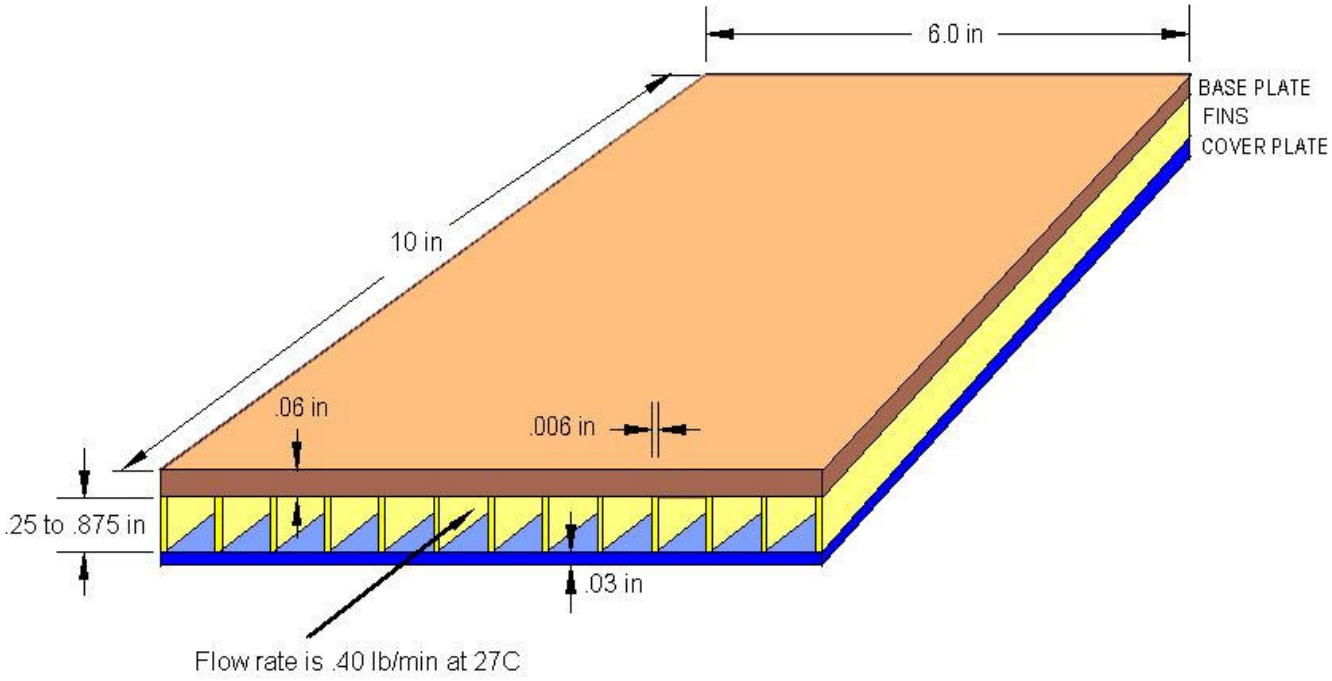
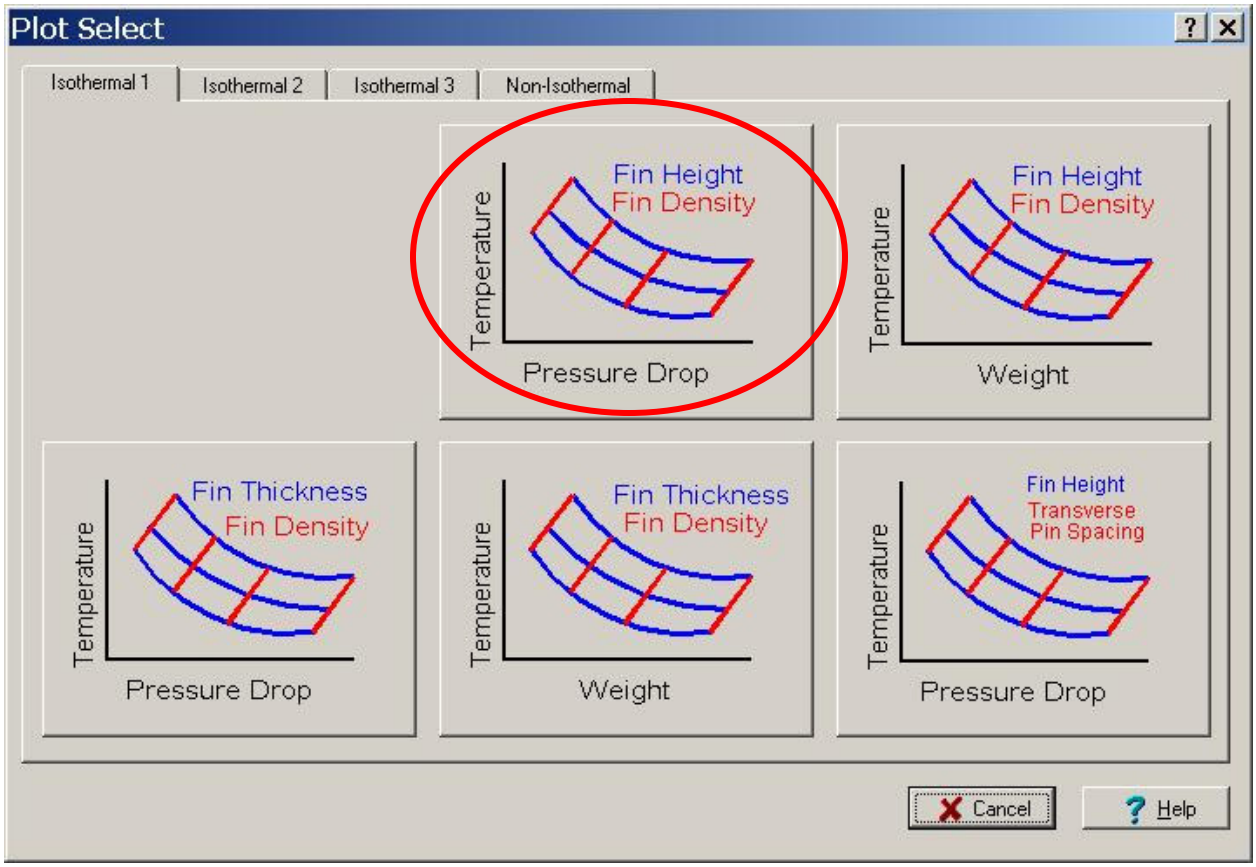
Plot Model Wizard

This example generates a plot of varying fin height and density demonstrating COLDPLATE's ability aid in the design and analysis of cold plates. Assume that it is desired to determine the thermal characteristics of a cold plate with the following input parameters. The model will be generated using COLDPLATE's Plot Wizard.

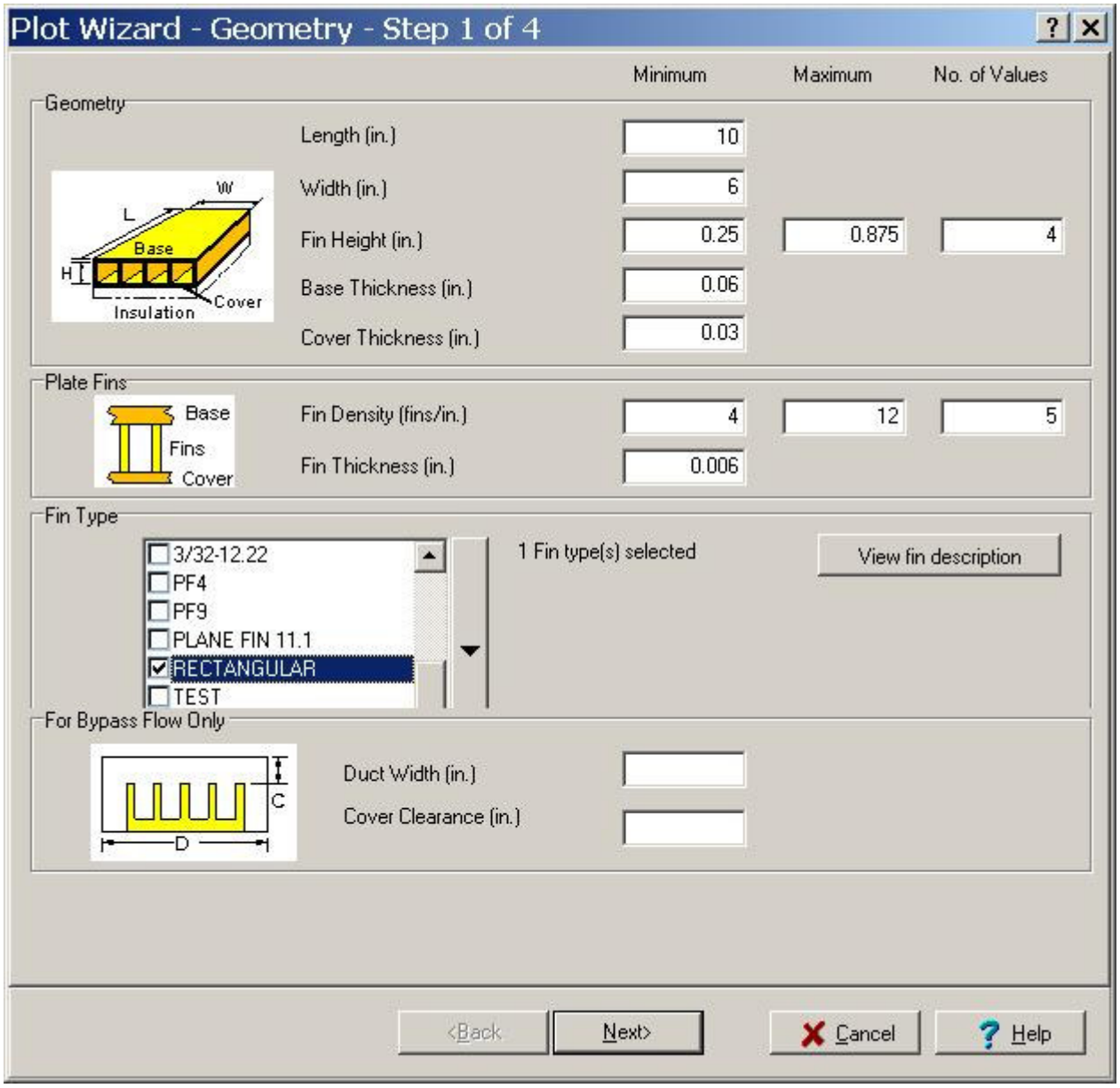
- Length L is 10 inches
- Width W is 6 inches
- Fins are to be .006 inches thick
- The fin type is rectangular
- Cover plate is .03
- Base plate is .06 inches thick
- The inlet air temperature is 27C
- The inlet air pressure is 14.7 psi
- Cooling fluid is air
- Mass flow rate is .40 lb/min
- The base, fins and cover are aluminum
- 70 Watts is uniformly distributed across the cold plate.
- Vary the fin height from .25 to .875 inches
- Vary the fin density from 4 to 12 fns/inch



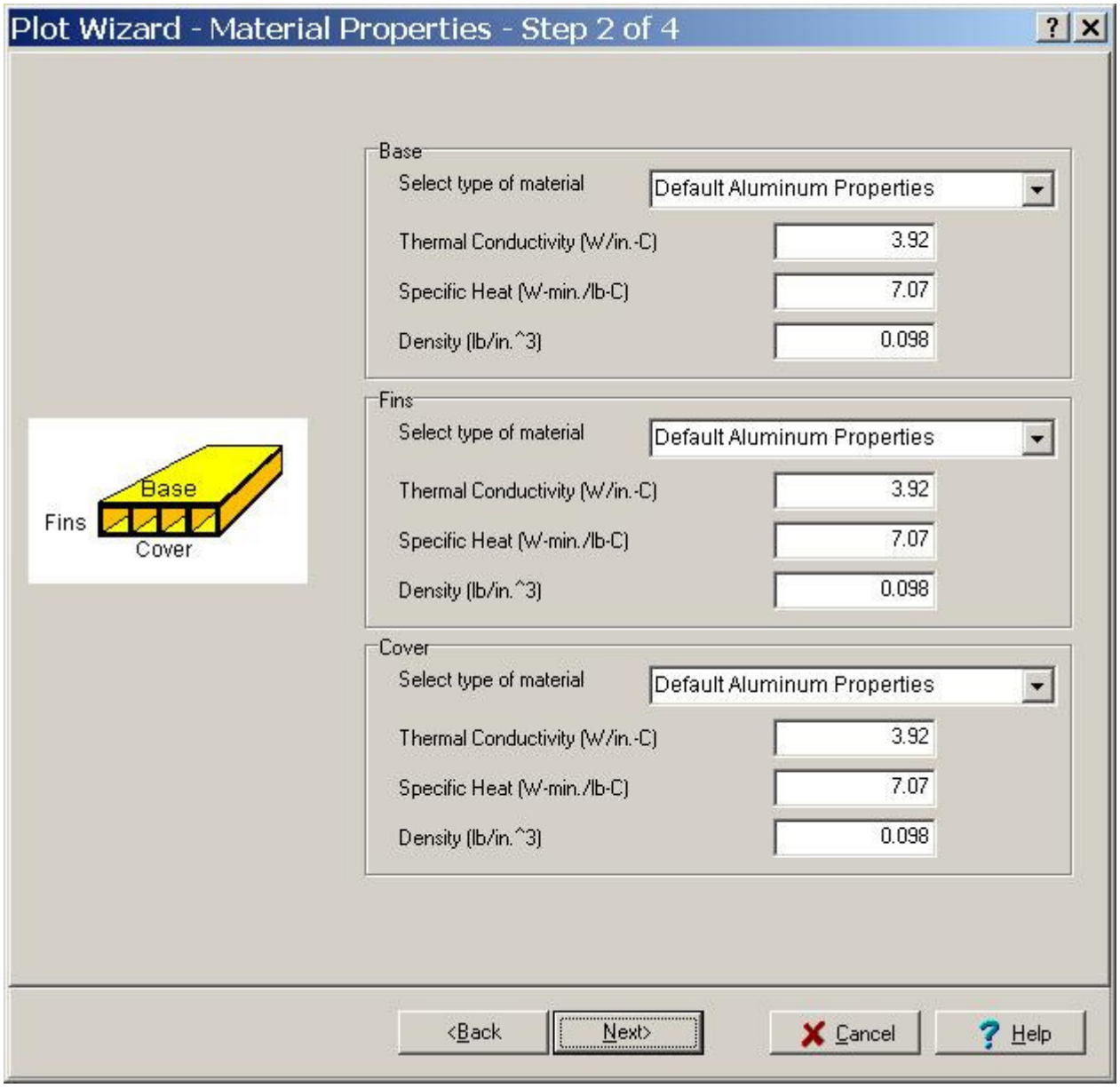
Select the Plot Button circled in red to start the Plot Wizard of varying Fin Density and Fin Height.



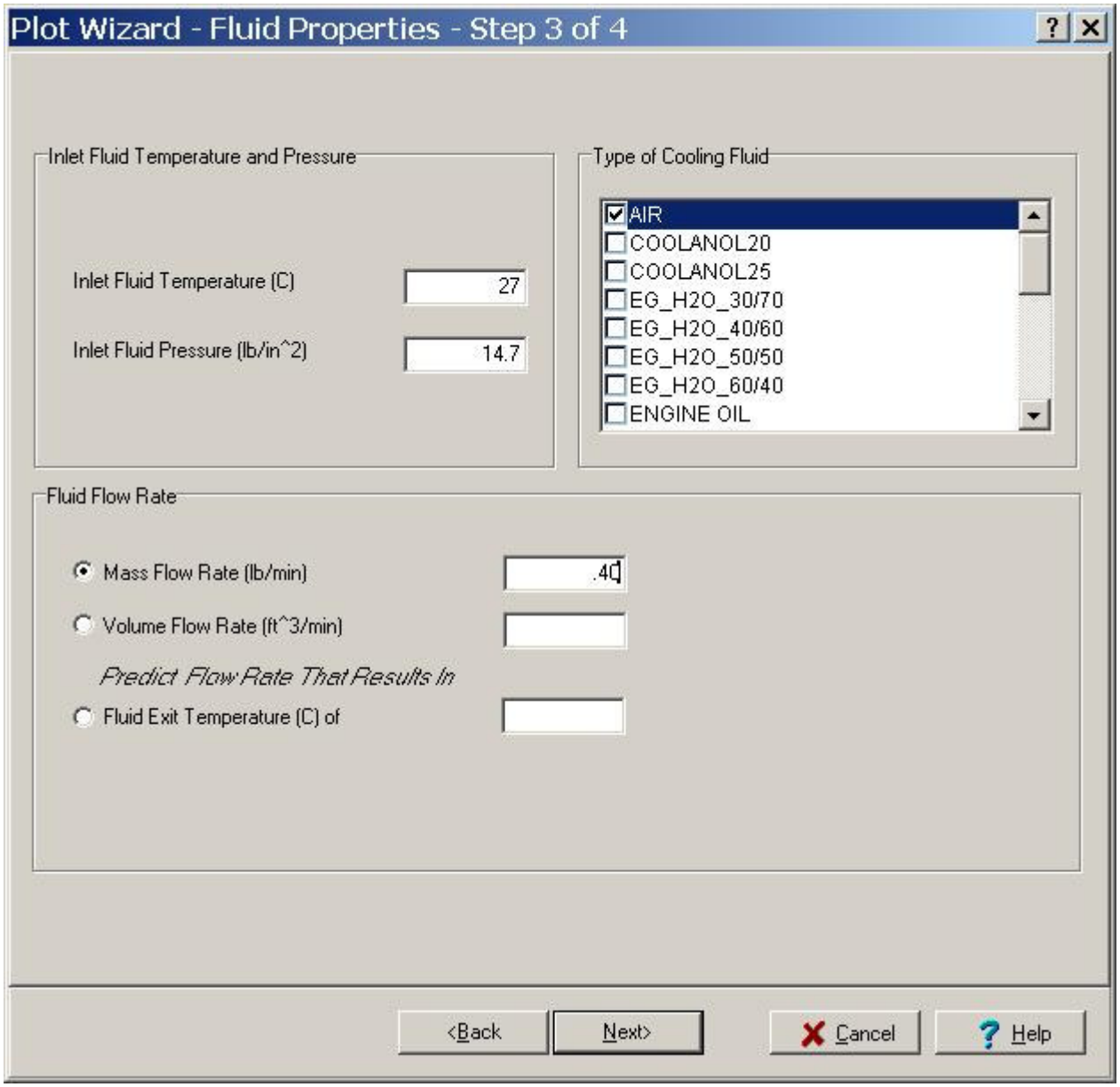
Input the geometry on this tab.



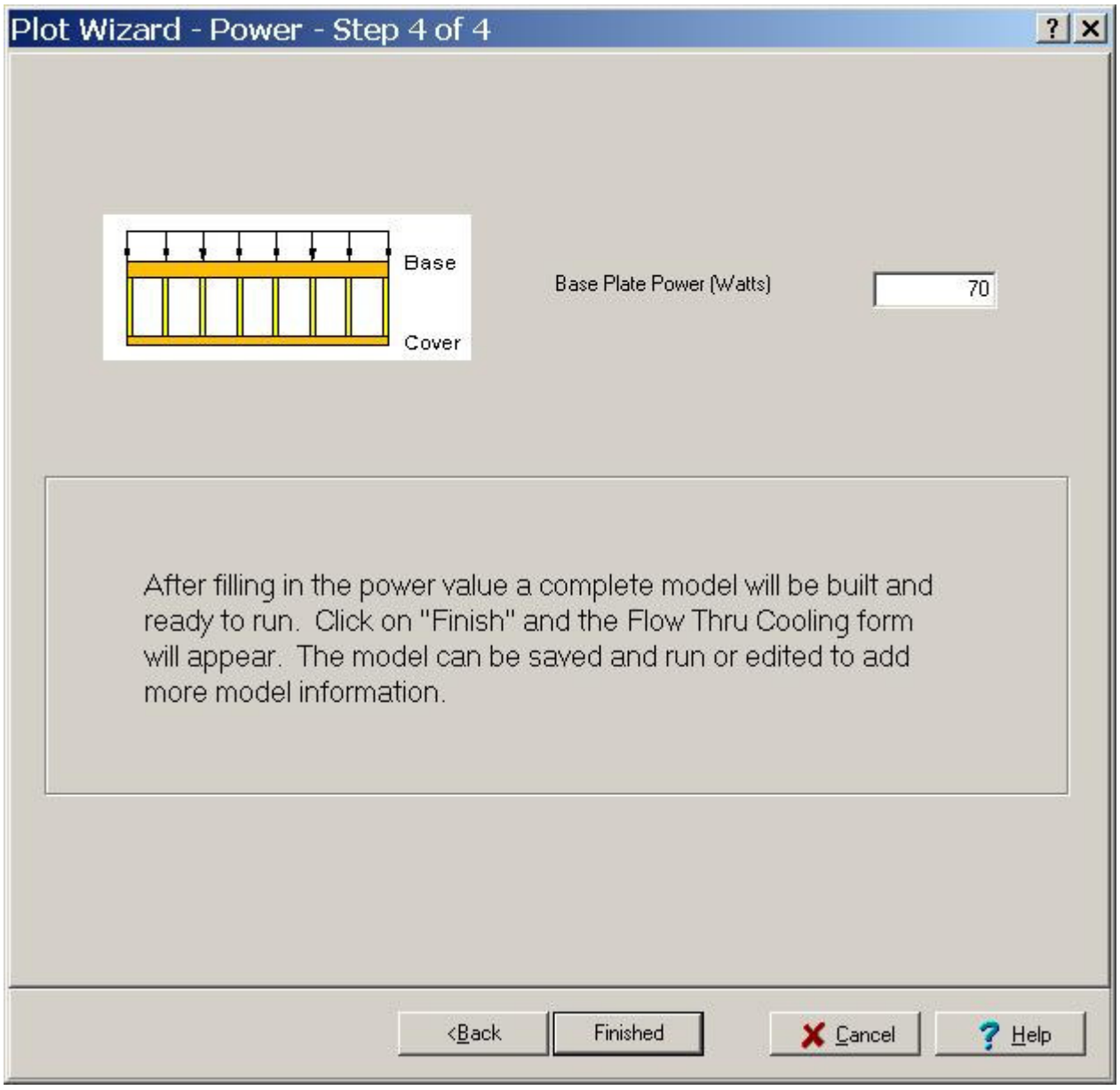
Select Default Aluminum Properties on this tab.



Input temperature, pressure, flow rate and air as the fluid on this tab.



Input the power dissipation on this tab.



These parameters were input into COLDPLATE and run, the resulting plot is shown below. From this the optimum temperature versus pressure drop can be selected.