

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 automatized 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 °C and 40 °C
- 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 ultra-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



Components

Processor

Intel® Xeon® processor E-2288G (8 Cores / 16 Threads, 3.70 GHz, up to 5.0 GHz, 16 MB)
Intel® Xeon® processor E-2286G (6 Cores / 12 Threads, 4.00 GHz, up to 4.9 GHz, 12 MB)
Intel® Xeon® processor E-2278G (8 Cores / 16 Threads, 3.40 GHz, up to 5.0 GHz, 16 MB)
Intel® Xeon® processor E-2276G (6 Cores / 12 Threads, 3.80 GHz, up to 4.9 GHz, 12 MB)
Intel® Xeon® processor E-2274G (4 Cores / 8 Threads, 4.00 GHz, up to 4.9 GHz, 8 MB)
Intel® Xeon® processor E-2246G (6 Cores / 8 Threads, 3.60 GHz, up to 4.8 GHz, 12 MB)
Intel® Xeon® processor E-2244G (4 Cores / 8 Threads, 3.80 GHz, up to 4.8 GHz, 8 MB)
Intel® Xeon® processor E-2236 (6 Cores / 12 Threads, 3.40 GHz, up to 4.8 GHz, 12 MB)
Intel® Xeon® processor E-2234 (4 Cores / 8 Threads, 3.60 GHz, up to 4.8 GHz, 8 MB)
Intel® Xeon® processor E-2226G (6 Cores / 6 Threads, 3.40 GHz, up to 4.6 GHz, 12 MB)
Intel® Xeon® processor E-2224G (4 Cores / 4 Threads, 3.50 GHz, up to 4.7 GHz, 8 MB)
Intel® Xeon® processor E-2224 (4 Cores / 4 Threads, 3.40 GHz, up to 4.6 GHz, 8 MB)
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™ i9-9900 processor (8 Cores / 16 Threads, 3.10 GHz, up to 5.0 GHz, 16 GB, Intel® UHD Graphics 630)
Intel® Core™ i9-9900K processor (8 Cores / 16 Threads, 3.60 GHz, up to 5.0 GHz, 16 GB, Intel® UHD Graphics 630)
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™ i3-9100 processor (4 Cores / 4 Threads, 3.60 GHz, up to 4.2 GHz, 6 MB, Intel® HD Graphics 630) *
Intel® Core™ i3-8100 processor (4 Cores / 4 Threads, 3.60 GHz, 6 MB)
Intel® vPro® Platform with all Intel® Xeon® processors
No Intel® vPro® technology with Intel® Core™ i5 and Core™ i7 processors
*with Intel® Turbo Boost Technology 2.0 (clock speed and performance will vary depending on workload and other variables)

Operating systems

Operating system pre-installed	Windows 10 Pro for Workstations	Windows 10 Pro for Workstations
	Windows 10 Pro	Windows 10 Pro
Operating system compatible	Windows® Server 2019	Windows® Server 2019
	Linux	Linux

Operating systems

Operating system notes

Certified for Red Hat® Enterprise Linux (pending)	Certified for Red Hat® Enterprise Linux (pending)
Certified for SUSE Enterprise Desktop (pending)	Certified for SUSE Enterprise Desktop (pending)
Certified for SUSE Enterprise Server (pending)	Certified for SUSE Enterprise Server (pending)
Certified for VMWare (pending)	Certified for VMWare (pending)
For some configurations third party drivers are currently not available or configuration restrictions may apply.	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 Windows 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 .	Windows 10 Support: After the end of the product life FUJITSU will continue to test and support all upcoming Windows 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 .
Certified for CITRIX (planned)	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
32 GB (1 module(s) 32 GB) DDR4, unbuffered, 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 8000, 48 GB, PCIe x16, 4 x DisplayPort, 1 x Virtual Link
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® P2200, 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 Dual Card, PCIe x1, 2 x miniDP, PCoIP
Remote Graphics: CELSIUS RemoteAccess Quad Card, PCIe x1, 4 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	<p>One Gigabyte equals one billion bytes, when referring to hard disk drive capacity.</p> <p>24/7 ready (business critical HDDs required)</p> <p>Up to 20 GB of HDD space is reserved for system recovery</p> <p>SED (Self-Encrypting Drive)</p> <p>SSD (Solid State Disk)</p>
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)**

Serial Interface FH
 Gigabit Ethernet PCIe x1
 Dual 10 Gigabit Ethernet PCIe x8
 Intel 2x1Gb Ethernet Adapter I350-T2
 PLAN EP X550-T2 2x10GBASE-T
 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 For dual channel performance, 2 memory modules have to be ordered. Capacity per channel has to be the same. 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 Recovery BIOS Unified Extensible Firmware Interface (UEFI)

I/O controller on board

Serial ATA total	5
Controller functions	Serial ATA III (6 Gbit) NCQ AHCI 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 Keyboard
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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)

Drive bays

M.2-2280	2 x on mainboard (for PCIe SSD modules, NVMe RAID 0/1 supported)
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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 °C (50 – 95 °F), 5 – 40 °C (41 – 104 °F) 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 PXE 2.1 Boot code Wake up from S5 (off mode) Intrusion switch (optional) WoL (Wake on LAN) iAMT 12.0 (depending on processor) eLCM 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://www.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/emeia/products/product-support-services/

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/emeia/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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