

Prüfbericht - Nr.: 1140009024 001		Seite 1 von 11 Page 1 of 11	
<i>Test Report No.:</i>			
Gegenstand der Prüfung: <i>Test item:</i> Ethanol Fireplace burner			
Bezeichnung: <i>Identification:</i>		Burner-1.SL Burner-3L	Serien-Nr.: N/A <i>Serial No.:</i>
Wareneingangs-Nr.: <i>Receipt No.:</i>		A000020250-001 A000020250-002	Eingangsdatum: 12.08.2013 <i>Date of receipt:</i>
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i>		The samples received with fine condition.	
Prüfört: <i>Testing location:</i>		TOV Rheinland (China) Ltd. Zhongshan Branch Company 1F,Pearl River Delta Household Electrical Center, Nantou Rd, Nantou Town, Zhongshan City, Guangdong province, P.R.China	
Prüfgrundlage: <i>Test specification:</i>		DIN EN 4734-1 :2011 Fireplaces for liquid fuels- Decorative appliances producing a flame using ethanol based or gelatinous fuel . Part 1: Use in private households	
Prüfergebnis: <i>Test Result:</i>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test item passed the test specification(s).</i>	
Prüflaboratorium: <i>Testing Laboratory:</i>		TOV Rheinland (China) Ltd. Zhongshan Branch Company	
geprüft/ tested by		kontrolliert/ reviewed by:	
23.10.2013	Matt Shen Nicole Luo	23.10.2013	Dine Wang
<i>Datum</i> <i>Date</i>	<i>Name/Stellung</i> <i>Name/Position</i>	<i>Datum</i> <i>Date</i>	<i>Name/Stellung</i> <i>Name/Position</i>
	<i>Unterschrift</i> <i>Signature</i>		<i>Unterschrift</i> <i>Signature</i>
Sonstiges/ Other Aspects: N/A			
Abkürzungen:		Abbreviations:	
P(ass)	• entspricht Prüfgrundlage	P(ass)	= passed
F(a1)	• entspricht nicht Prüfgrundlage	F(a1)	• fail
NIA	• nicht anwendbar	NIA	= not applicable
NIT	• nicht getestet	NIT	• not tested
<p>Oieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Oieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p> <p><i>This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i></p>			

1 Indication of measuring equipment

Equipment	Serial No.	Next callbration date
AND-GP-30K Balance	1.314	2014-08-04
JS 608 stop watch	1.307A	2014-03-21
Steel Ruler	1.32	2014-4-26
Flue analyser	1.316	2014-08-06
Flue hood	3.123	-
Hybrid recorder	1.007	2014-08-04
Barometrie pressure meter	1.301	2014-03-14
Digmatic caliber	1.102C	2014-08-11
Humidity and temperature meter	1.30A	2014-04-11

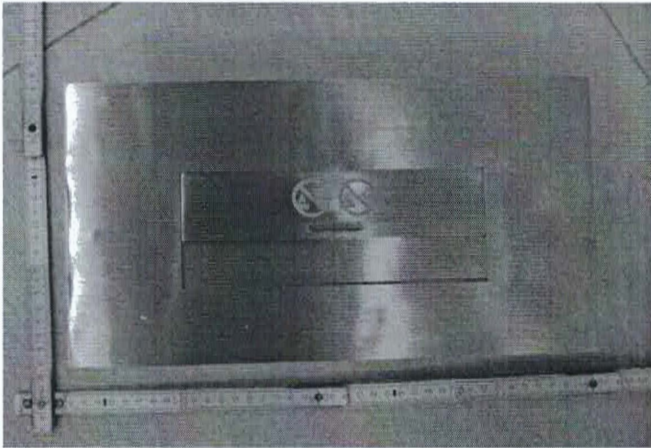
2 Product description

The tested product was decoration fireplace, which is not intended to use as a heater and to use continually.

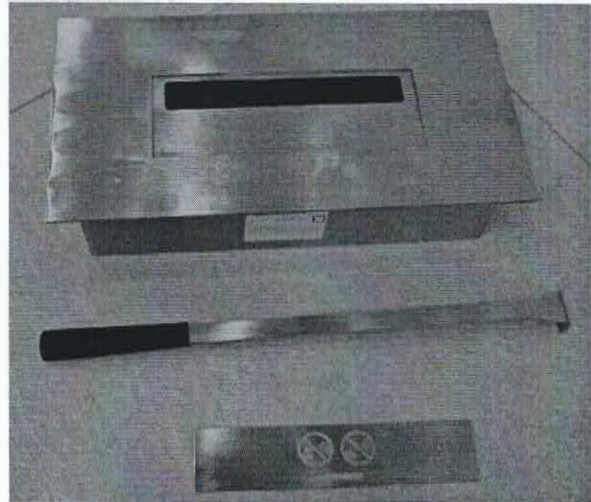
Technical details:

Model	Burner-1.5L
Size	Length:30cm , width:12.5cm , height: 8.2cm
Rabbit size	Length: 18cm , width:2.5cm
Weight	2.4kg
Construction and colour	The body of the burner made of steel, the colour is metal
Intended fuel	Bio ethanol according to manufacturer instructions.
Maximum fuel capacity	1.5L (1215g , if $\rho=0.81\text{g/cm}^3$)
Consumption rate	About 0.273U/h
Combustion power	About 1.84kW/h
Burn-in time	About 5.5 hours
Suggested minimum room	64m ³

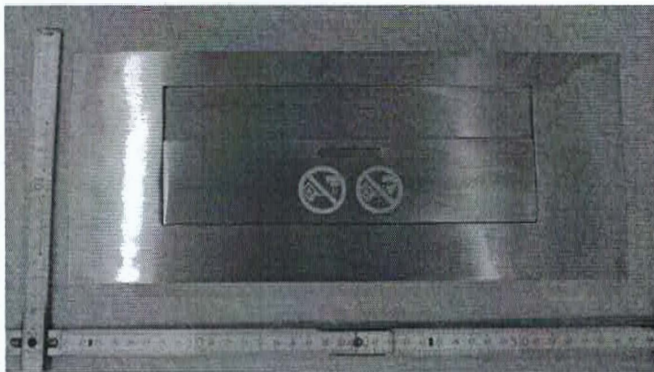
Model	Burner-3L
Size	Length:35cm , width: 18.5cm , height: 8.2cm
Rabbit size	Length:25cm , width:2.5cm
Weight	4kg
Construction and colour	The body of the burner made of steel, the colour is metal
Intended fuel	Bio ethanol according to manufacturer instructions.
Maximum fuel capacity	3L (2430g , if $\rho=0.81\text{g/cm}^3$)
Consumption rate	About 0.395U/h
Combustion power	About 2.67kW/h
Burn-in time	About 7.6 hours
Suggested minimum room	80 m ³



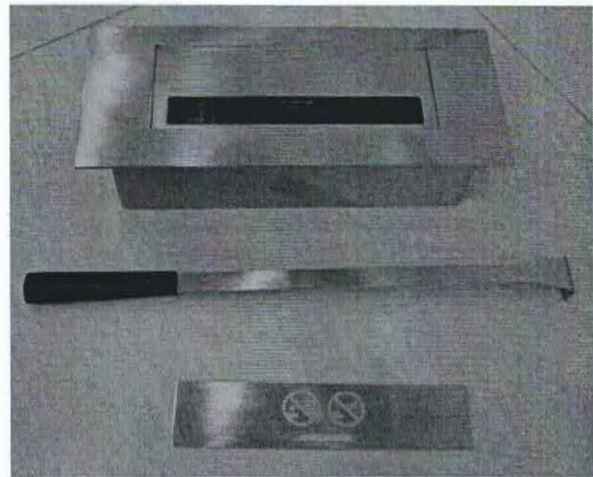
1. Picture of Burner-3L



2. Picture for parts of Burner-3L



3. Picture of Burner-1.SL



4. Picture for parts of Burner-1.5L

Picture for tested fireplace burner


3. Test requirements

Partly of DIN EN 4734-1:2011			
4	Construction		
4.1	<p>General</p> <p>The equipment must be designed so that</p> <ul style="list-style-type: none"> • after tests no visible deformation or other damage; • it withstands the stresses arising during normal use; • it can be operated safely. <p>The use of decorative elements such as wood imitations, gravel in the flame zone of the device is not allowed.</p>	<p>Fulfill all the requirements.</p> <p>The appliance do not have any decorative elements.</p>	p
4.1.1	<p>Fuel Capacity</p> <p>The maximum possible amount of fuel that might be held by the fuel tank may not exceed 3 litres.</p> <p>At table appliances the maximum possible amount of fuel that might be held by the fuel tank may not exceed 0.5 litres.</p>	<p>The maximum possible amount of fuel for the Burner-1.5L is 1.5 liters</p> <p>The maximum possible amount of fuel for the Burner-3L is 3 liters.</p> <p>It is not a table appliance.</p> <p>The manufacturer dictate that the fireplace must only be installed on a solid wall of non-flammable material. in the User manual.</p>	p
4.1.2	<p>Construction</p> <p>The appliance must have an easily operated locking device (which leads to the extinction of the flame). This device must also under operation - in case of way as auxiliary - to serve the safety.</p> <p>Besides this the construction design must ensure that,</p> <ul style="list-style-type: none"> • replaceable parts or parts for assembly on site not possible to configured incorrectly; • welding seams on the fuel tank which are subjected in normal operation with fuel are be continuous; • any parts of the appliance for use and/ or maintenance is not indicated, than it cannot cause a risk of injury by sharp edges to the user. 	<p>The appliance subjoin a cover above the fuel tank as a suitable extinction device.</p> <p>The construction also fulfill all requirements.</p>	p

Partly of DIN EN 4734-1:2011

<p>4.1.3</p>	<p>Materials</p> <p>The quality of the basic materials like the form and the dimensioning of the components must ensure, that the appliance by proper use and from that related mechanical, chemical and thermic stress remain durable safety and proportionately keep its functionality.</p> <p>Corrosion is here an especially aspect, because of inert material due to the ethanol it must be taken in to consideration. At the use of precious metals the acceptable quality is 1.4301 or higher to fill the requirement of reliability.</p> <p>If filler is used at the burner it must be assurance the specific attribution. Especially for durability and behaviour at thermic stress, even in contact with fuel and burning shall endure.</p> <p>The burner and every component, which might reach temperatures of 65 K + room temperature must consist of non-flammable materials.</p>	<p>The quality of the materials fulfill all the requirements.</p> <p>The manufacturer declared the quality of the used materials of the burner is 1.4301. The declaration could be found in the test file.</p> <p>The burner and all parts of the appliance which intend to high temperature made of nonflammable materials.</p>	<p>p</p>
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Partly of DIN EN 4734-1:2011

<p>4.4</p>	<p>Fuel Tank</p> <p>The fuel tank is sealed and not allowed to observe any sign of leakage of the fuel during 24 h if the fuel tank is filled till maximum. Alternatively the tightness could find out with an overpressure of 0,5 bar, while in this case no visible leakage (e.g. bubbles turn out by of using an leakage test spray) turn out.</p> <p>The appliance must have such a construction, which not allowed the leakage of the fuel. For that is an separated safety container with at least 110 % and max. 200 % volume of the original fuel tank. It might be achieved with a double wall construction.</p> <p>At suitable collecting of the fuel in a safety container can not cause any risk (flame formation, pilling, etc.). It need to evaluate through a test piece.</p> <p>In the user instructions must indicated the risk of a flame up caused by the run out fuel. In the user instructions must also refer that, before ignition of the fireplace its safety container must also be checked for run out fuel.</p> <p>At the appliance apply a suitably durable and intelligible recognizable device, which helps prevent the overfill and the occurrent run out of fuel by keeping the proper instructions for use. A fuel indicator is a suitable device for indicating.</p> <p>At appliance filling throat must indicate with a visible and durable symbol that the appliance filling during use and also in warm condition not allowed.</p>  <p>Picture 4: Symbol "Filling during operation and in the warm state is not allowed"</p> <p>The symbols must be at least 25 mm high. The colour of the symbols, which are graven to the metal (e.g. by engrave or laser) are dispensable</p> <p>One marking on the component, which could be removed during use or if it is on the accessory element (e.g. filler, firelighter, refuelling tank) is not enough.</p> <p>The durability of the marking next by keeping the proper instructions for use shall also be tested with the following method. It need to rub first with watery wool till 15 s and after that in ethanol dipped wool till 15 s. Sticker is not allowed.</p> <p>Test also the text after handling for readability.</p>	<p>The fuel tank fulfill all the requirements.</p>	<p>p</p>
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Partly of DIN EN 4734-1:2011																							
5.2	<p>Test conditions</p> <p>Every test must be carried out by the manufacturer's defined fuel.</p> <p>Test room</p> <ul style="list-style-type: none"> • Temperature 23 °C ± 5 °C • Relative humidity between 30 % and 90 % <p>Table 1 - measurement uncertainty</p> <table border="1" data-bbox="240 633 592 907"> <thead> <tr> <th>Measurement</th> <th>Measurement uncertainty</th> </tr> </thead> <tbody> <tr> <td>Gas analyse</td> <td></td> </tr> <tr> <td>CO</td> <td>± 10 % correlate to 30 ppm</td> </tr> <tr> <td>CO₂</td> <td>± 2 % correlate to 5000 ppm</td> </tr> <tr> <td>Temperature</td> <td></td> </tr> <tr> <td>Room</td> <td>± 2 K</td> </tr> <tr> <td>Surface</td> <td>± 2 K</td> </tr> <tr> <td>Tactile surface (touchable)</td> <td>± 2 K</td> </tr> <tr> <td>Mass</td> <td></td> </tr> <tr> <td>Fuel mass</td> <td>± 10 g</td> </tr> </tbody> </table>	Measurement	Measurement uncertainty	Gas analyse		CO	± 10 % correlate to 30 ppm	CO ₂	± 2 % correlate to 5000 ppm	Temperature		Room	± 2 K	Surface	± 2 K	Tactile surface (touchable)	± 2 K	Mass		Fuel mass	± 10 g	<p>The tests were carried out with the defined fuel.</p> <p>The test room temperature was 23 °C.</p> <p>The relative humidity was 47%</p> <p>The barometric pressure was 1013 mbar</p>	p
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5.3	<p>Fuel flow rate</p> <p>The maximum fuel consumption may not exceed 0,5 l/h</p> <p>For the determination of the fuel consumption the appliance has to be filled fully according to the manufacturer's declaration and on maximum load the whole burnout time is counted.</p> <p>To find out the fuel consumption the appliance has to be placed on adequately accurate scales for measuring the fuel flow rate or another comparable measurement could find out also.</p> <p>The whole burnout time at the appliance may not exceed at maximum and also at minimum load (if exists) 8 hours.</p> <p>If several positions are available, the minimal position has to be marked durable.</p>	<p>The maximum fuel consumption for both was all less than 0,5 l/h.</p> <p>The measured average value of Bumer-1.5L is about 0.273 L/h.</p> <p>The measured average value of Bumer-3L is about 0.395 L/h.</p> <p>The whole burnout time at both was all not exceed 8 hours.</p> <p>It takes about 5.5 hours for the Bumer-1.5L to consume 1.5L fuel.</p> <p>It takes about 7.6 hours for the Bumer-3L to consume 3L fuel.</p>	p																				
5.5	<p>Combustion quality</p> <p>To find out the emission of CO and CO₂ in a closed room at minimal and maximal load.</p> <p>The manufacturer's defined smallest room space should have the following accepted limit value of ventilation from 0,2 l/h and 0,5 l/h at the set up place at the lowest and highest load and in a whole burning time it must not exceed:</p> <ul style="list-style-type: none"> • 30 ppm CO; • 5000 ppm CO₂; <p>NOTE: The formation of thermal NO_x because of the burning temperature under 1000 °C is negligible. At the burning of ethanol the formation of fuel-NO_x in the flue gas is also negligible.</p> <p>REFERENCE: Give attention for that the smallest room space among other things like fuel consumption, ventilation of the set up place/ room air mixture has influence on the result of the fuel elemental analysis.</p>	<p>The test for the Bumer-1.5L was performed in a 64 m³ sealed room.</p> <p>The results are the following:</p> <ul style="list-style-type: none"> • CO: 11 ppm • CO₂: 4975 ppm <p>The test for the Bumer-3L was performed in a 80 m³ sealed room.</p> <p>The results are the following:</p> <ul style="list-style-type: none"> • CO: 12 ppm • CO₂: 4964 ppm 	p																				
5.6	<p>Burning safety</p>																						

Partly of DIN EN 4734-1:2011			
5.6.1	<p>General</p> <p>The following tests from 5.6.2 till 5.6.5 should be performed at the highest load to evaluate the durability. That is why it is necessary for the appliance to use more burn-out periods one after another with keeping the manufacturer defined shorter waiting time between 2 burn-outs.</p> <p>The tests must be carried out in a test corner according to DIN EN 13240 with in this standard defined test walls (portion walls) and test floor.</p>	Test were carried out according to these instructions.	p
5.6.2	<p>Floor temperature</p> <p>The surface temperature of the floor in the testing area may not exceed 65 K above room temperature.</p> <p>Does not apply this requirement, if the manufacturer states that the device should not be installed on a flammable surface.</p> <p>If the surface temperature exceeds 65 K, the appliance may be set up only on a nonflammable floor with suitable floor thickness to prevent the warming up of the adjacent building materials.</p>	<p>The surface temperature of the floor in the testing area rise considered the requirements</p> <p>Test result: Bumer-1.5L: 34K Bumer-3L: 35K.</p>	N/A
5.6.3	<p>Wall temperature</p> <p>The surface temperatures on the test walls at behind, next to and above the appliance should be by the manufacturer in the instructions manual detailed. It may not exceed 65 K above room temperature at the lowest distance.</p> <p>If the manufacturer states that the minimum distance to flammable things and building materials must be at least 1 m, the test could be reliable.</p>	The measured maximum surface temperature on the test walls around the appliance rise which considered the requirements was 31.1 K	N/A
5.6.4	<p>Temperature of the operating handle</p> <p>The temperature of the operating handles on the tactile surface may not exceed the room temperature more than:</p> <ul style="list-style-type: none"> • Metal 35 K • Porcelain 45 K • Plastic 60 K <p>This is also valid for equivalent materials.</p> <p>These temperatures could be exceeded, if the appliance is supplied with an accessory, which installation is easy and no hazard of burning occurred.</p>	This appliance has no operating handle.	N/A

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5.6.5	<p>Temperature of the tactile surfaces</p> <p>The temperature on parts of the front panel and lateral walls, which accidentally touchable <i>may</i> not exceed the room temperature more than the following values:</p> <ul style="list-style-type: none"> • metal and varnished metal surfaces 60K • enameled metal 65K • glass and ceramic 80K • Plastic 100K <p>The limit value for the temperature rise from 100 K refer also the plastic, which is reveted with metal and its thickness is less than 0,1 mm.</p> <p>NOTE: If the thickness of the plastic surface is less than 0,3 mm, than use the limit values for temperature rise of the carrier material.</p> <p>Do not apply this requirements for those parts on the front panel and lateral walls</p> <ul style="list-style-type: none"> • which are not accessible by a test bin with 75 mm diameter and hemispherical end; or • which have small dimensions, e.g. ventilation opening as well as hinge-joints and parts which accessible surface and width is less than 10mm, or • parts, which are from 5 cm around the ventilation opening ,or • glass surfaces, those are self evidently due to visible flames as hot surfaces recognizable, furthermore its maximal width is 10cm, or • which are less than 10 cm away from uncoated / undisguised and non-protected openings to the burner opening 	<p>For this appliance the value of the metal and varnished metal surfaces is applicable.</p> <p>The measured maximum temperature rise which considered the requirements of this point was 57 K</p> <p>This appliance has no enameled metal ,glass ceramic and plastic.</p>	<p>P</p>
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Partly of DIN EN 4734-1 :2011

<p>5.6.6</p>	<p>Ignition, extinction of the flame, re-ignition (at wann/cold state)</p> <p>A safe ignition from cold state (appliance at room temperature) or in warm state must with full and reduced tank also be possible.</p> <p>Perform the ignition process at cold state by filled tank from its capacity to 100%, 50%, 25%, and 10%, independent from the instructions stated by the manufacturer at his instruction manual. After a combustion time from 3 minutes extinct the flame with an interlocking device and at disclosed state leave it in rest till reach the surrounding temperature at the burner opening respectively maximum 1 hour through. After that open up and ignite directly again the appliance. The ignition must so occur, that it make a stabile flame and neither fuel in the flame e.g. fuel drop from the appliance discharge nor other critical condition occur. At reduced fuel quantity do not ignite the appliance in cold state, consider the requirements as corresponded.</p> <p>Furthermore test also the safe re-ignition and re-fuelling of the appliances by 60 °C fuel tank temperature.</p> <p>Record the temperature of the fuel tank or other parts at the flame district after extinction of the flame measure the time until the temperature below 60 °C sink. It needs to check, is in the user manual by the manufacturer defined awaiting time till re-ignition enough, to sink under the temperature of 60 °C.</p> <p>By reaching the temperature 60 °C of burner at the warmest point in warm condition should no flames in the appliance exists. For that first burn out the appliance and check it visually. Next step is to extinct the flame with the interlocking device, when approximately 90% of the fuel burned out.</p> <p>At appliances, particularly appliances with fibre filling or fill shell at the burner, should not have visually not unambiguously determinable continues combustion at the fibre filling, which occur a burn-out. It needs to verify by test.</p> <p>NOTE 1: That could at the burning-out phase e.g. so tested, that the CO volumetric percentage in the air and humidity free flue gas 0,2 %, never should exceed in a 10 minutes correlated duration. The 10 minutes average must find out from the visually extinction of the flame till tail away the measuring uncertainty of the CO measurement.</p> <p>NOTE 2: If any filling material is used, the manufacturer must also the requirements of 4.1.3 take in consideration.</p>	<p>The appliance fulfill all the requirements.</p> <p>The flame at every condition after ignition became stabile and smooth.</p> <p>Starting a refueling at 60 °C temperature was safe.</p> <p>The flame by low amount of fuel draw back, but it is clearly visible.</p> <p>The time till the burner below the 60 °C temperature is less than 15 minutes . while the manufacture defined awaiting time 15 minutes till re-ignition and re-fuelling.</p> <p>By using the interlocking device the flame extinct immediately (in all events) and not flare up even after sudden removal.</p>	<p>p</p>
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