

Heat Pump Clothes Dryers ENERGY STAR Emerging Technology Requirements:
Draft 1 Version 1.0

Performance Characteristic	Requirements	Required Documentation
Product Performance		
Energy Efficiency ¹	<p>EF \geq 4.1, achievable in at least one temperature setting²</p> <p>EF \geq 3.6, achievable in maximum temperature setting</p> <p>\leq 75 minutes to finish one complete cycle in temperature setting that achieves EF \geq 4.1³</p>	Manufacturer documentation of test results consistent with DOE Test Procedure found in 10 CFR part 430, subpart B, appendix D
Sensors	Temperature and moisture sensing controls, at a minimum	Manufacturer documentation based on definitions found in 10 CFR part 430, subpart B, appendix D. ⁴ Must include an engineering diagram showing the existence and location of sensing controls
Minimum Warranty Available (years)	One year parts and labor	Copy of warranty agreement
Certification	Must meet all safety requirements applicable for sale in the U.S.	Copy of certification case files
Additional Company Requirements		
Product Commercialization Plan	Required	Company must submit and EPA must approve a <u>Product Commercialization Plan</u> that includes: market size, commercialization partners, targeted applications, targeted regions, and staffing plan to support plan implementation
Training and Installation Plan	Required	Company must submit and EPA must approve a <u>Training and Installation Plan</u> that includes: company details on delivering technical training to installers

1 Energy Factor (EF) = Pounds of clothes washed (lbs) / kWh. Measured according to the U.S. Department of Energy (DOE) Test Procedure for Clothes Dryers (10 CFR part 430, subpart B, appendix D). Unless otherwise specified, compliance with specification limit shall be evaluated using exact values without any benefit from rounding.

2 For purposes of this requirement, the manufacturer may use the most energy efficient temperature setting (drying mode) with the DOE Test Procedure (instead of using the maximum temperature setting), to achieve an EF \geq 4.1.

3 The amount of time needed to finish one complete cycle according to the DOE Test Procedure found in 10 CFR Part 430, subpart B, appendix D. "Cycle" means a sequence of operation of a clothes dryer which performs a clothes dryer operation, and may include variations or combinations of the functions of heating, tumbling and drying. For purposes of this requirement, the manufacturer must record the amount of time required to finish one complete cycle in the same temperature setting (drying mode) that achieves an EF \geq 4.1.

4 Definitions for these sensors are as follows:

"Temperature sensing control" means a system which monitors dryer exhaust air temperature and automatically terminates the dryer cycle.

"Moisture sensing control" means a system which utilizes a moisture sensing element within the dryer drum that monitors the amount of moisture in the clothes and automatically terminates the dryer cycle.

Note: EPA expects that consumers purchasing Award winning clothes dryers will choose the most energy efficient setting available (i.e., the mode that achieves EF \geq 4.1) since the greatest energy savings will be realized while operating in this mode. However, EPA also recognizes that most models are designed to offer the consumer a choice in drying settings, some of which meet the demands of certain situations (e.g., faster drying times) but are more energy intensive. EPA is proposing two Energy Factor levels to ensure that no matter what mode the consumer chooses they will experience high efficiency performance as compared to standard electric models.