Volume Measurement in Corning 9017 96-Well Polystyrene Microplates Using the Scarlett™ 01 Volume Analysis System

Summary

The Scarlett 01 Volume Analysis System accurately quantified liquid volumes in the Corning 9017 96-well polystyrene microplate. Scarlett demonstrated accurate volume measurements across a 60–190 µL working range using reference volumes dispensed with traceably calibrated syringes.

Key Results

- Scarlett successfully measured liquid volumes in **Corning 9017** 96-well polystyrene microplates.
- Successful volume measurement from **60–190 µL** using DI H_2O.
- Observed Inaccuracy: **–3.3% to +0.2%**
- High measurement precision with a **maximum CV of 1.18%.**

Performance Overview

Table 1. Test Summary

Parameter	Value
Plate Manufacturer / Model	Corning 9017
Plate Type	96-well, round-well, flat-bottom, black, polystyrene
Volume Range Evaluated	60–190 µL
Liquids Evaluated	DI H_2O
Observed Inaccuracy Range	–3.3% to +0.2%
Maximum CV	1.2%

Verification Results

Across the evaluated range, volumes measured by the Scarlett 01 System closely matched the reference volumes. Inaccuracy values ranged from –3.32% to +0.24%, while coefficient of variation (CV) values remained below 1.18%.

Table 2. Measurement Performance Results

Reference Volume (µL)	Mean Volume (µL) (n=6)	[a] Inaccuracy	CV
59.94	60.08	+0.24%	1.18%
90.32	90.24	−0.09%	0.44%
109.66	107.33	−2.12%	0.55%
129.74	126.44	−2.55%	0.55%
149.44	145.36	−2.73%	0.27%
169.62	163.98	−3.32%	0.38%
189.88	188.72	−0.61%	1.04%

a – Inaccuracy (%) is calculated relative to calibrated syringe reference volumes.

Measurement Method

Measurements were performed using plate- and liquid-specific calibration curves. Calibration curves were generated using reference volumes dispensed by Hamilton glass syringes calibrated by RISE (Research Institutes of Sweden) according to ISO 8655 procedures. Reported inaccuracy values are relative to calibrated reference volumes.

Conclusion

The Scarlett 01 Volume Analysis System demonstrated accurate and precise liquid volume measurements from 60–190 µL in Corning 9017 96-well microplates. These results demonstrate the ability of Scarlett 01 to provide reliable volume verification in microplates commonly used for PCR and molecular biology workflows.

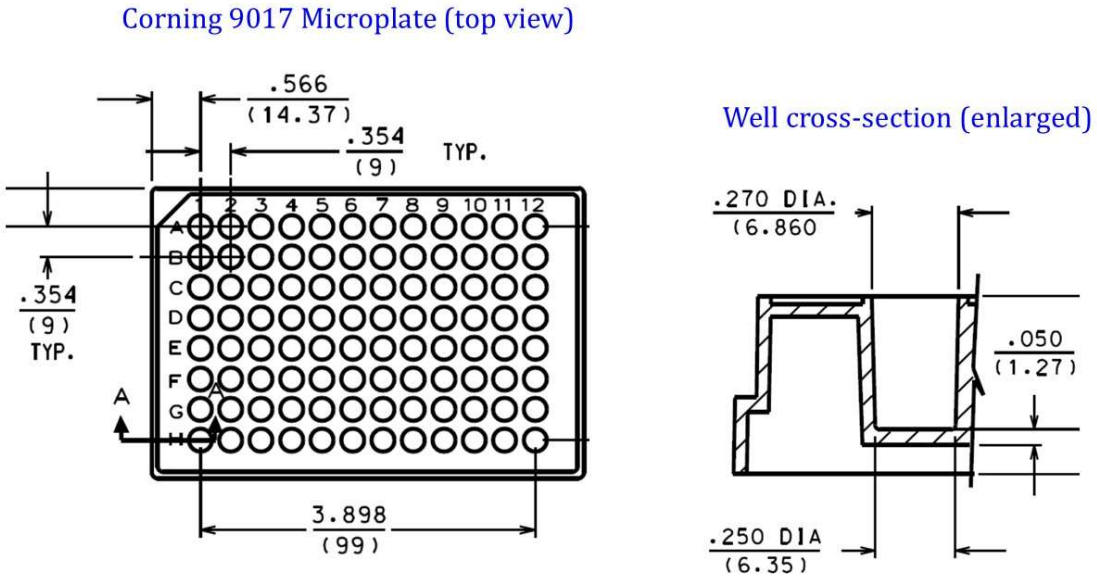

Figure 1. Plate and well geometries for the Corning 9017 96-well microplate.

Your plates. Your reagents. Your workflow. Contact Aventix (hello@aventix.io) to learn how Scarlett 01 can provide fast, non-contact volume verification across your laboratory workflows.