

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

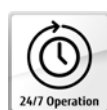
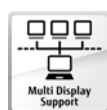
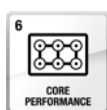
Stability, compatibility and performance for the main workstation applications

- 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>	Genuine Windows® 7 Professional 64-bit Genuine Windows® 7 Professional 32-bit
<b>Operating system compatible</b>	Genuine Windows® XP Professional x64 Edition Genuine 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>	Entry 3D: AMD FirePro™ V4900, 1 GB, 400 stream processors, PCIe x16, Dual Link DVI-I, 2x DisplayPort	
	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: ATI FirePro™ V7800, 2 GB, 1140 stream processors, PCIe x16, Dual Link DVI-I, 2x DisplayPort	
	High-end 3D: NVIDIA® Quadro® 4000, 2 GB, 256 cores, PCIe x16, Dual Link DVI-I, 2x DisplayPort	
	Midrange 3D: ATI FirePro™ V5800, 1 GB, 800 stream processors, 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: ATI FirePro™ V4800, 1 GB, 400 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	
	GPU computing card: NVIDIA® Tesla™ C2075, 6 GB, 448 cores, PCIe x16, 1x DVI-I	
<b>Hard disk drives (internal)</b>	SSD SATA, 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 internal	
	HDD SATA III, 10000 rpm, 300 GB, 2.5-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	

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

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	

## Slots

## Electrical values

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)

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

## Dimensions / Weight / Environmental

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

## Compliance

Product	CELSIUS M470-2	CELSIUS M470-2 POWER
Model	MCS-D2778	MCS-D2778
Germany	GS depending on configuration	GS depending on configuration
Europe	CE	CE
USA/Canada	cCSAus FCC Class B	cCSAus FCC Class B
Global	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
China	CCC	CCC
Compliance link	<a href="https://sp.ts.fujitsu.com/sites/certificates/">https://sp.ts.fujitsu.com/sites/certificates/</a>	

## Security

System protection	Kensington Lock support Eye for padlock Seal option Intrusion switch Optional: Integrated cabinet lock
Audit proof protection	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
Access protection	Optional: Access protection via internal SmartCard reader User and supervisor BIOS password Optional: SmartCase Logon+

## Additional Software

Additional software (preinstalled)	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.
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**Additional Software**

<b>Additional software (optional)</b>	Drivers & Utilities DVD (DUDVD) Windows® 7 & Vista & XP CyberLink PowerDVD 9 Nero 9 Essentials XL Recovery DVD (Windows® 7) Windows® XP 64 downgrade pack Windows® XP 32 downgrade pack	Drivers & Utilities DVD (DUDVD) Windows® 7 & Vista & XP CyberLink PowerDVD 9 Nero 9 Essentials XL Recovery DVD (Windows® 7) Windows® XP 64 downgrade pack Windows® XP 32 downgrade pack
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	Keyboard on (Special Fujitsu keyboard required) Thermal management	Keyboard on (Special Fujitsu keyboard required) Thermal management
<b>Spare part availability</b>	5 years	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**

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

**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://ts.fujitsu.com/Supportservice">http://ts.fujitsu.com/Supportservice</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.  
<http://ts.fujitsu.com/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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