



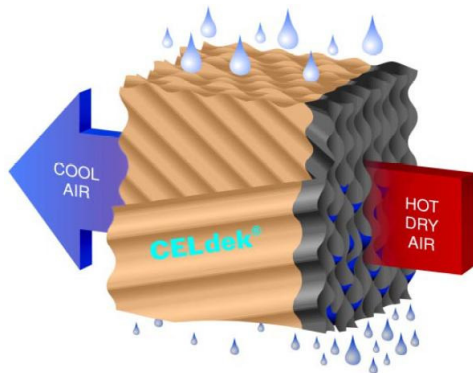
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## A More Affordable Cooling Unit

I've written in the past about advanced evaporative cooling, in general, as well as Whole House Evaporative Cooling Systems (<http://www.theenergyguy.com/Articles.html>). These systems are quiet, comfortable and cost about about one third as much as air conditioning to run. The customers we've installed these systems for in Nevada County are very happy with the comfort and low operating costs they provide. These systems work off a thermostat instead of a manual switch, air is directed into individual rooms, and the exhaust air is automatically sent out through your attic so windows don't need to be manually opened and closed. These "advanced coolers" are not the swamp coolers of yesterday!

Unfortunately most of the "evaporative coolers" you'll find at hardware stores are the "old style" swamp coolers. They're made with the same old inefficient "aspen pads" or a thin synthetic equivalent. In contrast, "advanced evaporative coolers" use a whole different type of pad called "CELdek media".



The old style swamp cooler may work "OK" a large part of the cooling season, as long as it's not too hot or humid outside and you have enough windows open. It's also important to open the right windows; avoid those on the windward side of your home; favor those on the sunny side, and those that let the breeze cross-flow through the areas where people are.

And if you've been reading my column here in Going Green for a while you know that solar screens on the outside of windows getting direct sun are a "no brainer" assuming you value comfort and don't own PG&E stock. Interior drapes, no matter how reflective, can't do half the job of a solar screen on the exterior! This advice holds regardless of the type of cooling system you have, and it's especially important if you have no cooling at all!

Unfortunately many people these days can't afford to spend the \$4,000 - \$9,000 it takes to install a Whole House Evaporative Cooling System. So what are the alternatives? Sure, you can buy a window

air conditioner cheap these days but it won't cool a very large area. And while they're cheap enough to buy they're too expensive to operate! So, getting back on topic, wouldn't it be great if there were an affordable evaporative cooler for the "rest of us"? One with the high efficiency pads and a quiet fan that could be placed in a window but could cool the whole house (up to 1600 sf at least)?

It turns out there is and it's called the Bon-Aire Durango window/wall cooler. It's made in Australia as are many of the other advanced coolers (hey, at least it's not made in China like practically everything else these days). The unit itself runs about \$500 and, with installation, around \$1,000 (potentially more depending on how and where it's installed).



I've been putting one to the test here at the Darby Testing Facility (my home) over the 4<sup>th</sup> of July weekend. We had a party over the weekend with people going in and out of the front door to the barbeque and the deck all day long. We also had family here from out of town too, so we had the washer, dryer and dishwasher humming away all weekend.

So how did it perform? On the hottest day when we had guests it was 94 degrees outside in the shade on our south sloping property. Inside, the hottest room in the house was 74 degrees but it actually felt a little cooler than that due to the breeze from the cooler. Everyone remarked at how comfortable, fresh and cool it felt inside.

The only down sides of this cooler are that, unlike a whole-house system:

- All the air comes out of one grille (so finding the right mounting location is important).
- It doesn't operate automatically, so you need to open and close windows (unless your goal is to have a humidifier and not a cooler) and turn the unit on and off manually.
- Unless it's permanently installed through a wall (which is possible with this one) you need to put it up and take it down once a year and due to the weight it's a two-person job.
- It's too noisy on the highest speed for a conversation nearby; the medium speed helps but the low speed is actually fairly quiet. One day when the guest weren't here it got up to 92 outside but the warmest it got inside was 72 with the cooler on low speed (I measured the energy use at just 178 watts).

The online reviews I've read on this cooler have been very positive too. Having had experiences with a wide range of evaporative coolers over the years I have to say the only part of the cooler I wasn't

impressed with was the float valve arm. It was far too weak, so I replaced it with a standard off the shelf float valve assembly.

Now that this affordable little cooler has proven itself, it's time to call my favorite locally owned hardware stores and encourage them to either stock them or be capable of ordering them up for us. That way, by the time you're reading this, there's a good chance you can buy one locally!

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