



HP Sales Central

OMEN by HP Laptop 16-b1797nr (6H2W0UA)

Active as of 4/8/2022



Overview

Lift Your Play Up. Way Up

Play your best from anywhere with the OMEN by HP 16.1" Gaming Laptop PC. Powered by a 12th Gen Intel® Core™ Processor¹ and NVIDIA® Graphics. Expand your gaming world with sharper and smoother visual experiences courtesy of a high-res, fast refresh rate display. Plus, OMEN Tempest Cooling Technology² prevents overheating even when your game heats up.

Elevated gaming experience.

List Price

\$2,407.77



Stay cool under pressure

With OMEN Tempest Cooling technology² that prevents overheating, even when your game play heats up.



Customize your experience with OMEN Gaming Hub

Your one-stop shop to elevate gameplay, from controlling every little performance to lighting options and more.



High-resolution, fast refresh rate display

Visually stunning featuring a 16.1" high-res, fast refresh rate display plus long battery life to play longer.



A dynamic processor that adapts to you for superior multi-tasking performance

12th Gen Intel® Core™ processors distributes performance where you need it the most — saving you time and increasing your ability to do the things you actually want.⁴



NVIDIA® GeForce RTX™ 3070 Ti

The GeForce RTX™ 3070 Ti graphics card is powered by Ampere—NVIDIA's 2nd gen RTX architecture. Built with enhanced RT Cores and Tensor Cores, new streaming multiprocessors, and superfast G6X memory, it gives you the power you need to rip through the most demanding games.⁵



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.

QHD IPS antiglare display

Get lost in the captivating QHD resolution with IPS technology. Coupled with an antiglare screen to reduce light reflection, this display provides a remarkable entertainment experience.⁶

Specifications

Operating system

Windows 11 Home

Processor family

12th Generation Intel® Core™ i7 processor

Processor

Intel® Core™ i7-12700H (up to 4.7 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 14 cores, 20 threads)^{6,71}

Chipset

Intel® Integrated SoC

Sustainable impact specifications

Ocean-bound plastic in speaker enclosure(s); Recycled metal in keyboard frame and hinge cap(s); Keyboard keycaps made with post-consumer recycled plastic

Security management

Trusted Platform Module (Firmware TPM) support

Memory

16 GB DDR5-4800 MHz RAM (2 x 8 GB)

Memory layout (slots & size)

2 x 8 GB

Internal Storage

1 TB PCIe® NVMe™ TLC M.2 SSD

Cloud service

25 GB Dropbox storage for 12 months

Display

16.1" diagonal, QHD (2560 x 1440), 165 Hz, 3 ms response time, IPS, micro-edge, anti-glare, Low Blue Light, 300 nits, 100% sRGB

Display size (diagonal)

16.1"

Graphics

Integrated

Graphics (integrated)

Intel® Iris® Xe Graphics

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 mini DisplayPort™; 1 RJ-45; 1 AC smart pin; 1 headphone/microphone combo

Expansion slots

1 multi-format SD media card reader

Camera

HP Wide Vision 720p HD camera with temporal noise reduction and integrated dual array digital microphones

Audio

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

Pointing device

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

Keyboard

Full-size, 4-zone RGB backlit, shadow black keyboard and 26-Key Rollover Anti-Ghosting Key technology

Input devices

IR Thermal sensor

Wireless

Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.2 combo (supporting gigabit data rate)

Power supply type

230 W AC power adapter

Battery type

6-cell, 83 Wh Li-ion polymer

Ecolabels

EPEAT® Silver registered

Energy star certified

ENERGY STAR® certified

Product design

Paint finish cover and base, sandblasted keyboard frame

Product color

Shadow black cover and base, shadow black aluminum keyboard frame

Minimum dimensions (W x D x H)

14.54 x 9.76 x 0.91 in

Weight

Starting at 5.09 lb

UPC number

196548950355

Package dimensions (W x D x H)

2.71 x 21.73 x 13.58 in

Package weight

8.86 lb

Software included

McAfee LiveSafe™

Manufacturer Warranty

1-year limited hardware warranty. Additional information available at www.support.hp.com; 1-year limited technical support for software and initial setup (from date of purchase)¹⁴¹

Overview

- 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 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 is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.
- 4 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.
- 5 ©2022 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.
- 6 Quad high-definition (QHD) content is required to view QHD images.

Specifications

- 6 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.
- 7 Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost/> for more information.
- 14 Wireless access point and internet service required and sold separately. Availability of public wireless access points limited; Call 1.800.474.6836 or support.hp.com for more information on Care Packs available after standard warranty expires. After standard warranty expires, an incident fee may apply.

Detailed Specifications

Additional information about HP

<http://www.hp.com>

Aggregation group name

BV_FE_FAMILY:ralph_22c1_Group_017

Aggregation UPC group

196337991996 196548226672 196548224227 196548224234 196548224241 196548518234
196548912506 196548251063 196548251056 19654831741 196548329090 196548329076
196548329113 196548056385 196548141418 196548141425 196548141432 196548141456
196548141463 196548141470 196548141487 196548141494 196548141500 196548141517
196548141524 196548141531 196548148318 196548148332 196548148349 196548148356
196548148363 196548148370 196548148387 196548148394 196548148400 196548148417
196548148424 196548148431 196548148448 196548148455 196548171996 196548172009
196548172016 196548171538 196548171545 196548171552 196548171569 196548171576
196548171583 196548171590 196548171606 196548171972 196548171989 196548172023
196548172030 196548172054 196548234257 196548234264 196548236169 196548250486
196548250493 196548250509 196548251025 196548251032 196548251049 196548251841
196548286607 196548291861 196548291908 196548291922 196548293643 196548293742
196548309771 196548309801 196548309818 196548320752 196548321186 196548350063
196548350070 196548350087 196548350094 196548350117 196548350124 196548350131
196548350148 196548350162 196548350179 196548353071 196548353088 196548368068
196548368075 196548368082 196548368099 196548368105 196548368112 196548368129
196548368136 196548368143 196548368150 196548368167 196548368174 196548368198
196548374229 196548374311 196548374328 196548374335 196548428700 196548454778
196548454792 196548454808 196548454815 196548455287 196548455294 196548455300
196548466795 196548483761 196548493982 196548493999 196548497065 196548497072
196548497089 196548497096 196548497102 196548497119 196548498253 196548537594
196548537600 196548537617 196548537624 196548537631 196548540518 196548540525
196548552634 196548552658 196548555789 196548555802 196548629886 196548630967
196548672790 196548749911 196548749935 196548749959 196548749966 196548763214
196548768813 196548782512 196548786084 196548787562 196548787579 196548790340
196548849499 196548849543 196548851218 196548950355 196548950430 196548954681
196786040214 196786063237 196786063244 196786063268 196786213649 196786213687
196786265136 196786265143 196786415104 196786421723

Aspect ratio

16:9

Audio

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

Audio footnote number

[28]

Battery capacity

83

Battery capacity uom

Wh

Battery cells number

6

Battery life

Long Life

Battery life

Up to 7 hours and 30 minutes

Battery life footnote number

[3]

Battery life video playback

Up to 10 hours

Battery life video playback footnote number

[10]

Battery recharge time

Supports battery fast charge: approximately 50% in 30 minutes

Battery recharge time footnote number

[5]

Battery type

6-cell, 83 Wh Li-ion polymer

Battery type

Li-ion polymer

Battery weight

0.69 lb

Battery weight

315 g

Bluetooth version

Bluetooth® 5.2

Brightness

300 nits

Camera

HP Wide Vision 720p HD camera with temporal noise reduction and integrated dual array digital microphones

Camera brand

HP Wide Vision

Camera microphone

integrated dual array digital microphones

Camera resolution (vertical)

720p

Camera resolution standard

HD

Chipset

Intel® Integrated SoC

Cloud service

25 GB Dropbox storage for 12 months

Cloud service footnote number

[1]

Code name

Ralph_22C1

Color

Shadow black

Color gamut

100% sRGB

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Datasheet photo 1

<https://ssl-product-images.www8-hp.com/digmedialib/prodimg/lowres/c08276004.png>

Datasheet photo 2

<https://ssl-product-images.www8-hp.com/digmedialib/prodimg/lowres/c08275992.png>

Datasheet photo 3

<https://ssl-product-images.www8-hp.com/digmedialib/prodimg/lowres/c08276567.png>

Datasheet photo 4

<https://ssl-product-images.www8-hp.com/digmedialib/prodimg/lowres/c08276016.png>

Dimensions (W x D x H) Note

Dimensions vary by configuration

Display

16.1" diagonal QHD display

Display

16.1" diagonal, QHD (2560 x 1440), 165 Hz, 3 ms response time, IPS, micro-edge, anti-glare, Low Blue Light, 300 nits, 100% sRGB

Display bezel

micro-edge

Display brightness

300

Display brightness uom

nits

Display panel technology

IPS

Display refresh rate

165

Display refresh rate uom

Hz

Display resolution (pixels)

2560 x 1440

Display resolution standard

QHD

Display response time

3

Display response time uom

ms

Display size (diagonal)

16.1"

Display size (diagonal)

40.9 cm (16.1")

Display size (diagonal) uom

"

Display size (diagonal, imperial)

16.1

Display size (diagonal, metric)

40.9

Display size (diagonal, metric) uom

cm

Display surface treatment

anti-glare

ECC memory

non-ECC

Ecolabels

EPEAT® Silver registered

Ecolabels footnote number

[27]

Energy star certified

ENERGY STAR® certified

Expansion slots

1 multi-format SD media card reader

External I/O ports footnote number

[19,20,42]

Feature supporting point footnote number

[13]

Graphic card footnote number

[8]

Graphics

Discrete

Graphics

Integrated

Graphics (discrete)

NVIDIA® GeForce RTX™ 3070 Ti Laptop GPU (8 GB GDDR6 dedicated)

Graphics (integrated)

Intel® Iris® Xe Graphics

Graphics card brand

NVIDIA®

Graphics card family

GeForce

Graphics card memory size

8

Graphics card memory size uom

GB

Graphics card memory type

GDDR6

Graphics Note

NVIDIA® Max-Q technology

HP apps

HP Audio Switch; HP Support Assistant; HP Connection Optimizer; HP BIOS Protection; HP QuickDrop; MyHP; OMEN Gaming Hub

HP apps footnote number

[32]

Image legal disclaimer

Product image may differ from actual product

Input devices

IR Thermal sensor

Internal Storage

1 TB PCIe® NVMe™ TLC M.2 SSD

Keyboard

Full-size, 4-zone RGB backlit, shadow black keyboard and 26-Key Rollover Anti-Ghosting Key technology

Keyboard backlight

RGB backlit

Keyboard backlit zone

4-zone

Keyboard color

shadow black

Keyboard size

Full-size

Keyboard technology

26-Key Rollover Anti-Ghosting Key technology

Legal disclaimer

Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows functionality. See <http://www.microsoft.com>.

Manufacturer Warranty

1-year limited hardware warranty. Additional information available at www.support.hp.com; 1-year limited technical support for software and initial setup (from date of purchase)

Memory

16 GB DDR5-4800 MHz RAM (2 x 8 GB)

Memory and storage

16 GB memory; 1 TB SSD storage

Memory layout (slots & size)

2 x 8 GB

Memory module type

DIMM

Memory Note

Transfer rates up to 4800 MT/s.

Memory size

16

Memory size uom

GB

Memory speed

4800

Memory speed uom

MHz

Memory type

DDR5

Minimum dimensions (W x D x H)

14.54 x 9.76 x 0.91 in

Minimum dimensions (W x D x H)

36.92 x 24.8 x 2.3 cm

Model Number

RTX™ 3070 Ti

Network interface

Integrated 10/100/1000 GbE LAN

Number of memory slots

2

Number of User-accessible Memory Slots

2

Operating system

Windows 11 Home

Package depth, imperial (most common size)

21.73

Package depth, metric (most common size)

55.2

Package dimensions (W x D x H)

2.71 x 21.73 x 13.58 in

Package dimensions (W x D x H)

6.9 x 55.2 x 34.5 cm

Package height, imperial (most common size)

13.58

Package height, metric (most common size)

34.5

Package weight

4.01 kg

Package weight

8.86 lb

Package width, imperial (most common size)

2.71

Package width, metric (most common size)

6.9

Packaging unit of measure (imperial)

in

Packaging unit of measure (metric)

cm

Playbook TS icon battery life

<http://h10003.www1.hp.com/digmedialib/prodimg/lowres/c03905264.png>

Playbook TS icon connectivity

<http://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08201987.png>

Playbook TS icon dimensions NB

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08250394.png>

Playbook TS icon display NB

<http://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08205649.png>

Playbook TS icon graphics

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08169202.png>

Playbook TS icon memory

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08267700.png>

Playbook TS icon OS

<http://h10003.www1.hp.com/digmedialib/prodimg/lowres/c03905482.png>

Playbook TS icon processor

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08201972.png>

Playbook TS icon storage

<http://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08192819.png>

Playbook TS icon weight imperial

<http://h10003.www1.hp.com/digmedialib/prodimg/lowres/c05790117.png>

Playbook TS icon weight metric

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08267650.png>

Pointing device

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

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 mini DisplayPort™; 1 RJ-45; 1 AC smart pin; 1 headphone/microphone combo

Power supply type

230 W AC power adapter

Processor

Intel® Core™ i7-12700H (up to 4.7 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 14 cores, 20 threads)

Processor Brand

Intel®

Processor cache

24 MB L3

Processor core

14

Processor family

12th Generation Intel® Core™ i7 processor

Processor family

Core™ i7

Processor frequency technology

Intel® Turbo Boost Technology

Processor generation

12th Generation

Processor maximum frequency

4.7

Processor maximum frequency uom

GHz

Processor model

12700H

Processor name footnote number

[6,7]

Processor threads

20

Product brand name

HP

Product color

Shadow black cover and base, shadow black aluminum keyboard frame

Product design

Paint finish cover and base, sandblasted keyboard frame

Product language options

#ABA

Product long name specifications

OMEN by HP Laptop 16-b1797nr, Windows 11 Home, 16.1", Intel® Core™ i7, 16GB RAM, 1TB SSD, NVIDIA® GeForce RTX™ 3070 Ti, QHD, Shadow black

Product long name specifications V2

OMEN by HP Laptop 16, Windows 11 Home, 16.1", Intel® Core™ i7, 16GB RAM, 1TB SSD, NVIDIA® GeForce RTX™ 3070 Ti, QHD, Shadow black

Product short name specifications

OMEN by HP Laptop 16-b1797nr, 16.1", Intel® Core™ i7, 16GB RAM, 1TB SSD

Screen-to-body ratio (without speakers)

80.69%

Screen-to-body ratio (without speakers) footnote number

[18]

Security management

Trusted Platform Module (Firmware TPM) support

Software - Productivity & finance

1 month trial for new Microsoft 365 customers

Software - productivity & finance footnote number

[24]

Software footnote number

[2]

Software included

McAfee LiveSafe™

Special features

NVIDIA G-SYNC™ technology

Storage capacity

1

Storage capacity uom 01

TB

Storage form factor 01

M.2

Storage interface 01

PCIe®

Storage interface protocol 01

NVMe™

Storage memory technology 01

TLC

Storage type

SSD

Storage type 01

SSD

Sustainable impact specifications

Ocean-bound plastic in speaker enclosure(s); Recycled metal in keyboard frame and hinge cap(s); Keyboard keycaps made with post-consumer recycled plastic

Sustainable impact specifications footnote number

[39,40,41]

Tech spec footnote

[1] 25 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.

Tech spec footnote

[10] 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.

Tech spec footnote

[14] Wireless access point and internet service required and sold separately. Availability of public wireless access points limited; Call 1.800.474.6836 or support.hp.com for more information on Care Packs available after standard warranty expires. After standard warranty expires, an incident fee may apply.

Tech spec footnote

[18] Percent of active plus nonactive viewing area to active viewing area plus border. Measure with lid vertical to the desk.

Tech spec footnote

[19] For best results with HP Sleep and Charge, use a USB charging protocol standard cable or cable adapter with an external device.

Tech spec footnote

[2] Free 30 day subscription of McAfee LiveSafe service included. Internet access required and not included. Subscription required after expiration.

Tech spec footnote

[20] SuperSpeed USB 20Gbps is not available.

Tech spec footnote

[23] 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.

Tech spec footnote

[24] Must activate within 180 days of Windows activation.

Tech spec footnote

[27] ENERGY STAR and the ENERGY STAR mark are registered trademarks owned by the U.S. Environmental Protection Agency; 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.

Tech spec footnote

[28] 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.

Tech spec footnote

[3] Windows 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.

Tech spec footnote

[32] HP BIOS Protection works with Windows 10 or 11 that ships with your PC; For more information visit hp.com/go/hpsupportassistant. (Link will vary outside of the U.S.) HP Support Assistant is only available on Windows-based PCs. Internet connection required for updating and connecting to HP Support.

Tech spec footnote

[39] Percentage of ocean-bound plastic contained in each component varies by product.

Tech spec footnote

[40] Laptops manufactured with recycled metal material in product cover. Percentage of recycled metal varies by product.

Tech spec footnote

[41] Keyboard keycap contains post-consumer recycled plastic. Percentage of Post consumer recycled contained in each component varies by product.

Tech spec footnote

[42] For optimal performance and battery chargeability while gaming and rendering, use the power adapter that ships with the PC. You can use the 100W/20V Type-C adapter or power bank when running light loading tasks. System-off charging is only supported on 20V Type-C adapter or power bank.

Tech spec footnote

[5] Recharges your battery up to 50% within 30 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.

Tech spec footnote

[6] 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.

Tech spec footnote

[7] Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost/> for more information.

Tech spec footnote

[8] NVIDIA® Max-Q Design can help reduce system heat and noise in thinner form factor PC’s. 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.

Technology logo, print 1

Publication logos/Artboard_3.jpg

Technology logo, print 2

Publication logos/HP_Fast_Charge_RGB_blue_NT.jpg

Technology logo, print 3

Publication logos/EPEAT_silver_3C11.jpg

Technology logo, print 4

Publication logos/energy_star_logo.jpg

Technology logo, print 6

Publication logos/McAfee_LiveSafe.jpg

Touchscreen

No

Trademark information

All other trademarks are the property of their respective owners.

UNSPSC code

43211503

UPC number

196548950355

Warranty footnote number

[14]

Weight

Starting at 2.3 kg

Weight

Starting at 5.09 lb

Weight note (metric)

Weight varies by configuration

Wireless

Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.2 combo (supporting gigabit data rate)

Wireless antenna

2x2

Wireless Model

Wi-Fi 6E AX211

Wireless Note

MU-MIMO supported

Wireless standard

Wi-Fi 6E

Wireless supplier

Intel®

Wireless transfer speeds

Supporting Gigabit data rate

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