

OMEN by HP Laptop 16-b0850nz



Lift your play up. Way up.

Go beyond with OMEN by HP 16.1 inch Gaming Laptop. Powered by an Intel® Core™ processor¹ and powerful NVIDIA® graphics, play at your best from anywhere. Expand your gaming world with sharper and smoother visual experiences courtesy of a high resolution and a fast refresh rate display. Stay cool under pressure with OMEN Tempest Cooling Technology² that prevents overheating even when your game heats up.



*Product image may differ from actual product



Stay cool under pressure

With 3-sided venting and 5-way airflow, OMEN Tempest Cooling Technology² prevents overheating even when your game heats up.



Visually stunning

Play at your best with tear-free gameplay at a fast refresh rate and eliminate screen flickering with HP Flicker-free.³



OMEN Gaming Hub

From software enhancements to hardware control, and live services, OMEN Gaming Hub elevates play in an easy and simple way.



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Featuring

Windows 10

Do great things confidently with the familiar feel of Windows - only better.⁴

Exceptional experience, anywhere

11th Gen Intel® Core™ processors bring the perfect combination of features to make you unstoppable. Get things done fast with high performance, instant responsiveness and best-in-class connectivity.⁵

The Ultimate Play

The GeForce RTX™ 3070 is powered by Ampere—NVIDIA's 2nd gen RTX architecture. Built with enhanced RT Cores and Tensor Cores, new streaming multiprocessors, and high-speed G6 memory, it gives you the power you need to rip through the most demanding games.⁶

NVIDIA® G-SYNC™

By synchronizing the refresh rates of your GPU and display, NVIDIA® G-SYNC™ technology delivers gameplay that's sharp, fluid, and stutter-free with minimal input lag.

144 Hz FHD anti-glare display

Reduce frustrating lag and image ghosting with a display that combines a 144 Hz refresh rate and a 1080p resolution for smooth, crisp gameplay.⁷

144 Hz FHD anti-glare display

Reduce frustrating lag and image ghosting with a display that combines a 144 Hz refresh rate, G-Sync support, and a 1080p resolution for smooth, crisp gameplay.⁷

Effortlessly connected

Enjoy a smoother wireless experience with Wi-Fi 6 (2x2) and Bluetooth® 5.0 combo, all your connections are solid and up to 3x faster file transfer speeds than Wi-Fi 5.⁸

MU-MIMO supported

If you have several MU-MIMO devices in your home, MU-MIMO support works in combination with a MU-MIMO router to maximize network traffic for a smoother online experience.

HP Wide Vision HD Camera

The 88-degree, wide-angle field of view lets you video chat with the entire family or group of friends in crystal clear detail.⁹

Thunderbolt™ 4 with USB4™ Type-C®

The latest Thunderbolt™ solution lets you power your device or connect up to two 4K displays with a single cable and blazing 40Gbps signaling rate.

HP QuickDrop

This bridge between your PC and mobile device lets you share mobile content right to your PC with a simple, secure Wi-Fi connection.

ExpressVPN

Hide your IP address and encrypt your network data so no one can see what you're doing. Reduce the threat of hacking even when browsing on public Wi-Fi.¹⁰

DTS: X® Ultra Technology

By producing authentic, spatially accurate 3D sound through any headset, this technology offers specially tuned audio modes for different game types to provide immersion for the best entertainment experience possible.¹¹

McAfee® LiveSafe™

Free 12-month subscription of McAfee® LiveSafe™ service included. McAfee® LiveSafe™ service enriches your digital life by protecting your data, identity and all your devices so you can connect with confidence.¹³

PCIe NVMe™ M.2 SSD storage

Boot up in seconds with lightning fast speed with up to 1 TB PCIe NVMe™ M.2 SSD storage.

Dual channel memory

With dual channel technology, two channels work simultaneously to double the communication speed between the memory controller and the RAM increasing system performance.

Micro-edge display

See more of your screen with a micro-edge display that maximizes your viewing area.

Flicker-free

Using DC Dimming technology, we can eliminate screen flickering for more comfortable viewing.¹⁴

HP Fast Charge

When your laptop is low on power, no one has time to wait hours to recharge. Power down your device and go from 0 to 50% charge in approximately 45 minutes.¹⁵

An exceptionally rich audio experience

HP Dual Speakers and audio, custom-tuned in collaboration with experts at Bang & Olufsen, bring entertainment to life with sound you can feel. Awaken your senses with PC audio perfection.

HP Audio Boost

Feel and hear state-of-the-art sound with the next generation of HP Audio Boost and SmartAmp technology—providing louder, richer sound and booming bass performance without distortion.

Elevated aesthetic

Designed with an aluminum-finished palm rest for a premium look.

Thin and light gaming

A small footprint and thin and light design lets you easily take this PC with you for ultraportable gaming.

Thoughtfully designed

Built with the environment in mind, our laptop design includes sustainable materials like ocean-bound plastic in the speaker enclosure.¹⁶

Thoughtfully designed

Built with the environment in mind, our laptop design includes sustainable materials like recycled aluminum.¹⁷

Keyboard keycaps contain post-consumer recycled plastic

We're bringing a more sustainable design to our keyboards by using keycaps made with post-consumer recycled plastic.¹⁸

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Specifications

Performance

Operating system

Windows 10 Home 64

Processor

Intel® Core™ i7-11800H (up to 4.6 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 8 cores, 16 threads)^{6,7}

Processor family: 11th Generation Intel® Core™ i7 processor

Chipset

Intel® HM570

Memory

16 GB DDR4-3200 MHz RAM (2 x 8 GB)

Transfer rates up to 3200 MT/s.

Number of User-accessible Memory Slots: 2

Storage

1 TB PCIe® NVMe™ TLC M.2 SSD

Optical drive not included

100 GB Dropbox storage for 12 months¹

Graphics

Discrete: NVIDIA® GeForce RTX™ 3070 Laptop GPU (8 GB GDDR6 dedicated)⁸;

NVIDIA® Max-Q technology

Audio

Audio by Bang & Olufsen; DTS:X® Ultra; Dual speakers; HP Audio Boost

Display

40.9 cm (16.1") diagonal, FHD (1920 x 1080), 144 Hz, 7 ms response time, IPS, micro-edge, anti-glare, Low Blue Light, 300 nits, 100% sRGB^{17,21,28}

Screen-to-body ratio

80.69%¹⁸

Power

230 W Smart AC power adapter;

Battery type

6-cell, 83 Wh Li-ion polymer²³

315 g

Battery and Power

Up to 6 hours and 45 minutes³;

Supports battery fast charge: approximately 50% in 45 minutes⁵

Maximum battery life video playback

Up to 7 hours and 45 minutes¹⁰

Connectivity

Network interface

Integrated 10/100/1000 GbE LAN

Wireless connectivity

Intel® Wi-Fi 6E AX210 (2x2) and Bluetooth® 5.2 combo (Supporting Gigabit data rate)^{11,12,13}

MU-MIMO supported; Miracast compatible

Ports

1 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4, HP Sleep and Charge); 1 SuperSpeed USB Type-A 5Gbps signaling rate (HP Sleep and Charge); 2 SuperSpeed USB Type-A 5Gbps signaling rate; 1 HDMI 2.1; 1 RJ-45; 1 AC smart pin; 1 headphone/microphone combo; 1 mini DisplayPort™^{19,20}

1 multi-format SD media card reader

Webcam

HP Wide Vision 720p HD camera with integrated dual array digital microphones

Design

Product color

Shadow black cover and base, shadow black aluminum keyboard frame

Paint cover and base finish, sandblasted anodized keyboard frame

Software

HP apps

HP Audio Switch; HP Connection Optimizer; HP QuickDrop; OMEN Gaming Hub

Software

ExpressVPN (30 day free trial); LastPass Premium (30 day free trial)²²;

1 month trial for new Microsoft 365 customers²⁴

Service & support

McAfee LiveSafe™²

Additional information

Part Number

P/N: 4P6G3EA #UUZ

UPC/EAN code: 196188064214

Ecolabels

ENERGY STAR® certified; EPEAT® Silver registered²⁷

Sustainable impact specifications:

Ocean-bound plastic in speaker enclosure; Contains recycled metal; Keyboard keycaps made with post-consumer recycled plastic^{39,40,41}

Weight

2.31 kg;

Packed: 4.01 kg

Weight Note: Weight varies by configuration

Dimensions

36.92 x 24.8 x 2.3 cm;

Packed: 6.9 x 55.2 x 34.5 cm

Dimension Note: Dimensions vary by configuration

Warranty

2 year (2/2/0) limited warranty includes 2 years of parts and labor. No on-site repair. Terms and conditions vary by country. Certain restrictions and exclusions apply.

Keyboard

Full-size, per key RGB backlit, shadow black keyboard and 26-Key Rollover Anti-Ghosting Key technology

HP Imagepad with multi-touch gesture support; Precision Touchpad Support

Features

Support NVIDIA® G-SYNC® technology

Security management

Fingerprint reader not available

Sensors

IR Thermal sensor

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Recommended accessories

* Not included.



OMEN by HP Sequencer Keyboard
2VN99AA



OMEN by HP Gaming Backpack
4YJ80AA



OMEN by HP Photon Wireless Mouse
6CL96AA

Warranty services*



3-year pickup and return
UM946E

Key Selling Points Footnotes

- ¹ Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- ² Thermal solution varies by configuration.
- ³ The Flicker-free capability eliminates screen flickering through integrating DC-dimming LED backlights.

Feature Messaging Footnotes

- ⁴ Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.microsoft.com>.
- ⁵ Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering is not a measurement of higher performance.
- ⁶ ©2021 NVIDIA Corporation. NVIDIA, the NVIDIA logo, GeForce, and GeForce RTX are registered trademarks and/or trademarks of NVIDIA Corporation in the United States and other countries. All other trademarks and copyrights are the property of their respective owners.
- ⁷ All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
- ⁸ Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs. The specifications for Wi-Fi 6 are draft and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other Wi-Fi 6 devices. Only available in countries where 802.11ax is supported. Wi-Fi 6 (802.11ax) is not supported in Ukraine, Russia, and Indonesia where the Wi-Fi 6 (802.11ax) will be disabled and downgraded to 802.11ac by the Intel's DRS solution.
- ⁹ Features may require software or other 3rd party applications to provide the described functionality.
- ¹⁰ Free 30-day trial, switch to a paid service at the end of the trial period. Each paid subscription grants you one (1) license to use on three (3) different devices at any given time. See www.expressvpn.com for more details.
- ¹¹ Listening to personal stereo equipment at full volume for long periods can damage the user's hearing. To reduce the risk of hearing damage, lower the volume and amount of time listening at full volume.
- ¹² Internet service required and not included. Subscription required after the 12 month.
- ¹³ The Flicker-free capability eliminates screen flickering through integrating DC-dimming LED backlights.
- ¹⁴ Recharges your battery up to 50% within 45 minutes when the system is off (using "shut down" command). Recommended for use with the HP adapter provided with the notebook, not recommended with a smaller capacity battery charger. After charging has reached 50% capacity, charging will return to normal speed. Charging time may vary +/-10% due to System tolerance. Available on select HP products. See <http://store.hp.com> for a full list of product features.
- ¹⁵ Percentage of ocean-bound plastic contained in each component varies by product.
- ¹⁶ Laptops manufactured with recycled aluminum material in product cover. Percent of recycled aluminum varies by product.
- ¹⁷ Percentage of post-consumer recycled plastic contained in keycap varies by product.

Technical Specifications Footnotes

- ¹ 100 GB of free Dropbox storage for 12 months from date of registration. For complete details and terms of use, including cancellation policies, visit the Dropbox website at <https://www.dropbox.com/help/space/hp-promotion>. Internet service required and not included.
- ² Free 1-year subscription of McAfee LiveSafe service included. Internet access required and not included. Subscription required after expiration.
- ³ Windows 10 MobileMark 18 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See <https://bapco.com/products/mobilemark-2018/> for additional details.
- ⁴ Recharges your battery up to 50% within 45 minutes when the system is off (using "shut down" command). Recommended for use with the HP adapter provided with the notebook, not recommended with a smaller capacity battery charger. After charging has reached 50% capacity, charging speed will return to normal speed. Charging time may vary +/-10% due to System tolerance. Available on select HP products. See <http://store.hp.com> for a full list of product features.
- ⁵ Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- ⁶ Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost/> for more information.
- ⁷ NVIDIA® Max-Q Design can help reduce system heat and noise in thinner form factor PCs. Form factor design and thickness of the system will vary. Overall graphics performance may be lower than alternative graphics solutions that do not utilize Max-Q design.
- ⁸ Battery life tested by HP using continuous FHD video playback, 1080p (1920x1080) resolution, 150 nits brightness, system audio level at 17%, player audio level at 100%, played full-screen from local storage, headphone attached, wireless on but not connected. Actual battery life will vary depending on configuration and maximum capacity will naturally decrease with time and usage.
- ⁹ Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately
- ¹⁰ Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6E (802.11ax) is backwards compatible with prior 802.11 specs. Wi-Fi 6E is part of Wi-Fi Certified. Only available in countries where Wi-Fi 6E (Tri-band - 2.4Ghz/5Ghz/6Ghz) is supported.
- ¹¹ The specifications for Wi-Fi 6E are draft and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other Wi-Fi 6E devices.
- ¹² All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
- ¹³ Percent of active plus nonactive viewing area to active viewing area plus border. Measure with lid vertical to the desk.
- ¹⁴ For best results with HP Sleep and Charge, use a USB charging protocol standard cable or cable adapter with an external device.
- ¹⁵ SuperSpeed USB 20Gbps is not available.
- ¹⁶ TÜV Low Blue Light is the Display Compliance Test Specification quality. See <https://www.certipedia.com/?locale=en#search> for more details.
- ¹⁷ Reverting to LastPass basic after 30 days.
- ¹⁸ Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.
- ¹⁹ Must activate within 180 days of Windows activation.
- ²⁰ Based on U.S. EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit www.epeat.net for more information.
- ²¹ Eyesafe® Display for Low Blue Light is the Display Compliance Test Specification quality. See <https://eyesafe.com> for more details.
- ²² Percentage of ocean-bound plastic contained in each component varies by product.
- ²³ Percentage of recycled metal varies by product.
- ²⁴ Keyboard keycap contains post-consumer recycled plastic. Percentage of Post consumer recycled contained in each component varies by product.

