

5960A

Triple Point of Argon System

Technical Data

Breakthrough primary temperature standards capability

The Fluke Calibration 5960A Triple Point of Argon System enables primary standards laboratories to realize the argon triple point using a consistent, reproducible process with the lowest uncertainty of any commercially available system. The Fluke Calibration system produces a 30-hour temperature plateau and provides multiple entrant wells to increase SPRT calibration efficiency and throughput.

- Low uncertainty of 0.25 mK
- Temperature plateau duration longer than 30 hours
- Four entrant wells with radial uniformity less than 0.05 mK
- 480 mm total immersion depth
- Argon purity of 99.9999%
- Multi-language display support

Low calibration uncertainty

A number of technology advancements are designed into the Fluke Calibration 5960A system to achieve a low uncertainty of 0.25 mK. For example, the argon cell is carefully built with an ultra-clean process using 99.9999% (six nines) purity argon resulting in an uncertainty factor from impurities of 0.015 mK. The deep, 480 mm immersion depth of the entrant well minimizes the effects of stem conduction to less than 0.01 mK and radial uniformity to less than 0.05 mK.

High lab throughput

The 5960A system utilizes liquid nitrogen (LN₂) in a Dewar vessel surrounding an argon cell to achieve -189.3442 °C. A digital controller combined with a heater maintains a temperature plateau lasting up to 30 hours with 0.1 mK variation without using complicated pressure controls. By regular renewal of liquid nitrogen

in the system, the plateau length can even be extended to four days. The system's long, stable temperature plateau lets you carry out your SPRT calibrations with better quality and more efficiency. Four entrant wells increase lab productivity by allowing you to calibrate four SPRTs simultaneously.



Ease of operation and maintenance

The display panel of the 5960A provides a simple menu structure with soft function keys for setup and programming the argon system. The readout displays simultaneously the set-point temperature, actual control sensor temperature and percent heater power. The display is selectable in eight languages—English, French, Spanish, Italian, German, Russian, Chinese, and Japanese.

Applying positive pressure with helium or dry nitrogen to an entrant well port prevents your SPRTs from being bound in the entrant well by freezing moisture. You can insert and remove SPRTs as desired from the system over the duration of a single plateau. Other systems require that you first melt the cell in order to add or remove an SPRT.

5960A Triple Point of Argon System specifications

Assigned value	-189.3442 °C
Argon gas purity	99.9999 % (6N purity)
Uncertainty (k=2)	0.25 mK
Length of plateau (0.1 mK)	>30 hours
Argon cell depth	160 mm
Total immersion depth	480 mm
Number of entrant wells	4
Radial uniformity	0.05 mK
Entrant well inner diameter (ID)	8.0 mm
Argon gas volume	13.4 moles (535 grams)
Liquid nitrogen Dewar volume	44.2 liters
Display resolution	0.001 °C
Set-point accuracy	0.1 °C (adjustable)
Power requirements	100 V to 115 V (± 10 %) 50/60 Hz, 230 W 230 V (± 10 %) 50/60 Hz, 230 W
System fuse ratings	115 V: 2 A T 250 V / 230 V: 1 A T 250 V
Size (HxWxD)	952 mm x 673 mm x 483 mm (37.5 in x 26.5 in x 19 in)
Weight	94 kg (207 lb)

*Measured from the bottom of the probe well to the surface of argon sample

Ordering information

Model

5960A

Triple Point of Argon System

Accessories

5960ACC-PUMP/DEWAR

Pump and Dewar Accessory Kit includes Rotary Vane Vacuum Pump, Self-Pressurized Liquid Nitrogen Dewar (50 liters), Hoses, Fittings, and Associated Hardware

5960ACC-PUMP

Pump Accessory Kit includes Rotary Vane Vacuum Pump, Hose, and Associated Hardware

5960ACC-DEWAR

Dewar Kit includes Self-Pressurized Liquid Nitrogen Dewar (50 liters), Hoses, Fittings, and Associated Hardware



Fluke Calibration. Precision, performance, confidence.™

Electrical	RF	Temperature	Humidity	Pressure	Flow	Software
------------	----	-------------	----------	----------	------	----------

Fluke Calibration
PO Box 9090,
Everett, WA 98206 U.S.A.

Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands
Web access: <http://www.flukecal.eu>

For more information call:
In the U.S.A. (877) 355-3225 or Fax (425) 446-5716
In Europe/M-East/Africa +31 (0) 40 2675 200 or Fax +31 (0) 40 2675 222
In Canada (800)-36-FLUKE or Fax (905) 890-6866
From other countries +1 (425) 446-6110 or Fax +1 (425) 446-5716
Web access: <http://www.flukecal.com>

©2012, 2017 Fluke Calibration. Specifications subject to change without notice.
Printed in U.S.A. 6/2017 4226831b-en

Modification of this document is not permitted without written permission from Fluke Calibration.