Frequently Asked Questions

2020 Photoionization Monitor

What compounds can I detect using the 2020 photoionization monitor?

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

- 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 2020, please refer to Technical Tip Volume 7 Number 1. Please note this Technical Tip also provides ionization potential data for each compound.

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

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.

How do I calibrate the 2020?

Please refer to Photovac's Technical Tip titled '2020 Photoionization Monitor Operational Reference Guide' for a walk-through of the calibration procedure. (Learn more…Technical Tip Volume 2 Number 1)

How often should I calibrate the 2020?

The recommended calibration interval for the 2020 is every eight hours of operation.

What gas do I use to calibrate the 2020?

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 2020?

Photovac recommends that the 0.1 micron filter on the 2020 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 2020 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.

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 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.

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 2020 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 2020 shows a Fault message. What does this mean?

Refer to the User's Manual Section 6.2 for a detailed explanation of the Fault Codes for the 2020. A summary of the fault codes:

Fault 1 Failure during calibration to properly set the zero point
Fault 2 Failure of the 2020 to properly calibrate at span (normally 100 PPM).
Fault 3 The UV lamp is not on or has low intensity.
Fault 4 The 2020 pump is drawing excessive current.

What is a response factor?

A response factor is a correction factor that normalizes the 2020'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 2020. Please refer to Technical Tip Volume 2, Number 2 for a complete listing of the response factors developed for the 2020. (Learn more…Technical Tip Volume 2, Number 2)

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)

What does the eLog message mean?

eLog is a message indicating that the 2020 datalogger is full. For details on clearing the datalogger through either downloading or deleting data, please refer to Section 2.7 of your 2020 User's Manual.

How can I download data from my 2020?

The data stored in your 2020 datalogger can be downloaded to a PC for archiving and editing. When downloading data to a PC, Terminal emulation software must be used. One such available package is Microsoft Windows HyperTerminal. Instructions for downloading logged data into Windows are outlined in Technical Tips. Please select the Windows operating system below that you are currently using for the appropriate Technical Tip.