

Fujitsu RLS - Ductless Mini-split Heat Pump

Review - Fujitsu RSL Series Mini-split Heat Pump

See my [video review of the Fujitsu 12RLS](#)

Introduction to Mini-split Heat Pumps



Mini-split air conditioners and heat pumps have been around for many years. These systems are just like your standard central air conditioning systems, except instead of having ductwork and registers, they place the air handler into your room. Each room where you want heating/cooling, you install a smallish wall unit.

While a central, ducted system makes sense for some homes, they are prone to inefficiencies due to duct losses. Ducts are often leaky and placed in basements or worse, attics, where they spew conditioned air instead of into the rooms where you want it. In fact, studies have shown that most ducted system lose 20%-30% of their efficiency through these losses. So that expensive 18 SEER system is likely only performing like a good 12 SEER system

On top of that, it's very difficult to get an even balance of air distribution in the house. One room might be too warm, another too cold. If you warm a cold room up to comfortable temperatures, the rest may be much too warm.

In an effort to rectify this situation, I installed a Fujitsu 12RLS (one ton cooling capacity) system in the living room. While it does require some tweaking of the blower speed for optimal operation, the system works much better than the GSHP. Since it has a much lower capacity than the main system, it runs longer. This is desirable for space heating/cooling as it results in better dehumidification in the summer and more uniform temperatures. I am now able to dial in exactly the conditions called for by the weather. If it's cool but humid, I can operate it in it's "dry" setting, where it acts as a dehumidifier and provides minimal space cooling. If it's mid-day and the sun is blazing down, I can turn it up to max cooling.

As an energy consultant, I'm always measuring my own home's energy usage. On a day where the average daily temperature was 80F, the GSHP runs five to seven hours per day, requiring about 30 kwh of electricity to operate. Now that I've installed the 12RLS, the GSHP typically runs about one hour, and this is only required to cool/dehumidify our bedroom at night. After I install another unit in the bedroom, I won't have to use the GSHP at all for cooling.

Measuring the usage of the Fujitsu is trickier because it doesn't just turn on and off. However, I also track my household electrical usage. Comparing comparable days between previous years and this year, I'm finding that my summertime electrical consumption used for cooling has dropped by about 33% (dropping from 30 kwh to 20 kwh). So, not only does the system keep us more comfortable, it reduces our electric usage.

Keep in mind too that I'm comparing the Fujitsu 12RLS to one of the most efficient ground source heat pumps on the market. A conventional air conditioner would consume about twice as much as the GSHP (about 60 kwh/day on a warm day). In that case, I'd be cutting my electric usage in half!