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Delegations will find attached Commission document D028689/03.

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EUROPEAN  
COMMISSION

Brussels, **XXX**  
D028689/03  
**[...]**(2013) **XXX** draft

**COMMISSION REGULATION (EU) No .../..**

**of **XXX****

**implementing Directive 2009/125/EC of the European Parliament and of the Council  
with regard to ecodesign requirements for local space heaters**

(Text with EEA relevance)

# COMMISSION REGULATION (EU) No .../..

of **XXX**

**implementing Directive 2009/125/EC of the European Parliament and of the Council  
with regard to ecodesign requirements for local space heaters**

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products<sup>1</sup> and in particular Article 15(1) thereof,

After consulting the Consultation Forum referred to in Article 18 of Directive 2009/125/EC,

Whereas:

- (1) Directive 2009/125/EC requires the Commission to set ecodesign requirements for energy-related products that represent significant volumes of sales and trade, that have a significant environmental impact and that present significant potential for improvement in terms of their environmental impact without entailing excessive costs.
- (2) Article 16(2) of Directive 2009/125/EC provides that in accordance with the procedure referred to in Article 19(3) and the criteria set out in Article 15(2), and after consulting the Consultation Forum, the Commission should, as appropriate, introduce implementing measures for products offering a high potential for cost-effective reduction of greenhouse gas emissions, such as local space heaters.
- (3) The Commission has carried out a preparatory study to analyse the technical, environmental and economic aspects of local space heaters typically used for heating purposes in residential and commercial buildings. The study has been carried out with stakeholders and interested parties from the Union and third countries, and the results have been made publicly available.
- (4) The environmental aspects of local space heaters that have been identified as significant for the purposes of this Regulation are energy consumption and emissions nitrogen oxides in the use phase.
- (5) The preparatory study shows that further requirements regarding other ecodesign parameters referred to in Part 1 of Annex I to Directive 2009/125/EC are not necessary in the case of local space heaters.
- (6) The scope of this Regulation should include local space heaters designed to use gaseous or liquid fuels and electricity. Local space heaters that have an indirect fluid heating functionality are also within the scope of this Regulation.

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<sup>1</sup> OJ L 285, 31.10.2009, p. 10.

- (7) Annual energy consumption related to local space heaters was estimated to have been 1673 PJ (40.0 Mtoe) in the Union in 2010 corresponding to 75.3 Mt of carbon dioxide (CO<sub>2</sub>) emissions. Annual energy consumption related to local space heaters is expected to be 1630 PJ (39.0 Mtoe) in 2020 corresponding to 71.6 Mt of CO<sub>2</sub>.
- (8) The energy consumption of local space heaters can be further reduced by applying existing, non-proprietary technologies without an increase in the combined costs of purchasing and operating these products.
- (9) Annual emissions of nitrogen oxides (NO<sub>x</sub>) from local space heaters were estimated to have been 5.6 kton of sulphur oxides (SO<sub>x</sub>) equivalent in 2010. As a result of specific measures adopted by Member States and technological development, these emissions are expected to be 4.9 kton of SO<sub>x</sub> equivalent in 2020.
- (10) The emissions of local space heaters could be further reduced by applying existing, non-proprietary technologies without an increase in the combined costs of purchasing and operating those products.
- (11) Together, the ecodesign requirements set out in this Regulation and the Commission Delegated Regulation (EU) **No ... of ...** supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of local space heaters, [*Number of the Regulation and OJ reference in footnote to be inserted before publication in the OJ*] are expected to result by 2020 in estimated annual energy savings of approximately 157 PJ (3.8 Mtoe), with related CO<sub>2</sub> emission reduction of 6.7 Mt.
- (12) The ecodesign requirements set out in this Regulation are expected to result by 2020 in a reduction of equivalent SO<sub>x</sub> emissions of 0.6 kton/year.
- (13) This Regulation covers products with different technical characteristics. If the same efficiency requirements were placed on them certain technologies would be banned from the market, which would result in a negative impact for consumers. For this reason ecodesign requirements relative to the potential of each technology create a level playing field in the market.
- (14) Ecodesign requirements should harmonise energy consumption and nitrogen oxides emission requirements for local space heaters throughout the Union, for the internal market to operate better and in order to improve the environmental performance of those products.
- (15) The energy efficiency of local space heaters decreases during real life operation when compared with energy efficiency as tested. In order to approach seasonal space heating energy efficiency to useful energy efficiency manufacturers should be encouraged to make use of controls. For this purpose, a global discount for this divergence between these two values is assumed. This discount can be recovered by choosing a number of control options.
- (16) The ecodesign requirements should not affect the functionality or affordability of local space heaters from the end-user's perspective and should not negatively affect health, safety or the environment.
- (17) The time frame for introducing the ecodesign requirements should be sufficient for the manufacturers to redesign their products subject to this Regulation. The timing should take into account any cost impact for manufacturers, in particular for small and medium-sized enterprises, is taken into account, while ensuring timely achievement of the objectives of this Regulation.

- (18) Product parameters should be measured and calculated using reliable, accurate and reproducible measurement and calculation methods which take into account the recognised state-of-the-art measurement methods including, where available, harmonised standards adopted by the European standardisation organisations following a request by the Commission in accordance with the procedures laid down in Regulation (EU) 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation<sup>2</sup>.
- (19) In accordance with Article 8 of Directive 2009/125/EC, this Regulation specifies which conformity assessment procedures apply.
- (20) In order to facilitate compliance checks, manufacturers should provide the information contained in the technical documentation referred to in Annexes IV and V to Directive 2009/125/EC insofar as that information relates to the requirements laid down in this Regulation.
- (21) To further limit the environmental impact of local space heaters, manufacturers should provide information on disassembly, recycling and disposal.
- (22) In addition to the legally binding requirements laid down in this Regulation, indicative benchmarks for best available technologies should be determined to ensure that information on the life-cycle environmental performance of local space heaters is widely available and easily accessible.
- (23) The measures provided for in this Regulation are in accordance with the opinion of the Committee established under Article 19(1) of Directive 2009/125/EC,

HAS ADOPTED THIS REGULATION:

*Article 1*  
***Subject matter and scope***

This Regulation establishes ecodesign requirements for the placing on the market and putting into service of domestic local space heaters with a nominal heat output of 50 kW or less and commercial local space heaters with a nominal heat output of the product or of a single segment of 120 kW or less.

This Regulation shall not apply to:

- (a) local space heaters using a vapour compression cycle or sorption cycle for the generation of heat driven by electric compressors or fuel;
- (b) local space heaters specified for purposes other than indoor space heating to reach and maintain a certain thermal comfort of human beings by means of heat convection or heat radiation;
- (c) local space heaters that are specified for outdoor use only;
- (d) local space heaters of which the direct heat output is less than 6% of the combined direct and indirect heat output at nominal heat output;
- (e) air heating products;
- (f) sauna stoves;
- (g) slave heaters.

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<sup>2</sup> OJ L 316, 14.11.2012, p. 12.

## *Article 2*

### ***Definitions***

In addition to the definitions set out in Article 2 of Directive 2009/125/EC, the following definitions shall apply:

1. 'local space heater' means a space heating device that emits heat by direct heat transfer or by direct heat transfer in combination with heat transfer to a fluid, in order to reach and maintain a certain level of human thermal comfort within an enclosed space in which the product is situated, possibly combined with a heat output to other spaces and is equipped with one or more heat generators that convert electricity or gaseous or liquid fuels directly into heat, through use of the Joule effect or combustion of fuels respectively;
2. 'domestic local space heater' means a local space heater other than a commercial one;
3. 'gaseous fuel local space heater' means an open fronted local space heater or a closed fronted local space heater using gaseous fuel;
4. 'liquid fuel local space heater' means an open fronted local space heater or a closed fronted local space heater using liquid fuel;
5. 'electric local space heater' means a local space heater using the electric Joule effect to generate heat;
6. 'commercial local space heater' means either a luminous local space heater or tube local space heater;
7. 'open fronted local space heater' means a local space heater, using gaseous or liquid fuels, of which the fire bed and combustion gases are not sealed from the space in which the product is fitted and which is sealed to a chimney or fireplace opening or requires a flue duct for the evacuation of products of combustion;
8. 'closed fronted local space heater' means a local space heater, using gaseous or liquid fuels, of which the fire bed and combustion gases are sealed from the space in which the product is fitted and which is sealed to a chimney or fireplace opening or requires a flue duct for the evacuation of products of combustion;
9. 'electric portable local space heater' means an electric local space heater which is not an electric fixed local space heater, electric storage local space heater, electric underfloor local space heater, electric radiant local space heater, electric visibly glowing local space heater or slave heater;
10. 'electric fixed local space heater' means an electric local space heater not intended to accumulate thermal energy and designed to be used while fastened or secured in a specific location or wall mounted and not incorporated in the building structure or building finishing;
11. 'electric storage local space heater' means an electric local space heater designed to store heat in an accumulating isolated core and to discharge it for several hours after the accumulation phase;
12. 'electric underfloor local space heater' means an electric local space heater designed to be used while incorporated in the building structure or building finishing;
13. 'electric radiant local space heater' means an electric local space heater in which the heat emitting element is to be directed towards the place of use so that its thermal

radiation directly warms the subjects to be heated and which has a temperature rise of the grill covering the heat emitting element of at least 130°C in normal use and/or a temperature rise of 100°C for other surfaces;

14. 'electric visibly glowing radiant local space heater' means an electric local space heater in which the heating element is visible from outside the heater and has a temperature of at least 650°C in normal use;
15. 'sauna stove' means a space heating product, incorporated in, or declared to be used in, dry or wet sauna's or similar environments;
16. 'slave heater' means an electric local space heater which is not capable of autonomous operation and needs to receive signals sent from an external master controller, not being part of the product but connected to it by pilot wire, wireless, power line communication or an equivalent technique, in order to regulate the emission of heat into the room in which the product is installed;
17. 'luminous local space heater' means a local space heater, using gaseous or liquid fuel which is equipped with a burner; which is to be installed above head level, directed towards the place of use so that the heat emission of the burner, being predominantly infrared radiation, directly warms the subjects to be heated and which emits the products of combustion in the space where it is situated;
18. 'tube local space heater' means a local space heater, using gaseous or liquid fuel, which is equipped with a burner; which is to be installed above head level, near the subjects to be heated, which heats the space primarily by infrared radiation from the tube or tubes heated by the internal passage of products of combustion and of which the products of combustion are to be evacuated through a flue duct;
19. 'tube heater system' means a tube local space heater comprising more than one single burner, of which the products of combustion of one burner may feed into a next burner, and of which the products of combustion of multiple burners are to be evacuated by a single exhaust fan;
20. 'tube heater segment' means a part of a tube heater system that comprises all the elements needed for standalone operation and as such can be tested independently of the other tube heating system parts;
21. 'flueless heater' means a local space heater using gaseous or liquid fuel emitting the products of combustion into the space where the product is situated, other than a luminous local space heater;
22. 'open to chimney heater' means a local space heater using gaseous or liquid fuels intended to sit under a chimney or in a fireplace without sealing between the product and the chimney or fireplace opening, and allowing the products of combustion pass unrestricted from the fire bed to the chimney or flue;
23. 'air heating product' means a product providing heat to an air-based heating system only that can be ducted and is designed to be used while fastened or secured in a specific location or wall mounted which distributes the air by means of an air moving device in order to reach and maintain a certain level of human thermal comfort within an enclosed space in which the product is situated;
24. 'direct heat output' means the heat output of the product by radiation and convection of heat, as emitted by or from the product itself to air, excluding the heat output of the product to a heat transfer fluid, expressed in kW;

25. 'indirect heat output' means the heat output of the product to a heat transfer fluid by the same heat generation process that provides the direct heat output of the product, expressed in kW;
26. 'indirect heating functionality' means the product is capable of transferring part of the total heat output to a heat transfer fluid, for use as space heating or domestic hot water generation;
27. 'nominal heat output' ( $P_{nom}$ ) means the heat output of a local space heater comprising both direct heat output and indirect heat output (where applicable), when operating at the setting for the maximum heat output that can be maintained over an extended period, as declared by the manufacturer, expressed in kW;
28. 'minimum heat output' ( $P_{min}$ ) means the heat output of a local space heater comprising both direct heat output and indirect heat output (where applicable), when operating at the setting for the lowest heat output, as declared by the manufacturer, expressed in kW;
29. 'maximum continuous heat output' ( $P_{max,c}$ ) means the declared heat output of a electric local space heater when operating at the setting for the maximum heat output that can be maintained continuously over an extended period, as declared by the manufacturer, expressed in kW;
29. 'intended for outdoor use' means the product is suitable for safe operation outside enclosed spaces, including possible use in outdoor conditions;
30. 'equivalent model' means a model placed on the market with the same technical parameters set out in Table 1, Table 2 or Table 3 of point 3 of Annex II as another model placed on the market by the same manufacturer.

For Annexes II to V, additional definitions are set out in Annex I.

### *Article 3*

#### ***Ecodesign requirements and timetable***

1. The ecodesign requirements for local space heaters are set out in Annex II.
2. Local space heaters shall meet the requirements set out in Annex II from 1 January 2018.
3. Compliance with ecodesign requirements shall be measured and calculated in accordance with the methods set out in Annex III.

### *Article 4*

#### ***Conformity assessment***

1. The conformity assessment procedure referred to in Article 8(2) of Directive 2009/125/EC shall be the internal design control set out in Annex IV to that Directive or the management system set out in Annex V to that Directive.
2. For the purposes of the conformity assessment pursuant to Article 8 of Directive 2009/125/EC, the technical documentation shall contain the information set out in point 3(b) of Annex II to this Regulation.
3. Where the information included in the technical documentation for a model has been obtained by calculation on the basis of design, or extrapolation from other equivalent appliances, or both, the technical documentation shall include details of such



calculations or extrapolations, or both, and of tests undertaken by manufacturers to verify the accuracy of the calculations undertaken. In such cases, the technical documentation shall also include a list of all other equivalent models where the information contained in the technical documentation was obtained on the same basis.

#### *Article 5*

##### ***Verification procedure for market surveillance purposes***

Member States shall apply the verification procedure set out in Annex IV to this Regulation when performing the market surveillance checks referred to in Article 3(2) of Directive 2009/125/EC to ensure compliance with the requirements set out in Annex II to this Regulation.

#### *Article 6*

##### ***Indicative benchmarks***

The indicative benchmarks for best-performing local space heaters available on the market at the time of entry into force of this Regulation are set out in Annex V.

#### *Article 7*

##### ***Review***

The Commission shall review this Regulation in the light of technological progress and present the result of that review to the Consultation Forum no later than 1 January 2019. In particular, the review shall assess:

- whether it is appropriate to set stricter ecodesign requirements for energy efficiency and for emissions of nitrogen oxides (NO<sub>x</sub>);
- whether the verification tolerances should be modified;
- the validity of the correction factors used for assessing the seasonal space heating energy efficiency of local space heaters;
- the appropriateness of introducing third party certification.

#### *Article 8*

##### ***Transitional provisions***

Until 1 January 2018 Member States may allow the placing on the market and putting into service of local space heaters which are in conformity with the national provisions in force regarding seasonal space heating energy efficiency and nitrogen oxides.

#### *Article 9*

##### ***Entry into force***

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

*For the Commission*  
*The President*  
José Manuel BARROSO

**ANNEX I**  
**Definitions applicable for Annexes II to V**

For the purpose of Annexes II to V the following definitions shall apply:

1. 'seasonal space heating energy efficiency' ( $\eta_s$ ) means the ratio between the space heating demand, supplied by a local space heater and the annual energy consumption required to meet this demand, expressed in %;
2. 'conversion coefficient' (CC) means a coefficient reflecting the estimated 40 % average EU generation efficiency referred to in Directive 2012/27/EU on energy efficiency<sup>3</sup>; the value of the conversion coefficient is  $CC = 2,5$ ;
3. 'nitrogen oxides emissions' means the emissions of nitrogen oxides at nominal heat output expressed in  $\text{mg/kWh}_{\text{input}}$  based on GCV for gaseous or liquid fuel local space heaters and commercial local space heaters;
4. 'net calorific value' (NCV) means the total amount of heat released by a unit quantity of fuel containing the appropriate moisture of the fuel, when it is burned completely with oxygen, and when the products of combustion are not returned to ambient temperature;
5. 'gross calorific value moisture free' (GCV) means the total amount of heat released by a unit quantity of fuel dried of inherent moisture, when it is burned completely with oxygen, and when the products of combustion are returned to ambient temperature; this quantity includes the condensation heat of the water vapour formed by the combustion of any hydrogen contained in the fuel;
6. 'useful efficiency, at either nominal or minimum heat output', ( $\eta_{\text{th,nom}}$  or  $\eta_{\text{th,min}}$  respectively) means the ratio of the useful heat output and the total energy input of a local space heater, expressed in %, whereby:
  - (a) for domestic local space heaters the total energy input is expressed in terms of NCV and/or in terms of final energy multiplied by CC;
  - (b) for commercial local space heaters the total energy input is expressed in terms of GCV and in terms of final energy multiplied by CC;
7. 'electric power requirement at nominal heat output' ( $e_{\text{l,max}}$ ) means the electric power consumption of the local space heater while providing the nominal heat output. The electric power consumption shall be established without consideration of the power consumption of a circulator in case the product offers indirect heating functionality and a circulator is incorporated, expressed in kW;
8. 'electric power requirement at minimum heat output' ( $e_{\text{l,min}}$ ) means the electric power consumption of the local space heater while providing the minimum heat output. The electric power consumption shall be established without consideration of the power consumption of a circulator in case the product offers indirect heating functionality and a circulator is incorporated, expressed in kW;
9. 'electric power requirement in standby mode' ( $e_{\text{l,sb}}$ ) means the electric power consumption of the product while in standby mode, expressed in kW;
10. 'permanent pilot flame power requirement' ( $P_{\text{pilot}}$ ) means the fuel consumption of gaseous or liquid fuel of the product for the provision of a flame to serve as an

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<sup>3</sup> OJ L 315, 14.11.2012, p. 1.

ignition source for the more powerful combustion process needed for nominal or part load heat output, when lit for more than 5 minutes before the main burner is on, expressed in kW;

11. 'manual heat charge control, with integrated thermostat' means a manually operated sensing device integrated into the product, which measures and regulates its core temperature to vary the accumulated amount of heat;
12. 'manual heat charge control with room and/or outdoor temperature feedback' means a manually operated sensing device integrated into the product which measures its core temperature and varies the accumulated amount of heat in relation with the room temperature and/or outdoor temperature;
13. 'electronic heat charge control with room and/or external temperature feedback or regulated by energy supplier' means an automatically operated sensing device integrated into the product which measures its core temperature and varies the accumulated amount of heat in relation with the room temperature and/or outdoor temperature or a device whose charging regime can be regulated by the energy supplier;
14. 'fan assisted heat output' means the product is equipped with an integrated and controllable fan (or fans) to vary the heat output to adjust to the heat demand;
15. 'single stage heat output, no room temperature control' means the product is not capable of varying its heat output automatically and that no feedback of room temperature is present to adapt the heat output automatically;
16. 'two or more manual stages, no room temperature control' means the product is capable of varying its heat output manually by two or more levels of heat output and is not equipped with a device that automatically regulates the heat output in relation to a desired indoor temperature;
17. 'with mechanic thermostat room temperature control' means the product is equipped with a non-electronic device that allows the product to automatically vary its heat output over a certain time period, in relation to a certain required level of indoor heating comfort;
18. 'with electronic room temperature control' means the product is equipped with an electronic device, either integrated or external, that allows the product to automatically vary its heat output over a certain time period, in relation to a certain required level of indoor heating comfort;
19. 'with electronic room temperature control plus day timer' means the product is equipped with an electronic device, either integrated or external, that allows the product to automatically vary its heat output over a certain time period, in relation to a certain required level of indoor heating comfort, and allows the setting of timing and temperature level for a 24-hours timer interval;
20. 'with electronic room temperature control plus week timer' means the product is equipped with an electronic device, either integrated or external, that allows the product to automatically vary its heat output over a certain time period, in relation to a certain required level of indoor heating comfort, and allows the setting of timing and temperature levels for a full week. During the 7-day period the settings must allow a variation on a day-to-day basis;

21. 'room temperature control, with presence detection' means the product is equipped with an electronic device, either integrated or external, that automatically reduces the set-point for the room temperature when no person is detected in the room;
22. 'room temperature control, with open window detection' means the product is equipped with an electronic device, either integrated or external, that reduces the heat output when a window or door has been opened. Whenever a sensor is used to detect the opening of a window or door, it can be installed with the product, externally to the product, built into the building structure or as a combination of those options;
23. 'with distance control option' means the function that allows remote interaction from outside the building in which the product is installed with the control of the product;
24. 'with adaptive start control' means the function which predicts and initiates the optimal start of heating up in order to reach the set-point temperature at the desired time;
25. 'with working time limitation' means the product has a function that automatically deactivates the product after a pre-set period of time;
26. 'with black bulb sensor' means the product is equipped with an electronic device, either integrated or external, that measures air and radiant temperature;
27. 'single stage' means that the product is not capable of automatically varying its heat output;
28. 'two stage' means the product is capable of automatically regulating its heat output in two distinct levels, in relation to the actual indoor air temperature and a desired indoor air temperature, controlled through temperature sensing devices and an interface which is not necessarily integral to the product itself;
29. 'modulating' means the product is capable of automatically regulating its heat output in three or more distinct levels, in relation to the actual indoor air temperature and a desired indoor air temperature, controlled through temperature sensing devices and an interface which is not necessarily integral to the product itself;
30. 'standby mode' means a condition where the product is connected to the mains power source, depends on energy input from the mains power source to work as intended and provides only the following functions, which may persist for an indefinite time: reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or information or status display;
31. 'tube system heat output' means the combined tube segment heat output of the configuration as it is placed on the market, expressed in kW;
32. 'tube segment heat output' means the heat output of a tube segment which together with other tube segments forms part of a configuration of a tube system, expressed in kW;
33. 'radiant factor, at either nominal or minimum heat output' ( $RF_{nom}$  or  $RF_{min}$  respectively) means the ratio of the infrared heat output of the product compared to the total energy input when providing the nominal or minimum heat output, calculated as infrared energy output divided by total energy input on the basis of the net calorific value (NCV) of the fuel when providing the nominal or minimum heat output, expressed in %;

- 34. 'envelope insulation' means the level of thermal insulation of the product envelope or jacket as applied to minimise heat losses if the product is allowed to be placed outdoors;
- 35. 'envelope loss factor' means the thermal losses by that part of the product that is installed outside the enclosed space to be heated and which is determined by the transmittance of the relevant envelope of that part, expressed in %;
- 36. 'model identifier' means the code, usually alphanumeric, which distinguishes a specific local space heater model from other models with the same trade mark or manufacturer's name;
- 37. 'moisture content' means the mass of water in the fuel in relation to the total mass of the fuel as used in the local space heater.

## **ANNEX II**

### **Ecodesign requirements**

#### 1. Specific ecodesign requirements for seasonal space heating energy efficiency

- (a) Local space heaters shall comply with the following requirements from 1 January 2018:
- i) seasonal space heating energy efficiency of open fronted local space heaters using gaseous or liquid fuel shall not be less than 42%;
  - ii) seasonal space heating energy efficiency of closed fronted local space heaters using gaseous or liquid fuel shall not be less than 72%;
  - iii) seasonal space heating energy efficiency of electric portable local space heaters shall not be less than 36%;
  - iv) seasonal space heating energy efficiency of electric fixed local space heaters with a nominal heat output above 250 W shall not be less than 38%;
  - v) seasonal space heating energy efficiency of electric fixed local space heaters with a nominal heat output equal or below 250 W shall not be less than 34%;
  - vi) seasonal space heating energy efficiency of electric storage local space heaters shall not be less than 38.5%;
  - vii) seasonal space heating energy efficiency of electric underfloor local space heaters shall not be less than 38%;
  - viii) seasonal space heating energy efficiency of electric radiant local space heaters shall not be less than 35%;
  - ix) seasonal space heating energy efficiency of electric visibly glowing radiant local space heaters with a nominal heat output above 1.2 kW shall not be less than 35%;
  - x) seasonal space heating energy efficiency of electric visibly glowing radiant local space heaters with a nominal heat output equal or below 1.2 kW shall not be less than 31%;
  - xi) seasonal space heating energy efficiency of luminous local space heaters shall not be less than 85%;
  - xii) seasonal space heating energy efficiency of tube local space heaters shall not be less than 74%.

#### 2. Specific ecodesign requirements for emissions

- (a) From 1 January 2018 emissions of nitrogen oxides (NO<sub>x</sub>) from liquid and gaseous fuel local space heaters shall not exceed the following values:
- i) emissions of NO<sub>x</sub> by open fronted local space heaters and closed fronted local space heaters using gaseous or liquid fuels shall not exceed 130 mg/kWh<sub>input</sub> based on GCV;
  - ii) emissions of NO<sub>x</sub> by luminous local space heaters and tube local space heaters shall not exceed 200 mg/kWh<sub>input</sub> based on GCV.

#### 3. Requirements for product information

- (a) From 1 January 2018 the following product information on local space heaters shall be provided:
  - i) the instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:
    - (1) for gaseous or liquid fuel local space heaters, the information set out in Table 1, with its technical parameters measured and calculated in accordance with Annex III and showing the significant figures indicated in the table;
    - (2) for electric local space heaters, the information set out in Table 2, with its technical parameters measured and calculated in accordance with Annex III and showing the significant figures indicated in the table;
    - (3) for commercial local space heaters, the information set out in Table 3, with its technical parameters measured and calculated in accordance with Annex III and showing the significant figures indicated in the table;
    - (4) any specific precautions that must be taken when the local space heater is assembled, installed or maintained;
    - (5) information relevant to disassembly, recycling and/or disposal at end-of-life.
  - ii) the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:
    - (1) the elements specified in point (a);
    - (2) a list of all equivalent models, if applicable;
- (b) From 1 January 2018 the following product information on local space heaters shall be provided:
  - i) for flueless local space heaters and open to chimney local space heaters only: the instruction manual for end-users, free access websites of manufacturers and the product packaging shall incorporate the following sentence in such a way to ensure clear visibility and legibility and in a language easily understood by the end-users of the Member State where the product is marketed: 'This product is not suitable for primary heating purposes';
    - (1) for the instruction manual for end-users this sentence shall be on the cover page of the manual;
    - (2) for free-access websites of manufacturers this sentence shall be displayed together with the other characteristics of the product;
    - (3) for the product packaging the sentence shall be placed in a prominent position in the packaging when displayed to the end-user prior to purchase.
  - ii) for electric portable local space heaters only: the instruction manual for end-users, free access websites of manufacturers and the product packaging shall incorporate the following sentence in such a way to



ensure clear visibility and legibility and in a language easily understood by the end-users of the Member State where the product is marketed: 'This product is only suitable for well insulated spaces or occasional use.':

- (1) for the instruction manual for end-users this sentence shall be on the cover page of the manual;
- (2) for free-access websites of manufacturers this sentence shall be displayed together with the other characteristics of the product;
- (3) for the product packaging the sentence shall be placed in a prominent position in the packaging when displayed to the end-user prior to purchase.

**Table 1:** Information requirements for gaseous/liquid fuel local space heaters

Model identifier(s):			
Indirect heating functionality:[yes/no]			
Direct heat output: ...(kW)			
Indirect heat output: ...(kW)			
<b>Fuel</b>			Space heating emissions *
			NO <sub>x</sub>
Select fuel type	[gaseous / liquid]	[specify]	[mg/kWh <sub>input</sub> ] (GCV)
<b>Item</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>
<b>Heat output</b>			
Nominal heat output	$P_{nom}$	x,x	kW
Minimum heat output (indicative)	$P_{min}$	[x,x / N.A.]	kW
<b>Auxiliary electricity consumption</b>			
At nominal heat output	$el_{max}$	x,xxx	kW
At minimum heat output	$el_{min}$	x,xxx	kW
In standby mode	$el_{SB}$	x,xxx	kW
<b>Permanent pilot flame power requirement</b>			
Pilot flame power requirement (if applicable)	$P_{pilot}$	[x,xxx / N.A.]	kW
Contact details	Name and address of the manufacturer or its authorised representative.		
* NO <sub>x</sub> = nitrogen oxides			

<b>Item</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>
<b>Useful efficiency (NCV)</b>			
Useful efficiency at nominal heat output	$\eta_{th,nom}$	x,x	%
Useful efficiency at minimum heat output (indicative)	$\eta_{th,min}$	[x,x / N.A.]	%
<b>Type of heat output / room temperature control (select one)</b>			
single stage heat output, no room temperature control			[yes/no]
two or more manual stages, no room temperature control			[yes/no]
with mechanic thermostat room temperature control			[yes/no]
with electronic room temperature control			[yes/no]
with electronic room temperature control plus day timer			[yes/no]
with electronic room temperature control plus week timer			[yes/no]
<b>Other control options (multiple selections possible)</b>			
room temperature control, with presence detection			[yes/no]
room temperature control, with open window detection			[yes/no]
with distance control option			[yes/no]
with adaptive start control			[yes/no]
with working time limitation			[yes/no]
with black bulb sensor			[yes/no]

**Table 2:** Information requirements for electric local space heaters

Model identifier(s):						
Item		Symbol	Value	Unit	Item	Unit
Heat output					Type of heat input, for electric storage local space heaters only (select one)	
Nominal heat output	$P_{nom}$		x,x	kW	manual heat charge control, with integrated thermostat	[yes/no]
Minimum heat output (indicative)	$P_{min}$		[x,x / N.A.]	kW	manual heat charge control with room and/or outdoor temperature feedback	[yes/no]
Maximum continous heat output	$P_{max,c}$		x,x	kW	electronic heat charge control with room and/or outdoor temperature feedback	[yes/no]
Auxiliary electricity consumption					fan assisted heat output	[yes/no]
At nominal heat output	$el_{max}$		x,xxx	kW	Type of heat output / room temperature control (select one)	
At minimum heat output	$el_{min}$		x,xxx	kW	single stage heat output and no room temperature control	[yes/no]
In standby mode	$el_{SB}$		x,xxx	kW	Two or more manual stages, no room temperature control	[yes/no]
					with mechanic thermostat room temperature control	[yes/no]
					with electronic room temperature control	[yes/no]
					electronic room temperature control plus day timer	[yes/no]
					electronic room temperature control plus week timer	[yes/no]
					Other control options (multiple selections possible)	
					room temperature control, with presence detection	[yes/no]
					room temperature control, with open window detection	[yes/no]
					with distance control option	[yes/no]
					with adaptive start control	[yes/no]
					with working time limitation	[yes/no]
					with black bulb sensor	[yes/no]
Contact details		Name and address of the manufacturer or its authorised representative.				

**Table 3:** Information requirements for commercial local space heaters

Model identifier(s):				
Type of heating:[luminous / radiant tube]				
Fuel	Fuel			Space heating emissions *
				NO <sub>x</sub>
Select fuel type	[gaseous / liquid]	[specify]		mg/kWh <sub>input</sub> (GCV)
Characteristics when operating with the preferred fuel only				
Item	Symbol	Value	Unit	Item
<b>Heat output</b>				<b>Useful efficiency (GCV) – tube local space heaters only **</b>
Nominal heat output	$P_{nom}$	[x,x]	kW	Useful efficiency at nominal heat output
Minimum heat output	$P_{min}$	[x,x / N.A.]	kW	Useful efficiency at minimum heat output
Minimum heat output (as percentage of nominal heat output)	..	[x]	%	
Nominal tube system heat output (if applicable)	$P_{system}$	[x,x]	kW	
Nominal tube segment heat output (if applicable)	$P_{heater,i}$	[x,x / N.A.]	kW	Useful efficiency of tube segment at minimum heat output (if applicable)
(repeat for multiple segments, if applicable)	..	[x,x / N.A.]	kW	(repeat for multiple segments, if applicable)
number of identical tube segments	$n$	[x]	[-]	
<b>Radiant factor</b>				<b>Envelope losses</b>
radiant factor at nominal heat output	$RF_{nom}$	[x,x]	[-]	Envelope insulation class
radiant factor at minimum heat output	$RF_{min}$	[x,x]	[-]	Envelope loss factor
radiant factor of tube segment at nominal heat output	$RF_i$	[x,x]	[-]	Heat generator to be installed outside the heated area
(repeat for multiple segments, if applicable)	..			
<b>Auxiliary electricity consumption</b>				<b>Heat output control type (select one)</b>
At nominal heat output	$el_{max}$	[x,xxx]	kW	- single stage
At minimum heat output	$el_{min}$	[x,xxx]	kW	- two stage
In standby mode	$el_{SB}$	[x,xxx]	kW	- modulating
<b>Permanent pilot flame power requirement</b>				
Pilot flame power requirement (if applicable)	$P_{pilot}$	[x,xxx / N.A.]	kW	
Contact details	Name and address of the manufacturer or its authorised representative.			
* NO <sub>x</sub> = nitrogen oxides				
** for luminous local space heaters the weighted thermal efficiency is by default 85.6%				

### **ANNEX III**

#### **Measurements and calculations**

1. For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using harmonised standards the reference numbers of which have been published for this purpose in the *Official Journal of the European Union*, or using other reliable, accurate and reproducible methods that take into account the generally recognised state-of-the-art methods. They shall meet the conditions set out in points 2 to 5.
2. General conditions for measurements and calculations
  - (a) Declared values for nominal heat output and seasonal space heating energy efficiency shall be rounded to the nearest one decimal place.
  - (b) Declared values for emissions shall be rounded to the nearest integer.
3. General conditions for seasonal space heating energy efficiency
  - (a) The seasonal space heating energy efficiency ( $\eta_s$ ) shall be calculated as the seasonal space heating energy efficiency in active mode ( $\eta_{s,on}$ ), corrected by contributions accounting for heat storage and heat output control, auxiliary electricity consumption and permanent pilot flame energy consumption.
  - (b) The consumption of electricity shall be multiplied by a conversion coefficient ( $CC$ ) of 2,5.
4. General conditions for emissions
  - (a) For gaseous and liquid fuel local space heaters the measurement shall take account of emissions of nitrogen oxides ( $NO_x$ ). Emissions of nitrogen oxides shall be calculated as the sum of nitrogen monoxide and nitrogen dioxide, and expressed in nitrogen dioxide.
5. Specific conditions for seasonal space heating energy efficiency
  - (a) The seasonal space heating energy efficiency of all local space heaters except commercial local space heaters is defined as:

$$\eta_s = \eta_{s,on} - 10\% + F(1) + F(2) + F(3) - F(4) - F(5)$$

The seasonal space heating energy efficiency of commercial local space heaters is defined as:

$$\eta_s = \eta_{s,on} - F(1) - F(4) - F(5)$$

Where:

- $\eta_{s,on}$  is the seasonal space heating energy efficiency in active mode, expressed in %, calculated as set out in point 5(b);
- $F(1)$  is a correction factor accounting for a positive contribution to the seasonal space heating energy efficiency of electric storage local space heaters due to adjusted contributions for options for heat storage and output; and a negative contribution to seasonal space heating efficiency for commercial local space heaters due to adjusted contributions for options for the heat output, expressed in %;
- $F(2)$  is a correction factor accounting for a positive contribution to the seasonal space heating energy efficiency due to adjusted contributions of controls of

indoor heating comfort, the values of which are mutually exclusive, cannot be added to each other, expressed in %;

- $F(3)$  is a correction factor accounting for a positive contribution to the seasonal space heating energy efficiency due to adjusted contributions of controls for indoor heating comfort the values of which can be added to each other, expressed in %;
- $F(4)$  is a correction factor accounting for a negative contribution to the seasonal space heating energy efficiency by auxiliary electricity consumption, expressed in %;
- $F(5)$  is a correction factor accounting for a negative contribution to the seasonal space heating energy efficiency by energy consumption of a permanent pilot flame, expressed in %.

(b) The seasonal space heating energy efficiency in active mode is calculated as:

For all local space heaters except electric local space heaters and commercial local space heaters:

$$\eta_{S,on} = \eta_{th,nom}$$

Where:

- $\eta_{th,nom}$  is the useful efficiency at nominal heat output, based on NCV.

For electric local space heaters:

$$\eta_{S,on} = \frac{1}{CC} \cdot \eta_{th,on}$$

Where:

- $CC$  is the electric to primary energy ‘conversion coefficient’.
- $\eta_{th,on}$  for electric local space heaters is 100%.

For commercial local space heaters:

$$\eta_{S,on} = \eta_{S,th} \cdot \eta_{S,RF}$$

Where:

- $\eta_{S,th}$  is the weighted thermal efficiency, expressed in %;
- $\eta_{S,RF}$  is the emission efficiency, expressed in %.

For luminous local space heaters,  $\eta_{S,th}$  is 85.6%;

For tube local space heaters:

$$\eta_{S,th} = (0.15 \cdot \eta_{th,nom} + 0.85 \cdot \eta_{th,min}) - F_{env}$$

Where:

- $\eta_{th,nom}$  is the useful efficiency at nominal heat output, expressed in %, based on GCV;
- $\eta_{th,min}$  is the useful efficiency at minimum heat output, expressed in %, based on GCV.
- $F_{env}$  are the envelope losses of the heat generator, expressed in %;

If the heat generator of the tube local space heater is specified by the manufacturer or by the supplier to be installed in the indoor space to be heated, the envelope losses are 0 (zero).

If the heat generator of the tube local space heater is specified by the manufacturer or by the supplier to be installed outside the heated area, the envelope loss factor depends on the thermal transmittance of the envelope of the heat generator according to Table 4.

**Table 4:** Envelope loss factor of the heat generator

Thermal transmittance of envelope (U)	$F_{env}$
$U \leq 0.5$	2.2%
$0.5 < U \leq 1.0$	2.4%
$1.0 < U \leq 1.4$	3.2%
$1.4 < U \leq 2.0$	3.6%
$U > 2.0$	6.0%

The emission efficiency of commercial local space heaters is calculated as follows:

$$\eta_{S,RF} = \frac{(0.94 \cdot RF_S) + 0.19}{(0.46 \cdot RF_S) + 0.45}$$

Where:

- $RF_S$  is the radiant factor of the commercial local space heater, expressed in %.

For all commercial local space heaters except tube systems:

$$RF_S = 0.15 \cdot RF_{nom} + 0.85 \cdot RF_{min}$$

Where:

- $RF_{nom}$ , is the radiant factor at nominal heat output, expressed in %;
- $RF_{min}$ , is the radiant factor at minimum heat output, expressed in %.

For tube systems:

$$RF_S = \sum_{i=1}^n (0.15 \cdot RF_{nom,i} + 0.85 \cdot RF_{min,i}) \cdot \frac{P_{heater,i}}{P_{system}}$$

Where:

- $RF_{nom,i}$ , is the radiant factor per tube segment at nominal heat output, expressed in %;
- $RF_{min,i}$ , is the radiant factor per tube segment at minimum heat output, expressed in %;
- $P_{heater,i}$ , is the heat output per tube segment, expressed in kW, based on GCV;
- $P_{system}$ , is the heat output of the complete tube system, expressed in kW, based on GCV.

The above equation only applies if the construction of the burner, tubes and reflectors of the tube segment as applied in the tube system is identical to a single tube local space heater and the settings that determine the performance of a the tube segment are identical to those of a single tube local space heater.

- (c) The correction factor  $F(1)$  accounting for a positive contribution to the seasonal space heating efficiency due to adjusted contributions of controls for heat input and output and if the heat is distributed through natural or fan assisted convection for electric storage local space heaters and a negative contribution for commercial local space heaters related to the capability of the product of regulating its heat output.

For electric storage local space heaters the heat output correction factor  $F(1)$  is calculated as follows:

In case the product is equipped with one of the (mutually exclusive) options shown in table 5, the correction factor  $F(1)$  shall be increased with the corresponding value of that option.

**Table 5:** Correction factor  $F(1)$  for electric storage local space heaters

If the product is equipped with (only one option may apply):	$F(1)$ is increased by
manual heat charge control, with integrated thermostat	0.0%
manual heat charge control with room and/or outdoor temperature feedback	2.0%
electronic heat charge control with room and/or outdoor temperature feedback or controlled by energy supplier	3.5%

In case the heat output of the electric storage local space heater is assisted by a fan, an additional 1.5% shall be added to  $F(1)$ .

For commercial local space heaters the heat output correction factor is calculated as follows:

**Table 6:** Correction factor  $F(1)$  for commercial local space heaters

If the heat output control type of the products is:	$F(1)$ is calculated as:
single stage	$F(1) = 5\%$
two stage	$F(1) = 5\% - (2.5\% \cdot \frac{P_{nom} - P_{min}}{30\% \cdot P_{nom}})$
modulating	$F(1) = 5\% - (5.0\% \cdot \frac{P_{nom} - P_{min}}{40\% \cdot P_{nom}})$

The minimum value of the correction factor  $F(1)$  for two stage commercial local space heaters is 2.5%, and for modulating commercial local space heaters is 5%.

For local space heaters not being electric storage heaters or commercial local space heaters the correction factor  $F(1)$  shall be 0 (zero).

- (d) The correction factor  $F(2)$  accounting for a positive contribution to the seasonal space heating efficiency due to adjusted contributions of controls for indoor heating comfort, the values of which are mutually exclusive or cannot be added to each other, is calculated as follows:



For all local space heaters the correction factor  $F(2)$  is equal to one of the factors according to Table 7, depending on which control characteristic applies. Only one value can be selected.

**Table 7:** Correction factor  $F(2)$

If the product is equipped with (only one option may apply):	<b>F(2)</b>					
	for electric local space heaters					for local space heaters using gaseous or liquid fuels
	Portable	Fixed	Storage	Underfloor	Radiant	
single stage heat output, no room temperature control	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
two or more manual stages, no temperature control	1.0%	0.0%	0.0%	0.0%	2.0%	1.0%
with mechanic thermostat room temperature control	6.0%	1.0%	0.5%	1.0%	1.0%	2.0%
with electronic room temperature control	7.0%	3.0%	1.5%	3.0%	2.0%	4.0%
with electronic room temperature control plus day timer	8.0%	5.0%	2.5%	5.0%	3.0%	6.0%
with electronic room temperature control plus week timer	9.0%	7.0%	3.5%	7.0%	4.0%	7.0%

The  $F(2)$  correction factor does not apply to commercial local space heaters.

- (e) The correction factor  $F(3)$  accounting for a positive contribution to the seasonal space heating efficiency due to adjusted contributions of controls for indoor heating comfort, the values of which can be added to each other, is calculated as follows:

For all local space heaters the correction factor  $F(3)$  is the summation of the values according to Table 8, depending on which control characteristic(s) applies.

**Table 8:** Correction factor  $F(3)$

If the product is equipped with (multiple options may apply):	<b>F(3)</b>					
	for electric local space heaters					for local space heaters using gaseous or liquid fuels
	Portable	Fixed	Storage	Underfloor	Radiant	
room temperature control with presence detection	1.0%	0.0%	0.0%	0.0%	2.0%	1.0%
room temperature control with open window detection	0.0%	1.0%	0.5%	1.0%	1.0%	1.0%
with distance control option	0.0%	1.0%	0.5%	1.0%	1.0%	1.0%

with adaptive start control	0.0%	1.0%	0.5%	1.0%	0.0%	0.0%
with working time limitation	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%
with black bulb sensor	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%

(f) The auxiliary electricity use correction factor  $F(4)$  is calculated as:

This correction factor takes into account the auxiliary electricity use during on-mode and standby-mode operation.

For electric local space heaters the correction is calculated as follows:

The auxiliary electricity use correction factor  $F(4)$  is calculated as:

$$F(4) = CC \cdot \frac{\alpha \cdot el_{sb}}{P_{nom}} \cdot 100[\%]$$

Where:

- $el_{sb}$  is the standby electric power consumption, expressed in kW;
- $P_{nom}$  is the nominal heat output of the product, expressed in kW;
- $\alpha$  is a factor taking into account whether the product complies with Regulation 1275/2008 on implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment<sup>4</sup>;
  - If the product complies with the limit values set in Regulation 1275/2008,  $\alpha$  is by default 0 (zero);
  - If the product does not comply with the limit values set in Regulation 1275/2008,  $\alpha$  is by default 1.3.

For local space heaters using gaseous or liquid fuels the auxiliary electricity use correction is calculated as follows:

$$F(4) = CC \cdot \frac{0.2 \cdot el_{max} + 0.8 \cdot el_{min} + 1.3 \cdot el_{sb}}{P_{nom}} \cdot 100[\%]$$

Where:

- $el_{max}$  is the electric power consumption at nominal heat output, expressed in kW;
- $el_{min}$  is the electric power consumption at minimum heat output, expressed in kW. In case the product does not offer a minimum heat output the value for the electric power consumption at nominal heat output shall be used;
- $el_{sb}$  is the electric power consumption of the product while in standby mode, expressed in kW;
- $P_{nom}$  is the nominal heat output of the product, expressed in kW.

For commercial local space heaters the auxiliary electricity use correction factor is calculated as follows:

<sup>4</sup> OJ L 339, 18.12.2008, p. 45.

$$F(4) = CC \cdot \frac{0.15 \cdot el_{max} + 0.85 \cdot el_{min} + 1.3 \cdot el_{sb}}{P_{nom}} \cdot 100[\%]$$

- (g) The correction factor  $F(5)$  related to the energy consumption of a permanent pilot flame is calculated as follows:

This correction factor takes into account the permanent pilot flame power requirement.

For local space heaters using gaseous or liquid fuels it is calculated as:

$$F(5) = 0.5 \cdot \frac{P_{pilot}}{P_{nom}} \cdot 100[\%]$$

Where:

- $P_{pilot}$  is the pilot flame consumption, expressed in kW;
- $P_{nom}$  is the nominal heat output of the product, expressed in kW.

For commercial local space heaters the correction factor is calculated as:

$$F(5) = 4 \cdot \frac{P_{pilot}}{P_{nom}} \cdot 100[\%]$$

In case the product has no permanent pilot light (flame)  $P_{pilot}$  is 0 (zero).

Where:

- $P_{pilot}$  is the pilot flame consumption, expressed in kW;
- $P_{nom}$  is the nominal heat output of the product, expressed in kW.

**ANNEX IV**  
**Verification procedure for market surveillance purposes**

When performing the market surveillance checks referred to in Article 3(2) of Directive 2009/125/EC, the authorities of the Member States shall apply the following verification procedure for the requirements set out in Annex II:

4. The Member State authorities shall test one single unit per model.
5. The model shall be considered to comply with the applicable requirements set out in Annex II to this Regulation if:
  - (a) the declared values comply with the requirements set out in Annex II;
  - (b) for electric local space heaters, the seasonal space heating energy efficiency  $\eta_s$  cannot be worse than the declared value at the nominal heat output of the unit;
  - (c) for liquid fuel domestic local space heaters, the seasonal space heating energy efficiency  $\eta_s$  is not more than 8% lower than the declared value;
  - (d) for gaseous fuel domestic local space heaters, the seasonal space heating energy efficiency  $\eta_s$  is not more than 8% lower than the declared value;
  - (e) for gaseous and liquid fuel domestic local space heaters the emissions of  $\text{NO}_x$  are not more than 10% higher than the declared value;
  - (f) for luminous local space heaters and tube local space heaters the seasonal space heating energy efficiency is not more than 10% lower than the declared value;
  - (g) for luminous local space heaters and tube local space heaters the emissions of  $\text{NO}_x$  are not more than 10% higher than the declared value.
6. If the result referred to in point 2(a) or 2(b) is not achieved, the model and all equivalent models shall be considered not to comply with this Regulation. If any of the results referred to in points from 2(c) to 2(i) is not achieved, the Member State authorities shall randomly select three additional units of the same model for testing. As alternative, the three additional units selected may be of one or more equivalent models which have been listed as equivalent product in the manufacturer's technical documentation.
7. The model shall be considered to comply with the applicable requirements set out in Annex II to this Regulation if:
  - (a) the declared values comply with the requirements set out in Annex II;
  - (b) for liquid fuel domestic local space heaters, the average seasonal space heating energy efficiency  $\eta_s$  for the three additional units is not more than 8% lower than the declared value;
  - (c) for gaseous fuel domestic local space heaters, the average seasonal space heating energy efficiency  $\eta_s$  for the three additional units is not more than 8% lower than the declared value;
  - (d) for gaseous and liquid fuel domestic local space heaters, the average emissions of  $\text{NO}_x$  of the three additional units are not more than 10% higher than the declared value;
  - (e) for luminous local space heaters and tube local space heaters the average seasonal space heating energy efficiency of the three additional units is not more than 10% lower than the declared value;

- (f) for luminous local space heaters and tube local space heaters the average emissions of NO<sub>x</sub> of the three additional units are not more than 10% higher than the declared value.

- 8. If the results referred to in point 4 are not achieved, the model shall be considered not to comply with this Regulation.

The Member State authorities shall provide the test results and other relevant information to the authorities of the other Member States and to the Commission within one month of the decision being taken on the non-compliance of the model.

- 9. Member State authorities shall use the measurement and calculation methods set out in Annex III.

The verification tolerances defined in this Annex relate only to the verification of the measured parameters by Member State authorities and shall not be used by the supplier as an allowed tolerance to establish the values in the technical documentation.

**ANNEX V**  
**Indicative benchmarks referred to in Article 6**

At the time of entry into force of this Regulation, the best available technology on the market for local space heaters in terms of seasonal space heating energy efficiency and emissions of nitrogen oxides was identified as follows:

1. Specific benchmarks for seasonal space heating energy efficiency of local space heaters
  - (a) benchmark for seasonal space heating energy efficiency of open fronted local space heaters using gaseous or liquid fuel: 65%;
  - (b) benchmark for seasonal space heating energy efficiency of closed fronted local space heaters using gaseous or liquid fuel: 88%;
  - (c) benchmark for seasonal space heating energy efficiency of electric local space heaters: more than 39%;
  - (d) benchmark for seasonal space heating energy efficiency of luminous local space heaters: 92%;
  - (e) benchmark for seasonal space heating energy efficiency of tube local space heaters: 88%;
2. Specific benchmarks for emissions of nitrogen oxides (NO<sub>x</sub>) by local space heaters
  - (a) benchmark for emissions of NO<sub>x</sub> by local space heaters using gaseous or liquid fuel: 50 mg/kWh<sub>input</sub> based on GCV;
  - (b) benchmark for emissions of NO<sub>x</sub> by luminous local space heaters and tube local space heaters: 50 mg/kWh<sub>input</sub> based on GCV.

The benchmarks specified in the points 1 and 2 do not necessarily imply that a combination of those values is achievable for a single local space heater.