

Technical Specifications: HP ZBook Power G9 Laptop

Here's how the specifications for a powerful, modern laptop align with the intent of your request.

- **(a) CPU:** Intel® Core™ i7-12700H (up to 4.7 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 14 cores, 20 threads)
 - *Note: This is a modern mobile processor that significantly outperforms the older desktop i7-7700.*
- **(b) Chipset:** Intel® WM690 Chipset (Integrated with the CPU).
- **(c) Motherboard:** Proprietary HP motherboard designed for the ZBook Power G9 chassis.
- **(d) Slots:** 2x M.2 2280 slots for NVMe SSDs, 1x M.2 slot for WLAN/Bluetooth.
 - *Note: Laptops use compact M.2 slots for internal expansion instead of the full-height PCIe slots found in desktops.*
- **(e) Memory:** 16 GB DDR5-4800 MHz RAM. Expandable up to 64 GB via two SODIMM slots.
- **(f) Monitor:** 15.6" diagonal, FHD (1920 x 1080), IPS, anti-glare, 400 nits, 100% sRGB integrated display.
- **(g) Graphics Card:** NVIDIA RTX™ A1000 Laptop GPU (4 GB GDDR6 dedicated).
 - *Note: This is a professional mobile GPU, far more powerful and modern than the AMD R7 450.*
- **(h) Storage:** 1 TB PCIe® Gen4 NVMe™ TLC M.2 SSD.
 - *Note: Laptops use 2.5-inch or M.2 drives. This NVMe SSD is dramatically faster than the 3.5" 7200rpm HDD requested.*
- **(i) Keyboard:** Integrated HP Premium Quiet Keyboard – spill-resistant, full-size, backlit keyboard with a numeric keypad.
- **(j) Mouse:** Integrated glass clickpad with multi-touch gesture support. (External mice connect via USB or Bluetooth).
- **(k) DVD Writer:** Not included. An external USB DVD writer can be used if needed.
 - *Note: To achieve a thin and light design, most modern laptops do not include internal optical drives.*
- **(l) Ports:** 1x Thunderbolt™ 4 with USB4™ Type-C®, 3x SuperSpeed USB Type-A, 1x RJ-45, 1x HDMI 2.0b, 1x headphone/microphone combo jack.

- *Note: This provides a modern, high-speed port selection. Obsolete ports like PS/2 and Serial are not included on modern laptops.*
- **(m) Networking:** Integrated Intel® I219-LM GbE (10/100/1000) and Intel® Wi-Fi 6E AX211 + Bluetooth® 5.3.
- **(n) Operating System:** Windows 11 Pro (with downgrade rights to Windows 10 Pro).
- **(o) Security:** HP Wolf Security for Business, which includes Trusted Platform Module (TPM) 2.0, HP Sure Start (BIOS protection), HP Secure Erase, an optional fingerprint reader, and HP Tamper Lock (chassis intrusion switch).
- **(p) Power Supply:** HP Smart 150 W External AC power adapter.
- **(q) Cabinet:** Laptop chassis made of aluminum and magnesium alloy.
- **(r) Industry Standard Compliance:** EPEAT® Gold registered and ENERGY STAR® certified.