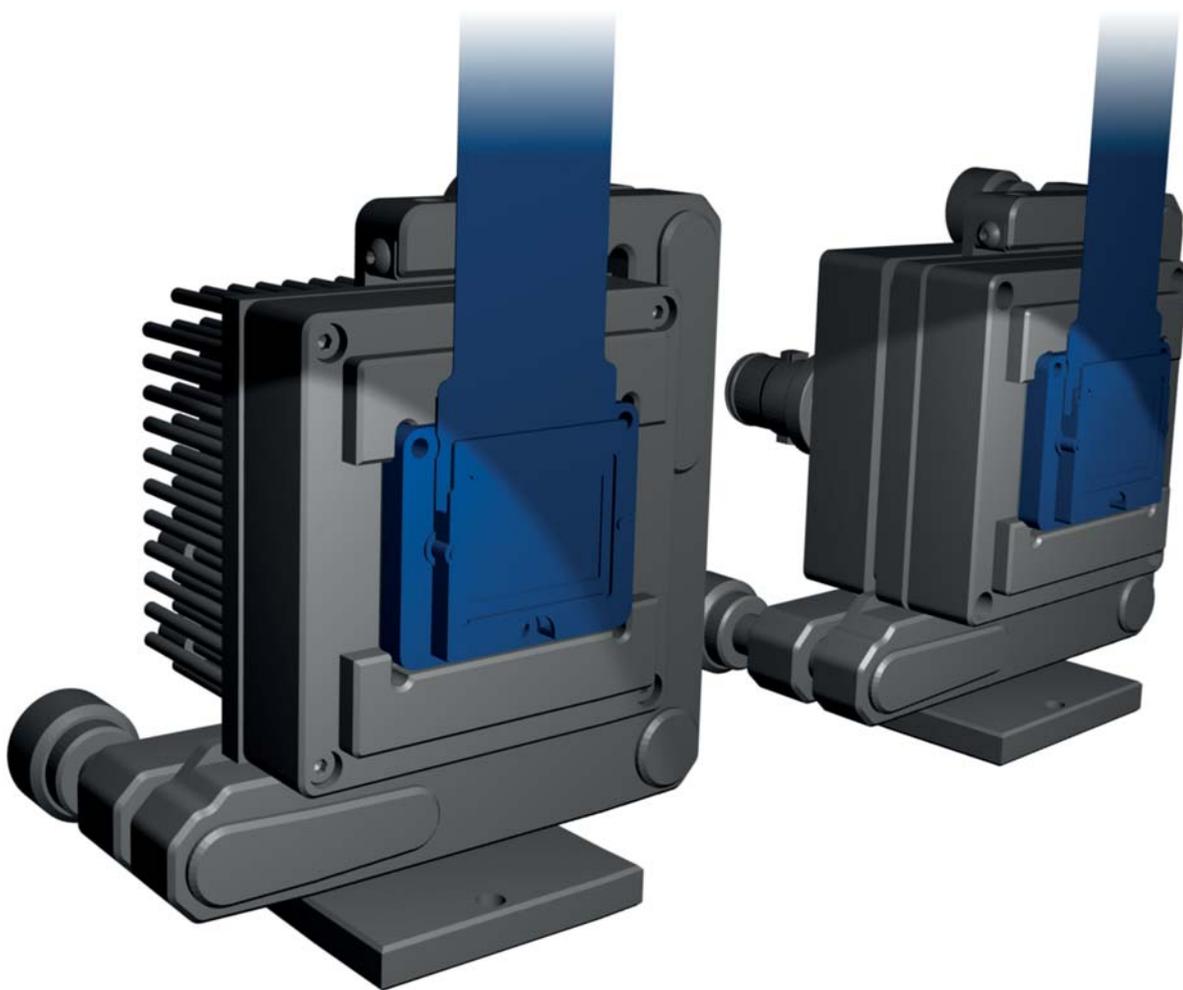


TMS

Thermal Management Systems for HOLOEYE SLMs



Pioneers in Photonic Technology

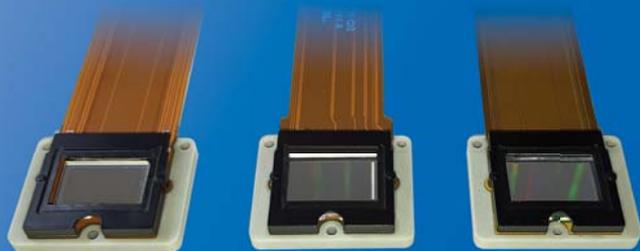
SLM Thermal Management Solutions

HOLOEYE Spatial Light Modulators are based on Liquid Crystal microdisplays. Physical properties of LC materials show a certain temperature dependence and a change in temperature may influence different optical SLM properties (phase shift, switching speed, phase stability...).

SLM displays have their own power dissipation which varies between products and configurations. To keep the performance / temperature stable an active thermal management system should be used.

Dependent on the device model and its power dissipation, the device version's reflectivity and the laser power used in an application, HOLOEYE offers a thermal management system with passive heat sink or a system based on an active water cooling.

The thermal management systems are designed to work with the current versions of the HOLOEYE PLUTO-2, LETO and GAEA-2 Spatial Light Modulator series.



The up-to-date display versions of all these SLM platforms use a standardized display packaging with a ceramic stiffener / back plate with excellent thermal conductivity. The displays can be mounted using the integrated magnets or by screws if required.

The HOLOEYE thermal management systems are modular and can easily be exchanged dependent on requirements and application.



TMS 001

The TMS 001 temperature management system is based on a Peltier element (thermoelectric cooler) in combination with a passive heat sink and can both cool and heat up the SLM display.



TMS 002

Even using HOLOEYE's high reflectivity SLM versions (with dielectric mirror) an active thermal management is required for high laser power applications. The TMS 002 temperature management system with active water cooling is especially designed for the use with higher laser power.



All HOLOEYE LCOS Spatial Light Modulator displays feature an integrated temperature sensor. A USB connection is used to connect the temperature control unit to the PC.

The HOLOEYE Configuration Manager software can be used to read out the microdisplay temperature and together with the thermal management system keep it stable at a defined temperature.

