

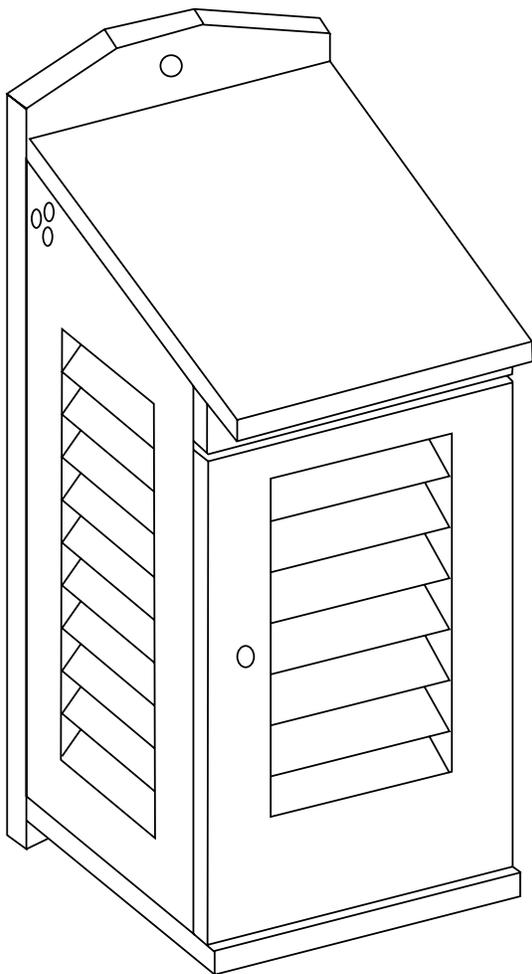
Instrument Construction: Instrument Shelter

Instructions for Building an Instrument Shelter

The GLOBE Instrument Shelter (Figure AT-ICIS-1) should be constructed of approximately 2 cm thick White Pine or similar wood and painted white, inside and out. A lock should be installed to prevent tampering with the instruments. Mounting blocks should be installed on the interior to insure that the max/min thermometer does not touch the back wall. The parts should be screwed together or glued and nailed. The plans are specified in metric units. Therefore, you may need to make minor adjustments to dimensions depending on the local standard dimensions of wood in your region.

It is easier to purchase prefabricated louvered

Figure AT-ICIS-1: Instrument Shelter



panels, and they are usually available for purchase. The primary criteria for constructing louvres is that they provide for ventilation of the instrument shelter while preventing sunlight and rain from entering directly. To prevent sunlight from entering the shelter we suggest that each louvre slat overlap slightly with adjacent slats. See Figure AT-IC-1. There should also be a gap between slats of approximately 1 cm, and the slat angle should be roughly 50-60 degrees from horizontal. For shelter mounting instructions, see *Selecting and Documenting Your Atmosphere Study Site*.

Frequently Asked Questions



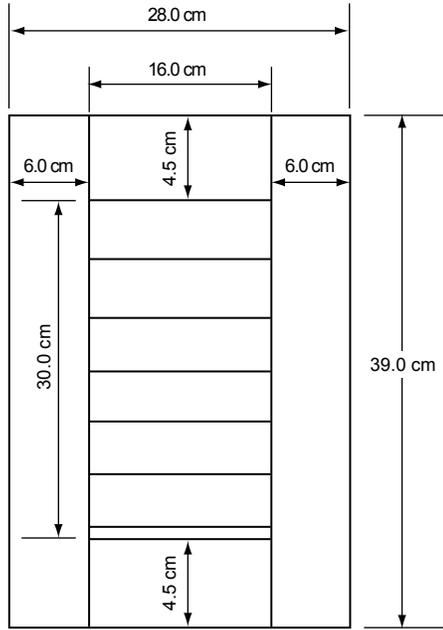
1. Does our instrument shelter have to have slats?

It is important that air be able to pass freely into and out of the instrument shelter so that the thermometer measures the ambient air temperature. The slats on the instrument shelter allow air to move through the shelter, but also help to keep out rain, snow, and blowing debris. Just putting holes in the walls of the shelter will let in more rain or snow than the slats will. So yes, it is very important for the instrument shelter to have slats. For more insight to the characteristics of the instrument shelter, see the Learning Activity on *Studying the Instrument Shelter*.

2. Why does the instrument shelter have to be white?

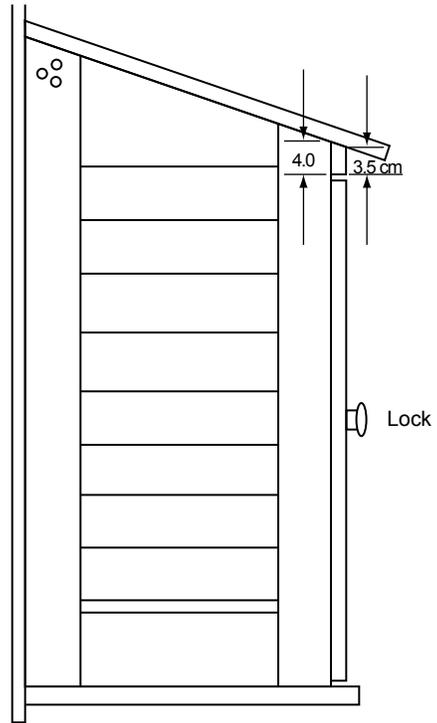
The role of the instrument shelter is to protect the thermometers from direct sunlight, as well as from precipitation and flying debris. However, we want to make sure that the instrument shelter itself doesn't affect the air temperature being measured. That is, we want the air temperature inside the shelter to be the same as the air temperature in the shade outside the shelter. This means that we want a shelter that won't absorb a lot of sunlight and heat up more than its surroundings. By making the shelter white, most of the sunlight that hits the shelter is reflected away. For more insight to the characteristics of the instrument shelter, see the Learning Activity on *Studying the Instrument Shelter*.

Figure AT-ICIS-2: Instrument Shelter Dimensions

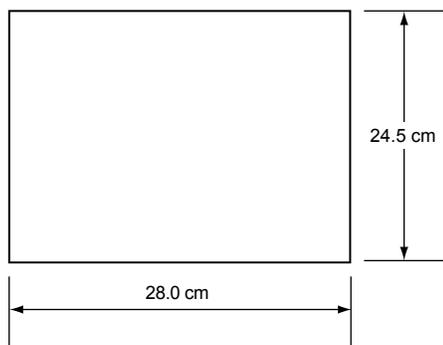


Front Door

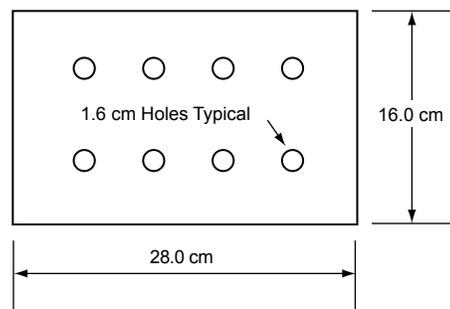
Note: Louvres are 0.64 cm Thick and 4.5 cm Wide



Side View



Roof



Bottom

Outer Dimension Inclusive of Louvre Panels

Figure AT-ICIS-3

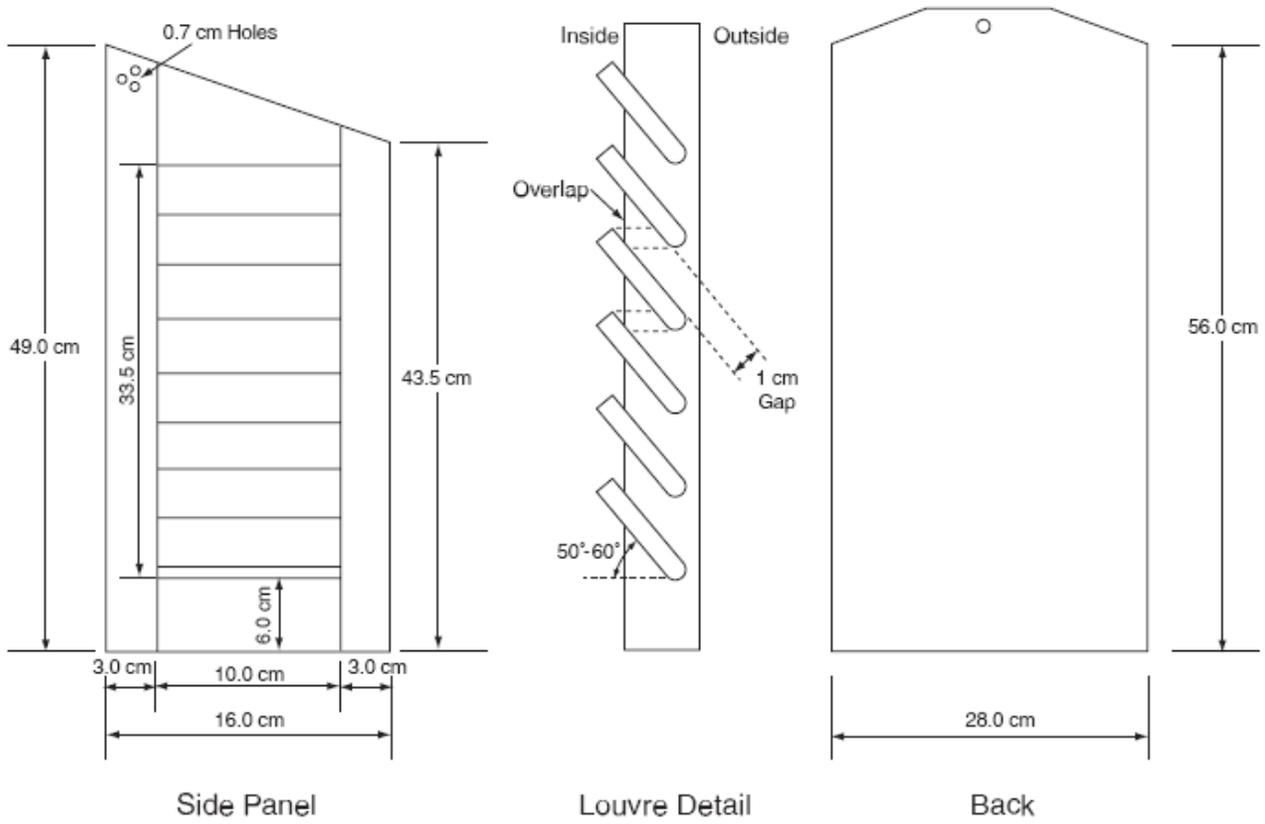


Figure AT-ICIS-4

