Air Conditioner Sizing Worksheet

BC HOUSING

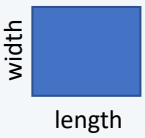
This document is meant to help operators size portable air conditioners for short-term use only and should not be used to choose long-term cooling solutions. You must work with a consultant to size long-term cooling equipment.
It is important to purchase the right sized air conditioner to cool a space effectively. An air conditioner's size is based on its cooling capacity (BTUs/hr), a measure of how much heat per hour the air conditioner can remove from a room.

Fill out the form below to find out the minimum size of air conditioner that you need.

Step 1: Calculate the room area to pick the right sized AC unit

Measure the room, and use the forms below to calculate the area.

Square and Rectangular Rooms



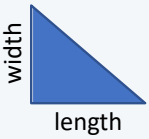
width x length = Area

width= ft

length= ft

Area= 0 ft^2

Triangular Rooms



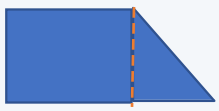
width x length x ½ = Area

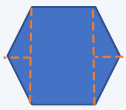
width= ft

length= ft

Area= 0 ft^2

For rooms that are more complex shapes, break the rooms down into smaller simple shapes, calculate those areas, and add all the smaller areas together.





Step 2: Find out the correct base cooling capacity for room size

Input the room area and height below.

Area of room ft^2 Height of room = ft

Base Cooling Capacity Needed = 5,000 BTUs/hr

Warning: This calculation only works for rooms under 2500 ft² - larger spaces should have permanent cooling.

Step 3: Add adjustments for room characteristics

The number of occupants in a room, the room use, and the amount of sunlight a room receives can impact the amount of cooling needed. Answer the following 5 questions to make sure you buy the right sized air conditioner.

1. **On a sunny day, how would you describe the room that you want to cool?**
   - ◯ The room is heavily shaded or windows faces N or NE
   - ◯ There is an average amount of sunlight
   - ◯ The room is very sunny or windows face S or SW
2. **How many people will be occupying the room?**
3. **Does the room have a kitchen?** ◯ Yes ◯ No
4. **Is the room well insulated?** ◯ Yes ◯ No
5. **Will the air conditioner only run at night?** ◯ Yes ◯ No

Calculate Reset Form

Step 4: Final air conditioner cooling capacity

With all the information you have provided, you will need an air conditioner that has the following cooling capacity:

Final Cooling capacity = BTUs/hr

BC Housing recommends purchasing units that are specified as 9,000-14,000 BTUs/hr, even if the remaining capacity needed is less than 9,000 BTUs/hr. Keep doors and windows shut when using an AC unit for maximum cooling efficiency

If your final cooling capacity is over 14,000 BTUs/hr, you will need to purchase multiple units in order to cool your space effectively.

Number of units needed =

If the number of units needed is over 2, you should consider alternative ways of cooling a space and installing permanent cooling system that can more effectively cool the space. See the **Cooling Strategies** sheet to see different cooling options.

Sources: http://publications.gc.ca/collections/collection_2012/rncan-nrcan/M141-13-2012.pdf, Energy Star air conditioner capacity table.