven operation. This compact, easy to use temperature controller operates under a single + 12 V power supply. PTC-5000-MC offers 0.1 °C temperature control over 20 °C to 75 °C. It comes with a LCD display and a USB port for remote control. PTC-5000-MC is designed for the development of Quantum Light Source (QLS) related applications. Contact Optilab for more information.

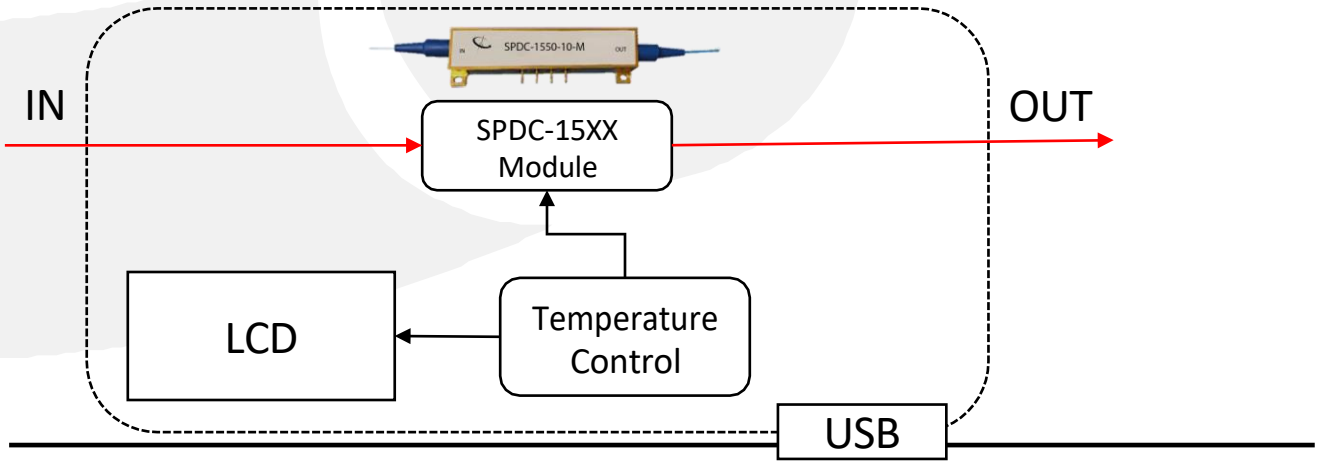
FEATURES

- Precision Temperature Control
- Built-in Temperature Controller
- High Power TEC Circuit
- On Board LCD Display
- USB Port for External PC Control

APPLICATIONS

- Quantum Light Source (QLS)
- Research and Development
- SPDC
- SFG
- Quantum Photonics

FUNCTION DIAGRAM



PTC-5000-MC

SPECIFICATIONS

GENERAL

SPDC/SFG Module Type	SPDC
TEC Temperature Setting	20 ºC ~ 75 ºC
TEC Setting Resolution	0.1 oC
TEC Power Supply	4 W
Temperature Readback Resolution	0.1 ºC
Setting Resolution	0.1 ºC

SPDC MODULE GENERAL

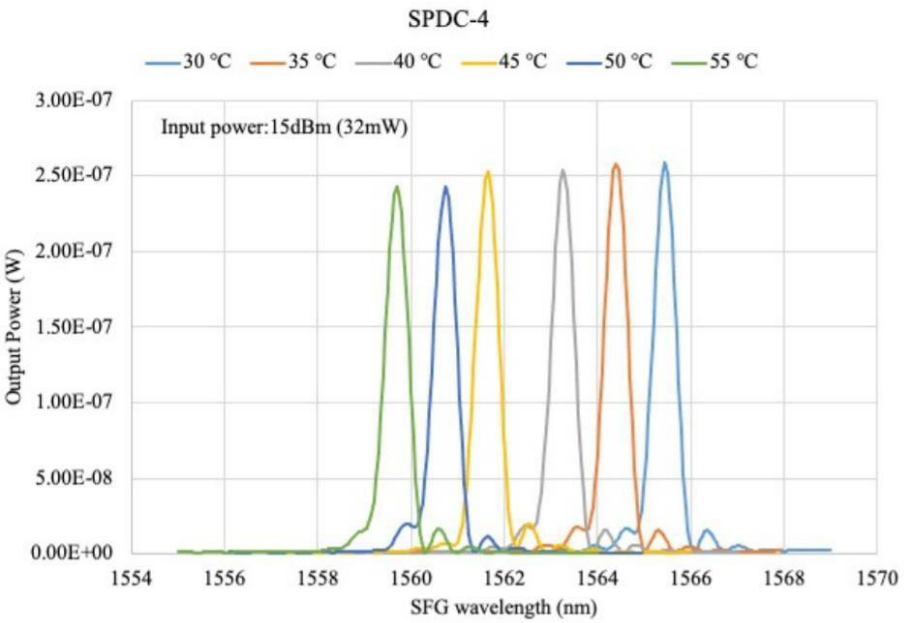
Substrate	Z-cut, X-propagation PPLN
Waveguide	Titanium In-diffusion
Pump Power @ CW	≤ 30 mW
Avg. pump Power @ pulsed pump*	≤ 50 mW
Insertion Loss	≤ 6 dB (5.5 dB typical) @ 1530 nm
TEC	
Resistance	10 kΩ @ 25 ˚C
Beta Value	B25/85 - 3976 K
Operating Temperature Range	-40 ˚C ~ + 125 ˚C
Temperature Accuracy	± .1 from 0 - 70 ˚C

MECHANICAL

OperatingTemperature	15 ºC to +35 ºC
Storage Temperature	0 ºC to +60 ºC
Operating Humidity	0% to 85% Relative Humidity
Communication	USB / RS-485
Dimension	61 mm x 130 mm x 145 mm
Display	OLED
Power Supply	+12 V DC, 4 A

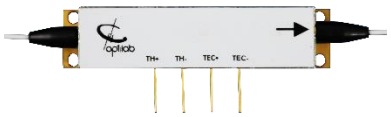
TEST DATA

Temperature Tuning of SPDC-1560



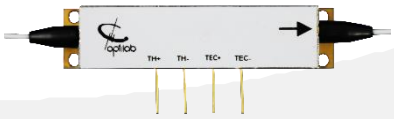
RELATED PRODUCTS

- SFG-XXX-YY-M



SFG-XXX-YY-M is a Periodically Poled Lithium Niobate (PPLN) waveguide chip designed to operate at XXX nm. Contact Optilab for more information

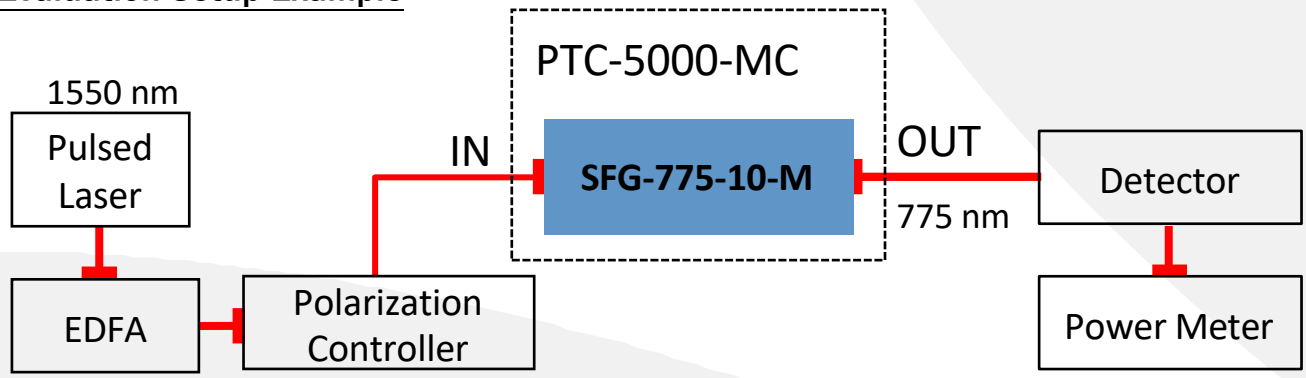
- SPDC-15XX-YY-M



SPDC-15XX-YY-M is a periodically poled lithium niobate (PPLN) waveguide module designed to operate at 15XX nm. Contact Optilab for more information

APPLICATION DIAGRAM

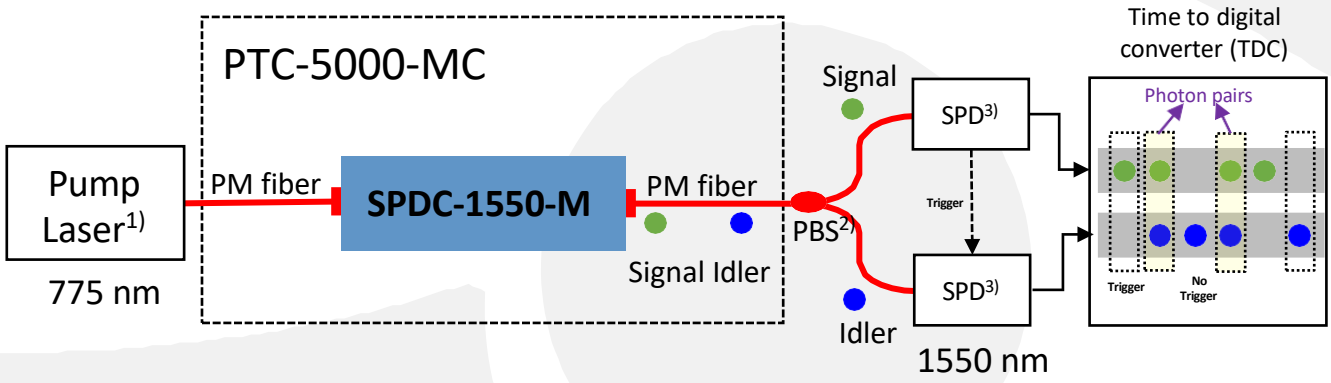
Sum Frequency Generator (Or SHG)
Module Evaluation Setup Example



APPLICATION DIAGRAM

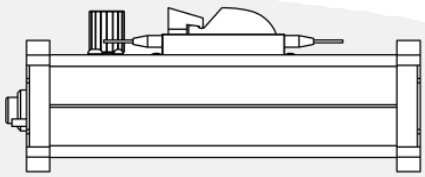
Spontaneous Parametric Down-Conversion
Typical Schematic Diagram

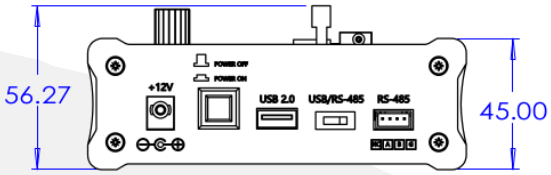
e -> o+e



[1)] CW or Femtosecond Laser
[2)] Polarization Beam Splitter
[3)] Single Photon Detector

MECHANICAL DRAWING





PINOUT	
PIN NO.	DESCRIPTION
1	THERMISTOR
2	THERMISTOR
3	TEC-
4	TEC+