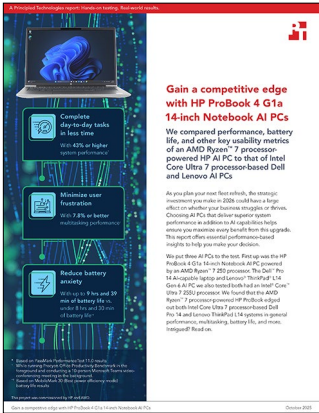




The science behind the report:

Gain a competitive edge with HP ProBook 4 G1a 14-inch Notebook AI PCs

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 [Gain a competitive edge with HP ProBook 4 G1a 14-inch Notebook AI PCs](#).

We concluded our hands-on testing on September 22, 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 22, 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: Results of our testing.

	HP ProBook 4 G1a AI PC	Dell Pro 14	Lenovo ThinkPad L14 Gen 6
Cinebench 2024			
Cinebench 2024			
CPU multi-core scores (Higher is better)	744.6	573.5	552.2
Geekbench 6			
CPU multi-core scores (Higher is better)	11,599	9,391	9,974
Single-core scores (Higher is better)	2,619	2,449	2,485
PassMark PerformanceTest 11.0			
Rating (Higher is better)	7,527.7	5,149.8	5,252.3
Procyon Office Productivity Benchmark			
Rating (Higher is better)	6,915	6,381	6,529

	HP ProBook 4 G1a AI PC	Dell Pro 14	Lenovo ThinkPad L14 Gen 6
Procyon Office Productivity Benchmark multitasking			
Rating (Higher is better)	6,171	5,723	5,700
MobileMark 30 (Balanced mode) benchmark			
Battery life Time (hh:mm) (Higher is better)	9:14	7:19	7:43
Minutes per Whr (Higher is better)	9.9	8.0	8.1
DC performance (Higher is better)	1,413	1,236	1,175
MobileMark Index (Higher is better)	783	542	544
MobileMark 30 (Best power efficiency mode) benchmark			
Battery life Time (hh:mm) (Higher is better)	9:39	8:22	8:12
Minutes per Whr (Higher is better)	10.3	9.1	8.6
DC performance (Higher is better)	1,030	855	732
MobileMark Index (Higher is better)	596	429	360
Cinebench 2024 benchmark			
Performance score (median) (Higher is better)	723	388	377
Underside temperature (median) (Higher is better)	117.1°F/47.3°C	115.5°F/46.4°C	119.8°F/48.8°C

System configuration information

Table 2: Detailed information on the systems we tested.

System	HP ProBook 4 G1a 14 inch Notebook AI PC	Lenovo ThinkPad L14 Gen 6	Dell Pro 14 Laptop
Processor			
Vendor	AMD	Intel®	Intel
Model number	Ryzen™ 7 250	Core™ Ultra 7 255U	Core Ultra 7 255U
Core frequency (GHz)	3.3–5.1	2.0–5.2	2.0–5.2
Number of cores	8	12	12
Logical processors	16	14	14
Memory			
Amount (GB)	32	32	32
Type	DDR5	DDR5	DDR5
Graphics			
Vendor	AMD	Intel	Intel
Model number	Radeon™ Graphics	Intel Graphics	Intel Graphics
Storage			
Amount (GB)	512	512	512
Type	SSD	SSD	SSD
Connectivity/expansion			
Wireless internet	MediaTek Wi-Fi 7 MT7925 160 MHz PCIe Adapter	Intel Wi-Fi 6E AX211	Intel Wi-Fi 7 BE200
Bluetooth	5.4	5.3	5.4
USB	2x USB-C ports (USB Power Delivery 3.0, DisplayPort™ 1.4) 2x USB-A 3.2 ports	2x Thunderbolt 4 Type-C ports 3x USB-A 3.2 ports	2x Thunderbolt 4 Type-C ports 2x USB-A 3.2 ports
Battery			
Type	Integrated lithium-polymer	Integrated lithium-polymer	Integrated lithium-polymer
Rated capacity (Whr)	56	57	55
Display			
Size (in.)	14	14	14
Resolution	1,920 x 1,200	1,920 x 1,200	1,920 x 1,200
Operating system			
Vendor	Microsoft	Microsoft	Microsoft
Name	Windows 11 Pro	Windows 11 Pro	Windows 11 Pro
Version	24H2 Build 26100.4946	24H2 Build 26100.4946	24H2 Build 26100.4946

System	HP ProBook 4 G1a 14 inch Notebook AI PC	Lenovo ThinkPad L14 Gen 6	Dell Pro 14 Laptop
BIOS			
BIOS name and version	HP X78 Ver. 01.02.00, 8/5/2025	Lenovo R2SET26W (1.02), 7/4/2025	Dell Inc. 1.6.0, 7/7/2025
Dimensions			
Height (in.)	0.67	0.68	0.80
Width (in.)	12.54	12.35	12.35
Depth (in.)	8.83	8.90	8.87
Weight (lb.)	3.09	3.07	3.00

How we tested

Setting up the systems

When running the tests, we used a factory provided image. We reset the system image between tests to prevent software from corrupting the test image.

Setting up and updating the OEM image

1. Boot the system.
2. To complete installation, follow the on-screen instructions, using the default selections when appropriate.
3. Set the Windows Power Plan to Best Performance.
4. Set Screen and Sleep options to Never:
 - a. Right-click the desktop, and select Display settings.
 - b. Select System from the left-hand column.
 - c. Click Power.
 - 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. Launch each vendor's proprietary utility app installed on each system, and update any drivers or BIOS files:
 - a. For Dell, run the Dell Command | Update utility.
 - b. For Lenovo, run the Lenovo Commercial Vantage application. Run all Critical and Recommended Updates.
 - c. For HP, check for updates using HP PC Hardware Diagnostics Windows. Run the HP Support Assistant Application using a guest login, and run updates.
8. After running updates, in Application settings, disable automatic software updates.
9. Verify the date and time are correct, and synchronize the system clock with the time server.
10. Pause Automatic Windows Updates:
 - a. Click Windows Start.
 - b. Type Windows Update settings and press Enter.
 - 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 in the search bar, type Control Panel. Click Control Panel→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 the system asks if you want 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.

Running ProcessIdleTasks

Once every 24-hour period, before testing, we rebooted the system and ran the ProcessIdleTasks command, which forces idle processes to complete and minimizes the chance of background tasks affecting test runs.

1. Boot the system.
2. Select Windows Start.
3. Type `cmd` and press Ctrl+Shift+Enter.
4. Type `Rundll32.exe advapi32.dll, ProcessIdleTasks` Do not interact with the system until the command completes.
5. After the command completes, wait 5 minutes before running the test.

Running system performance and productivity tests

Measuring performance with PassMark PerformanceTest 11

Setting up the test

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

Running the test

1. To launch PassMark PerformanceTest, click the PassMark PerformanceTest icon.
2. To start the benchmark, click Run Benchmark.
3. When the test completes, record the results.
4. Repeat steps 2 through 3 twice more.

Measuring performance with Procyon Office Productivity Benchmark

Setting up the test

1. Download and install Procyon.
2. Open Procyon.
3. Click Office Productivity Benchmark.
4. Click Register.
5. Enter the license key for the Office Productivity Benchmark, and click Register.
6. Before running the benchmark, make sure to install a licensed version of Microsoft 365.

Running the test

1. Boot the system.
2. Launch Procyon.
3. Click Office Productivity Benchmark.
4. Click Run.
5. When the benchmark is complete, record the results. Wait 15 minutes before rerunning the benchmark.
6. Repeat steps 3 through 5 twice more.

Measuring performance with Cinebench 2024

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. Wait 10 minutes before rerunning.
4. Repeat steps 1 through 3 twice more.

Measuring performance with Geekbench 6 Pro

Setting up the test

1. Purchase a Geekbench 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 Benchmark.
3. Record the result.
4. Wait 5 minutes before rerunning.
5. Repeat steps 1 through 4 twice more.

Measuring multitasking performance

Setting up the test

1. Download and install Procyon.
2. Open Procyon.
3. Click Office Productivity Benchmark.
4. Click Register.
5. Enter the license key for the Office Productivity Benchmark, and click Register.
6. Before running the benchmark, install a licensed version of Microsoft 365.
7. Select Windows Start.
8. Type `camera` and select Change the default settings for your camera.
9. Click the Connected Camera listed.
10. Under Windows Studio Effects, disable the following settings if necessary:
 - Automatic framing
 - Eye contact
 - Background effects with the default Standard blur applied

Running the test

1. Boot the system.
2. Launch Microsoft Teams.
3. In the pane on the left, click Calendar.
4. Click the Meet Now button, and click Start meeting.
5. Ensure Camera and Computer Audio are enabled, and click Join now.
6. Launch Procyon.
7. Click Office Productivity Benchmark.
8. Click Run. The Teams call window should be maximized in the background.
9. When the benchmark is complete, record the results.
10. Quit Microsoft Teams.
11. Wait 15 minutes before rerunning the benchmark. Repeat steps 2 through 11 twice more.

Measuring thermals and sustained performance with Cinebench 2024

These tests require the following:

- A FLIR E6-XT Infrared Camera
- Cinebench 2024

Running the test

1. Start the thermal recorder.
2. Boot the system and leave the system plugged in.
3. Launch Cinebench 2024.
4. Select File → Advanced benchmark.
5. Verify that the Custom Test setting is set to 30 minutes.
6. Select CPU (Multi Core), and click Start.
7. Record the performance results and skin temperatures after 30 minutes. Note the ambient room temperature, and take a skin temperature photo with the FLIR E6xt infrared Camera of the keyboard deck and underside of chassis.
8. Repeat steps 1 through 7 twice more.

Measuring battery life

Measuring battery life with MobileMark 30 (Balanced and Best power efficiency modes)

This test requires an X-Rite - i1Display Plus colorimeter.

Avoiding antivirus software conflicts

MobileMark 30 is not compatible with any virus-scanning software, so we uninstalled any such software present on the notebook PCs before we installed the benchmark.

Avoiding pre-installed software conflicts

MobileMark 30 installs the following applications, which its test scripts employ:

Productivity

- Corel WinZip 26.0 Enterprise
- Microsoft Excel 2021 Professional Plus
- Microsoft Outlook 2021 Professional Plus
- Microsoft PowerPoint 2021 Professional Plus
- Microsoft Word 2021 Professional Plus

Creativity

- Adobe Photoshop CC

If any of these applications already exist on the system under test, they could cause problems with the benchmark due to software conflicts. To avoid any such issues, we uninstalled all conflicting pre-installed software applications—including different versions of any of the programs MobileMark 30 uses—before we installed the benchmark.

Using the MobileMark built-in configuration tool

This tool supports three levels of configuration:

1. Only makes changes that are REQUIRED for the benchmark to run.
2. Additionally, makes changes that are RECOMMENDED for repeatable results.
3. Additionally, makes OPTIONAL changes that help ensure best results.

The configuration tool makes the following configuration changes at each of the three levels:

Level 1 - Required

- Disables User Account Control (UAC)
- Set DPI Scaling to 100%
- Disables Low Battery Actions
- Disables Network Proxies
- Disables System Sleep and Hibernate
- Disables Windows Update
- Enables Windows Search
- Disables WinSAT

Level 2 - Recommended

- Create BAPCo power scheme
- Set Power Plan Type to Balanced
- Set CPU Adaptive Mode
- Disables Battery Saver Dimming
- Verifies Battery Saver Threshold
- Disables Disk Defrag
- Disables Windows Error Reporting
- Disables Windows Lock Screen
- Disables Screen Saver and Monitor Timeout
- Set Font Smoothing

Level 3 - Optional

- Disables Battery Saver
- Disables Hard Disk Timeout
- Disables System Restore
- Ignores Laptop Lid Close
- Enables Dark Mode

For the Balanced runs, we chose the official BAPCo “Run Benchmark” default as outlined in the BAPCo MobileMark30 User Guide (https://bapco.com/wp-content/uploads/2024/04/BAPCo-MobileMark30_User-Guide-v1.0.pdf), which runs the benchmark using the Required and Recommended options. For the Best power efficiency runs we disabled the recommended options for “Set Power Plan Type to balanced” and “Verify Battery Saver Threshold” options.

Setting up the performance-qualified battery life test

1. On a separate PC, install the i1Profiler software from <https://www.xrite.com/categories/formulation-and-quality-assurance-software/i1profiler>, and connect the X-Rite - i1Display Plus colorimeter to that PC.
2. On the system under test, verify that the wireless adapter is disabled.
3. For the Balanced battery life runs:
 - a. Select Windows Start, type `Power`, `sleep`, and `battery` settings and press the Enter key.
 - b. From the Power mode drop-down menu, select `Balanced`.
 - c. Select Windows Start, type `Battery saver` and press the Enter key.
 - d. From the Battery saver drop-down menu, select `Turns on at 20%`, and click the down arrow. Next to `Lower screen brightness when using battery saver`, toggle the button to `Off`.
4. For the Best power efficiency battery life runs:
 - a. Select Windows Start, type `Power`, `sleep`, and `battery` settings and press the Enter key.
 - b. From the Power mode drop-down menu, select `Best power efficiency`.
 - c. Select Windows Start, type `Battery saver` and press the Enter key.
 - d. From the Battery saver drop-down menu, select `Turns on at Always (100%)`, and click the down arrow. Next to `Lower screen brightness when using battery saver`, toggle the button to `Off`.
5. On the system under test, verify that the volume is set to 50%.
6. On systems with AMD processors, disable Vari-Bright to prevent the screen from dynamically changing the screen brightness based on content:
 - a. Launch AMD Software.
 - b. Click the Settings gear icon.
 - c. Select the Display tab, and disable Vari-Bright.
7. On systems with Intel processors, disable Intel DPST to prevent the screen from dynamically changing the screen brightness based on content:
 - a. Open the Intel Graphics Command Center, press the Windows key, type `Intel` and choose Intel Graphics Command Center.
 - b. Select `System` → `Power`.
 - c. In `On Battery`, set `Display Power Savings` to `Off`.
8. Verify the system is no less than 250 nits.
9. On the system under test, install MobileMark 30 with the default options.

Running the performance-qualified battery life test

1. Boot the system.
2. Launch MobileMark 30.
3. Click Run Benchmark.
4. Click the Brightness Profiler button.
5. Allow the white screen to warm up for 30 minutes. After 30 minutes, click Skip.
6. At the Panel Dark Luminance pop-up, select Yes, to use the value that is queried from the display.
7. Place the X-Rite - i1Display Plus colorimeter in the outlined spot on the screen.
8. On the test PC, toggle the F1 button to turn off the test overlay.
9. On the colorimeter PC, start i1Profiler program, and select Advanced.
10. Click Display, and click Profiling.
11. Next to Luminance, click the drop-down menu, and select Measure.
12. In the drop-down menu that appears below, select Paper in booth.
13. In the box with the image that says, "Place your paper in the light booth," scroll down and click the Measure button.
14. On the test PC, adjust the slider until the Target White luminance is met on the colorimeter PC.
15. Once the correct Target White luminance is met on the test PC, click Done.
16. The test will begin immediately. When prompted, unplug the AC power adapter.

The benchmark is complete when the PC has fully depleted its battery and is no longer operational when running on battery power. We executed the MobileMark 30 benchmark three times on the system and took the median battery life score run as the representative performance score result for that test.

[Read the report ►](#)

This project was commissioned by HP and AMD.



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