



**Setup Details:**

Temperature range:  
-40°C-+200°C

**Cooling power:**

.42 kW @ +100  
.42 kW @ +20°C  
.38 kW @ 0°C  
.33 kW @ -10°C  
.25 kW @ -20°C  
.05 kW @ -40°C

**Heating power:** 1.5 kW

Hoses: M16; 6'  
Fluid: M40.165.10  
Reactor: Chemglass 1L  
Reactor content: 750mL (M40.165.10)  
Stirrer speed: 275 rpm  
Control: process

# Ministat 230

**Ministat® 230-cc®-NR controlling a Chemglass 1 Liter glass jacketed reactor from 20°C to -20°C**

**Requirement** This case study demonstrates how fast the Ministat 230 Can Cool from Room Temperature to -20°C when connected with a 1 Liter Chemglass reactor system.

**Method** The reactor was filled to 750mL with CG-1978-F132, the HTF used was M40.165.10, the stirrer set to 275 rpm and the control to "process". The purpose of this case study is to show how fast the Ministat 230 can cool from 20°C to -20°C. The results were recorded using the "Spyware" software.

**Results** It can be seen from the graphic that the Ministat 230 cools the jacket temperature to -20°C in just about 30 Minutes, with the process temp quickly following the trend 13 minutes later, bringing the total time to cool the contents of the reactor in just 43 minutes.

