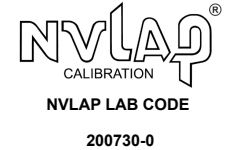


**Customer:** MESA LABORATORIES  
12100 WEST 6TH AVE  
LAKEWOOD, CO 80228



**PO Number:** PO-009796

**Certificate/SO Number: 5-B2Z7X-20-1 Revision 0**

**Manufacturer:** Druck/Unomat/GE Sensing/Kaye  
**Model Number:** DPI 520  
**Description:** Pressure Calibrator  
**Serial Number:** 0417/97-4  
**ID:** TE10226

**As-Found:** In Tolerance  
**As-Left:** In Tolerance

**Calibration Date:** Jul 27, 2017  
**Due Date:** Jul 27, 2018

**Calibrated To:** Manufacturer Specification  
**Calibration Procedure:** 1-AC19457-0

Transcat Calibration Laboratories have been audited and found in compliance with ISO /IEC 17025:2005. Accredited calibrations performed within the Lab's Scope of Accreditation are indicated by the presence of the Accrediting Body's Logo and Certificate Number on this Certificate of Calibration. Any measurements on an accredited calibration not covered by that Lab's Scope of Accreditation are listed in the notes section of the certificate. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, SCC, NRC, CLAS, ANAB or any agency of the Federal Government. NVLAP, NIST, SCC, NRC, CLAS or ANAB do not guarantee the accuracy of an individual calibration by accredited laboratories.

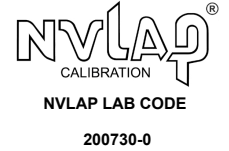
Transcat calibrations, as applicable, are performed in compliance with the requirements of the Transcat Quality Manual Revision 1, ISO 9001:2008, ANSI/NCSL Z540.1-1994 (R2002), and ISO 10012:2003. When specified contractually, the requirements of ISO TS 16949:2009, 10CFR21, 10CFR50 App. B and ASME NQA-1:2012 are also covered. Complete records of work performed are maintained by Transcat and are available for inspection. Laboratory standards used in the performance of this calibration are shown on the Supplemental Report.

Transcat documents the traceability of measurements to the SI units through the National Institute of Standards and Technology (NIST), or the National Research Council of Canada (NRC), or other recognized national measurement institutes (NMI) that are signatories to the CIPM Mutual Recognition Arrangement, or accepted fundamental and/or natural physical constants, or by the use of specified methods, consensus standards or ratio type measurements. Documentation supporting traceability information is available for review at a Transcat facility. The measured quantity and the measurement uncertainty are required for further dissemination of traceability.

Uncertainties are reported with a coverage factor k=2, providing a level of confidence of approximately 95%. All calibrations have been performed using processes having a TUR of 4:1 or better (3:1 for mass calibrations), unless otherwise noted on the Supplemental Report. The Test Uncertainty Ratio (TUR) is calculated in accordance with NCSL International RP-18. For mass calibrations: Conventional mass referenced to 8.0 g/cm<sup>3</sup>.

The results in this report relate only to the item calibrated or tested, and the determination of in or out of tolerance is specific to the model/serial no. referenced above based on the tolerances shown on the supplemental report; these tolerances are either the original equipment manufacturer's (OEM's) warranted specifications or the client's requested specifications. Any number of factors can cause a unit to drift out of tolerance at any time following its calibration. Limitations on the uses of this instrument are detailed in the OEM's operating instructions. This certificate may not be reproduced except in full, without the written approval of Transcat. Additional information, if applicable may be included on separate report(s).

**Customer:** MESA LABORATORIES  
12100 WEST 6TH AVE  
LAKEWOOD, CO 80228



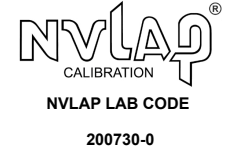
**PO Number:** PO-009796

**Certificate/SO Number: 5-B2Z7X-20-1 Revision 0**

**As Found/As Left Data**

Description	Setpoints	Accuracy	Low Limit	High Limit	As Found / As Left	O O T	Cal Process Uncertainty (k=2; ±)	Measurement Uncertainty (k=2; ±)	Units	TUR
<b>Pressure Measure</b>										
Ambient Pressure	14.70psia	±( 0.025% Rdg + 1 LSD)	14.69	14.71	14.70 psia		2.2e-004	1.2e-002	psia	45.5 : 1
Pressure Linearity	1.45psia	±(0.005% FS + 1 LSD)	1.43	1.47	1.46 psia		3.5e-005	1.3e-002	psia	100.0 : 1
	20.25psia	±(0.005% FS + 1 LSD)	20.23	20.27	20.26 psia		2.9e-004	1.3e-002	psia	69.0 : 1
	40.69psia	±(0.005% FS + 1 LSD)	40.67	40.71	40.70 psia		5.8e-004	1.3e-002	psia	34.5 : 1
	61.09psia	±( 0.025% Rdg + 1 LSD)	61.06	61.12	61.10 psia		1.2e-003	1.2e-002	psia	25.8 : 1
	78.54psia	±( 0.025% Rdg + 1 LSD)	78.51	78.57	78.55 psia		1.5e-003	1.2e-002	psia	20.1 : 1
	98.93psia	±( 0.025% Rdg + 1 LSD)	98.90	98.96	98.95 psia		1.9e-003	1.2e-002	psia	16.0 : 1
	118.94psia	±( 0.025% Rdg + 1 LSD)	118.90	118.98	118.96 psia		2.3e-003	1.2e-002	psia	17.7 : 1
	139.35psia	±( 0.025% Rdg + 1 LSD)	139.31	139.39	139.37 psia		2.6e-003	1.2e-002	psia	15.1 : 1
	159.71psia	±( 0.025% Rdg + 1 LSD)	159.66	159.76	159.73 psia		3.0e-003	1.2e-002	psia	16.5 : 1
	180.15psia	±( 0.025% Rdg + 1 LSD)	180.09	180.21	180.18 psia		3.4e-003	1.2e-002	psia	17.5 : 1
200.97psia	±( 0.025% Rdg + 1 LSD)	200.91	201.03	201.00 psia		3.8e-003	1.2e-002	psia	15.7 : 1	
Hysteresis	118.94psia	±( 0.025% Rdg + 1 LSD)	118.90	118.98	118.96 psia		2.3e-003	1.2e-002	psia	17.7 : 1
	98.93psia	±( 0.025% Rdg + 1 LSD)	98.90	98.96	98.95 psia		1.9e-003	1.2e-002	psia	16.0 : 1
	78.54psia	±( 0.025% Rdg + 1 LSD)	78.51	78.57	78.55 psia		1.5e-003	1.2e-002	psia	20.1 : 1

**Customer:** MESA LABORATORIES  
12100 WEST 6TH AVE  
LAKEWOOD, CO 80228



**PO Number:** PO-009796

**Certificate/SO Number: 5-B2Z7X-20-1 Revision 0**

**Traceable Standards**

Asset	Manufacturer	Model Number	Description	Cal Date	Due Date	Traceability Number	Use
DewK6	Fluke	2626-S	Hygro-Thermometer, Probe,	20-Jun-17	30-Jun-18	1-&DEWK6-8-1	AF/AL
DW09BA	Fluke/DH Instruments	PG7601	Piston Gauge	1-Mar-17	31-Mar-18	5-&DW09BA-1-1	AF/AL
DW09LOW	Fluke/DH Instruments	PC-7100/7600-10-TC	Gas Piston-Cylinder Module	11-Jul-13	31-Jul-18	5-&DW09-1-1	AF/AL
DW09MASS	Fluke/DH Instruments	MS-AMH-38	AMH Mass Set	11-Jul-13	31-Jul-18	5-&DW09-1-1	AF/AL
DW09MID	Fluke/DH Instruments	PC-7100/7600-100	Gas Piston-Cylinder Module	11-Jul-13	31-Jul-18	5-&DW09-1-1	AF/AL

The use of the standard is defined as: AF - used for as-found readings, AL - used for as-left readings.

**Environmental Data**

Temperature	Relative Humidity	Temp / RH Asset
68.53°F /20.29°C	47.60%	DewK1

**Calibrated At:**  
1181 Brittmoore Road  
Houston, TX 77043

**Facility Responsible:**  
1181 Brittmoore Road  
Houston, TX 77043  
800-828-1470

**Calibrated By:**  
 **Electronically Signed By:**  
Thomas M. Laguna

**Reviewed By:**  
 **Electronically Signed By:**  
Scott D. Caine

Thomas M. Laguna Jul 27, 2017  
Calibration Technician 07:40:46 -05:00

Scott D. Caine Jul 28, 2017  
Lab Manager 08:27:32 -05:00



**Date Received:** July 07, 2017  
**Service Level:** R9

# TRANSCAT<sup>®</sup> SUPPLEMENTAL REPORT

Trust in every measure CALIBRATION LAB DATA AS FOUND / AS LEFT

Customer: MESA LABORATORIES

PO Number: PO-009796

## Certificate/SO Number: 5-B2Z7X-20-1 Revision 0

<b>Manufacturer:</b> Druck/Unomat/GE Sensing/Kaye	<b>Service Type:</b> R9
<b>Model Number:</b> DPI 520	
<b>Description:</b> Pressure Calibrator	
<b>Serial Number:</b> 0417/97-4	<b>Calibration Date:</b> Jul 27, 2017
<b>ID:</b> TE10226	<b>Date Due:</b> Jul 27, 2018
	<b>Calibration Procedure:</b> 1-AC19457-0

Description	Setpoints	Accuracy	Low Limit	High Limit	As Found / As Left	O O T	Cal Process Uncertainty	Measuremen t Uncertainty	Units	TUR
<b>Pressure Measure</b>										
Ambient Pressure	14.70psia	±( 0.025% Rdg + 1 LSD)	14.69	14.71	14.70 psia		2.2e-004	1.2e-002	psia	45.5 : 1
Pressure Linearity	1.45psia	±(0.005% FS + 1 LSD)	1.43	1.47	1.46 psia		3.5e-005	1.3e-002	psia	100.0 : 1
	20.25psia	±(0.005% FS + 1 LSD)	20.23	20.27	20.26 psia		2.9e-004	1.3e-002	psia	69.0 : 1
	40.69psia	±(0.005% FS + 1 LSD)	40.67	40.71	40.70 psia		5.8e-004	1.3e-002	psia	34.5 : 1
	61.09psia	±( 0.025% Rdg + 1 LSD)	61.06	61.12	61.10 psia		1.2e-003	1.2e-002	psia	25.8 : 1
	78.54psia	±( 0.025% Rdg + 1 LSD)	78.51	78.57	78.55 psia		1.5e-003	1.2e-002	psia	20.1 : 1
	98.93psia	±( 0.025% Rdg + 1 LSD)	98.90	98.96	98.95 psia		1.9e-003	1.2e-002	psia	16.0 : 1
	118.94psia	±( 0.025% Rdg + 1 LSD)	118.90	118.98	118.96 psia		2.3e-003	1.2e-002	psia	17.7 : 1
	139.35psia	±( 0.025% Rdg + 1 LSD)	139.31	139.39	139.37 psia		2.6e-003	1.2e-002	psia	15.1 : 1
	159.71psia	±( 0.025% Rdg + 1 LSD)	159.66	159.76	159.73 psia		3.0e-003	1.2e-002	psia	16.5 : 1
	180.15psia	±( 0.025% Rdg + 1 LSD)	180.09	180.21	180.18 psia		3.4e-003	1.2e-002	psia	17.5 : 1
	200.97psia	±( 0.025% Rdg + 1 LSD)	200.91	201.03	201.00 psia		3.8e-003	1.2e-002	psia	15.7 : 1
Hysteresis	118.94psia	±( 0.025% Rdg + 1 LSD)	118.90	118.98	118.96 psia		2.3e-003	1.2e-002	psia	17.7 : 1
	98.93psia	±( 0.025% Rdg + 1 LSD)	98.90	98.96	98.95 psia		1.9e-003	1.2e-002	psia	16.0 : 1

The column labeled Cal Process Uncertainty (CPU) does not include the short term component of the UUT. The column labeled Measurement Uncertainty includes both CPU and the short term component of the UUT. TUR is calculated using CPU.

Note: Reported resolution of the UUT does not represent calibration uncertainty or accuracy of the UUT.

Revision 0

Certificate/SO Number: 5-B2Z7X-20-1 Revision 0

Field not applicable. (P = Pass, F = Fail)

Customer: MESA LABORATORIES

PO Number: PO-009796

**Certificate/SO Number: 5-B2Z7X-20-1 Revision 0**

Description	Setpoints	Accuracy	Low Limit	High Limit	As Found / As Left	O O T	Cal Process Uncertainty	Measuremen t Uncertainty	Units	TUR
<b>Pressure Measure</b>										
	78.54psia	±( 0.025% Rdg + 1 LSD)	78.51	78.57	78.55 psia		1.5e-003	1.2e-002	psia	20.1 : 1

As Found and As Left Data recorded on July 27, 2017

Temperature 68.5°F / 20.3°C      Relative Humidity 48%      Temp/RH Asset DewK1

Asset	Manufacturer	Model	Description	Cal Date	Due Date	Traceability Numbers
DewK6	Fluke	2626-S	Hygro-Thermometer, Probe,	Jun 20, 2017	Jun 30, 2018	1-&DEWK6-8-1
DW09BA	Fluke/DH Instruments	PG7601	Piston Gauge	Mar 01, 2017	Mar 31, 2018	5-&DW09BA-1-1
DW09LOW	Fluke/DH Instruments	PC-7100/7600-10-TC	Gas Piston-Cylinder Module	Jul 11, 2013	Jul 31, 2018	5-&DW09-1-1
DW09MASS	Fluke/DH Instruments	MS-AMH-38	AMH Mass Set	Jul 11, 2013	Jul 31, 2018	5-&DW09-1-1
DW09MID	Fluke/DH Instruments	PC-7100/7600-100	Gas Piston-Cylinder Module	Jul 11, 2013	Jul 31, 2018	5-&DW09-1-1

The column labeled Cal Process Uncertainty (CPU) does not include the short term component of the UUT. The column labeled Measurement Uncertainty includes both CPU and the short term component of the UUT. TUR is calculated using CPU.

Note: Reported resolution of the UUT does not represent calibration uncertainty or accuracy of the UUT.

**Revision 0**

Field not applicable. (P = Pass, F = Fail)