SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017 & KS Q ISO/IEC 17025:2017

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CALIBRATION

Valid To : July. 07, 2027. Accreditation No : KC01-072

In recognition of the successful completion of the KOLAS evaluation process,
accreditation is granted to this laboratory to perform the following calibrations

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
204. Pressure			503. Humidity					
20402	Manometers	Y	50302	Relative humidity hygromete polimeterthinfilm, hair, et	N			
20406	Absolute pressure gauges	N						
20408	Compound pressure gauges	Y	50303	Psychrometers; Assmann ventilated, PRT type, etc.	N			
20409	Differential pressure gauges	Y						
20411	Gauge pressure gauges	Y	50304	Temperature humidity recorders; hygrothermograph, etc.	N			
20412	Pressure transducers /transmitters	Y						
20413	Dial type vacuum gauges	Y	50305	Transducers; dew-point /relative humidity	N			
401. DC voltage & current								
40101	DC ammeters	Y	50306	Humidity generators; two-pressure, two-temperature, flow mixing humidity generator, constant tempra ture and humidity chamber etc.	Y			
40112	DC voltmeters	Y						
404. Other DC & LF measurements								
40424	Voltage/current recorders	Y						
501. Contact thermometry								
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50101	Temperature generators; ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	N						
50102	Temperature indicators /recorders/controllers, temperature calibrators	Y						
50104	Resistance thermometers; SPRT, IPRT, thermistors, etc.	N						
50105	Thermal expansion thermometers; bimetal, gas or liquid type	N						
50106	Thermocouples; noble metal, base metal, pure metal, special type, etc.	N						
50107	Temperature transducers	N						

Note

1. This laboratory provides calibration services in permanent standard laboratory and at on-site.
2. Laboratory conducts on-site calibration should meet requirements of KOLAS-SR-007.
3. On-site calibration is allowed to items with marking 'Y', not allowed to items with marking 'N'.
4. Measurement uncertainty normally is quoted as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of k=2. It expresses the lowest uncertainty of measurement that can be provided by accredited calbration laboratories in normal conditions.
5. Due to the calibration environment such as reference standards or customers' facilities, it is note that uncertainty of measurement on a calibration certificate may be expressed larger than measurement uncertainty on scope of accreditation in general.

Accreditation No. : KC01-072

204. Pressure

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Manometers; inclined tube,U tube,well	20402	(0 ~ 10) kPa	8.0×10^{-3}	Pressure calibrators (KCMS-320-005)
Absolute pressure gauges	20406	(0.005 ~ 10) MPa abs.	6.0×10^{-4}	Pneumatic pressuer ballances (KCMS-320-007)
Compound pressure gauges	20408	(-100 ~ 200) kPa (0.2 ~ 10) MPa	8.8×10^{-4} 6.0×10^{-4}	Pneumatic pressuer ballances Pressure calibrators (KCMS-320-001)
Differentail pressure gauges	20409	(0 ~ 10) MPa	2.0×10^{-4}	Pneumatic pressuer ballances (KCMS-320-002)
Gauge pressure gauges	20411	(0 ~ 10) MPa (10 ~ 100) MPa	2.0×10^{-4} 1.5×10^{-4}	Pneumatic pressuer ballances Hydraulic pressuer ballances (KCMS-320-003)
Pressure transducers/ transmitters	20412	(0.005 ~ 10) MPa abs. (-100 ~ 0) kPa (0 ~ 10) MPa (10 ~ 100) MPa	9.0×10^{-4} 2.4×10^{-3} 7.7×10^{-4} 8.0×10^{-4}	Pneumatic pressuer ballances Hydraulic pressuer ballances Pressure calibrators DMM (KCMS-320-004)
Dial type vacuum gauges	20413	(-100 ~ 0) kPa	6.8×10^{-3}	Pressure calibrators (KCMS-320-006)

401. DC votage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC ammeters DC current	40101	(0 ~ 10) mA (10 ~ 100) mA (0.1 ~ 1) A	2.0×10^{-4} 1.0×10^{-4} 2.0×10^{-4}	Meter calibrator (KCMS-340-006)
DC voltmeters DC voltage	40112	(0 ~ 100) mV (0.1 ~ 1 000) V	1.0×10^{-4} 1.0×10^{-4}	Meter calibrator (KCMS-340-003)

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Voltage/current recorders DC voltage	40424	(0 ~ 100) mV (0.1 ~ 100) V	1.0×10^{-4} 1.0×10^{-4}	Meter calibrator (KCMS-340-004)
DC current		(4 ~ 10) mA (10 ~ 20) mA	2.0×10^{-4} 1.5×10^{-4}	

501. Contact thermometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Temperature generators; ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	50101			Platinum Resistance Thermocouple Super thermometer (KCMS-350-006/007)
ice-point baths		0 ℃	0.008 ℃	
isothermal liquid baths				
ovens		(-39 ~ 550) ℃	0.02 ℃	
dry-block calibrators		(550 ~ 960) ℃	0.93 ℃	
furnaces		(960 ~ 1 100) ℃	1.1 ℃	
Temperature indicators; recorders/controllers, temperature calibrators, etc.	50102			Platinum Resistance Thermocouple Super thermometer Temperature Calibrator (KCMS-350-003/004)
with sensor (resistance type)		(-39 ~ 550) ℃	0.02 ℃	
with sensor (thermocouple type)		(-39 ~ 550) ℃	0.09 ℃	
		(550 ~ 1 100) ℃	1.5 ℃	
without sensor (resistance type)		(-39 ~ 550) ℃	0.17 ℃	
without sensor (thermocouple type)		(-39 ~ 550) ℃	0.34 ℃	
		(550 ~ 1 100) ℃	0.6 ℃	
Resistance thermometers; SPRT,IPRT, thermistors, etc.	50104			Platinum Resistance Super thermometer (KCMS-350-001)
Resistance thermometer		(-39 ~ 550) ℃	0.08 ℃	
Thermal expansion thermometers; bimetal, gas or liquid type	50105			Platinum Resistance Super thermometer (KCMS-350-005)
Bimetal thermometer		(-39 ~ 150) ℃	0.3 ℃	
		(150 ~ 250) ℃	0.6 ℃	
		(250 ~ 350) ℃	1.2 ℃	
		(350 ~ 550) ℃	2.3 ℃	
Gas or liquid filled thermometer		(-39 ~ 150) ℃	0.3 ℃	
		(150 ~ 250) ℃	0.6 ℃	
		(250 ~ 350) ℃	1.2 ℃	
		(350 ~ 550) ℃	2.3 ℃	
Thermocouples; noble metal base metal, pure metal, special type, etc.	50106			Platinum Resistance Thermocouple Super thermometer
Noble metal thermocouple		(0 ~ 1 100) ℃	1.3 ℃	(KCMS-350-002)
Base metal thermocouple		(-39 ~ 550) ℃	0.7 ℃	
		(550 ~ 1 100) ℃	1.6 ℃	
Temperature Transducers	50107			Platinum Resistance Thermocouple
Temperature transmitter		(-39 ~ 100) ℃	0.09 ℃	Super thermometer,DMM
		(100 ~ 300) ℃	0.13 ℃	(KCMS-350-008)
		(300 ~ 550) ℃	0.16 ℃	
		(550 ~ 1 100) ℃	1.6 ℃	

503. Humidity

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Relative humidity hygrometer; polimeterthinfilm, hair, etc.	50302			Dew point hygrometer KCMS-350-013
polimeterthinfilm				
(Relative humidity)		(10 ~ 20) % R.H.	2.5 % R.H.	
		(20 ~ 40) % R.H.	2.4 % R.H.	
		(40 ~ 70) % R.H.	2.5 % R.H.	
		(70 ~ 90) % R.H.	2.7 % R.H.	
(Temperature)		(10 ~ 90) ℃	1.0 ℃	
Psychrometers; Assmann ventilated, PRT type, etc.	50303			Dew point hygrometer KCMS-350-014
PRT type				
(Relative humidity)		(10 ~ 20) % R.H.	2.5 % R.H.	
		(20 ~ 40) % R.H.	2.4 % R.H.	
		(40 ~ 70) % R.H.	2.5 % R.H.	
		(70 ~ 90) % R.H.	2.7 % R.H.	
(Temperature)		(10 ~ 90) ℃	1.0 ℃	
Temperature humidity recorders; hygrothermograph, etc.	50304			Dew point hygrometer KCMS-350-015
hygrothermograph				
(Relative humidity)		(10 ~ 20) % R.H.	2.6 % R.H.	
		(20 ~ 40) % R.H.	2.4 % R.H.	
		(40 ~ 70) % R.H.	2.6 % R.H.	
		(70 ~ 90) % R.H.	2.7 % R.H.	
(Temperature)		(-15 ~ 50) ℃	1.2 ℃	
Transducers; dew-point /relative humidity	50305			Dew point hygrometer KCMS-350-016
Relative humidity		(10 ~ 20) % R.H.	2.5 % R.H.	
		(20 ~ 40) % R.H.	2.4 % R.H.	
		(40 ~ 70) % R.H.	2.5 % R.H.	
		(70 ~ 90) % R.H.	2.7 % R.H.	
Humidity generators; two-pressure, two-temperature, flow mixing humidity generator, constant temprature and humidity chamber etc.	50306			Dew point hygrometer Datalogger KCMS-350-017
constant temprature and humidity chamber				
(Relative humidity)		(10 ~ 90) % R.H.	2.3 % R.H.	
(Temperature)		(-39 ~ 150) ℃	0.3 ℃	