25 Bradley Drive, Westbrook, Maine 04092-2013, USA
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PCS® Instrument
Calibration Certificate

Calibration Number:	19-2214A	Customer:	Artel, Inc.	Issue Date:	21 Feb 2020
Serial Number:	20660	Address:	25 Bradley Dr Westbrook, ME 04092 USA	Test Date:	27 Sep 2019
				Condition:	As Left

Description of Item Calibrated:

PCS Pipette Calibration System uses dual-dye, dual-wavelength, and ratiometric photometry to determine the delivered volume of a pipette. The PCS Instrument is a specialized photometer designed for measuring liquid deliveries.

Traceability:

Calibration is performed on a Mettler microanalytical balance Serial Number 1123303108, ASN 01975 or a Sartorius microanalytical balance Serial Number 38301995, ASN 02704. The instruments are calibrated yearly using mass standards traceable to the International System of Units (SI). The instrument performance is verified daily using OIML R111 Class E2 weight sets traceable to the National Institute of Standards and Technology through Certified Reference Materials, Weight Set, Serial Number 68502, ASN 01279 calibration due on 31 Jan 2021, or Serial Number 68348, ASN 01974 calibration due on 30 Sep 2021.

Environmental Conditions:

Relative Humidity	63.69	% RH	Ambient Temperature	20.55	°C
Barometric Pressure	1015.41	hPa	Liquid Temperature	20.73	°C

Calibration Method Document Number: 310A4504

This calibration method has been accredited to ISO/IEC 17025, A2LA Certificate #2093.03

	Results	Uncertainty (k=2)
Linearity at 25% of scale	-0.02	0.03%
Linearity at 75% of scale	-0.09	0.03%
Linearity at 100% of scale	0.01	0.03%
Instrument Accuracy	0.02	0.01%

These results relate only to the instrument identified in this report. Linearity results and Instrument accuracy results are reported as % deviation (PCS volume vs. gravimetric volume). Linearity results are a measure of relative instrument accuracy and are conducted at 130µL volume. Accuracy is conducted at 250µL volume.

Uncertainty:

Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. The reported uncertainty is % volume.

The A2LA symbol does not imply certification/approval of the products, but rather accreditation of the competency of the Artel Laboratory to perform this calibration. This calibration certificate shall not be reproduced except in full, without written approval of the Artel Laboratory.

Authorized by: _____ Date: 20 Feb 2020
Technical Manager (or designee): Judi Schantz

The Artel PCS and its components are covered by patents listed at www.artel.co/patents.