

# ThinkPad E590 20NB002BPB

**Product**  
ThinkPad E590

**Region**  
EET

**Country**  
Poland

**Machine Type**  
20NB

**TopSeller**  
TopSeller

**Processor**  
Core i5-8265U (4C / 8T, 1.6 / 3.9GHz, 6MB)

**Graphics**  
Integrated Intel UHD Graphics 620

**Chipset**  
Intel SoC Platform

**Memory**  
1x 8GB DIMM DDR4-2400

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

**Multi-touch**  
None

**Storage**  
512GB SSD M.2 2242 PCIe x2 NVMe

**Optane Memory**  
None

**Optical**  
None

**WLAN + Bluetooth**  
Intel 9260 11ac, 2x2 + BT5.0

**WWAN**  
None

**SIM Card**  
None

**Smart Card Reader**  
None

**Monitor Cable**  
None

**Bundled Accessories**  
None

**Color**  
Black

**Case Material**  
Aluminum

**Camera**  
720p

**Keyboard**  
Non-backlit

**Fingerprint Reader**  
Fingerprint Reader

**NFC**  
None

**TPM**  
Discrete TPM 2.0

**Battery**  
Integrated 45Wh

**Power Adapter**  
65W USB-C

**System Management**  
None

**Operating System**  
Windows 10 Pro 64

**Bundled Software**  
None

**Base Warranty**  
1-year, Depot

**Upsell Service Bundles**  
None

**End of Support**  
2025-01-25

**Announce Date**  
2018-12-25

## 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 E590 Platform Specifications

Product Specifications Reference (PSREF)

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        |                       |                                                                                                                                                                                                                                                                                                                                      |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|----------------|---------------------|-------|--------------|------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|--------------|----------------|---------------|-------------|---------------------|------------|----|----------|------|-------|-----|-----------|-----------------------|------------|-----|----------|------|-------|------|-----------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--|
| Processor         | 8th Generation Intel® Core™ i3 / i5 / i7 Processor                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |              |                |                     |       |              |                        | Dimensions            | WxDxH: 14.53" x 9.94" x 0.78"; 369mm x 252.5mm x 19.9mm                                                                                                                                                                                                                                                                              |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   | Processor Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | # of Cores | # of Threads | Base Frequency | Max Turbo Frequency | Cache | Memory Types | Processor Graphics     | Weight                | Starting at 4.68 lb / 2.12 kg                                                                                                                                                                                                                                                                                                        |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   | i3-8145U                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2          | 4            | 2.1 GHz        | 3.9 GHz             | 4MB   | DDR4-2400    | Intel UHD Graphics 620 | Case color            | Black or silver                                                                                                                                                                                                                                                                                                                      |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   | i5-8265U                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4          | 8            | 1.6 GHz        | 3.9 GHz             | 6MB   |              |                        | Case material         | Display cover: Aluminum;<br>Bottom: PC/ABS plastic                                                                                                                                                                                                                                                                                   |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| i7-8565U          | 1.8 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |              | 4.6 GHz        | 8MB                 |       |              |                        |                       |                                                                                                                                                                                                                                                                                                                                      |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Graphics          | Intel UHD Graphics 620 in processor only or Intel UHD Graphics 620 in processor and AMD Radeon RX 550X Graphics, 2GB DDR5 memory; supports external digital monitor via HDMI or USB Type-C; supports dual independent display; Max resolution: 4096x2304@60Hz (USB Type-C); 4096x2160@24Hz (HDMI)                                                                                                                                                                                      |            |              |                |                     |       |              |                        | Smart card reader     | None                                                                                                                                                                                                                                                                                                                                 |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | Media reader          | MicroSD card reader                                                                                                                                                                                                                                                                                                                  |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Chipset           | Intel SoC (System on Chip) platform 32GB max / 2400MHz DDR4, dual-channel capable, two DDR4 SO-DIMM sockets<br>* Installed memory is actually 2666MHz but run at 2400MHz due to Intel limitation                                                                                                                                                                                                                                                                                       |            |              |                |                     |       |              |                        | Ports                 | One USB 2.0, two USB 3.1 Gen 1 (one Always On), one USB 3.1 Type-C Gen 2 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet (RJ-45), headphone / microphone combo jack, microSD card reader, security keyhole<br>* Depending on many factors, actual data transfer speed may be lower than theoretical speed |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | Monitor cable         | None                                                                                                                                                                                                                                                                                                                                 |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Memory            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | Bundled Accy          | None                                                                                                                                                                                                                                                                                                                                 |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | Camera                | HD720p camera, fixed focus                                                                                                                                                                                                                                                                                                           |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Display           | <table><tr><td>Size / Resolution</td><td>Surface</td><td>Type</td><td>Brightness</td><td>Aspect Ratio</td><td>Contrast Ratio</td><td>Viewing Angle</td><td>Multi-touch</td></tr><tr><td>15.6" HD (1366x768)</td><td>Anti-glare</td><td>TN</td><td>220 nits</td><td>16:9</td><td>400:1</td><td>90°</td><td>Non-touch</td></tr><tr><td>15.6" FHD (1920x1080)</td><td>Anti-glare</td><td>IPS</td><td>250 nits</td><td>16:9</td><td>600:1</td><td>170°</td><td>Non-touch</td></tr></table> |            |              |                |                     |       |              |                        | Size / Resolution     | Surface                                                                                                                                                                                                                                                                                                                              | Type | Brightness | Aspect Ratio | Contrast Ratio | Viewing Angle | Multi-touch | 15.6" HD (1366x768) | Anti-glare | TN | 220 nits | 16:9 | 400:1 | 90° | Non-touch | 15.6" FHD (1920x1080) | Anti-glare | IPS | 250 nits | 16:9 | 600:1 | 170° | Non-touch | Audio support | HD Audio, Synaptic® CX11880 codec / stereo speakers, 2W x 2, Dolby® Advanced Audio / dual array microphone, headphone / microphone combo jack |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | Size / Resolution     | Surface                                                                                                                                                                                                                                                                                                                              | Type | Brightness | Aspect Ratio | Contrast Ratio | Viewing Angle | Multi-touch |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | 15.6" HD (1366x768)   | Anti-glare                                                                                                                                                                                                                                                                                                                           | TN   | 220 nits   | 16:9         | 400:1          | 90°           | Non-touch   |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | 15.6" FHD (1920x1080) | Anti-glare                                                                                                                                                                                                                                                                                                                           | IPS  | 250 nits   | 16:9         | 600:1          | 170°          | Non-touch   |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Keyboard          | 6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight                                                                                                                                                                                                                                                                                                                                                                                                     |            |              |                |                     |       |              |                        |                       |                                                                                                                                                                                                                                                                                                                                      |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Multi-touch       | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |              |                |                     |       |              |                        | UltraNav™             | TrackPoint® pointing device and buttonless Mylar surface multi-touch touchpad                                                                                                                                                                                                                                                        |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | Security              | Power-on password, hard disk password, supervisor password, security keyhole                                                                                                                                                                                                                                                         |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Storage           | Up to two drives (one M.2 SSD and one HDD)<br>• HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™<br>• M.2 2280 SSD / SATA 6.0Gb/s<br>• M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 2<br>• M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2                                                                                                                                                                                                                                            |            |              |                |                     |       |              |                        | Security chip         | Integrated model: discrete TPM 2.0, TCG Certified<br>Discrete model: firmware TPM 2.0 integrated in chipset                                                                                                                                                                                                                          |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | System Mgt            | None                                                                                                                                                                                                                                                                                                                                 |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | Fingerprint reader    | Optional: Touch style fingerprint reader on the palm rest                                                                                                                                                                                                                                                                            |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | NFC                   | None                                                                                                                                                                                                                                                                                                                                 |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Optane™ memory    | Optional: Intel Optane memory, PCIe NVMe, PCIe 3.0 x 2                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |              |                |                     |       |              |                        | Battery               | Integrated Li-ion 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W USB Type-C AC adapter                                                                                                                                                                                                                       |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |                |                     |       |              |                        | Max battery life      | MobileMark® 2014: 11 hr<br>* Battery life varies significantly with settings, usage, & other factors                                                                                                                                                                                                                                 |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Optical           | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |              |                |                     |       |              |                        | AC adapter            | 45W or 65W USB Type-C AC adapter                                                                                                                                                                                                                                                                                                     |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| Ethernet          | Gigabit Ethernet Connection, Realtek R8111GUS                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |              |                |                     |       |              |                        | Preload (optional)    | Windows® 10 Home 64 or Windows 10 Pro 64                                                                                                                                                                                                                                                                                             |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| WLAN + Bluetooth™ | One of the following, configurable by model:<br>• Realtek® RTL8822BE, Wi-Fi 2x2 802.11ac + Bluetooth 4.2, M.2 card<br>• Intel Wireless-AC 9260, Wi-Fi 2x2 802.11ac + Bluetooth 5.0, M.2 card                                                                                                                                                                                                                                                                                           |            |              |                |                     |       |              |                        | Limited warranty      | 1-year depot repair service                                                                                                                                                                                                                                                                                                          |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| WWAN              | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |              |                |                     |       |              |                        | Mil-Spec test         | MIL-STD-810G military testing                                                                                                                                                                                                                                                                                                        |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |
| SIM card          | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |              |                |                     |       |              |                        | Environment           | EPEAT™ Silver; ENERGY STAR® 7.1; RoHS-compliant                                                                                                                                                                                                                                                                                      |      |            |              |                |               |             |                     |            |    |          |      |       |     |           |                       |            |     |          |      |       |      |           |               |                                                                                                                                               |  |

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

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July 2019

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