



AMERICAN PETROLEUM INSTITUTE

ANSI/API MPMS Chapter 22.3

Testing Protocol for Flare Gas Metering

FIRST EDITION | AUGUST 2015 | 21 PAGES | \$98.00 | PRODUCT NO. H220301

The scope of the standard is to describe a testing protocol for flare gas meters. This includes a discussion of the testing to be performed, how the test data should be analyzed, and how an uncertainty is determined from the testing of the meter. The scope does not include the general guidelines to flare gas metering that are covered under MPMS Chapter 14.10.

For ordering information:

Online: www.api.org/pubs

Phone: 1-800-854-7179
(Toll-free in the U.S. and Canada)

(+1) 303-397-7056
(Local and International)

Fax: (+1) 303-397-2740

API members receive a 30% discount where applicable.

Contents

	Page
1 Scope	1
2 Normative References.....	1
3 Terms and Definitions.....	1
4 Field of Application	2
5 Parameter Variations Affecting Device Performance	3
6 Mandatory Tests.....	3
6.1 Test Conditions	3
6.2 Test Installation	4
6.3 Test Results	8
6.4 Baseline Testing	8
6.5 Installation Effects Testing	8
6.6 Special Testing.....	10
6.7 Testing Procedure	10
7 Test Facility Requirements.....	10
7.1 Audit Process.....	10
7.2 Lab/Facility Qualification	11
8 Uncertainty Analysis and Calculation.....	11
8.1 Test Facility Uncertainty	11
8.2 Device Uncertainty	11
8.3 How to Calculate Uncertainty.....	11
8.4 Presentation of Test Report Uncertainty	11
9 Test Report.....	11
9.1 General	11
9.2 Test Facility Information	11
9.3 Test Meter Information	12
9.4 Description of the Full Test Matrix And Results	12
9.5 Sample Meter Test Reporting Form.....	13
Annex A (informative) Samples for Summary and Detailed Data Reports	14
Bibliography	21
Figures	
1 Test Program Piping Configuration.....	7
2 Elbow in Plane Piping Layout with a USM in its Preferred Position	9
3 Elbow out of Plane Piping Layout with a USM in its Preferred Position.....	9
X Picture of Meter Under Test	16
Y Baseline Meter Test Piping Arrangement (example).....	18
Z Baseline Meter Test Piping (example).....	18
AA Baseline Meter Test Result Summary (example).....	19
AB Installation Effect Test Summary—2 Elbows Out of Plane (example).....	20
Tables	
X Reference Test Equipment Summary	17
Y Baseline Meter Test Summary (example).....	19