

Evaluation of Performance of JULABO Magnum 91 with externally connected 35 Liter-jacketed glass Reactor from QVF

Objective

The objective of the test was to determine the performance of a JULABO Magnum 91 Temperature Control System attached to a jacketed QVF glass reactor with a volume of 35 liters.

Test Report

To determine the performance of several processes such as heating-up and cooling-down times in varied temperature ranges. In addition the lowest temperature was determined in a further test. The test results were recorded on a notebook with EasyTemp Professional Software. The temperatures stated below refer to the external temperatures measured directly in the reactor.

Test Conditions

Equipment:	Magnum 91 with QVF Reactor 35 liters
Mains Voltage:	400 Volt / 3 Phases / 50 Hz
Ambient temperature:	22 °C (room temperature)
Medium:	Silicon-Oil "Thermal HL80"
Particular Settings:	Temperature control via JULABO EasyTemp Professional Software



RESULT

The test result shows that the QVF reactor can be cooled down from +60°C to -50°C within 2.05 hours when attached to a JULABO Magnum 91.

Lowest temperature within the reactor is -69°C.

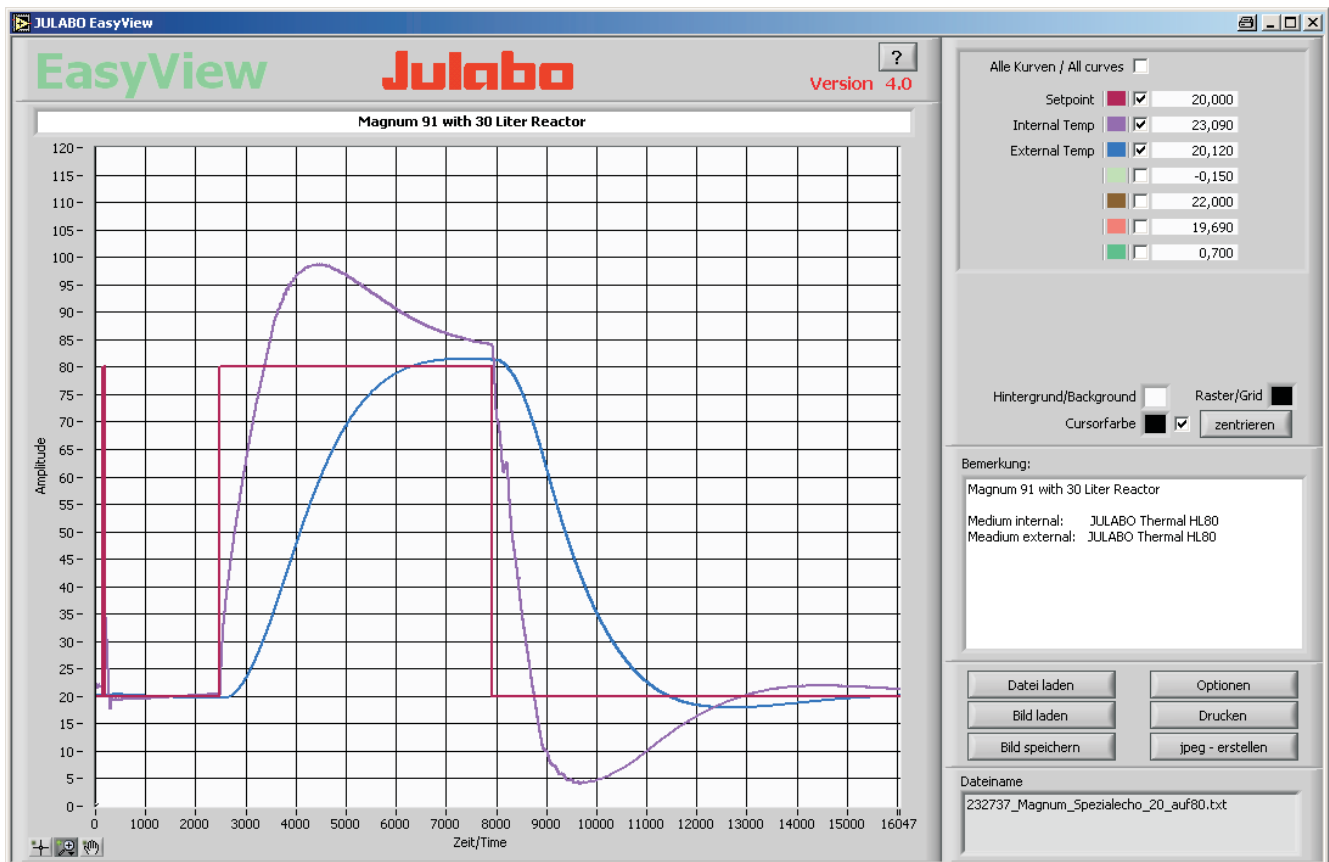
Test Results:

Test		Temperature range (external, within Reactor)	Time in Min.
Test 1	Heating-up	+20°C...+80°C	after 1 hr. 23 min.
Test 2	Cooling-down	+60°C...-50°C	after 2 hrs. 05 min.
Test 3	Heating/Cooling profile	+80°C...-80°C...+80°C	after 6 hrs. 06 min.
Test 4	Lowest temperature	+20°C...-69°C	after 5 hrs. 33 min.



Test 1

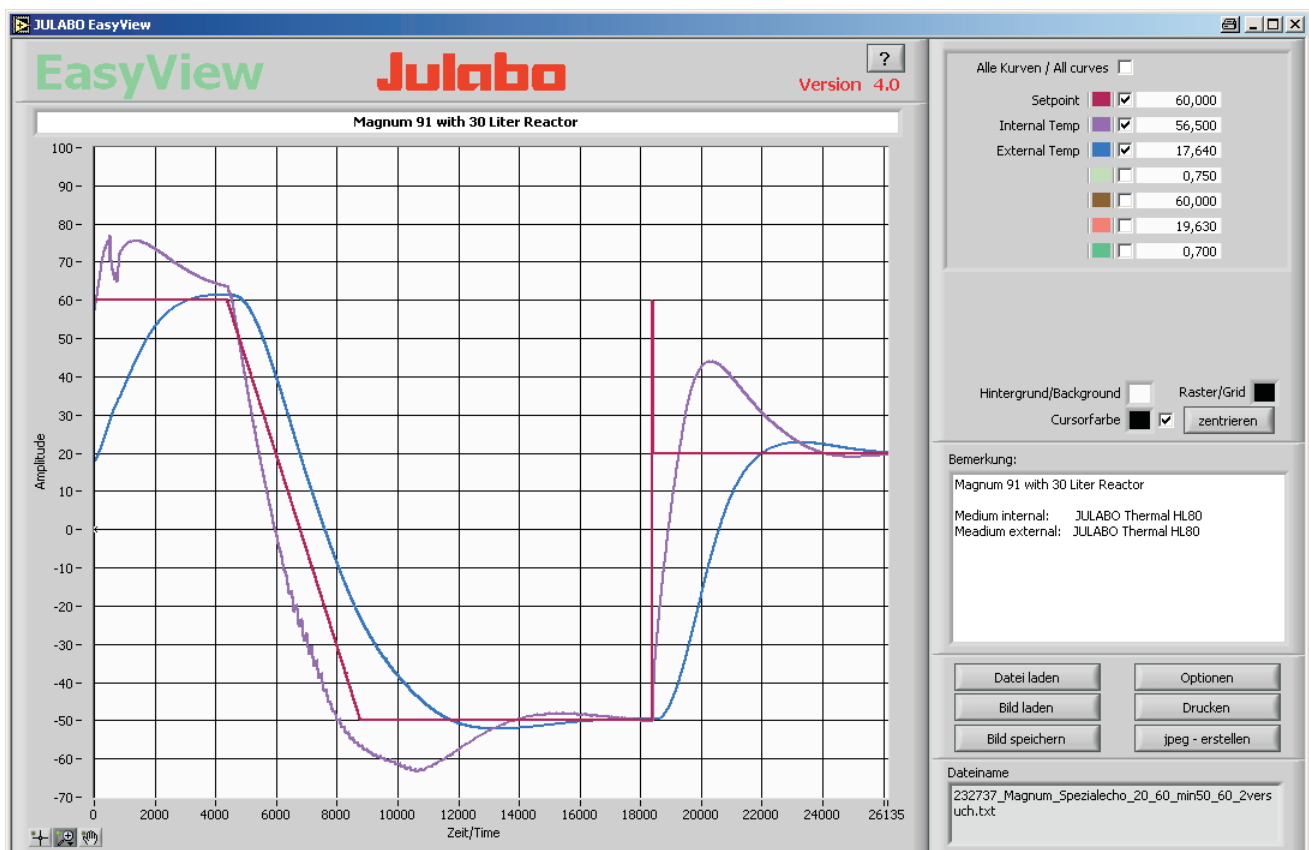
Heating up from +20°C to +80°C within 1 hr. 23 min.





Test 2

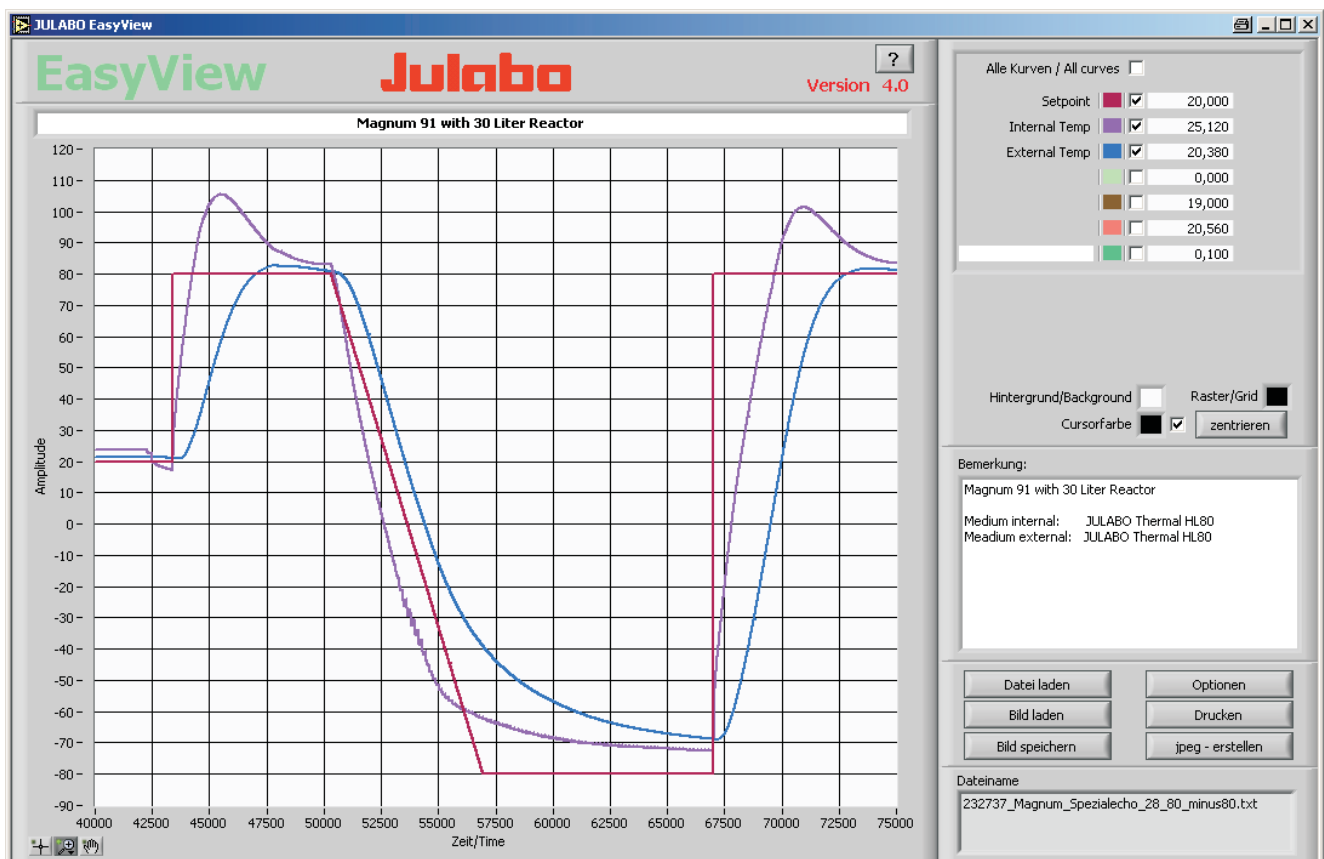
Cooling down from +60°C to -50°C within 2 hrs. 05 min.





Test 3

Heating/Cooling performance from +80°C to -80°C to +80°C within 6 hrs. 06 min.





Test 4

Cooling down to lowest temperature from +20°C to -69°C within 5 hrs. 33 min.

