



INTERNATIONAL  
ACCREDITATION  
SERVICE®

# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## **DICK MUNNS COMPANY**

11133 WINNERS CIRCLE  
LOS ALAMITOS, CALIFORNIA 90720, U.S.A.

### **Calibration Laboratory CL-122**

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date November 11, 2020

Expiration Date April 1, 2022



A handwritten signature in black ink, reading "Raj Nathan".

**President**

Visit [www.iasonline.org](http://www.iasonline.org) for current accreditation information.

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | [www.iasonline.org](http://www.iasonline.org)

## DICK MUNNS COMPANY

[www.dickmunns.com](http://www.dickmunns.com)

**Contact Name** Pablo L. Acosta

**Contact Phone** +1-714-827-1215

**Accredited to** ISO/IEC 17025:2017

**Effective Date** November 11, 2020

### CALIBRATION AND MEASUREMENT CAPABILITY (CMC)\*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY <sup>1,2</sup> (±)	CALIBRATION PROCEDURE AND/OR STANDARD EQUIPMENT USED
<b>Mechanical</b>			
Flow Rate by Volume (H <sub>2</sub> O or Hydrocarbon)	0.002 gal/min to 1.0 gal/min	0.17 %	DMC Standard A-6
Turbine Meters	0.002 gal/min to 0.5 gal/min	0.17 %	DMC Standard A-7
PD Meters	0.2 gal/min to 1.0 gal/min	0.10 %	DMC Standard A-10
Mag Meters	0.3 gal/min to 5.0 gal/min	0.014 %	DMC Standard A-28
Rotometers	0.5 gal/min to 15 gal/min	0.10 %	DMC Standard A-33
Vortex Meters	5.0 gal/min to 25 gal/min 5.0 gal/min to 50 gal/min 10 gal/min to 100 gal/min 100 gal/min to 600 gal/min	0.16 % 0.15 % 0.15 % 0.20 %	DMC Standard A-33 DMC Standard A-14 DMC Standard A-710 DMC Standard A-710
Flow Rate	Up to 4 kg/min 0.01 kg/min to 12 kg/min 10 lb/min to 250 lb/min 100 lb/min to 1000 lb/min 500 lb/min to 10000 lb/min	0.1 % FS 0.23 % 0.1 % 0.08 % FS 0.07 lb	DMC Standard A-322 DMC Standard A-70 DMC Standard A-50 DMC Standard A-264 DMC Standard A350
Flow Rate by Volume	10 gal/min to 100 gal/min 100 gal/min to 500 gal/min 600 gal/min to 1000 gal/min 1000 gal/min to 1500 gal/min 100 gal/min to 3000 gal/min	0.01 % 0.012 % 0.015 % 0.017 % 0.15 %	DMC Standard I to IV-A350    DMC Standard A-350 [TRANSFER STDs A3682, A3684 & A770]
Flow Rate by Volume for Compressible Gas	2 cm <sup>3</sup> /min to 50000 cm <sup>3</sup> /min  0.005 ALPM to 0.090 ALPM 0.060 ALPM to 1.2 ALPM 0.200 ALPM to 12.0 ALPM 12.1 ALPM to 25.0 ALPM	0.12 %  0.19 % 0.19 % 0.17 % 0.19 %	DMC Standard A290  DMC Standard A-100 DMC Standard A-1 DMC Standard A-2 DMC Standard A-3

\* If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | [www.iasonline.org](http://www.iasonline.org)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY <sup>1,2</sup> (±)	CALIBRATION PROCEDURE AND/OR STANDARD EQUIPMENT USED
Flow Rate by Volume for Compressible Gas continued	0.200 ACFM to 10.0 ACFM 10.0 ACFM to 25.0 ACFM 25.0 ACFM to 50.0 ACFM 2.0 ACFM to 150.0 ACFM 160 ACFM to 250.0 ACFM 250 ACFM to 1200 ACFM	0.19 % 0.20 % 0.23 % 0.19 % 0.19 % 0.21 %	DMC Standard A-4  DMC Standard A-5
Flow Rate by Volume (Transfer Standard)	1 SCFM to 1036 SCFM 1 SCCM to 1800 SCCM  5 SCCM to 500 SCCM 500 SCCM to 50000 SCCM  0.003 gal/min to 2.64 gal/min  0.020 gal/min to 9.25 gal/min 0.150 gal/min to 26.4 gal/min 0.500 gal/min to 50.0 gal/min 0.500 gal/min to 100.0 gal/min 10 gal/min to 600.0 gal/min	0.20 % 0.8 %  0.15 % 0.15 %  0.8 %  0.8 % 0.8 % 0.8 % 0.8 % 0.8 % 0.8 %	DMC Standard A800  DMC Standard A-8 Max Machine  Mesa Labs DryCal 800 w/ 2 cells – NIST 250  DMC Standard A-78  DMC Standard A-61 DMC Standard A-58 DMC Standard A-99 DMC Standard A-69 DMC Standard A-300 Turbine
Flow Rate by Volume (Transfer Standard) (Secondary Air Flow)	10 ACFM to 120 ACFM 20 CFM to 14000 CFM	0.38 % 0.50 %	DMC Standard A-297 DMC Standard A-197
Mass Velometer / Air Velocity Meters	50 ACFM to 8000 ACFM	0.20 %	DMC Standard A-220 (12 in Wind Tunnel)
Anemometer	50 FPM to 8000 FPM	0.69 %	DMC Standard A-69 (12 in Wind Tunnel)
Pressure	0 inH <sub>2</sub> O to 2 inH <sub>2</sub> O -760 mm HgA to -1 mm HgA -15 psia to 595 psig 10 psig to 10000 psig  0.01 inH <sub>2</sub> O to 10 inH <sub>2</sub> O	0.002 inH <sub>2</sub> O 0.05 mmHg  0.011 % 0.03 %  0.13 %	DMC Standard A135 DMC Standard A22  DMC Standard A321 DMC Standard A970 Fluke Digital Pressure DMC Standard A484
Specific Gravity	0.7 SG to 1.95 SG	0.0002 %	DMC Standard A219
Volume	99.9304 mL	0.00010 %	DMC Standard A799
Scale (weight)	0 g to 200 g	0.00020 g	DMC Standard A150

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | [www.iasonline.org](http://www.iasonline.org)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY <sup>1,2</sup> (±)	CALIBRATION PROCEDURE AND/OR STANDARD EQUIPMENT USED
Volume by Gravimetric Means	0.1 gal to 5 gal 5 gal to 50 gal 50 gal to 100 gal 100 gal to 200 gal 200 gal to 1000 gal	0.00088 gal 0.012 gal 0.022 gal 0.056 gal 0.12 gal	DMC 5GAL.01 DMC STD. A264
Torque	4 lbf·in to 250 lbf·ft	0.25 %	Laboratory developed procedure
<b>Thermal</b>			
Temperature	60 °F to 90 °F -180 °C to 1150 °C	0.019 °F 0.14 °C	DMC Standard A24 DMC Standard A312
Relative Humidity	10 %RH to 95 %RH	1.2 %	Custom Wet/Dry Bulb Chamber – Procedure based on NAVAIR-17-20MH-32
<b>Gas Detection</b>			
Gas Detection	Mixes of O <sub>2</sub> , CO <sub>2</sub> , CO, Methane, Propane, H <sub>2</sub> S & ISO-Butylene	0.19%	Cal Gas Cylinder and DMC Standard A1-A3

<sup>1</sup>The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

<sup>2</sup>When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

FS = full scale

gal = gallon (US)

ACFM = actual cubic foot per minute

ALPM = actual liter per minute

SCCM = standard cubic centimeter per minute

SCFM = standard cubic foot per minute

psi = pound force per square inch

psig = pound force per square inch, gauge

psia = pound force per square inch, absolute