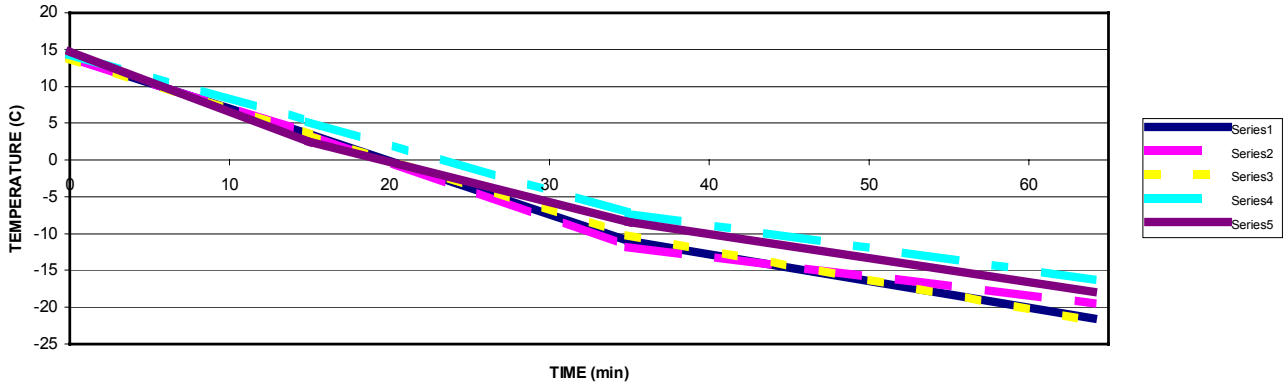
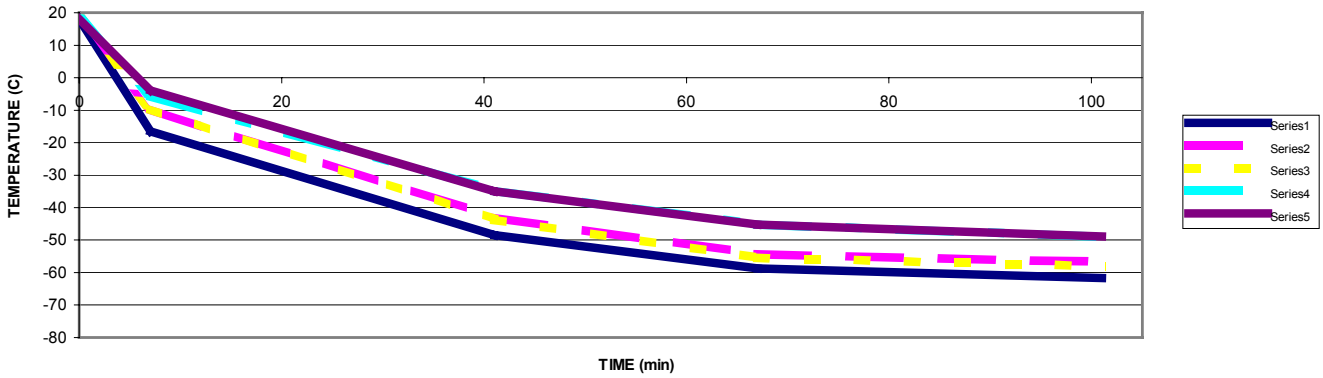
Cool-down curve with *FP50-HP*
(Bath fluid began at ambient temperature)



Cool-down curve with *FP88-HP*
(Pre-chilled bath fluid)



Cool-down curve with *FP95-SD*
(Pre-chilled bath fluid)

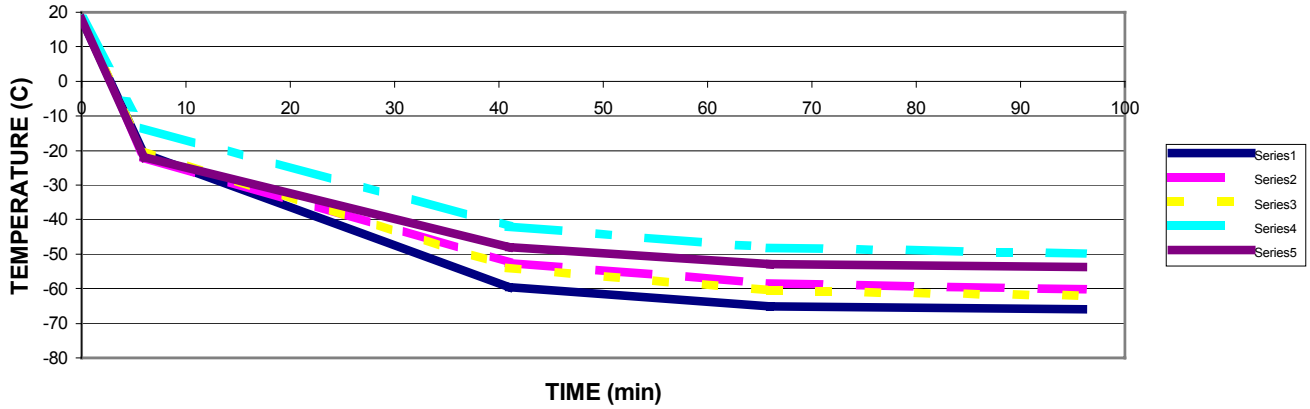


Figure 3 (a, b, c): Cool down curves for FP50-HP, FP88-HP, and F95-SD.

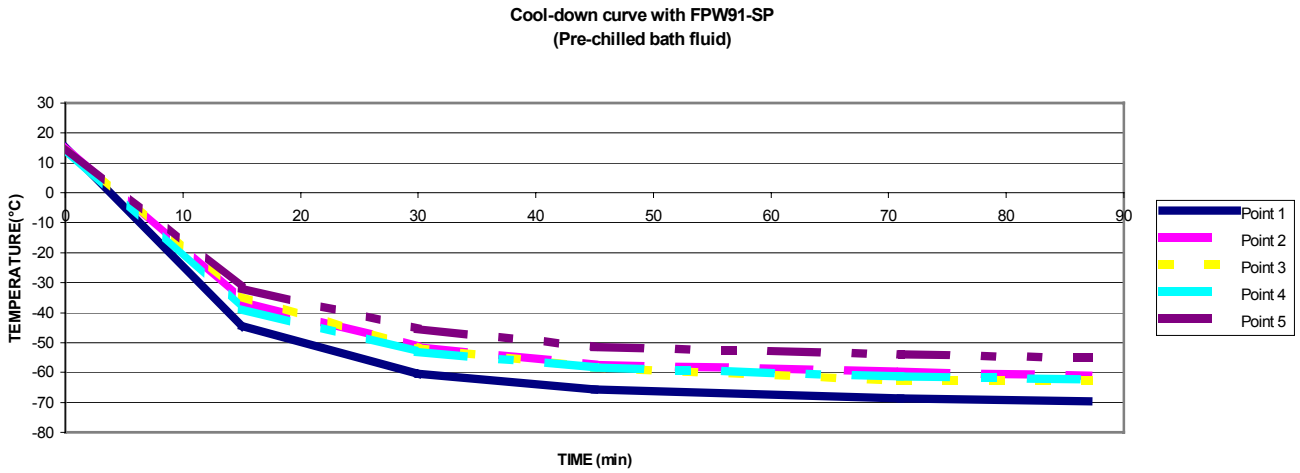


Figure 3d: Cool down curves for FPW91-SP.

The internal bath temperature curve depicted in Figure 4 corresponds to the test results in Figure 3. Again, the T_{50} plot illustrates temperature cool-down with the FP50-HP unit from ambient.

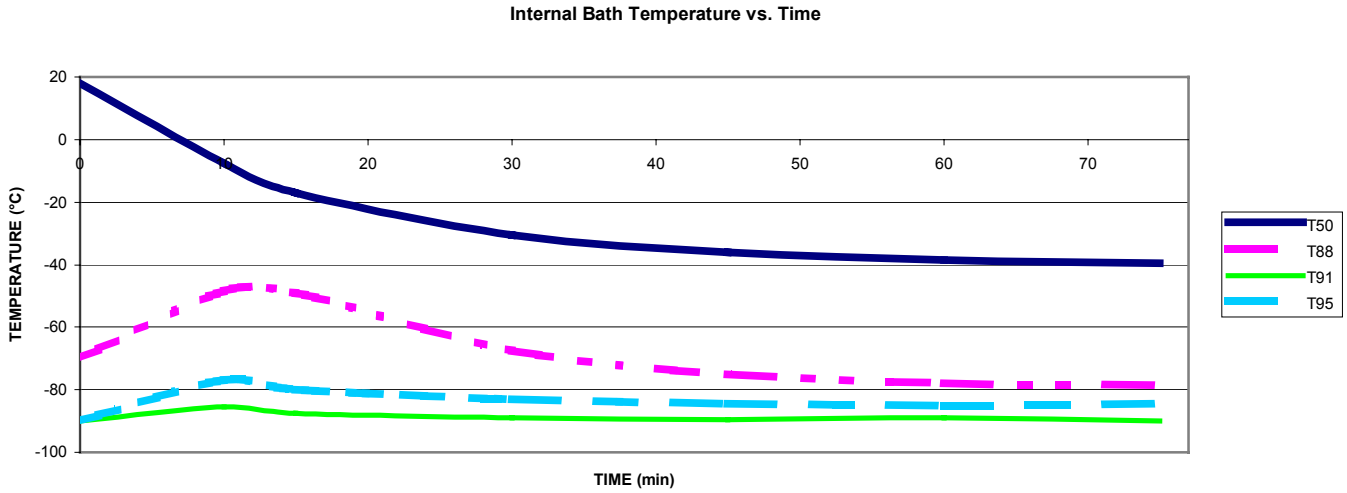


Figure 4: Internal bath cool down rates for FP50-HP, FP88-HP, F95-SD, FPW91-SP.

Test Conclusions:

From the observations above, we recommend insulation for the block. Frost formation occurred when the bath temperatures went below freezing. Therefore, the Julabo instruments have the potential to reach lower temperatures by minimizing the heat transfer between the block and its surroundings (like resting on a larger Teflon base). We can be confident that the FP88-HP, FP95-SD, and FPW91-SP units will allow low temperatures of –70°C.