

Selection Criteria Washing Machines

Methodology

Scope

Topten.eu – Best products of Europe – presents the most energy efficient household washing machines of Europe. Topten presents three categories of washing machines:

- Washing machines with a capacity < 8 kg
- Washing machines with a capacity of 8 kg
- Washing machines with a capacity > 8 kg

Technical criteria

In order to qualify for Topten.eu, washing machines must meet the following criteria:

- Energy efficiency class: A+++ according to the EU energy label
- Spin-drying efficiency class: A according to the EU energy label
- Available in at least one European country.
- In addition, suppliers have to provide Topten with the following data:
 - Energy Efficiency Index (EEI)
 - Energy consumption per cycle in kWh for the 60°C programme at full load, the 60°C programme at half load and the 40°C programme at half load
 - Programme time for the 60°C programme at full load, the 60°C programme at half load and the 40°C programme at half load
 - Power in left-on-mode and off-mode
 - Maximum spin speed
 - Availability of a water protection system (Aqua Stop, waterproof, water control system etc.)

Suppliers who are not able to provide the values cannot claim to have their appliances presented on Topten.eu.

The selection criteria will regularly be updated according to market development.

Data sources

- Suppliers' declarations
- National Topten-sites
- Encodex data base

Order of presentation

The products are ordered according to their Energy Efficiency Index (EEI), on line, it's the power consumption in left-on-mode and off-mode. The order can be changed individually by clicking on the head of the tables.

Glossary

Brand and Model

A click on the column of a product shows the detailed view. Models of similar construction and identical technical values are displayed only once, the other models' names are listed below. A click on the column of a product shows the detailed view.

Costs for electricity and water

Assumptions:

- Costs for electricity and water (in €) during 15 years (product life) according to the annual energy and water consumption as declared on the EU energy label for 220 standard cycles.
- Tariff of electricity: 0.20 €/kWh
- Tariff of water: 0.26 €/100 liters (Source: EuP-study lot 25, Task 2)

Capacity

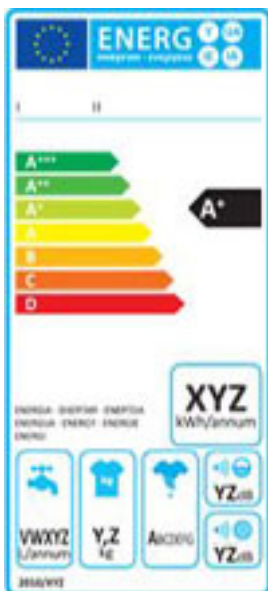
The rated capacity in kg of cotton for the standard 60°C programme at full load and the 40°C programme at full load, which ever is the lower.

Energy efficiency class

The energy efficiency class according to the EU energy label. The classes range from A+++ (most efficient) to D (least efficient).

Washing machines

Energy Class	Energy Efficiency Index (EEI)
A+++	$EEI < 46$
A++	$46 \leq EEI < 52$
A+	$52 \leq EEI < 59$
A	$59 \leq EEI < 68$
B	$68 \leq EEI < 77$
C	$77 \leq EEI < 87$
D	$EEI \geq 87$



Since the end of 2013, washing machines with a capacity ≥ 4 kg have to reach energy class A+, A++ or A+++ to be allowed on the EU market (see Ecodesign requirements).

Energy Efficiency Index

The Energy Efficiency Index (EEI) according to suppliers' declarations (as basis for the termination of the energy efficiency class). The lower the value, the more efficient is the washing machine.

Spin-drying class

The spin-drying efficiency class according to the declaration on the EU energy label. The classes range from A (most efficient) to G (least efficient).

Energy per year

Energy consumption per year in kWh according to the declaration on the EU energy label.

Energy per cycle

Energy consumption per cycle in kWh according to suppliers' declarations for the 60°C programme at full load (60), the 60°C programme at half load (60_{1/2}) and the 40°C programme at half load (40_{1/2}).

Water

Water consumption per year in litres according to the declaration on the EU energy label.

Programme time

Time needed in minutes for washing with the 60°C programme at full load (60), the 60°C programme at half load (60_{1/2}) and the 40°C programme at half load (40_{1/2}) according to suppliers' declarations.

Left-on/off

Power in standby in W in the left-on-mode (the washing machine is on) and in the off-mode (the washing machine is off) according to suppliers' declarations.

Max. spin speed

Maximum spin speed in revolutions per minute (rpm) according to suppliers' declarations.

Cold wash

Equipment of the washing machine with a 15°C or 20°C programme for cotton laundry. According to the Ecodesign requirements all washing machines must offer a cycle at 20°C from 1 December 2013.

Hot/Rain water supply

Equipment of the washing machine with a supply for hot water or rainwater respectively.

Noise (only visible in detailed view)

Noise in decibel (dB(A)) during washing and during spinning according to the declarations on the EU energy label.

Countries available

This item displays in which countries the products are available according to producers' declarations, national Topten-sites and data bases as Encodex. The considered countries are all member states of the EU, plus Croatia, Norway and Switzerland. However, the availability is sometimes difficult to define precisely as it can depend on marketing and sales decisions by retailers and national manufacturing units.

Infoplus

Publications

- [Washing at 20°C is Cool](#). Topten documentation. March 2014.
- [Cold wash – Tests on the washing performance](#). Barbara Josephy, Eric Bush, Francisco R. Zuloaga, Sophie Attali, Christoph Türk, Jörg Siebolds. EEDAL 2015.
- [Cold wash: Do prejudices impede high energy savings?](#) Barbara Josephy, Eric Bush, Jürg Nipkow, Karin Kleeli, Sandro Glanzmann. EEDAL 2013.
- [Washing machines: Key criteria for best available technology](#). Barbara Josephy, Eric Bush, Jürg Nipkow, Sophie Attali. EEDAL 2011.

Standards and Labels

- [EU energy label washing machines: Commission Delegated Regulation \(EU\) No 1061/2010 of 28 September 2010](#) supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of household washing machines.
- Amendment regarding [Online Energy Labels](#): Regulation No. 518/2014
- [Ecodesign requirements washing machines: Commission Regulation \(EU\) No 1015/2010 of 10 November 2010](#) implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for household washing machines.
- [Ecodesign requirements washing machines: Corrigendum to Commission Regulation \(EU\) No 1015/2010 of 10 November 2010](#) implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for household washing machines.
- EN 60456:2011: Clothes washing machines for household use. Methods for measuring the performance.
- [The Blue Angel](#): RAL-UZ 137 (Criteria for the award of the environmental label: Household washing machines. January 2013)

Links

- [European Commission: Directorate-General for Energy](#) (Brussels, Belgium).
- [European Commission: Enterprise and Industry](#) (Brussels, Belgium).
- [European Commission: Eco-design of Energy-Related Products \(ErP\)](#).
- The european council for an energy efficient economy [eceee](#) provides a status overview on all products in the Ecodesign & Energy Labelling process
- [Coolproducts](#) informs about the EU ecodesign process on washing machines and other products. It is a coalition of NGOs' campaign for a stronger, fast Ecodesign Directive to save the climate and money.
- [Encodex](#) (Nuremberg, Germany) is a subsidiary of the GfK Group and is present in over 50 countries worldwide. Encodex provides data bases of appliances.

Information for producers and retailers

Producers and retailers are kindly asked to contact [info\[at\]topten.info](mailto:info[at]topten.info) to inform about more products which meet the Euro-Topten selection criteria.

09/2015 Josephy/Nipkow/Bush/Berger-Wey