

**Heating boilers - Electrical power consumption for  
heat generators - System boundaries -  
Measurements**

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generators - System boundaries - Measurements

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 15456:2008 sisaldab Euroopa standardi EN 15456:2008 ingliskeelset teksti.

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English Version

## Heating boilers - Electrical power consumption for heat generators - System boundaries - Measurements

Chaudières de chauffage - Puissance électrique des  
générateurs de chaleur - Limites du système - Mesurages

Heizkessel - Elektrische Leistungsaufnahme für  
Wärmeerzeuger - Systemgrenzen - Messungen

This European Standard was approved by CEN on 29 February 2008.

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## Foreword

This document (EN 15456:2008) has been prepared by Technical Committee CEN/TC 57 “Central heating boilers”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2008, and conflicting national standards shall be withdrawn at the latest by October 2008.

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## Introduction

This document specifies the measurement methods for evaluating auxiliary power consumption. This document also provides the parameters for boilers necessary for the calculation of the total power consumption according to prEN 15316-4-1 [4].

## 1 Scope

This European Standard applies to heating boilers (e.g. with forced-draught burners (unit)) and burners equipped with a fan including all components specified by the manufacturer to be required for the designed boiler operation.

This European Standard also applies to heating boilers sold without burners.

This European Standard covers the required definitions, the system boundaries, the measurements for the determination of the electrical power consumption and, where applicable, the water side resistance in order to establish the electric auxiliary energy for:

- Oil-fired forced-draught burners in accordance with EN 267;
- Automatic forced-draught burners for gaseous fuels in accordance with EN 676;
- Flued oil stoves with vaporizing burners in accordance with EN 1;
- Heating boilers sold without burners for:
  - Oil-fired forced-draught burners in accordance with EN 303-1 [6], EN 303-2 [7] and EN 304;
- Condensing boilers for liquid fuels in accordance with EN 15034;
- Room sealed boilers for fuel oil in accordance with EN 15035;
- Heating boilers - Heating boilers with forced-draught burners - Nominal heat output not exceeding 10 MW and maximum operating temperature of 110 °C in accordance with EN 14394;
- Pellet burners for small heating boilers in accordance with EN 15270.

NOTE All measurements for boilers are carried out in the heating mode only. For hot water production this mode is also relevant.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1, *Flued oil stoves with vaporising burners*

EN 267, *Forced draught oil burners — Definitions, requirements, testing, marking*

EN 304:1992, *Heating boilers — Test code for heating boilers for atomizing oil burners*

EN 676, *Automatic forced draught burners for gaseous fuels*

EN 14394, *Heating boilers — Heating boilers with forced draught burners — Nominal heat output not exceeding 10 MW and maximum operating temperature of 110 °C*

EN 15034, *Heating boilers — Condensing heating boilers for fuel oil*

EN 15035, *Heating boilers — Special requirements for oil fired room sealed units up to 70 kW*

### 3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

#### 3.1 reference conditions

15 °C and 1 013,25 mbar, unless otherwise stated

#### 3.2 fuel mass flow

$\dot{m}_B$

fuel mass which is consumed during each unit of time by the boiler in continuous operation

NOTE Fuel mass flow is expressed in cubic metre per hour or kilogram per hour.

#### 3.3 fuel volumetric flow

$\dot{V}_B$

volume of the fuel supplied to the boiler during continuous operation for each unit of time

NOTE Fuel volumetric flow is expressed in cubic metre per hour.

#### 3.4 electrical power consumption

$P_{aux}$

##### 3.4.1 electrical power consumption for heat generation

$P_{aux,gen}$

electric energy consumed by the system components (e.g. pump, fan, valves and control unit) required for the heat generator's designed operation:

- at full load (100 %)  $P_{aux 100}$ ,
- at part load (30 %)  $P_{aux 30}$  and
- at stand-by operation  $P_{aux sb}$ .

NOTE Electrical power consumption for heat generation is expressed in watts.

##### 3.4.2 electrical power consumption for other use

$P_{aux,dis}$

electric energy consumed by the system components which are not required for the heat generator's designed operation, e.g. heat distribution pump, valves for heat distribution

NOTE Electrical power consumption for other use is expressed in watts.

#### 3.5 draught

pressure differential between the static air pressure in the place of installation and the static pressure of the exhaust gases, as measured in the exhaust gas measuring section, which is required for correct operation of the boiler in the test room