PRESTO W92tt

Cool-down a 100 liters reactor from +20 °C to lowest possible temperature

Objective

This case study tests the lowest possible temperature of the PRESTO W92tt with a 100 liters glass reactor. The PRESTO W92tt is connected to the reactor via 3 m metal tubings. The PRESTO W92tt cools down from +20 °C to the lowest possible temperature.

Environment

Room temperature	20 °C
Humidity	45 %
Voltage	400 V / 50 Hz

Test Conditions

JULABO unit	PRESTO W92tt
Cooling power	+20 °C 19 kW
	0 °C 15.5 kW
	-20 °C 9.5 kW
Heating capacity	36 kW
Band limit	without
Flow pressure	0.5 bar
Bath fluid	Thermal HL80
Reactor	100 l glass reactor (Büchiglas)
	filled with 70 l Ethanol
Jacket volume	30 l
Control	External (ICC)

Control Parameters
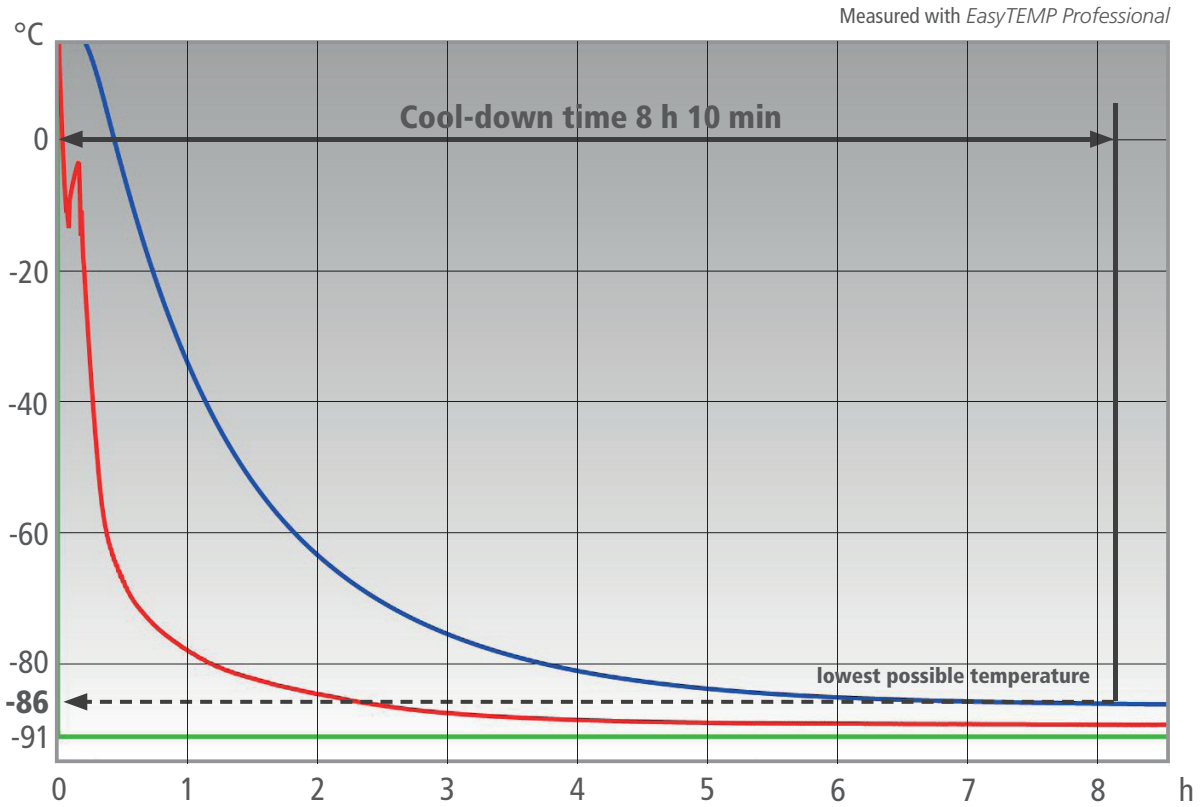
Xp	0.2 K
Tn	720 s
Tv	100 s
Xpu	24 K

Test Results

The PRESTO W92tt cooled the reactor from +20 °C down to the lowest possible temperature in 8 h 10 min.
Within these test conditions the lowest possible temperature is -86 °C.

Measured with *EasyTEMP Professional*

Cool-down time 8 h 10 min

lowest possible temperature

°C: 0, -20, -40, -60, -80, **-86**, -91

h: 0, 1, 2, 3, 4, 5, 6, 7, 8

———— Setpoint

———— Temperature in reactor's interior

———— Temperature in reactor's jacket

Tip
Protect your reactor.
The function "band
limit" (see above)
permits setting the max.
temperature difference
between jacket and
internal vessel.

Profile of reactor

Jacket   interior

Tip

Use the free of charge
EasyTEMP software to
control the units with
the PC and to show
the temperature curves
graphically.

EasyTEMP