

Comparison of Drop Size when Dispensing MilliQ Water using 40 μm and 60 μm Orifice Diameter MJ Dispensing Devices

Drop size measurements were obtained using MJ-AB-01 type MJ Dispensing Devices having a 40 μm and 60 μm orifice diameter when dispensing of MilliQ water at ambient temperature. These measurements were performed on the Research Station using the highest image magnification setting (1.0mm on the video screen = 50 μm). Images of drop formation were captured using Optimas.

The following electronic drive waveform parameters were fixed for all tests: Rise time: 3.0 μs ; fall time: 3.0 μs ; frequency: 240Hz. Backpressure was adjusted and fixed at 0.09psi.

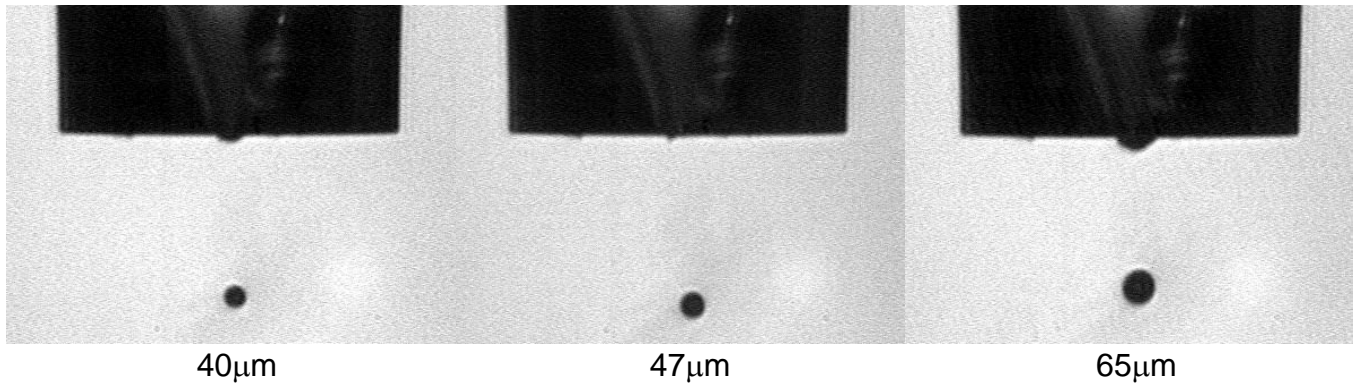


Figure 1. Drop sizes for 40 μm diameter orifice MJ Dispensing Device B4-143-23 when dispensing MilliQ water.

The drop sizes obtained when dispensing MilliQ water using the 40 μm orifice MJ Dispensing Device are displayed in **Figure 1**. The electronic drive waveform dwell time and voltage parameters used: **40 μm drop:** 36 μs dwell time at 22 volts; **47 μm drop:** 23 μs dwell time at 11 volts; **65 μm drop:** 68 μs dwell time at 16 volts.

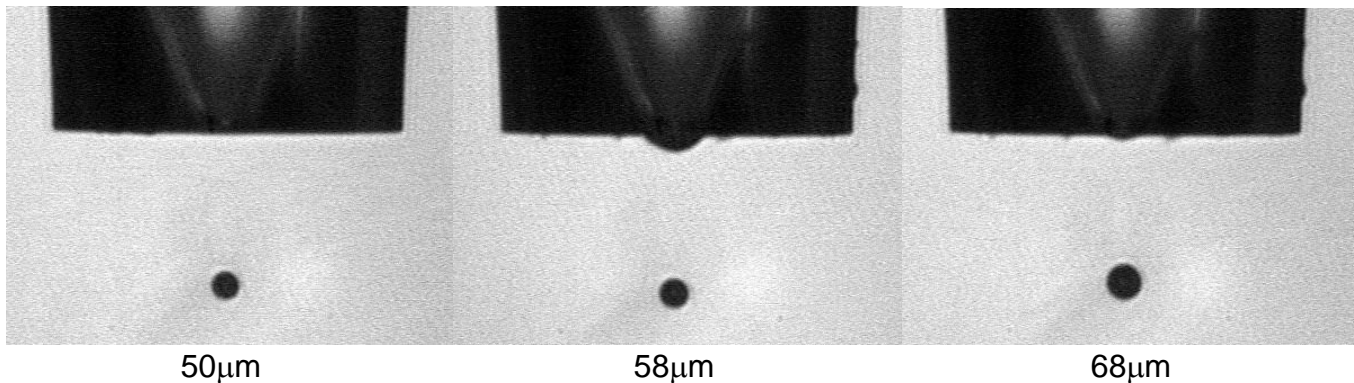


Figure 2. Drop sizes for 60 μm diameter orifice MJ Dispensing Device B5-128-5 when dispensing MilliQ water.

The drop sizes obtained when dispensing MilliQ water using the 60 μm orifice MJ Dispensing Device are displayed in **Figure 2**. The electronic drive waveform dwell time and voltage parameters used:

50 μm drop: 18 μs dwell time at 17 volts; **47 μm drop:** 22 μs dwell time at 18 volts; **68 μm drop:** 70 μs dwell time at 30 volts.