



HealthyPhoton

Model : HPICB

TDLAS Integrated Controller



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Index

Index.....	2
1. Introduction.....	3
2. Product Description.....	3
2.1. Parameters.....	4



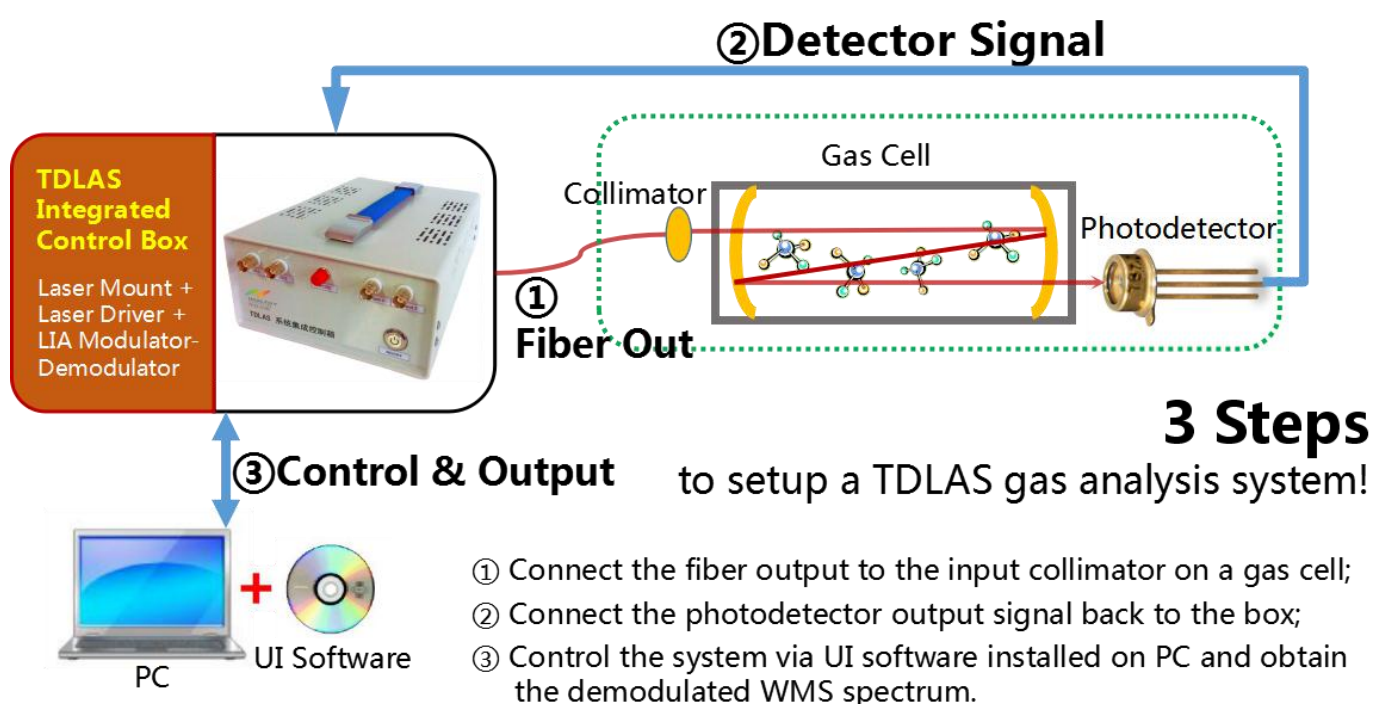
1. Introduction

TDLAS (Tunable Diode Laser Absorption Spectroscopy) spectral analysis requires temperature-stable and low-noise laser sources, weak signal modulation/demodulation modules, and reliable software control. HealthyPhoton integrates the four key components for a TDLAS system, including laser current driver, temperature control, signal modulation and lock-in demodulation. The TDLAS Integrated Controller features small size, easy installation, and easy operations. It is ideal for laboratory laser gas analysis, industrial process control, environmental pollutant monitoring, biochemical analysis, laser remote sensing and other fields.

2. Product Description

HealthyPhoton's TDLAS Integrated Controller includes core modules such as a laser bias current driver, TEC temperature control, heatsink, signal modulation, and lock-in demodulation. All the TDLAS parameters can be set on a PC-based user interface through a USB cable.

The wavelength modulated laser for detecting specific gas molecule is guided by the optical fiber to the FC/APC port. Laser beam collimation is needed in order to let the beam pass through the gas sample with a path-length (either inside a gas absorption cell or an open-path environment) and is received by a photodetector. The voltage signal output from the photodetector is connected back to the TDLAS controller via the coaxial cable for lock-in harmonic demodulation. The result spectral is output through the BNC analog port on the front panel or uploaded to the PC via the USB cable.





2.1. Parameters

Supported laser package	14pin butterfly package (with fiber pigtail output)
LD drive current	0 ~ 250mA
TEC temperature range	10 ~ 50 °C
Fiber connector type	FC/APC
Photodetector input port	Standard BNC female (CH1)
Lock-in analog demodulation output port	Standard BNC female (CH2/CH3)
PC connection port	USB (Type B)
Dimension (L*W*H)	170x240x80mm ³
Power supply (max)	15W (DC: 5V-3A)
Operation temperature	0 - 60 °C
Weight	~2000g