

Bsc Fluid Mechanics Lab Measurements

Lab M01 Assignments

2015-16 Semester II.

- A Determine the drag coefficient of three cylinders of different diameter (having the same surface roughness) as a function of Reynolds number. Measure each cylinder at the same Reynolds number and repeat the measurement for 5 Reynolds numbers in total. In order to guarantee only 2D flow effects, utilize the circular endplates over the ends of the cylinders during the measurements.
Check your results using the online validation tool www.ara.bme.hu/lab!
- B Determine the drag coefficient of 3 different cones of various heights as a function of Reynolds number. Measure each cone at the same Reynolds number and repeat the measurement for 5 Reynolds numbers in total.
Check your results using the online validation tool www.ara.bme.hu/lab!
- C Determine the drag coefficient of 3 different cylinders having conical ends as a function of Reynolds number. Measure each cylinder of conical end at the same Reynolds number and repeat the measurement for 5 Reynolds numbers in total.
Check your results using the online validation tool www.ara.bme.hu/lab!
- D Determine the drag coefficient of 3 spheres of different diameter as a function of Reynolds number. Measure each sphere of different diameters at the same Reynolds number and repeat the measurement for 5 Reynolds numbers in total.
Check your results using the online validation tool www.ara.bme.hu/lab!
- E Determine the drag coefficient of 5 cones of varying height at 3 different velocities! Choose the velocities in the range of $50\% \cdot v_{\max}$ and $100\% \cdot v_{\max}$.
Check your results using the online validation tool www.ara.bme.hu/lab!
- F Determine the drag coefficient of 3 vertical cylinders of different diameter at 5 different velocities. Choose the velocities in the range of $50\% \cdot v_{\max}$ and $100\% \cdot v_{\max}$.
Check your results using the online validation tool www.ara.bme.hu/lab!
- G Determine the drag coefficient of 3 horizontal cylinders of different surface roughness (of the same diameter) at 5 different velocities. In order to guarantee only 2D flow effects, utilize the circular endplates over the ends of the cylinders during the measurements. Choose the velocities in the range of $50\% \cdot v_{\max}$ and $100\% \cdot v_{\max}$.
Check your results using the online validation tool www.ara.bme.hu/lab!
- H Determine the drag coefficient of 3 cylinders of different heights as a function of Reynolds number. Measure the cylinders of various heights at the same Reynolds number and repeat the measurements for 5 Reynolds numbers in total.
Check your results using the online validation tool www.ara.bme.hu/lab!