

The following samples were submitted and identified on behalf of the client as:

<p>COMMISSION DELEGATED REGULATION (EU) No 2019/2016 supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of household refrigerating appliances</p> <p>COMMISSION REGULATION (EU) No 2019/2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC</p>	
Report Reference No	GZES200902739331
Tested by (name + signature)	San Li /Project engineer 
Approved by (+ signature)	Sky Lin /Reviewer 
Date of issue	2020-10-23
Testing Laboratory	SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch
Address	Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Daliang, Shunde District, Foshan, Guangdong, China
Applicant's name	Foshan Sunnai Electrical Appliance Co., Ltd.
Address	Xingtan Industrial Zone, Xingtan, Shunde, Foshan, Guangdong, China
Test specification:	
Standard	(EU) No 2019/2016; (EU) No 2019/2019
Test procedure	STR: Regulation (EU) 2017/1369 and Directive 2009/125/EC
Non-standard test method	None
Test Report Form No	EN 62552_2019/2019_B
Test Report Form(s) Originator	SGS-CSTC
Master TRF	2020-04-29
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Test item description	Wine cooler
Trade Mark	—
Manufacturer	Same as applicant
Model/Type reference	SW-126
Factory	Same as applicant
Ratings	220 - 240 V; 50 Hz



Summary of testing:

Tests performed (name of test and test clause):

(EU) No 2019/2016
 (EU) No 2019/2019
 EN 62552-1:2020
 EN 62552-2:2020
 EN 62552-3:2020
 EN 60704-1:2010+A11:2012
 EN 60704-2-14:2013+A11:2015+A1:2019

Testing location:

See page one

Copy of marking plate

WINE COOLER

Model	SW-126
Temp.Zone	1
Climate	ST
Protect	I
Volume	291L
Gas	R600a/50g
Voltage	220~240V/50Hz
current	0.35A
Daily energy consumption AE	0.493kW.h/24h
Daily energy consumption E16°C	0.220kW.h/24h
Daily energy consumption E32°C	0.766kW.h/24h
Blowing agent	C ₆ H ₁₀

Foshan Sunnai Electrical Appliance Co.,Ltd.

Foshan Sunnai Electrical Appliance Co.,Ltd. SW-126

180 kWh/annum

126

46 dB
A B C D

PROFIBUC

Remark: The above marking plates maybe only a draft.

Test item information	
Supply Connection	Non-detachable power cord fitted with plug
Appliance designation	Wine cooler
Product parameters	
Overall space required in use (WxDxH) (mm)	--
Defrost type	<input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic
If automatic defrost	<input type="checkbox"/> Elapsed <input type="checkbox"/> CRT <input type="checkbox"/> Variable
If variable type.....	--
Does the unit have a through the door: ice dispenser/water dispenser	No
Condenser type	Grill
Condenser location(s)	Back
Ambient controlled anti-condensation heater.....	N/A
Storage compartment humidity	Upper: 54%/ Lower:52 %
Bottle capacity for wine storage.....	126
Possible test case verdicts:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
Testing	
Date of receipt of test item	2020-09-14
Date (s) of performance of tests	2020-09-14 to 2020-10-10

Product information sheet				
Type of refrigerating appliance				
Low-noise appliance:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Design type:	<input type="checkbox"/> Built-in <input checked="" type="checkbox"/> Free standing	
Wine storage appliance:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Other refrigerating appliance:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
General product parameters				
Parameter	Value	Parameter	Value	
Overall dimensions (mm)	Height	Rated total storage volume (L)	291	
	Width			600
	Depth			630
EEL	187,6	Energy efficiency class	G	
Airborne acoustical noise emissions (dB(A) re 1 pW)	46	Airborne acoustical noise emissions class	D	

Annual energy consumption (kWh/a)	180	Climate classes	<input type="checkbox"/> Extended temperate <input type="checkbox"/> Temperate <input checked="" type="checkbox"/> Subtropical <input type="checkbox"/> Tropical		
Minimum ambient temperature (°C), for which the refrigerating appliance is suitable	16	Maximum ambient temperature (°C), for which the refrigerating appliance is suitable	38		
Winter setting	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no				
Compartment type	Compartment Volume (l)	Recommended temperature setting for optimised food storage (°C)	Freezing capacity (kg/24 h)	Defrosting type (auto-defrost = A, manual defrost = M)	
Pantry	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≥+14, ≤+20	-	-
Wine storage	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	291,0	≥+5, ≤+20	-	M
Cellar	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≥+2, ≤+14	-	-
Fresh-food	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≥0, ≤+4	-	-
0-star or Ice-making	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≤0	-	-
Chill	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≥-3, ≤3	-	-
1-star	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≤-6	-	-
2-star	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≤-12	-	-
3-star	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≤-18	-	-
4-star	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≤-18	-	-
2-star section	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	≤-12	-	-
Variable temperature	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	-	-	-	-
For 4-star compartments					
Fast freeze facility	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no				
Light source parameters					
Type of light source	—				
Light source energy efficiency class	<input checked="" type="checkbox"/> Not check <input type="checkbox"/> N/A <input type="checkbox"/> Class A/B/C/D/E/F/G				

General remarks:

The test results presented in this report relate only to the object tested.
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"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

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

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General product information:

Household wine cooler fitted with compressor MG1060Y. The refrigerant is R600a.

COMMISSION DELEGATED REGULATION (EU) No 2019/2016																			
Cl.	Requirement-Test	Result-Remark	Verdict																
Annex II	Energy efficiency classes and airborne acoustical emission classes		—																
	The energy efficiency class of refrigerating appliances shall be determined on the basis of the energy efficiency index (EEI) as set out in Table 1.		—																
	The EEI of a refrigerating appliance shall be determined in accordance with point 5 of Annex IV.		P																
	<p style="text-align: center;"><i>Table 1</i></p> <p style="text-align: center;">Energy efficiency classes of refrigerating appliances</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Energy efficiency class</th> <th style="width: 50%;">Energy efficiency index (EEI)</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>EEI ≤ 41</td> </tr> <tr> <td>B</td> <td>41 < EEI ≤ 51</td> </tr> <tr> <td>C</td> <td>51 < EEI ≤ 64</td> </tr> <tr> <td>D</td> <td>64 < EEI ≤ 80</td> </tr> <tr> <td>E</td> <td>80 < EEI ≤ 100</td> </tr> <tr> <td>F</td> <td>100 < EEI ≤ 125</td> </tr> <tr> <td>G</td> <td>EEI > 125</td> </tr> </tbody> </table>		Energy efficiency class	Energy efficiency index (EEI)	A	EEI ≤ 41	B	41 < EEI ≤ 51	C	51 < EEI ≤ 64	D	64 < EEI ≤ 80	E	80 < EEI ≤ 100	F	100 < EEI ≤ 125	G	EEI > 125	P
Energy efficiency class	Energy efficiency index (EEI)																		
A	EEI ≤ 41																		
B	41 < EEI ≤ 51																		
C	51 < EEI ≤ 64																		
D	64 < EEI ≤ 80																		
E	80 < EEI ≤ 100																		
F	100 < EEI ≤ 125																		
G	EEI > 125																		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Airborne acoustical noise emission</th> <th style="width: 50%;">Airborne acoustical noise emission class</th> </tr> </thead> <tbody> <tr> <td>< 30 dB(A) re 1 pW</td> <td>A</td> </tr> <tr> <td>≥ 30 dB(A) re 1 pW and < 36 dB(A) re 1 pW</td> <td>B</td> </tr> <tr> <td>≥ 36 dB(A) re 1 pW and < 42 dB(A) re 1 pW</td> <td>C</td> </tr> <tr> <td>≥ 42 dB(A) re 1 pW</td> <td>D</td> </tr> </tbody> </table>		Airborne acoustical noise emission	Airborne acoustical noise emission class	< 30 dB(A) re 1 pW	A	≥ 30 dB(A) re 1 pW and < 36 dB(A) re 1 pW	B	≥ 36 dB(A) re 1 pW and < 42 dB(A) re 1 pW	C	≥ 42 dB(A) re 1 pW	D	P						
Airborne acoustical noise emission	Airborne acoustical noise emission class																		
< 30 dB(A) re 1 pW	A																		
≥ 30 dB(A) re 1 pW and < 36 dB(A) re 1 pW	B																		
≥ 36 dB(A) re 1 pW and < 42 dB(A) re 1 pW	C																		
≥ 42 dB(A) re 1 pW	D																		
ANNEX III	Label for refrigerating appliances		—																
1	LABEL FOR REFRIGERATING APPLIANCES, EXCEPT FOR WINE STORAGE APPLIANCES		N/A																
	The label design and information shall according to the requirements of 1.1 and 1.2		N/A																
2	LABEL FOR WINE STORAGE APPLIANCES		P																
	The label design and information shall according to the requirements of 2.1 and 2.2		P																
3	Label design		P																
	The label design shall according to the 3.1, 3.2 and 3.3		P																
ANNEX IV	Measurement methods and calculations		—																
	For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using harmonised standards, or other reliable, accurate and reproducible methods, which takes into account the generally recognised state-of-the-art methods and are in line with the provisions set out below. The reference numbers of these harmonised standards have been published for this purpose in the Official Journal of the European Union:		P																
1.	General conditions for testing:		P																

COMMISSION DELEGATED REGULATION (EU) No 2019/2016			
Cl.	Requirement-Test	Result-Remark	Verdict
(a)	for refrigerating appliances with anti-condensation heaters that can be switched on and off by the end-user, the anti-condensation heaters shall be switched on and — if adjustable — set at maximum heating and included in the annual energy consumption (AE) as daily energy consumption (E_{daily});		N/A
(b)	for refrigerating appliances with ambient controlled anti-condensation heaters, the ambient controlled electric anti-condensation heaters shall be switched off or otherwise disabled, where possible, during the measurement of energy consumption;		N/A
(c)	for refrigerating appliances with dispensers that can be switched on and off by the end-user, the dispensers shall be switched on during the energy consumption test but not operating;		N/A
(d)	for the measurement of energy consumption, variable temperature compartments shall operate at the lowest temperature that can be set by the end-user to continuously maintain the temperature range, as set out in Table 3, of the compartment type which has the lowest temperature;		N/A
(e)	for refrigerating appliances that can be connected to a network, the communication module shall be activated but there is no need to have a specific type of communication or data exchange or both during the energy consumption test. During the energy consumption test it has to be ensured that the unit is connected to a network;		N/A
(f)	for the performance of chill compartments:		—
	(1) for a variable temperature compartment rated as a fresh food and/or chill compartment, the energy efficiency index (EEI) shall be determined for each temperature condition and the highest value shall be applied;		N/A
	(2) a chill compartment shall be able to control its average temperature within a certain range without user-adjustments of its control, this can be verified during the energy consumption tests at 16°C and 32°C ambient temperature;		N/A
(g)	for adjustable volume compartments, when the volumes of two compartments are adjustable relative to one another by the end-user, the energy consumption and the volume shall be tested when the volume of the compartment with the higher target temperature is adjusted to its minimum volume;		N/A
(h)	the specific freezing capacity is calculated as 12 times the light load weight, divided by the freezing time to bring the temperature of the light load from +25 ° C to - 18 ° C at an ambient temperature of 25 ° C expressed in kg/12h and rounded to one decimal place; the light load weight is 3,5 kg per 100 litre of the compartment volume of the frozen compartments, and shall be at least 2,0 kg;		N/A

COMMISSION DELEGATED REGULATION (EU) No 2019/2016			
Cl.	Requirement-Test	Result-Remark	Verdict
(i)	for 4-star compartments, the specific freezing capacity shall be such that the freezing time to bring the temperature of the light load (3,5 kg/100 l) from +25 to - 18 °C at an ambient temperature of 25 °C, is smaller than or equal to 18,5 h;		N/A
(j)	for the determination of the climate classes, the acronym for the ambient temperature range, that is SN, N, ST or T:		P
	(1) The extended temperate (SN) has a temperature range from 10 °C to 32 °C; (2) The temperate (N) has a temperature range from 16 °C to 32 °C; (3) The subtropical (ST) has a temperature range from 16 °C to 38 °C; and (4) The tropical (T) has a temperature range from 16 °C to 43 °C.	ST	P
2	Storage conditions and target temperatures per compartment type:		P
	Table 3 sets out the storage conditions and target temperature per compartment type.		P
3	Determination of the AE:		P
(a)	For all refrigerating appliances, except for low noise refrigerating appliances:		P
	The energy consumption shall be determined by testing at an ambient temperature of 16 °C and 32 °C.		P
	To determine the energy consumption, the average air temperatures in each compartment shall be equal to or below the target temperatures specified in Table 3 for each compartment type claimed by the supplier. Values above and below target temperatures may be used to estimate the energy consumption at the target temperature for each relevant compartment by interpolation, as appropriate.		P
	The main components of energy consumption to be determined are:		P
	-a set of steady state power consumption values (P _{ss}) in W and rounded to one decimal place, each at a specific ambient temperature and at a set of compartment temperatures, which are not necessarily the target temperatures;		P
	-the representative incremental defrost and recovery energy consumption (ΔE _{d-f}), in Wh and rounded to one decimal place, for products with one or more auto-defrost systems (each with its own defrost control cycle) measured at an ambient temperature of 16 °C (ΔE _{d-f16}) and 32°C (ΔE _{d-f32});		N/A
	-defrost interval (td-f), expressed in h and rounded to three decimal places, for products with one or more defrost systems (each with its own defrost control cycle) measured at an ambient temperature of 16°C (td-f16) and 32°C (td-f32). td-f shall be determined for each system under a certain range of conditions;		N/A

COMMISSION DELEGATED REGULATION (EU) No 2019/2016			
Cl.	Requirement-Test	Result-Remark	Verdict
	-for each test performed the P _{ss} and ΔE_{d-f} are added together to form a daily energy consumption at a certain ambient temperature $ET = 0,001 \times 24 \times (P_{ss} + \Delta E_{d-f}/td-f)$, expressed in kWh/24h, specific to the settings applied;		P
	-E _{aux} , expressed in kWh/a and rounded to three decimal places. E _{aux} is limited to the ambient controlled anti-condensation heater and is determined from the heater's power consumption at a number of ambient temperature and humidity conditions, multiplied with the probability that this ambient temperature and humidity condition occurs and summed; this result is subsequently multiplied with a loss factor to account for heat leakage into the compartment and its subsequent removal by the refrigeration system.		N/A
	Each of these parameters shall be determined through a separate test or set of tests. Measurement data is averaged over a test period which is taken after the appliance has been in operation for a certain time. To improve the efficiency and accuracy of testing, the length of the test period shall not be fixed; it shall be such that the appliance is in steady state condition during this test period. This is validated by examining all data within this test period against a set of stability criteria and whether enough data could be collected in this steady state.		N/A
	AE, expressed in kWh/a and rounded to two decimal places, shall be calculated as follows: $AE = 365 \times E_{daily}/L + E_{aux}$	See summary result	P
	-the load factor L = 0,9 for refrigerating appliances with only frozen compartments and L = 1,0 for all other appliances; and		P
	-with E _{daily} , expressed in kWh/24h and rounded to three decimal places calculated from ET at an ambient temperature of 16 ° C (E ₁₆) and at an ambient temperature of 32 ° C (E ₃₂) as follows: $E_{daily} = 0,5 \times (E_{16} + E_{32})$ where E ₁₆ and E ₃₂ are derived by interpolation of the energy test at the target temperatures set out in Table 3.		P
(b)	For low noise refrigerating appliances:		N/A
	The energy consumption shall be determined as provided for in point 3(a), but at an ambient temperature of 25 °C instead of at 16 °C and 32 °C.		N/A
	E _{daily} , expressed in kWh/24h and rounded to three decimal places for the calculation of the AE is then as follows: $E_{daily} = E_{25}$		N/A
	where E ₂₅ is ET at an ambient temperature of 25°C and derived by interpolation of the energy tests at the target temperatures listed in Table 3.		N/A

COMMISSION DELEGATED REGULATION (EU) No 2019/2016			
Cl.	Requirement-Test	Result-Remark	Verdict
4	Determination of the standard annual energy consumption (SAE):		P
(a)	For all refrigerating appliances:		P
	SAE, expressed in kWh/a, and rounded to two decimal places, is calculated as follows: $SAE = C \times D \times \sum_{c=1}^n A_c \times B_c \times [V_c/V] \times (N_c + V \times r_c \times M_c)$		P
	When carrying out the calculations above, for the variable temperature compartments, the compartment type with the lowest target temperature for which it is declared suitable is chosen.		P
(b)	Modelling parameters per compartment type for the calculation of SAE:		P
	The modelling parameters are set out in Table 4.		P
	The values of the modelling parameters per compartment type		P
(c)	Compensation factors per compartment type in the calculation of SAE:	See summary result	P
	The compensation factors are set out in Table 5.		P
5	Determination of the EEI:		P
	EEI, expressed in % and rounded to the first decimal place, calculated as: $EEI = AE/SAE.$	See summary result	P
ANNEX V	Product information sheet		—
	Pursuant to point 1(b) of Article 3, the supplier shall enter into the product database the information as set out in Table 6. If the refrigerating appliance contains multiple compartments of the same type, the lines for these compartments shall be repeated. If a certain compartment type is not present, the compartment parameters and values shall be '-'. Light source parameters	See Product information sheet	—
ANNEX VI	Technical documentation		—
1	The technical documentation referred to in point 1(d) of Article 3 shall include the following elements:		—
(a)	the information as set out in Annex V;		—
(b)	the information as set out in Table 7. If the refrigerating appliance contains multiple compartments of the same type, the lines for these compartments shall be repeated. If a certain compartment type is not present, the compartment parameters and values shall be '-'. If a parameter is not applicable, the values of that parameter shall be '-'.		—
ANNEX IX	Verification procedure for market surveillance purposes		—
	The verification tolerances set out in this Annex relate only to the verification of the declared 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. The values and classes on the label or in the product information sheet shall not be more favourable for the supplier than the values reported in the technical documentation.		—

COMMISSION REGULATION (EU) No 2019/2019																	
Cl.	Requirement-Test	Result-Remark	Verdict														
Annex II	Ecodesign requirements		—														
1	Energy efficiency requirements:		P														
(a)	From 1 March 2021, the energy efficiency index (EEI) of refrigerating appliances shall not be above the values as set out in Table 1.	Wine storage appliances with transparent door	P														
	<table border="1"> <thead> <tr> <th></th> <th>EEI</th> </tr> </thead> <tbody> <tr> <td>dedicated low noise refrigerating appliances with fresh food compartment(s)</td> <td>375</td> </tr> <tr> <td>low noise refrigerating appliances with transparent doors</td> <td>380</td> </tr> <tr> <td>other low noise refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment</td> <td>300</td> </tr> <tr> <td>wine storage appliances with transparent doors</td> <td>190</td> </tr> <tr> <td>other wine storage appliances</td> <td>155</td> </tr> <tr> <td>all other refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment</td> <td>125</td> </tr> </tbody> </table>		EEI	dedicated low noise refrigerating appliances with fresh food compartment(s)	375	low noise refrigerating appliances with transparent doors	380	other low noise refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment	300	wine storage appliances with transparent doors	190	other wine storage appliances	155	all other refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment	125		—
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other wine storage appliances	155																
all other refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment	125																
(b)	From 1 March 2024, the EEI of refrigerating appliances shall not be above the values set out in Table 2.	Wine storage appliances with transparent door	F														
	<table border="1"> <thead> <tr> <th></th> <th>EEI</th> </tr> </thead> <tbody> <tr> <td>dedicated low noise refrigerating appliances with fresh food compartment(s)</td> <td>312</td> </tr> <tr> <td>low noise refrigerating appliances with transparent door(s)</td> <td>300</td> </tr> <tr> <td>other low noise refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment</td> <td>250</td> </tr> <tr> <td>wine storage appliances with transparent door(s)</td> <td>172</td> </tr> <tr> <td>other wine storage appliances</td> <td>140</td> </tr> <tr> <td>all other refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment</td> <td>100</td> </tr> </tbody> </table>		EEI	dedicated low noise refrigerating appliances with fresh food compartment(s)	312	low noise refrigerating appliances with transparent door(s)	300	other low noise refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment	250	wine storage appliances with transparent door(s)	172	other wine storage appliances	140	all other refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment	100		—
	EEI																
dedicated low noise refrigerating appliances with fresh food compartment(s)	312																
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other wine storage appliances	140																
all other refrigerating appliances, with the exception of low noise combi appliances with a frozen compartment	100																
2	Functional requirements:		—														
	From 1 March 2021, refrigerating appliances shall meet the following requirements:		P														
	(a) Any fast freeze facility, or any similar function achieved through modification of the temperature settings in freezer compartments, shall, once activated by the end-user according to the manufacturer's, the importer's or authorised representative's instructions, automatically revert to the previous normal storage conditions after no more than 72 hours.		N/A														
	(b) Winter settings shall be automatically activated or de-activated according to the need to maintain the frozen compartment(s) at the correct temperature.		N/A														

COMMISSION REGULATION (EU) No 2019/2019			
Cl.	Requirement-Test	Result-Remark	Verdict
	(c)Each compartment shall be marked with the appropriate identification symbol. For the frozen compartments this shall be the number of stars of the compartment. For the chill and unL-compartments, this shall be an indication, chosen by the manufacturer, the importer or authorised representative, of the type of food that should be stored in the compartment.		P
	(d)If the refrigerating appliance contains vacuum insulation panels, the refrigerating appliance shall be labelled with the letters 'VIP' in a clearly visible and readable way.		N/A
	(e)For 2-star sub-compartments or 2-star sections:		N/A
	-a 2-star sub-compartment or 2-star section is separated from the 3-star or 4-star volume by a partition, container, or similar construction;		N/A
	-the volume of the 2-star sub-compartment or 2-star section does not exceed 20 % of the total volume of the containing compartment.		N/A
	(f)For 4-star compartments, the specific freezing capacity shall be such that the freezing time to bring the temperature of the light load (3,5 kg/100 l) from +25 to - 18 ° C at an ambient temperature of 25 ° C, is smaller than or equal to 18,5 h.		P
	Until 1 March 2024, the requirements laid down in points 2(a) and (b) shall not apply to combi appliances with one electromechanical thermostat and one compressor which are not equipped with an electronic control board.		N/A
3	Resource efficiency requirements:	Declared by manufacturer	—
	From 1 March 2021, refrigerating appliances shall meet the following requirements:		—
(a)	Availability of spare parts:		—
	(1) manufacturers, importers or authorised representatives of refrigerating appliances shall make available to professional repairers at least the following spare parts: thermostats, temperature sensors, printed circuit boards and light sources, for a minimum period of seven years after placing the last unit of the model on the market;		P
	(2) manufacturers, importers or authorised representatives of refrigerating appliances shall make available to professional repairers and end-users at least the following spare parts: door handles, door hinges, trays and baskets for a minimum period of seven years and door gaskets for a minimum period of 10 year, after placing the last unit of the model on the market;		P
	(3) manufacturers shall ensure that these spare parts can be replaced with the use of commonly available tools and without permanent damage to the appliance;		P

COMMISSION REGULATION (EU) No 2019/2019			
Cl.	Requirement-Test	Result-Remark	Verdict
	(4) the list of spare parts concerned by point (1) and the procedure for ordering them shall be publicly available on the free access website of the manufacturer, importer or authorised representative, at the latest two years after the placing on the market of the first unit of a model and until the end of the period of availability of these spare parts;		P
	(5) the list of spare parts concerned by point (2) and the procedure for ordering them and the repair instructions shall be publicly available on the manufacturer's, the importer's or authorised representative's free access website, at the moment of the placing on the market of the first unit of a model and until the end of the period of availability of these spare parts.		P
(b)	Access to repair and maintenance information:		P
	After a period of two years after the placing on the market of the first unit of a model or of an equivalent model, and until the end of the period mentioned under (a), the manufacturer, importer or authorised representative shall provide access to the appliance repair and maintenance information to professional repairers in the following conditions:		P
	(1) the manufacturer's, importer's or authorised representative's website shall indicate the process for professional repairers to register for access to information; to accept such a request, manufacturers, importers or authorised representative may require the professional repairer to demonstrate that:		P
	(i) the professional repairer has the technical competence to repair refrigerating appliances and complies with the applicable regulations for repairers of electrical equipment in the Member States where it operates. Reference to an official registration system as professional repairer, where such system exists in the Member States concerned, shall be accepted as proof of compliance with this point;		P
	(ii) the professional repairer is covered by insurance covering liabilities resulting from its activity, regardless of whether this is required by the Member State;		P
	(2) the manufacturers, importers or authorised representatives shall accept or refuse the registration within 5 working days from the date of request by the professional repairer;		P
	(3) manufacturers, importers or authorised representatives may charge reasonable and proportionate fees for access to the repair and maintenance information or for receiving regular updates. A fee is reasonable if it does not discourage access by failing to take into account the extent to which the professional repairer uses the information;		P

COMMISSION REGULATION (EU) No 2019/2019			
Cl.	Requirement-Test	Result-Remark	Verdict
	Once registered, a professional repairer shall have access, within one working day after requesting it, to the requested repair and maintenance information. The available repair and maintenance information shall include:		P
	—the unequivocal appliance identification; — a disassembly map or exploded view; —list of necessary repair and test equipment; —component and diagnosis information (such as minimum and maximum theoretical values for measurements); —wiring and connection diagrams; —diagnostic fault and error codes (including manufacturer-specific codes, where applicable); and —data records of reported failure incidents stored on the refrigerating appliance (where applicable).		P
	(c) Maximum delivery time of spare parts:		P
	(1) during the period mentioned under point 3(a)(1) and point 3(a)(2), the manufacturer, importer or authorised representatives shall ensure the delivery of the spare parts for refrigerating appliances within 15 working days after having received the order;		P
	(2) in the case of spare parts available only to professional repairers this availability may be limited to professional repairers registered in accordance with point b.		P
	(d)Requirements for dismantling for material recovery and recycling while avoiding pollution:		P
	(1) manufacturers, importers or authorised representatives shall ensure that refrigerating appliances are designed in such a way that the materials and components referred to in Annex VII to Directive 2012/19/EU can be removed with the use of commonly available tools;		P
	(2) manufacturers, importers and authorised representatives shall fulfil the obligations laid down in Point 1 of Article 15 of Directive 2012/19/EU.		P
4	Information requirements:		P
	From 1 March 2021, instruction manuals for installers and end-users, and free access website of manufacturers, importers or authorised representatives shall include the following information:		P
	(a) the combination of drawers, baskets and shelves that result in the most efficient use of energy for the refrigerating appliance		P
	(b)clear guidance about where and how to store foodstuffs in a refrigerating appliance for best preservation over the longest period, to avoid food waste;		P
	(c)the recommended setting of temperatures in each compartment for optimum food preservation. These settings shall not contradict the storage conditions set out in Annex III, Table 3;		P

COMMISSION REGULATION (EU) No 2019/2019			
Cl.	Requirement-Test	Result-Remark	Verdict
	(d)an estimation of the impact of temperature settings on food waste;		P
	(e)a description of the effects of special modes and features, and in particular how temperatures are affected in each compartment and for how long;		P
	(f)for wine storage appliances: 'this appliance is intended to be used exclusively for the storage of wine'. This shall not apply to refrigerating appliances that are not specifically designed for wine storage but may be used for this purpose, or to refrigerating appliances that have a wine storage compartment combined with any other compartment type;		P
	(g)instructions for the correct installation and end-user maintenance, including cleaning, of the refrigerating appliance;		P
	(h)for a freestanding appliance: 'this refrigerating appliance is not intended to be used as a built-in appliance';		P
	(i)for appliances without a 4-star compartment: 'this refrigerating appliance is not suitable for freezing foodstuffs';		N/A
	(j)access to professional repair, such as internet webpages, addresses, contact details;		P
	(k)relevant information for ordering spare parts, directly or through other channels provided by the manufacturer, importer or authorised representative;		P
	(l)the minimum period during which spare parts, necessary for the repair of the appliance, are available;		P
	(m)the minimum duration of the guarantee of the refrigerating appliance offered by the manufacturer, importer or authorised representative;		P
	(n)for refrigerating appliances with climate class:		P
	(O)instruction on how to find the model information in the product database, as defined in Regulation (EU) 2019/2016 by means of a weblink that links to the model information as stored in the product database or a link to the product database and information on how to find the model identifier on the product.		P

Product specification Compartment specifications:						
Parameter	Value		Parameter	Value		
Annual energy consumption (kWh/a)	180		Auxiliary energy (kWh/a)	—		
Standard annual energy consumption (kWh/a)	95,95		EEI (%)	187,6		
Temperature rise time(h)	—		Combi parameter C	1,0		
Door heat loss factor D	1,0		Load factor L	1,0		
Anti-condensation heater type	-					
Daily energy consumption at 16 °C (kWh/24h)	0,220		Daily energy consumption at 32 °C (kWh/24h)	0,766		
Incremental defrost and recovery energy consumption at 16 °C (Wh)	—		Incremental defrost and recovery energy consumption (a) at 32 °C (Wh)	—		
Defrost interval (a) at 16 °C (h)	—		Defrost interval (a) at 32 °C (h)	—		
Compartment specifications:						
Type	Target temperature(°C)	Thermodynamic parameter (r _c)	N _c	M _c	Defrost factor (A _c)	Freestanding /Built-in factor (B _c)
Pantry	-	-	-	-	-	-
Wine Storage	12	0,60	75	0,12	1,00	1,00
Cellar	-	-	-	-	-	-
Fresh-food	-	-	-	-	-	-
Chill	-	-	-	-	-	-
0-star or Ice-making	-	-	-	-	-	-
1-star	-	-	-	-	-	-
2-star	-	-	-	-	-	-
3-star	-	-	-	-	-	-
4-star	-	-	-	-	-	-
2-star section	-	-	-	-	-	-
Variable temperature compartment	-	-	-	-	-	-

Table 4

The values of the modelling parameters per compartment type

Compartment type	r_c (°)	N_c	M_c	C
Pantry	0,35	75	0,12	between 1,15 and 1,56 for combi appliances with 3- or 4-star compartments (°), 1,15 for other combi appliances, 1,00 for other refrigerating appliances
Wine storage	0,60			
Cellar	0,60			
Fresh food	1,00	138	0,12	
Chill	1,10			
0-star & ice-making	1,20	138	0,15	
1-star	1,50			
2-star	1,80			
3-star	2,10			
Freezer (4-star)	2,10			

- (°) $r_c = (T_a - T_c) / 20$; with $T_a = 24$ °C and T_c with values as set out in Table 3.
- (°) C for combi appliances with 3- or 4-star compartments is determined as follows: where $frzf$ is the 3- or 4-star compartment volume V_p , as a fraction of V with $frzf = V_p / V$:
 - if $frzf \leq 0,3$ then $C = 1,3 + 0,87 \times frzf$;
 - else if $0,3 < frzf < 0,7$ then $C = 1,87 - 1,0275 \times frzf$;
 - else $C = 1,15$.

Table 5

The values of the compensation factors per compartment type

Compartment type	A_c		B_c		D			
	Manual defrost	Auto-defrost	Freestanding appliance	Built-in appliance	≤ 2 (°)	3 (°)	4 (°)	> 4 (°)
Pantry	1,00		1,00	1,02	1,00	1,02	1,035	1,05
Wine storage								
Cellar								
Fresh food								
Chill				1,03				
0-star & ice-making	1,00	1,10		1,05				
1-star								
2-star								
3-star								
Freezer (4-star)								

(°) number of external doors or compartments, whichever is lowest.

Summary results			
Items	Rated value	Measure value	Verdict
Total volume (L).....:	291	307,6	P
Temperature rise time (h)	—	—	—
Internal humidity of wine storage appliances(%)	—	Upper: 54 % Lower: 52 %	P
Freezing capacity (kg/24h).....:	—	—	—
Energy consumption E16 (kWh/24h).....:	0,220	0,185	P
Energy consumption E32 (kWh/24h).....:	0,766	0,736	P
Annual energy consumption (kWh/a).....:	180	168,27	P
SAE (kWh/a).....:	95,95	97,29	P
EEI.....:	187,6	173,0	P
Energy efficiency class.....:	G	G	P
Airborne acoustical noise emissions (dB(A) re 1pW).....:	46	45,4	P
Airborne acoustical noise emission class.....:	D	D	P

Table 1

Energy efficiency classes of refrigerating appliances

Energy efficiency class	Energy efficiency index (EEI)
A	$EEI \leq 41$
B	$41 < EEI \leq 51$
C	$51 < EEI \leq 64$
D	$64 < EEI \leq 80$
E	$80 < EEI \leq 100$
F	$100 < EEI \leq 125$
G	$EEI > 125$

The noise emission class

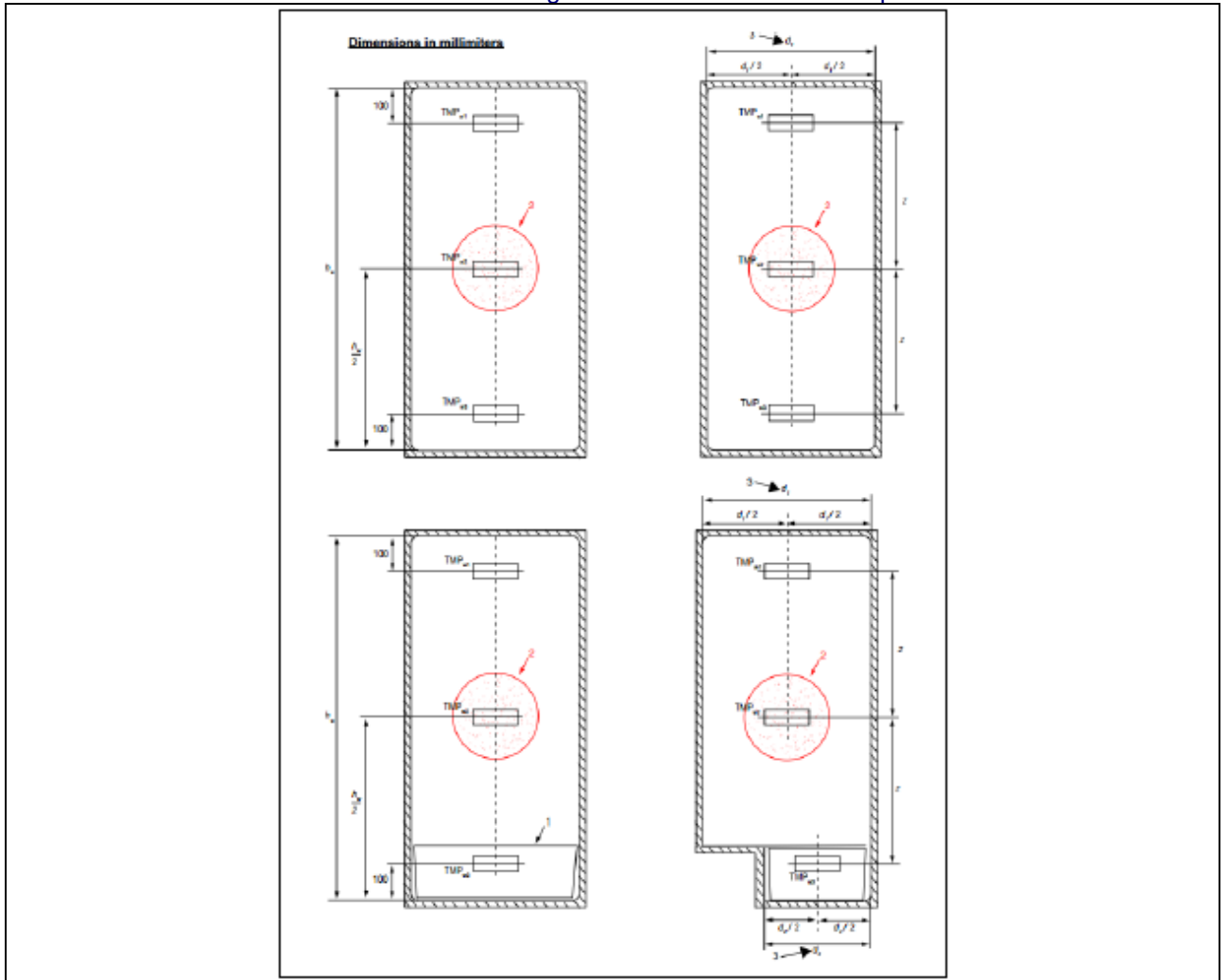
Table 2

Airborne acoustical noise emission classes

Airborne acoustical noise emission	Airborne acoustical noise emission class
$< 30 \text{ dB(A) re } 1 \text{ pW}$	A
$\geq 30 \text{ dB(A) re } 1 \text{ pW and } < 36 \text{ dB(A) re } 1 \text{ pW}$	B
$\geq 36 \text{ dB(A) re } 1 \text{ pW and } < 42 \text{ dB(A) re } 1 \text{ pW}$	C
$\geq 42 \text{ dB(A) re } 1 \text{ pW}$	D

Test data table:

Clause 6: storage temperature test (Part 2 Cl.6)			
The height of upper compartment	<input type="checkbox"/> ≤400mm	<input type="checkbox"/> ≤300mm	<input checked="" type="checkbox"/> ≥400mm
The height of lower compartment	<input type="checkbox"/> ≤400mm	<input type="checkbox"/> ≤300mm	<input checked="" type="checkbox"/> ≥400mm
Ambient temperature	16 °C	Control setting	Upper:10 °C/Lower:10 °C
Temperature of upper wine compartment	$t_{w1m}=10,23$ °C, $t_{w2m}=10,10$ °C, $t_{w3m}=10,02$ °C, $t_{wma}=10,11$ °C		
Max temperature amplitudes(≤0,5K)	0,11 K		
Temperature of lower wine compartment	$t_{w1m}=10,22$ °C, $t_{w2m}=10,15$ °C, $t_{w3m}=10,21$ °C, $t_{wma}=10,19$ °C		
Max temperature amplitudes(≤0,5K)	0,19 K		
During a defrost and recovery period the average of all sensors is not permitted to rise more than 1,5 K	N/A		
Ambient temperature	25 °C	Control setting	Upper:10 °C/Lower:10 °C
Temperature of upper wine compartment	$t_{w1m}=10,21$ °C, $t_{w2m}=9,97$ °C, $t_{w3m}=10,25$ °C, $t_{wma}=10,14$ °C		
Max temperature amplitudes(≤0,5K)	0,27 K		
Temperature of lower wine compartment	$t_{w1m}=10,53$ °C, $t_{w2m}=10,37$ °C, $t_{w3m}=10,85$ °C, $t_{wma}=10,58$ °C		
Max temperature amplitudes(≤0,5K)	0,23 K		
During a defrost and recovery period the average of all sensors is not permitted to rise more than 1,5 K	N/A		
Ambient temperature	38 °C	Control setting	Upper:10 °C/Lower:10 °C
Temperature of upper wine compartment	$t_{w1m}=10,29$ °C, $t_{w2m}=10,35$ °C, $t_{w3m}=11,37$ °C, $t_{wma}=10,67$ °C		
Max temperature amplitudes(≤0,5K)	0,18 K		
Temperature of lower wine compartment	$t_{w1m}=11,90$ °C, $t_{w2m}=10,83$ °C, $t_{w3m}=11,99$ °C, $t_{wma}=11,57$ °C		
Max temperature amplitudes(≤0,5K)	0,29 K		
During a defrost and recovery period the average of all sensors is not permitted to rise more than 1,5 K	N/A		
Clause 6 Appended sketch: Temperature measure location for storage temperature test and temperature rise test in fresh-food compartment: (Figure G.2 of EN 62552-1)			



Clause 8: freezing capacity test (Part 2 Cl.8)		—	
Ambient temperature	—	Control setting	—
Mass of ballast load	—	Mass of light load	—
Freezing time	—		
Specific freezing capacity	—		
Freezing capacity	—		
Warmest temperature in ballast load during test	—		
Warmest temperature in ballast load at end of test	—		
Warmest temperature in two-star section during test	—		
Warmest temperature in two-star section at end of test	—		
Warmest temperature in light load at end of test	—		
The instantaneous temperature t_a of the fresh-food storage compartment during the test does not exceed +7 °C, with t_1, t_2, t_3 between -1 °C and +10 °C;	—		
Clause 8: The sketch of the storage plan for the refrigerating appliance showing the location of the M-packages and the location of the warmest M-package: N/A			
Supplement information: —			

Annex C: Temperature rise test (Part 2 Annex C)	
Ambient temperature	—
Rated time for temperature rise from -18 °C to -9 °C.....	—
Measured time for temperature rise from -18 °C to -9 °C.....	—
Supplement information: —	

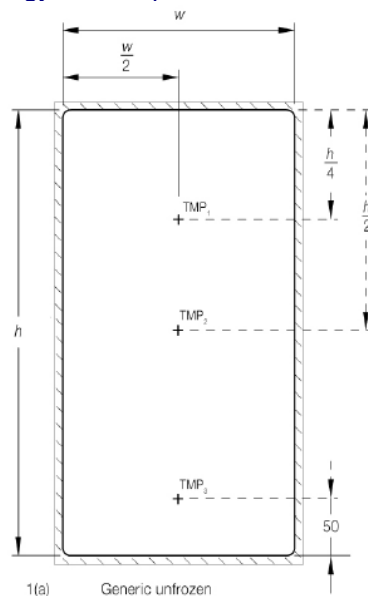
Clause 6: Energy consumption test (Part 3 Cl.6)	
Model No.....	SW-126 with compressor NN1080Y
Test voltage.....	230 V, 50 Hz
Relative humidity.....	61 %
Determine Pss case.....	<input checked="" type="checkbox"/> SS1 <input type="checkbox"/> SS2
Determine DF case.....	<input type="checkbox"/> DF1 <input type="checkbox"/> DF2
<input checked="" type="checkbox"/> 16 °C	
First test (warmer)	
Control setting.....	Upper:12 °C/Lower:12 °C
Compartment temperature (upper wine compartment)	$t_{w1m} = 12,60$ °C, $t_{w2m} = 12,49$ °C, $t_{w3m} = 12,32$ °C, $t_{wma} = 12,47$ °C
Compartment temperature (lower wine compartment)	$t_{w1m} = 12,66$ °C, $t_{w2m} = 12,53$ °C, $t_{w3m} = 12,65$ °C, $t_{wma} = 12,61$ °C
The steady state power for the selected temperature control setting:	Pss=6,71 W

The representative accumulated temperature difference over time for defrost and recovery	—
The representative incremental energy for defrost and recovery	—
Defrost interval.....:	—
Daily energy consumption.....:	$E_{\text{daily16C}} = 0,161 \text{ kWh/day}$
Second test (colder)	
Control setting.....:	Upper:11 °C/Lower:11 °C
Compartment temperature (upper wine compartment)	$t_{w1m} = 11,67 \text{ °C}, t_{w2m} = 11,55 \text{ °C}, t_{w3m} = 11,35 \text{ °C}, t_{wma} = 11,52 \text{ °C}$
Compartment temperature (lower wine compartment)	$t_{w1m} = 11,68 \text{ °C}, t_{w2m} = 11,54 \text{ °C}, t_{w3m} = 11,70 \text{ °C}, t_{wma} = 11,61 \text{ °C}$
The steady state power for the selected temperature control setting:	$P_{ss}=8,34 \text{ W}$
The representative accumulated temperature difference over time for defrost and recovery	—
The representative incremental energy for defrost and recovery	—
Defrost interval.....:	—
Daily energy consumption.....:	$E_{\text{daily16C}} = 0,200 \text{ kWh/day}$
Energy consumption calculated by interpolation	
Energy consumption.....:	$E_{\text{daily16C}} = 0,185 \text{ kWh/24h}$
<input checked="" type="checkbox"/> 32 °C	
First test (warmer)	
Control setting.....:	Upper:11 °C/Lower:11 °C
Compartment temperature (upper wine compartment)	$t_{w1m} = 12,27 \text{ °C}, t_{w2m} = 12,24 \text{ °C}, t_{w3m} = 12,73 \text{ °C}, t_{wma} = 12,41 \text{ °C}$
Compartment temperature (lower wine compartment)	$t_{w1m} = 12,63 \text{ °C}, t_{w2m} = 12,15 \text{ °C}, t_{w3m} = 13,12 \text{ °C}, t_{wma} = 12,67 \text{ °C}$
The steady state power for the selected temperature control setting:	$P_{ss}=29,69 \text{ W}$
The representative accumulated temperature difference over time for defrost and recovery	—
The representative incremental energy for defrost and recovery	—
Defrost interval.....:	—
Daily energy consumption.....:	$E_{\text{daily32C}} = 0,713 \text{ kWh/day}$
Second test (colder)	
Control setting.....:	Upper:10 °C/Lower:10 °C
Compartment temperature (upper wine compartment)	$t_{w1m} = 11,36 \text{ °C}, t_{w2m} = 11,33 \text{ °C}, t_{w3m} = 11,77 \text{ °C}, t_{wma} = 11,48 \text{ °C}$
Compartment temperature (lower wine compartment)	$t_{w1m} = 11,64 \text{ °C}, t_{w2m} = 11,08 \text{ °C}, t_{w3m} = 12,12 \text{ °C}, t_{wma} = 11,61 \text{ °C}$
The steady state power for the selected temperature control setting:	$P_{ss}=31,25 \text{ W}$

The representative accumulated temperature difference over time for defrost and recovery	—
The representative incremental energy for defrost and recovery	—
Defrost interval.....:	—
Daily energy consumption.....:	$E_{\text{daily32C}} = 0,750 \text{ kWh/day}$
Energy consumption calculated by interpolation	
Energy consumption.....:	$E_{\text{daily32C}} = 0,736 \text{ kWh/24h}$
E_{daily} ($= 0.5 \times (E_{\text{daily16C}} + E_{\text{daily32C}})$)	$E_{\text{daily}} = 0,461 \text{ kWh/d}$
Load factor L.....:	$L = 1.0$
Auxiliary energy.....:	$E_{\text{aux}} = 0 \text{ kWh/a}$
Annual consumption.....: ($= 365 \times E_{\text{daily}}/L$)	$AE = 168,27 \text{ kWh/a}$

Clause 6 Appended sketch:

Temperature measure location for energy consumption test in wine compartment:



Supplement information: —

Table 5 Annex H Determination of volumes (Part 3 Annex H)		P
Compartment identification	Rated	Measured
wine compartment	291	307,6
Freezer compartment	—	—
Total	291	307,6

Table 6. Ambient controlled anti-condensation heaters (Part 3 Annex F)							N/A
Relative Humidity	RH band mid-point	Probability at 16 °C	Probability at 22 °C	Probability at 32 °C	Heater W at 16 °C	Heater W at 22 °C	Heater W at 32 °C
0 to 10 %	5 %	0,00%	0,00%	0,34%	—	—	—
10 to 20 %	15 %	0,61%	6,86%	2,01%	—	—	—
20 to 30 %	25 %	3,11%	14,57%	1,61%	—	—	—
30 to 40 %	35 %	5,03%	14,83%	0,86%	—	—	—
40 to 50 %	45 %	5,09%	11,67%	0,18%	—	—	—
50 to 60 %	55 %	4,67%	8,31%	0,01%	—	—	—
60 to 70 %	65 %	3,39%	5,54%	0,00%	—	—	—
70 to 80 %	75 %	3,17%	2,51%	0,00%	—	—	—
80 to 90 %	85 %	2,85%	0,66%	0,00%	—	—	—
90 to 100 %	95 %	2,05%	0,07%	0,00%	—	—	—
Annual energy, Eaux, kWh/y, 0.001							—

Table 7. Noise test (EN 60704-2-14)						P
Test voltage: 230 VAC, 50 Hz						
Humidity		62,1 %		Atmospheric pressure		100,9 kPa
Background (dBA)		19,5		Temperature (°C)		24,2
L ₁ (m)		0,630		a (m)		0,815
L ₂ (m)		0,600		b (m)		1,300
L ₃ (m)		1,580		c (m)		2,580
Microphone position	Coordinate of each position (m)			Unit/dB(A)		
	X	Y	Z	sample 1	—	—
1	1,630	0	1,290	29,0	—	—
2	0,815	1,300	1,290	33,9	—	—
3	0,815	-1,300	1,290	32,3	—	—
4	1,630	1,300	2,580	30,7	—	—
5	1,630	-1,300	2,580	32,8	—	—
6	0,815	0	2,580	34,4	—	—
L _{pm} (the averaged sound pressure level)				32,55	—	—
L _{wA} (sound power level)				45,42	—	—
The sound power level (Averaged of three sample)						—

Photo documents:

<p style="text-align: center;">Products General</p> 	<p style="text-align: center;">Products General</p> 
<p style="text-align: center;">Products General</p> 	<p style="text-align: center;">Compressor</p> 

--- End of Report ---