

## Services that **Ensure the Accuracy of Your Equipment**

- **New Instrument Calibrations:** Calibrate your newly-purchased item before it is shipped. Visit ColeParmer.com or contact our customer service for a wide selection of test and measurement instruments and the corresponding InnoCal calibration part numbers and pricing.
- **Recalibration Services:** Ship your existing instrument to our lab for recalibration. We clean, calibrate, and quickly return your equipment—with documentation—to keep your business running smoothly.
- **Maintenance and Repair Services:** Keep your valuable equipment up and running with scheduled preventive maintenance and repair. Our experienced service technicians are factory trained to provide factory-authorized service for both laboratory and industrial process equipment and instruments. What's more, our vast inventory of OEM parts ensures that services are completed quickly and accurately. In addition to repairs, our technicians can also create custom devices to handle your unique applications.
- **On-Site Services:** If your facility requires a large volume of instrument calibrations, we can discuss and arrange on-site calibration capabilities.

Choose the best option for you. One call to **866-466-6225** puts you on the way to ensuring the accuracy of your instrumentation.

**Plus!** Receive convenient reminders when it is time to recalibrate or service your instruments.

**InnoCal conforms to\***



ANSI/ISO/IEC 17025:2005 accredited  
 NIST Handbook 150, 2000 Edition  
 ANSI/NCSL Z540-2-1997  
 NIST Technical Note 1297  
 ISO 9000:2000

\*Please check our scope of accreditation for any limitations.

## InnoCalSolutions.com

Visit our web site where you will find our most up-to-date range of capabilities; take a video tour of our laboratory; download our complete scope of accreditation; request a quote; access technical information; and link to a comprehensive listing of standards organizations and government and international metrology labs including NIST.gov and A2LA.org.



# InnoCal provides detailed calibration documentation that is traceable to NIST Standards

**Complete NIST-traceable report for and Identification of the Unit Under Test (UUT)**

**Customer Identification**

**Test Number**

**A2LA Logo**  
See scope of accreditation for any limitations

**- Calibration procedure**  
**- Calibration dates including next due date**

**Condition of item received as-found / as-left condition**

**Technician Remarks**

**List of standards used to perform calibration (including their calibration dates)**

Item No.	Manufacturer	Model No.	Description	Cal. Date	Due Date
5016	Hart Scientific	5615	Thermometer, Platinum Resistance Probe	07/26/2007	07/26/2008
CP05018	Hart Scientific	5649	Thermocouple Probe, Type R	09/13/2007	09/13/2008
CPM058	Hart Scientific	1529	Temperature, Thermocouple, THERMOMETER, C	03/11/2008	03/11/2009
CPM149	Hart Scientific	1529	Temperature, Thermocouple, THERMOMETER, C	09/21/2007	09/21/2008
CPM151	Hart Scientific	2562	Temperature Indicator, PRT Scanner 8-Channel	09/19/2007	09/19/2008
CPM154	Hart Scientific	5614	Thermometer, Platinum Resistance Probe	05/31/2007	05/31/2008
CPM155	Hart Scientific	5614	Thermometer, Platinum Resistance Probe	05/31/2007	05/31/2008

**Statement of estimated uncertainty with test uncertainty ratios (TURs)**

FUNCTION TESTED	Nominal Value	As Found	As Left	Cal. Tol.	CALIBRATION TOLERANCE
Temperature Accuracy	-38.834 °C	-39.1	Same		-43.256 to -34.412 °C [TUR 69:1] [EMU 0.064 °C]
	0.010 °C	-0.2	Same		-4.408 to 4.428 °C [TUR 67:1] [EMU 0.066 °C]
	231.928 °C	233.4	Same		227.452 to 236.404 °C [TUR 91:1] [EMU 0.049 °C]
	419.527 °C	417.6	Same		415.051 to 424.003 °C [TUR 20:1] [EMU 0.22 °C]

**Calibration or Measured Data with uncertainties @ 95% (K=2)**

**Laboratory Conditions**

**Electronic Signatures**

**Statement of compliance to ISO 17025, ANSI/NCSL Z540-1 along with a statement regarding traceability to SI units via national or international standards such as those maintained by NIST. This statement also defines that the measurement uncertainties reported are at a confidence level of 95% or K=2 unless otherwise noted in the Remarks section**

## Temperature Calibrations

InnoCal provides temperature calibration service for all styles of thermometers including:

- Liquid-in-glass thermometers
- Bimetal and dial thermometers
- Thermocouples
- RTDs
- Thermistors
- Infrared (IR)
- We are the only authorized service center for recalibration of Thermo Scientific ERTCO<sup>®</sup> glass thermometers!



NIST-traceable report for:	Description	Catalog number
Temperature datalogger	Three test points across range	CF-17002-20
Temperature transducer/transmitter	0.5°C (0.9°F) or worse accuracy	CF-17101-36
	Better than 0.5°C (0.9°F) accuracy	CF-17103-08
Handheld digital indicator	Four test points across range, -80 to 1000°C (-112 to 1832°F)	CF-17101-61
Scanning thermometer, meter only	Four temperature test points across range of instrument	CF-17101-79
Scanning thermometer, 12-channel	Four temperature test points with probes, -80 to 1000°C (-112 to 1832°F)	CF-17103-12
	Simulation temperature to mV or Ω	CF-17103-00
Scanning thermometer, 24-channel	Four temperature test points with probes, -80 to 1000°C (-112 to 1832°F)	CF-17103-24
Dry-well calibrator, single	Multiple test points across range of instrument, -40 to 500°C (-40 to 932°F)	CF-17002-16
Dry-well calibrator, dual	Multiple test points across range of instrument, -40 to 500°C (-40 to 932°F)	CF-17002-17
Dry-well calibrator, single; high-temperature	Multiple test points across range of instrument, 500 to 1100°C (932 to 2012°F)	CF-17002-18
Metrology well	High-accuracy; better than 1°C (0.5°F)	CF-17002-24
Psychrometer	Three points across range of instrument	CF-17005-00
	One-point 40 to 572°F (-40 to 300°C) ERTCO enclosed thermometer	CF-17006-01
Thermometer, glass (liquid-in-glass)	Two to four test points across range, -80 to 300°C (-112 to 572°F)	CF-17006-03
	Five to nine test points across range, -80 to 300°C (-112 to 572°F)	CF-17006-05
	Ten to fifteen test points across range, -80 to 300°C (-112 to 572°F)	CF-17006-06
Infrared temperature transducer	Per manufacturer's specifications	CF-17101-62
HART <sup>®</sup> -style PRT	Per manufacturer's specifications	CF-17001-11
Temperature bath	Per manufacturer's specifications	CF-17001-13

## Temperature Meter, Probe, and System Calibrations

Regardless of the type of thermometry probe your application requires, InnoCal can ensure the accuracy of your meter, probe, or system!

NIST-traceable report for:	Description	Meter only calibration	Probe only calibration	System (meter and probe) calibration
		Catalog number	Catalog number	Catalog number
Thermocouple, standard types	Four test points across range of instrument. Meter: -270 to 2316°C (-454 to 4200°F); Probe and System: -80 to 1300°C (-112 to 2372°F). Actual range is dependent on type of probe.	CF-17000-10	CF-17001-10	CF-17002-10
Thermocouple, cryogenic	Low temperature to -197°C (-322°F)	—	—	CF-17103-25
Thermistor	Four test points across range of instrument. Meter, probe, and system: -80 to 150°C (-112 to 302°F)	CF-17000-06	CF-17001-06	CF-17002-06
RTD	Four test points across range of instrument. Meter: -200 to 1000°C (-328 to 1832°F); Probe and System: -80 to 1300°C (-112 to 2372°F). Actual range is dependent on type of probe.	CF-17000-04	CF-17001-04	CF-17002-04
Infrared	Four test points across range, -15 to 500°C (5 to 932°F)	CF-17004-00	CF-17004-10	CF-17004-20
Infrared calibrator	Multiple test points across range, -30 to 1000°C (-22 to 1832°F)	CF-17002-19	—	—
Bimetal or dial	Four test points across range, -197 to 1000°C (-320 to 1832°F)	—	—	CF-17003-00
PRT probe or HART <sup>®</sup> style meter and probe	Four test points across range of instrument. Meter: -270 to 2316°C (-454 to 4200°F); Probe and System: -80 to 1000°C (-112 to 1832°F). Actual range is dependent on type of probe.	—	CF-17001-11	CF-17002-11

## Humidity Calibrations

From wall-mount thermohygrometers to multiprobe handheld instruments, InnoCal offers humidity calibrations for virtually any brand or style of meter.

NIST-traceable report for:	Catalog number
Thermohygrometer, handheld or benchtop. Three humidity test points (30, 60, and 80% RH) and one temperature test point at ambient (22 to 25°C)	CF-17030-20
Datalogger, humidity/temperature	CF-17030-24
Recorder, humidity/temperature	CF-17030-26
Digital/dial indicator, humidity/temperature	CF-17030-28
Psychrometer, three test points across range of instrument	CF-17002-24



## Pressure Calibrations

InnoCal performs NIST-traceable pressure and vacuum calibrations on absolute-, atmospheric-, and gauge-pressure vacuum or pressure gauges, transducers, and barometers.

NIST-traceable report for:	Catalog number
Pressure/vacuum gauge; 1, 2, or 3% accuracy. Five test points across range 0 to 20,000 psi, 0 to 30" Hg	CF-17040-10
Pressure/vacuum gauge; better than 1% accuracy. Five test points across range 0 to 20,000 psi, 0 to 30" Hg	CF-17040-12
Barometer/barograph. Three test points across range (950 to 1030 mBar); one temperature test point at ambient (22 to 5°C)	CF-17040-30
Fluke 700-series pressure module	CF-17090-26
Pressure comparator	CF-17090-27
Pressure transmitter	CF-17090-29
Process calibrator, high accuracy; up to 5000 psig	CF-17002-15
Process calibrator, low accuracy, handheld	CF-17101-78
Low-pressure manometer	CF-17090-31
Dead weight tester, single column; 0.1% accuracy	CF-17101-09
Dead weight tester, single column; 0.05% accuracy	CF-17101-10
Dead weight tester, single column; 0.015% accuracy	CF-17101-11
Dead weight tester, dual column; 0.1% accuracy	CF-17101-12
Dead weight tester, dual column; 0.05% accuracy	CF-17101-13
Dead weight tester, dual column; 0.015% accuracy	CF-17101-14
Dead weight tester; >0.015% accuracy	CF-17101-15
Dead weight tester, pneumatic, 0.1%	CF-17101-83
Dead weight tester, pneumatic; 0.05%	CF-17101-84
Dead weight tester, pneumatic; 0.015%	CF-17101-85



## Electrical Calibrations

InnoCal's highly trained metrologists use high-end multifunction calibrators to perform NIST-traceable calibrations on your electronic instruments.



NIST-traceable report for:	Catalog no.
DC and AC/DC current and voltage transducer	CF-17101-81
Capacitance meter	CF-17090-38
Conductivity meter	CF-17090-30
Counter, low-accuracy	CF-17100-26
Counter, high-accuracy	CF-17101-24
Current clamp meter	CF-17090-04
Multimeter with infrared thermometer	CF-17090-08
Multimeter, 4.5 digit, handheld	CF-17090-00
Multimeter, 4.5 digit, benchtop	CF-17090-02
Multimeter, 5.5 digit, handheld	CF-17090-40
Multimeter, 5.5 digit, benchtop	CF-17090-42
Multimeter, 6.5 digit, handheld	CF-17090-44
Multimeter, 6.5 digit, benchtop	CF-17090-46
Multimeter, high-accuracy reference; >6.5 digit	CF-17101-30
Multimeter accessory/high-volt probe	CF-17101-29
Single function generator	CF-17101-07
Dual function generator	CF-17101-22
Loop calibrator, low accuracy	CF-17090-20
Loop calibrator, high accuracy	CF-17090-22
Panel indicator (voltage, current, resistance)	CF-17090-18
Recorder; chart, strip, or digital (voltage, current, resistance)	CF-17100-00
Recorder, X-Y (voltage, current, resistance)	CF-17100-10
Data logger (voltage, current, resistance)	CF-17101-18

NIST-traceable report for:	Catalog no.
Panel-mount indicator, multiple inputs	CF-17101-63
Micro-ohmmeter	CF-17101-26
Component tester (economical)	CF-17101-20
Process calibrator, high accuracy; up to 5000 psig	CF-17002-15
Process calibrator, low accuracy, handheld	CF-17101-78
High-accuracy portable process and documenting calibrator	CF-17101-82
ScopeMeter, to 1 GHz, handheld	CF-17090-12
ScopeMeter, to 300 MHz, handheld	CF-17100-33
ScopeMeter, to 600 MHz, handheld	CF-17101-31
Oscilloscope, to 1 GHz, bench	CF-17090-14
Oscilloscope, to 300 MHz, bench	CF-17100-34
Oscilloscope, to 600 MHz, bench	CF-17101-32
Power watt meter	CF-17090-28
Power harmonic analyzer (low frequency)	CF-17090-32
Power quality meter (low frequency)	CF-17090-34
Power disturbance meter (low frequency)	CF-17090-36
Power supply, AC/DC single phase	CF-17090-16
Power meter (low-frequency)	CF-17101-34
Resistance decade box	CF-17101-35
Megohmmeter	CF-17101-25
Ground resistance tester	CF-17101-27
Hipot tester	CF-17101-28
Signal generator	CF-17101-98
RF spectrum analyzer	CF-17101-99

## Torque Calibrations

**NEW**

Standards



NIST-traceable report for:	Catalog number
Cap closure calibrator	CF-17080-15
Precision torque tester, 100 oz-in maximum	CF-17101-40
Precision torque tester, 100 lb-in maximum	CF-17101-86
Precision torque tester, 500 lb-ft maximum	CF-17101-87
Precision torque tester, 1000 lb-ft maximum	CF-17101-88
Torque screwdriver/watch, to 50 in-lb	CF-17100-40
Torque wrench, dial type, up to 250 lb-in, 2%	CF-17101-39
Torque wrench, dial type, up to 1200 lb-in, 2%	CF-17101-89
Torque wrench, dial type, up to 600 lb-ft, 2%	CF-17101-90
Torque wrench, dial type, up to 1000 lb-ft, 2%	CF-17101-91
Torque wrench, click type, up to 250 lb-in, 4%	CF-17101-92
Torque wrench, click type, up to 1200 lb-in, 4%	CF-17101-93
Torque wrench, click type, up to 600 lb-ft, 4%	CF-17101-94
Torque wrench, click type, up to 1000 lb-ft, 4%	CF-17101-95
Torque wrench, dial or click type, up to 2000 lb-ft, 2%	CF-17101-96

## Force Calibrations

NIST-traceable report for:	Catalog number
Force gauge, up to 250 lbs	CF-17080-16
Force gauge, up to 500 lbs	CF-17101-37
Load cells with data up to 1000 lb	CF-17101-38
Scale, all types	CF-17101-52

## Dimensional Calibrations



NIST-traceable report for:	Catalog number
Dimensional instrument, miscellaneous	CF-17050-11
Protractor or angle meter	CF-17100-44
Micrometer or caliper, up to 12 inches	CF-17050-12
Micrometer or caliper, from 12 to 24 inches	CF-17050-13
Height gage, 0 to 24 inches	CF-17050-14
Gage block, up to 6 inches (priced per block)	CF-17050-15
Steel ruler, up to 24 inches	CF-17050-16
Ultrasonic thickness gauge	CF-17101-68
Coating thickness gauge	CF-17101-69

## Flowmeter Calibrations

Our computerized, automated standards allow us to perform NIST-traceable mass and correlated flow measurements, using air or nitrogen gas.

**NEW**

Standards



NIST-traceable report for:	Catalog number
Flowmeter, air/gas. Five to seven test points across range 0.1 to 80,000 sccm (0.1 to 80L/min).	CF-17080-00
Flowmeter, gas mass. Five to seven test points across range 0.1 to 80,000 sccm (0.1 to 80L/min).	CF-17080-10
Flowmeter, liquid. 1 ccm to 300 L/min water (can correct for other fluids).	CF-17080-12

## Air Velocity Calibrations

Our state-of-the-art air velocity standard enables us to calibrate most types of anemometer including hot wire, vane, Balometer<sup>®</sup>, and air capture hoods.

**NEW**

Standards



NIST-traceable report for:	Catalog number
Anemometer, hot-wire type	CF-17100-11
Anemometer/air velocity transmitter	CF-17101-01
Balometer	CF-17101-02

## Weather Calibrations

NIST-traceable report for:	Catalog number
Weather station/barometer, benchtop (temperature, pressure, humidity, air velocity)	CF-17100-01
Weather station/barometer, handheld (temperature, pressure, humidity, air velocity)	CF-17101-67
Barometer/barograph, three test points across range (950 to 1030 mBar), one temperature test point at ambient (22 to 25°C)	CF-17040-30



## pH Meter Calibrations

pH meter calibration includes five electronic test points for pH (2, 4, 7, 10, 12 pH) and five test points reading in mV (across range). Available for either handheld or benchtop pH meters with BNC connection. We also provide a wet calibration service for pocket meters and testers using ISO Guide 34 Accredited NIST-traceable pH buffers.



NIST-traceable report for:	Catalog number
pH pocket meter (non-BNC). Up to three points against NIST-traceable pH buffers	CF-17101-45
pH simulator	CF-17106-06
pH meter (BNC connection). Five electrical pH and five mV test points	CF-17106-20
pH temperature probe	CF-17106-21
Conductivity. Additional five-point test for multiparameter meters	CF-17090-30

## Gas Monitor Calibrations

From single-gas to multigas detectors, InnoCal now provides factory-authorized calibration and repair maintenance services. Specially trained technicians test the monitor/detector with a known concentration of gas. Service available for major manufacturers of gas monitors including:

- MSA
- BW Technologies/Honeywell
- Sperian
- Drager



Calibration for:	Catalog number
MSA Altair <sup>®</sup> and Altair Pro single-gas monitors	CF-17102-10
MSA Altair <sup>®</sup> 4 and 5 Altair multigas monitors	CF-17102-11
MSA FiveStar <sup>®</sup> multigas monitor	CF-17102-12
MSA Mini single-gas monitor	CF-17102-13
MSA Orion <sup>®</sup> multigas monitor	CF-17102-14
MSA Passport <sup>®</sup> multigas monitor	CF-17102-15
MSA Solaris <sup>®</sup> multigas monitor	CF-17102-16
MSA Titan <sup>®</sup> single-gas monitor	CF-17102-17
Sperian Cannonball multigas monitor	CF-17102-18
Sperian MultiPro <sup>®</sup> and MultiVision multigas monitors	CF-17102-19
Sperian PhD <sup>™</sup> multigas monitor	CF-17102-20
Sperian Toxi Vision <sup>®</sup> single-gas monitor	CF-17102-21
BW single-gas monitor	CF-17102-22
BW multigas monitor	CF-17102-23
Drager Miniwarn multigas monitor	CF-17102-05
Drager Multiwarn multigas monitor	CF-17102-06
Drager Pac <sup>®</sup> single-gas monitor	CF-17102-07
Drager Pac <sup>®</sup> multigas monitor	CF-17102-08
Drager X-am <sup>®</sup> multigas monitor	CF-17102-09

## Recorder and Data Logger Calibrations



NIST-traceable report for:	Catalog number
Recorder, chart strip or digital (voltage, current, resistance)	CF-17100-00
Recorder, X-Y (voltage, current, resistance)	CF-17100-10
Recorder; humidity, temperature	CF-17030-28
Data logger; voltage, current, resistance	CF-17101-18
Data logger, temperature	CF-17101-36
Data logger; humidity, temperature	CF-17030-24

## Sound Calibrations

NIST-traceable report for:	Catalog number
Sound meter, handheld	CF-17100-05
Sound level meter, Type I	CF-17101-55
Sound level meter, Type II	CF-17101-53
Sound level calibrator	CF-17101-54
Sound filter	CF-17101-56
Noise dosimeter	CF-17101-57

## Tachometers, Stroboscopes, and Rotational Equipment Calibrations



NIST-traceable report for:	Catalog number
Tachometer. Mechanical: ten test points at 150 to 24,000 rpm; Optical, twelve test points at 0 to 200,000 rpm	CF-17050-00
Stroboscope. Ten test points at 0 to 200,000 FPM	CF-17050-10
Peristaltic pump drive, rpm	CF-17050-01
Centrifuge, rpm	CF-17050-02

## Additional Calibrations

NIST-traceable report for:	Catalog number
Timer, digital or mechanical	CF-17060-00
Timer, multiparameter	CF-17060-01
Pipette/dispenser. 15 to 45 test points. Price is per channel.	CF-17104-00
Vibration meter, industrial, handheld	CF-17101-66
Balance/scale	CF-17101-52
Peristaltic pump drive, rpm	CF-17050-01
Centrifuge, rpm	CF-17050-02
Refractometer. One test point at midpoint of range.	CF-17105-00
Lightmeter, visible	CF-17101-44
Hydrometer. One test point at midpoint of range.	CF-17107-00
Special or additional test point upon request	CF-17100-02