PIKE TECHNOLOGIES
Spectroscopic Creativity

Installation and User Guide

Out-of-Compartment Microplate Reader

Address Comments to:

PIKE Technologies, Inc.
6125 Cottonwood Drive
Madison, WI 53719

Phone	(608) 274-2721
Fax	(608) 274-0103
E-mail	info@piketech.com
Web Site	www.piketech.com

Jan. 1, 2014

Contents

Introduction

The Out-of-Compartment Microplate Reader offers high throughput plate reading capability to UV-Vis spectrophotometers with standard sample compartments. This allows flexibility to researchers conducting experiments with traditional accessories such as cuvettes, temperature control and integrating spheres who may also require microplate reading functionality. Microplate reading capability is often required in research, drug discovery, bioassay validation, quality control and manufacturing processes in the pharmaceutical and biotechnological industry and academia. The accessory supports standard 96-well and 384-well formats. The Microplate Reader can also be adapted to perform automated measurements of filters, optical components and other materials.

Specifications

Optics	Transfer Optics Module and two UV-Vis/NIR Optical Fiber Cables or, Transfer Optics Module, one Optical Fiber Cable and Photodiode Detector
Accuracy	+/- 25 µm
Mechanical Specifications Repeatability Resolution Run Time	 +/- 5 µm 1 µm 96-well plate – 32 seconds 384-well plate – 84 seconds
Computer Interface	USB
Power Requirements	100–240 Volts AC 50/60 Hz
Dimensions (W x D x H)	11.6 x 13.7 x 6"
Weight	15 lbs

The Microplate Reader is controlled by PIKE Technologies' AutoPRO™ 6 software which can be integrated with most commercial FTIR and NIR software packages.

Launch optics/fiber coupler fitted into the spectrophotometer is required.

Unpacking Your Accessory

In order for you to quickly verify receipt of your accessory, we have included a packing list. Please inspect the package carefully. Contact PIKE Technologies if any discrepancies are noticed.

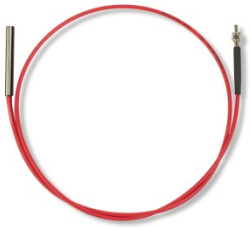
Packing List

User Manual
PN 350-0047000
Quantity 1

AutoPRO6 Manual and Software
PN 350-000071
Quantity 1

Microplate Reader Accessory
PN 047-10XXX
Quantity 1

UV-Vis Fiber Optical Probe
(1 m), **Probe Sold Separately**
PN 047-3030



USB Cable

Quantity 1

Cary 60 Detector Cable Access Plate
Quantity 1

Power Supply
with Power Line Cord
Quantity 1

Optical Description

The optical system of the Microplate Reader features a fiber optic probe, and a built-in silicon diode detector. The light is picked up in the spectrophotometer sample compartment by the Transfer Optics Module and sent to the plate reader via the optical fiber probe. After passing through the sample, it is collected by the detector and registered by the spectrophotometer electronics.

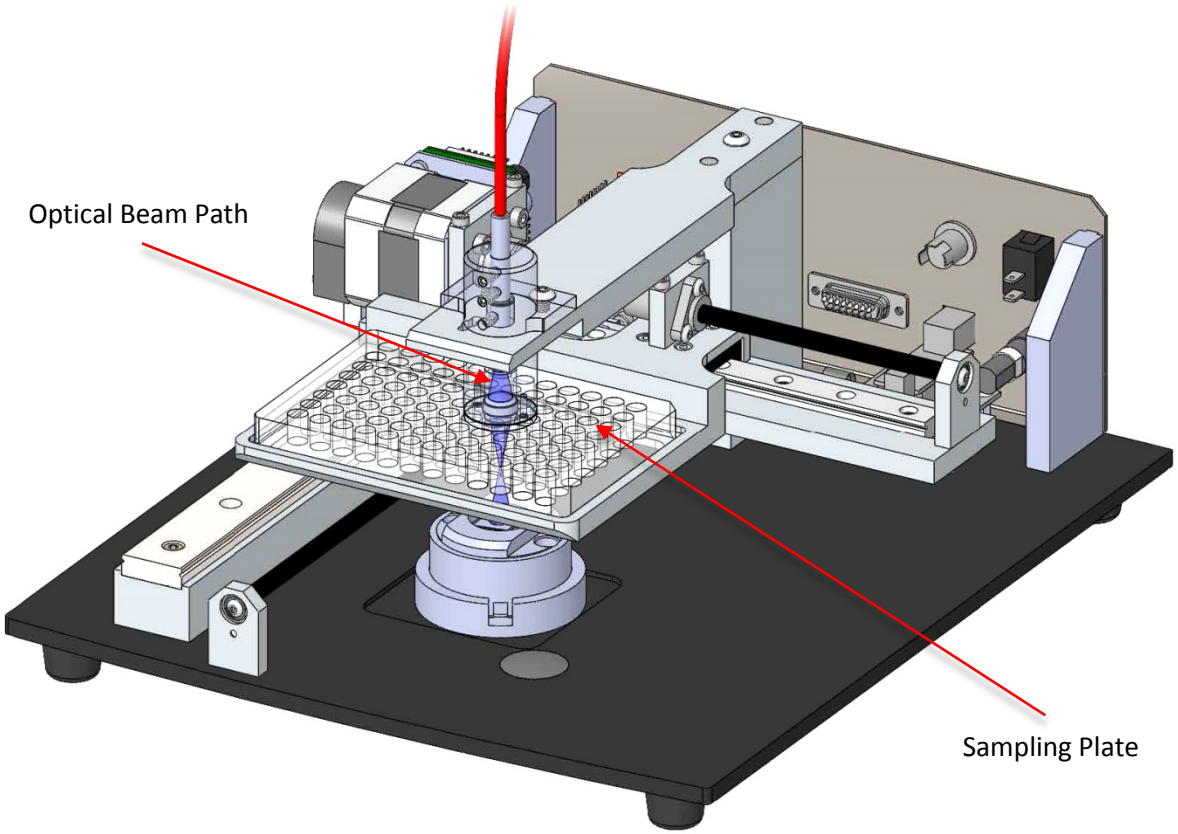


Figure 1. Optical cutaway view

The mechanical design of the accessory relies on an X, Y stage with both axes driven by high precision servo motors with optical encoders for speed and reproducibility. USB and DC power are the only external connections required for this accessory. Programming and control of the Microplate Reader is done through PIKE Technologies' AutoPRO6 software, which can be integrated easily with the spectrophotometer software.

Installation

The Microplate Reader module features a small footprint and can be positioned next to or above the spectrophotometer.

Before performing these steps please ensure that the spectrophotometer power is off.

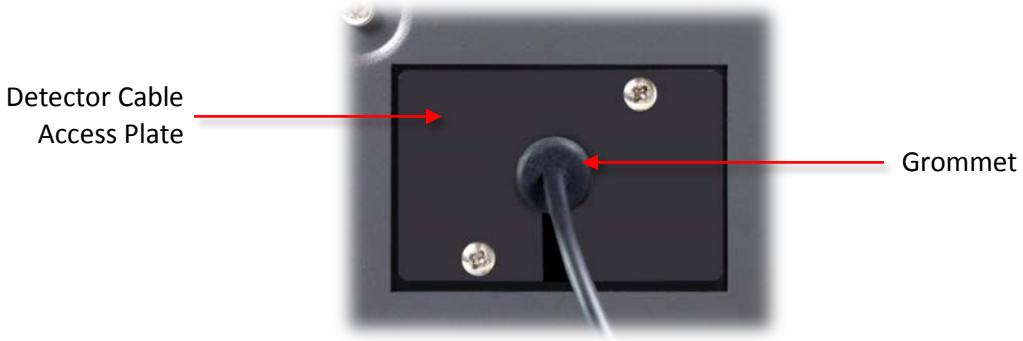
1. Mount the Transfer Optics Module in the sample compartment of the spectrophotometer. Follow manufacturer's instructions to complete this step.

2. Position the Microplate Reader in a desired location and plug the detector cable into the socket located in the sample compartment of the spectrophotometer as follows:

    a. Remove the access plate from the spectrophotometer back wall.

    b. Feed the detector cable through the opening and plug it into the socket located on the side wall of the spectrophotometer sample compartment.

    c. Slide the detector cable grommet in the Detector Cable Access Plate slot and re-attach the plate to the back of the instrument.

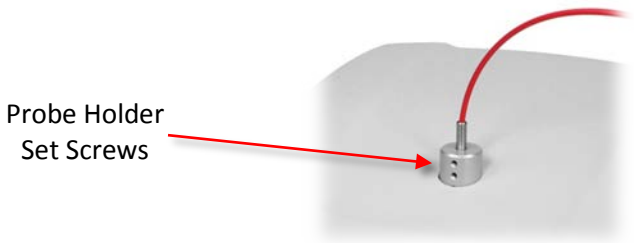


3. Attach the fiber optic probe to the SMA connector marked “Light Out” on the Transfer Optics Module.

Figure 2. Completed System

4. Complete the PC and PC connection section on the next page.

5. Slide the probe into the probe holder located on the top of the accessory. Enable the align function in the spectrophotometer software to monitor the energy. Adjust the probe up and down until the position of maximum energy is determined. Secure the probe by tightening the two set screws of the probe holder.



PC and Power Connection

Before performing these steps please ensure that the spectrophotometer power is off.

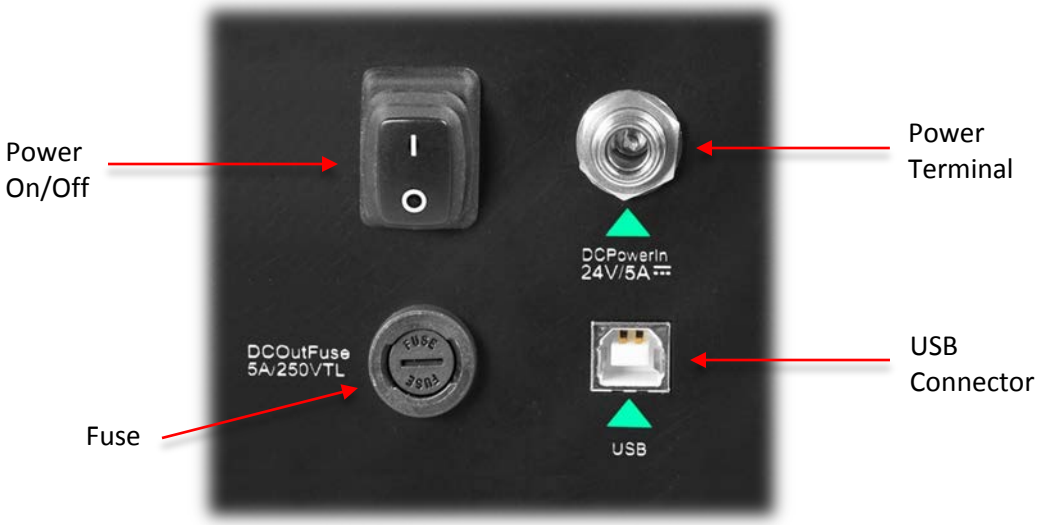


Figure 3. Connector panel located on the back panel of the Microplate Reader

Connecting to your Computer

Please load the AutoPRO6 software before connecting the accessory to the PC. Instructions for the AutoPRO6 software are covered in a separate manual.

Locate the USB port on top of the accessory panel. Connect the USB cable to that port and to a USB port on your computer.

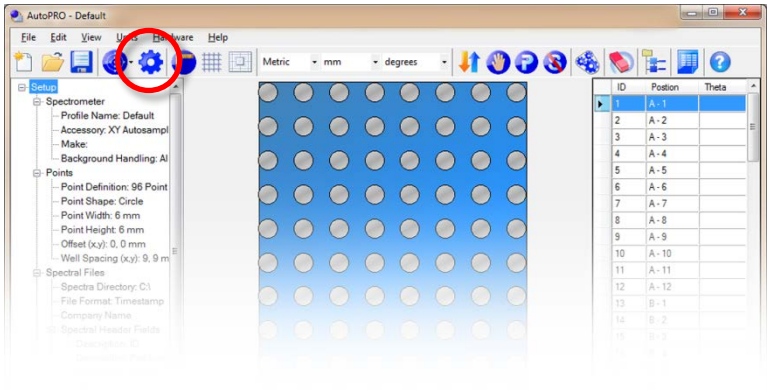
Powering-Up the Accessory

Plug the DC power line connector to the matching DC power jack on the accessory panel. Connect the power supply to an AC wall outlet. The green “power on” line LED light will turn on.

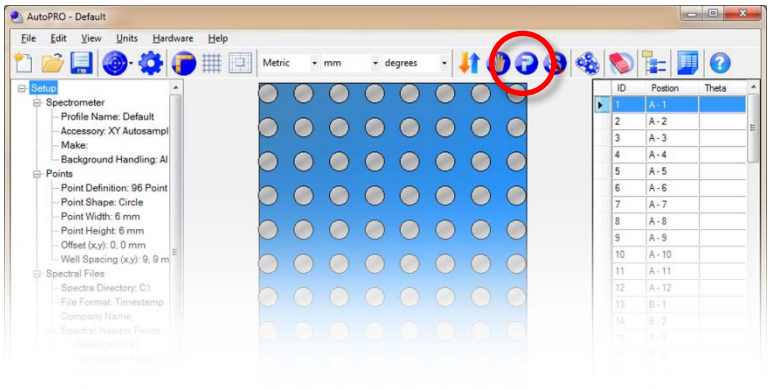
Please refer to a separate manual for AutoPRO6 Software installation and use.

Accessory Initialization

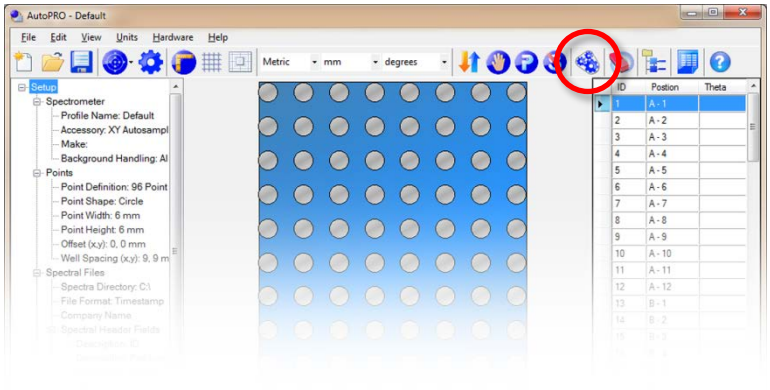
1. Set up AutoPRO6 software for the correct accessory.



2. Set the accessory to manual mode.



3. Click the Initialize Motors icon (the stage will move slightly and reposition itself at position 0,0).



After this step the Microplate Reader is ready for use and you can set up your experiment as described in the AutoPRO6 User Manual.

6125 Cottonwood Drive · Madison, WI 53719-5120 · (608) 274-2721 (TEL) · (608) 274-0103 (FAX)
info@piketech.com · www.piketech.com