

# Performance Testing for Axygen® Automation Tip (EVF-180-R-S)

## Application Note



### Method

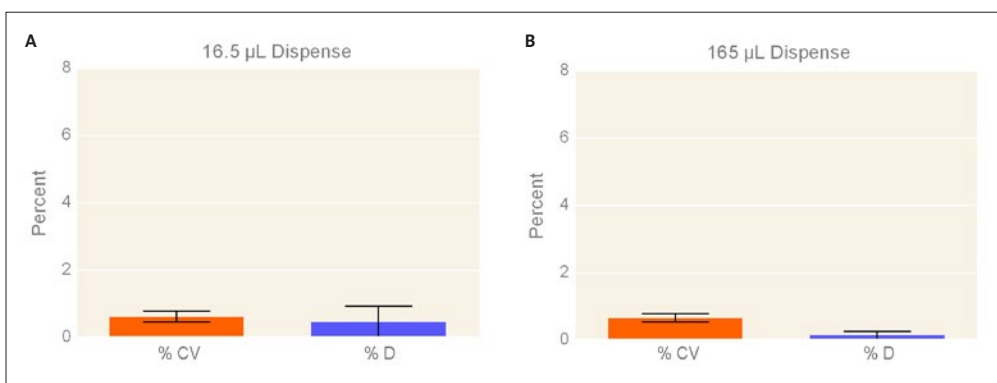
The Multi Channel Arm (MCA) of the Tecan® Freedom EVO® liquid handling workstation was used to assess precision, as coefficient of variation (% CV), and accuracy as percent deviation (% D) for Axygen 180 µL tips.

To test the ability of the tip to dispense accurately and precisely at two dispense volumes, 16.5 µL and 165 µL, a rack of 96 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 16.5 µL test volume, each tip aspirated 16.5 µL of Range B solution (Artel Cat. No. MVS-204) and dispensed 16.5 µL into

183.5 µL of diluent solution (Artel Cat. No. MVS-202) in each well. For the 165 µL test volume, each tip aspirated 165 µL of Range A solution (Artel Cat. No. MVS-203) and dispensed 165 µL into 35 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 16.5 µL dispense and Range A solution for 165 µL dispense) were measured using an Artel ELx800NB® plate reader (Artel Cat. No. 1311197). Each study was performed 3 independent times for a total of 288 tip dispenses. Evaluation criteria include % D from the set dispense volume and % CV of the measured dispense volume for the 288 tip dispenses.

### Results



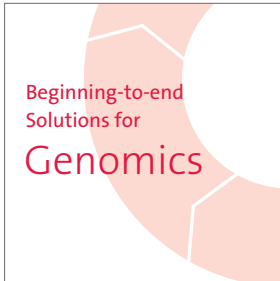
**Figure 1. Analysis of EVF-180-R-S tip with aqueous dispense.** The precision (assessed by % CV) and accuracy (assessed by % D) of Axygen EVF-180-R-S tips dispensing (A) 16.5 µL and (B) 165 µL volumes using the Tecan Freedom EVO liquid handling workstation were determined using the Artel MVS® system. The % CV and % D were below 1% for both the 16.5 µL and 165 µL dispenses, n = 288.

**Table 1. Aqueous Dispense Results**

Target Volume (µL)	16.5	165
n	288	288
% CV	0.63 ± 0.15	0.51 ± 0.41
% D	0.46 ± 0.47	0.15 ± 0.08
Outliers	0	1

### Conclusion

The % CV and % D for the Axygen automation EVF-180-R-S tips dispensing 16.5 µL and 165 µL volumes were 5% or below. Therefore, Axygen automation EVF-180-R-S tips can precisely and accurately dispense volumes as low as 16.5 µL and as high as 165 µL for aqueous solutions using the MCA of the Tecan Freedom EVO liquid handling workstation.



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