

# DATA SHEET

## CELSIUS M460

Your thoroughbred workstation

Issue: November 2009

### CELSIUS M460

The CELSIUS M Series is the performing mainstream workstation with a good balance between price and power. If you need more power and expandability than an entry-level workstation can offer, the CELSIUS M460 is your choice for many business segments, such as CAD/CAE, virtual reality and finance. The ISV certification process enables workstation users to run their preferred applications with maximum system stability.



### Extremely powerful workstations

Get more done in less time

- Fastest available processors, graphics and hard disk drives

### Noise-reduced system

Silent working environment

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

### Serviceability

Minimum downtime if system failure

- Service-friendly system design

### Leading workstation application certification

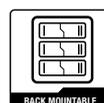
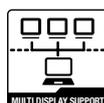
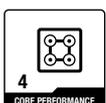
Maximum compatibility and performance with customer-preferred applications

- Full support for ISV applications and easy integration into existing IT environments

### Built to order

Free configurability for all product lines

- Customer is given a system optimized for his requirements



## Components

### Processor

Intel® Core™2 Quad processor Q9650 (Quad Core, 3.0 GHz, 12 MB, 1333 MHz)  
Intel® Core™2 Quad processor Q9550 (Quad Core, 2.83 GHz, 12 MB, 1333 MHz)  
Intel® Core™2 Quad processor Q9505 (Quad Core, 2.83 GHz, 6 MB, 1333 MHz)  
Intel® Core™2 Quad processor Q9400 (Quad Core, 2.66 GHz, 6 MB, 1333 MHz)  
Intel® Core™2 Quad processor Q8300 (Quad Core, 2.5 GHz, 4 MB, 1333 MHz)  
Intel® Core™2 Duo processor E8600 (Dual Core, 3.33 GHz, 6 MB, 1333 MHz)  
Intel® Core™2 Duo processor E8500 (Dual Core, 3.16 GHz, 6 MB, 1333 MHz)  
Intel® Core™2 Duo processor E8400 (Dual Core, 3.0 GHz, 6 MB, 1333 MHz)  
Intel® Core™2 Duo processor E7600 (Dual Core, 3.06 GHz, 3 MB, 1066 MHz)  
Intel® Core™2 Duo processor E7500 (Dual Core, 2.93 GHz, 3 MB, 1066 MHz)  
Intel® Core™2 Duo processor E7400 (Dual Core, 2.8 GHz, 3 MB, 1066 MHz)

### Memory modules

4 GB (2 module(s) 2 GB) DDR2, ECC, 800 MHz, PC2-6400, DIMM  
4 GB (2 module(s) 2 GB) DDR2, 800 MHz, PC2-6400, DIMM  
2 GB (2 module(s) 1 GB) DDR2, ECC, 800 MHz, PC2-6400, DIMM  
2 GB (2 module(s) 1 GB) DDR2, 800 MHz, PC2-6400, DIMM  
2 GB (1 module(s) 2 GB) DDR2, 800 MHz, PC2-6400, DIMM  
1 GB (1 module(s) 1 GB) DDR2, 800 MHz, PC2-6400, DIMM

### Graphics add on cards (optional)

Remote Graphics: CELSIUS RemoteAccess Card, , PCIe x1, 2x DVI-I  
Ultra-high-end 3D: NVIDIA® Quadro FX 4600, 768 MB, PCIe x16, 2x DL-DVI-I  
High-end 3D: NVIDIA® Quadro FX 3800, 1024 MB, PCIe x16, DL-DVI-I, 2x DP  
High-end 3D: NVIDIA® Quadro FX 3700, 512 MB, PCIe Gen2 x16, 2x DL-DVI-I  
Midrange 3D: NVIDIA® Quadro FX 1800, 768 MB, PCIe x16, DL-DVI-I, 2x DP  
Midrange 3D: NVIDIA® Quadro FX 1700, 512 MB, PCIe x16, 2x DL-DVI-I, HDTV-out  
Midrange 3D: NVIDIA® Quadro FX 580, 512 MB, PCIe x16, DL-DVI-I, 2x DP  
Midrange 3D: NVIDIA® Quadro FX 570, 256 MB, PCIe x16, 2x DL-DVI-I  
Midrange 3D: ATI FirePro™ V5700, 512 MB, PCIe x16, DL-DVI-I, 2x DP  
Midrange 3D: ATI FireGL V5600, 512 MB, PCIe x16, 2x DL-DVI-I  
Midrange 3D: ATI FireGL V5200, 256 MB, PCIe x16, 2x DL-DVI-I  
Entry 3D: NVIDIA® Quadro FX 380, 256 MB, PCIe x16, 2x DL-DVI-I  
Entry 3D: NVIDIA® Quadro FX 370, 256 MB, PCIe x16, DL-DVI-I, SL DVI-I  
Entry 3D: ATI FirePro™ V3700, 256 MB, PCIe x16, 2x DL-DVI-I  
Multi monitor 2D: NVIDIA® Quadro NVS 440, 256 MB, PCIe x1, 4x SL DVI-I  
Multi monitor 2D: NVIDIA® Quadro NVS 290, 256 MB, PCIe x1, 2 x SL DVI-I  
Professional 2D: NVIDIA® Quadro NVS 295, 256 MB, PCIe x16, 2x DP  
Professional 2D: NVIDIA® Quadro NVS 290, 256 MB, PCIe x16, 2 x SL DVI-I

### Hard disk drives (internal)

SSD SATA, 256 GB, 2.5-inch  
SSD SATA, 128 GB, 2.5-inch  
SATA II, 10000 rpm, 300 GB, 2.5-inch, S.M.A.R.T.  
SATA II, 10000 rpm, 150 GB, 2.5-inch, S.M.A.R.T.  
SATA II, 7200 rpm, 1000 GB, 3.5-inch, S.M.A.R.T. business critical  
SATA II, 7200 rpm, 1000 GB, 3.5-inch, S.M.A.R.T.  
SATA II, 7200 rpm, 750 GB, 3.5-inch, S.M.A.R.T. business critical  
SATA II, 7200 rpm, 500 GB, 3.5-inch, S.M.A.R.T. business critical  
SATA II, 7200 rpm, 500 GB, 3.5-inch, S.M.A.R.T.  
SATA II, 7200 rpm, 320 GB, 3.5-inch, S.M.A.R.T.  
SATA II, 7200 rpm, 160 GB, 3.5-inch, S.M.A.R.T.  
SAS, 15000 rpm, 450 GB, 3.5-inch  
SAS, 15000 rpm, 300 GB, 3.5-inch  
SAS, 15000 rpm, 146 GB, 3.5-inch  
SAS, 15000 rpm, 73 GB, 3.5-inch

### Hard disk notes

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.

<b>Drives (optional)</b>	1.44 MB Floppy
	Blu-ray Disc Triple Writer
	DVD
	DVD Super Multi
	MultiCard Reader 20in1, 3,5-Inch

<b>Interface add on cards/components (optional)</b>	WLAN III, 802.11g/Draft-n (Windows only)
	WLAN II, 802.11g, 54Mbps (Windows only)
	Parallel Interface
	Gigabit Ethernet PCIe x1
	eSATA Interface
	Dual serial card, PCI, EX-43092

<b>Base unit</b>	<b>CELSIUS M460</b>
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<b>Mainboard</b>	
Mainboard type	D2608
Formfactor	ATX
Chipset	Intel® X38 Express, Intel® 82801IR ICH9R
Processor socket	LGA 775
Processor quantity maximum	1
Memory slots	4 DIMM
Supported capacity RAM (max.)	8 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).
LAN	10/100/1000 MBit/s Intel® 82566 DM
WLAN	Optional
Audio codec	Realtek ALC262
Audio features	High Definition audio

<b>I/O controller on board</b>	
Serial ATA total	6
thereof eSATA	1, optional
SATA RAID support	0, 1, 10, 5
SAS Controller type	Optional
SAS RAID support	0,1

<b>Interfaces</b>	
Audio: in (rear)	2
Audio: out / SPDIF (rear)	1
Ethernet (RJ-45)	1
FireWire (IEEE1394) (front)	1
FireWire (IEEE1394) (rear)	1
Front Audio: in	1
Front Audio: out	1
Internal speakers	1
Mouse / Keyboard (PS/2)	2
Multicardreader	Optional
Parallel	Optional
Serial (RS-232)	1
USB front	2
USB internal	2
USB rear	8
USB 2.0 total	12

<b>Drive bays</b>	
Drive bays total	7

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**Drive bays**

3.5-inch internal bays	4
5.25-inch external bays	3

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**Slots**

PCI-Express Gen2 x16	2 x (312 mm) full height
PCI-Express x4 (mech. x8)	1 x (312 mm) full height
PCI-Express x1	1 x (312 mm) full height
PCI (32-bit / 33 MHz)	3 x (312 mm) full height

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**Graphics brand name**

Refresh rate 1024 x 768 (recommended / max.)	/
Refresh rate 1280 x 1024 (recommended / max.)	/
Refresh rate 1600 x 1200 (recommended / max.)	/

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**Electrical values**

Power consumption note	190 W depending on configuration
Rated voltage range	100 - 240 V
Rated frequency range	50 - 60 Hz
Max. output of power supply	410 W

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

Noise emission	According to ISO9296 (LpAm at bystander position)
Noise Operation mode 4: High load	23 dB
Idle mode	23 dB
Noise notes / description	depending on configuration

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**Dimensions / Weight / Environmental**

Dimension (W x D x H)	215 x 520 x 446 mm
Operating position	Vertical / horizontal
Weight	18 kg
Weight notes	Weight may vary depending on actual configuration
Operating ambient temperature	15 - 35°C
Operating relative humidity	10 - 75 %

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**Compliance**

Product	CELSIUS M460
Model	MCS-D2608
Germany	GS
Europe	CE
USA/Canada	cCSAus FCC Class B
Global	RoHS (Restriction of hazardous substances) IEC60601-1-2 in combination with medical kit
China	CCC
Compliance link	<a href="https://sp.ts.fujitsu.com/sites/certificates/default.aspx">https://sp.ts.fujitsu.com/sites/certificates/default.aspx</a>

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**Security**

Physical security	Kensington Lock support Eye for padlock Seal option Intrusion switch
System security	Write protect option for the Flash EPROM Boot protection for floppy disk / CD drive and write protection for floppy disk drive
User security	Optional: Access protection via internal SmartCard reader Hard disk password User and supervisor BIOS password Optional: SmartCase Logon+

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## Operating system

Operating system optional preinstalled	Microsoft® Windows® 7 Professional 64-bit Microsoft® Windows® 7 Professional 32-bit Microsoft® Windows Vista® Business 64-bit Microsoft® Windows Vista® Business 32-bit
Operating system compatible	Microsoft® Windows® XP Professional x64 Edition Microsoft® Windows® XP Professional Linux
Operating system notes	RedHat / Novell certification pending For some configurations third party drivers are currently not available or configuration restrictions may apply.

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## Additional Software

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

Manageability type	DeskView 10
Manageability link	<a href="http://ts.fujitsu.com/manageability">http://ts.fujitsu.com/manageability</a>

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## Input device / components

	Optical USB tilt wheel mouse
Input devices (optional)	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

Service level	(depending on country)
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## Maintenance and Support Services - the perfect extension

Recommended Service	5x9, Response Time: Next Business Day
Service Weblink	<a href="http://ts.fujitsu.com/Supportservice">http://ts.fujitsu.com/Supportservice</a>

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Information about environmental care, policies, programs and our Environmental Guideline FSC 03230:

<http://ts.fujitsu.com/aboutus>

Take back and Recycling information:

<http://ts.fujitsu.com/recycling>