NOVAMED INC.

CERTIFICATE OF PIPETTE CALIBRATION

Calibration Cert# 3053.01

Certificate # 062013 - 1234

CUSTOMER DETAILS			
Customer	Novamed Inc.	**Asset#**	1234
Contact	Mike Kahn	**Serial Number**	ABCD1234
Location	Lab	**Pipette Model**	Gilson Pipetman P1000, V, 100-1000ul, 1ch
Address	8136 Lawndale Ave	**Calibration Date**	20-Jun-2013
	Skokie, IL 60076 USA	**Next Due Date**	20-Jun-2014
Telephone	847-675-3550	**Technician**	Richard Gniadek
		Report Print Date	20-Jun-2013

ENVIRONMENTAL CONDITIONS							
Water Temperature	℃	21.78	**Barometric Pressure**	kPa	100.00	**Z Factor** (cm3/g)	1.00322
Relative Humidity	(%)	38.00	**Air Density**	(g/cm3)	0.00118	**Liquid Density** (gm/ml)	0.9978

STANDARD EQUIPMENT

Standard	Serial Number	Calibration Date	Next Due Date
Mettler AX205DR Balance	1121473354	13-Apr-2012	01-Jun-2012
Barometer	91308891	12-Mar-2012	28-Dec-2012
Weight Set	1000031366	12-Mar-2012	23-Feb-2013
YSI Thermocouple	02E102661	15-Mar-2012	05-Jan-2013

Calibration Data - As Found

Volume (uL)	Ch	Mean	SD	Unc. +/- (k=2)	Accuracy % Actual	Accuracy % Target	Precision % Actual	Precision % Target	Status	Sample	Sample Weight (mg)	Sample Volume (uL)
100.00	1	97.16	0.02088	0.25	2.84273	3.00000	0.02149	0.60000	Passed			
										1	96.87000	97.18235
										2	96.84000	97.15225
										3	96.82000	97.13219
										4	96.85000	97.16228
500.00	1	499.48	0.51059	0.57	0.10393	0.80000	0.10223	0.20000	Passed			
										1	497.52000	499.12421
										2	497.58000	499.18441
										3	498.62000	500.22776
										4	497.78000	499.38505
1000.00	1	998.17	0.01262	0.26	0.18293	0.80000	0.00126	0.15000	Passed			
										1	994.95000	998.15814
										2	994.96000	998.16817
										3	994.98000	998.18823
										4	994.96000	998.16817

Calibration Data - As Calibrated

Volume (uL)	Ch	Mean	SD	Unc. +/- (k=2)	Accuracy % Actual	Accuracy % Target	Precision % Actual	Precision % Target	Status	Sample	Sample Weight (mg)	Sample Volume (uL)
100.00	1	98.59	0.02763	0.25	1.40561	3.00000	0.02802	0.60000	Passed			
										1	98.25000	98.56680
										2	98.26000	98.57683
										3	98.29000	98.60693
										4	98.31000	98.62699
500.00	1	500.58	0.01295	0.26	0.11678	0.80000	0.00259	0.20000	Passed			
										1	498.98000	500.58892
										2	498.97000	500.57889
										3	498.96000	500.56886
										4	498.99000	500.59895
1000.00	1	1002.18	0.02953	0.26	0.21811	0.80000	0.00295	0.15000	Passed			
										1	998.92000	1002.14094
										2	998.96000	1002.18107
										3	998.97000	1002.19110
										4	998.99000	1002.21116

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Comment Cleaned/Checked/Calibrated

1. PASS grade denotes that pipette meets OEM specifications. This pipette was calibrated gravimetrically using Standard Operating Procedure (NSOP), De-Ionized Water, Manufacturer/Generic Pipette tips and a Mettler Analytical Balance. All the standard equipment used to calibrate pipettes are certified at regular intervals traceable to National Institute of Standards and Technology (NIST). The test procedures comply to ISO/IEC 17025 guidelines.
2. As a standard practice, Multi-Channel pipettes are checked & calibrated at one random channel only, all other channels are verified.
3. Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanced uncertainties expressed at approximately the 95% level of confidence, usually using a coverage factor of k=2. The actual measurement uncertainty of a specific calibration performed by a laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.
4. The results above relate only to the item calibrated. This report shall not be reproduced except in full, without the written approval of Novamed Inc.
5. All Syringes are checked and verified at 3% of inaccuracy and imprecision specifications.

Technician _____ **Date** 20-Jun-2013

QC Designee _____ **Review Date** _____