

## Electric Laundry Dryers

As our building systems become more efficient, the energy use of appliances becomes more apparent. Laundry loads in multifamily housing can sometimes be the largest load, so ensuring that the most efficient equipment is used is important. More surprising may be that the first cause of high consumption is convenience—households with in-unit laundry run twice as many loads as households with only access to a central laundromat.<sup>68</sup> While washing machines and clothes dryers use about the same amount of motor energy per load, boiling the water out of wet laundry uses 81% of all the energy in an average laundry load in 2010<sup>69</sup>, assuming one is using a standard ~30% efficient gas dryer, rather than a ~250% efficient electric heat pump dryer.

### Energy Star Electric Dryers

Energy Star, a building science program led by the US Environmental Protection Agency (EPA), aims to inform consumers and businesses on how to cut down on operating costs by listing and ranking energy efficient products<sup>70</sup>. Until recently, both residential and commercial/coin-operated clothes drying machines were excluded from the list of Energy Star rated appliances because of their consistently high-power demand between all products available on the market. Innovative technologies like moisture sensing, heat pumps and condensation drying have led to a rise in the availability of residential-grade Energy Star rated dryers<sup>71</sup>, although there are no commercial-grade Energy Star listings as of 2019. Some examples of residential-grade Energy Star washers and dryers are shown below. Commercial grade, coin-operated products must be independently evaluated for efficiency, often by requesting that of the company placing laundry machines on-site as a service. All Products Below are Energy Star.

### Standard Electric Dryers

Energy Star ranked Laundry Dryers use a variety of strategies to better eliminate water from clothes, such as fans, humidity sensors and heating technologies. Electric resistance dryers require a vent, while condensing dryers do not. The following products use electric resistance to dry clothes.

Model	Samsung DV45K76E	LG DLE1501	GE GTD65EB	Maytag MED3500W	Whirlpool WED75HEFW	Electrolux EFME417
						
Price	\$400	\$450	\$500	\$650	\$650	\$700
Drum Capacity (cu. ft)	7.4	7.4	7.4	7.4	7.4	8.0
kWh/year	607	607	608	608	608	608

68 Baylon et. al. (2013). "Residential Building Stock Assessment: Multifamily Characteristics and Energy Use." Ecotope, Inc. for NEEA.

69 Korn & Dimetrosky. (2010). "Do the Savings Come Out in the Wash? A Large Scale Study of In-Situ Residential Laundry Systems." The Cadmus Group. ACEEE Summer Study on Energy Efficiency in Buildings

70 U.S. Department of Energy. (2017). "Saving Energy and Money with Appliance and Equipment Standards in the United States"

<[https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917\\_0.pdf](https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917_0.pdf)>

71 Janeway, K. (2014). "Finally, the lowly dryer can reach for Energy Star" <<https://www.consumerreports.org/cro/news/2014/05/finally-the-humble-dryer-can-reach-for-energy-star/index.htm>>

## Combination Condensing Washer & Dryer

Condensing Washer/Dryer combine both space and energy efficiency and are ventless—laundry water instead goes down the drain. They are most common in retrofitted apartments in Europe, and run on 120V outlets, using as much energy as a hair dryer on medium and stresses fabrics less. After washing the clothes, the same machine dries the laundry using a condenser. A laundry cycle, from loading to unloading, takes 2-3 hours.

Make And Model	<b>Magic Chef</b> MCSCWD20W3	<b>Haier</b> HLC1700AXW	<b>Summit</b> SPWD2201SS	<b>Deco</b> DC4400CV	<b>LG</b> WM3488HW	<b>Whirlpool</b> WFC8090GX
						
Price	\$720	\$1,000	\$1,000	\$1,200	\$1,300	\$1,500
kWh/year	85 kWh/year	65kWh/year	65kWh/year	96kWh/year	120 kWh/year	180kWh/year
Drum Capacity (cu. ft.)	-	2.0	2.0	3.5	2.3	2.8
Volts/Amps	-	120V/10A	115V/12A	110V/15A	120V/15A	240V/30A

## Heat Pump Dryers

Heat pump dryers are also ventless, but maintain a higher temperature than a condensing dryer, but lower than that of electric resistance, and therefore dry clothing at a rate between the two. Note that smaller drum sizes hold less clothes, and consequently take less time to dry.

Make And Model	<b>Samsung</b> DV22N685H	<b>Blomberg</b> DHP24400W	<b>Kenmore</b> Elite 81783	<b>Beko</b> HPD24412W	<b>Whirlpool</b> WED9290FC	<b>Miele</b> TWI180WP
						
Price	\$1,000	\$1,100	\$1100	\$1,300	\$1700	\$1,900
kWh/year	145kWh/year	149kWh/year	-	149kWh/year	531kWh/year	133kWh/year
Drum Capacity (cu. ft.)	4.0	4.1	7.4	4.1	7.4	4.1
Cycle Time (min)	60	46	-	46	75	35