Department for Business, Energy & Industrial Strategy

Energy Technology List

High speed hand air dryers

A guide to energy efficient equipment listed on the Energy Technology List (ETL)

Department for Business, Energy & Industrial Strategy

Energy Technology List

Contents

Department for Business, Energy & Industrial Strategy

Energy Technology List

Introduction

The ETL is a government register of energy saving products. When you select products from the list you are choosing from amongst the most energy efficient products in the marketplace.

When replacing equipment, businesses are often tempted to opt for equipment with the lowest capital cost. However, such immediate cost savings may prove to be a false economy. Considering higher energy efficient products means that life cycle costs are reduced, improving cash flow in the longer term.

Businesses can also claim accelerated tax relief through the Annual Investment Allowance (AIA) for investments in plant and machinery equipment. The AIA has been temporarily increased to £1 million from January 2019.

This leaflet illustrates the benefits of investing in high speed hand air dryers energy saving equipment which qualifies for the ETL.

The ETL comprises two lists:

- **Energy Technology Criteria List**: defines the performance criteria that equipment must meet to qualify for the ETL;
- **Energy Technology Product List**: is the list of products that have been assessed as being compliant with ETL criteria.

Eligible high speed hand air dryer products on the ETL can be searched at:
https://etl.beis.gov.uk/engetl/fox/live/ETL_PUBLIC_PRODUCT_SEARCH

Department for Business, Energy & Industrial Strategy

Energy Technology List

Setting the scene

Did you know?
ETL listed high speed hand air dryers can use up to 70% less energy than standard warm hand air dryers

Full lifecycle analysis shows that high speed hand air dryers can save significant amounts of money and CO_2 compared to using paper towels

Definition

High speed hand air dryers are products that are specifically designed to dry hands by moving air in such a manner that the water is physically removed or evaporated. The ETL aims to encourage the purchase of high speed hand air dryer products with the highest efficiency.

There are three main types of electric hand dryers:

- **Conventional warm air dryers** use a wide jet of warmed air to dry hands by evaporation. Hands are held beneath the dryer outlet in the airflow and typical drying times are 20-30 seconds. **The ETL does not cover this type of electrical hand dryer**.
- **High speed warm air dryers** use jets of warmed air driven at higher speeds than the conventional dryers. Hands can be held beneath the dryer or inserted into an opening. A more powerful motor is used to increase air speeds to around 50-80 m/s, which allows drying times to be reduced to around 10-15 seconds. Energy is thus saved through reduced drying times and heating requirements.
- **High speed ambient air dryers** use ambient air at high speeds so that water is physically removed from the hands. Hands can be held beneath the dryer, or inserted into an opening and air is directed from both sides. The motor used to drive the air is more powerful than for the warm air dryers so air speeds are greater, and no heater is required. Typical drying times are around 10-15 seconds.

Department for Business, Energy & Industrial Strategy

Energy Technology List

Setting the scene

Assumptions

ETL listed high speed hand air dryers must meet defined energy efficiency levels under various load conditions. In this document, the baseline scenario below has been used to calculate the potential financial (£), energy (kWh) and carbon savings (tonnes CO_2) unless otherwise indicated:

- There are 72,900 standard 10 second drying cycles per year
- Price for electricity 11.14p/kWh
- Carbon emissions for electricity 0.35156 kgCO_2/kWh
- ETL listed high speed hand air dryers are 50% more efficient than non-ETL units
- ETL listed products are presumed to be in the top 25% of energy efficient products available in the marketplace

Energy cost and emissions data from BEIS 2017

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Energy Technology List

Products eligible for the ETL:

High speed hand air dryers are eligible for the ETL

High speed hand air dryers

ETL listed high speed hand air dryers must:

- Incorporate an electrically driven blower that produces one or more jets of high speed air that can be used to dry hands that are placed beneath, or into, the product.
- Automatically switch off power to the blower and air heater (where fitted) when hands are removed from the product's drying zone.
- Eligible products must use less than 5.5 kWh of electricity per 1,000 standard drying cycles in its normal mode of operation.
- Have a standard drying time that is less than, or equal to, 15 (+/- 0.5) seconds

Installing a single ETL listed high speed hand air dryer rather than a non-listed product, will result in potential annual savings of:

- £108
- 972 kWh
- 0.3 tonnes CO_2

With a typical additional capital cost of £300* and lifetime energy and AIA benefits of around £420 at today's prices, the financial benefit of choosing an ETL listed product is almost 1.5 times the additional cost. The purchase may qualify for an AIA of approximately £90 in the year of purchase.

*Unit cost of ETL compliant and non-ETL compliant is £490 and £190 respectively

Department for Business, Energy & Industrial Strategy

Energy Technology List

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Testing
ETL listed high speed hand air dryers must undergo rigorous testing in order to ensure that they meet both the necessary energy usage requirements, and the expected hygiene, sanitary, drying and time requirements of the user. Testing procedures required are clearly outlined within the 'ETL Method for the Testing of High Speed Hand Air Dryers', which can be found online here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387368/ETL_Hand_Air_Dryer_Test_Methodology_v2_-_October_2014.pdf Testing requires standardised procedures for wetting and drying of hands, volunteers, setup, and calibration of equipment. These requirements are in line with the NSF protocol P335, which establishes minimum requirements for health and sanitation characteristics of hygienic commercial hand dryers. The protocol incorporates requirements for the following: air filtration, air temperature, drying time, water disinfection, and automated operation.

Department for Business, Energy & Industrial Strategy

Energy Technology List

Where can I find more information?

For information about the ETL please visit: https://www.gov.uk/guidance/energy-technology-list and see our Information for Purchasers factsheet. Or contact the ETL Help Line on 0300 330 0657; email ETLQuestions@carbontrust.com

For more information on the ETL:

To search for a product on the ETL please visit:
https://etl.beis.gov.uk/engetl/fox/live/ETL_PUBLIC_PRODUCT_SEARCH

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