

## OBJECTIVE.

The NOVEOS System by HYCOR Biomedical aims to set a new standard in mid-to-high volume routine allergy testing laboratories, by solving shortcomings of current technologies. The goal of this study is to compare differences in the run times and maintenance times between NOVEOS and analogous systems.

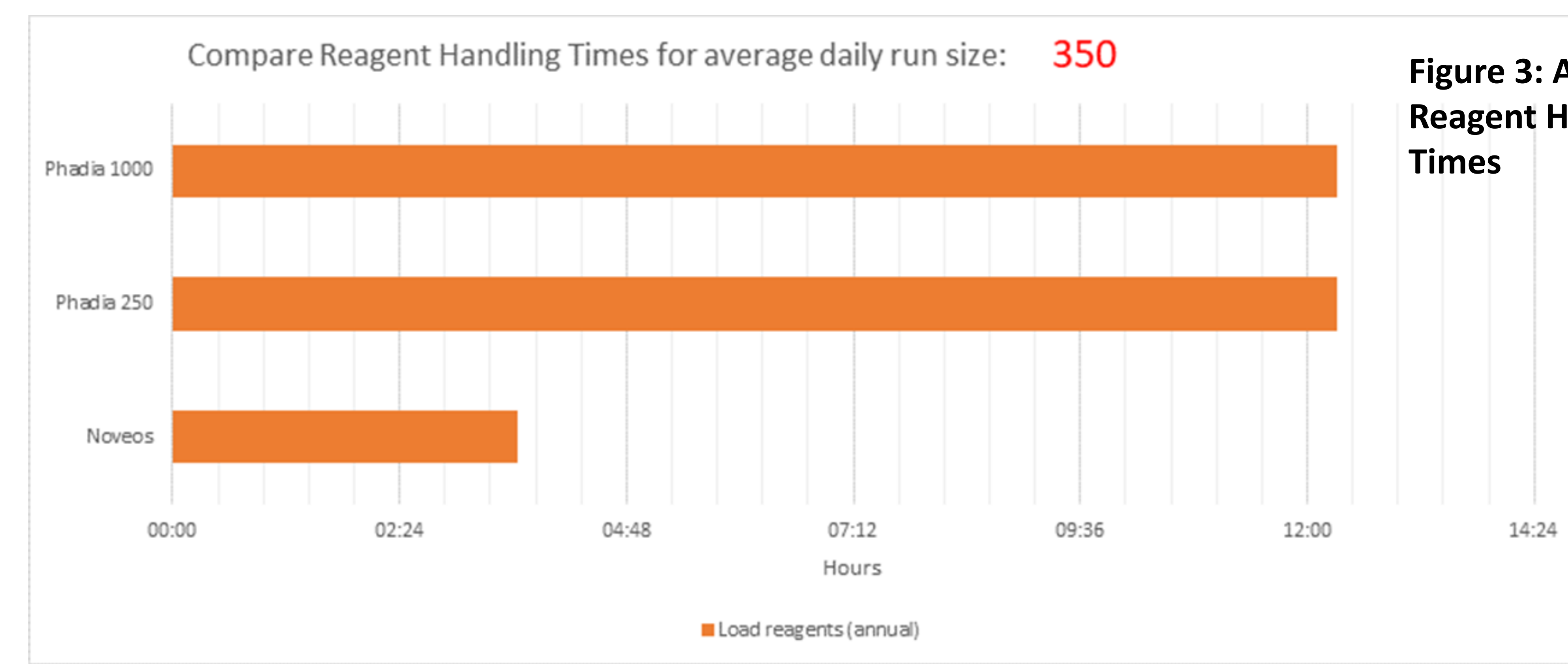
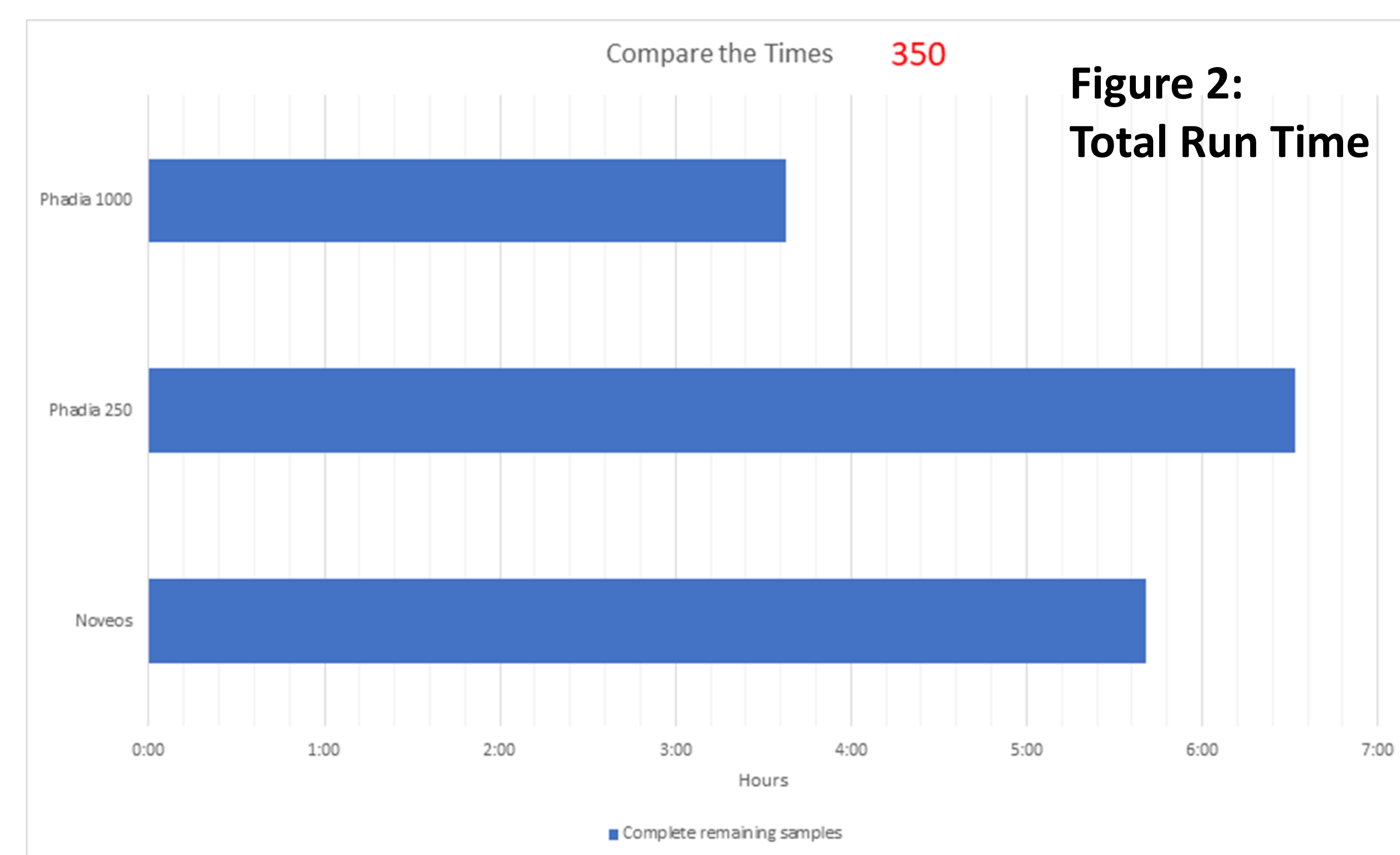
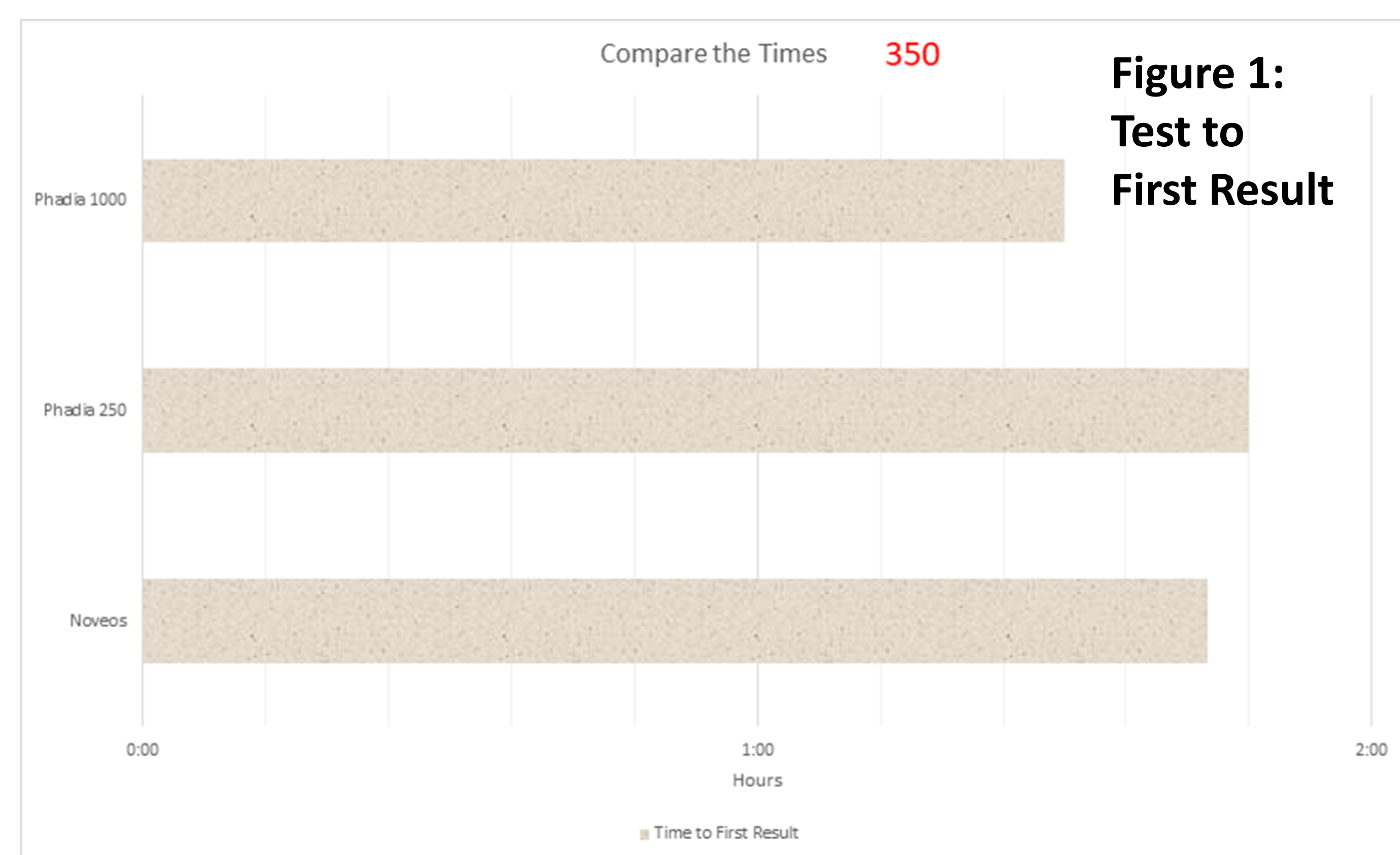
## Methods.

A total of 300 tests were run on a commercial model of the NOVEOS System. Stopwatch timers were used to measure the time required for a trained lab operator to execute routine procedures for daily maintenance, weekly maintenance, and to set-up and process the 300 tests. The actual run-time from the run start until the instrument produced results was also timed. NOVEOS run log files were extracted, analyzed, and compared to timing data from a Phadia 250 system, and a Phadia 1000 system. Differences in the time to perform maintenance tasks for the NOVEOS and Phadia systems were also analyzed.

## Results.

The NOVEOS instrument performs its unattended maintenance at the beginning of a run, whereas Phadia systems perform unattended maintenance at the end of a run. When the instrument is ready to process testing, the time to first result for NOVEOS was 1 hour, 44 minutes, compared with 1 hour, 48 minutes, and 1 hour, 30 minutes for the Phadia 250 and Phadia 1000 instruments respectively. Total run time for 350 tests was 5 hours, 41 minutes, and 27 seconds for the NOVEOS instrument, 6 hours, 32 minutes and 05 seconds for a Phadia 250 instrument, and 3 hours, 38 minutes, and 05 seconds for a Phadia 1000. For a 350 test run, the calculated annual reagent handling times for

NOVEOS is less than 3 hours and 38 minutes, about 12 hours for a Phadia 250 and Phadia 1000 systems. The monthly manual maintenance time for a NOVEOS system 2 hours and 9 minutes, compared to 4 hours and 15 minutes for the Phadia 250, and 5 hours and 25 minutes for a Phadia 1000 system. In addition, a lab using a Phadia 250 system has to factor in a long pause time of 60 hours per month where the Phadia 250 is not usable after the monthly maintenance procedure. Capacity differences of the instruments do require labs to process multiple runs or to have multiple Phadia 250 instruments to perform the same number of tests on a single NOVEOS System or Phadia 1000 System.



## Conclusion.

The study shows the time to first result are similar for NOVEOS and Phadia Systems. A laboratory chooses whether to release results per patient or after processing the complete run on the NOVEOS system. The output and capacity of the NOVEOS system is similar to that of the Phadia 1000 instrument, although the processing time is longer than the Phadia 1000, but approximately twice as fast as the Phadia 250 instrument. A lab should weigh the cost benefits of a system including manual labor requirements, maintenance time, costs and ease of use. The study shows time required to manually handle reagents (run set-up) and to execute maintenance actions is significantly less for NOVEOS than for either of these Phadia Systems. Further time workflow improvements with a NOVEOS system could occur by using additional source containers for filling and loading.

## References

NOVEOS citation: Data on file. Hycor NOVEOS™ Time Study, September 16, 2019.

Phadia 250 and 1000 per claims in their manuals (Phadia\_250\_User\_Manual\_v\_1\_4\_EN – highlighted.pdf and Phadia\_1000\_User\_Manual\_v\_1\_3\_EN.pdf).