

Customer Mettler-Toledo Rainin, LLC
Service
Craig Bush
7500 Edgewater Drive
Oakland, CA 94621

Location 7500 Edgewater Drive
Oakland

Serial Number E0100048A

Model RAININ L-200

Next Service 04.Feb.2018

Service Plan Single channel 3x4 AF, PM, 3x10 AR (17800048)

Comment

As found-Failed Andy Pabst 04.Aug.2017

Inspection 1. Over All Condition: Poor, 2. Vacuum Leak Test: Leak Test Fail

Conditions **Humidity** 56.4% | 62.5% **Air Temperature** 21.15°C | 21.29°C **Z-Factor** 1.0031µl/mg
Air Pressure 1013.93hPa | 1013.78hPa **Water Temperature** 21.15°C | 21.29°C **Evaporation** 0mg

Equipment **Balance** B636010379 Next Cal. (31.Oct.2017) Readability (0.0001g) **Pipette Tip** Manufacturer's recommended Manufacturer

Climate Monitor Humidity - Humidity (14421017) Next Cal. (29.Nov.2017) | Temperature - Temperature (14421017) Next Cal. (29.Nov.2017) | Voltage - (Pressure) (14421017) Next Cal. (29.Nov.2017)

Test Volume (ul)	Weighings (mg)			
	1	2	3	4
20.0	10.44	12.79	12.48	10.98
100	55.45	62.22	63.53	57.42
200	122.80	133.33	126.44	123.12

Results

Test Volume (ul)	Mean Volume (ul)	Systematic Error				Random Error				Expanded Uncertainty (ul)	Status
		Error (ul)	Limit (+/- ul)	Error (%)	Limit (+/- %)	Error (ul)	Limit (ul)	Error (CV%)	Limit (%)		
20.0	11.709	-8.291	1.6	-41.457	8.0	1.144	0.6	9.767	3.0	3.8µl (K=3.31)	Failed
100	59.840	-40.160	1.6	-40.160	1.6	3.853	0.6	6.440	0.6	13µl (K=3.31)	Failed
200	126.814	-73.186	1.6	-36.593	0.8	4.905	0.6	3.868	0.3	16µl (K=3.31)	Failed

Preventive Maintenance: Cleaned, replace seal

Parts Replaced: Seal (17014289), SEAL RETAINER E3,L,R,RL,SE3,SL 200UL (17004750)

As left-Passed Craig Bush 04.Aug.2017

Conditions **Humidity** 58.3% | 58.2% **Air Temperature** 21.19°C | 21.21°C **Z-Factor** 1.0031µl/mg
Air Pressure 1013.93hPa | 1013.93hPa **Water Temperature** 21.19°C | 21.21°C **Evaporation** 0mg

Equipment **Balance** B636010385 Next Cal. (31.Oct.2017) Readability (0.0001g) **Pipette Tip** Manufacturer's recommended Manufacturer

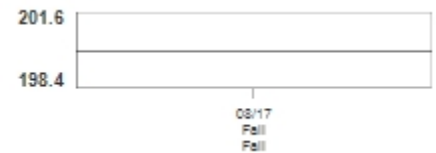
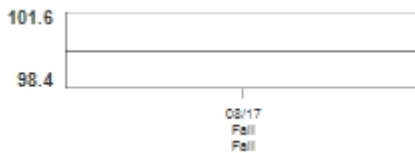
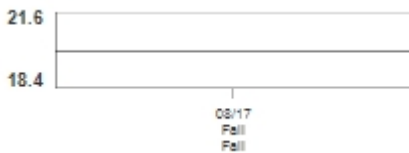
Climate Monitor Humidity - Humidity (14421017) Next Cal. (29.Nov.2017) | Temperature - Temperature (14421017) Next Cal. (29.Nov.2017) | Voltage - (Pressure) (14421017) Next Cal. (29.Nov.2017)

Test Volume (ul)	Weighings (mg)									
	1	2	3	4	5	6	7	8	9	10
20.0	19.55	20.05	20.13	20.06	20.17	20.25	20.23	20.18	20.17	20.12
100	99.84	99.63	99.98	99.97	99.93	99.88	100.05	99.97	99.90	99.89
200	200.52	199.97	200.16	200.43	200.59	200.63	200.29	200.48	200.23	200.41

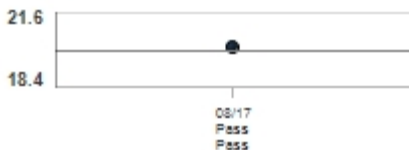
Results

Test Volume (ul)	Mean Volume (ul)	Systematic Error				Random Error				Expanded Uncertainty (ul)	Status
		Error (ul)	Limit (+/- ul)	Error (%)	Limit (+/- %)	Error (ul)	Limit (ul)	Error (CV%)	Limit (%)		
20.0	20.153	0.153	1.6	0.766	8.0	0.201	0.6	0.999	3.0	0.47µl (K=2)	Passed
100	100.214	0.214	1.6	0.214	1.6	0.114	0.6	0.114	0.6	0.34µl (K=2)	Passed
200	200.992	0.992	1.6	0.496	0.8	0.208	0.6	0.103	0.3	0.48µl (K=2)	Passed

As found



As left




Authorized Signatory, Craig Bush
04.Aug.2017

METTLER TOLEDO