

Name: Calibration & Testing Center of Taikoo (Shandong) Aircraft Engineering Co., Ltd.

Address: Yaoqiang International Airport, Jinan, Shandong, China

Registration No. CNAS L9376

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

Effective Date: 2022-11-01 Expiry Date: 2028-10-17

SCHEDULE 3 ACCREDITED TESTING SCOPE

№	Test Object	Item/Parameter		Standard or Method	Note	Effective Date
		№	Item/ Parameter			
1	Plain workpiece	1	Dimension	Geometrical Product Specifications (GPS) - Inspection of Plain Workpiece Sizes GB/T3177-2009	≤300mm	2022-11-01
		2	Straightness	Measurement of Departures from Straightness GB/T 11336-2004	≤300mm	2022-11-01
		3	Perpendicularity Angle	GPS-Geometrical Tolerance - Verification Prescription GB/T 1958-2017 A.9	≤300mm	2022-11-01
		4	Gradient	GPS-Geometrical Tolerance - Verification Prescription GB/T 1958-2017 A.10	≤300mm	2022-11-01
		5	Position	GPS-Geometrical Tolerance - Verification Prescription GB/T 1958-2017 A.13	≤300mm	2022-11-01
		6	Geometrical Tolerance	Geometrical Product Specifications(GPS)-Geometrical tolerance-Verification GB/T 1958-2017 Appendix C	≤300mm	2022-11-01
2	Heat Treatment Furnaces	1	Temperature uniformity	Boeing process specification-Temperature Control for processing of materials BAC5621-2017 Rev.M		2022-11-01
				Test method for working zone of heat treatment furnace GB/T 9452-2012 7		2022-11-01
				SAE Aerospace Material Specification - Pyrometry AMS2750-2022 Rev.G		2022-11-01

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№	Test Object	Item/Parameter		Standard or Method	Note	Effective Date
		№	Item/ Parameter			
3	Purity Water	1	Total Solid	Boeing Process Control Analytical Procedures D180-17994-1 REV.W B-217		2022-11-01
4	Plating Solution	1	Isoprep44 of Alkaline Cleaning Solution	Boeing Process Control Analytical Procedures D180-17994-1 REV.W B-236		2022-11-01
		2	Nitric Acid of Acid Etching Solution	Boeing Process Control Analytical Procedures D180-17994-1 REV.W B-38		2022-11-01
		3	Bonderite M-CR 600 Aero	Boeing Process Control Analytical Procedures D180-17994-1 REV.W B-21		2022-11-01
		4	Bonderite M-CR 1200S Aero	Boeing Process Control Analytical Procedures D180-17994-1 REV.W B-23		2022-11-01
5	Fuel	1	Microbes	Boeing Aircraft Maintenance Manual AMM 28-11-00 AMM28-10-00 2.A.(2).(d)	Accredited only for HY-LITE JET A-1 FUEL TEST	2022-11-01
				AIRBUS Aircraft Maintenance Manual AMM12-32-28 Figure 12-32-28-991-00600-A	Accredited only for HY-LITE JET A-1 FUEL TEST	2022-11-01
6	*Electric Welding Machine	1	DC Current	Test method for Electric Welding Machine SCP-E-110		2022-11-01
				Boeing process specification-Fusion Welding of metals BAC5975		2022-11-01
		2	AC Current	Test method for Electric Welding Machine SCP-E-110		2022-11-01



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		№	Item/ Parameter			
				Boeing process specification-Fusion Welding of metals BAC5975		2022-11-01
7	Aircraft sling	1	Load test	Technical specification for the proofload test of sling of civil aviation MH/T 3006-2011 6.2.4	Accredited only for LOAD≤100 kN; Accredited only for sling of civil aviation	2022-11-01
		2	PT	Civil Aviation Nondestructive Testing--Penetrant Testing T/CAMAC 0005—2020		2022-11-01
		3	MT	Civil Aviation Nondestructive Testing Magnetic--Particle Testing T/CAMAC 0004—2020		2022-11-01
8	aircraft jack	1	capability	Type, basic parameter and technical requirement of jack for aircraft HB7791-2005 5.3	Accredited only for LOAD≤500 kN; Except for Horizontal load	2022-11-01
		2	The hydraulic system	Type, basic parameter and technical requirement of jack for aircraft HB7791-2005 5.5		2022-11-01
		3	security	Type, basic parameter and technical requirement of jack for aircraft HB7791-2005 5.6		2022-11-01
9	Seat belts	1	Whole Static load	Test method for personal fall prosonal systems GB/T6096-2020 5.1	Accredited only for LOAD≤15k N;	2022-11-01



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		№	Item/ Parameter			
					Accredited only for Zone restricted seat belts	
10	Hand chain blocks	1	Visual inspection	Hand chain blocks JB/T 7334-2016 5.2		2022-11-01
		2	No-load performance	Hand chain blocks JB/T 7334-2016 5.3		2022-11-01
		3	Dynamic load performance	Hand chain blocks JB/T 7334-2016 5.5	Load ≤100kN	2022-11-01
		4	Load limit	Hand chain blocks JB/T 7334-2016 5.13		2022-11-01
11	Chain lever hoists	1	Visual inspection	Chain lever hoists JB/T 7335-2016 5.2		2022-11-01
		2	No-load performance	Chain lever hoists JB/T 7335-2016 5.3		2022-11-01
		3	Dynamic load performance	Chain lever hoists JB/T 7335-2016 5.5	Load ≤100kN	2022-11-01
		4	Load limit	Chain lever hoists JB/T 7335-2016 5.12		2022-11-01



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SCHEDULE OF ACCREDITATION CERTIFICATE

SCHEDULE 5 ACCREDITED CALIBRATION AND MEASUREMENT CAPABILITY SCOPE

Note: The instruments with \* represents onsite calibration can be performed.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
1	Height Calipers	Length	V.R. of Height Calipers JYG 31	(0~300) mm	$U=0.01\text{mm}+10^{-5}L$		
2	Dial Gauges	Length	V. R. of Dial Gauges (dial and digital) JYG 34	reading in 0.01mm (0~10) mm	$U=5 \mu\text{m}$		
				reading in 0.001mm(0~5) mm	$U=1.6 \mu\text{m}$		
3	Crimping Tool/Die Set (Imperial)	Length	Calibration Procedure of Crimping tool/Die Set SCP-L-054	(0.001~1)in	$U=2.5 \times 10^2 \mu\text{in}$		
4	Dial Indicator(Imperial)	Length	Dial Indicators (For Linear Measurements) ASME B89.1.10M	Reading in 0.0005in(0~1) in	$U=1.7 \times 10^2 \mu\text{in}$	合格评定国家认可委员会 认可证书专用章	
				Reading in 0.0005in(1~2) in	$U=3 \times 10^2 \mu\text{in}$		
				Reading in 0.00005in(0~0.06) in	$U=70 \mu\text{in}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
5	Wide Range Dauges Reading in 0.01mm	Length	V. R. of Wide Range Dauges Reading in 0.01mm JJG379	(10~50) mm	$U=10 \mu m$		
6	Current Calipers	Length	V. R. of Current Calipers JJG 30	(0~300) mm	$U=0.01mm+10^{-5}L$		
7	Dial Test Indicator	Length	V. R. of Dial Test Indicator JJG 35	reading in 0.01mm(0~ 1) mm	$U=1.7 \mu m$		
				reading in 0.001mm(0~ 0.4) mm	$U=0.9 \mu m$		
8	Plain Limit Gauges	Length	V. R. of Plain Limit Gauges JJG 343	Plug Gauge: (0.2~100) mm	$U=0.6 \mu m$		
				Ring Gauge: (10~50) mm	$U=0.7 \mu m$		
9	Cylindrical Plug Gages(Imperial)	Length	Measurement of Plain External Diameters for use as Master Discs or Cylindrical Plug Gages ASME B89.1.5	$\phi$ (0.01~4) in	$U=24 \mu in$		
10	Thread Plug Gauge (Imperial)	Length	Gages and Gaging for Unified Inch Screw Threads ASME B1.2	UN(0.008~0.6) in	$U=92 \mu in$		
11	Feeler Gauges	Length	V. R. of Feeler Gauge JJG 62	(0.02~0.10) mm	$U=1.4 \mu m$		
				(0.10~3.00) mm	$U=2.4 \mu m$		
12	Thread Plug Gauge	Length	C.S. for Cylindrical Thread Gauges JJF 1345	M(0.20~50) mm	$U=2.2 \mu m$	measure intermediate diameter	
13	Radius Gauges	Length	V. R. of Radius Gauges JJG58	R(1~25)mm	$U=7 \mu m$		
14	Standard Test Block	Length	Calibration Procedure of Standard Test Block SCP-L- 056	(0.02~100)mm	$U=2.4 \mu m$		

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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
15	Cable Swaging Terminal Gauge	Length	Calibration Procedure of Cable Swaging Terminal Gauge SCP-L-062	(2~100)mm	$U=19 \mu m$		
16	Test Sieves	Length	C. S. for Test Sieves JJF 1175, Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves ASTM E11	(0.25~50)mm	$U=6 \mu m$		
1	ELCH BT100 Type Elasticity Laminate Checker	Pressure	Calibration Procedure of ELCH BT100 Type Elasticity Laminate Checker SCP-L-061, ELCH BT100 Type Elasticity Laminate Checker Operating Instructions	-0.07MPa/-0.7bar	$U_{rel}=0.9\%$		
		Length		(0~0.4)mm	$U=0.004mm$		
2	Tyre Pressure Gauge	Pressure	Verification Regulation of Tyre Pressure Gauge JJG 927	(0.05~2.5) MPa	$U=0.26\%FS$		
3	Tyre Pressure Gauge	Pressure	Pressure Gauge-Apparatus for inspection of pressure and/or inflation of tyres for motor vehicles-Metrology, requirements and testing BS EN 12645	(0.02~7)MPa(0.2~70) bar	$U=0.17\%FS$		
4	Cable	Force	Tensitron Company Operating Instructions: ACM 200 Cable Tensiometer, Calibration Procedure of Cable Tensiometer-T60 Series SCP-M-004, C.S for Cable Tensiometer of Direct	(22~2002)N/(5.0~450.0)lbf	$U_{rel}=0.68\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			Reading Type JJF(CAAC)0087, Calibration Specification for T5 series Cable Tensionmeter JJF(CAAC)0057, Calibration Procedure of Cable Tensiometer-T5 Series & ACM-200 SCP-M-005	(22.24~ 2001.70)N/(2.268~ 204.117)kgf	$U_{rel}=0.68\%$		
5	Working Dynamometer	Force	Verification Regulation of Working Dynamometer JJG 455	(22~2667)N (2.667~300)kN	$U_{rel}=0.14\%$ $U_{rel}=0.035\%$		
6	Weighing Platform	Mass	Intercomp Company Calbration Procedures: AC30-60 Weighing Platform Calbration Procedures AC30- 60 Aircrsft Weighing Platform,C.S for Aircrsft Weighing Platform JJF(CAAC)0091	(2722~ 27216)kg/(6000~ 60000)lb	$U_{rel}=0.036\%$		
7	*Bourdon Tube Pressure Gauge, Pressure-Vacuum Gauge and Vacuum Gauge for General Use	Pressure	Verification Regulation of Bourdon Tube Pressure Gauge, Pressure-Vacuum Gauge and Vacuum Gauge for General Use JJG 52	(-0.1~70) MPa	$U=0.38\%FS$		
8	*Composite Repair System	Pressure	Calibration Procedure of Composite Repair System SCP-T-	(-85~-13)kPa/(-25~- 4)in · Hg	$U_{rel}=2.4\%$	合格评定 国家认可 CNAS 认可证书专用章	
		Temperature	152,HCS9000B/HCS9200B Calibration Manual	(32~260)°C/(90~500)°F	$U_{rel}=0.12\%$		



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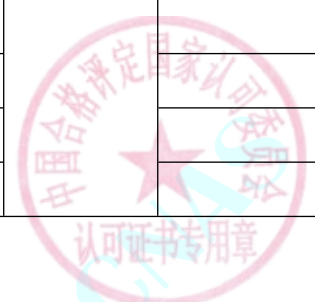
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
9	Rotary Tools for Threaded Fasteners	Torque	Rotary Tools for Threaded Fasteners-Performance Test Method ISO5393	(1.0~10)N·m/(8.8~88)lbf·in	$U_{rel}=0.66\%$		
10	*Digital Indicating Weighing Instrument	Mass	Verification Regulation of Digital Indicating Weighing Instrument JJG 539	(2~2000) g	$U=0.1g$		
				(>2~5) kg	$U=1g$		
				(>5~10) kg	$U=1g$		
			(>10~40) kg	$U=3g$			
11	Torque Wrench	Torque	Verification Regulation of Torque Wrenches JJG 707, Assembly Tools for Screws and Nuts-Hand Torque Tools BS EN ISO 6789-1, Hand Torque Tools and Torque Testers ASME B107.300	(0.14~1356)N·m/(1.2lbf·in~1000lbf·ft)	$U_{rel}=0.7\%$		
12	*Electronic Balance	Mass	Verification Regulation for Electronic Balance JJG 1036	(0~1)kg	$U=0.01g$		
				(>1~2)kg	$U=0.02g$		
				(>2~5) kg	$U=0.03g$		
				(>5~10) kg	$U=0.06g$		
				(>10~30) kg	$U=0.6g$		
				(>30~40) kg	$U=0.7g$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
13	*Pressure Gauge	Pressure	Pressure Gauges and Gauge Attachments ASME B40.100, Pressure gauges part 1. Bourdon tube pressure gauges- Dimensions, metrology, requirements and testing BS EN 837-1	(-0.1~70)MPa/(-14.5~10153)psi	U=0.086%FS		
14	*Rockwell Hardness Machine	Hardness	Standard Test Methods for Rockwell Hardness of Metallic Materials ASTM E18	(20~60) HRBW	U=0.38HRBW		
				(>60~80) HRBW	U=0.38HRBW		
				(>80~100) HRBW	U=0.48HRBW		
				(20~35) HRC	U=0.42 HRC		
				(>35~60) HRC	U=0.40 HRC		
				(>60~80) HRC	U=0.32 HRC		
15	*Rockwell Superficial Hardness Machine	Hardness	Verification Of Rockwell Hardness Testing Machines ASTM E18 Appendix A1	(70~81) HR15TW	U=0.43 HR15TW		
				(>81 ~87) HR15TW	U=0.56 HR15TW		
				(>87 ~93) HR15TW	U=0.52 HR15TW		
16	hydraulic jack	Force	V.R.of hydraulic jack JJG621	(10~500)kN	U <sub>rel</sub> =0.5%		
17	axial force of tester	Force	Verification Regulation of Working Dynamometer JJG455	(890~44482)N/(200~10000)lbf	U=0.05%FS		
18	Elastic Element Precise Pressure Gauges and Vacuum Gauges	Pressure	Verification Regulation of Elastic Element Precise Pressure Gauges and Vacuum Gauges JJG 49	(-0.1~70)MPa	U=0.087%FS		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
19	Digital Pressure Gauges	Pressure	Verification Regulation of Digital Pressure Gauges JJG875	(-0.1~70)MPa/(-14.5~10153)psi	$U=0.063\%FS$	Grade 0.2 and below	
1	*Equipment of the Environmental Testing for Temperature and Humidity	Temperature	Calibration Specification for the Environmental of the Environmental Testing for Temperature and Humidity Parameters JJF 1101	(0~300) °C	$U=0.5^{\circ}C$		
2	Working Base Metal Thermocouple	Temperature	Calibration Regulation of Base Metal Thermocouple JJF1637, Calibration Specification for Sheathed Thermocouples JJF1262, SAE Aerospace Material Specification - Pyrometry 3.1 Temperature Sensor AMS2750	(-30~60) °C	$U=0.7^{\circ}C$		
				(>60~300) °C	$U=0.9^{\circ}C$		
				(>300~1200) °C	$U=1.2^{\circ}C$		
3	*Recorders for industrial- process Measurement	Temperature	Verification Regulation of Recorders for industrial-process Measurement JJG 74, SAE Aerospace Material Specification - Pyrometry 3.2 Instrumentation AMS2750	(>0~1000) °C (J、K)	$U=0.4^{\circ}C$		
				(>0~1000) °C (E、N)	$U=0.3^{\circ}C$		
4	*Digital Temperature Indicators and Controllers	Temperature	Verification Regulation of Digital Temperature Indicators and Controllers JJG 617, SAE Aerospace Material Specification - Pyrometry 3.2 Instrumentation AMS2750	(>0~1000) °C (J、K)	$U=0.3^{\circ}C$		
				(>0~1000) °C (E、N)	$U=0.3^{\circ}C$		
				(-200~600) °C (Resistance)	$U=0.2^{\circ}C$		



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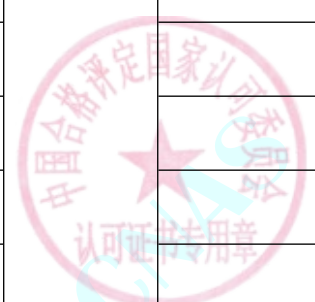
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
5	Mechanical Thermo-Hygrometers	Temperature	Verification Regulation of Mechanical Thermo-Hygrometers JJG 205	(5~50) °C	U=0.6°C		
		Humidity		30%RH~90%RH	U=2.0%RH		
6	Digital thermo-hygrometer	Temperature	Calibration Specification for Digital Thermo-hygrometer JJF(JungGong) 165	(5~50)°C	U=0.4°C		
		Humidity		30%RH~90%RH	U=2.0%RH		
7	Bimetallic thermometers	Temperature	Calibration Specification for Bimetallic Thermometer JJF 1908	(-30~300)°C	U=0.3°C		
8	Temperature Indicators	Temperature	Calibration Specification for Temperature Indicators JJF 1664,SAE Aerospace Material Specification - Pyrometry AMS2750	(0~1000)°C for TC	U=0.3°C		
				(-200~600)°C for RTD	U=0.2°C		
9	Liquid-in-Glass Thermometers for Working	Temperature	Verification Regulation of Liquid-in-Glass Thermometers for Working JJG 130	(-30~300)°C	U=0.1°C	Calibration of only division value 0.5°C and below.	
10	Temperature Transmitter	Temperature	Calibration Specification of the Temperature Transmitter JJF 1183	(-20~350)°C	U <sub>rel</sub> =0.1%	For Thermocouple type K	
1	Analogue DC Voltmeter	DC Voltage	Verification Regulation of Amperemeter/Voltmeter/Wattmeter and Ohmmeter JJG 124	(0.01~1000) V	U <sub>rel</sub> =0.1%	Calibration of only 0.5 level and below.	



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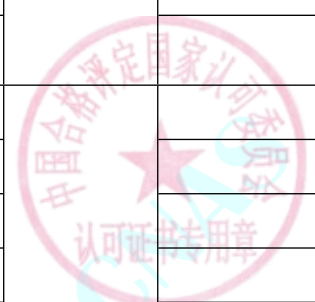
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
2	Analogue DC Amperemeter	DC Current	Verification Regulation of Amperemeter/Voltmeter/Wattmeter and Ohmmeter JJG 124	(0.1~20) A	$U_{rel}=0.1\%$	Calibration of only 0.5 level and below.	
3	Analogue AC Voltmeter	AC Voltage	Verification Regulation of Amperemeter/Voltmeter/Wattmeter and Ohmmeter JJG 124	(0.005~3) V 50 Hz~10 kHz	$U_{rel}=0.15\%$	Calibration of only 0.5 level and below.	
				(>3~30) V 50 Hz~10 kHz	$U_{rel}=0.15\%$		
				(>30~1000) V 50 Hz~10 kHz	$U_{rel}=0.12\%$		
4	AC Digital Current Meter	AC Current	Calibration Specification for Multimeters JJF1587	29 $\mu$ A~33 mA 45 Hz~1 kHz	$U_{rel}=2.3 \times 10^{-4} \sim 7.9 \times 10^{-4}$		
				29 $\mu$ A~33 mA >1 kHz~5 kHz	$U_{rel}=4.3 \times 10^{-4} \sim 1.8 \times 10^{-3}$		
				29 $\mu$ A~33 mA >5 kHz~10 kHz	$U_{rel}=1.1 \times 10^{-3} \sim 4.3 \times 10^{-3}$		
				29 $\mu$ A~33 mA >10 kHz~20 kHz	$U_{rel}=2.1 \times 10^{-3} \sim 5.1 \times 10^{-3}$		
				(>33~330) mA 45 Hz~1 kHz	$U_{rel}=5.0 \times 10^{-4} \sim 2.3 \times 10^{-4}$		
				(>33~330) mA >1 kHz~5 kHz	$U_{rel}=1.3 \times 10^{-3} \sim 5.8 \times 10^{-4}$		
				(>33~330) mA >5 kHz~10 kHz	$U_{rel}=2.0 \times 10^{-3} \sim 6.5 \times 10^{-4}$		
				(>33~330) mA >10 kHz~20 kHz	$U_{rel}=2.3 \times 10^{-3} \sim 5.0 \times 10^{-3}$		
(>0.33~1.1) A 45 Hz~1 kHz	$U_{rel}=4.0 \times 10^{-4} \sim 3.0 \times 10^{-4}$						



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				(>0.33~1.1) A >1 kHz~5 kHz	$U_{rel}=3.1 \times 10^{-3} \sim 3.2 \times 10^{-3}$		
				(>0.33~1.1) A >5 kHz~10 kHz	$U_{rel}=1.5 \times 10^{-2} \sim 2.0 \times 10^{-2}$		
				(>1.1~3) A 45 Hz~1 kHz	$U_{rel}=2.7 \times 10^{-4} \sim 3.0 \times 10^{-4}$		
				(>1.1~3) A >1 kHz~5 kHz	$U_{rel}=3.0 \times 10^{-3} \sim 3.1 \times 10^{-3}$		
				(>1.1~3) A >5 kHz~10 kHz	$U_{rel}=1.3 \times 10^{-2} \sim 1.5 \times 10^{-2}$		
				(>3~11) A 45 Hz~100 Hz	$U_{rel}=6.3 \times 10^{-4} \sim 3.9 \times 10^{-4}$		
				(>3~11) A >100 Hz~1 kHz	$U_{rel}=5.3 \times 10^{-4} \sim 5.1 \times 10^{-4}$		
				(>3~11) A >1 kHz~5 kHz	$U_{rel}=1.5 \times 10^{-2}$		
				(>11~20) A 45 Hz~100 Hz	$U_{rel}=7.3 \times 10^{-4} \sim 8.3 \times 10^{-4}$		
				(>11~20) A >100 Hz~1 kHz	$U_{rel}=8.8 \times 10^{-4} \sim 9.8 \times 10^{-4}$		
5	*ESD Control Facility	Resistance	Boeing process specification-Handling of Electricla-Electronic Parts and Assenblies BAC5485,protection electrostatics devices from electrostatic phenomena general requirements BS EN	(0.01~9.99) M Ω	$U=3.5\%R+0.03M \Omega$		
				(10~99.9) M Ω	$U=3.5\%R+0.3M \Omega$		
				(100~999) M Ω	$U=3.5\%R+3M \Omega$		
				(1 ~9.99) G Ω	$U=5.7\%R+0.03G \Omega$		
				(10 ~19.9)G Ω	$U=5.7\%R+0.3G \Omega$		



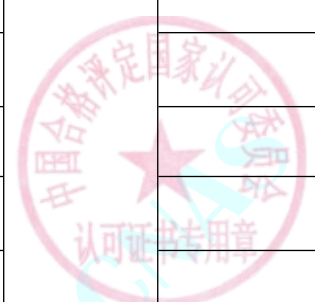
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			61340-5-1	(20~100)G Ω	$U=5.7\%R+3G\Omega$		
6	AC Digital Voltmeter	AC Voltage	Calibration Specification for Multimeters JJF1587	(1.0 ~ 100) mV 45 Hz~ 10 kHz	$U_{rel}=8.4\times 10^{-3}\sim 2.2\times 10^{-4}$		
				(1.0 ~ 100) mV >10k Hz~ 20 kHz	$U_{rel}=8.5\times 10^{-3}\sim 2.4\times 10^{-4}$		
				(1.0 ~ 100) mV >20 k Hz~ 50 kHz	$U_{rel}=9.1\times 10^{-3}\sim 4.3\times 10^{-4}$		
				(1.0 ~ 100) mV >50 kHz~ 100 kHz	$U_{rel}=U_{rel}=1.7\times 10^{-2}\sim 1.1\times 10^{-3}$		
				(1.0 ~ 100) mV >100 kHz~ 500 kHz	$U_{rel}=5.8\times 10^{-2}\sim 2.7\times 10^{-3}$		
				(>100 ~ 330) mV 45 Hz~ 10 kHz	$U_{rel}=2.2\times 10^{-4}\sim 1.6\times 10^{-4}$		
				(>100 ~ 330) mV >10 k Hz~ 20 kHz	$U_{rel}=2.4\times 10^{-4}\sim 1.8\times 10^{-4}$		
				(>100 ~ 330) mV >20 k Hz~ 50 kHz	$U_{rel}=4.3\times 10^{-4}\sim 3.7\times 10^{-4}$		
				(>100 ~ 330) mV >50 kHz~ 100 kHz	$U_{rel}=1.1\times 10^{-3}\sim 9.0\times 10^{-4}$		
				(>100 ~ 330) mV 4>100 kHz~ 500 kHz	$U_{rel}=2.7\times 10^{-3}\sim 2.2\times 10^{-3}$		
				(>0.33~3.3) V 45 Hz~ 10 kHz	$U_{rel}=2.6\times 10^{-4}\sim 1.3\times 10^{-4}$		
				(>0.33~3.3) V >10 kHz~ 20 kHz	$U_{rel}=3.8\times 10^{-4}\sim 2.1\times 10^{-4}$		
(>0.33~3.3) V >20 k Hz~ 50 kHz	$U_{rel}=4.8\times 10^{-4}\sim 3.2\times 10^{-4}$						

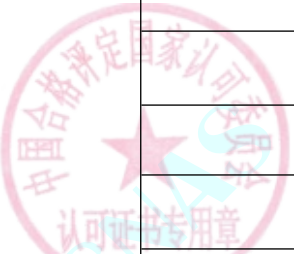


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>0.33~3.3) V >50 kHz~100 kHz	$U_{rel}=7.4 \times 10^{-4} \sim 1.1 \times 10^{-3}$		
				(>0.33~3.3) V >100 kHz~500 kHz	$U_{rel}=4.2 \times 10^{-3} \sim 2.6 \times 10^{-3}$		
				(>3.3~33) V 45 Hz~10 kHz	$U_{rel}=2.6 \times 10^{-4} \sim 1.5 \times 10^{-4}$		
				(>3.3~33) V >10 kHz~20 kHz	$U_{rel}=4.6 \times 10^{-4} \sim 2.6 \times 10^{-4}$		
				(>3.3~33) V >20 kHz~50 kHz	$U_{rel}=5.6 \times 10^{-4} \sim 3.7 \times 10^{-4}$		
				(>3.3~33) V >50 kHz~100 kHz	$U_{rel}=1.4 \times 10^{-3} \sim 9.5 \times 10^{-4}$		
				(>33~330) V 45 Hz~1 kHz	$U_{rel}=4.1 \times 10^{-4} \sim 2.1 \times 10^{-4}$		
				(>33~330) V >1 kHz~10 kHz	$U_{rel}=4.2 \times 10^{-4} \sim 2.2 \times 10^{-4}$		
				(>33~330) V >10 kHz~20 kHz	$U_{rel}=4.7 \times 10^{-4} \sim 2.7 \times 10^{-4}$		
				(>33~330) V >20 kHz~50 kHz	$U_{rel}=5.1 \times 10^{-4} \sim 3.2 \times 10^{-4}$		
				(>33~330) V >50 kHz~100 kHz	$U_{rel}=3.5 \times 10^{-3} \sim 2.2 \times 10^{-3}$		
				(>330~1000) V 45 Hz~1 kHz	$U_{rel}=3.3 \times 10^{-4} \sim 3.1 \times 10^{-4}$		
				(>330~1000) V >1kHz~5 kHz	$U_{rel}=2.8 \times 10^{-4} \sim 2.6 \times 10^{-4}$		
				(>330~1000) V >5kHz~10 kHz	$U_{rel}=3.3 \times 10^{-4} \sim 3.1 \times 10^{-4}$		



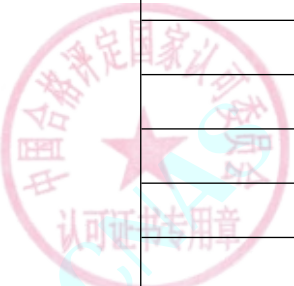
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
7	Clamp Ammeters	DC Current	Calibration Specification of Clamp Ammeters JJF1075	(0.1~20) A	$U_{rel}=0.2\%$		
				(>20~1000) A	$U_{rel}=0.7\%$		
8	*Magnetic Particle	Magnetization Current	Standard Practice for Magnetic Particle Testing for Aerospace ASTM E1444/E1444M	(200~2000)A	$U_{rel}=1.5\%$		
		Magnetization Time		(>2000~15000)A	$U_{rel}=1.8\%$		
9	HCS2047 Type Heat Blanket Tester	Resistance	Calibration Procedure of HCS2047 Type Heat Blanket Tester SCP-E-115,HCS2047 Type Heat Blanket Tester Calibration Manual	(0~99.99) Ω	$U=0.08\ \Omega$		
				(100~1000) Ω	$U=0.2\ \Omega$		
10	DC Digital Ohmmeter	Resistance	Calibration Specification for Multimeters JJF1587	(1~10) Ω	$U_{rel}=1.0\times 10^{-2}\sim 1.0\times 10^{-3}$		
				(>10~100) Ω	$U_{rel}=1.0\times 10^{-3}\sim 1.8\times 10^{-4}$		
				(>0.1~1) k Ω	$U_{rel}=1.8\times 10^{-4}\sim 4.8\times 10^{-5}$		
				(>1~10) k Ω	$U_{rel}=4.8\times 10^{-5}\sim 3.1\times 10^{-5}$		
				(>10~100) k Ω	$U_{rel}=3.1\times 10^{-5}\sim 3.8\times 10^{-5}$		
				(>0.1~1) M Ω	$U_{rel}=3.8\times 10^{-5}\sim 4.2\times 10^{-5}$		
				(>1~3) M Ω	$U_{rel}=4.2\times 10^{-5}\sim 1.1\times 10^{-4}$		
				(>3~10) M Ω	$U_{rel}=1.1\times 10^{-4}\sim 1.6\times 10^{-4}$		
				(>10~30) M Ω	$U_{rel}=1.6\times 10^{-4}\sim 3.3\times 10^{-4}$		
11	DC Digital Amperemeter	DC Current	Calibration Specification for Multimeters JJF1587	5 μ A~10 mA	$U_{rel}=2.2\times 10^{-4}\sim 1.1\times 10^{-4}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>10~100) mA	$U_{rel}=1.1 \times 10^{-4}$		
				(>100~300) mA	$U_{rel}=1.1 \times 10^{-4}$		
				(>0.3~1) A	$U_{rel}=2.4 \times 10^{-4}$		
				(>1~3) A	$U_{rel}=3.9 \times 10^{-4}$		
				(>3~10) A	$U_{rel}=5.3 \times 10^{-4}$		
				(>10~20) A	$U_{rel}=1.0 \times 10^{-3}$		
12	DC Digital Voltmeter	DC Voltage	Calibration Specification for Multimeters JJF1587	(10~100) mV	$U_{rel}=1.3 \times 10^{-4} \sim 3.1 \times 10^{-5}$		
				(0.1~1) V	$U_{rel}=1.4 \times 10^{-5} \sim 6.5 \times 10^{-5}$		
				(>1~10) V	$U_{rel}=5.9 \times 10^{-5} \sim 1.5 \times 10^{-5}$		
				(>10~30) V	$U_{rel}=5.9 \times 10^{-5} \sim 2.3 \times 10^{-5}$		
				(>30~100) V	$U_{rel}=3.0 \times 10^{-5} \sim 2.0 \times 10^{-5}$		
				(>100~1000) V	$U_{rel}=6.7 \times 10^{-5} \sim 2.0 \times 10^{-5}$		
13	Wrist Strap Tester	Resistance	Calibration Specification for Wrist Strap and Footwear Tester JJF(Electronic) 31502	750k $\Omega$ ~ 11M $\Omega$	$U_{rel}=0.1\%$		
1	*Transmission Densitometer	Density	Standard Practice for Calibration of Transmission Densitometers ASTM E1079	(0~4.2)D	$U= (0.03 \sim 0.04) D$	Only for x ray	



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
2	*Film viewer	luminance	Standard Practice for Radiographic Examination ASTM E1742, Standard Guide for Illuminators Used for Viewing Industrial Radiographs ASTM E1390, Calibration Procedure of Film Viewer SCP-E-105	(100~100000)cd/m <sup>2</sup>	$U_{rel}=5\%$		



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