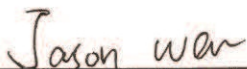
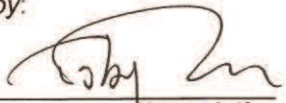
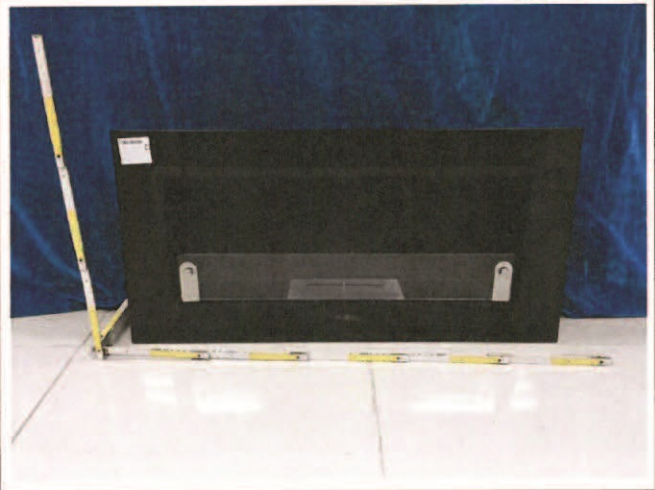


<b>Prüfbericht-Nr.:</b> <i>Test Report No.:</i>	16806639 001	<b>Auftrags-Nr.:</b> <i>Order No.:</i>	1140031360	Seite 1 von 11 <i>Page 1 of 11</i>	
<b>Kunden-Referenz-Nr.:</b> <i>Client Reference No.:</i>	628848	<b>Auftragsdatum:</b> <i>Order date:</i>	28th Nov. 2016		
<b>Auftraggeber:</b> <i>Client:</i>					
<b>Prüfgegenstand:</b> <i>Test item:</i>	BIO-ETHANOL FIREPLACE				
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	FD180				
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	Test report				
<b>Prüfgrundlage:</b> <i>Test specification:</i>	EN 16647:2015 Fireplaces for liquid fuels- Decorative appliances producing a flame using alcohol based or gelatinous fuel - Use in private households(Partly)				
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	28th Nov. 2016				
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	A000463563-001				
<b>Prüfzeitraum:</b> <i>Testing period:</i>	14th Dec. 2016 – 28th Dec. 2016				
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	Gas Lab Zhongshan				
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	TÜV Rheinland (China) Ltd. Zhongshan Branch				
<b>Prüfergebnis*:</b> <i>Test result*:</i>	Siehe Sonstiges / See Other				
<b>geprüft von / tested by:</b>		<b>kontrolliert von / reviewed by:</b>			
30th Dec. 2016 Jason Wen 		30th Dec. 2016 Tanghui Zhu 			
<b>Datum</b> <i>Date</i>	<b>Name / Stellung</b> <i>Name / Position</i>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>Name / Stellung</b> <i>Name / Position</i>	<b>Unterschrift</b> <i>Signature</i>
<b>Sonstiges / Other:</b> All test results were complying with EN 16647:2015 except for clause 8 which were not required by client. For burner chamber material and filing material, please see the declaration of manufacture. The test result is only related to the tested samples.					
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>			Details im vorherigen Abschnitt <i>Details in the previous section</i>		
* Legende: 1 = sehr gut      2 = gut      3 = befriedigend      4 = ausreichend      5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n)      F(all) = entspricht nicht o.g. Prüfgrundlage(n)      N/A = nicht anwendbar      N/T = nicht getestet					
Legend: 1 = very good      2 = good      3 = satisfactory      4 = sufficient      5 = poor P(ass) = passed a.m. test specification(s)      F(all) = failed a.m. test specification(s)      N/A = not applicable      N/T = not tested					
<b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b> <i>This test report only relates to the a. m. test sample. 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 test mark.</i>					





Prüfbericht-Nr.: 16806639 001  
Test Report No.:

Seite 3 von 11  
Page 3 of 11

**Produktbeschreibung**  
**Product description**

**Technical parameter:**

Model name	FD180
Size of product (mm)	900*150*450
Net weight (kg)	12.46
Size of burner opening (mm)	170*21
Intended fuel	95% C2H5OH
Maximum burner volume	1L
Total fuel capacity of the appliance	1L
Stated output (kW)	1.04
Appliance type	Fix Fireplace
Burn out time(h)	About 8
Suggested minimum room volume (m <sup>3</sup> )	18

**Photos:**



Photo 1 FD180

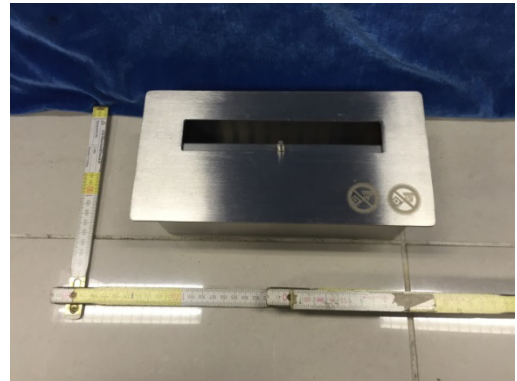
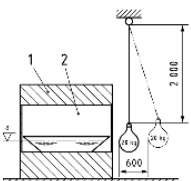


Photo 2 Alcohol box



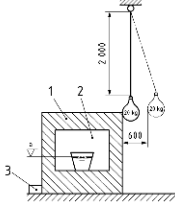
Photo 3 Closing mechanism

Prüfbericht-Nr.: 16806639 001  
Test Report No.:

Absatz	EN 16647:2015	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation
1	Scope decorative fireplace for domestic use, producing a flame using alcohol		
2	Normative reference EN ISO 13732-1 referred for temperature testing		
3	Terms and definitions Fuel alcohol as at least 95% C <sub>2</sub> H <sub>5</sub> OH		
4	Construction		
4.1	General		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
4.2	Fuel Volume	Maximum volume was 1L	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
4.3	Construction	The welding seams of the fuel storage tank is continuously.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
4.4	Materials	For burner chamber material, chrome-nickel steel 1.4301, please see the declaration of manufacture.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
4.5	Stability test		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
4.6	Ignition device	No integrated ignition device equipped, but user could ignite the fire from a horizontal minimum distance of 200mm.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5	Test methods and requirements		
5.1	General		
5.2	Tilting and sliding test Put sample on surface of glass, be tilted by 10° to all four sides for free-standing appliances and table-top appliances, should no spillage. The speed of tilting shall not exceed 1.5±0.5° increase of tilt angle/second		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.3	Movement from impact test 		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.4	Tilting from impact stress		P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>



Prüfbericht-Nr.: 16806639 001  
Test Report No.:

Absatz Clause	EN 16647:2015 Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse - Bemerkungen Measuring results - Remarks	Bewertung Evaluation
			
5.5	Stress test	Fix in the wall.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.6	Spillage test		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.7	Fuel storage container		
	Tightness; Safety of overfilled; Safety chamber Safety symbol on the fuel tank Durance test for the filling material test	For filing material, please see the declaration of manufacture.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8	Operating method	No burner adjustment, all test was carried out with maximum rate.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.1	General		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.2	Test conditions	Test was carried out according to the user instruction.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.3	Fuel consumption		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.4	Operating safety		
	Flaring out of the flames under normal air draft condition	The safety distance is 50cm declared by the manufacture.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
	Withstand the draught from 2 m/s and 0,5 m/s.		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
	The CO concentration of the burning-out phase	Less than 0.2%	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>

Prüfbericht-Nr.: 16806639 001 Test Report No.:			
Absatz Clause	EN 16647:2015 Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse - Bemerkungen Measuring results - Remarks	Bewertung Evaluation
5.8.5	Autoignition test	No auto ignition take place	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.6	Extinguish test	Fire extinguish less than 10 s	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.7	Combustion performance		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.8	Fire safety		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.8.1	General		
5.8.8.2	Floor temperature shall not exceed 65K above room temperature		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.8.3	Wall temperature shall not exceed 65K above room temperature		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.8.4	Temperature of operating handles should fulfil the requirements of EN ISO13732-1 for burn threshold		P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
5.8.8.5	Temperature of touchable surfaces should fulfil the requirements of EN ISO13732-1 for burn threshold	No risk of burning	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.8.6	Ignition, extinguishing and relighting of the fire(in cold and warm state)		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.8.6 .1	Ignition of the fire in cold state		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.8.6 .2	Relighting of the fire in warm state		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
5.8.8.6 .3	Extinguishing of the fire		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>

Prüfbericht-Nr.: 16806639 001 Test Report No.:			
Absatz	EN 16647:2015	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation
5.8.9	Electrical safety		P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
5.8.10	Electronic devices		P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
5.9	Labelling		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
6	Marking		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
6.1	General		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
6.2	Labelling/Rating plate		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
6.3	Safety instruction		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
6.4	Marking on the package		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
6.5	Warning advice fuel storage tank		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7	User's manual		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.1	General		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.2	Installation instructions		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>

Prüfbericht-Nr.: 16806639 001 Test Report No.:			
Absatz	EN 16647:2015	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation
7.3	Operating instructions		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.4	Emergency extinguish instructions		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.5	Type examination		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.5.1	Test sample and documents		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
7.5.2	Test report		P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
8	Factory production control	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.1	General	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.2	Materials and components	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.3	Check of devices used for examinations, tests and measurements	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.4	Process control	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.5	Supervision, testing and evaluation of the product	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.5.1	General	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>



Prüfbericht-Nr.: 16806639 001 Test Report No.:			
Absatz	EN 16647:2015	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation
8.5.2	Building materials	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.5.3	Insulating materials	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.5.4	Sealing and sealing materials	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.5.5	Production Control	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.6	Non-conforming products	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.7	Corrective and preventive measures	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>
8.8	Handling, storage, packaging, preservation and delivery	No required by client	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input checked="" type="checkbox"/>

Prüfbericht-Nr.: 16806639 001  
Test Report No.:

Seite 10 von 11  
Page 10 of 11

Absatz	EN 16647:2015	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

### V Performance test table / Test data sheet

Table 1 – Fuel Volume, according to EN16647:2015 clause 4.2

Model number	FD180
Measured maximum capacity	1L
Requirement	≤10L
Result	P

Table 2 – Fuel consumption, according to EN16647:2015 clause 5.8.3

Model number	FD180
calculated thermal output (kW)	1.04
Requirement(kW)	≤4.5
Result	P

Table 3 – Safety operation-draught test, according to EN16647:2015 clause 5.8.4

Model number	FD180
speed of air draught	2m/s & 0.5m/s
Requirement	No flame out was occurred
Result	P

Table 4 – Safety operation- burning-out phase test, according to EN16647:2015 clause 5.8.4

Model number	FD180
CO of burning-out phase(ppm)	67
Requirement (ppm)	≤2000
Result	P

Table 5 – Auto-ignition and Extinguish test, according to EN16647:2015 clause 5.8.5 and clause 5.8.6

Model number	FD180
No auto ignition take place	Re-opened after 10s,no auto ignition occur
Fire extinguish time	≤10s
Result	P

Table 6 – Combustion performance test, according to EN16647:2015 clause 5.8.7

Model number		FD180			
Measurement		CO(ppm)	CO2(ppm)	NOx	O2(%)
	within 15min	1.1(< 87)	/	6.3	19.78
	within 30min	2.3 (< 52)	/	7.4	19.89
	within 1h	4.0 (<26)	/	8.2	19.75
	within 8h	9.0 (<9)	4937(<5000)	7.8	19.71
Manufacture Suggested minimum room with 0.5 time air change		18m <sup>3</sup>			

**Prüfbericht-Nr.: 16806639 001**  
*Test Report No.:*

Absatz	<b>EN 16647:2015</b>	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	<i>Measuring results - Remarks</i>	<i>Evaluation</i>

Table 7 – Fire safety test, according to EN16647:2015 clause 5.8.8

Model number	FD180		
Ambient temperature	24.8°C		
Measured position	Requirement rise ( $\Delta T$ ) K	Temperature rise ( $\Delta T$ ) K	Result
Wall temperature	65	37.1	P
Floor temperature	65	/	N/A
Temperature of operating handle	35	/	N/A
Surface temperature	/	54.1°C	Please see the risk assessment

Table 8 –Assessment for risk of burning

<b>a)Product information</b>	
Assessed surface	Surface
Accessibility	Easily touchable
Temperature estimation	Moderate to hot
Surface material	Steel
Texture of the surface	Smooth
Operating conditions	In maximum thermal output
<b>b)Task analysis</b>	
Surface which is or may be touched	Surface
Intentional or unintentional touching	Unintentional
Persons who contact or may contact	Adults and children
Duration of contact	0,5 s for healthy adults, 4 s for children, 15 s for very young children
Probability of unintentional touching	A small probability to touch
Frequency of intentional touching	Zero
Actual range of power/temperature settings	In maximum thermal output
<b>c) Measurement of surface temperature</b>	
The maximum measured temperature of the top surface when In maximum thermal output is 54.1 °C in this example.	
<b>d) Choice of applicable burn threshold</b>	
The burn threshold spread for a smooth surface made of steel and a contact period of 0,5 s is 78 °C to 84 °C. These figures apply if only adults have access to the top surface. If also children have access burn spreads of 62 °C to 67 °C (4 s contact period) respective 56 °C to 60 °C (15 s contact period) apply.	
<b>e) Comparison and conclusion</b>	
The measured surface temperature isn't above the applicable burn threshold spreads.	
<b>f) Result of risk assessment</b>	
No risk of burning.	
<b>g) Application of protective measures</b>	
NA.	

**-End of the report-**