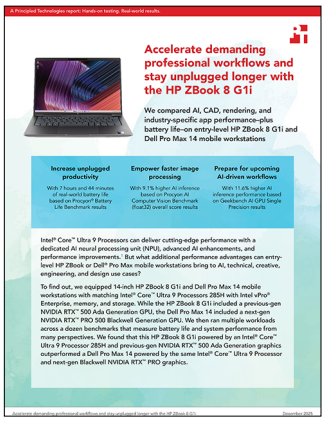


**The science behind the report:**

# Accelerate demanding professional workflows and stay unplugged longer with the HP ZBook 8 G1i

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report Accelerate demanding professional workflows and stay unplugged longer with the HP ZBook 8 G1i.

We concluded our hands-on testing on October 15, 2025. During testing, we determined the appropriate hardware and software configurations and applied updates as they became available. The results in this report reflect configurations that we finalized on August 21, 2025 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

## Our results

To learn more about how we have calculated the wins in this report, go to http://facts.pt/calculating-and-highlighting-wins. Unless we state otherwise, we have followed the rules and principles we outline in that document.

Table 1: Median results of our benchmark testing. Longer battery life, higher scores, more FPS, and lower task completion times are better.

| Test / Subtest | HP ZBook 8 G1i | Dell™ Pro Max 14 |
|---|---|---|
| Procyon Battery Life Benchmark | | |
| Total duration (hh:mm) | 7:44 | 7:04 |
| Geekbench 6 Pro | | |
| CPU multi-core | 17,115 | 15,997 |
| SPECworkstation® 4.0 | | |
| AI & ML | 1.68 | 1.59 |
| Product design | 1.29 | 1.27 |
| Media & Entertainment | 1.44 | 1.47 |
| Energy | 1.28 | 1.26 |
| Financial services | 1.02 | 0.95 |
| Life sciences | 1.54 | 1.51 |
| Productivity & Development | 0.89 | 0.89 |

| Test / Subtest | HP ZBook 8 G1i | Dell™ Pro Max 14 |
|---|---|---|
| Cinebench 2024 | | |
| CPU single-core score | 129 | 125 |
| PassMark PerformanceTest 11 | | |
| Overall rating | 11,266 | 10,914 |
| Geekbench AI GPU - ONNX framework DirectML back-end | | |
| Half Precision (float16) | 22,991 | 23,536 |
| Single Precision (float32) | 12,494 | 11,195 |
| Quantized (int8) | 9,890 | 9,093 |
| Procyon AI Computer Vision Benchmark | | |
| float32 | 369 | 338 |
| float16 | 749 | 703 |
| int8 | 1,021 | 1,005 |
| Procyon AI  Text Generation Benchmark | | |
| Llama 2 | 1,002 | 975 |
| Llama 3.1 | 1,012 | 950 |
| Phi-3.5 | 1,101 | 1,066 |
| Mistral | 1,038 | 993 |
| Blender (samples per minute) | | |
| Classroom | 63.79 | 60.96 |
| Monster | 127.26 | 122.48 |
| The Junk Shop | 85.47 | 79.76 |
| Puget Bench for Photoshop | | |
| Overall score | 8,154 | 7,614 |
| Topaz Video AI (FPS) | | |
| 1920x1080 (FHD) Proteus 4X | 1.46 | 1.13 |
| 1920x1080 (FHD) Gaia 1X | 1.88 | 1.62 |
| 3840x2160 (4K) Gaia 1X | 0.43 | 0.39 |
| 3840x2160 (4K) Proteus 4X | 0.32 | 0.24 |
| Revit 2024 RFO benchmark | | |
| Model creation time (mm:ss) | 2:33 | 2:42 |
| Activate first view (mm:ss) | 0:16 | 0:19 |
| Change view visual style (mm:ss) | 1:43 | 1:55 |
| Export to DWF (mm:ss) | 6:24 | 6:55 |
| Export to DWG (mm:ss) | 42:58 | 44:52 |

| Test / Subtest | HP ZBook 8 G1i | Dell™ Pro Max 14 |
|---|---|---|
| SPECapc® for Creo 9 | | |
| GPU composite score | 2.51 | 2.37 |
| SPECapc for SolidWorks 2024 | | |
| GPU composite score | 3.96 | 3.76 |

# System configuration information

Table 2: Detailed information on the systems we tested.

| System configuration information | HP Zbook 8 G1i | Dell Pro Max 14 |
|---|---|---|
| Processor | | |
| Vendor | Intel® | Intel® |
| Model number | Core™ Ultra 9 285H, vPro® Enterprise | Core™ Ultra 7 265H, vPro® Enterprise |
| Core frequency (GHz) | 2.9 – 5.4 | 2.2 – 5.3 |
| Number of cores | 16 | 16 |
| Number of threads | 16 | 16 |
| Cache (MB) | 24 | 24 |
| AI Engine capabilities (overall TOPS) | Up to 99 | Up to 97 |
| AI Engine capabilities (NPU TOPS) | Up to 13 | Up to 13 |
| Memory | | |
| Amount (GB) | 64 (2 x 32) | 64 (1 x 64)) |
| Type | DDR5 | LPCAMM |
| Speed (MT/s) | 5,600 | 7,500 |
| Graphics | | |
| Vendor | NVIDIA® | NVIDIA® |
| Model number | RTX™ 500 Ada Generation Laptop GPU | RTX PRO™ 500 Blackwell Generation Laptop GPU |
| Driver | NVIDIA v32.0.15.7351 | NVIDIA v32.0.15.7314 |
| Storage | | |
| Amount (TB) | 1 | 1 |
| Type (SSD) | NVMe® PCIe Gen 4 x4 | NVMe PCIe Gen 4 x4 |
| Connectivity/expansion | | |
| Wireless internet | Intel AX211 Wi-Fi 6E | Intel AX211 Wi-Fi 6E |
| Bluetooth | 5.3 | 5.3 |
| USB | 2 x Thunderbolt™ 4 with USB Type-C® 40Gbps<br>1 x Type-C 20Gbps<br>1 x USB Type-A 5Gbps | 2xThunderbolt<br>4 with USB Type-C 40Gbps<br>2 x USB Type-A 5Gbps |
| Video | 1 x HDMI® 2.1 | 1 x HDMI 2.1 |
| Battery | | |
| Type | Lithium-polymer | Lithium-polymer |
| Rated capacity (Wh) | 77 | 72 |
| Display | | |
| Size (in.) | 14 | 14 |
| Resolution | 1,920 x 1,200 | 1,920 x 1,200 |
| Touchscreen | No | No |

| System configuration information | HP Zbook 8 G1i | Dell Pro Max 14 |
|---|---|---|
| Operating system | | |
| Vendor | Microsoft | Microsoft |
| Name | Windows 11 Pro | Windows 11 Pro |
| Build number or version | 24H2 Build 26100.4946 | 24H2 Build 26100.4946 |
| BIOS | | |
| BIOS name and version | HP X70 v01.01.13<br>05/13/2025 | Dell v1.6.2<br>08/04/2025 |
| Dimensions | | |
| Height (in.) | 0.74 | 0.58 – 0.74 |
| Width (in.) | 12.43 | 12.32 |
| Depth (in.) | 8.74 | 8.95 |
| Weight (lbs) | 3.19 | 3.95 |

# How we tested

## Setting up the systems

### Setting up and updating the OEM image

1. Boot the system.
2. Follow the on-screen instructions to complete installation, using the default selections when appropriate.
3. Set the Windows (plugged in) Power Mode to Best Performance.
4. Set Screen and Sleep options to Never:
    a. Right-click the desktop, and select Display settings.
    b. From the left column, select System.
    c. Click Power & Battery.
    d. For all power options listed under Screen and Sleep, select Never.
5. Disable User Account Control notifications:
    a. Select Windows Start, type `UAC` and press the Enter key.
    b. Move the slider control to Never notify, and click OK.
6. Run Windows Update, and install all updates available.
7. Run the HP/Dell/Lenovo Support Assistant utilities, and install all recommended BIOS and driver updates available.
8. Verify the date and time are correct and synchronize the system clock with the time server.
9. Pause Automatic Windows Updates:
    a. Click the Windows Start button.
    b. Type `Windows Update settings` and press the Enter key.
    c. From the Pause updates drop-down menu, select Pause for 5 weeks.

### Capturing an image

1. Connect an external HDD to the system.
2. Click the Windows Menu button, and type `Control Panel` in the search bar. Click Control Pane l → System and Security → Backup and Restore (Windows 7) → Create a system image.
3. Verify that the external HDD is selected as the save drive, and click Next.
4. Verify that all drives are selected to back up, and click Next.
5. Click Start backup.
6. When you see the prompt to create a system repair disc, select No, and close the dialogs.

### Restoring an image

1. Connect an external HDD to the system.
2. Press and hold the Shift key while restarting the system.
3. Select Troubleshoot.
4. Select Advanced options.
5. Select See more recovery options.
6. Select System image recovery.
7. Select the User account.
8. Enter the system password, and click Continue.
9. At the Restore system files and settings screen, select Next.
10. Verify that the external HDD is selected, and click Next.
11. Once the recovery has completed, click Finish.

## Blender benchmark testing

### Setting up the test

1. Download the Blender Benchmark from https://opendata.blender.org/.

### Running the test

1. Launch the Blender Benchmark.
2. At the Welcome screen, click Next.
3. Select Blender version 4.3.0, and click Next.
4. At the Benchmark Scenes screen, click Next.
5. At the Benchmark Device screen, select either the CPU or GPU option, and click Start Benchmark.
6. Record the results.
7. Wait 15 minutes before performing the next run.
8. Repeat steps 1 through 7 two more times, and record the median result.

## Cinebench 2024 testing

### Setting up the test

1. Download and install Cinebench 2024 from https://www.maxon.net/en/downloads/cinebench-2024-downloads
2. Launch Cinebench 2024.
3. Select File->Advanced benchmark.
4. From the Minimum Test Duration drop-down menu, select Off.

### Running the test

1. Launch Cinebench 2024.
2. Click File, Run All tests.
3. Record the result.
4. Wait 10 minutes before re-running.
5. Repeat steps 1 through 4 two more times, and record the median result.

## Geekbench AI testing

#### Setting up the test

1. Purchase and download a Geekbench AI Pro license from https://www.geekbench.com/ai/download/.
2. Using all the defaults, run the installer, and install the benchmark.

#### Running the test

1. Launch Geekbench AI.
2. Enter the license key.
3. For CPU/NPU testing, select the following parameters:
   - AI Framework: OpenVINO™
   - AI Backend: CPU
   - AI Device: processor
4. For GPU testing, select the following parameters:
   - AI Framework: ONNX
   - AI Backend: DirectML
   - AI Device: graphics card
5. Click Run AI Benchmark.
6. Wait 5 minutes, repeat steps 3 through 5, and capture the median result of the three runs.

## Geekbench 6 Pro testing

### Setting up the test

1. Purchase a Pro license and download and install Geekbench 6 Pro from https://www.geekbench.com/download/.

### Running the test

1. Launch Geekbench.
2. Click Run CPU or Compute Benchmark.
3. Record the result.
4. Wait 5 minutes before re-running.
5. Repeat steps 1 through 4 two more times, and record the median result of the three runs.

## PassMark PerformanceTest 11 testing

### Setting up the test

1. Install PassMark PerformanceTest.
2. Download PassMark PerformanceTest from https://www.passmark.com/products/performancetest/download.php.
3. To begin the installation, press Install.
4. Click Accept to accept the license agreement, and click Next.
5. After the installation is complete, deselect Launch Performance Test, and click Finish.

### Running the test

1. Launch PassMark PerformanceTest.
2. To begin the test, click Run Benchmark.
3. When the test completes, record the results.
4. Repeat steps 1 through 3 twice more, and report the median results.

## Procyon AI Computer Vision Benchmark testing

### Setting up the test

1. Purchase and download the Procyon AI Computer Vision benchmark from https://benchmarks.ul.com/procyon.
2. Install the Procyon benchmark.
3. Double-click the installer.
4. Click Next.
5. Click to agree to the EULA, and click Next.
6. Click Next.
7. Launch Procyon.
8. Select Settings, and input the Procyon AI Computer Vision license key.
9. Close Procyon.

### Running the test

1. Launch Procyon.
2. Select the Computer Vision test.
3. For the Float32 and Float16 tests, select the Windows ML tab.
4. Choose the GPU, and select Float32.
5. To begin the test, click Run.
6. When the test completes, record the results, and wait 15 minutes before re-running.
7. When three runs are complete, complete three runs of GPU and Float16.
8. For the Integer test, choose the AMD Ryzen AI tab.
9. Choose NPU and Integer.
10. To begin the test, click Run.
11. When the test completes, record the results, and wait 15 minutes before re-running.
12. Complete three runs, and record the median results.

## Procyon AI Text Generation Benchmark testing

### Setting up the test

1. Purchase and download the Procyon AI Text Generation benchmark from https://benchmarks.ul.com/procyon.
2. Install the Procyon benchmark.
3. Double-click the installer.
4. Click Next.
5. Click to agree to the EULA, and click Next.
6. Click Next.
7. Launch Procyon.
8. Select Settings, and input the Procyon AI Text Generation license key.
9. Close Procyon.

### Running the test

1. Launch Procyon.
2. Select the AI Text Generation test.
3. Choose the GPU and select ONXX.
4. To begin the test, click Run.
5. When the test completes, record the results, and wait 15 minutes before re-running.
6. Complete three runs, and record the median result.

## Procyon Battery Life Benchmark testing

### Setting up the test

1. Boot the system.
2. Verify the following display and power settings:
   - Right-click the desktop, and select Display settings.
   - Uncheck the box next to Change brightness automatically when lighting changes, if available.
   - Uncheck the box next to Change brightness based on content, if available.
   - In the Scale drop-down menu, select 100%.
   - Select System from the left-hand pane.
   - Click Power & Battery.
   - For all power options listed under Screen and Sleep, select Never.
3. Download and install Procyon.
4. Open Procyon.
5. Click Battery Life Office Productivity Benchmark.
6. Click Register.
7. Enter the license key for the Office Productivity Battery Life Benchmark, and click Register.
8. Click Calibrate screen.
9. Using a nit meter, adjust the screen brightness to as close to 200 nits as possible.
10. Close Procyon.
11. Before running the benchmark, make sure to install a licensed version of Microsoft 365 and open Word, Excel, and PowerPoint applications and disable tips when possible.

### Running the test

1. Boot the system.
2. Ensure the system is fully charged.
3. Go to the Windows Start Menu.
4. Type `CMD` to bring up command prompt.
5. Type `cd C:\Program Files\UL\Procyon`
6. To start the test, type `ProcyonCMD.exe -d "custom_definitions/office_productivity_mp_batterylife.def" -o "<Export_folder>/resultfilename.procyon-result"`
7. When prompted, unplug the system.
8. When the benchmark completes, plug in the system and power up the system.
9. Record the results.
10. Repeat steps 2 through 9 twice, and report the median result of the three runs.

## Puget Bench for Photoshop testing

### Setting up the test

1. Launch Adobe Photoshop.
2. Click through the Tutorial pop-up tips.
3. Close Adobe Photoshop.
4. Purchase a PugetBench for Creators license from https://www.pugetsystems.com/pugetbench/creators/.
5. Click the Download PugetBench for Creators for Windows or Mac.
6. After the download completes, double-click the installation file to install PugetBench.
7. Enter the license key in the license field. Click Activate.
8. Click Download Assets.

### Running the test

1. Boot the system.
2. Open PugetBench for Creators.
3. Select the Photoshop test on the left side of the app.
4. Click Start Test.
5. When the benchmark finishes, record the overall score.
6. Close PugetBench for Creators, and restart the system under test.
7. Wait 30 minutes before performing the next run.
8. Repeat steps 1 through 7 twice, and record the median result of the three runs.

## Revit 2024 RFO benchmark testing

### Setting up the test

1. Purchase, download and install Revit 2025 from https://www.autodesk.com/products/revit/overview.
2. Launch Revit 2025, and sign in with the account information.
3. At the Tutorial screen, click Don't show this again.
4. Close Revit 2025.
5. Download the Revit 2025 RFO Benchmark Tool from https://www.revitforum.org/forum/revit-all-flavors/hardware-and-infrastructure/36875-rfo-benchmark-v3-updated-for-2025.
6. Extract the Revit 2025 RFO Benchmark Tool.

### Running the test

1. Open the Extracted Revit 2025 RFO Benchmark Tool directory.
2. To launch the benchmark, click _RFO Benchmark – Full_Expanded shortcut.
3. When the benchmark finishes, record the results.
4. Wait 15 minutes before performing the next run.
5. Repeat steps 1 through 3 twice, and record the median result of the three runs.

## SPECapc for Creo 9 testing

### Setting up the test

1. Purchase a license for Creo 9.
2. To log into your PTC account, use the Welcome email, and designate a site administrator. (Note: For valid SPECapc for Creo 9 results to be submitted, Creo 9 v9.0.4.0 must be used for testing. Download the Win64 Creo 9.0.4.0 installer from here https://support.ptc.com/appserver/auth/it/esd/product.jsp?prodFamily=ENG.)
3. Extract the Creo 9.0.4.0 zip file.
4. Inside the extracted file, copy the install_license_server.exe onto a separate Windows system.
5. On a separate Windows system, run install_license_server.exe.
6. In the Creo Installation Assistant – Creo 9.0.4.0 Window, select Install License Server, and click Next.
7. Accept the Software License Agreement, and click Next.
8. On the License Identification screen, select Simple license entry, and click Next.
9. Next to License Generation for Server Install, expand the drop-down menu, and select Simple License entry.
10. Enter the sales order number located on your purchase order, and click Install License.

11. In the new window, log into PTC.com with your credentials.
12. Click Finish.
13. To verify that the license server is running, browse to the server IP and port 8090 or [server_ip]:8090.
14. Log in with the default credentials, admin/admin, enter a new password, and verify that the license server is running with
15. available licenses.
16. On the system under test, copy the Creo Installation folder above to the target system.
17. Run Setup.exe.
18. At the Introduction screen, click Next.
19. At the Software License Agreement screen, accept the agreement, export the agreement, and click Next.
20. Add the license server using 7788@[ip_of_license server]. Select the License server, and click Next.
21. At the Application Selection screen, accept the Defaults, and click Next.
22. At the Customize Application screen, confirm that Creo Render Studio is selected, and click Install.
23. Once the installation completes, click Finish.
24. Launch Creo Parametric, and close any prompts.
25. Download SPECapc for Creo 9 from https://gwpg.spec.org/benchmarks/benchmark/specapc-ptc-creo-9/.
26. Extract and complete the installation, using all default options.

### Running the test

1. Open SPECapc for Creo 9.
2. Click Run.
3. Record the results.
4. Repeat steps 1 and 2 twice, and record the median result of the three runs.

## SPECapc for Solidworks 2024 testing

### Setting up the test

1. Purchase and install a full Premium license of Solidworks 2024 Premium version from https://www.solidworks.com/.
2. Go to https://gwpg.spec.org/benchmarks/benchmark/specapc-solidworks-2024/ and purchase and download the vendor license of the benchmark.
3. Click on the SPECapc_sw2024_1.13.exe to install the benchmark.
4. Set the DPI scaling to 100%
   - Right-click the desktop, and select Display settings.
   - From the Scale drop-down menu, select 100%.
5. Shut down the system.

### Running the test

1. Launch the SPECapc Solidworks 2024 benchmark by clicking on the desktop icon.
2. Click Run Benchmark.
3. When the test is complete, record the results.
4. Repeat steps 1 through 3 twice, and record the median result of the three runs.

## SPECworkstation 4.0 testing

### Setting up the test

1. Go to https://gwpg.spec.org/benchmarks/benchmark/specworkstation-4_0/ purchase, and download the vendor license of the benchmark.
2. To install, click the SPECworkstation-Setup-4.0.0.exe.
3. Turn off Windows Defender Firewall.
4. Click Windows Menu button.
5. In the search bar, type `Firewall`
6. Select Windows Defender Firewall.
7. In the left column, select Turn Windows Defender Firewall on or off.
8. Under both Private and Public network settings, choose Turn off Windows Defender Firewall, and click OK.

### Running the test

1. Launch SPECworkstation.
2. Click Run.
3. Report results and reboot the system
4. Repeat steps 1 through 3 twice, and record the median result of the three runs.

## Topaz Labs Video AI testing

### Setting up the test

1. Download and install Topaz Labs Video AI from https://www.topazlabs.com/downloads.

### Running the test

1. Launch Topaz Labs Video AI.
2. Choose Free demo and close the activation window.
3. Select Process → Benchmark.
4. From the Input Resolution drop-down menu, select 1920x1080 (FHD) or 3,480 x 2,160 (4K).
5. Click Benchmark.
6. When the test completes, record the results.
7. Wait 15 minutes before retesting.
8. Repeat steps 1 through 7 twice, and record the median result of the three runs.

Read the report ▶

This project was commissioned by HP.

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