FUJITSU

Fujitsu recommends Windows 10 Pro.

# Data Sheet
## FUJITSU Workstation CELSIUS C780

## 1U Performance from Virtually Anywhere

Driven by precision engineering and innovation, Fujitsu's engineers maximized rack density in the datacenter while at the same time offering true workstation performance in only 1U. This allows customers in the automotive, aeronautic, broadcasting,energy as well as healthcare industry to benefit from faster time-to-market and reduced innovation cycles from the safety of the datacenter.

### Manageability
Server based management in a rack workstation
- Windows® Server 2019 R2
- The integrated Remote Management Controller iRMC S5 allows comprehensive control, irrespective of the system status
- ServerView embedded Lifecycle Management (eLCM) offers image management and enables LAN enhanced security and stability in a fully automized environment

### Energy efficiency
Fujitsu's Cool-safe® Advanced Thermal Design technology for a broader range of ambient temperature
- Temperatures in the data center can now vary between 5 ℃ and 40 ℃
- Benefits: cost savings and optimization potential

### Best visualization - even virtualized
Meeting your demands as a 1:1 remote workstation
- Support of up to two high-end graphic cards (single width) or one ulta-high-end graphic card (double width)
- Up to 128 GB DDR4 (2666 MHz) memory

### Storage Flexibility
Comprehensive choice of storage solutions
- Fujitsu PCIe SSD: Choice of on-board or PCIe card solution for maximum I/O performance
- SATA SSD: High-speed SATA SSDs

intel XEON inside

NVIDIA.

# Components

| Processor | Intel® Xeon® processor E-2186G (6 Cores / 12 Threads, 3.80 GHz, up to 4.7 GHz, 12 MB) * |
|---|---|
| | Intel® Xeon® processor E-2174G (4 Cores / 8 Threads, 3.80 GHz, up to 4.7 GHz, 8 MB) * |
| | Intel® Xeon® processor E-2146G (6 Cores / 12 Threads, 3.50 GHz, up to 4.5 GHz, 12 MB) * |
| | Intel® Xeon® processor E-2144G (4 Cores / 8 Threads, 3.60 GHz, up to 4.5 GHz, 8 MB) * |
| | Intel® Xeon® processor E-2136 (6 Cores / 12 Threads, 3.30 GHz, up to 4.5 GHz, 12 MB) * |
| | Intel® Xeon® processor E-2134 (4 Cores / 8 Threads, 3.50 GHz, up to 4.5 GHz, 8 MB) * |
| | Intel® Xeon® processor E-2126G (6 Cores / 6 Threads, 3.30 GHz, up to 4.5 GHz, 12 MB) * |
| | Intel® Xeon® processor E-2124G (4 Cores / 4 Threads, 3.40 GHz, up to 4.5 GHz, 8 MB) * |
| | Intel® Xeon® processor E-2124 (4 Cores / 8 Threads, 3.30 GHz, up to 4.5 GHz, 8 MB) * |
| | Intel® Core™ i7-8700 processor (6 Cores / 12 Threads, 3.20 GHz, up to 4.6 GHz, 12 MB) * |
| | Intel® Core™ i7-8700K processor (6 Cores / 12 Threads, 3.70 GHz, up to 4.7 GHz, 12 MB) * |
| | Intel® Core™ i5-8600 processor (6 Cores / 6 Threads, 3.10 GHz, 9 MB) * |
| | Intel® Core™ i5-8500 processor (6 Cores / 6 Threads, 3.00 GHz, up to 4.1 GHz, 9 MB) * |
| | Intel® Core™ i3-8100 processor (4 Cores / 4 Threads, 3.60 GHz, 6 MB) |
| | Intel® vPro™ with all Intel® Xeon® processors<br>No Intel® vPro™ technology with Intel® Core i5 and Core i7 processors<br>*with Intel® Turbo Boost Technology (clock speed and performance will vary depending on workload and other variables) |

| **Operating systems** | | |
|---|---|---|
| **Operating system pre-installed** | Windows 10 Pro. Fujitsu recommends Windows 10 Pro. Windows 10 Pro for Workstations | Windows 10 Pro. Fujitsu recommends Windows 10 Pro. Windows 10 Pro for Workstations |
| **Operating system compatible** | Windows® Server 2019<br>Linux | Windows® Server 2019<br>Linux |
| **Operating system notes** | Certified for Red Hat© Enterprise Linux (pending)<br>Certified for SUSE Enterprise Desktop (pending)<br>Certified for SUSE Enterprise Server (pending)<br>Certified for VMWare (pending)<br>For some configurations third party drivers are currently not available or configuration restrictions may apply. Windows 10 Support: After the end of the product life FUJITSU will continue to test and support all upcoming Window 10 releases for a period of maximum 5 years – depending on the available extension of hardware services through FUJITSU Warranty top ups. For details please see "FUJITSU Service Statement for Windows 10 Semi-Annual-Channel Support" at http://support.ts.fujitsu.com.<br>Certified for CITRIX (planned) | Certified for Red Hat© Enterprise Linux (pending)<br>Certified for SUSE Enterprise Desktop (pending)<br>Certified for SUSE Enterprise Server (pending)<br>Certified for VMWare (pending)<br>For some configurations third party drivers are currently not available or configuration restrictions may apply. Windows 10 Support: After the end of the product life FUJITSU will continue to test and support all upcoming Window 10 releases for a period of maximum 5 years – depending on the available extension of hardware services through FUJITSU Warranty top ups. For details please see "FUJITSU Service Statement for Windows 10 Semi-Annual-Channel Support" at http://support.ts.fujitsu.com.<br>Certified for CITRIX (planned) |

| Memory modules | 8 GB (1 module(s) 8 GB) DDR4, unbuffered, ECC, 2,666 MT/s, UDIMM |
|---|---|
| | 8 GB (1 module(s) 8 GB) DDR4, unbuffered, non-ECC, 2,666 MT/s, UDIMM |
| | 16 GB (1 module(s) 16 GB) DDR4, unbuffered, ECC, 2,666 MT/s, UDIMM |
| | 16 GB (1 module(s) 16 GB) DDR4, unbuffered, non-ECC, 2,666 MT/s, UDIMM |

| Graphics | Ultra-high-end 3D: NVIDIA® Quadro® GV100, 32 GB, PCIe x16, 4 x DisplayPort |
|---|---|
| | Ultra-high-end 3D: NVIDIA® Quadro® RTX 6000, 24 GB, PCIe x16, 4 x DisplayPort, 1 x Virtual Link |
| | Ultra-high-end 3D: NVIDIA® Quadro® P6000, 24 GB, PCIe x16, 1 x Dual Link DVI-D, 4 x DisplayPort |
| | Ultra-high-end 3D: NVIDIA® Quadro® RTX 5000, 16 GB, PCIe x16, 4 x DisplayPort, 1 x Virtual Link |
| | Ultra-high-end 3D: NVIDIA® Quadro® P5000, 16 GB, PCIe x16, 1 x Dual Link DVI-D, 4 x DisplayPort |
| | High-end 3D: AMD Radeon™ Pro WX 7100 , 8 GB, PCIe x16, 4 x DisplayPort |
| | High-end 3D: NVIDIA® Quadro® RTX 4000, 8 GB, PCIe x16, 3 x DisplayPort, 1 x Virtual Link |
| | High-end 3D: NVIDIA® Quadro® P4000, 8 GB, PCIe x16, 4 x DisplayPort |
| | Midrange 3D: NVIDIA® Quadro® P2000, 5 GB, PCIe x16, 4 x DisplayPort |
| | Midrange 3D: AMD Radeon™ Pro WX 5100, 8 GB, 320 stream processors, PCIe x16, 4 x DisplayPort |
| | Entry 3D: NVIDIA® Quadro® P1000, 4 GB, PCIe x16, 4 x miniDP |
| | Entry 3D: AMD Radeon™ Pro WX 3100, 4 GB, 320 stream processors, PCIe x16, 1 x DisplayPort, 2 x miniDP |
| | Entry 3D: AMD Radeon™ Pro WX 2100, 2 GB, 320 stream processors, PCIe x16, 1 x DisplayPort, 2 x miniDP |
| | Entry 3D: NVIDIA® Quadro® P620, 2 GB, PCIe x16, 4 x miniDP |
| | Entry 3D: NVIDIA® Quadro® P400 , 2 GB, PCIe x16, 3 x miniDP |
| | Remote Graphics: CELSIUS RemoteAccess Quad Card, PCIe x1, 4 x miniDP, PCoIP |
| | Remote Graphics: CELSIUS RemoteAccess Dual Card, PCIe x1, 2 x miniDP, PCoIP |
| | Others: DP to DVI-D (single link) Adapter Cable |
| | Others: MiniDP to DP Adapter Cable |

| Hard disk drives (internal) | SSD SATA III, 960 GB High Endurance, 1DWDP, 2.5-inch |
|---|---|
| | SSD SATA III, 480 GB High Endurance, 1DWDP, 2.5-inch |
| | SSD SATA III, 240 GB High Endurance, 1DWDP, 2.5-inch |
| | SSD PCIe, 2048 GB M.2 NVMe Highend module |
| | SSD PCIe, 1024 GB M.2 NVMe Highend module |
| | SSD PCIe, 512 GB M.2 NVMe Highend module |
| | SSD PCIe, 256 GB M.2 NVMe Highend module |
| | SSD PCIe, 2x 2048 GB M.2 NVMe Highend card |
| | SSD PCIe, 2x 1024 GB M.2 NVMe Highend card |
| | SSD PCIe, 2x 512 GB M.2 NVMe Highend card |
| | SSD PCIe, 2x 256 GB M.2 NVMe Highend card |
| | SSD PCIe, 1x 2048 GB M.2 NVMe Highend card |
| | SSD PCIe, 1x1024 GB M.2 NVMe Highend card |
| | SSD PCIe, 1x 512 GB M.2 NVMe Highend card |
| | SSD PCIe, 1x 256 GB M.2 NVMe Highend card |
| | SSD PCIe, 1024 GB M.2 NVMe module |
| | SSD PCIe, 512 GB M.2 NVMe module |
| | SSD PCIe, 256 GB M.2 NVMe module |
| | SSD PCIe, 1024 GB M.2 NVMe module, SED |
| | SSD PCIe, 512 GB M.2 NVMe module, SED |
| | SSD PCIe, 256 GB M.2 NVMe module, SED |
| | SSD PCIe, 2x 1024 GB M.2 NVMe card |
| | SSD PCIe, 2x 512 GB M.2 NVMe card |
| | SSD PCIe, 2x 256 GB M.2 NVMe card |
| | SSD PCIe, 1x 1024 GB M.2 NVMe card |
| | SSD PCIe, 1x 512 GB M.2 NVMe card |
| | SSD PCIe, 1x 256 GB M.2 NVMe card |
| | SSD SATA III, 1024 GB, 2.5-inch |
| | SSD SATA III, 512 GB, 2.5-inch |
| | SSD SATA III, 256 GB, 2.5-inch |
| | SSD SATA III, 512 GB, 2.5-inch, SED |
| | SSD SATA III, 256 GB, 2.5-inch, SED |
| | HDD SAS, 10,000 rpm, 2400 GB, 2.5-inch |
| | HDD SAS, 10,000 rpm, 1800 GB, 2.5-inch |
| | HDD SAS, 10,000 rpm, 1200 GB, 2.5-inch |
| | HDD SAS, 10,000 rpm, 600 GB, 2.5-inch |
| | HDD SATA III, 7,200 rpm, 2,000 GB, 2.5-inch, business critical |
| | HDD SATA III, 7,200 rpm, 1,000 GB, 2.5-inch, business critical |
| **Hard disk notes** | One Gigabyte equals one billion bytes, when referring to hard disk drive capacity.<br>24/7 ready (business critical HDDs required)<br>Up to 20 GB of HDD space is reserved for system recovery<br>SED (Self-Encrypting Drive)<br>SSD (Solid State Disk) |
| Drives (optional) | DVD Super Multi ultra slim (tray) |
| SCSI / SAS Controller | LSI RAID Ctrl SAS 1GB (D3216) RAID 5/6 Ctrl. 12 Gbit/s 8 ports int. |
| | LSI RAID Ctrl SAS (D3327) RAID 0/1 Ctrl. 12 Gbit/s 8 ports int. |
| | Flash Backup Unit (FBU + TFM) For RAID controller D3216 |

### Interface add on cards/components (optional)

| | |
|---|---|
| | PLAN EP X550-T2 2x10GBASE-T |
| | Intel 2x1Gb Ethernet Adapter I350-T2 |
| | Gigabit Ethernet PCIe x1 |
| | Dual serial card PCIe x1 |

| | |
|---|---|
| Riser Cards | 2 x PCI-Express 3.0 x8, Full height (single slot density) (340 mm / 13.39 inch) |
| | 1 x PCI-Express 3.0 x16, Full height (double slot density)  (340 mm / 13.39 inch) |

| | | |
|---|---|---|
| Base unit | CELSIUS C780   (S26361-K1448-V315) | CELSIUS C780power   (S26361-K1448-V325) |

### Mainboard

| | |
|---|---|
| Mainboard type | D3688-A1 |
| Formfactor | proprietary |
| Chipset | Intel® C246 |
| Processor socket | LGA 1151 |
| Processor quantity maximum | 1 |
| Supported capacity RAM (max.) | 128 GB |
| Memory slots | 4 DIMM (DDR4) ECC/non-ECC |
| Memory frequency | 2,666 MT/s |
| Memory notes | Dual channel support<br>For dual channel performance, 2 memory modules have to be ordered. Capacity per channel has to be the same.<br>2666 MHz may be clocked down to 2400 MHz depending on processor and memory configuration |
| LAN | 2x Built-in 10/100/1,000 MBit/s Intel® I219LM and Intel® I210 |
| BIOS features | BIOS Flash EPROM update by software<br>Recovery BIOS<br>Unified Extensible Firmware Interface (UEFI) |

### I/O controller on board

| | |
|---|---|
| Serial ATA total | 5 |
| Controller functions | Serial ATA III (6 Gbit)<br>NCQ<br>AHCI<br>RAID 0/1/5/10 |
| SATA RAID support | 0, 1, 10, 5 |

### Interfaces

| | |
|---|---|
| USB 2.0 total | 2 |
| USB 3.1 Gen1 (USB 3.0) total | 3 |
| USB front | 2x 2.0 |
| USB rear | 3x 3.0 |
| USB internal | 1x 3.0 |
| VGA | 1 (IRMC) |
| Serial (RS-232) | 1 (optional via slot bracket) |
| Ethernet (RJ-45) | 2 |

### Input device / components

| | |
|---|---|
| Input devices (optional) | Optical USB tilt wheel mouse<br>Keyboard |

### Drive bays

| | |
|---|---|
| Drive bays total | 5 |
| 2.5-inch internal bays | 4 |
| Drive bay notes | Up to 4x 2.5-inch HDDs/SSDs (cold plug) |
| M.2-2280 | 2 x on mainboard (for PCIe SSD modules, NVMe RAID 0/1 supported) |

## Slots

| | |
|---|---|
| PCI-Express 3.0 x4 | 1 x (174 mm / 6.85 inch) Full height |
| PCI-Express 3.0 x16 | 1 x (340 mm / 13.39 inch) Configurable as 2x PCI-Express 3.0 x8 Full height (single slot density) or 1x PCI-Express 3.0 x16 Full height (double slot density) via Riser card |

## Electrical values

| | | |
|---|---|---|
| Power efficiency note | power supply efficiency (at 230V; 20% / 50% / 100% load) : 90% / 94% / 92% | power supply efficiency (at 230V; 20% / 50% / 100% load) : 90% / 94% / 92% |
| Rated voltage range | 100 V - 240 V (AC Input) | 100 V - 240 V (AC Input) |
| Rated frequency range | 47 Hz - 63 Hz | 47 Hz - 63 Hz |
| Operating voltage range | 90 V - 264 V | 90 V - 264 V |
| Operating line frequency range | 47 Hz - 63 Hz | 47 Hz - 63 Hz |
| Max. output of single power supply | 450 W | 800 W |
| Power supply output | 450 W | 800 W |

## Dimensions / Weight / Environmental

| | |
|---|---|
| Dimensions (W x D x H) | 431 x 683 x 44.45 mm |
| | 16.97 x 26.89 x 1.75 inch |
| Operating position | Horizontal / vertical (I/O ports facing down) |
| Weight | approx. 13 kg |
| Weight (lbs) | approx. 28.7 lbs |
| Weight notes | Actual weight may vary depending on configuration |
| Operating ambient temperature | 10 – 35 ℃ (50 – 95 ℉), 5 – 40 ℃ (41 – 104 ℉) with Fujitsu's Cool-safe® Advanced Design technology |
| Operating relative humidity | 5 - 85 % (relative humidity) |

## Compliance

| | | |
|---|---|---|
| Product | CELSIUS C780 | CELSIUS C780power |
| Model | CR1U | |
| Europe | CE Class A* | |
| USA/Canada | FCC Class A | |
| Global | RoHS (Restriction of hazardous substances) WEEE (Waste electrical and electronic equipment) Microsoft Operating Systems (HCT / HCL entry / WHQL) | |
| China | CCC (planned) TPM 2.0 for China (optional) | |
| Compliance link | https://sp.ts.fujitsu.com/sites/certificates | |

## Additional Software

| | |
|---|---|
| Additional software (preinstalled) | Adobe® Reader® (pdf reader) McAfee® LiveSafe™ (provides award-winning antivirus protection for your PC and much more. 30 days trial pre-installed) Microsoft Office (1 month trial for new Microsoft® Office 365 customers. Buy Microsoft Office.) |
| Additional software (optional) | Recovery DVD for Windows® Drivers & Utilities DVD (DUDVD) Nero 10 Essentials XL (burning/backup/DVD-playback suite) |

## Security

| | | |
|---|---|---|
| System and BIOS Security | EraseDisk Boot sector virus protection Write protect option for the Flash EPROM Embedded security (TPM 2.0) Control of all USB interfaces External USB ports can be disabled separately Control of external interfaces | EraseDisk Boot sector virus protection Write protect option for the Flash EPROM Embedded security (TPM 2.0) Control of all USB interfaces External USB ports can be disabled separately Control of external interfaces |
| User Security | User and supervisor BIOS password Hard disk password | User and supervisor BIOS password Hard disk password |

## Manageability

| | |
|---|---|
| Manageability technology | DeskUpdate Driver management<br>PXE 2.1 Boot code<br>Wake up from S5 (off mode)<br>Intrusion switch (optional)<br>WoL (Wake on LAN)<br>iAMT 12.0 (depending on processor)<br>eLCM<br>iRMC |
| Manageability software | ServerView |
| Manageability link | http://www.fujitsu.com/fts/manageability |

## Miscellaneous

## Packaging information

| | | |
|---|---|---|
| Packaging dimension (mm) | 264 x 490 x 87 mm | 264 x 490 x 87 mm |
| Packaging dimension (inch) | 10.39 x 19.29 x 3.43 inch | 10.39 x 19.29 x 3.43 inch |
| Packaging notes | printed user documentation is bleached in chlorine free process | printed user documentation is bleached in chlorine free process |

## Warranty

| | |
|---|---|
| Warranty period | 3 years (depending on country) |
| Warranty type | Onsite Service |
| Warranty Terms & Conditions | http://support.ts.fujitsu.com/warranty |

## Product Support Services - the perfect extension

| | |
|---|---|
| Recommended Service | 9x5, Onsite Response Time: Next Business Day |
| Spare Parts availability | 5 years after end of product life |
| Service Weblink | http://www.fujitsu.com/fts/services/support |

# Recommended Accessories

**FUTRO L420**

The FUJITSU FUTRO L420 meets a multitude of user and business needs. It is designed to handle standard office tasks and demanding, high-graphics applications over PCoIP. Dual-monitoring enables you to increase your productivity. As a smart zero client, the FUJITSU FUTRO L420 provides high security, easy management and zero noise, whilst being user-friendly and integrating easily into an existing VMware® network.

Order Code:
S26361-K1062-V200

**FUTRO L620**

The FUJITSU FUTRO L620 meets a multitude of user and business needs. It is designed to handle standard office tasks and demanding, high-graphics applications over PCoIP. Quad-monitoring enables you to increase your productivity. As a smart zero client, the FUJITSU FUTRO L620 provides high security, easy management and zero noise, whilst being user-friendly and integrating easily into an existing VMware® network.

Order Code:
S26361-K1062-V300

# More information

## Fujitsu products, solutions & services

In addition to the FUJITSU Workstation CELSIUS C780, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

### Fujitsu Portfolio

Build on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offering. This allows customers to leverage from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

### Computing Products

www.fujitsu.com/global/products/computing/

### Software

www.fujitsu.com/software/

## More information

Learn more about the FUJITSU Workstation CELSIUS C780, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
www.fujitsu.com/fts/CELSIUS

## Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment.
Using our global know-how, we aim to contribute to the creation of a sustainable environment for future generations through IT. Please find further information at http://www.fujitsu.com/global/about/environment

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2019-05-01 EN-EN