

Performance Testing for Axygen® Automation Tip (TT-200-CBK-HTR)

Application Note



Method

The LiHa on 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 200 µL tips.

To test the ability of the tip to dispense accurately and precisely at two dispense volumes, 20 µL and 200 µL, a column of 7 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 20 µL test volume on the LiHa, a column of 7 tips were arranged so that each tip aspirated 20 µL of Range B solution (Artel Cat. No. MVS-204) and dispensed 20 µL into 180 µL of

diluent solution (Artel Cat. No. MVS-202) in each well. For the 200 µL test volume on the LiHa, a column of 7 tips were arranged so that each tip aspirated 200 µL of Range A solution (Artel Cat. No. MVS-203) and dispensed 200 µL into 0 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 20 µL dispense and Range A solution for 200 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 42 tip dispenses for the 20 µL and 200 µL test volume. Evaluation criteria include % D from the set dispense volume and % CV of the measured dispense volume for the tip dispenses.

Results

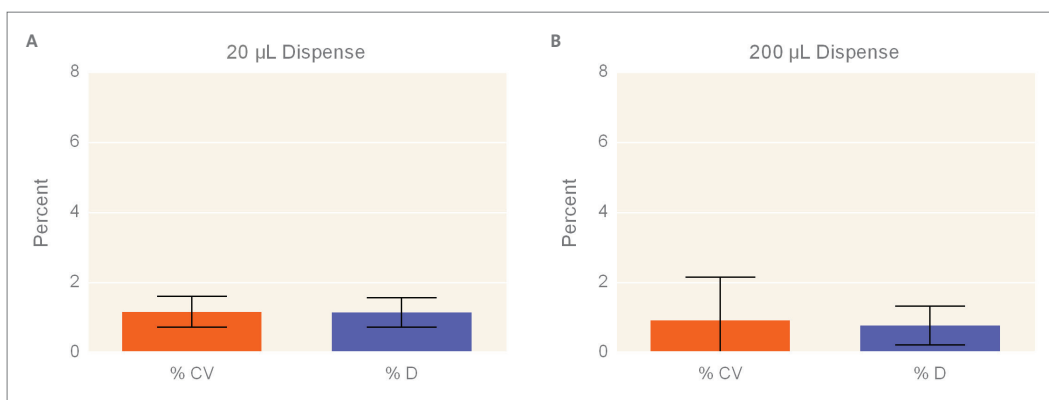


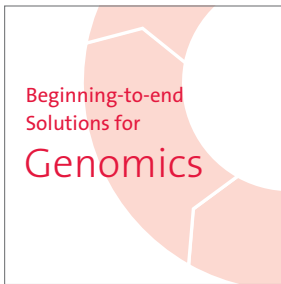
Figure 1. Analysis of TT-200-CBK-HTR tip with aqueous dispense. The precision (assessed by % CV) and accuracy (assessed by % D) of Axygen TT-200-CBK-HTR tips dispensing (A) 20 µL and (B) 200 µL volumes using the LiHa on the Tecan Freedom EVO liquid handling workstation were determined using the Artel MVS® system. The % CV and % D were below 1.5% for both 20 µL and 200 µL dispenses.

Table 1. Aqueous Dispense Results

Target Volume (µL)	20	200
n	42	42
% CV	1.17 ± 0.44	0.92 ± 1.24
% D	1.16 ± 0.42	0.78 ± 0.55
Outliers	0	0

Conclusion

The % CV and % D for the Axygen automation TT-200-CBK-HTR tips dispensing 20 µL and 200 µL were 5% or below. Therefore, Axygen automation TT-200-CBK-HTR tips can precisely and accurately dispense volumes as low as 20 µL and as high as 200 µL for aqueous solution using the LiHa on the Tecan Freedom EVO liquid handling workstation.



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Corning Incorporated
Life Sciences Europe

Corning BV
Fogostraat 12
1060 LJ Amsterdam
The Netherlands
Phone: +31 (0) 20 659 60 51
Fax: +31 (0) 20 659 76 73
CSEurope@corning.com
www.corning.com/lifesciences

Support Offices

EUROPE

France
t 0800 916 882
f 0800 918 636

Germany
t 0800 101 1153
f 0800 101 2427

The Netherlands
t 31 20 655 79 28
f 31 20 659 76 73

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t 0800 376 8660
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t 31 (0) 20 659 60 51
f 31 (0) 20 659 76 73

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