(EU) 2024/1103
Eco-design requirements for local space heaters

Report Reference No:	WST25C070232-1SR
Tested by (+ signature):	Jeson Fu
Approved by (+ signature):	Michael Ling
Date of issue 2025-03-XX	Number of pages 11
Testing Laboratory name:	SHENZHEN WST TESTING CO., LTD.
Address:	87 Guangshen Road, Baocheng 11st Zone, Xin'an Street, Bao'an, Shenzhen, Guangdong
Applicant's name:	CIXI MAX ELECTRIC APPLIANCE CO.,LTD
Address:	NO.411 XINSHEGNDONG ROAD,XINPU TOWN,CIXI,NINGBO,CHINA
Test item description:	--
Test object:	Quartz Heater
Model/Type reference:	RH01, RH02, RH03, RH04, RH05, RH06, RH07, RH08, RH09, RH10, RH11, RH12, RH13, RH14, RH15, RH17, RH18, RH19, RH20
Input range supply voltage / frequency:	220-240V~, 50-60Hz, 1200W, Class I
Manufacturer:	CIXI MAX ELECTRIC APPLIANCE CO.,LTD
Address:	NO.411 XINSHEGNDONG ROAD,XINPU TOWN,CIXI,NINGBO,CHINA
Test specification:	
Test procedures:	☒ COMMISSION REGULATION (EU) 2024/1103 implementing Directive 2009/125/EC of the European Parliament and of the Council as regards ecodesign requirements for local space heaters and separate related controls and repealing Commission Regulation (EU) 2015/1188 ☒ 2024/90295 Corrigendum Commission Regulation (EU) 2024/1103 of 18 April 2024implementing Directive 2009/125/EC of the European Parliament and of the Council as regards ecodesign requirements for local space heaters and separate related controls and repealing Commission Regulation (EU) 2015/1188
Test result:	The measured data is less than the limit according 'Ecodesign requirements' of Annex II of the regulation (details see page 11 table 3 Requirements)

Testing:.....	Quartz Heater
Login No. of sample:	4
Date of receipt of test item:	2025-03-05
Date of tests:	2023-03-05

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Possible test case verdicts:	
- Test object does meet the requirement:	P (Pass)
- Test case does not apply to the test object:	N.A (Not applicable)
- Test object does not meet the requirement:	F (Fail)
- Test object does not demand	N.D (Not demanded)

General remarks:

"(See remark #)" refers to a remark appended to the report.

Throughout this report a comma is used as the decimal separator.

The test results presented in this report relate only to the object tested.

This report also refers below regulations and standards:

- ☒ EN 50564:2011
- ☒ EN 60675:1995+A1:1998 +A2:2018+A11:2019
- ☐ EN 60531:2000+A11:2019
- ☐ EN 15500-1:2017

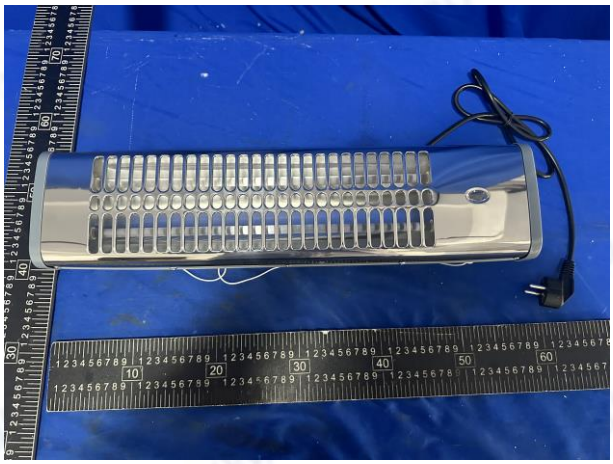
Note:

1.The information requirement is not evaluated in this report.

2.According to the regulation, the product information requirements from 1 July 2025, shall be given to a instruction manuals for installers and users, and free access websites of manufacturers, their authorised representatives and importers and the product packing.

3. The information requirements of appended table with suggested value is just for reference, the value in table should be claimed by manufacturer.

1. Pictures of samples and rating label

Pictures of the samples	
	

2. Description of the test subject

Sample information	
Name of product ……..:	Quartz Heater
Wall-mounted heater.....……:	No
Portable heater……:	Yes
Rated voltage ……..……..:	220-240V~
Rated input power……..…..…..:	Refer to page 1
Functions description	
Single stage heat output, no room temperature control……....:	Yes
Two or more manual stages, no temperature control……:	No
With mechanic thermostat room temperature control……:	No
With electronic room temperature control……:	No
With electronic room temperature control plus day timer…..……:	No
With electronic room temperature control plus week timer……...:	No
Other functions	
Room temperature control with presence detection……...:	No
Room temperature control with open window detection……:	No
With distance control option function……..…..:	No
With adaptive start control function……..……..:	No
With working time limitation……:	No
With Black bulb sensor……....:	No
With self-learning functionality……..……..:	No
Control accuracy……..……..……..:	No

Tested items are Quartz Heater. All models tested as one family, the construction and electric parts.

3. Requirements

3.1 Requirements for seasonal space heating energy efficiency:

3.1.1

Seasonal space heating energy efficiency (η_s) of	Measure	Requirement	Verdict
open fronted local space heaters and open to chimney local space heaters	--	⩾40,3%	NA
closed fronted open combustion local space heaters	--	⩾63,6%	NA
balanced flue local space heaters	--	⩾63,6%	NA
electric portable local space heaters	--	⩾44,7%	NA
electric fixed local space heaters with a nominal heat output above 250 W, except towel rails	--	⩾47,5%	NA
electric fixed local space heaters with a nominal heat output equal or below 250 W, except towel rails,	--	⩾43,1%	NA
electric storage local space heaters	--	⩾47,3%	NA
electric underfloor local space heaters	--	⩾47,5%	NA
electric visibly glowing radiant local space heaters with a nominal heat output above 1,2 kW, except electric visibly glowing radiant portable local space heaters	--	⩾46,8%	NA
electric visibly glowing radiant local space heaters with a nominal heat output equal or below 1,2 kW, except electric visibly glowing radiant portable local space heaters	--	⩾40,5%	NA
electric visibly glowing radiant portable local space heaters	39,5%	⩾39,5%	P
luminous local space heaters	--	⩾90,0%	NA
tube local space heaters	--	⩾80,0%	NA
towel rails with a nominal heat output above 250 W	--	⩾46,0%	NA
towel rails with a nominal heat output above 60 W and equal or below 250 W	--	⩾42,1%	NA

3.1.2:

Requirements	Remark	Verdict
Electric storage local space heaters shall be equipped with electronic heat charge control with room and/or outdoor temperature feedback and fan assisted heat output	--	NA
Towel rails with a nominal heat output equal or below 60 W shall only be operable through a working time limitation with a maximum pre-set period of time no longer than 6 hours	--	NA
Electric local space heaters placed on the market without control shall not be able to provide heat output without control	--	NA

3.2 Requirements for emissions (for liquid and gaseous fuel local space heaters):

Emissions of nitrogen oxides (*NOx*) by	Measure	Requirement	Verdict
Open fronted local space heaters, open to chimney local space heaters, closed fronted open combustion local space heaters, balanced flue local space heaters and flueless local space heaters	--	120 mg/kWh$_{input}$	NA
Luminous local space heaters and tube local space heaters	--	180 mg/kWh$_{input}$	NA

3.3 Requirements for low power modes:

	Measure	Requirement	Verdict
Off mode	0 W	0,50 W	P
Off mode (from 2027-05-09)	--	0,30 W	NA
Standby mode With only reactivation function OR only reactivation function + mere indication of enabled reactivation function	--	0,50 W	NA
Standby mode With only information or status display OR only information or status display + reactivation function	--	1,00 W	NA
Networked standby	--	2,00 W	NA
Networked standby the communication between the heat generator and the control is wireless or through powerline carrier	--	3,00 W	NA
Idle mode	--	1,00 W	NA
Idle mode the idle mode depends on the input from a network connection to automatically provide heat to the room	--	3,00 W	NA
Supplementary information:			

Requirements	Remark	Verdict
If the standby mode includes the display of information or status, this function shall also be provided when the networked standby is provided.	--	NA

4 Evaluation

4.1 Calculation of seasonal space heating energy efficiency:

The seasonal space heating energy efficiency of local space heaters is defined as:		—
for gaseous fuel local space heaters and liquid fuel local space heaters, except commercial local space heaters	$\eta_S = \eta_{S,on}$ $= \eta_{th;nom} \cdot (0,75 + F(2) + F(3)) \cdot F(4) \cdot F(5)$	N/A
for electric local space heaters	$\eta_{S,on} = \eta_{th;nom} \cdot (0,75 + F(2) + F(3)) \cdot F(4) \cdot F(5) = 75,0\%$ $\eta_S = \eta_{S,on} / CC = 39,5\%$ $F(2): 0$ $F(3): 0$ $F(4): 1$ $F(5): 1$ $\eta_{th;nom} = 100\%$ $CC = 1,9$	P
for commercial local space heaters	$\eta_S = \eta_{S,on} - F(1) - F(4) - F(5)$ $\eta_{S,on\ (\%)} = \eta_{S,th} \cdot \eta_{S,RF} / 100$ $F(1):$ $F(4):$ $F(5):$	N/A
a..For luminous local space heaters:	$\eta_{S,th} = 85,6\ \%$	N/A
b..For tube local space heaters:	$\eta_{S,th} = (0,15 \cdot \eta_{th,nom} + 0,85 \cdot \eta_{th,min}) - F_{env}$	NA
thermal efficiency at nominal heat output (%)	$\eta_{th,nom:}$	NA
thermal efficiency at minimum heat output (%)	$\eta_{th,min:}$	NA
envelope losses of the heat generator (%)	F_{env} :see below table	NA
c..For commercial local space heaters	$\eta_{S,RF} = \frac{(0,94 \cdot RF_S) + 0,19}{(0,46 \cdot RF_S) + 0,45} =$	NA
- For all commercial local space heaters except tube systems	$RF_S = 0,15 \cdot RF_{nom} + 0,85 \cdot RF_{min} =$	NA
radiant factor at nominal heat output (%)	$RF_{nom:}$	NA
radiant factor at minimum heat output (%)	$RF_{min:}$	NA
- For tube systems	$RF_S(\%) = \sum_{i=1}^{n} (0,15 \cdot RF_{nom,i} + 0,85 \cdot RF_{min,i}) \cdot \frac{P_{heater,i}}{P_{system}}$	NA
radiant factor per tube segment at nominal heat output (%)	$RF_{nom,i,:}$	NA
radiant factor per tube segment at minimum heat output (%)	$RF_{min,I:}$	NA
heat output per tube segment (kW)	$P_{heater,I:}$	NA
heat output of the complete tube system (kW)	$P_{system:}$	NA

Thermal transmittance of envelope (U)	F_{env}	—
U ⩽ 0,5	2,2 %	NA
0,5 < U ⩽ 1,0	2,4 %	NA
1,0 < U ⩽ 1,4	3,2 %	NA
1,4 < U ⩽ 2,0	3,6 %	NA
U > 2,0	6,0 %	NA

4.2 Correction factor F(1)- F(5)

4.2.1: Correction factor F(1) for commercial local space heaters:

If the heat output control type of the products is:	F(1) [%]	With the following limits	Verdict
Single stage	*F* (1) = 5		NA
Two stage	$F(1) = 5 - \left(2,5 \cdot \frac{P_{nom} - P_{min}}{0,3 \cdot P_{nom}}\right)$	$2,5\% \leq F(1) \leq 5,0\%$	NA
Modulating	$F(1) = 5 - \left(5,0 \cdot \frac{P_{nom} - P_{min}}{0,4 \cdot P_{nom}}\right)$	$0\% \leq F(1) \leq 5,0\%$	NA

4.2.2 Correction factor F(2):

If the product is equipped with (only one option may apply):	F(2)							Verdict
	for electric local space heaters						for gaseous and liquid fuel local space heaters	
	Portable	Fixed	Storage	Underfloor	Visibly glowing radiant	Towels rails		
Single stage heat output, no room temperature control	0	0	0	0	**0**	0	0	P
Two or more manual stages, no temperature control	0,025	0	0	0	0,050	0,030	0,025	NA
With mechanic thermostat room temperature control	0,100	0,025	0,025	0,025	0,025	0,030	0,050	NA
With electronic room temperature control	0,160	0,050	0,050	0,050	0,080	0,030	0,100	NA
With electronic room temperature control plus day timer	0,170	0,095	0,095	0,095	0,100	0,095	0,125	NA
With electronic room temperature control plus week timer	0,190	0,150	0,150	0,150	0,120	0,150	0,150	NA

4.2.3 Correction factor F(3):

If the product is equipped with (multiple options may apply):	F(3)							Verdict
	for electric local space heaters						for gaseous and liquid fuel local space heaters	
	Portable	Fixed	Storage	Underfloor	Visibly glowing radiant	Towels rails		
Room temperature control with presence detection	0,005	0	0	0	0,040	0	0,025	NA
Room temperature control with open window detection	0,005	0,020	0,020	0,020	0,020	0,020	0,025	NA
With distance control option	0	0,020	0,020	0,020	0	0	0,025	NA
With adaptive start control	0,005	0,020	0,020	0,020	0	0,020	0	NA
With working time limitation	0,005	0	0	0	0,020	0,020	0	NA
With black bulb sensor	0	0	0	0	0,040	0	0	NA
With self-learning functionality	0	0,020	0,020	0,020	0,010	0,020	0,0125	NA
Control accuracy with CA < 2 Kelvin and CSD < 2 Kelvin	0,020	0,020	0,020	0,020	0	0,020	0,0125	NA

4.2.4 Correction factor F(4):

Gaseous and liquid fuel local space heaters except commercial local space heaters	$F(4) = \frac{1}{1 + \left(CC \frac{0,2 \cdot el_{max} \; 0,8 \cdot el_{min}}{P_{nom}} \right)}$	NA
electric power consumption at nominal heat output (kW)	el_{max}:	NA
electric power consumption at minimum heat output (kW)	el_{min}:	NA
nominal heat output (kW)	P_{nom} :	NA
Commercial local space heaters	$F(4)[\%] = CC \cdot \frac{0,15 \cdot el_{max} + 0,85 \cdot el_{min}}{P_{nom}} \cdot 100$	NA
electric power consumption at nominal heat output (kW)	el_{max}:	NA
electric power consumption at minimum heat output (kW)	el_{min}:	NA
nominal heat output (kW)	P_{nom} :	NA
Electric local space heaters	$F(4) = 1$	P

4.2.5 Correction factor F(5):

Gaseous and liquid fuel local space heaters except commercial local space heaters	$F(5) = \frac{1}{1 + \left(0,5 \frac{P_{pilot}}{P_{nom}} \right)}$	NA
pilot flame consumption (kW)	P_{pilot}:	NA
nominal heat output (kW)	P_{nom} :	NA
Commercial local space heaters	$F(5)[\%] = 4 \cdot \frac{P_{pilot}}{P_{nom}} \cdot 100$	NA
pilot flame consumption (kW)	P_{pilot}:	NA
nominal heat output (kW)	P_{nom} :	NA
In case the product has no permanent poilot light (flame) P_{pilot} is 0 (Zero)	$P_{pilot} = 0$	NA
Electric local space heaters	$F(5) = 1$	P

4.3 Correction Heat output evaluation

TABLE 1:	**heat output**	
No.	P measured (kW)	Note
RH01, RH02, RH03, RH04, RH05, RH06, RH07, RH08, RH09, RH10, RH11, RH12, RH13, RH14, RH15, RH17, RH18, RH19, RH20	1,2	P_{nom}
	0,6	P_{min}
	1,2	$P_{max,c}$

5. Information requirements of Table 3

Table 3: Information requirements for electric local space heaters

Contact details :	*Name and address of the manufacturer or its authorised representative.*

Model identifier(s): RH01, RH02, RH03, RH04, RH05, RH06, RH07, RH08, RH09, RH10, RH11, RH12, RH13, RH14, RH15, RH17, RH18, RH19, RH20

Item	Symbol	Value	unit
Heat output			
Nominal heat output	P_{nom}	1,2	kW
Minimum heat output (indicative)	P_{min}	0,6	kW
Maximum continuous heat output	$P_{max,c}$	1,2	kW
Power consumption			
In off mode	P_o	0	W
In standby mode	P_{sm}	NA	W
In idle mode	P_{idle}	NA	W
In network standby	P_{nsm}	NA	W
Standby mode with display of information or status		no	
Seasonal space heating energy efficiency in active mode	$\eta_{s,on}$	75,0	%

Item	unit
Type of heat output/room temperature control (select one)	
single stage heat output and no room temperature control	[yes]
Two or more manual stages, no room temperature control	[no]
with mechanic thermostat room temperature control	[no]
with electronic room temperature control	[no]
electronic room temperature control plus day timer	[no]
electronic room temperature control plus week timer	[no]
Other control options (multiple selections possible)	
room temperature control, with presence detection	[no]
room temperature control, with open window detection	[no]
distance control option	[no]
adaptive start control	[no]
working time limitation	[no]
black bulb sensor	[no]
self-learning functionality	[no]
Control accuracy	[no]