

# Performance Testing for Axygen® Automation Tip (RRF-175-C-R-S)

## Application Note



### Method

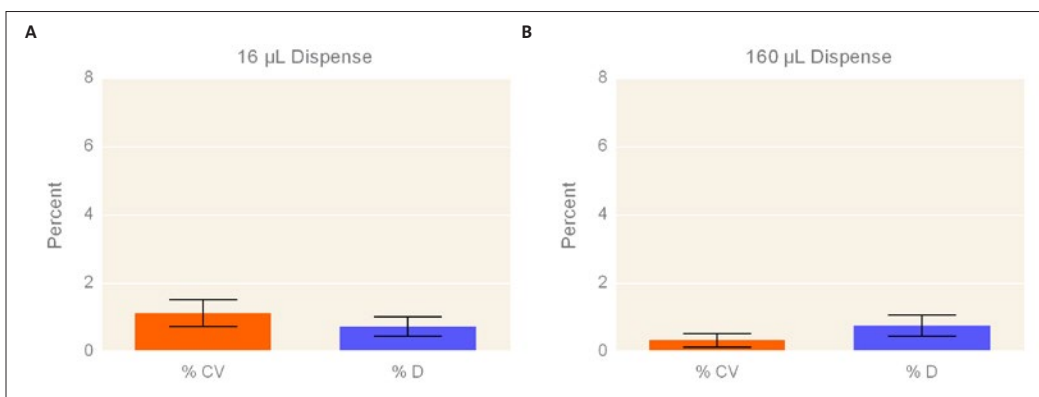
The Varispan™ arm on the Perkin Elmer Janus® liquid handling workstation was used to assess precision as coefficient of variation (% CV), and accuracy as percent deviation (% D), for Axygen 175 µL tips.

To test the ability of the tip to dispense accurately and precisely at two dispense volumes, 16 µL and 160 µL, a column of 8 tips aspirated from an Axygen low profile reservoir (Corning Cat. No. RES-SW96-LP) and dispensed into a Corning® 96-well black/clear-bottom microplate (Corning Cat. No. 3631).

For the 16 µL test volume, each tip aspirated 16 µL of Range B solution (Artel Cat. No. MVS-204) and dispensed 16 µL into 184 µL

of diluent solution (Artel Cat. No. MVS-202) in each well. For the 160 µL test volume, each tip aspirated 160 µL of Range A solution (Artel Cat. No. MVS-203) and dispensed 160 µL into 40 µL of diluent solution in each well. To determine the volume of liquid dispensed in each well, absorbance readings for the solutions (diluted Range B solution for 16 µL dispense and Range A solution for 160 µL dispense) were measured using an Artel ELx800NB® plate reader (Artel Cat. No. 1311197). Each study was performed 6 independent times for a total of 48 tip dispenses. Evaluation criteria include % D from the set dispense volume and % CV of the measured dispense volume for the 48 tip dispenses.

### Results



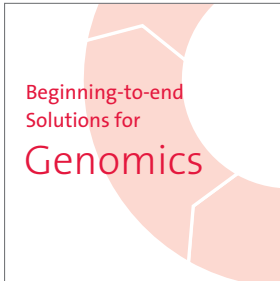
**Figure 1.** Analysis of RRF-175-C-R-S tip with aqueous dispense. The precision (assessed by % CV) and accuracy (assessed by % D) of Axygen RRF-175-C-R-S tips dispensing (A) 16 µL and (B) 160 µL volumes using the Varispan arm on the Perkin Elmer Janus liquid handling workstation were determined using the Artel MVS® system. The % CV and % D were below 1.5% for both 16 µL and 160 µL dispenses, n = 48.

**Table 1.** Aqueous Dispense Results

Target Volume (µL)	16	160
n	48	48
% CV	1.13 ± 0.39	0.34 ± 0.20
% D	0.74 ± 0.28	0.76 ± 0.31
Outliers	0	0

### Conclusion

The % CV and % D for the Axygen automation RRF-175-C-R-S tips dispensing 16 µL and 160 µL were 5% or below. Therefore, Axygen automation RRF-175-C-R-S tips can precisely and accurately dispense volumes as low as 16 µL and as high as 160 µL for aqueous solutions using the Varispan arm on the Perkin Elmer Janus liquid handling workstation.



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