

# Frequently Asked Questions

## 2020PRO Photoionization Monitor

### What compounds can I detect using the 2020PRO photoionization monitor?

In general, any volatile organic compound (VOC) with the following properties is detected by the 2020PRO:

- Boiling point <185 degrees C
- Vapor pressure > 1 mm Hg
- Ionization potential from 8.0 eV to 10.9 eV

For a listing of compounds detected by the 2020PRO, please refer to Technical Tip Volume 7 Number 1. Please note this Technical Tip also provides ionization potential data for each compound. ([Learn more...Technical Tip Volume 7 Number 1](#))

### Should I use a 10.6 eV or 11.7 eV lamp in the 2020PRO?

For most applications the standard 10.6 eV lamp will detect a wide range of volatile organic compounds. The 10.6 eV lamp will generally detect compounds with an ionization potential from 8.0 eV to 10.9 eV. Some chlorinated compounds such as dichloromethane (methylene chloride) are best detected using the optional 11.7 eV lamp. [Click here](#) to look up the ionization potential of many common organic compounds. ([Learn more...Technical Tip Volume 7 Number 1](#))

If you do not see a compound on the list that you would like to detect, contact Photovac Technical Support at 781 290 0777 or [click here](#) for Technical Support.

### Which User Mode should I use?

#### Logging Off Mode

Logging Off mode is identified by the word "LOG" with a diagonal line through the word "LOG" in the upper right corner of the 2020PRO display. Logging Off will continuously display the concentration of total volatile compounds present that the 2020PRO can ionize. The reading is updated approximately once per second.

#### Tag Mode

Tag mode is identified by the word "TAG" in the upper right-hand corner of the 2020PRO display. Tag mode will continuously display the instantaneous concentration of total volatile compounds. Tag mode also allows the user to manually tag and datalog readings. Tag mode, allows the user to datalog a background reading, a sample reading and assign Site Codes to readings.

#### Interval Mode

Interval displays the instantaneous readings as well as STEL, TWA, and PEAK readings. Interval mode is identified by the letters "INT" in the upper right-hand corner of the 2020PRO display. Interval automatically calculates and updates STEL, TWA, and PEAK readings. Interval mode also automatically stores these readings in the 2020PRO's memory at a preset interval selected by the user.

### How do I calibrate the 2020PRO?

The new dedicated cal key will prompt user to first use zero grade air or clean ambient air to create a zero point during calibration. The user will then be prompted to enter the concentration value of the span gas and then complete the calibration.

### How often should I calibrate the 2020PRO?

The recommended calibration interval for the 2020PRO is the start of each workday and after eight hours of operation.

### What gas do I use to calibrate the 2020PRO?

Isobutylene at a concentration of 100 PPM is recommended for 2020 span calibration. A cylinder of isobutylene (part number MX350012) can be purchased from Photovac.

### How often should I replace the sample inlet filter on the 2020PRO?

Photovac recommends that the 0.1 micron filter on the 2020PRO inlet is changed every forty hours of typical use. During the first few days of initial operation the filter should be checked every eight hours of use to determine how quickly the filter becomes dirty or clogged. In dusty environments or when sampling high concentrations, it may be necessary to check and change the filter more often. If water or other liquids are aspirated the filter should be changed immediately.

### How often do I need to clean the lamp?

The lamp in the Photovac 2020PRO should be cleaned every 30 days of operation. The lamp should be checked weekly for contamination on the lamp window. Contamination appears as a white or off-white film or deposit on the lamp window. Use of the 2020 in very dusty environments or in areas where the VOC concentration is high may require that the lamp is cleaned more often.

### How do I know if I need a new lamp?

The 2020 lamp should be replaced every 12 -24 months. Lamp life is dependant on 2020 usage, sampling environment and how frequently the lamp has been cleaned. Clean the lamp if you are experiencing fault messages or are having difficulty calibrating the 2020. If cleaning the lamp does not clear the fault messages then the lamp should be replaced.

### What is the procedure to clean the lamp?

Please click on link for Lamp Cleaning Instructions ([click here...lamp cleaning document as download](#)). A lamp cleaning kit (part number MX380336) can be purchased from Photovac. The cleaning kit includes aluminum oxide cleaning compound, 10 cotton swabs, and instructions.

### How do I know if I need a new lamp?

The 2020PRO lamp should be replaced every 12 -24 months. Lamp life is dependant on 2020PRO usage, sampling environment and how frequently the lamp has been cleaned. Clean the lamp if you receive a Lamp Fault message or are having difficulty calibrating the 2020PRO. If cleaning the lamp does not clear the fault messages then the lamp should be replaced.

### How can I extend the life of the 11.7 eV lamp?

Because of the material used to make the window on any 11.7 eV lamps, 11.7 eV lamps are very hydroscopic. This tendency of the 11.7 eV to absorb moisture results in a shorter lamp life compared to a 10.6 eV lamp. To improve the life of the 11.7 eV lamp remove it from the 2020PRO when it is not in use and store the lamp with a desiccant in the plastic shipping bottle. For additional information contact Photovac Technical Support. [click here](#) for Technical Support

### The 2020PRO shows a System Alert message. What does this mean?

A summary of the 2020PRO System Alerts:

2020PRO Display	Description
Zero Air Error	Zero gas too high
Span Gas Error	Span gas too low
Pump Error	Pump fault
UV Lamp Error	UV lamp fault

Blocked Filter	Blocked sample inlet filter
Low Battery Icon	Low battery
Data Log Full	Data memory full
Unit is Locked. Enter Passcode to Unlock.	Unit locked by passcode
The Unit is Communicating with the PC	Instrument communicating with PC
Instrument Over Range	Sample concentration over instrument operating range
Alarm + R Icon	Real time concentration alarm
Alarm + T Icon	TWA concentration alarm
Alarm + S Icon	STEL concentration alarm

#### What is a response factor?

A response factor is a correction factor that normalizes the 2020PRO's response to a single compound. Since any photoionization detector can be more or less sensitive to a single compound, the response factor is used to normalize that unique response relative to isobutylene.

Please note: Response factors should only be used where the instrument operator is certain that only a single compound is present. If multiple compounds are present a response factor of 1.0 is always set.

Since every manufacturer's detector design is unique, response factors from other manufacturers or other Photovac instruments must not be used with the 2020PRO.

#### What if no RF is listed for my compound of interest?

If no response factor is listed for a particular compound, Photovac has not developed a response factor of that compound. In this case you can develop your own response factor. Please refer to Technical Tip Volume 7, Number 5 for the procedure to determine a response factor. (Learn more...Technical Tip Volume 7, Number 5)