Elevate performance while preserving battery life with the Dell Latitude 7340 Ultralight Laptop

Compared to a Dynabook Portégé X30L-K, the Latitude 7340 offered higher benchmark scores and longer battery life

12.4 minutes of battery life per WHr

17.4% higher Cinebench multi-core score
unplugged while draining the same amount of battery life

10.6% higher office productivity score
unplugged while draining the same amount of battery life

According to Forbes, 98 percent of workers want the ability to work remotely some of the time, but most still regularly go into the office.[1] Because the way we work is evolving, so are the qualities we look for in a laptop. Today's hybrid workforce needs laptops that strike a balance between performance and portability. The productivity boost a hybrid worker gets from a high performing and portable laptop might disappear if the performance and portability come at the cost of battery life.

We were mindful of this when we conducted benchmark and battery-life testing on two lightweight laptops to see how well they balanced the conflicting needs of performance and portability. When we compared a Dell™ Latitude™ 7340 Ultralight Laptop to a Dynabook Portégé X30L-K, we found that the Latitude 7340 offered better performance benchmark scores. Furthermore, we tested the systems unplugged and found that the Latitude 7340 offered these performance advantages while draining approximately the same amount or less battery life. Finally, the Latitude 7340 offered 12.4 minutes of battery life per WHr, 17.0 percent more than the Dynabook system.

Dell Latitude 7340 Ultralight Laptop

- Windows 11 Pro
- Intel Core i7-1365U processor
- 16GB integrated memory
- 512GB NVMe SSD
- 57 WHr battery
- 400-nit touchscreen display
- Starts at 2.17 lb., or 0.98 kg.[2] (the laptop we tested weighed 2.44 lb., or 1.10 kg.)

Dynabook Portégé X30L-K

- Windows 11 Pro
- Intel Core i7-1265U processor
- 16GB integrated memory
- 256GB NVMe SSD
- 53 WHr battery
- 250-nit non-touch display
- Starts at 1.99 lb., or 0.90 kg.[3] (the laptop we tested weighed 2.04 lb., or 0.94 kg.)

How we tested

To better understand the experience a user might expect from each laptop, we performed two kinds of tests:

- **Performance benchmark testing:** We ran four benchmarks that measure the performance users might expect from the systems. We ran these tests with the devices plugged and unplugged:
  - CrossMark
  - WebXPRT 4
  - Procyon Office Productivity
  - Cinebench 23
- **Battery life testing:** We ran the MobileMark 25 benchmark, which gives a real-world measure of battery life.
- **Thermal testing:** We measured the temperatures of each laptop's keyboard deck and underside of chassis while an intense workload was running.
- **Acoustic testing:** We measured how much noise each laptop emitted while idle and while running an intense workload.

Because we wanted to determine how everyday work might affect battery life, we tested each device while it was unplugged. We ran all tests in the Balanced power mode. For more details on our workloads and configurations, see the science behind the report.

About the Dell Latitude 7340 Laptop

According to Dell, the "Latitude 7340 Ultralight is the world's smallest and lightest 13.3" premium commercial laptop."[4] With a starting weight of 2.17 lb. (0.98 kg.), Dell designed the Latitude 7340 "for busy professionals on the move."[5] The Latitude 7340 features Intel Iris® Xe graphics, Windows 11 Pro, optional Intel vPro®, and 13th Gen Intel Core i5 or i7 processors. To learn more, visit https://www.dell.com/en-us/shop/dell-laptops/latitude-7340-laptop-or-2-in-1/spd/latitude-13-7340-2-in-1-laptop.

Higher benchmark scores without sacrificing battery life

CrossMark

We used the CrossMark benchmark to gauge the performance and responsiveness of the devices while using real-world applications. By measuring performance using workloads users commonly encounter, CrossMark provides users with an understanding of how a device will likely operate in the real world. We ran the tests while both systems were unplugged so we could compare the performance with the battery drain. The Dell Latitude 7340 achieved a CrossMark overall score that was 8.76 percent higher and drained 2.3 percent more battery life than the Dynabook Portégé X30L-K, as Figure 1 shows. These results demonstrate that users of the Latitude 7340 can expect better performance using everyday applications. The performance advantage was higher than the battery life drain, which suggests that this competitive edge doesn't come at the cost of battery life. The results of the CrossMark benchmark test indicate that the Latitude 7340 might be a good choice for users who want performance and portability without sacrificing battery life.

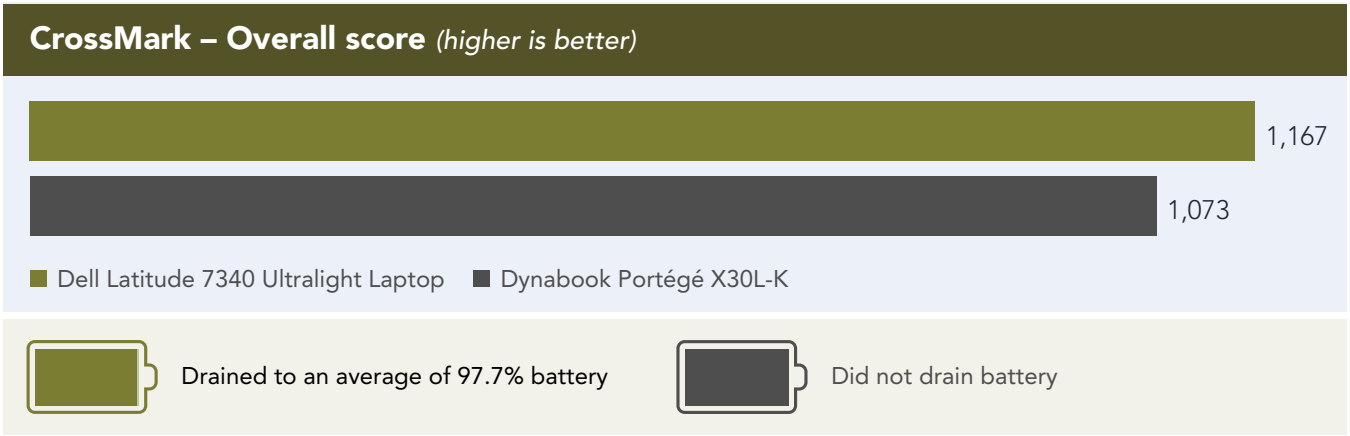


Figure 1: CrossMark overall score. Higher is better. Source: Principled Technologies.

CrossMark

According to BAPco, developers of the CrossMark benchmark test, it is a "native cross-platform benchmark that measures the overall system performance and system responsiveness using models of real-world applications."[6]

WebXPRT

Given the prevalence of web browsing in everyday tasks, a system's web browsing performance emerges as an essential component of overall device functionality. We used the WebXPRT 4 benchmark to measure how well each system performed web browsing. As Figure 2 shows, the Dell Latitude 7340 achieved a WebXPRT score that was 5.95 percent higher than the Dynabook Portégé X30L-K. Both systems used the same amount of battery life during this test, so users of the Latitude 7340 won't be searching for a power cord sooner just because of their system's faster web browsing.

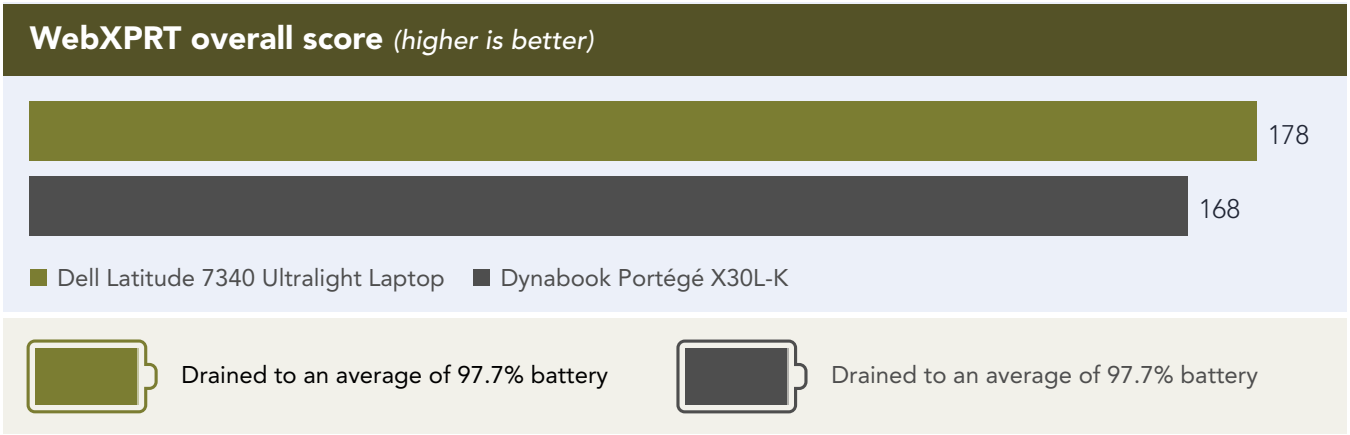


Figure 2: WebXPRT 4 overall score. Higher is better. Source: Principled Technologies.

WebXPRT

WebXPRT 4 is an industry-standard browser benchmark that compares the performance of web-enabled devices when executing real-world tasks. It contains HTML5, JavaScript, and WebAssembly-based scenarios that mirror activities users perform: Photo Enhancement, Organize Album Using AI, Stock Option Pricing, Encrypt Notes and OCR Scan using WASM, Sales Graphs, and Online Homework.[7]

Procyon Office Productivity

Microsoft Office is one of the most popular suites of office productivity applications, so it is important to understand how the systems perform using these applications.[8] The Procyon Office Productivity benchmark evaluates system performance while executing various tasks in Microsoft Office applications like Word, Excel, and PowerPoint. As Figure 3 shows, the Dell Latitude 7340 achieved a Procyon Office Productivity overall score that was 10.6 percent higher than the Dynabook Portégé X30L-K, and it did so while using less battery life. Whether a user is on a flight creating a PowerPoint deck or on a road trip drafting a whitepaper using Microsoft Word, the Latitude 7340 can offer better performance in these Microsoft Office applications, but not at the cost of battery life.

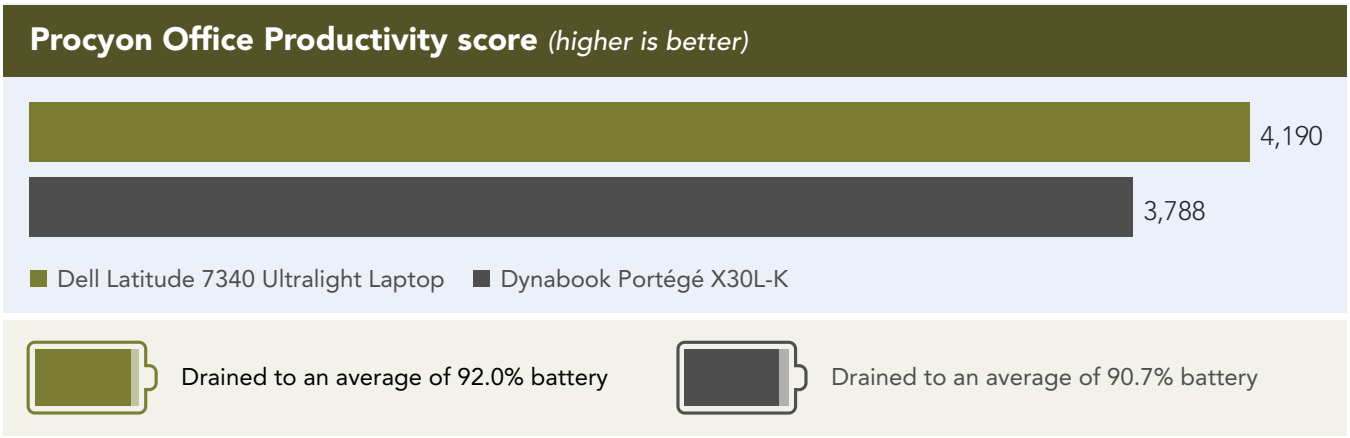


Figure 3: Procyon Office Productivity benchmark score. Higher is better. Source: Principled Technologies.

Procyon Office Productivity

The Procyon benchmark suite from UL comprises five benchmarks that target "professional users in industry, enterprise, government, retail and press."[8] The Office Productivity Benchmark can measure Windows or macOS device performance for office productivity work using Microsoft Office apps.

Cinebench R23

Applications with 3D graphics are among the most compute-intensive applications, and the Cinebench R23 benchmark uses these workloads to strain systems and see how well they handle demanding workloads. While many users may never use their systems for 3D graphics, the results of these tests can be useful to understand how systems might perform in other compute-intensive use cases. The Dell Latitude 7340 achieved a multi-core score that was 17.4 percent higher and a single-core score that was 12.6 percent higher than the Dynabook Portégé X30L-K. As Figure 4 shows, the Latitude 7340 performed better with these taxing workloads while also using less battery life than the Portégé X30L-K. The multi-core performance advantage is beneficial for users that frequently edit video, process images, or edit audio; the single-core advantage would likely mean better performance while gaming or web browsing. Once again, the performance advantages we found using this benchmark didn't come at the expense of battery life.

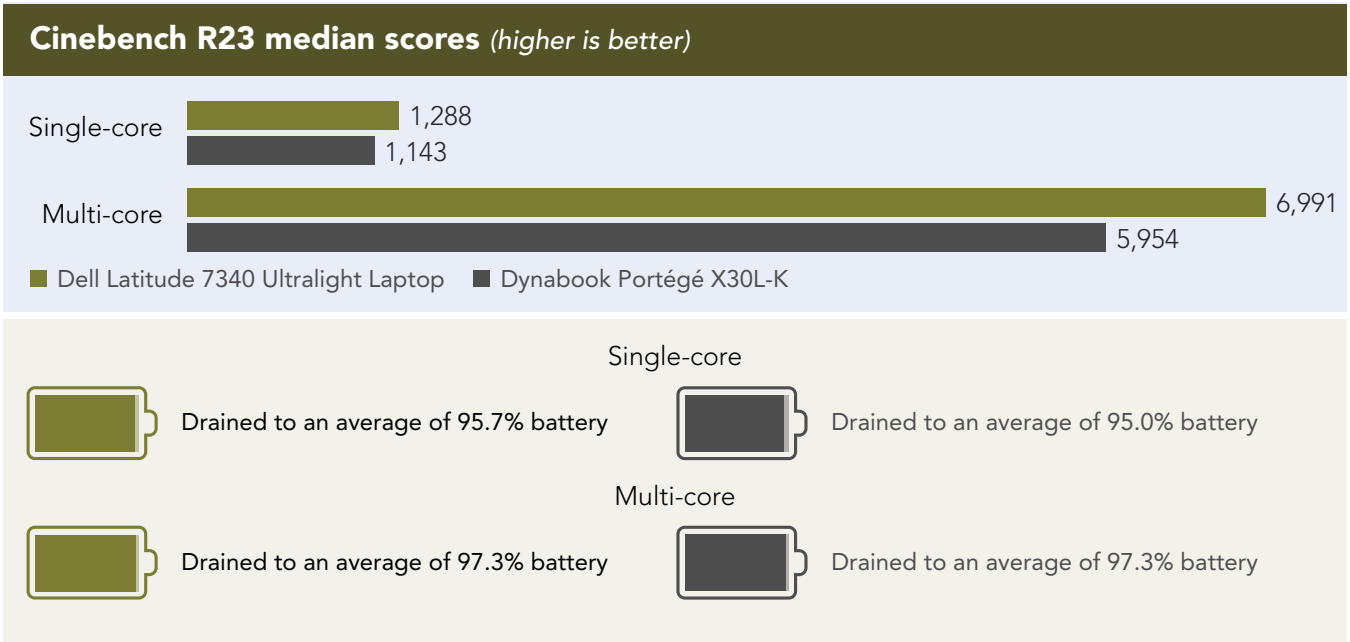
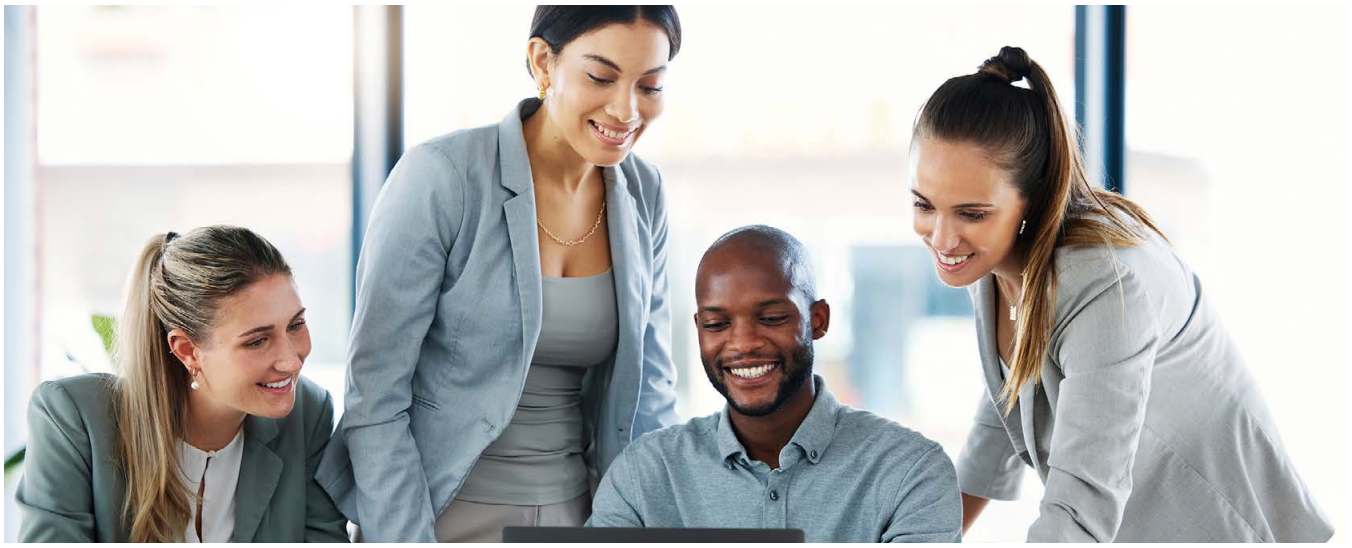


Figure 4: Cinebench R23 benchmark median scores. Higher is better. Source: Principled Technologies.

Cinebench R23

According to Maxon, "Cinebench offers a real-world benchmark that incorporates a user's common tasks within Cinema 4D to measure a system's performance."[9] Outputting scores for both single-core and multi-core CPU performance, Cinebench measures how a device runs under a high CPU load, allows you to gauge how well the cooling system works during longer tasks, and tests how the device works with intensive 3D tasks.[10] Higher scores could indicate faster PC response times on graphics-intensive games, product development and design software, and scientific simulations.



Stay productive no matter where you work: Longer battery life

Hybrid and remote work have given some workers the freedom to work from anywhere, but this flexibility also comes with challenges. One of the challenges of this new way of working is staying productive and keeping your device charged while you're away from your desk. To compare the battery performance of the two systems, we used the MobileMark 25 benchmark. The MobileMark 25 benchmark places the unplugged systems under load until their batteries are depleted, which simulates how long the batteries in the systems might last during a busy work day. Because the systems have different sized batteries, we normalized the results to make a fair comparison.

Under the MobileMark 25 benchmark load, the Dell Latitude 7340 Ultralight Laptop offered 11 hours and 45 minutes of battery life. Normalized, this means that the 57 WHr battery in the Latitude 7340 offered 12.4 minutes of battery life per WHr, 17.0 percent more than the 53 WHr battery in the Dynabook system. These results align with the other findings in this report: the Latitude 7340 offers performance advantages, but not at the cost of battery life. The battery life per WHr advantage shown here mean that users can get more done with the Latitude 7340, without draining their battery faster.

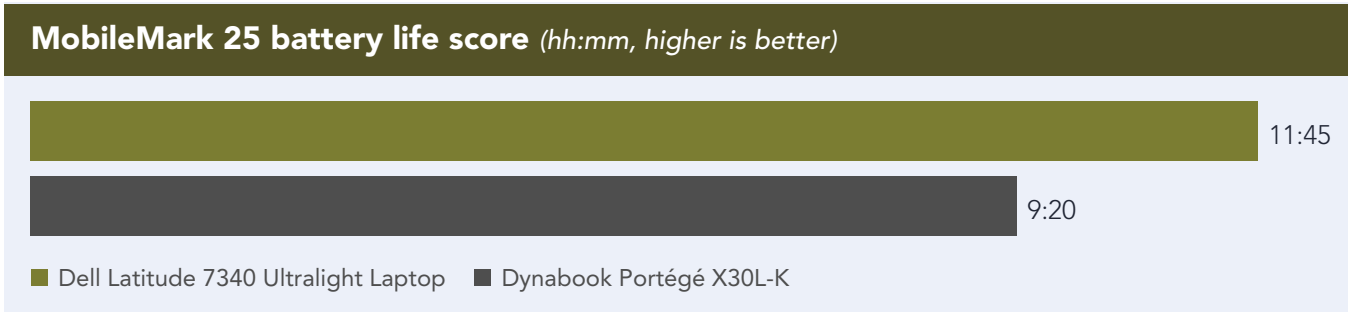


Figure 5: Battery life, normalized in minutes per WHr, according to the MobileMark 25 benchmark. More time is better.
Source: Principled Technologies.

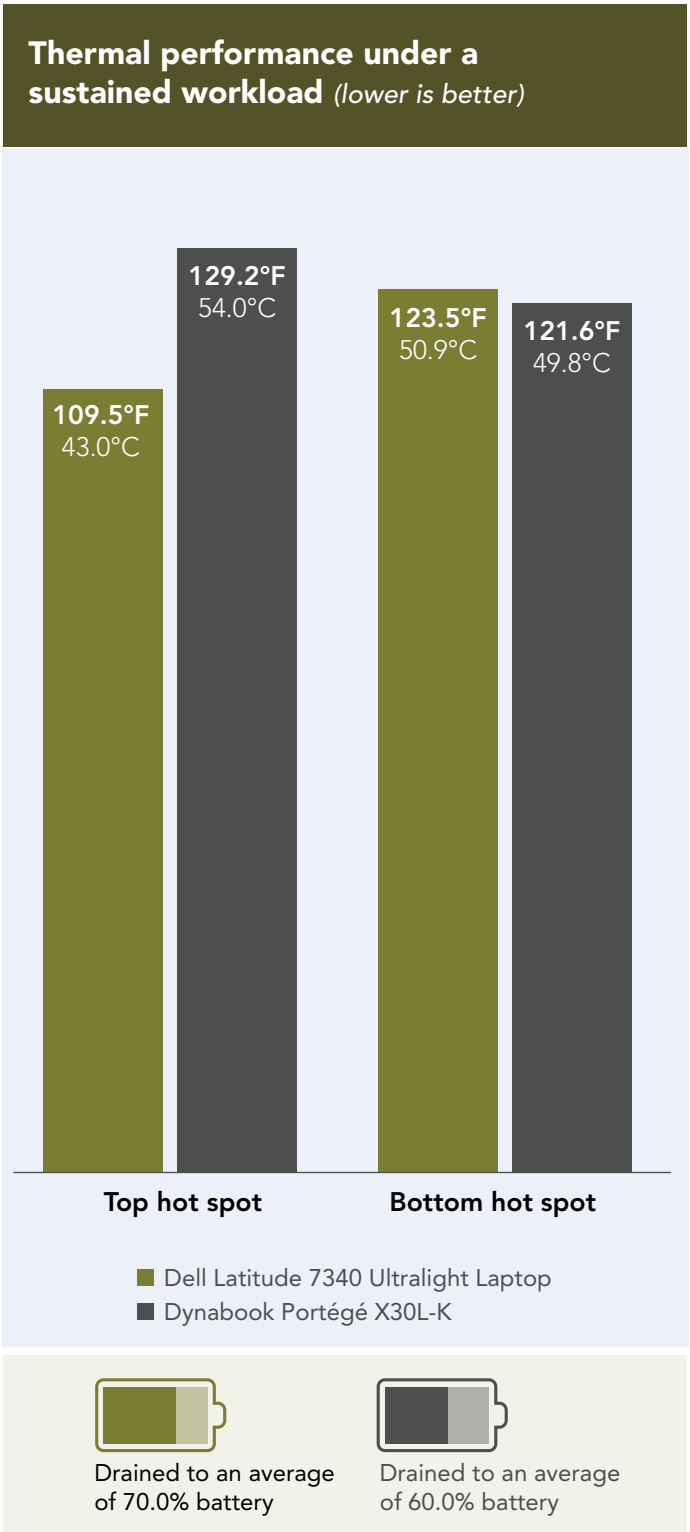


Figure 6: Average temperatures under a sustained Cinebench R23 workload, in degrees Fahrenheit and Celsius, at two hot spots on the devices we tested. Lower temperatures are better. Source: Principled Technologies.

Keep your cool

In a work-from-anywhere world, many workers choose to work at a desk at least some of the time, whether at home or in the office. But remote work also allows the flexibility to curl up with a laptop on the couch or bring it along to work on the bus during daily commutes. For those times, a device that will stay comfortable and cool can minimize thermal distractions as users work.

To assess the systems' heat outputs, we ran a sustained Cinebench R23 workload (five consecutive multi-core tests) and measured the temperature of two hot spots on each device: the keyboard deck on the top of the laptop and the laptop's underside. Using the intensive Cinebench R23 testing tool helps us understand how hot the systems get when handling heavy workloads.

We found that the Dell Latitude 7340 Ultralight Laptop was substantially cooler than the Dynabook Portégé X30L-K on the top hot spot—measuring almost 20 degrees (F) less. On the bottom hot spot, the devices were matched more evenly, with the Dell Latitude 7340 Ultralight Laptop just under 2 degrees warmer. Figure 6 shows this temperature comparison, while Figures 7 and 8 show detailed thermal images from the median workload run.

While this test was running, the Dell Latitude 7340 Ultralight Laptop also maintained over two-thirds of its battery life, draining the battery to an average of just 70 percent. In contrast, the Dynabook system drained to an average of 60 percent. Running cooler or at about the same temperature while draining less battery, the Dell Latitude 7340 Ultralight Laptop could give users a more comfortable experience when they're away from desks and chargers.

Dell Latitude 7340 Ultralight Laptop thermal images

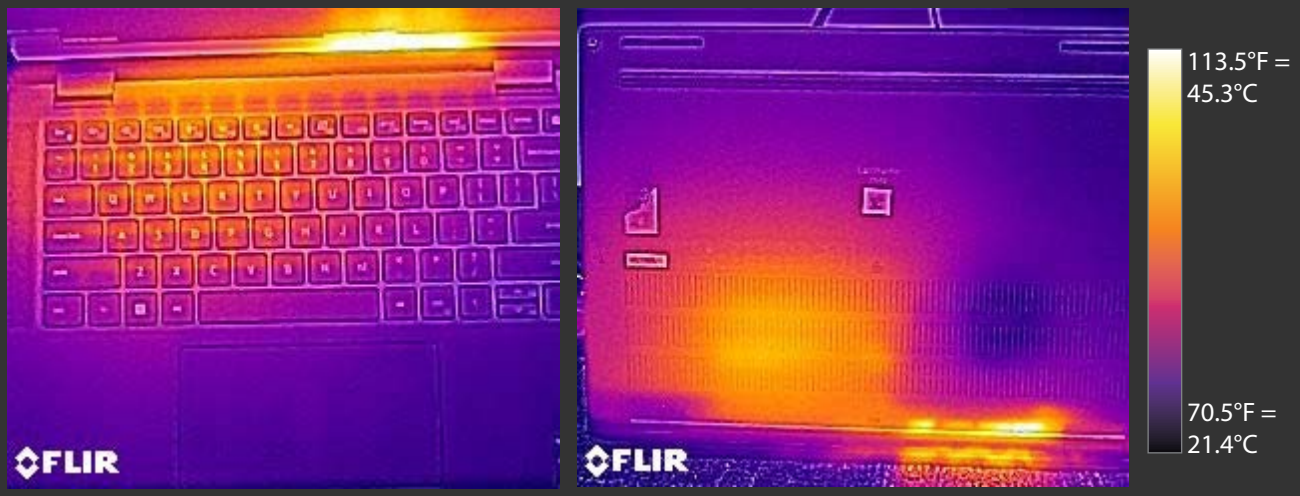


Figure 7: Thermal images of the Dell Latitude 7340 Ultralight Laptop during the sustained Cinebench R23 workload.
Source: Principled Technologies.

Dynabook Portégé X30L-K thermal images

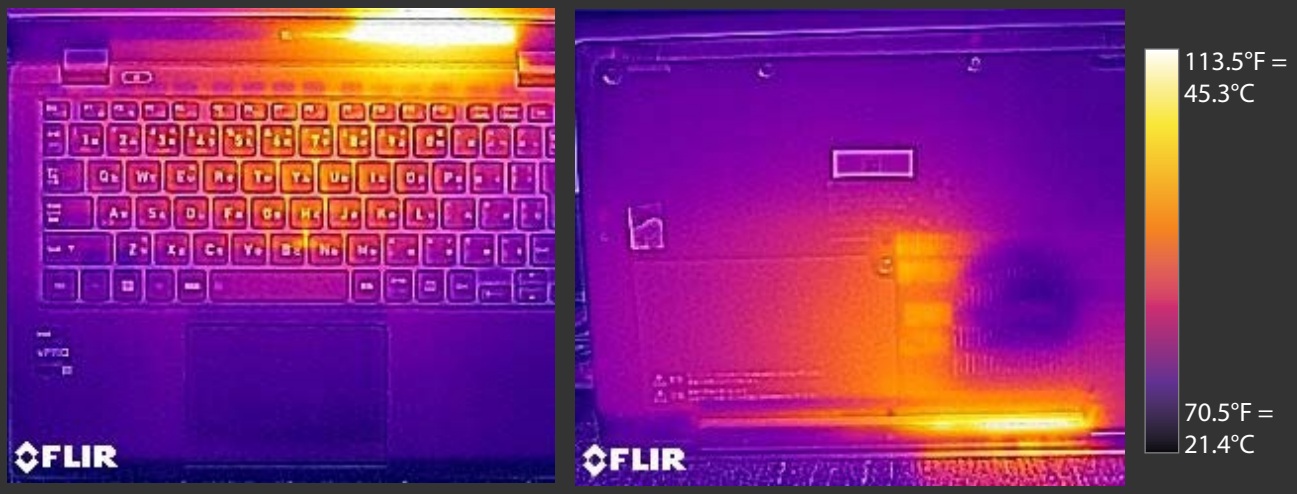


Figure 8: Thermal images of the Dynabook Portégé X30L-K during the sustained Cinebench R23 workload.
Source: Principled Technologies.

Stay focused with a quiet laptop

White noise may help some people focus, but few workers want to deal with the sound of a whirring laptop fan. A quiet laptop leaves space for users to create the most productive audio environment, whether that's an upbeat playlist, looping rain sounds, or peaceful silence. To determine how noisy each system was under load, we measured the decibel levels in the room while each laptop was running a Cinebench workload. To boost the load on the systems—and therefore their potential noise output—we performed this testing with the laptops in Performance mode.

At the beginning of our 20-minute test, the Dell Latitude 7340 Ultralight Laptop was slightly louder than the Dynabook system, while in the second half of the test, the two systems emitted about the same amount of noise. Even at the beginning of the test, however, the differences were small. Both of the laptops we tested generally stayed quieter than 30 dB, about the sound of a whisper, with the Dynabook Portégé X30L-K twice spiking above that line.[11]

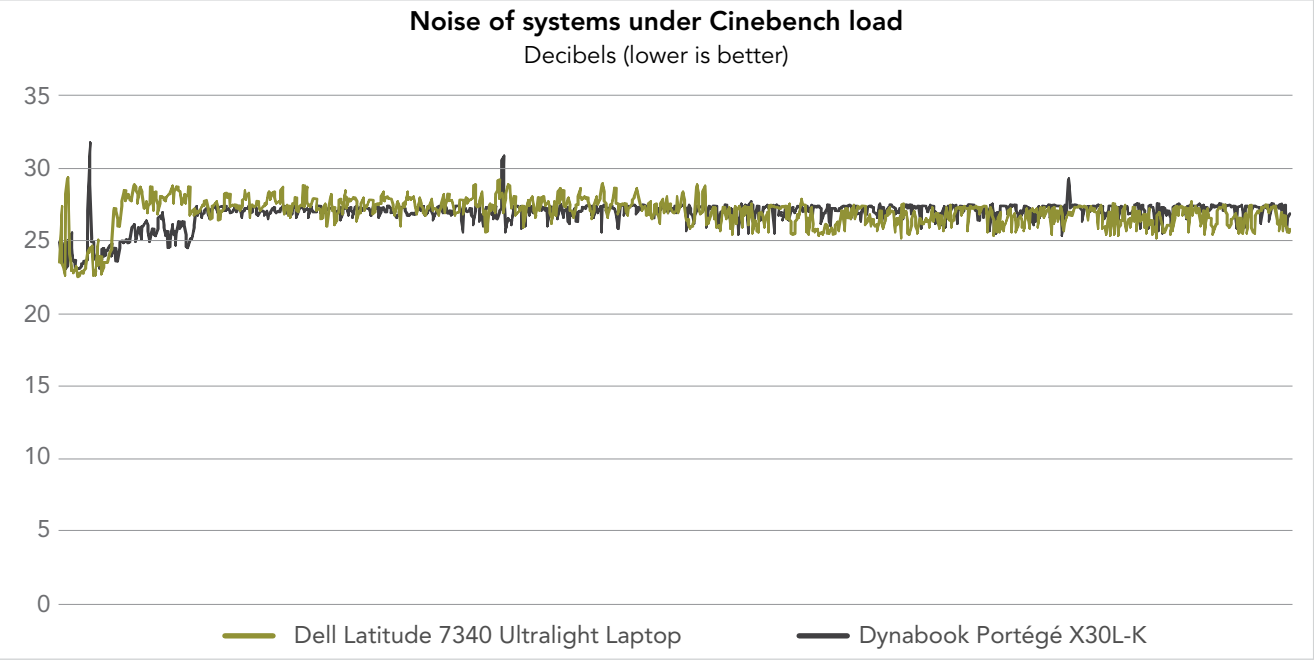


Figure 9: The sound levels, in decibels, that each system emitted under a Cinebench workload over the course of 20 minutes. Note that the baseline for the room noise without either system running was 23.6 decibels. Lower is better. Source: Principled Technologies.

Conclusion

New ways of working and new, faster mobile connectivity solutions mean workers have more freedom than ever to work away from their desks. Many workers report being more productive when they can work from the quiet of their home. And choosing a lightweight, powerful, and portable laptop can give workers the flexibility of pulling out their device to work on a long flight or in the waiting room at the doctor's office. To take advantage of these new opportunities, users need powerful and mobile systems that don't sacrifice performance, battery life, or comfort in the name of portability.

When we compared two lightweight devices, we found that the Dell Latitude 7340 Ultralight Laptop offered performance advantages over the Dynabook Portégé X30L-K in multiple benchmark tests. The Latitude 7340 achieved these higher scores using less or nearly equivalent battery life, so users don't have to choose between performance and battery life: the Dell Latitude 7340 Ultralight Laptop offers both. Additionally, we found that the Dell system also ran about 20 degrees (F) cooler on the keyboard deck and delivered comparable acoustic outputs under an intensive workload.

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