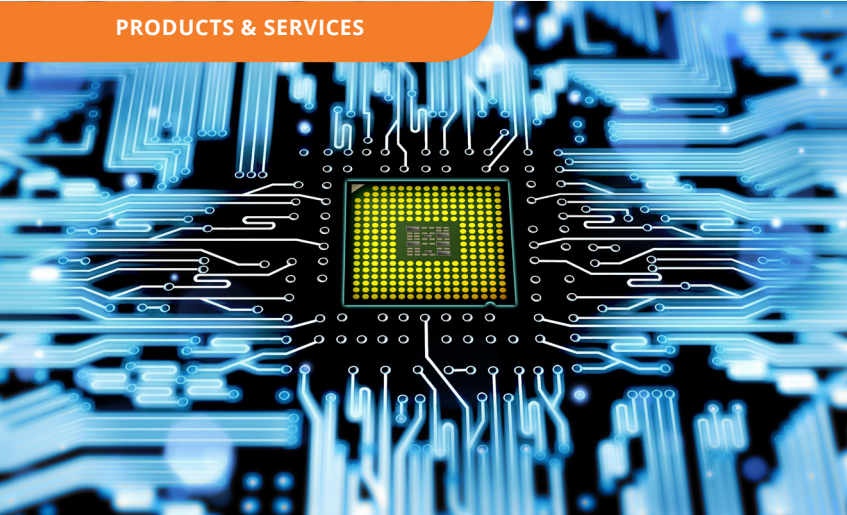




Dedicated to innovation in aerospace

# NLR High Stability Chiller (NLR-HSC-M1)

## PRODUCTS & SERVICES



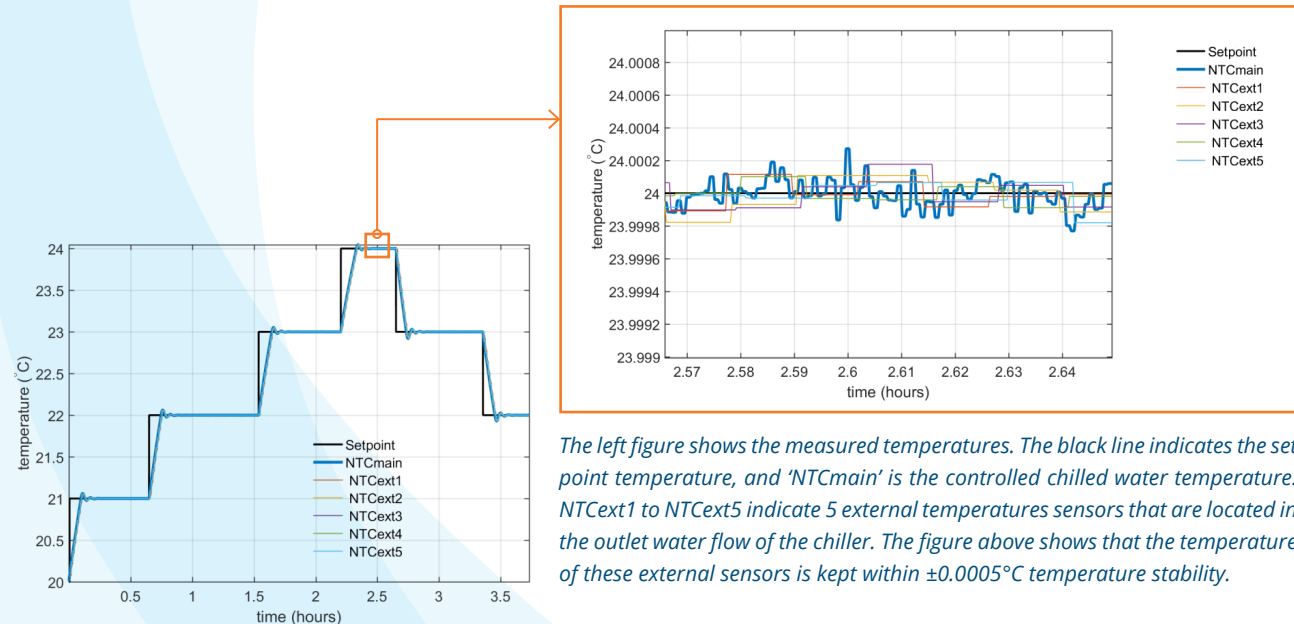
<b>Temperature stability</b>	±0.0005°C
<b>Operating temperature</b>	5°C to 70°C
<b>Pump flow rate</b>	Variable flow rate, max 80 lpm at 1.2 bar pressure difference
<b>Cooling capacity</b>	~800W
<b>Heating capacity</b>	~1500W
<b>Chilled water maximum pressure</b>	10 bar
<b>Chilled water inlet/outlet</b>	1.5 inch Swagelok fittings
<b>Dimensions (W x L x H):</b>	650 mm x 1250 mm x 1400 mm
<b>Chiller control</b>	National Instruments (NI) real time PXI system
<b>Number of external NTC temperature sensors</b>	Up to 27
<b>EMC compliance</b>	compliant with IEC 61000-6-3 and IEC 61000-6-4 emissions standard for both conducted and radiated emission
<b>Cooling of Peltier units</b>	Process Cooling Water (PCW) or a regular thermostat bath

### APPLICATION

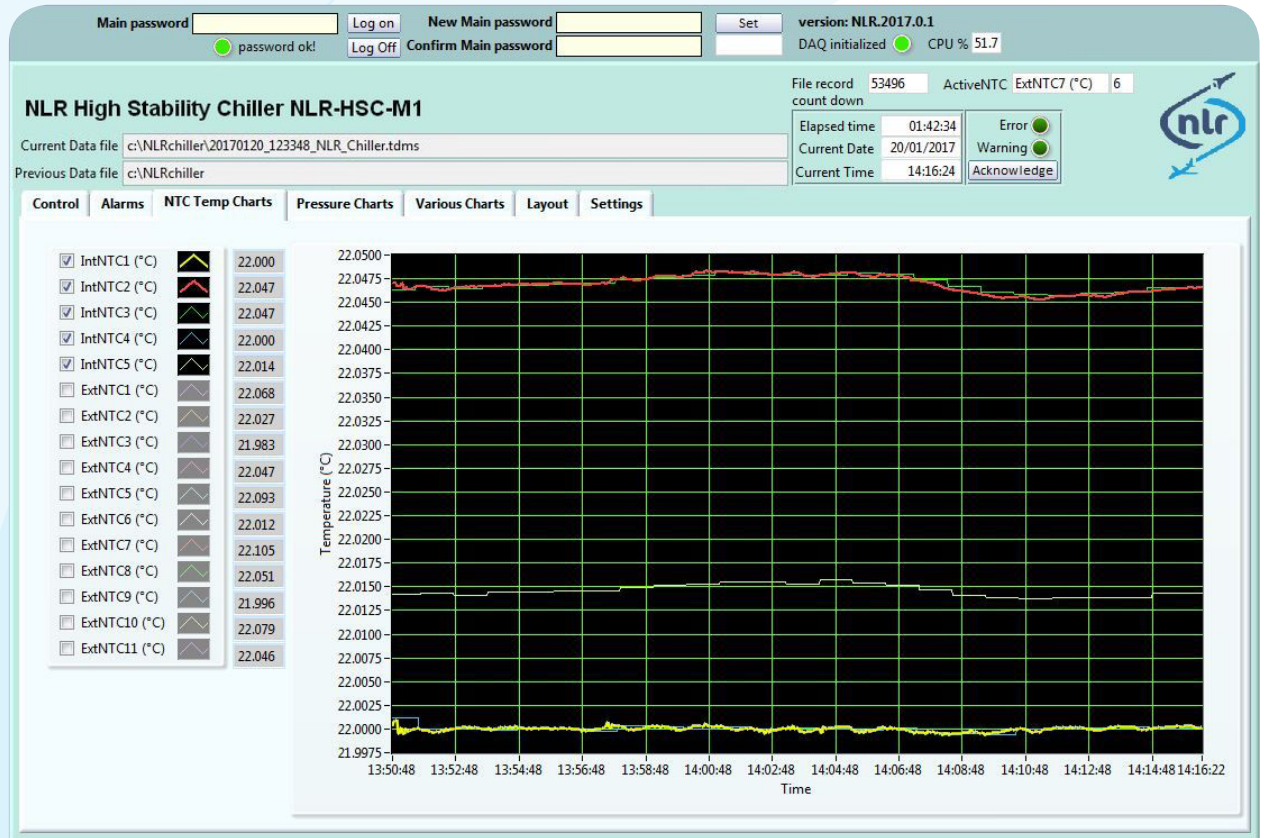
The NLR High stability chiller is a circulation cooler intended for applications where an extremely stable thermal environment is required. The chiller can deliver up to 80 litres/minute of water with a temperature stability of ±0.0005°C. The water pressure variations and noise levels are very low. This makes the chillers very suitable for applications where vibrations should be minimized, such as optical tables and lithography equipment.

### TECHNOLOGY

The low water pressure variations and noise levels are realised by applying Peltier coolers instead of the more common compressor technology, and the use of a multistage water pump. The chiller can be remotely controlled via a browser on any PC connected to the same network as the chiller. Up to 27 external NTC temperature sensors can be connected to the system.



The left figure shows the measured temperatures. The black line indicates the set point temperature, and 'NTCmain' is the controlled chilled water temperature. NTCext1 to NTCext5 indicate 5 external temperatures sensors that are located in the outlet water flow of the chiller. The figure above shows that the temperature of these external sensors is kept within ±0.0005°C temperature stability.



The Graphical Users Interface (GUI) can be opened in a browser on any PC that is connected to the same network as the chiller. The GUI contains displays for all the measured values (temperatures, pressures, volume flow) and is used to control the system. The measured data is automatically stored.

#### PROPERTIES

- Extreme temperature stability
- Minimal vibration
- Very low noise level
- Remote operation via web interface
- up to 80 litres/minute
- Cooling capacity 0.8 kW

#### OPTIONS

- Assembly in ISO 8 clean room
- More external sensors
- Customising of the specifications

#### ORDER & CONTACT INFO

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