Operating Temperature
A detector should be operated at its optimal temperature given in the **Final Test Report** (delivered with every device).

Maximum Voltage
Do not operate the PV detector at higher bias voltages than suggested in the **Final Test Report** (delivered with every device).

Be Careful Using Ohmmeters for PV Detectors!
Standard ohmmeters may overbias and damage the detector. This is especially true for small physical area or SWIR PV detectors. Bias of 10 mV can be used for resistance measurements of any type of detector.
Ask for conditions of I-V plot measurements!

Usage
Devices can operate in **the 10% to 80 % humidity**, in **the -20 °C to +30 °C ambient temperature** range. Operation at **>30 °C** ambient may reduce performance for standard Peltier coolers..
Ask for systems that can operate in the +30 °C to +80 °C ambient temperature range.

Storage
The following conditions should be fulfilled for safe and reliable operation of detector:
- store in dark place, **10% to 90% humidity** and **-20 °C to +50 °C temperature**,
- avoid exposing to the direct sunlight and strong UV/VIS light as this may result in degradation of the detector performance,
- avoid electrostatic discharges at leads therefore, the devices should be stored having leads shorted.

Handling
Some IR Window materials such as BaF_2 are soft and brittle. Particular attention should be paid to not scratch a surface of the window. A damaged window may entirely degrade the detector performance. Excessive mechanical stress applied to the package itself or to a device containing the package may result in permanent damage. Peltier element inside thermoelectrically cooled detectors is susceptible to mechanical shocks. Great care should be taken when handling cooled detectors.

Cleaning Window
Keep the Window clean. Use a soft cotton cloth damped with isopropyl alcohol and wipe off the surface gently if necessary.

Mechanical Shocks
The Peltier elements may be damaged by excessive mechanical shock or vibration. Care is recommended during manipulations and normal use. Drop impacts against a hard surface are particularly dangerous.

Shaping Leads
Avoid bending the leads at a distance **less than 2 mm** from a base of the package to prevent glass seal damage. When shaping the leads, maximum two right angle bends and three twists at the distance **minimum 6 mm** from the base of the package.
Keep the leads of the detecting element shorted when shaping!

Soldering Leads
IR detectors can be easily damaged by excessive heat. Special care should be taken when soldering the leads. Usage of heat sinks is highly recommended. Tweezers can be used for this purpose; when soldering, clamp a lead at a place between the soldering iron and the base of the package. To avoid destructive influence of ESD and other accidental voltages (e.g. from a non-grounded soldering iron) rules for handling LSI integrated circuits should be applied to IR detectors too. Leads should be soldered at +370 °C or below within 5 s.

Beam Power Limitations
Damage thresholds, specified as integrated power of incoming radiation:
- for detectors without immersion lens irradiated with **continuous wave** (**CW**) or **single pulse longer than 1 µs** irradiance on the active area must not exceed **100 W/cm²**. The irradiance of **the pulse shorter than 1 µs** must not exceed **1 MW/cm²**,
- for optically immersed detectors irradiated with **CW** or **single pulse longer than 1 µs** irradiance on the apparent optical active area must not exceed **2.5 W/cm²**. The irradiance of **the pulse shorter than 1 µs** must not exceed **10 kW/cm²**,
- for **repeated irradiation with pulses shorter than 1 µs**, the equivalent CW irradiation, average power over the pulse - to - pulse period should be less than the CW damage threshold according to equation:

$$\begin{pmatrix}\text{equivalent CW}\\ \text{radiation power}\end{pmatrix}=\begin{pmatrix}\text{pulse peak power}\\ \text{focus area}\end{pmatrix}\cdot\begin{pmatrix}\text{pulse}\\ \text{duration}\end{pmatrix}\cdot\begin{pmatrix}\text{repetition}\\ \text{rate}\end{pmatrix}$$

Saturation thresholds vary by detector type and can be provided upon request.