



HVAC Tech Note #24 – March 2005

Keep it in the Shade

The efficiency of air-cooled condensing equipment can be improved by locating it so that it is shaded. ARI rating conditions for central system condensing units typically used in residential applications are at 95 °F air temperature entering the condenser. If the air entering the condenser is reduced to 85 °F, the total cooling capacity increases by about 7% and the compressor power required drops by about 4%. Conversely, if the air temperature is 105 °F (not unusual for roof mounted units) the total cooling capacity decreases by about 7% and the compressor power increases by about 13%. *(These numbers are based on published performance for a Carrier model 38AK008 condensing unit at 45 °F SST.)*

It's well worth it, then, to think about the location of this type of equipment and take advantage of any shade available. It may even make sense to provide shading if no natural option exists. The equipment will also last longer running in less severe conditions.

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