

# ThinkPad T590 20N4001YPB

**Product**  
ThinkPad T590

**Region**  
EET

**Country/Region**  
Poland

**Machine Type**  
20N4

**TopSeller**  
TopSeller

**Processor**  
Core i7-8565U (4C / 8T, 1.8 / 4.6GHz, 8MB)

**Graphics**  
Integrated Intel UHD Graphics 620

**Chipset**  
Intel SoC Platform

**Memory**  
8GB Soldered + 8GB DIMM DDR4-2400

**Display**  
15.6" FHD (1920x1080) IPS 250nits Anti-glare

**Multi-touch**  
None

**Storage**  
512GB SSD M.2 2280 PCIe NVMe Opal2

**Optical**  
None

**WLAN + Bluetooth**  
Intel 9560 11ac, 2x2 + BT5.0

**WWAN**  
Fibocom L830-EB

**SIM Card**  
None

**Smart Card Reader**  
Smart Card Reader

**Monitor Cable**  
None

**Bundled Accessories**  
None

**Color**  
Black

**Camera**  
720p

**Keyboard**  
Backlit

**Fingerprint Reader**  
Fingerprint Reader

**NFC**  
None

**TPM**  
Discrete TPM 2.0

**Battery**  
Integrated 57Wh

**Power Adapter**  
65W USB-C

**System Management**  
None

**Operating System**  
Windows 10 Pro 64

**Bundled Software**  
None

**Base Warranty**  
3-year, Depot

**Upsell Service Bundles**  
None

**End of Support**  
2025-04-19

**Announce Date**  
2019-03-19

## Notes:

Battery life is an estimated maximum. Actual battery life may vary based on many factors, including screen brightness, active applications, features, power management settings, battery age and conditioning, and other customer preferences.



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# ThinkPad T590 Platform Specifications

Product Specifications Reference (PSREF)

|                   |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------|----------------|---------------------|--------------|----------------|------------------------|---------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor         | 8th Generation Intel® Core™ i5 / i7 Processor                                                                                                                                                                                                                                                     |                                    |              |                |                     |              |                |                        |               |                          | Dimensions<br>Weight<br>Case color<br>Case material                                                                                                                                              | WxDxH: 14.40" x 9.76" x 0.75"; 365.8mm x 248mm x 19.1mm<br>FHD model: 3.87 lb / 1.75 kg; UHD model: 3.86 lb / 1.75 kg<br>Black<br>Display cover: PPS / 50% GF;<br>Bottom: PA / 50% GF                                                                                                                                                                                                                                                                                                    |
|                   | Processor Number                                                                                                                                                                                                                                                                                  | # of Cores                         | # of Threads | Base Frequency | Max Turbo Frequency | Cache        | Memory Types   | Processor Graphics     |               |                          |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                   | i5-8265U                                                                                                                                                                                                                                                                                          | 4                                  | 8            | 1.6 GHz        | 3.9 GHz             | 6MB          | DDR4-2400      | Intel UHD Graphics 620 |               |                          |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                   | i5-8365U                                                                                                                                                                                                                                                                                          |                                    |              | 1.6 GHz        | 4.1 GHz             | 6MB          |                |                        |               |                          |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                   | i7-8565U                                                                                                                                                                                                                                                                                          |                                    |              | 1.8 GHz        | 4.6 GHz             | 8MB          |                |                        |               |                          |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| i7-8665U          | 1.9 GHz                                                                                                                                                                                                                                                                                           |                                    |              | 4.8 GHz        | 8MB                 |              |                |                        |               |                          |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Graphics          | Intel UHD Graphics 620 in processor only or Intel UHD Graphics 620 in processor and NVIDIA® GeForce® MX250, 2GB GDDR5 memory; supports external digital monitor via HDMI or Thunderbolt; supports three independent displays; Max resolution: 4096x2304@60Hz (Thunderbolt); 4096x2160@24Hz (HDMI) |                                    |              |                |                     |              |                |                        |               |                          | Smart card reader                                                                                                                                                                                | Optional: Smart card reader                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Chipset           | Intel SoC (System on Chip) platform<br>48GB max / 2400MHz DDR4, dual-channel capable, 8GB or 16GB memory soldered to systemboard, one DDR4 SO-DIMM socket<br>* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation                                                    |                                    |              |                |                     |              |                |                        |               |                          | Media reader                                                                                                                                                                                     | MicroSD card reader                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Memory            |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Ports                                                                                                                                                                                            | Two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 1 (with the function of Power Delivery and DisplayPort), one USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of PD and DP), HDMI 1.4b, Ethernet (RJ-45), nano-SIM card slot (WWAN models), headphone / microphone combo jack, optional smart card reader, microSD card reader, side docking connector, security keyhole<br>* Depending on many factors, actual data transfer speed may be lower than theoretical speed |
| Display           | Size                                                                                                                                                                                                                                                                                              | Resolution                         | Type         | Surface        | Brightness          | Aspect Ratio | Contrast Ratio | Color Gamut            | Viewing Angle | Monitor cable (optional) | HDMI to VGA: Lenovo HDMI to VGA Monitor Adapter<br>USB-C to VGA: Lenovo USB-C to VGA Adapter (NOT available in EMEA)<br>USB-C to DP: Lenovo USB-C to DisplayPort Adapter (NOT available in EMEA) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                   | 15.6"                                                                                                                                                                                                                                                                                             | FHD (1920x1080)                    | IPS          | Anti-glare     | 250 nits            | 16:9         | 700:1          | 45%                    | 170°          | Bundled Accy             | None                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                   | 15.6"                                                                                                                                                                                                                                                                                             | UHD (3840x2160) HDR, Dolby Vision™ | IPS          | Anti-glare     | 500 nits            | 16:9         | 1200:1         | 100% Adobe             | 170°          | Camera (optional)        | One of the following, configurable by model:<br>• HD720p camera with ThinkShutter camera privacy, fixed focus<br>• IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Multi-touch (opt) | On-cell touch, supports 10-finger gesture (FHD only)                                                                                                                                                                                                                                              |                                    |              |                |                     |              |                |                        |               |                          | Audio support                                                                                                                                                                                    | HD Audio, Realtek® ALC3287 codec / stereo speakers, 2W x 2, Dolby® Audio™ Premium / dual array far-field microphone, headphone / microphone combo jack                                                                                                                                                                                                                                                                                                                                   |
| Storage           | • M.2 2280 SSD / SATA 6.0Gb/s<br>• M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4<br>• M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2<br>• Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4                                                                                         |                                    |              |                |                     |              |                |                        |               |                          | Keyboard                                                                                                                                                                                         | 6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight                                                                                                                                                                                                                                                                                                                                                                                                       |
| Optical           |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | None                                                                                                                                                                                             | UltraNav™                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ethernet          | Non-vPro model: Intel Ethernet Connection I219-V (Jacksonville)<br>vPro model: Intel Ethernet Connection I219-LM (Jacksonville)                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Security                                                                                                                                                                                         | Power-on password, hard disk password, supervisor password, security keyhole                                                                                                                                                                                                                                                                                                                                                                                                             |
| WLAN (optional)   | Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth 5.0<br>Bluetooth 5.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter                                                                                                                                                               |                                    |              |                |                     |              |                |                        |               |                          | Security chip                                                                                                                                                                                    | Discrete TPM 2.0, TCG Certified                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Bluetooth™        |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | System Mgt (opt)                                                                                                                                                                                 | Intel vPro Technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| WWAN (optional)   | One of the following, configurable by model:<br>• Wireless WAN upgradable<br>• Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card (EMEA only)<br>• Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card<br>* For non-WWAN model, it means the model is NOT WWAN upgradable  |                                    |              |                |                     |              |                |                        |               |                          | Fingerprint reader                                                                                                                                                                               | Optional: Touch style match on chip fingerprint reader on the palm rest                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SIM card          |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Nano-SIM card slot, optional Verizon LTE (US) SIM card                                                                                                                                           | NFC (optional)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                   |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Battery                                                                                                                                                                                          | Integrated Li-ion 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter                                                                                                                                                                                                                                                                                                                                                                           |
|                   |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Max battery life                                                                                                                                                                                 | MobileMark® 2014: 14.98 hr (9.5 hr for UHD model with discrete graphics)<br>* Battery life varies significantly with settings, usage, & other factors                                                                                                                                                                                                                                                                                                                                    |
|                   |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | AC adapter                                                                                                                                                                                       | 45W or 65W USB Type-C AC adapter                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                   |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Preload                                                                                                                                                                                          | Windows® 10 Home 64 or Windows 10 Pro 64                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                   |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Limited warranty                                                                                                                                                                                 | One of the following, configurable by model:<br>• 1-year depot repair service<br>• 3-year/1-yr battery depot repair service<br>• 3-year/1-yr battery limited onsite service                                                                                                                                                                                                                                                                                                              |
|                   |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Mil-Spec test                                                                                                                                                                                    | MIL-STD-810G military testing                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                   |                                                                                                                                                                                                                                                                                                   |                                    |              |                |                     |              |                |                        |               |                          | Environment                                                                                                                                                                                      | EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant                                                                                                                                                                                                                                                                                                                                                                                                                                          |

Note: The specifications above may not be available in all regions.

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