



GEIGER PRO

Attention: This product is not designed to replace your home Carbon Monoxide detector. Other advisories also apply. Read and understand this entire document.

Thanks for purchasing GEIGER PRO from Radiant Technology. This new product (May 2023) has significant new features:

- Calibration and graphing display levels are engineered with FAA Carbon Monoxide monitoring recommendations in mind. (Search the web for “Carbon Monoxide, a Deadly Menace” – FAA)
- Aural alarm for ~41 PPM
- LCD graph shows color coded CO levels over a 30 minute window
- Secondary screen shows “G” levels with an analog style dial, including min and max values

This product will help protect you. **Your responsibility is to understand how it works and how to interpret its results.** Please read this manual thoroughly before using GEIGER PRO.

CHARGING. Please charge the battery before use – overnight is best for a full charge on a standard USB port. When the AMBER light beside the USB port is bright, the device is charging. When it turns very dim, the device is fully charged. The USB cable is not included. If you need a cable, send an email to info@radiantinstruments.com, and we will ship you one without charge. (US addresses only.) **Always charge GEIGER PRO before usage.**

SENSOR used in GEIGER PRO. GEIGER PRO utilizes the SPEC Sensor CO sensor, which markets this product as a “10 year expected life” device. We use part #'s 110-109 and 110-102.

USER TEST. We recommend checking the response of your product by holding it in the smoke of a match which has been blown out. Do not hold the sensor over a flame; the rising heat may destroy it.

CROSS SENSITIVITY. GEIGER PRO has very slight cross sensitivity to hydrogen and extremely slight cross sensitivity to alcohol. **Remove hydrogen and alcohol from the cockpit prior to flight.** The sensor does not have any other known cross sensitivities.

POWER ON. To power GEIGER PRO on, slide the power switch up. The product will start an aural alarm test and display a graph, along with current and maximum CO detected since power on. If the temperature of the unit has changed significantly since it was last used; or if the unit has been turned off for more than a day, it may take up to 3 minutes for the output to stabilize.

POWER OFF. To turn GEIGER PRO off, slide the power switch down.

USAGE. Hang the unit in ambient air, not directly in an air stream. When turned on, and after the warm up period, the graph scale is as follows:

- 0 - 20 PPM of CO. OK. Green graphing and CO number.
- 21 to 30 PPM of CO. **FAA says: Headaches; slight increase in respiration; drowsiness may develop. Yellow graphing and CO number.**
- 31 to 40 PPM detected. **FAA says: Headache, impaired judgment, shortness of breath, increasing drowsiness, blurring of vision. Yellow graphing and CO number.**
- 41 to 100+. **FAA says: Unconsciousness, eventual death if victim is not removed from source of CO. Red graphing and CO number.**

The above levels and guidance on CO poisoning are directly from published FAA advice:

[Carbon Monoxide, a Deadly Menace \(from faa.gov\)](https://www.faa.gov/air_traffic/flight_info/aeronautical/govt_operations/flight_operations/operational_guidance/CO_poisoning)

G METER. Press the *NEXT* button briefly and the unit will advance to a G-Meter screen, which shows current, min and max G's. When on the G screen, a brief touch of the *NEXT* button will return to the CO graphing screen.

SCREEN DIMMING. Press the *DIM* button for more than three seconds and the unit will dim the screen. Battery life is extended to 10+ hours. Do it again to go back to full brightness.

AURAL ALARM. The aural alarm will sound at ~41 PPM and higher. The alarm may be muted, by pressing the *SPEAKER* button briefly. The loudspeaker icon on the main screen will turn off. Pressing the *SPEAKER* button again will cause the aural alarm to be re-enabled.

PILOT ACTIONS, when CO is suspected (sourced from published FAA advice):

- Turn the cabin heat fully off.

- Increase the rate of cabin fresh air ventilation to the maximum.
- Open windows if the flight profile and aircraft's operating manual permit such an action.
- If available (provided it does not represent a safety or fire hazard), consider using supplemental oxygen.
- Land as promptly as possible.
- Do not hesitate to let Air Traffic Control know of your concerns and ask for vectors to the nearest airport.
- Once on the ground, seek medical attention.
- Before continuing the flight, have the aircraft inspected by a certified mechanic.

BATTERY. The battery will last about 6 hours. Recharge GEIGER PRO from any standard USB port using a standard micro-USB cable. You may also operate the unit while the battery is being recharged.

CALIBRATION. We cannot guarantee the absolute accuracy of GEIGER PRO. We do provide the following advisory that each unit:

- Is calibrated to a zero point at the factory
- And is checked and calibrated against our lab reference for response at 100 PPM. After factory calibration, all units have an initial accuracy of 100 PPM +/- 5 PPM.
- We recommend recalibration every 3 years.
- You may reset the Zero calibration point of the unit on demand. Press the *CAL* button for more than 3 seconds.

ERRONEOUS INDICATIONS.

- **A rapid change in temperature** may cause an errant result, for instance, stepping out of a cool cockpit onto a hot ramp area.
- **A rapid change in air flow** may cause an errant result, for instance, moving the unit from ambient air into air vent flow.
- **A rapid change in humidity** may cause an errant result.
- **If a blue value appears in the "CO", it is an indication that the unit may need zero point recalibration. The blue value is shown when internal CO interpolation derives a value below zero (IE, negative, which is impossible.)**
- **If the battery indicator is showing ¼ remaining (red bar), discontinue use and recharge the battery.**

WARRANTY:

Your new Radiant Technology product carries a one-year warranty, from the end user invoice date. Please contact support@radiantinstruments.com should your product need warranty service. There is an additional charge for international warranty service.

This warranty service includes the following:

- Any failed unit will be repaired or replaced;
- Any battery will be replaced if a full charge does not provide at least five hours of usage on full bright screen;

DISCLAIMER:

While Radiant Technology has taken care to ensure the accuracy of the information contained herein it accepts no responsibility for the consequences of any use thereof and reserves the right to change the specification of goods without notice. Radiant Technology accepts no liability for the correct, incorrect, or erroneous use of the device, including the failure of the device to perform as expected. **If you do not agree to these terms, please discontinue use of the product.**

RETURN / REFUND INFORMATION:

If ordered directly from us: Must be returned in new, uninstalled, resalable condition within 14 days after receipt. Ship to Radiant Technology LLC, PO Box 20690, Wichita KS 67208.

If ordered from any of our distributors or resellers: Their Terms and Conditions apply. Check with them.