

شهادة اعتماد رقم (٠٤٠٥٢٣)



جمهورية مصر العربية
المجلس الوطني للاعتماد (إيجاك)
يشهد بأن

معامل ميرako للاختبار والمعايرة
شركة مصر لصناعة التبريد والتكييف (ميرako)

الكلو (٢٨) طريق مصر اسكندرية الصحراوي - أبو رواش - المنطقة الصناعية
محافظه الجيزة - مصر

قد حصل على اعتماد المجلس حيث تم تقييمه طبقاً للمواصفة الدولية

ISO/IEC 17025:2017

في معايرة بعض أجهزة القياسات الحرارية والضغط والأبعاد الهندسية والعزوم
والقياسات الكهربائية وقياس سرعة الهواء وبعض اختبارات أجهزة تكييف الهواء
والسلك المتوهج والأمان للأجهزة المنزلية وباختبار مقاومة التآكل باستخدام رزاز الملح

الموضحة بالبيان المرفق رقم (٠٤٠٥٢٣) ب)

رقم إصدار المجال (٠٧)

صالحة حتى: ٢٢ أغسطس ٢٠٢٦

إصدار رقم (٠٧): ٢٦ أكتوبر ٢٠٢٣

شرط الحفاظ على التوافق مع المواصفات أعلاه والمتطلبات الخاصة بالمجلس
المعامل لها الحق في إصدار تقارير/ شهادات تحت مظلة المجلس الوطني للاعتماد
طبقاً لمجال الاعتماد المرفق

المجلس الوطني للاعتماد موقع على اتفاقية الاعتراف المتبادل مع منظمة التعاون الدولي
لا اعتماد المعامل (ILAC) في مجال اعتماد معامل المعايرة والاختبار والتحليل الطبية
ومقدمي خدمة اختبارات الكفاءة الفنية وجهات التفتيش

تاريخ الاعتماد الأول: ٢٣ أغسطس ٢٠١٠

مهندس / أحمد سمير صالح

مهندس / هاني الدسوقي

رئيس المجلس



المدير التنفيذي

للمجلس الوطني للاعتماد

70467

وزير التجارة والصناعة



Accreditation Certificate No. (040523A)

Arab Republic of Egypt
Egyptian Accreditation Council (EGAC)

Certifies that

Miraco Laboratories for Testing and Calibration
Misr Refrigeration and Air Conditioning Company (Miraco)

Kilo (28) – Cairo Alexandria Desert Road – Abu Rawash
Industrial Zone - Giza Governorate - Egypt

Has been accredited by EGAC in compliance with the requirements of

ISO/IEC 17025:2017

**In Calibration of some Instruments for Temperature Measurements,
Pressure, Dimension, Torque, Electrical Measurements and Air
Velocity Measurement and Some Tests of Air Conditioning Equipment,
Glow Wire, Safety for Home Appliances and Test of Salt Spray**

The scope of accreditation is described in the attached schedule No. (040523B)

Scope Issue No. (07)

Issue No. (07): October 26, 2023

Valid to: August 22, 2026

Subject to continued compliance to the above standard and EGAC requirements

**The Laboratories are accredited to issue reports / certificates under EGAC
accreditation according to the attached scope of accreditation**

EGAC is an ILAC MRA Signatory in the Field of Calibration, Testing, Medical Labs,

Proficiency Testing Providers and Inspection Bodies Accreditation

1st Accreditation Date: August 23, 2010

Eng. Hanie El Desouki

Executive Director

Eng. Ahmed Samir Saleh

Chairman of EGAC



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Schedule of Accreditation
Calibration Laboratory According to ISO/IEC 17025
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Measurand Quantity	Range	Uncertainty Described in Calibration & Measurement Capability*	Brief Description of Measurement and Equipment Used
Pressure (permanent & onsite)			
Calibration of pressure and Vacuum gauges.	Up to 20 bar	3.3 mbar	DKD R6-1:2014 Reference pressure gauges 4466623
	Up to 70 bar	21 mbar	DKD R6-1:2014 Reference pressure gauges 447185
	Up to 100 bar	34 mbar	DKD R6-1:2014 Pressure module/display (3311921/10305498)
Calibration of differential pressure gauges.	-10 to 10 mbar	0.019 mbar	DKD R6-1:2014 Reference differential pressure gauge (211H181E0014)
Calibration of absolute pressure gauges.	Up to 2 bar (Abs)	2.6 mbar (Abs)	DKD R6-1:2014 Reference pressure gauges (5583103)

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كورنيش المعادي - برج رياض المعادي ١ - القاهرة - مصر

تليفون : ٢٥٢٧٥٢٢٠/٥/٦/٧ (٢٠٢)

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(*) Calibration & measurements capabilities are to be expressed as expanded uncertainty (k=2) i.e. providing a level of confidence of approximately 95%.

Measurand Quantity	Range	Uncertainty Described in Calibration & Measurement Capability*	Brief Description of Measurement and Equipment Used
Temperature (permanent & onsite)			
Calibration of thermometers with indicator (RTD)	-30 °C to 135 °C	0.13 °C	Calibration Procedure SOP-TMP-7.2-01 Based on: DKD- R5 – 1:09/2018 Platinum Resistance Thermometer (PT100) 5615-9 S/N : 1027339 , 5303014 Reference Pt 100 Probes (w) Indicator S.N: 1246A , 1246B , 1246 Dry Block Calibrator S.N: 351472/1
Calibration of thermometers with indicator (Thermocouple)	-30°C to 135 °C	0.15 °C	Calibration Procedure SOP-TMP-7.2-01 Based on: EURAMET eg-08 Version 3.1 (02/2020) Platinum Resistance Thermometer (PT100) 5615-9 S/N : 1027339 , 5303014 Reference Pt 100 Probes Indicator S.N: 1246A , 1246B , 1246 Dry Block Calibrator S.N: 351472/1

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Measurand Quantity	Range	Uncertainty Described in Calibration & Measurement Capability*	Brief Description of Measurement and Equipment Used
Torque (Permanent)			
Calibration of torque wrenches. Clockwise direction	From 1 N.m to 10 N.m From 5 N.m to 50 N.m	1.76% 1.71%	ISO 6789-1:2017 ISO 6789-2:2017 Torque transducer S.N.: TC1151 Torque transducer S.N.:705149A

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Measurand Quantity	Range	Uncertainty Described in Calibration & Measurement Capability*	Brief Description of Measurement and Equipment Used
Dimension (permanent)			
Calibration of calipers Digital – Dial - Vernier	Up to 150 mm 150 mm to 300 mm	10 µm 16 µm	ASME B89.1.14 2018 Gauge blocks Set - Grade 0 S.N.: LS8046 Individual gauge block - Grade 1 S.N.: 190395 Individual gauge block - Grade 1 S.N.: 190248 Setting Ring Code No.: MC – RNG -01
Calibration of External micrometers	Up to 25 mm 25 mm to 50 mm	3.0 µm	ASME B89.1.13 2013 Gauge blocks Set - Grade 0 S.N.: LS8046

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Measurand Quantity	Range	Uncertainty Described in Calibration & Measurement Capability*	Brief Description of Measurement and Equipment Used
Electrical (permanent)			
Calibration of AC voltage at 50 Hz Measuring devices	1V to 100V 100V to 300V 300 V to 1000V	10.70 mV 38.80 mV 124.80 mV	ES1021:2020 AC power calibrator S.N.: 91V222603 Model: LS 3300 Manufacture : YOKOGAWA
Calibration of AC current at 50 Hz Measuring devices	100mA to 1A 1A to 10A 10 A to 30A 30A to 50A	0.65 mA 2.84 mA 6.62 mA 14.12 mA	ES1021:2020 AC power calibrator S.N.: 91V222603 Model: LS 3300 Manufacture : YOKOGAWA

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Measurand Quantity	Range	Uncertainty Described in Calibration & Measurement Capability*	Brief Description of Measurement and Equipment Used
Electrical (permanent)			
Calibration of AC power at 50 Hz, PF 0 to 1 Measuring devices	150 W to 600W 600W to 3000W 3kW to 9kW 9kW to 15kW	0.30 W 0.6 W 2.2 W 3.2 W	ES1021:2020 AC power calibrator S.N.: 91V222603 Model: LS 3300 Manufacture : YOKOGAWA

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Measurand Quantity	Range	Uncertainty Described in Calibration & Measurement Capability*	Brief Description of Measurement and Equipment Used	
Air velocity (permanent)				
Calibration of air velocity Instrument	Up to 10 m/s	0.23 m/s	Calibration Procedure SOP-AVC-7.2-01 Based on: EURAMET cg-24 Version 3.0 (9/2021) EURAMET cg-25 Version 1.0 (2/2021)	Pitot tube with reference manometer Type: 477AV S.N.: 0183QT/167-6 Lab grade mini Wind tunnel S.N.: 200913

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Materials / Products Tested	Type of Tests / Properties Measured / Range of Measurements	Standard Specifications / Techniques Used
Air Conditioning Units up to 5 TR (Window, Split, Package) Air Cooled Units and Non Ducted Air Conditioners	Standard Rating Cooling Capacity Standard Rating Heating Capacity Performance Cooling Test . Performance Heating Test . By Using Air Enthalpy Method	ASHRAE 16:2016 ISO 5151:2017/Amd1:2020 ISO 13253:2017/Amd1:2020 ASHRAE 41.1:2020 ASHRAE 41.1:2022 SASO 2663 :2021 KS 2463:2019 ES 3795:2013 ES 3795-1:2016 ES 3795-2:2017 ES 3795-5:2018 ES 4814:2022 ES 5072:2020 ISO 16358-1:2013, Amd 1:2019 ISO 16358-2:2013 ISO 16358-3:2013 PSY1 lab - Thermocouple S.N.: 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A, 1C, 2C, 3C, 4C, 5C, 6C, 7C, 8C, 9C, 10C - Resistance Temperature Detector S.N.: 141588/30, 141588/31, 141588/34, 141588/35, 141588/2, 141588/3 S.N.: ISS-M878, ISS-M879, ISS-M880, ISS-M884, ISS-M885, ISS-M887 - Differential Pressure Transducer S.N.: 91J126000, S.N 91V525110 - Pressure Transmitter S.N 5295395, 5295391 - Barometric Pressure Gauge S.N: 12690920 - Air Velocity Transmitter S.N: 1911880610580E,1911880610637B,1911880610705D - Water Flow Meter S.N: G210000008309979 - Power, Volt, Freq. & Current Transmitter S.N: 91JA37350

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Air Conditioning Units up to 5 TR Fan Coil Units	Standard Rating Cooling Capacity By Using Air Enthalpy Method	ASHRAE 16:2016 ARI 440(I-P):2019 ARI 440(SI)-2019 ASHRAE 41.1:2020 ASHRAE 41.1:2022 - Thermocouple S.N.: 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A, 1C, 2C, 3C, 4C, 5C, 6C, 7C - Resistance Temperature Detector S.N: 141588/30, 141588/31, 141588/34, 141588/35, 141588/2, 141588/3 S.N: ISS-M878, ISS-M879, ISS-M880, ISS-M884, ISS-M885, ISS-M886 - Differential Pressure Transducer S.N: 91J126000, S.N 91H832525 - Pressure Transmitter S.N 5295395, 5295388 - Barometric Pressure Gauge S.N: 12690920 - Air Velocity Transmitter S.N: 16158806020354,1615880601745D,16158806020735 - Water Flow Meter S.N: G210000008309979 - Power, Volt, Freq. & Current Transmitter S.N: 91JA37350

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Air Conditioning Units up to 3.5 TR (Window, Split, Package) Air Cooled Units	Standard Rating Cooling Capacity Standard Rating Heating Capacity Performance Cooling Test . Performance Heating Test . By Using Air Enthalpy Method	ASHRAE 16:2016 ISO 5151:2017/Amd1:2020 ISO 13253:2017/Amd 1:2020 ASHRAE 41.1:2020 ASHRAE 41.1:2022 SASO 2663 :2021 KS 2463:2019 ES 3795:2023 ES 3795-1:2016 ES 3795-2:2017 ES 3795-5:2018 ES 4814:2022 ES 5072:2020 ISO 16358-1:2013, Amd 1:2019 ISO 16358-2:2013 ISO 16358-3:2013 PSY2 lab - Thermocouple S.N.: TC/01-ID, TC/02-ID, TC/03-ID, TC/04-ID, TC/05-ID, TC/06-ID, TC/07-ID, TC/08-ID, TC/09-ID, TC/010-ID. S.N.: TC/01-OD, TC/02-OD, TC/03-OD, TC/04-OD, TC/05-OD, TC/06-OD, TC/07-OD, TC/08-OD, TC/09-OD, TC/010-OD. - Resistance Temperature Detector S.N: ID-RTD-01, ID-RTD-02, ID-RTD-03, ID-RTD-04, OD-RTD-01, OD-RTD-02 - Differential Pressure Transducer S.N: 91N519511320, 91N623102324 - Pressure Transmitter S.N: 91N727169328, 5480515 - Barometric Pressure Gauge S.N: 3880816 - Power, Volt, Freq. & Current Transmitter S.N: 171144939

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Materials / Products Tested	Type of Tests / Properties Measured / Range of Measurements	Standard Specifications / Techniques Used
Air Conditioning Units up to 35 TR (Split, Package) Air Cooled Units and Ducted Air Conditioners	Standard Rating Cooling Capacity Standard Rating Heating Capacity Performance Cooling Test . Performance Heating Test . By Using Air Enthalpy Method	ASHRAE 16:2016 ISO 5151:2017/Amd 1:2020 ISO 13253:2017/Amd 1:2020 ASHRAE 41.1:2020 ASHRAE 41.1:2022 SASO 2663 :2021 KS 2463:2019 ES 3795:2023 ES 3795-1:2016 ES 3795-2:2017 ES 3795-5:2018 ES 4814:2022 ES 5072:2020 ISO 16358-1:2013, Amd 1:2019 ISO 16358-2:2013 ISO 16358-3:2013 PSY3 lab - Thermocouple S.N.: TC01-ID, TC02-ID, TC03-ID, TC04-ID, TC05-ID, TC06-ID, TC07-ID, TC08-ID, TC09-ID, TC10-ID, TC11-ID, TC12-ID, TC13-ID, TC14-ID, TC15-ID, TC16-ID, TC17-ID, TC18-ID, TC19-ID, TC20-ID, TC21-ID, TC22-ID, TC23-ID, TC24-ID, TC25-ID, TC26-ID, TC27-ID, TC28-ID, TC29-ID, TC30-ID S.N.: TC01-OD, TC02-OD, TC03-OD, TC04-OD, TC05-OD, TC06-OD, TC07-OD, TC08-OD, TC09-OD, TC10-OD, TC11-OD, TC12-OD, TC13-OD, TC14-OD, TC15-OD, TC16-OD, TC17-OD, TC18-OD, TC19-OD, TC20-OD, TC21-OD, TC22-OD, TC23-OD, TC24-OD, TC25-OD, TC26-OD, TC27-OD, TC28-OD, TC29-OD, TC30-OD - Resistance Temperature Detector S.N: RTD001-ID, RTD002-ID, RTD003-ID, RTD004-ID, RTD005-ID S.N: RTD001-OD, RTD002-OD - Differential Pressure Transducer S.N: 91U825588, 91T002193 - Pressure Transmitter S.N 525668, 525665, 525669, 525666 - Barometric Pressure Gauge S.N: 1A00KZG312V - Air Velocity Transmitter S.N: 214718000130DF, 214718000135E0, 21471800013602 - Power, Volt, Freq. & Current Transmitter S.N: 06062707/06062704 ,220712261

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Materials / Products Tested	Type of Tests / Properties Measured / Range of Measurements	Standard Specifications / Techniques Used
Air Conditioning Units up to 5 TR (Window, Split, Package) Air Cooled Split Units.	Standard Rating Cooling Capacity Standard Rating Heating Capacity Performance Cooling Test. Performance Heating Test. By Using Heat Balance Method	ASHRAE 16:2016 ISO 5151:2017/Amd 1:2020 ISO 13253:2017/Amd 1:2020 ASHRAE 41.1:2020 ASHRAE 41.1:2022 SASO 2663:2021 KS 2463:2019 ES 3795:2023 ES 3795-1:2016 ES 3795-2:2017 ES 3795-5:2018 ES 4814:2022 ES 5072 - 2020 ISO 16358-1:2013, Amd 1:2019 ISO 16358-2:2013 ISO 16358-3:2013 CAL1 lab - Thermocouple S.N.: 1B, 2B, 3B, 4B, 5B, 6B, 7B, 8B, 1D, 2D, 3D, 4D, 5D, 6D, 7D, 8D, 9D, 10D - Resistance Temperature Detector S.N: 141588/5, 141588/16, 141588/11, 141588/12 S.N: 1000,1001,1002,1003, 1004 S.N.: 0011, 0012, 0013, 0014, 0015, 0016, 0017, 008 - Pressure Transmitter S.N 5480513,5480514 - Air Velocity Transmitter S.N: 161588060178FE,1615880602066B - Water Flow Meter S.N.: G090000001202230, G090000001202231 - Freq. & Current, Power, Volt Transmitter S.N 91JA37349, 91JA37352, 91JA37353.220659168,220659169,220659170 Electronic Digital Balance S.N: NM1455

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Air Conditioning Units up to 6 TR (Window, Split, Package) Air Cooled Split Units.	Standard Rating Cooling Capacity Standard Rating Heating Capacity Performance Cooling Test. Performance Heating Test. By Using Heat Balance Method	ASHRAE 16:2016 ISO 5151:2017/Amd 1:2020 ISO 13253:2017/Amd 1:2020 ASHRAE 41.1:2020 ASHRAE 41.1:2022 SASO 2663:2021 KS 2463:2019 ES 3795:2023 ES 3795-1:2016 ES 3795-2:2017 ES 3795-5:2018 ES 4814:2022 ES 5072:2020 ISO 16358-1:2013, Amd 1:2019 ISO 16358-2:2013 ISO 16358-3:2013
Air Conditioning Units up to 6 TR Fan Coil Units	Standard Rating Cooling Capacity By Using Heat Balance Method	ASHRAE 16:2016 ARI 440(I-P) :2019 ARI 440(SI)-2019 ASHRAE 41.1:2020 ASHRAE 41.1:2022
		CAL2 lab - Thermocouple S.N.: TC001-1, TC002-1, TC003-1, TC004-1, TC005-1, TC006-1, TC007-1, TC008-1 S.N.: TC009-1, TC010-1, TC011-1, TC012-1, TC013-1, TC014-1, TC015-1, TC016-1 S.N.: TC017-1, TC018-1, TC019-1, TC020-1, TC001-2, TC002-2, TC003-2, TC004-2 S.N.: TC005-2, TC006-2, TC007-2, TC008-2, TC009-2, TC010-2, TC011-2, TC012-2 S.N.: TC013-2, TC014-2, TC015-2, TC016-2, TC017-2, TC018-2, TC019-2, TC020-2 - Resistance Temperature Detector S.N.: RTD001-1, RTD002-1, RTD003-1, RTD004-1, RTD005-1, RTD006-1, RTD007-1 S.N.: RTD008-1, RTD009-1, RTD010-1, RTD011-1, RTD012-1, RTD013-1, RTD001-2 S.N.: RTD002-2, RTD003-2, RTD004-2, RTD005-2, RTD006-2, RTD007-2, RTD008-2 - Differential Pressure Transducer S.N.: 91U825587, 91V609477 - Pressure Transmitter S.N.: 5480516, 5295393 - Barometric Pressure Gauge S.N.: 1A015IPWTJE, 1A015IPX9IV - Air Velocity Transmitter S.N.: 2147180013263, 21471800013181 - Water Flow Meter S.N.: G200000008309345, G200000008309346, G200000008308347 - Freq. & Current, Power, Volt Transmitter S.N.: 190823651, 190823652, 190823650 Electronic Digital Balance S.N.: A20106175

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Air Conditioning Units (Window, Split, Package)	Determination of Sound Power and Sound Pressure Levels at frequency 125 Hz to 10 kHz By Using Precision Method, Acoustics	ISO 3741:2010 Reverberation room - Reference Sound Source S.N 1818653 - Real Time Frequency Analyzer S.N 2684302,3050-114558 - Microphone S.N 1811694, 3185124 - Microphone Preamplifier S.N 1834741, 1828408 - Sound Level Calibrator S.N 1838979, 3008703 - Resistance Temperature Detector S.N 0019, 0020

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House holding Units' plastic parts	Glow wire flamability test at 650 °C, 750 °C, 850 °C and 960 °C	IEC60335-1:2020 IEC60695-2-10:2021 IEC60695-2-11:2021 IEC60695-2-12:2021 Glow wire Tester Model: T4-08 SN: 134/17 Stopwatch Model: UHLSPORT SN: MC-SFT-STW-01

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Metal Assembly Parts	Salt Spray test	ISO 9227-2022	Salt Spray Testers: S.N: 121046 , S.N: 53319 PH Meter: S.N: 6220158101, Precision Scale: S.N: 639491 Fog Catcher Meters: S.N: MC-SFT-DCTC-FCM-01 , S.N: MC-SFT-DCTC-FCM-02 Salt spray solution hydrometer: S.N: MC-SFT-HYD-01 Angle meter: S.N: T2-207
Solid Insulating Materials	Tracking Test	IEC 60335-1:2020 IEC 60335-2-40:2022 IEC 60112 :2020	Tracking Test Apparatus: S.N: 70/17, Tracking electrodes: S.N: 534-535, 477-476 Electronic Digital Balance: S.N: WG1600153

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Plastic Assembly Parts	Ball Pressure Test	IEC 60335-1:2020 IEC 60335-2-40:2022 IEC 60695-10-2 :2014	Heating Chamber: S.N: 05/17, Loading Device 1: S.N: 69/17, Loading Device 2: S.N: C04471441, Optical comparator lenses: S.N: 121W , 121B , 122W , 122B Thermocouple with Temp. Indicator: S.N:151218827

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Home Appliances	Determination of Degree of Protection (IPX3,IPX4)	IEC 60529:2019	Rain Test Chamber : S.N: 02/17 Tubes R600 , R800 , R1000 , R1200: S.N: 45/17 , 47/17 , 42/17 Flow rate meter: S.N: 198.801.888 Water Pressure Mete: S.N: 466623 Jet test set: S.N: 52/17

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Materials / Products Tested	Type of Tests / Properties Measured / Range of Measurements	Standard Specifications / Techniques Used	
Home Appliance	Ground Bond Test	IEC 60335-1:2020	Electrical safety comprehensive tester: Model: AN9651TH(F) S.N: 1910965001FG, Isolation power supply: S.N: 1910965001IPS, Test box: S.N: 1910965001TB
	AC Withstand High Voltage Test	IEC 60335-2-40:2022	
	DC Withstand High Voltage Test		
	Power Deviation Test		
	Insulation Resistance Test		
	Leakage Current Test		
Wires & cables	Internal wiring electrical strength	IEC 60335-1:2020	Electrical safety comprehensive tester: Model: AN9651TH(F) S.N: 1910965001FG, Isolation power supply: S.N: 1910965001IPS, Test box: S.N: 1910965001TB
		IEC 60335-2-40:2022	
Wires & Cables	Cord anchorage test	IEC 60335-1:2020 IEC 60884-1:2022	Cord anchorage torque tester: S.N: 22/17

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Electrical Equipment & Enclosures	Protection against access to live parts test	IEC 60335-1:2020 IEC 61032:1997 IEC 60529:2013	Probe B: S.N: L04472107 Continuity Indicator: S.N: L10461939
Electrical Equipment & Enclosures	Protection against access to hazardous parts test	IEC 60335-1:2020 IEC 61032:1997 IEC 60529:2019	Fingernail Probe: S.N: L09470801 Probe 11: S.N: L01472038 Probe 12: S.N: L07472064 Probe 13: S.N: L07461896 Probe 41: S.N: L01472015 Probe B: S.N: L04472107 Rigid finger probe: S.N: L12462001

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Measurand Quantity	Range	Uncertainty Described in Calibration & Measurement Capability*	Brief Description of Measurement and Equipment Used
Electrical (permanent)			
Calibration of AC current with clamp @50 Hz Measuring devices	50 A to 100 A 100A to 300A 300A to 600 A	0.42 A 1.27 A 2.51 A	ES1021:2020 AC power calibrator S.N.: 91V222603 Current coil 50 turns S.N.: 20083530

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