



**China National Accreditation Service for Conformity Assessment  
LABORATORY ACCREDITATION CERTIFICATE**

(Registration No. CNAS L4912 )

**Danfoss (Tianjin) Co., Ltd.**

**Global Services Technology Center (China)**

*(Legal Entity: Danfoss (Tianjin) Co., Ltd.)*

No.5, Fuyuan Road, Wuqing Development Area, Tianjin, China

*is accredited in accordance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.*

*The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.*

Effective Date: 2023-01-19

Expiry Date: 2029-01-18

Signed on behalf of China National Accreditation Service for Conformity Assessment

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Accreditation Cooperation Mutual Recognition Arrangement (APAC MRA).

The validity of the certificate can be checked on CNAS website at <http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml>.



# 中国合格评定国家认可委员会 实验室认可证书

(注册号: CNAS L4912)

兹证明:

**丹佛斯(天津)有限公司全球服务(中国)技术中心**

(法人: 丹佛斯(天津)有限公司)

**天津市武清开发区福源道5号, 301700**

符合 ISO/IEC 17025: 2017 《检测和校准实验室能力的通用要求》  
(CNAS-CL01 《检测和校准实验室能力认可准则》) 的要求, 具备承担本  
证书附件所列服务能力, 予以认可。

获认可的能力范围见标有相同认可注册号的证书附件, 证书附件是  
本证书组成部分。

生效日期: 2023-01-19

截止日期: 2029-01-18



中国合格评定国家认可委员会授权人

中国合格评定国家认可委员会(CNAS)经国家认证认可监督管理委员会(CNCA)授权, 负责实施合格评定国家认可制度。  
CNAS是国际实验室认可合作组织(ILAC)和亚太认可合作组织(APAC)的互认协议成员。  
本证书的有效性可登陆[www.cnas.org.cn](http://www.cnas.org.cn)获认可的机构名录查询。

Name: Danfoss (Tianjin) Co., Ltd. Global Services Technology Center (China)

Address: No.5, Fuyuan Road, Wuqing Development Area, Tianjin, China

Registration No. CNAS L4912

Accreditation Criteria: ISO/IEC 17025:2017 and relevant requirements of CNAS

Effective Date: 2022-12-23 Expiry Date: 2029-01-18

SCHEDULE 3 ACCREDITED TESTING SCOPE

№	Test Object	Item/Parameter		Standard or Method	Note	Effective Date
		№	Item/ Parameter			
1	Carbon and low alloy steel	1	C, Si, Mn, P, S, Cr, Mo, Ni, Al, Cu, Nb, Ti, V, W, B	Carbon and low-alloy steel-Determination of multi-element contents-Spark discharge atomic emission spectrometric method (routine method) GB/T 4336-2016		2022-12-23
		2	C, Si, Mn, P, S, Cr, Mo, Ni, Al, Cu, Nb, Ti, V, B	Standard Test Method for Analysis of Carbon and Low-Alloy Steel by Spark Atomic Emission Spectrometry ASTM E415-21		2022-12-23
2	Stainless steel	1	C, Si, Mn, P, S, Cr, Mo, Ni, Al, Cu, Nb, Ti	Stainless steel-Determination of multi-element contents-Spark discharge atomic emission spectrometric method (Routine method) GB/T 11170-2008		2022-12-23
		2	C, Si, Mn, P, S, Cr, Mo, Ni, Cu	Standard Test Method for Analysis of Austenitic Stainless Steel by Spark Atomic Emission Spectrometry ASTM E1086-22		2022-12-23
3	Aluminium alloys	1	Si, Fe, Cu, Mn, Mg, Cr, Ni, Zn, Ti, Pb, Sn	Optical emission spectrometric analysis method of aluminium and aluminium alloys GB/T 7999-2015		2022-12-23
4	Copper alloys	1	Zn, Pb, Sn, P, Mn, Fe, Ni, Si, Al, As	Methods for analysis of copper and copper alloys-The atomic emission spectrometry YS/T 482-2005	accredited only for lead brass	2022-12-23



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№	Test Object	Item/Parameter		Standard or Method	Note	Effective Date
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5	Metal and Metal Product	1	Non-metallic inclusions	Steel-Determination of content of nonmetallic inclusions-micrographic method using standards diagrams GB/T 10561-2005	Accredited only for method A	2022-12-23
				Steel-Determination of content of nonmetallic inclusions-micrographic method using standards diagrams ISO 4967: 2013	Accredited only for method A	2022-12-23
		2	Metallography of cast iron	Metallographic test for gray cast iron GB/T 7216-2009	Except for number of carbides, number of phosphorus eutectic, number of eutectic groups	2022-12-23
				Metallographic test for spheroidal graphite cast iron GB/T 9441-2021	Except for number of graphite spheres, number of phosphorus eutectic, number of carbides	2022-12-23
				Microstructure of cast irons-Part 1: Graphite classification by visual analysis ISO 945-1:2019		2022-12-23
				Standard test method for evaluating the microstructure of graphite in iron castings ASTM A247-19		2022-12-23
		3	Microstructure	Inspection methods of microstructure for metals GB/T 13298-2015		2022-12-23



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		4	Examination on welds	Destructive tests on welds in metallic materials-Macroscopic and microscopic examination of welds BS EN ISO 17639:2022		2022-12-23
		5	Coating thickness	Metallic and oxide coatings-Measurement of coating thickness-microscopical method GB/T 6462-2005		2022-12-23
				Metallic and oxide coatings-Measurement of coating thickness - Microscopical method ISO 1463: 2021		2022-12-23
		6	Examination on microscale morphology	General rules of analytical methods for scanning electron microscope JY/T 0584-2020	Accredited only for micromorphology and qualitative analysis of components.	2022-12-23
		7	Tensile test	Metallic materials-Tensile testing-Part 1: Method of test at room temperature GB/T 228.1-2021	Accredited only for $R_{eL}$ 、 $R_{eH}$ 、 $R_{p0.2}$ 、 $R_m$ 、 $A$ 、 $Z$ ; $F_m \leq 100kN$ ; A2 and B method.	2022-12-23
				Metallic materials-Tensile testing-Part 1: Method of test at ambient temperature ISO 6892-1:2019	Accredited only for $R_{eL}$ 、 $R_{eH}$ 、 $R_{p0.2}$ 、 $R_m$ 、 $A$ 、 $Z$ ;	2022-12-23



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					$F_m \leq 100\text{kN}$ ; A2 and B method.	
		8	Tension test on welds	Destructive tests on welds in metallic materials - Transverse tensile test BS EN ISO 4136: 2012	Accredited only for $F_m \leq 100\text{kN}$	2022-12-23
		9	Impact test	Metallic materials-Charpy pendulum impact test method GB/T 229-2020	Accredited only for $\leq 150\text{J}$ , room temperature ; $KV_2, KU_2$	2022-12-23
				Metallic materials-Charpy pendulum impact test- Part 1: Test method ISO 148-1:2016	Accredited only for $\leq 150\text{J}$ , room temperature ; $KV_2$	2022-12-23
		10	Impact test on welds	Destructive tests on welds in metallic materials-Impact tests-Test specimen location, notch orientation and examination BS EN ISO 9016:2022		2022-12-23
		11	Brinell hardness	Metallic materials-Brinell hardness test-Part 1: Test method GB/T 231.1-2018	Accredited only for HBW2.5/6 2.5, HBW2.5/187.5, HBW5/250	2022-12-23
				Metallic materials-Brinell hardness test-Part 1: Test method DS EN ISO 6506-1:2014	Accredited only for HBW2.5/6 2.5, HBW2.5/187.5, HB	2022-12-23



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					W5/250	
		12	Hardness test on welds	Destructive tests on welds in metallic materials-Hardness testing Part 1: Hardness test on arc welded joints BS EN ISO 9015-1:2011	Accredited only for HV5,HV10	2022-12-23
				Destructive tests on welds in metallic materials-Hardness testing - Part 2: Microhardness testing of welded joints BS EN ISO 9015-2:2016		2022-12-23
		13	Rockwell hardness	Metallic materials-Rockwell hardness test-Part 1:Test method GB/T 230.1-2018	Accredited only for HRB,HRC, HRE	2022-12-23
				Metallic materials-Rockwell hardness test -Part 1:Test method ISO 6508-1:2016	Accredited only for HRB,HRC, HRE	2022-12-23
		14	Vickers hardness	Metallic materials Vickers hardness test-Part 1: Test method GB/T 4340.1-2009	Accredited only for HV0.1,HV 0.2,HV0.3, HV0.5,HV 1,HV5,HV 10,HV30	2022-12-23
				Metallic materials - Vickers hardness test - Part 1:Test method ISO 6507-1:2018	Accredited only for HV0.1,HV 0.2,HV0.3, HV0.5,HV 1,HV5,HV 10,HV30	2022-12-23



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		15	Salt spray tests	Corrosion tests in artificial atmospheres -Salt spray tests GB/T 10125-2021	Accredited only for NSS	2022-12-23
				Corrosion tests in artificial atmospheres - Salt spray tests ISO 9227: 2017	Accredited only for NSS	2022-12-23
				Standard practice for operating salt spray (fog) apparatus ASTM B117-19		2022-12-23
		16	Corrosion evaluation	Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates -Rating of test specimens and manufactured articles subjected to corrosion tests GB/T 6461-2002		2022-12-23
				Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates - Rating of test specimens and manufactured articles subjected to corrosion tests DS EN ISO 10289: 2001		2022-12-23
		17	Ammonia test	Wrought copper and copper alloys-Detection of residual stress-Ammonia test GB/T 10567.2-2007		2022-12-23
				Refrigerant-Containing components and accessories, nonelectrical ANSI/UL 207-2014 18A		2022-12-23
				Standard Test Method for Ammonia Vapor Test for Determining Susceptibility to Stress Corrosion Cracking in Copper Alloys ASTM B858-06(2018)		2022-12-23
		18	Dezincification test of brass	Determination of dezincification corrosion resistance of brass GB/T 10119-2008		2022-12-23
				Dezincification resistance of copper alloys AS 2345-2006		2022-12-23
				Corrosion of metals and alloys-Determination of dezincification resistance of copper alloys with zinc Part 1: Test method BS EN ISO 6509-1:2014		2022-12-23



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№	Test Object	Item/Parameter		Standard or Method	Note	Effective Date
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		19	Cleanliness test	Hermetic scroll refrigerant compressors GB/T 18429-2018 6.2.4		2022-12-23
				Measuring method of refrigerating equipment cleanliness JB/T 9058-1999		2022-12-23
				Plate heat exchanger for refrigeration JB/ T 8701-2018 7.4.8		2022-12-23
6	Components for compressors, exchangers and control valves	1	Cold temperature	Environmental testing for electric and electronic products-part 2: Test methods-Tests A:Cold GB/T 2423.1-2008 IEC 60068-2-1:2007	Accredited only for Test Chamber size is 800mm×800mm×950mm, the lowest temperature -60°C	2022-12-23
		2	Change of temperature	Environmental testings-Part 2: Test methods-Test N:Change of temperature GB/T 2423.22-2012 IEC 60068-2-14:2009	Accredited only for the temperature from -60°C to 170°C and temperature change speed lower than 5°C/min and Test Chamber size is	2022-12-23



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					800mm×800mm×950mm, Except for Nc two-bath method.	
		3	Dry heat test	Environmental testing for electric and electronic products-Part 2: Test methods-Tests B: Dry heat GB/T 2423.2-2008 IEC 60068-2-2:2007	Accredited only for Bb and Test Chamber size is 800mm×800mm×950mm and temperature lower than 170°C	2022-12-23
		4	Damp heat test, steady state	Environmental testing-Part 2: Testing method-Test Cab: Damp heat, steady state GB/T 2423.3-2016 IEC 60068-2-78:2012	Accredited only for temperature for 40°C to 80°C relative humidity is 10% to 95% and Test Chamber size is	2022-12-23

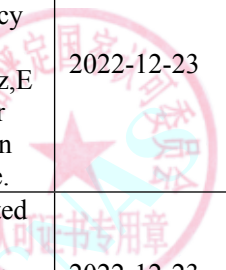


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					800mm×800mm×950mm	
		5	Damp heat , cyclic	Environmental testing for electric and electronic products-Part 2: Test method-Test Db: Damp heat, cyclic (12h+12h cycle) GB/T 2423.4-2008 IEC 60068-2-30:2019	Accredited only for temperature for 40°C to 80°C and relative humidity is 10% to 95% and Test Chamber size is 800mm×800mm×950mm	2022-12-23
		6	Sinusoidal Vibration Test	Environmental testing-Part 2 : Tests-Test Fc: Vibration (sinusoidal) GB/T 2423.10-2019 IEC 60068-2-6 : 2007	Accredited only for Frequency range ≤2000Hz,E xcept for Vibration response.	2022-12-23
		7	broad-band random test	Environmental testing-Part 2: Tests-Test Fh: Vibration, broadband random and guidance GB/T 2423.56-2018 IEC 60068-2-64: 2019	Accredited only for Frequency range ≤2000Hz,E	2022-12-23

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					except for Vibration response.	
		8	Shock Test	Environmental testing-Part 2 : Test Methods-Test Ea and Principle:Shock GB/T 2423.5-2019 IEC 60068-2-27 : 2008	Accredited only for Peak acceleration A ≤15g,Pulse duration D≤11ms	2022-12-23
		9	Surface roughness	Geometrical Product Specifications(GPS)- Surface texture: Profile method- Rules and procedures for the assessment of surface texture GB/T 10610-2009 ISO 4288-1996	Accredited only for Ra from 0.1 to 10 μm	2022-12-23



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