

Fujitsu recommends Windows® 7.

# Data Sheet

## Fujitsu CELSIUS M470 Workstation

Your New "Thoroughbred" Workstation

If you're looking for reliable performance when using demanding applications, the Fujitsu CELSIUS M470 single-processor workstation meets your needs. It can be individually configured, helping you to enhance your productivity. It features best-in-class noise emissions of only 23 dB for a quiet and efficient working environment. Comprehensive ISV certifications ensure your applications run smoothly. Finally, an integrated display gives you continuous control over system status.

### Performance

Higher productivity

- High performance multi-core processors, hard disk drives and next generation graphics subsystems

### Ergonomics

Quiet system for a pleasant working environment

- Optimized thermal management, low-noise chassis and silent fans

### Reliability

System stability for the complete lifecycle

- High product standards thanks to top-quality components and comprehensive testing in certified in-house laboratories for 24/7 operation

### Certification of workstation applications

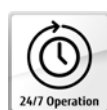
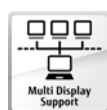
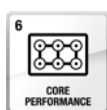
Stability, compatibility and performance for the main workstation applications

- Comprehensive support for ISV applications and ease of integration into existing IT networks

### Expandability

Excellent expandability for future demands

- Increased memory capacities of up to 48 GB



# Components

<b>Processor</b>	Intel® Xeon® processor X5690 (6 Cores / 12 Threads, 3.46 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5687 (4 Cores / 8 Threads, 3.60 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5680 (6 Cores / 12 Threads, 3.33 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5677 (4 Cores / 8 Threads, 3.46 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5675 (6 Cores / 12 Threads, 3.06 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5672 (4 Cores / 8 Threads, 3.20 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5670 (6 Cores / 12 Threads, 2.93 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5667 (4 Cores / 8 Threads, 3.06 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5660 (6 Cores / 12 Threads, 2.80 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5650 (6 Cores / 12 Threads, 2.66 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor X5647 (4 Cores / 8 Threads, 2.93 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor W3690 (6 Cores / 12 Threads, 3.46 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor W3670 (6 Cores / 12 Threads, 3.20 GHz, 12 MB, 6.4 GT/s)
	Intel® Xeon® processor W3565 (4 Cores / 8 Threads, 3.20 GHz, 8 MB, 4.8 GT/s)
	Intel® Xeon® processor W3550 (4 Cores / 8 Threads, 3.06 GHz, 8 MB, 4.8 GT/s)
	Intel® Xeon® processor W3530 (4 Cores / 8 Threads, 2.80 GHz, 8 MB, 4.8 GT/s)
	Intel® Xeon® processor W3520 (4 Cores / 8 Threads, 2.66 GHz, 8 MB, 4.8 GT/s)
	Intel® Xeon® processor W3505 (2 Cores / 4 Threads, 2.53 GHz, 4 MB, 4.8 GT/s)
	Intel® Xeon® processor W3503 (2 Cores / 4 Threads, 2.5 GHz, 4 MB, 4.8 GT/s)
	Intel® Xeon® processor L5640 (6 Cores / 12 Threads, 2.26 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor L5630 (4 Cores / 8 Threads, 2.13 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor L5609 (4 Cores / 8 Threads, 1.86 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor E5649 (6 Cores / 12 Threads, 2.53 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor E5645 (6 Cores / 12 Threads, 2.40 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor E5640 (4 Cores / 8 Threads, 2.66 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor E5630 (4 Cores / 8 Threads, 2.53 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor E5620 (4 Cores / 8 Threads, 2.40 GHz, 12 MB, 5.86 GT/s)
	Intel® Xeon® processor E5607 (4 Cores / 8 Threads, 2.26 GHz, 8 MB, 4.8 GT/s)
	Intel® Xeon® processor E5606 (4 Cores / 8 Threads, 2.13 GHz, 8 MB, 4.8 GT/s)
	Intel® Xeon® processor E5603 (4 Cores / 8 Threads, 1.60 GHz, 8 MB, 4.8 GT/s)
<b>Operating systems</b>	
<b>Operating system</b>	Windows® 7 Professional 64-bit Windows® 7 Professional 32-bit
<b>Operating system compatible</b>	Windows® XP Professional x64 Edition Windows® XP Professional Linux
<b>Operating system notes</b>	Red Hat® certification Novell® certification For some configurations third party drivers are currently not available or configuration restrictions may apply.
<b>Memory modules</b>	1 GB (1 module(s) 1 GB) DDR3, 1333 MHz, PC3-10600 1 GB (1 module(s) 1 GB) DDR3, ECC, 1333 MHz, PC3-10600 2 GB (1 module(s) 2 GB) DDR3, ECC, 1333 MHz, PC3-10600 4 GB (1 module(s) 4 GB) DDR3, ECC, 1333 MHz, PC3-10600 8 GB (1 module(s) 8 GB) DDR3, unbuffered, ECC, 1333 MHz, PC3-10600, DIMM

<b>Graphics add on cards (optional)</b>	Ultra-high-end 3D: NVIDIA® Quadro® 6000, 6 GB, 448 cores, PCIe x16, 1x DVI-I, 2x DisplayPort, 2x DVI/VGA	
	Ultra-high-end 3D: NVIDIA® Quadro® 5000, 2.5 GB, 352 cores, PCIe x16, Dual Link DVI-I, 2x DisplayPort, DVI, VGA	
	High-end 3D: AMD FirePro™ V7900, 2 GB, 1140 stream processors, PCIe x16, 4 x DisplayPort	
	High-end 3D: NVIDIA® Quadro® 4000, 2 GB, 256 cores, PCIe x16, Dual Link DVI-I, 2x DisplayPort	
	Midrange 3D: NVIDIA® Quadro® 2000D, 1 GB, 192 cores, PCIe x16, 2x Dual Link DVI-I	
	Midrange 3D: NVIDIA® Quadro® 2000, 1 GB, 192 cores, PCIe x16, Dual Link DVI-I, 2x DisplayPort	
	Midrange 3D: AMD FirePro™ V5900, 2 GB, 800 stream processors, PCIe x16, Dual Link DVI-I, 2x DisplayPort	
	Entry 3D: AMD FirePro™ V4900, 1 GB, 480 stream processors, PCIe x16, Dual Link DVI-I, 2x DisplayPort	
	Entry 3D: NVIDIA® Quadro® 600, 1 GB, 96 cores, PCIe x16, Dual Link DVI-I, DisplayPort	
	Entry 3D: NVIDIA® Quadro® 400, 512 MB, 48 cores, PCIe x16, 1x DVI-I, DisplayPort	
	Entry 3D: ATI FirePro™ V3800, 512 MB, 400 stream processors, PCIe x16, Dual Link DVI-I, DisplayPort	
	Professional 2D: NVIDIA® Quadro® NVS 450, 512 MB, 2 x 8 cores, PCIe x16, 4 x DisplayPort	
	Professional 2D: NVIDIA® Quadro® NVS 300, 512 MB, 16 cores, PCIe Gen2 x16, 2x DVI/VGA	
	Professional 2D: NVIDIA® Quadro® NVS 295, 256 MB, 8 Cores, PCIe x16, 2x DisplayPort	
	Multi monitor 2D: NVIDIA® Quadro® NVS 295, 256 MB, 8 Cores, PCIe x1, 2x DisplayPort	
	Remote Graphics: CELSIUS RemoteAccess Card, PCIe x1, 2x DVI-I, PCoIP	
GPU computing card: NVIDIA® Tesla™ C2075, 6 GB, 448 cores, PCIe x16, 1x DVI-I		
<b>Hard disk drives (internal)</b>	SSD SATA III, 512 GB, 2.5-inch	
	SSD SATA, 256 GB, 2.5-inch	
	SSD SATA, 128 GB, 2.5-inch	
	HDD SATA III, 10000 rpm, 600 GB, 3.5-inch	
	HDD SATA III, 10000 rpm, 300 GB, 3.5-inch	
	HDD SATA III, 7200 rpm, 1000 GB, 3.5-inch, business critical	
	HDD SATA III, 7200 rpm, 500 GB, 3.5-inch, business critical	
	HDD SATA II, 7200 rpm, 2000 GB, 3.5-inch, business critical	
	HDD SATA II, 7200 rpm, 1000 GB, 3.5-inch, S.M.A.R.T.	
	HDD SATA II, 7200 rpm, 500 GB, 3.5-inch, S.M.A.R.T.	
	HDD SATA II, 7200 rpm, 320 GB, 3.5-inch, S.M.A.R.T.	
	HDD SATA II, 7200 rpm, 160 GB, 3.5-inch, S.M.A.R.T.	
	HDD SAS, 15000 rpm, 600 GB, 3.5-inch internal	
	HDD SAS, 15000 rpm, 450 GB, 3.5-inch	
HDD SAS, 15000 rpm, 300 GB, 3.5-inch		
<b>Hard disk notes</b>	2.5-inch drives will be mounted in the 3.5-inch bays	2.5-inch drives will be mounted in the 3.5-inch bays
	One Gigabyte equals one billion bytes, when referring to hard disk drive capacity.	One Gigabyte equals one billion bytes, when referring to hard disk drive capacity.
<b>Drives (optional)</b>	Blu-ray Disc™ Triple Writer	
	DVD-ROM	
	DVD Super Multi	
	MultiCard Reader 20in1, 5.25-Inch	
	MultiCard Reader 20in1 USB 2.0 5.25-Inch	
<b>Interface add on cards/components (optional)</b>	WLAN III, 802.11g/Draft-n (Windows only)	
	USB 3.0 PCIe x1	
	Parallel Interface	
	Gigabit Ethernet PCIe x1	
	eSATA Interface	
	Dual serial card PCIe x1, powered	
	Dual serial card PCIe x1	
	Dual 1 Gigabit Ethernet PCIe x4	
	Dual 10 Gigabit Ethernet PCIe x8	

Base unit	CELSIUS M470-2	CELSIUS M470-2 POWER
<b>Mainboard</b>		
Mainboard type	D2778	D2778
Formfactor	ATX	ATX
Chipset	Intel® X58 Express, Intel® 82801JR ICH10R	Intel® X58 Express, Intel® 82801JR ICH10R
Processor socket	LGA 1366	LGA 1366
Processor quantity maximum	1	1
Memory slots	6 DIMM	6 DIMM
Supported capacity RAM (max.)	48 GB	48 GB
Memory notes	In configurations with 4 GB and more the visible memory may be reduced to approximately 3.5 GB or less (for 32-bit operating systems) and configurations with 8 GB the visible memory may be reduced to approximately 7.5 GB or less (depending on system configuration).	In configurations with 4 GB and more the visible memory may be reduced to approximately 3.5 GB or less (for 32-bit operating systems) and configurations with 8 GB the visible memory may be reduced to approximately 7.5 GB or less (depending on system configuration).
LAN	Built-in 10/100/1000 MBit/s Realtek RTL8111	Built-in 10/100/1000 MBit/s Realtek RTL8111
Audio codec	Realtek ALC663	Realtek ALC663
Audio features	High Definition Audio	High Definition Audio
<b>I/O controller on board</b>		
Serial ATA total	6	
SATA RAID support	0, 1, 10, 5	
<b>Interfaces</b>		
Audio: in (rear)	1	1
Audio: out / SPDIF (rear)	2 / 1	2 / 1
Audio: in	1	1
Audio: out	1	1
FireWire (IEEE1394) (front)	1	1
FireWire (IEEE1394) (rear)	1	1
Internal speakers	1	1
USB 2.0 total	11	11
USB front	2	2
USB rear	6	6
USB internal	3, thereof 1 type A	3, thereof 1 type A
Serial (RS-232)	1	1
Mouse / Keyboard (PS/2)	1 / 1	1 / 1
Ethernet (RJ-45)	1	1
Interface Module notes	Anytime USB charge functionality	Anytime USB charge functionality
<b>Drive bays</b>		
Drive bays total	7	
3.5-inch internal bays	4	
5.25-inch external bays	3	
<b>Slots</b>		
PCI-Express 2.0 x16	2 x (312 mm / ) Full height	
PCI-Express 1.0 x4 (mech. x8)	1 x (312 mm) Full height	
PCI-Express 2.0 x4 (mech. x8)	1 x (312 mm) Full height	
PCI (32-bit / 33 MHz)	2 x (312 mm / ) Full height	
<b>Electrical values</b>		
Power consumption note	190 W depending on configuration	190 W depending on configuration
Rated voltage range	100 V - 240 V	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz	50 Hz - 60 Hz
Max. output of single power supply	500 W up to 85% efficiency	700 W up to 85% efficiency

**Noise for standard configuration (HDD, ODD, FDD)**

<b>Noise emission</b>	According to ISO9296 (LpAm at bystander position)	According to ISO9296 (LpAm at bystander position)
<b>Idle mode</b>	23 dB(A)	23 dB(A)
<b>Office mode</b>	23 dB(A)	23 dB(A)
<b>Noise notes / description</b>	depending on configuration	depending on configuration

**Dimensions / Weight / Environmental**

<b>Dimensions (W x D x H)</b>	215 x 522 x 446 mm
<b>Operating position</b>	Vertical / horizontal
<b>Weight</b>	18 kg
<b>Weight notes</b>	Actual weight may vary depending on configuration
<b>Operating ambient temperature</b>	15 - 35°C
<b>Operating relative humidity</b>	10 - 75 %

**Compliance**

<b>Product</b>	CELSIUS M470-2	CELSIUS M470-2 POWER
<b>Model</b>	MCS-D2778	MCS-D2778
<b>Germany</b>	GS depending on configuration	GS depending on configuration
<b>Europe</b>	CE	CE
<b>USA/Canada</b>	cCSAus FCC Class B	cCSAus FCC Class B
<b>Global</b>	RoHS (EU & China) ENERGY STAR® 5.0 Medical EMC standard IEC60601-1-2 in combination with medical kit	RoHS (EU & China) ENERGY STAR® 5.0 Medical EMC standard IEC60601-1-2 in combination with medical kit
<b>China</b>	CCC	CCC
<b>Compliance link</b>	<a href="https://sp.ts.fujitsu.com/sites/certificates/">https://sp.ts.fujitsu.com/sites/certificates/</a>	

**Security**

<b>System protection</b>	Kensington Lock support Eye for padlock Seal option Intrusion switch Optional: Integrated cabinet lock
<b>Audit proof protection</b>	Write protect option for the Flash EPROM Boot protection for floppy disk / CD drive and write protection for floppy disk drive Dynamic USB security for full hardware USB protection Control of all USB interfaces External USB interfaces detachable separately Embedded security (TPM 1.2) - Infineon
<b>Access protection</b>	Optional: Access protection via internal SmartCard reader User and supervisor BIOS password Optional: SmartCase Logon+

**Additional Software**

<b>Additional software (preinstalled)</b>	Norton Internet Security (incl. Firewall) 60 days version Microsoft® Office Starter: reduced-functionality Word and Excel® only, with advertising. No PowerPoint® or Outlook®. Buy Office 2010 to use the full-featured software.	
<b>Additional software (optional)</b>	Drivers & Utilities DVD (DUDVD) Windows® 7, Windows® Vista and Windows® XP CyberLink PowerDVD 9 Nero 9 Essentials XL Recovery DVD (Windows® 7)	Drivers & Utilities DVD (DUDVD) Windows® 7, Windows® Vista and Windows® XP CyberLink PowerDVD 9 Nero 9 Essentials XL Recovery DVD (Windows® 7)
<b>Spare part availability</b>	Keyboard on (Special Fujitsu keyboard required) Thermal management 5 years	Keyboard on (Special Fujitsu keyboard required) Thermal management 5 years

**Manageability**

<b>Manageability technology</b>	DeskUpdate Driver management		
<b>Manageability software</b>	DeskView 10.x client management including: DASH 1.1 remote system management		
<b>DeskView components</b>	On/Offline remote client management Detailed system inventory management and reports BIOS Management Remote power management System notifications Security Remote Control DeskView Helpdesk Integration		
<b>Supported standards</b>	WMI BootP (made4you) PXE WoL (Wake on LAN)	WMI BootP (made4you) PXE	WMI BootP (made4you) PXE WoL (Wake on LAN)
<b>Manageability link</b>	<a href="http://ts.fujitsu.com/manageability">http://ts.fujitsu.com/manageability</a>		<a href="http://ts.fujitsu.com/manageability">http://ts.fujitsu.com/manageability</a>

**Input device / components**

<b>Input devices (optional)</b>	Optical USB tilt wheel mouse Optical USB/PS2 tilt wheel mouse Space Explorer USB Space Navigator USB Space Pilot USB Keyboard
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**Warranty**

<b>Standard Warranty</b>	3 years (depending on country)
<b>Service level</b>	On-site Service (depending on country)
<b>Maintenance and Support Services - the perfect extension</b>	
<b>Recommended Service</b>	5x9, Response Time: Next Business Day
<b>Service Weblink</b>	<a href="http://www.fujitsu.com/fts/services/support">http://www.fujitsu.com/fts/services/support</a>

## More information

### Fujitsu platform solutions

In addition to Fujitsu CELSIUS M470, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

#### Dynamic Infrastructures

With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

#### Computing Products

[www.fujitsu.com/global/services/computing/](http://www.fujitsu.com/global/services/computing/)

#### Software

[www.fujitsu.com/software/](http://www.fujitsu.com/software/)

### More information

Learn more about Fujitsu CELSIUS M470, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.  
[www.fujitsu.com/fts/CELSIUS](http://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 resolve issues of environmental energy efficiency through IT. Please find further information at <http://www.fujitsu.com/global/about/environment/>



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