

## Applications

### Computer or Data Server Rooms

Mini-splits are designed primarily to keep people comfortable. That means the typical range of temperatures for the room is 70-72 DegF.

Mini Splits were not specifically designed for cooling server rooms or other data rooms however due to their size and ease of installation this is a very common application, and also the #1 Technical Service issue.

But **FOLLOWING** these guidelines can make for a reliable, profitable installation in this application

### Sizing

Sizing of the Mini Split to the room is **EXTREMELY IMPORTANT.**

**Team Air recommends a 12,000 Btu/h capacity per 200 to 250 Sq Ft of room size. Do not exceed this sizing guideline.**

Installing large capacity systems in small rooms will lead to short cycling of the compressor as the supply airflow from the unit to "bounces back" into the return air stream of the unit

If using the larger capacity units, Supply air is discharged at a velocity of approximately 6ft per second.

With a small room, where the opposite wall to the unit is less than 10ft away the supply air only circulates for approximately 4 seconds before returning to the unit.

The room temperature sensor is located on the surface of the cooling coil, if the supply air quickly "bounces back" into the unit, it will satisfy the sensor and the compressor will be cycled off.

All Team Air mini splits feature continuous fan operation, maintaining circulation in the room rapidly picking up the warmer return air from the room, causing the return air sensor to quickly sense a rise in temperature and call for compressor operation.

This leads to short cycling of the unit, poor temperature control and a greatly reduced unit life span.

Due to this scenario we recommend that you

**Do not install any capacity Team Air Mini Split in rooms of less than 100 Sq Ft in size**

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### **Unit Location**

Ensure that no obstacles to the air flow from the Indoor unit are within 10 feet of the unit, be especially aware that Computer server units create an airflow baffle and can have the same effect on airflow to and from the unit as a small room size.

In Computer room application the Team Air Mini Split units must be installed a MINIMUM of 6ft from the floor so that the airflow from the unit is unimpeded.

### **Sensible Heat and Humidity**

Team Air units are designed to provide an approximate SHR of 0.66.

Be aware that low humidity conditions will further reduce unit performance, requiring either additional higher fan speeds to be programmed into the unit, or introduction of some latent load into the room, e.g. Use of a humidifier.

### **Compressor Run Times**

To ensure compressor longevity it is paramount that the **compressor run time be longer than 5 minutes at all times throughout the year**. This will allow oil return to the compressor, and will ensure that the max number of starts per hour is not exceeded.

If the compressor runtime is less than 5 minutes, especially at design ambient temperature this is very likely that the unit is oversized.

### **Ambient**

The other major issue with Computer or Data rooms is that they are designed to operate 365 days 24/7. This means that the Outdoor unit will be exposed to temperatures below the minimum design ambient of 65 DegF

Therefore for cooling below 65 DegF, Team Air insists on the following items to be installed on the system.

1. ICM 326H Fan Speed controller.
2. Crankcase Heater on ALL units

**If winter temperatures fall below 32 DegF a Wind Baffle on the Coil Inlet and the Exhaust of the condenser fan is required.**

This will isolate the unit from any wind that could cause the unit to over condense, slugging liquid refrigerant back to the Compressor, which can damage the valve plate, wash oil from the bearing services and eventually cause the Compressor to fail.

**A Wind Baffle will provide cooling operation down to an Ambient of 0 DegF**  
Wind Baffles are field fabricated, drawings are available on request from Team Air