

Volume Verification Report

for 1000 µl Pipetting Channels

Instrument Name:	ML_STAR	Date: 2022-12-07
Instrument Serial No.:	403F	Time: 13:25
Instrument User Software Version:	4.5.0.5217 FVK2: 1020/04	
Location:	SSI TCDK	Temperature [°C]: 20.4
Operator:	Fredrik Svensson	Relative Humidity [%]: 31.6
Reason for Verification:	PM2	
Report File:	Report_Vol_Ver_1000ulSingleChannels_403F_202212071325.pdf	

Test Equipment:		
Balance Serial No.:	B929969340	Valid until: 2023-03-18
Calibration Weight No.:	C132337082	Valid until: 2023-08-16
Actual Weigth [g]:	20.00004	Calibration Weight [g]: 20 +/- 0.00034
Reader Serial No.:	1067	Validation: passed
Reader Checkplate Serial No.	1359	Valid until: 2023-08-08
Ambient Temperature and Humidity Measuring Device Serial No.: 83724023		
		Valid until: 2023-10-04
Reagent Kit Lot No.:	M0470	Valid until: 2023-08-10

Measurements:		
Testing Volume [µl]:	10	1000
Number of Samples:	8	8
Used Tip Type:	10µl Low Volume Tip	1000µl High Volume Tip
Liquid Density [g/cm3]:	1.0007	1.0006
Mean Volume [µl]:	10.001	982.7
Standard Deviation [µl]:	0.122	6.3
Trueness (spec.) [%]:	<= +/- 8.00	<= +/- 2.50
Trueness (actual) [%]:	0.01	-1.73
Precision (spec.) [%]:	<= 5.00	<= 2.00
Precision (actual) [%]:	1.22	0.64
Test Result:	passed	passed

Process Status: *passed*

Summary Volume 10µl:

Channel No.	
1	passed
2	passed
3	passed
4	passed
5	passed
6	passed
7	passed
8	passed

Summary Volume 1000µl:

Channel No.	
1	passed
2	passed
3	passed
4	passed
5	passed
6	passed
7	passed
8	passed

Operator: Fredrik Svensson **Date:** 2022-12-07

Signature: *Frsu*

Testing Volume: 10 μ l

	Channel 1	Channel 2	Channel 3	Channel 4
No. 1	9.858	10.022	9.956	9.940
No. 2	9.865	9.817	9.880	9.781
No. 3	9.760	10.034	9.707	9.899
No. 4	10.010	10.090	9.983	10.042
No. 5	10.118	10.106	9.990	10.069
No. 6	10.061	10.065	10.030	10.065
No. 7	10.102	10.143	9.963	10.098
No. 8	10.081	10.110	10.014	10.061
Mean Volume [μl]:	9.982	10.048	9.940	9.994
Standard Deviation [μl]:	0.135	0.102	0.105	0.111
Trueness [%]:	-0.18	0.48	-0.60	-0.06
Precision [%]:	1.36	1.01	1.05	1.11
Test Result:	passed	passed	passed	passed
	Channel 5	Channel 6	Channel 7	Channel 8
No. 1	9.770	9.828	10.022	9.876
No. 2	9.679	9.876	10.002	9.872
No. 3	9.843	9.936	9.956	9.925
No. 4	9.975	10.069	10.126	10.139
No. 5	9.987	10.114	10.126	10.209
No. 6	9.983	10.077	10.147	10.130
No. 7	10.014	10.069	10.201	10.139
No. 8	10.022	9.971	10.168	10.069
Mean Volume [μl]:	9.909	9.993	10.093	10.045
Standard Deviation [μl]:	0.129	0.106	0.088	0.134
Trueness [%]:	-0.91	-0.07	0.93	0.45
Precision [%]:	1.30	1.06	0.87	1.33
Test Result:	passed	passed	passed	passed

Testing Volume: 1000 μ l

	Channel 1	Channel 2	Channel 3	Channel 4
No. 1	988.4	988.4	982.1	980.6
No. 2	991.7	996.3	984.6	985.9
No. 3	996.3	993.4	988.5	987.0
No. 4	983.6	984.7	979.9	976.1
No. 5	987.3	987.2	985.9	976.5
No. 6	988.6	988.6	983.6	980.4
No. 7	985.2	981.8	979.0	973.7
No. 8	984.9	982.8	977.0	979.3
Mean Volume [μl]:	988.2	987.9	982.6	980.0
Standard Deviation [μl]:	4.1	5.0	3.8	4.7
Trueness [%]:	-1.18	-1.21	-1.74	-2.00
Precision [%]:	0.42	0.50	0.39	0.48
Test Result:	passed	passed	passed	passed
	Channel 5	Channel 6	Channel 7	Channel 8
No. 1	977.5	979.8	986.0	987.1
No. 2	981.4	982.1	985.8	992.2
No. 3	989.4	992.3	989.6	995.3
No. 4	973.4	970.6	975.3	979.1
No. 5	975.9	972.6	976.7	981.4
No. 6	978.9	983.2	980.7	985.1
No. 7	970.8	971.8	978.9	979.4
No. 8	974.1	978.3	978.1	983.8
Mean Volume [μl]:	977.7	978.8	981.4	985.4
Standard Deviation [μl]:	5.8	7.3	5.1	5.9
Trueness [%]:	-2.23	-2.12	-1.86	-1.46
Precision [%]:	0.59	0.74	0.52	0.60
Test Result:	passed	passed	passed	passed