



Work unplugged for nearly
8 hours in Windows Best
Performance mode*



Executive summary



Up to 2.08x the
Cinebench rating
for sustained
productivity**



Over 24°F cooler
with better sustained
performance***

Experience longer battery life, increased responsiveness, and cooler surface temperatures with the HP EliteBook 645 G9 Notebook PC

vs. the Dell Latitude 5430 and Dell Latitude 5420 laptops

When purchasing laptops, you want the device best suited to your employees' needs. After all, whether interruptions result from slow response times, searching for an outlet, or the discomfort of hot surface temperatures, any device issues can affect productivity and workflows.

We put three business laptops to the test: a current-gen HP EliteBook 645 G9 Notebook PC powered by an AMD Ryzen™ 7 PRO 5875U processor, a current-gen Dell™ Latitude™ 5430 laptop powered by an Intel® Core® i7-1265U processor, and a previous-gen Dell Latitude 5420 laptop powered by an Intel Core i7-1185G7 processor. We compared models from the HP EliteBook 605 series and the Dell Latitude 5000 series because both vendors target corporate enterprise users who need portability and power for those devices. We compared models from current generations and chose a previous-generation Dell unit to measure gen-over-gen improvements.

First, we tested the devices' batteries, and the HP EliteBook 645 G9 provided longer battery life than the current-gen Dell Latitude 5430. Then we used industry-standard benchmark tools, such as Cinebench R23, and found that the HP EliteBook 645 G9 achieved comparable or better system responsiveness than the Dell Latitude 5430 and 5420 laptops we tested. Finally, when we ran a sustained workload in Cinebench R23, the HP EliteBook 645 G9 ran cooler than the current-gen Dell Latitude 5420 and delivered a higher multi-core performance score. The performance of the HP EliteBook 645 G9 from our benchmark tools indicate that the notebook could help business users work longer, wait less for applications to perform tasks, and stay cooler with the device on their laps.

*Based on a MobileMark® 2018 battery life scores; scores may differ from other published scores due to differences in system settings

**Based on Cinebench R23 multi-core score during a sustained workload vs. the Dell Latitude 5420 laptop

***Based on surface temperatures while running a sustained Cinebench R23 workload

Results of our testing

The HP EliteBook Notebook PC had a similar battery size to the Dell Latitude 5430 and ran over an hour and half longer. Calculating the WHr per minute of battery life, the HP EliteBook achieved better system efficiency than the Dell Latitude system.

Under a sustained Cinebench R23 workload, the HP EliteBook Notebook PC outperformed the other laptops we tested while maintaining surface temperatures as much as 24°F cooler than the Dell Latitude 5430 laptop at a hot spot on the underside of the devices. Compared to the previous-gen Dell Latitude 5420 laptop, the HP EliteBook Notebook PC achieved more than double the performance score while running at the same keyboard temperature. This indicates that the HP EliteBook 645 G9 Notebook PC could stay cooler while delivering better performance on resource-intensive tasks.

The more responsive a system is, the less time users must wait for important productivity applications to perform tasks, and the more time they have to focus on their work. In testing with PCMark 10, the HP EliteBook Notebook PC delivered better productivity ratings than the other systems.

For full results of our testing, [read the report](#).

Conclusion

Users with the AMD Ryzen 7 PRO 5875U processor-based HP EliteBook 645 G9 Notebook PC could experience longer battery life, increased responsiveness, and cooler surface temperatures.

In our hands-on testing with MobileMark 2018, the HP EliteBook 645 G9 Notebook PC ran more than 90 minutes longer on battery power than the current-gen Dell Latitude 5430 system. When we used other industry-standard benchmark tools, the HP EliteBook 645 G9 Notebook PC achieved comparable or better system responsiveness than the current-gen Dell Latitude 5430 and previous-gen Dell Latitude 5420 laptops we tested. Users might not get as hot with the HP EliteBook 645 G9 Notebook PC on their laps too: Temperatures for the bottom of the laptop averaged 24 degrees cooler than the current-gen Dell Latitude 5430 system.

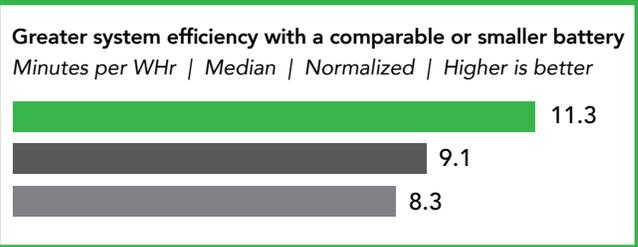


Figure 1: System efficiency of the devices we tested, in minutes of battery life (as measured by the MobileMark 2018 benchmark) per WHr. Higher is better. Source: Principled Technologies.

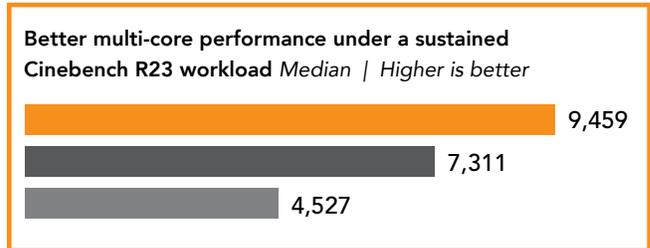


Figure 2: CPU multi-core scores under a sustained load as reported by Cinebench R23 for the three systems we tested. Higher is better. Source: Principled Technologies.

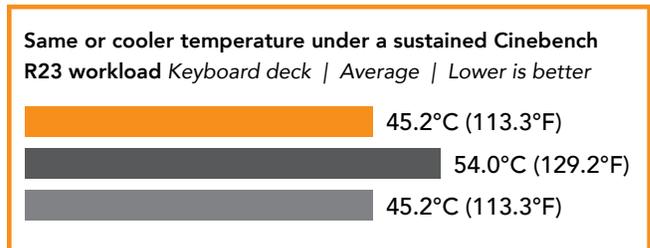


Figure 3: Average temperatures, in degrees Celsius and Fahrenheit, for one hot spot on the devices under load. Lower is better. Source: Principled Technologies.

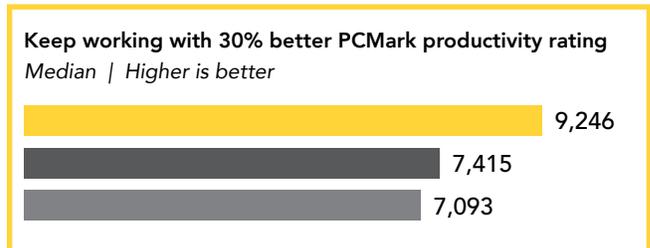


Figure 4: Productivity ratings as reported by PCMark 10 for the three systems we tested. Higher is better. Source: Principled Technologies.



Read the report at <https://facts.pt/UaJ2Ji4F>



Facts matter.®

Principled Technologies is a registered trademark of Principled Technologies, Inc. All other product names are the trademarks of their respective owners. For additional information, review the report.

This project was commissioned by HP & AMD.