Supplement to the Operating Manual Cube M

1 Inert gas mode in the LaserDiagnosticsSoftware LDS

In order to minimize the possible influence of deviating ambient conditions, a new measurement mode was introduced with the release of the LaserDiagnosticsSoftware LDS 1.3.

With this **inert gas mode**, we are able to reduce the influence of the thermal conductivity of the gas used on the measurement process by typically 2/3.

Particular attention was given to the gases helium and argon, which have significantly reduced thermal conductivity in relation to air (78 % nitrogen and 21 % oxygen) and are highly prevalent in additive manufacturing.

The **inert gas mode** is not suitable for use of the device in nitrogen.

1.1 Requirements

The **inert gas mode** is integrated in the Cube M from serial number 22 000 upwards. To use the **inert gas mode**, the LaserDiagnosticsSoftware LDS (option), version 1.3 or higher must be installed on the PC. For a detailed description of the software installation, file management and evaluation of the measured data, please refer to the separate operating manual LaserDiagnosticsSoftware LDS.
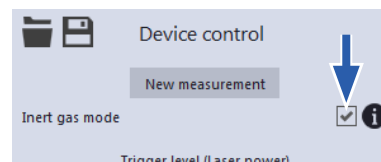
1.2 Measuring with the inert gas mode

If the **inert gas mode** is activated when operating the Cube M in air, this may result in reduced measurement accuracy during power measurement. Therefore, we recommend using the measuring mode exclusively when using the device e.g. in helium or argon.

> ℹ️ The measured values determined in **inert gas mode** by means of the LaserDiagnosticsSoftware LDS are not transferred to the Cube M. The display in the LDS will therefore deviate from the conventionally determined measured values in the Cube M when the **inert gas mode** is active.


1. Activate the **Inert gas mode** check box in the **Device control**.
→ The **Inert gas mode** is activated.
2. Start a measurement according to chapter 14 of the operating manual.

3. Click on the **Projects** tab.

👁 In the project tree, the use of the measuring mode is indicated.

4. Move the mouse pointer over the measurement.
→ The window displays if the **Inert gas mode** was active during a measurement.
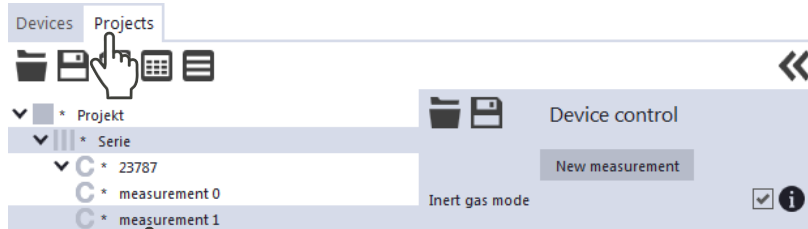
Information on the use of the **Inert gas mode** mode is also displayed in the menu **Measurement Environment > Metadata**:

► Drag and drop the measured values from the project tree into the open **Metadata** toolbench.
→ The **Metadata** shows if the **Inert gas mode** was active during a measurement.