

DELLTM

OPTIPLEXTM 360

TECHNICAL GUIDEBOOK

INSIDE THE OPTIPLEX 360



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DELL™ OPTIPLEX™ 360

Designed with growing businesses and organizations with less complex IT infrastructures in mind, the OptiPlex 360 is built with practical features focused on providing essential business value. The OptiPlex 360 delivers reliable, cost effective business productivity with Intel® Core™2 Duo processors, high-speed memory options and integrated video support. Customizable to meet your business needs, the OptiPlex 360 offers technology that provides basic manageability, security, and energy efficiency. All backed by a choice of smart, desktop-focused services that provide your IT professionals the tools they need throughout the technology lifecycle, from acquisition to asset retirement. Essential business value of the OptiPlex 360 is just one of the reasons Dell is a leader in business desktops – and why OptiPlex is the easiest choice you'll make today.

OPTIPLEX MEANS BUSINESS

The OptiPlex 360 delivers essential performance to help keep your business running:

- Exceptional value for reliable business class computing, featuring Intel® Core™2 Duo, Pentium Dual Core and Celeron^(R) processors
- Planning support with up to 12 month lifecycle, stable images, managed transitions and Dell ImageWatch™ to provide early notification of upcoming technology changes
- Customizable Global service and support through Dell ProSupport™ service options
- Dell Client Manager remote manager allows easy system manageability

OPTIPLEX IS EASY TO OWN

The OptiPlex 360 is designed and built to be both flexible and easily scalable to meet your changing needs:

- The right fit for basic user productivity with choice of two form factors
- Time-saving tool-less design and Dell exclusive DirectDetect™ troubleshooting LED's help result in reduced maintenance and service costs
- Add predictability to the IT management process with a minimum 60-day transition period between product transitions
- Dell client manager enabling, remote inventory, diagnosis & system hardware management

OPTIPLEX SECURITY

OptiPlex provides basic security offerings to help protect your critical data:

- System and BIOS passwords to help prevent unauthorized access
- Chassis loop lock provides physical system protection
- Proactive Dell ProSupport services help reduce risk and protect your sensitive data with Hard Drive Data Recovery and Certified Data Destruction

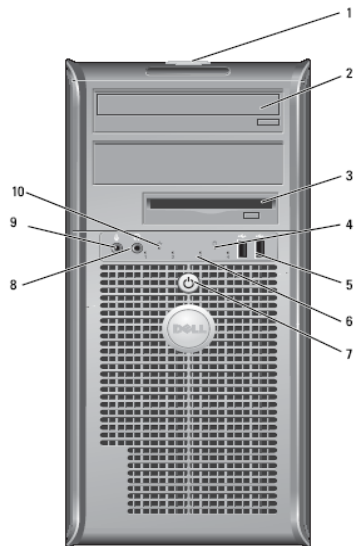
OPTIPLEX GETS GREEN

Dell is committed to being the greenest PC Company on the planet. And the OptiPlex 360 delivers smart energy choices so that you can:

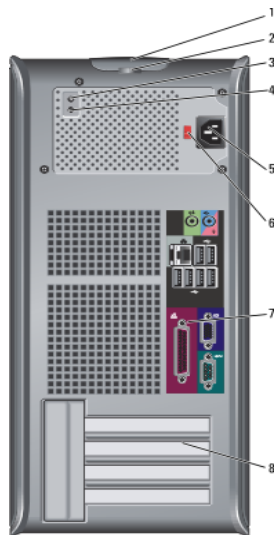
- Achieve outstanding performance with less energy through Dell's Energy Smart power management
- Help reduce power consumption—and cost—with Dell's power supply, which is up to 88% efficient, available after Nov 17, 2008 on selected models

Recycle your current desktops free of charge with the purchase of a new Dell OptiPlex

MINI TOWER COMPUTER (MT) VIEW

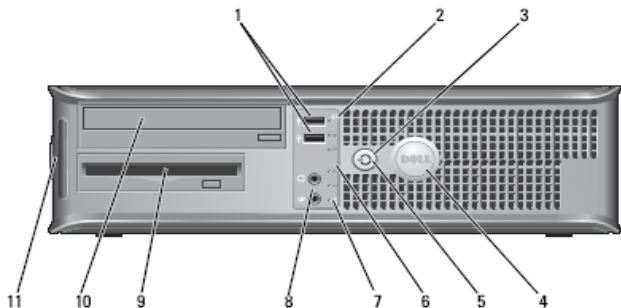


FRONT VIEW			
1	Service Tag	6	Diagnostic lights
2	Optical drive	7	power button
3	Floppy drive	8	headphone connector
4	Drive activity light	9	microphone connector
5	USB 2.0 connectors(2)	10	LAN indicator light

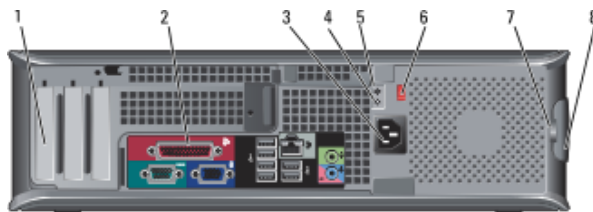


BACK VIEW			
1	cover-release latch	5	power connector
2	padlock ring	6	voltage selector switch
3	Built in Self Test (BIST) LED	7	back panel connectors
4	BIST switch	8	card slots

DESKTOP COMPUTER (DT) VIEW

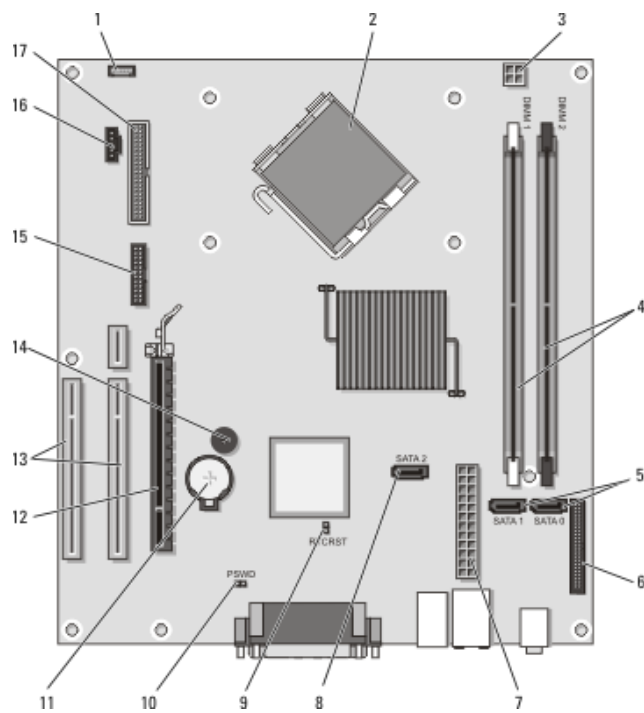


FRONT VIEW			
1	USB 2.0 connectors (2)	7	LAN indicator light
2	drive activity light	8	headphone and microphone connectors
3	power button	9	floppy drive
4	Dell badge	10	optical drive
5	power light	11	Service Tag
6	diagnostic lights		



BACK VIEW			
1	card slots	5	Built in Self Test (BIST) LED
2	back panel connectors	6	voltage selection switch
3	power connector	7	padlock ring
4	BIST switch	8	cover-release latch

SYSTEM BOARD



COMPONENTS			
1	speaker connector (INT_SPKR)	10	password jumper (PSWD)
2	processor connector (CPU)	11	battery socket (BATTERY)
3	processor power connector (12VPOWER)	12	PCI Express x16 card connector (SLOT1)
4	memory module connectors (DIMM_1, DIMM_2)	13	PCI card connectors (SLOT2 and SLOT3)
5	SATA drive connectors (SATA0, SATA1)	14	internal buzzer (SPKR)
6	front-panel connector (FRONTPANEL)	15	serial/ PS/2 connector (PS2/ SER2)
7	power connector (POWER)	16	fan connector (FAN_CPU)
8	SATA drive connectors (SATA2,)	17	floppy drive connector (FLOPPY)
9	RTC reset jumper (RTCRST)		

MARKETING SYSTEM CONFIGURATIONS

NOTE: Offerings may vary by region. For more information regarding the configuration of your computer, click Start>Help and Support and select the option to view information about your computer.

OPERATING SYSTEM

NOTE: One of the following Operating Systems will be preinstalled.

	MT	DT
Windows Vista® operating system	Windows Vista® Business SP1, Windows Vista® Home Basic SP1	
Windows XP® operating system (through downgrade right)	Windows® XP Professional SP3	
Other	FreeDOS for (n-series all countries except China), Novell SLED (China only)	
OS Media Support	X	X

CHIPSET

	MT	DT
Chipset	Intel® G31Express Chipset (ICH7)	
Non-volatile memory on chipset		
BIOS Configuration FWH (firmware hub)	8Mb located at SPI_FLASH on chipset	
NIC EEPROM	2Kb located at LOM_FLASH on chipset	

PROCESSOR**NOTE:** Processor numbers are not a measure of performance.

Processor (Speed, Cache, FSB)	MT	DT
Intel® Core 2 Duo with Intel, Enhanced Intel Speed Step Technology and Execute Disable Bit		
Intel Core 2 Duo E8600 Processor (3.33GHz, 6MB L2 cache, 1333MHz FSB)	X	X
Intel Core 2 Duo E8500 Processor (3.16GHz, 6MB L2 cache, 1333MHz FSB)	X	X
Intel Core 2 Duo E8400 Processor (3.00GHz, 6MB L2 cache, 1333MHz FSB)	X	X
Intel Core 2 Duo E7600 Processor (3.06GHz, 3MB L2 cache, 1066MHz FSB)	X	X
Intel Core 2 Duo E7500 Processor (2.93GHz, 3MB L2 cache, 1066MHz FSB)	X	X
Intel Core 2 Duo E7400 Processor (2.80GHz, 3MB L2 cache, 1066MHz FSB)	X	X
Intel® Pentium dual core with Intel, Enhanced Intel Speed Step Technology and Execute Disable Bit		
Intel Core 2 Duo E6300 Processor (2.8Hz, 2MB L2 cache, 1066MHz FSB)	X	X
Intel Core 2 Duo E5400 Processor (2.7GHz, 2MB L2 cache, 800MHz FSB)	X	X
Intel Core 2 Duo E5300 Processor (2.6Hz, 2MB L2 cache, 800MHz FSB)	X	X
Intel Core 2 Duo E5200 Processor (2.5GHz, 2MB L2 cache, 800MHz FSB)	X	X
Intel® Celeron dual core with Intel, Enhanced Intel Speed Step Technology and Execute Disable Bit		
Intel Celeron Dual Core E1600 Processor (2.4GHz, 512K L2 cache, 800MHz FSB)	X	X
Intel Celeron Dual Core E1500 Processor (2.2GHz, 512K L2 cache, 800MHz FSB)	X	X
Intel Celeron Dual Core E1400 Processor (2.0GHz, 512K L2 cache, 800MHz FSB)	X	X
Intel® Celeron with Enhanced Execute Disable Bit		
Intel Celeron 450 Processor (2.5GHz, 512K L2 cache, 800MHz FSB)	X	X
Intel Celeron 440 Processor (2.0GHz, 512K L2 cache, 800MHz FSB)	X	X

MEMORY

Your computer supports a maximum of 4 GB of memory when you use two 2-GB DIMMs.

Memory modules should be installed in pairs of matched memory size, speed, and technology. If the memory modules are not installed in matched pairs, the computer will continue to operate, but with a slight reduction

	MT	DT
Type: DDR2 Synch DRAM Non-ECC Memory	800MHz speeds	
DIMM Slots	2	2
DIMM Capacities	Up to 2GB	Up to 2GB
Minimum Memory	1GB	1GB
Maximum Memory with 800MHz speed memory	4GB	4GB
800MHz Memory configurations		
4GB ¹ DDR2 Non-ECC SDRAM, 800MHz, (2 DIMM)	X	X
2GB DDR2 Non-ECC SDRAM, 800MHz, (1DIMM)	X	X
2GB DDR2 Non-ECC SDRAM, 800MHz, (2 DIMM)	X	X
1GB DDR2 Non-ECC SDRAM, 800MHz, (2 DIMM)	X	X
1GB DDR2 Non-ECC SDRAM, 800MHz, (1 DIMM)	X	X

¹The total amount of available memory will be less than 4GB. The amount less depends on the actual system configuration. To fully utilize 4GB or more of memory requires a 64-bit enabled processor and 64-bit operating system.

DRIVES AND REMOVABLE STORAGE

	MT	DT
Bays:		
3.5-inch bay (External Floppy)	1	1
5.25-inch bay (External Optical)	2	1
Hard Drives Supported (Internal)	2	1
Optical Drives Supported (External)	2	1
Interface:		
SATA (number of connectors)	3	2
Floppy/Diskette	1	1
Hard Drive: Size, type, speed, RPM		
320GB ¹ SATA 7200 RPM HDD	X	X
250GB SATA 7200 RPM HDD	X	X
160GB ¹ SATA 7200 RPM HDD	X	X
80GB SATA 7200 RPM HDD	X	X
2nd HDD support: (includes two matching capacity/speed hard drives)		
320GB SATA 7200 RPM HDD	X (no Raid support)	
250GB SATA 7200 RPM HDD	X (no RAID support)	
160GB SATA 7200 RPM HDD	X (no Raid support)	
80GB SATA 7200 RPM HDD	X (no RAID support)	

DRIVES AND REMOVABLE STORAGE

	MT	DT
Optical Drive: (SFF/USFF requires a slimline optical drive)		
DVD +/- RW ²	16x SATA	16x SATA
DVD-ROM ³	16x SATA	16x SATA
Combo Drive CDRW/DVD	48x/32CDRW/DVD Combo SATA	48x/32CDRW/DVD Combo SATA
Floppy Diskette Drive: (SFF requires a slimline floppy drive)		
Floppy Drive	1.44MB	1.44MB

¹ For hard drives, GB means 1 billion bytes and TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.

² Discs burned with this drive may not be compatible with some existing drives and players; using DVD+R media provides maximum compatibility.

³ DVD-ROM drives may have write-capable hardware that has been disabled via firmware modifications.

SYSTEM BOARD CONNECTORS

NOTE: See Detailed Engineering Specifications for maximum card dimensions support.

	MT	DT
PCI Slot(s): number of	2 FH	2LP or 2FH with riser
PCIe x16 Slot: number of	1 FH	1 LP Native or 1 FH with Combo Riser
Serial ATA (SATA)	3	2
Serial (native)	1	1

GRAPHICS/VIDEO CONTROLLER

NOTE: MT supports full height card, DT supports low profile card or full height card with optional riser.

	MT	DT
Integrated Intel® Graphics Media Accelerator 3100*	Integrated on system board	
Enhanced Graphic/Video* Options 1		
256MB ATI Radeon™ HD 2400 PRO with DVI and TV Out	Optional full height or low profile card	Optional low profile card
Enhanced Graphic/Video Options 1		
DVI (Digital) Adapter Card	Optional full height or low profile card	Optional low profile card
256MB ATI Radeon™ HD 3450 Graphics Dual VGA and TV Out	Optional full height or low profile card	Optional low profile card
256MB ATI Radeon™ HD 3450 Graphics Dual DVI or VGA and TV Out	Optional full height or low profile card	Optional low profile card
256MB nVidia GeForce 9300 GE	Optional full height or low profile card	Optional low profile card

EXTERNAL PORTS/CONNECTORS

NOTE: MT supports full height card, DT supports low profile card or full height card with optional riser. SFF supports low profile card.

See chassis diagrams section for port/connector locations

See chassis diagrams section for port/connector locations	MT	DT
USB 2.0	8	
Serial (native)	One rear	
PS/2 and Serial (low profile card includes PS/2 dongle)	Optional full height or low profile card	
Parallel	One rear	
Network Connector (RJ-45)	One rear	
Video:		
VGA	One rear	
Audio:		
Microphone-in	One minijack front	
Headphone	One minijack front	
Stereo line-in	One minijack rear	
Speakers line out	One minijack rear	
Risers: (PCI riser card will replace two PCI slots and Combo riser card will replace one PCI and one PCIe slots.)		
Combo full height riser with 1 PCI and 1 PCIe connector		Optional
Dual full height riser with 2 PCI connectors		Optional

COMMUNICATIONS - NETWORK ADAPTER (NIC)

NOTE: MT supports full height card, DT supports low profile card or full height card with optional riser.

	MT	DT
Broadcom (BCM5784M) Gigabit LAN 10/100/1000 (WOL, PXE)	Integrated on system board	
Broadcom NetXtreme 10/100/1000 PCIe Gigabit Networking Card	Optional full height	Optional Low-profile or full height card with optional riser

¹ This term does not connote an actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

COMMUNICATIONS – MODEM

NOTE: MT supports full height card, DT supports low profile card or full height card with optional riser.

	MT	DT
V.92 Data/Fax Controllerless Modem	Optional full height or low profile card	

AUDIO AND SPEAKERS

	MT	DT
ADI 1984A High Definition Audio	Integrated on system board	
Internal Chassis Speaker	Optional	
Dell AX210 (USB powered) Speakers	Optional	
Dell A510/AX510PA Speakers	Optional	

KEYBOARD AND MOUSE

	MT	DT
Dell USB Entry Keyboard	Optional	
Dell USB Entry QuietKey Keyboard (after Nov)	Optional	
Dell USB Entry Mouse	Optional	
Dell Palmrest	Optional	
Dell Logo Mouse Pad	Optional	

SECURITY

	MT	DT
Chassis lock slot	Standard	

SERVICE AND SUPPORT

NOTE: For more details on Dell Service Plans please to go to: www.dell.com/service/service_plans

	MT	DT
1 Year Next Business Day On-Site Service (1-1-1)	Standard	
3 Year Limited Hardware Warranty (3-3-0)	Optional	
3 Year Next Business Day On-site Service (3-3-3)	Optional	
Gold Tech Support	Optional	

SOFTWARE

	MT	DT
Dell Client Manager Standard	Available via Dell.com	
Norton Internet Security	90 Day Trial or optional subscription	
McAfee Security Center	90 Day Trial or optional subscription	

DETAILED ENGINEERING SPECIFICATIONS

SYSTEM DIMENSIONS (PHYSICAL)

NOTE: System Weight* and Shipping Weight* is based on a typical configuration and may vary based on PC configuration. A typical configuration includes: integrated graphics, one hard drive, one optical drive, and one diskette drive.

	MT	DT
Chassis Volume LITERS	33	16
Chassis Weight* POUNDS/KILOGRAMS	27.2 / 12.34	23 / 10.4
Chassis Dimensions: (HxWxD)		
Height INCHES/CENTIMETERS	16.3 / 41.4	4.5 / 11.4
Width INCHES/CENTIMETERS	7.3 / 18.5	15.7 / 39.9
Depth INCHES/CENTIMETERS	17.3 / 43.9	13.9 / 35.3
Shipping Weight* POUNDS/KILOGRAMS INCLUDES PACKAGING MATERIALS	19.73kg	12.7kg
Packaging Parameters (HxWxD)		
Height INCHES/CENTIMETERS	22.38 / 56.8	20.63 / 52.4
Width INCHES/CENTIMETERS	22.25 / 56.5	20.31 / 51.6
Depth INCHES/CENTIMETERS	14.25 / 36.2	11.75 / 29.8

SYSTEM BOARD CONNECTOR MAXIMUM ALLOWABLE DIMENSIONS

	MT	DT
PCI Slot(s) Dimensions: (HxL)	2	2
Height INCHES/CENTIMETERS	4.376/11.115	2.731/6.89
Length INCHES/CENTIMETERS	6.6/16.765*	6.6/16.765
PCIe x16 Slot Dimensions: (HxL)	1	1
Height INCHES/CENTIMETERS	4.376/11.115	2.731/6.89
Length INCHES/CENTIMETERS	6.6/16.765*	6.6/16.765
Risers: (PCI riser card will replace two PCI slots and Combo riser card will replace one PCI and one PCIe slots.)		
Combo Full Height Riser with 1 PCI and 1 PCIe connector (HxL)		
Height INCHES/CENTIMETERS		4.376/11.115
Length INCHES/CENTIMETERS		6.9/17.53**
Dual Full Height Riser with 2 PCI connectors (HxL)		1
Height INCHES/CENTIMETERS		4.376/11.115
Length INCHES/CENTIMETERS		6.9/17.53**

* Card length can be longer than standard Half-Length Card but cannot be a Full-Length Card.

** 6.9/17.53 in/cm is longer than the standard Half-Length Card

SYSTEM LEVEL ENVIRONMENTAL AND OPERATING CONDITIONS

	MT	DT
Temperature		
Operating	10° to 35°C (50° to 95°F)	10° to 35°C (50° to 95°F)
Non-Operating	-40° to 65°C (-40° to 149°F)	-40° to 65°C (-40° to 149°F)
Relative Humidity		
Operating (Noncondensing)	20 to 80 %* (*Max Wet bulb temperature= 29 °C)	20 to 80 %* (*Max Wet bulb temperature= 29 °C)
Non-Operating (Noncondensing)	5 to 95 %* (*Max Wet bulb temperature= 38 °C)	5 to 95 %* (*Max Wet bulb temperature= 38 °C)
Maximum vibration		
Operating	5 to 350 Hz at 0.0002 G2/Hz	0.25 G at 3 to 200 Hz at 0.5 octave/min
Non-Operating	5 to 500 Hz at 0.001 to 0.01 G2/Hz	0.5 G at 3 to 200 Hz at 1 octave/min
Maximum Shock		
Operating	40 G +/- 5% with pulse duration of 2 msec +/- 10% (equivalent to 51 cm/sec[20 in/sec])	40 G +/- 5% with pulse duration of 2 msec +/- 10% (equivalent to 51 cm/sec [20 in/sec])
Non-Operating	105 G +/- 5% with pulse duration of 2 msec +/- 10% (equivalent to 127 cm/sec[50 in/sec])	105 G +/- 5% with pulse duration of 2 msec +/- 10% (equivalent to 127 cm/sec [50 in/sec])
Maximum Altitude		
Operating	-15.2 to 3048 m (-50 to 10,000 ft)	-15.2 to 3048 m (-50 to 10,000 ft)
Non-Operating	-15.2 to 10,668 m (-50 to 35,000 ft)	-15.2 to 10,668 m (-50 to 35,000 ft)

POWER

Non EPA Power	MT	DT
Power Supply Wattage	255W	235W
AC input Voltage Range	90~135Vac, 180~264Vac (PFC)	90~135Vac, 180~264Vac (PFC)
AC input current	9A/3.5A(PFC),	6.5/3.5A(PFC)
AC input Frequency	47~63Hz	47~63Hz
AC holdup time	>16ms	>16ms
Minimum Efficiency (Active PFC, Energy Star Compliant)	NA	NA
Minimum Efficiency (Active PFC)	NA	NA
Minimum Efficiency (PFC)	65%	65%
DC parameters		
+3.3v output	11A	9A
+5.0v output	17A	15A
+12.0v output (add as many 12v rails as needed)	16A	14A
+5.0v auxiliary output	4A	4A
-12.0v output	0.2A	0.2A
Max total power	255W	235W
Max combined +3.3v / +5.0v power	121W	105W
Max combined 12.0v power (note: only if more than one 12v rail)	NA	NA.
BTUs/h (based on PSU max wattage)	870BTUs/h	801BTUs/h
3.3v CMOS battery (type and estimated battery life)	CR2032, 5years	CR2032, 5years
RTC accuracy (time of day)	4 second/24 hours	4 second/24hours
Power Supply Fan (size and type)	80mm	92mm
Compliance: (add all that apply)		
Energy star compliant	No	No
Blue Angel Compliant		
1W requirement	Yes	Yes
UL/cUL, CE, CCC, Nemko, TUV, BSMI	Yes	Yes

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EPA Power	MT	DT
Power Supply Wattage	255W	255W
AC input Voltage Range	90~264Vac	90~264Vac
AC input current	3.6A/1.8A,	4/2A
AC input Frequency	47~63Hz	47~63Hz
AC holdup time	>16ms	>16ms
Minimum Efficiency (Active PFC)	83%	83%
DC parameters		
+3.3v output	8A	5A
+5.0v output	15A	15A
+12.0v1 output	13A	18A
+12.0v2 output	7A	NA
+5.0v auxiliary output	4A	4A
-12.0v output	0.5A	0.5A
Max total power	255W	255W
Max combined +3.3v / +5.0v power	80W	91.5W
Max combined 12.0v power (note: only if more than one 12v rail)	220W	NA.
BTUs/h (based on PSU max wattage)	870BTUs/h	870BTUs/h
Power Supply Fan (size and type)	80mm	92mm
Compliance: (add all that apply)		
Energy Star compliant	Yes	Yes
Blue Angel Compliant	Yes	Yes
1W requirement	Yes	Yes
UL/cUL, CE, CCC, Nemko, TUV, BSMI	Yes	Yes

AUDIO

Integrated ADI 1984A High Definition Audio	MT	DT
High Definition Stereo support	Yes	Yes
Number of channels	2	2
Number of Bits / Audio resolution	16,20 and 24-bit resolution	16,20 and 24-bit resolution
Sampling rate (recording/playback)	Up to 192KHz	Up to 192KHz
Signal to Noise Ratio	96dB	96dB
Wavetable voices		
Analog Audio	Yes	Yes
Dolby Digital		
THX		
Digital out (S/PDIF)		
Audio Jack Impedance		
Microphone	1K~2Kohm	1K~2Kohm
Line-In	>10Kohm	>10Kohm
Line-Out	>10Kohm	>10Kohm
Headphone	16~500ohm	16~500ohm
Internal Speaker Power Rating	2W	2W

COMMUNICATIONS - NETWORK ADAPTER (NIC)

NOTE: MT supports full height card, DT supports low profile card or full height card with optional riser. SFF supports low profile card.

Integrated Broadcom5784M Gigabit ¹ LAN	MT	DT
Connector Type	RJ-45	
Data Rates supported	10/100/1000M	
Controller Details		
Controller bus architecture (example PCIe 1.0a x1)	PCIe V1.1 x 1	
Integrated memory	Yes (buffer memory)	
Data transfer mode (example Bus-Master DMA)	DMA	
Power consumption (full operation per data rate connection speed)	752 mW	
Power consumption (standby operation)	64 mW	
IEEE standards compliance (example 802.1P)	IEEE802.3, IEEE802.3u, IEEE802.3x	
Hardware Certifications (example FCC, B, GS mark...)	IEEE	
Boot ROM Support	Yes	

¹ This term does not connote an actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

COMMUNICATIONS - NETWORK ADAPTER (NIC) (CONT.)

	MT	DT
Network Transfer Mode (example Full Duplex, Half Duplex)		
Network Transfer Rate (example 10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps	
Environmental		
Operating temperature	0 to 125°C	
Operating humidity	NA	
Operating System Driver Support	Windows XP(32bit), Windows Vista (32bit)	
Manageability (examples WOL, PXE..)	WoL, PXE	
Management Capabilities Alerting (examples ASF 2.0 AMT...)		

COMMUNICATIONS – MODEM

NOTE: MT supports full height card, DT supports low profile card or full height card with optional riser. SFF supports low profile card.

V.92 DATA/FAX CONTROLLERLESS MODEM	MT	DT
Bus	PCI	
Connector	RJ-11	
Data Transmission	PCM - Pulse Coded Modulation (V.92/V.90) TCM - Trellis Coded Modulation (V.90/V.34/V.32 bis/V.32)	
Data Speeds	56kbps receive, 48kbps transmit	
Data Standards	ITU V.92/V.90, V.34/V.32 bis/V.32	
Fax Speeds	14.4kbps	
Fax Mode Capabilities	2-wire, half-duplex, synchronous	
Error Correction and Data Compression	V.44, V.42, V.42bis, MNP 2-4, MNP 5	
Power Management	WOR (wake on ring) capable	
Upgradeability	Driver upgradeable	
Video	V.80 Synchronous Access Mode (SAM) can be supported by software applications (not driver)	
Operating Temperature	0~50 degree C	
Operating Humidity	45 degree C 90% max	
Operating System Support	Vista 32, Windows XP 32	
Operating System Driver Support	Vista 32, Windows XP 32	

COMMUNICATIONS – MODEM (CONT.)

	MT	DT
Power Requirements	+3.0V~+3.6V, 116.6mW max	
Chipset	Conexant SmartHSFs/LF (CX11256 & CX20493)	
Dimensions of full height card INCHES/CENTIMETERS (L X H)	L: 5.25'/13.325cm H: 4.73'/12.002cm	
Dimensions of low profile card INCHES/CENTIMETERS (L X H)		L: 5.26'/13.366cm H: 3.12'/7.923cm

GRAPHICS/VIDEO CONTROLLER

NOTE: MT supports full height card, DT supports low profile card or full height card with optional riser. SFF supports low profile card.

INTEGRATED INTEL GRAPHICS MEDIA ACCELERATOR 3100*	MT	DT
Bus Type (example integrated or PCIe x16)	Integrated	
GPU core clock	400 MHz	
Frame Buffer Memory (onboard and shared) Size and Speed	Up to 256MB of shared system memory	
Maximum power consumption	9.0 W	
Overlay Planes	Yes	
Maximum Color Depth	32 bit	
Maximum Vertical Refresh Rate	85 Hz	
Multiple Display Support	No	
Operating Systems Graphics/ Video API Support	OpenGL 1.4/DirectX 9.0C	
Supported Resolutions and Max Refresh Rates (Hz) (Note: Analog and/or digital)	Up to 2048x1536 @ 75 Hz Supports flat panels up to 1920x1200 @ 60 Hz or digital CRT/HDTV at 1400x1050 @ 85 Hz	
External connectors	VGA	
Dimensions INCHES/CENTIMETERS (L X H)	N/A	
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	0° to 106° C (32° to 223° F)	
Relative Humidity Range	20% to 80% (non-condensing)	
Altitude Range	-15.2 to 3048 m (–50 to 10,000 ft)	

GRAPHICS/VIDEO CONTROLLER (CONT.)

256MB ATI RADEON™ HD 2400 PRO WITH DVI AND TV OUT*	MT	DT
Bus Type (example integrated or PCIe x16)	PCIEx16	
GPU core clock	400MHz	
Frame Buffer Memory (onboard and shared) Size and Speed	256MB 500Mhz	
Maximum power consumption	21W	
Overlay Planes	Yes	
Maximum Color Depth	32-bit	
Maximum Vertical Refresh Rate	85Hz	
Multiple Display Support	No	
Operating Systems Graphics/ Video API Support	D3D and Open GL	
Supported Resolutions and Max Refresh Rates (Hz) (Note: Analog and/or digital)	Max : 1920x1440/32bpp @ 75Hz Min : 640x480/8bpp @ 60Hz	
External connectors	DVI-D and S-video	
Dimensions of full height card INCHES/CENTIMETERS (L X H)	167.64mm x 120mm	167.64mm x 120mm
Dimensions of low profile card INCHES/CENTIMETERS (L X H)		167.64mm x 85mm
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	10°-50° C	
Relative Humidity Range	5-90% RH	
Altitude Range	0-20,000 ft.	

256MB AMD RADEON™ HD 3450 GRAPHICS DUAL DVI OR VGA AND TV OUT	MT	DT
Bus Type (example integrated or PCIe x16)	PCIEx16	
GPU core clock	600Mhz	
Frame Buffer Memory (onboard and shared) Size and Speed	500Mhz	
Maximum power consumption	22W	
Overlay Planes	Yes	
Maximum Color Depth	32-bit	
Maximum Vertical Refresh Rate	85Hz	
Multiple Display Support	Yes	
Operating Systems Graphics/ Video API Support	D3D and OpenGL	
Supported Resolutions and Max Refresh Rates (Hz) (Note: Analog and/or digital)	Max : 1920x1440/32bpp @ 75Hz Min : 640x480/8bpp @ 60Hz	
External connectors	DMS-59 and S-video	
Dimensions of full height card INCHES/CENTIMETERS (L X H)	167.64mm x 120mm	167.64mm x 120mm
Dimensions of low profile card inches/centimeters (L x H)		167.64mm x 85mm

**256MB AMD RADEON™ HD 3450 GRAPHICS
DUAL DVI OR VGA AND TV OUT (CONT.)**

	MT	DT
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	10°-50° C	
Relative Humidity Range	5-90% RH	
Altitude Range	0-20,000 ft.	

256MB nVidia GeForce 9300 GE	MT	DT
Bus Type (example integrated or PCIe x16)	PCIEx16	
GPU core clock	540Mhz	
Frame Buffer Memory (onboard and shared) Size and Speed	500Mhz	
Maximum power consumption	25W	
Overlay Planes	Yes	
Maximum Color Depth	32-bit	
Maximum Vertical Refresh Rate	85Hz	
Multiple Display Support	Yes	
Operating Systems Graphics/ Video API Support	D3D and OpenGL	
Supported Resolutions and Max Refresh Rates (Hz) (Note: Analog and/or digital)	Max : 1920x1440/32bpp @ 75Hz	
External connectors	DMS-59 ¹ and S-video	
Dimensions of full height card inches/centimeters (L x H)	167.64mm x 120mm	167.64mm x 120mm
Dimensions of low profile card inches/centimeters (L x H)		167.64mm x 85mm
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	10°-50° C	
Relative Humidity Range	5-90% RH	

* Significant of system memory may be allocated to support integrated graphics, depending on operating system, system memory size and other factors.

* Populating a up-graphics card in the x16 slot disabled onboard video.

HARD DRIVES**80GB SATA 7200 RPM HDD**

80GB SATA 7200 RPM HDD	MT	DT
Capacity* (bytes)	80GB	
Dimensions inches/centimeters (W x H x D)	4/10.16 x 1.028/2.61 x 5.787/14.7	
Interface type and Maximum speed	SATA, 3Gbps	
Internal buffer size (range)	2MB, 8MB	
Seek Time (RD/WR)	8.9/10.9ms	
Rotational Speed	7200Rpm	
Logical Blocks	512-byte	
Power Source		
DC Power Requirements	+5V ± 5%, +12V ± 10%	
DC Current (Peak)	1.6A(5V), 1.9A(12V)	
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	0° to 60°C	
Relative Humidity Range	8 to 90%	
Maximum Wet Bulb Temperature	37.7°C	
Altitude Range	-200~10000ft.	
Environmental Non-Operating Conditions (Non-Condensing):		
Operating Temperature Range	-40° to 65°C	
Relative Humidity Range	5 to 95%	
Maximum Wet Bulb Temperature	40°C	
Altitude Range	-200~40000ft.	

160GB SATA 7200 RPM HDD

160GB SATA 7200 RPM HDD	MT	DT
Capacity* (bytes)	160GB	
Dimensions inches/centimeters (W x H x D)	4/10.16 x 1.028/2.61 x 5.787/14.7	
Interface type and Maximum speed	SATA, 3Gbps	
Internal buffer size (range)	2MB, 8MB, 16MB	
Seek Time (RD/WR)	8.9/10.9ms	
Rotational Speed	7200Rpm	
Logical Blocks	512-byte	
Power Source		
DC Power Requirements	+5V ± 5%, +12V ± 10%	
DC Current (Peak)	0.86A(5V), 2.0A(12V)	
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	5° to 55°C	
Relative Humidity Range	5 to 90%	
Maximum Wet Bulb Temperature	37.7°C	
Altitude Range	-200~10000ft.	
Environmental Non-Operating Conditions (Non-Condensing):		
Operating Temperature Range	-40° to 65°C	
Relative Humidity Range	5 to 95%	
Maximum Wet Bulb Temperature	40°C	
Altitude Range	-200~40000ft.	

250GB SATA 7200 RPM HDD

250GB SATA 7200 RPM HDD	MT	DT
Capacity (bytes)	250,059,350,016	
Dimensions inches (W x D x H)	5.87 x 4 x 1	
Interface type and Maximum speed	Up to 3Gb/s	
Internal buffer size	8 MB	
Average Seek Time	8.5 ms	
Rotational Speed	7200 rpm	
Logical Blocks	488,397,168	
Power Source		
DC Power (Max)	Idle 7.0W, Active 10.0W	
DC Current	5V (.8A) and 12V (1.8A)	
Environmental Operating Conditions (Non-Condensing):		
Temperature Range	5°C to 60°C	
Relative Humidity Range	20% to 80% non-condensing	
Maximum Wet Bulb Temperature	29°C	
Altitude Range	-50 ft to 10000 ft	
Environmental Non-Operating Conditions (Non-Condensing):		
Temperature Range	-40°C to 65°C	
Relative Humidity Range	10% to 90% non-condensing	
Maximum Wet Bulb Temperature	38°C	
Altitude Range	-50 ft to 35000 ft	

320GB SATA 7200 RPM HDD

320GB SATA 7200 RPM HDD	MT	DT
Capacity (bytes)	320,072,933,376	
Dimensions inches (W x D x H)	5.87 x 4 x 1	
Interface type and Maximum speed	Up to 3Gb/s	
Internal buffer size	16 MB	
Average Seek Time	8.5 ms	
Rotational Speed	7200 rpm	
Logical Blocks	625,142,448	
Power Source		
DC Power (Max)	Idle 7.0W, Active 10.0W	
DC Current	5V (.8A) and 12V (1.8A)	
Environmental Operating Conditions (Non-Condensing):		
Temperature Range	5°C to 60°C	
Relative Humidity Range	20% to 80% non-condensing	
Maximum Wet Bulb Temperature	29°C	
Altitude Range	-50 ft to 10000 ft	
Environmental Non-Operating Conditions (Non-Condensing):		
Temperature Range	-40°C to 65°C	
Relative Humidity Range	10% to 90% non-condensing	
Maximum Wet Bulb Temperature	38°C	
Altitude Range	-50 ft to 35000 ft	

OPTICAL DRIVES**DVD +/- RW¹**

DVD +/- RW ¹	MT	DT
External Dimensions inches/centimeters (Without Bezel – W x H x D)	148.2 x 42 x 170mm (± 0.5mm)	
Weight (max) pounds/kilograms	0.8kg	
Interface type and speed	SATA, 1.5Gbps	
Disc Capacity	8cm and 12cm	
Internal buffer size	Supplier Dependant	
Access Times (typical)	Supplier Dependant	
Maximum Data Transfer Rates		
Writes	16x DVD/48x CD	
Reads	16x DVD/48x CD	
Power Source		
DC Power Requirements	12V, 5V	
DC Current	1200mA (12V)/ 900mA (5V)	
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	5° to 50°C	
Relative Humidity Range	20 to 80% RH	
Maximum Wet Bulb Temperature	29°C	
Altitude Range	-200 to 3048m	
Environmental Non-Operating Conditions (Non-Condensing):		
Operating Temperature Range	-40° to 65°C	
Relative Humidity Range	15 to 90% RH	
Maximum Wet Bulb Temperature	38°C	
Altitude Range	-200 to 10600m	

¹ Discs burned with this drive may not be compatible with some existing drives and players; using DVD+R media provides maximum compatibility.

OPTICAL DRIVES (CONT.)**DVD-ROM¹**

DVD-ROM ¹	MT	DT
External Dimensions inches/centimeters (Without Bezel – W x H x D)	148.2mm(6in)/42mm (2in)/ 190.5 (max)	
Weight (max) pounds/kilograms	750g	
Interface type and speed	SATA 1.5Gbit/s	
Disc Capacity	Standard	
Internal buffer size	supplier dependent	
Access Times (typical)	supplier dependent	
Maximum Data Transfer Rates		
Writes	N/A	
Reads	16x DVD/48x CD	
Power Source		
DC Power Requirements	12V, 5V	
DC Current (Peak)	1200mA (12V)/ 900mA (5V)	
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	5C to 50C	
Relative Humidity Range	20% to 80% RH	
Maximum Wet Bulb Temperature	29C	
Altitude Range	-200 to 3048m	
Environmental Non-Operating Conditions (Non-Condensing):		
Operating Temperature Range	-40C to 65C	
Relative Humidity Range	5% to 95% RH	
Maximum Wet Bulb Temperature	38C	
Altitude Range	-200 to 10600m	

¹ DVD-ROM drives may have write-capable hardware that has been disabled via firmware modifications.

COMBO DRIVE CD-RW

COMBO DRIVE CD-RW	MT	DT
External Dimensions inches/centimeters (Without Bezel – W x H x D)	148.2mm(6in)/42mm (2in)/ 190.5 (max)	
Weight (max) pounds/kilograms	750g	
Interface type and speed	SATA 1.5Gbit/s	
Disc Capacity	Standard	
Internal buffer size	supplier dependent	
Access Times (typical)	supplier dependent	
Maximum Data Transfer Rates		
Writes	48x CD	
Reads	16x DVD/48x CD	

OPTICAL DRIVES (CONT.)**COMBO DRIVE CD-RW**

COMBO DRIVE CD-RW	MT	DT
Power Source		
DC Power Requirements	12V, 5V	
DC Current (Peak)	1200mA (12V)/ 900mA (5V)	
Environmental Operating Conditions (Non-Condensing):		
Operating Temperature Range	5C to 50C	
Relative Humidity Range	20% to 80% RH	
Maximum Wet Bulb Temperature	29C	
Altitude Range	-200 to 3048m	
Environmental Non-Operating Conditions (Non-Condensing):		
Operating Temperature Range	-40C to 65C	
Relative Humidity Range	5% to 95% RH	
Maximum Wet Bulb Temperature	38C	
Altitude Range	-200 to 10600m	

More details for optical drives can be found at: <http://support.dell.com/support/systemsinfo/documentation.aspx?c=us&l=en&s=gen&~cat=7>

BIOS DEFAULTS

BIOS Factory Defaults (All Chassis's)

BIOS address	F0000h	USB front panel	On	Low power mode	Off
BIOS chip (NVRAM)	8Mb	Module bay		Password	Disabled
Setup Option	Default Factory Value	Serial #1 Port	Auto	POST hot keys	Setup& Boot Menu
Parallel Port mode	PS/2	Keyboard Num lock	Report	SATA drives	On
Parallel Port address	378	Keyboard error report	On	Floppy	Internal or USB if no internal
Wake on LAN	Off	Onboard Video	Auto	Limit CPUID	Off
EIST	Off	HD Acoustic mode	Bypass	ASF Settings	Off
Onboard Audio	On	Onboard Video buffer		HD Password	Disabled
Onboard Modem	On	Primary Video	Auto	Hyper-threading	On
Flex bay		Suspend mode	S3	Auto Power on	Off
Execute Disable	On	Chassis intrusion		Auto Power time	12:00am
Onboard NIC	On (without PXE)	TPM		SERR	On
PS2 Mouse	On	Smart drive error report	Off	Fast Boot	On
Onboard USB	On	A/C recovery	Off		

CHASSIS ENCLOSURE & VENTILATION REQUIREMENTS

ENCLOSURE VENTILATION

If your enclosure has doors, they need to be of a type that allows at least 30% airflow through the enclosure (front and back).

ENCLOSURE MINIMUM CLEARANCE

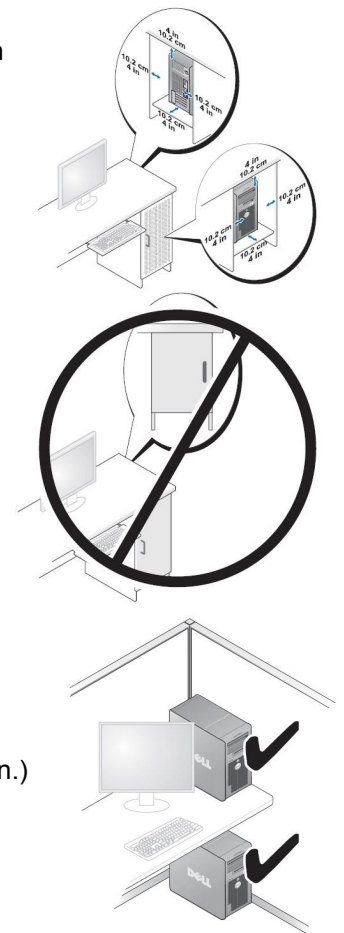
Leave a 10.2 cm (4 in.) minimum clearance on all vented sides of the computer to permit the airflow required for proper ventilation.

RECOMMENDED ENCLOSURE

Do not install your computer in an enclosure that does not allow airflow. This restricts the airflow and impacts your computer's performance, possibly causing it to overheat.

OPEN DESK MINIMUM CLEARANCE

If your computer is installed in a corner, on a desk, or under a desk, leave at least 5.1 cm (2 in.) clearance from the back of the computer to the wall to permit the airflow required for proper ventilation.



REGULATORY COMPLIANCE AND ENVIRONMENTAL

Product related conformity assessment and regulatory authorizations including Product Safety, Electromagnetic Compatibility (EMC), Ergonomics, and Communication Devices relevant to this product may be viewed at www.dell.com/regulatory_compliance. The Regulatory Datasheet for this product is located at: http://www.dell.com/content/topics/global.aspx/corp/environment/en/prod_datasheets

Details of Dell's environmental stewardship program to conserve product energy consumption, reduce or eliminate materials for disposal, prolong product life span and provide effective and convenient equipment recovery solutions may be viewed at www.dell.com/environment. Product related conformity assessment, regulatory authorizations, and information encompassing Environmental, Energy Consumption, Noise Emissions, Product Materials Information, Packaging, Batteries, and Recycling relevant to this product may be viewed by clicking the Design for Environment link on the webpage.

ACOUSTIC NOISE EMISSION INFORMATION

OPTIPLEX 360 MT

Component	Typical Configuration	High-end Configuration
CPU	E2220	E7300
Memory	1 GB DDRII 667MHz x1	1 GB DDRII 800MHz x2
HDD (#, capacity)	80 GB 7200 RPM SATA x1	160 GB 7200 RPM SATA x2
RMSD	CDRW/DVD Combo x1	DVDRW/DVD dual x1
Graphics Adapter	Integrated GMA3100	Integrated GMA3100

The Declared Noise Emission in accordance with ISO 9296 for the Dell Optiplex 360 MT is as follows:
(all values L_{WAd} expressed in bels; 1 bel=10 decibels, re 10^{-12} Watts)

Operating Mode	Typical Configuration Declared Sound Power (L_{WAd})	High-end Configuration Declared Sound Power (L_{WAd})
Idle	3.8	3.8
HDD Operating	3.8	3.8
ODD Operating	5.2	5.3
90% CPU	3.8	3.7

The Declared A-weighted Sound Pressure Level in decibels (re 2×10^{-5} Pa), at Operator, Bystander, and Desk Side Positions are measured in accordance with ISO 7779 7.6.1, 7.6.2, and C.15.2 and declared in accordance with ISO 9296 for this product is as follows¹:

Operating Mode	Typical Configuration Declared Sound Pressure (LpA)				High-end Configuration Declared Sound Pressure (LpA)			
	Table-Top		Floor-Standing		Table-Top		Floor- Standing	
	Operator Position (LpA)	By-stander Position (LpA)	Operator Position (LpA)	By-stander Position (LpA)	Operator Position (LpA)	By-stander Position (LpA)	Operator Position (LpA)	By-stander Position (LpA)
Idle	27.1	22.3	23.1	21.6	29.0	23.1	22.8	20.7
HDD Operating	27.2	22.4	22.2	21.7	28.5	23.1	22.9	20.8
ODD Operating	44.2	39.0	35.7	33.1	44.6	38.2	36.8	34.5
90% CPU	27.3	22.6	22.2	21.9	27.5	22.5	22.3	21.0

All tests are conducted according to ISO 7779 and declared according to ISO 9296 except 90% CPU. For this mode, the system CPU was stressed at 90% utilization with no other peripheral device actively seeking. This test mode is not specified in ISO 7779, but was measured using the same microphone distances and measurement techniques defined for the other reported operating modes.
Declared Sound Power rounded to nearest tenth of a bel per ISO 9296 section 4.4.2

ACOUSTIC NOISE EMISSION INFORMATION (CONT.)**OPTIPLEX 360 DT**

Component	Typical Configuration	High-end Configuration
CPU	E2220	E4700
Memory	1 GB DDRII 667MHz x2	1 GB DDRII 800MHz x2
HDD (#, capacity)	80 GB 7200 RPM SATA x1	160 GB 7200 RPM SATA x1
RMSD	CDRW/DVD Combo x1	DVDRW/DVD dual x1
Graphics Adapter	Integrated GMA3100	Integrated GMA3100

The Declared Noise Emission in accordance with ISO 9296 for the Dell Optiplex 360 MT is as follows:
(all values L_{WAd} expressed in bels; 1 bel=10 decibels, re 10^{-12} Watts)

Operating Mode	Typical Configuration Declared Sound Power (L_{WAd})	High-end Configuration Declared Sound Power (L_{WAd})
Idle	3.8	3.9
HDD Operating	3.8	3.9
ODD Operating	5.2	5.2
90% CPU	4.1	4.0

The Declared A-weighted Sound Pressure Level in decibels (re 2×10^{-5} Pa), at Operator, Bystander, and Desk Side Positions are measured in accordance with ISO 7779 7.6.1, 7.6.2, and C.15.2 and declared in accordance with ISO 9296 for this product is as follows¹:

Operating Mode	Typical Configuration Declared Sound Pressure (LpA)				High-end Configuration Declared Sound Pressure (LpA)			
	Table-Top		Floor-Standing		Table-Top		Floor- Standing	
	Operator Position (LpA)	By-stander Position (LpA)	Operator Position (LpA)	By-stander Position (LpA)	Operator Position (LpA)	By-stander Position (LpA)	Operator Position (LpA)	By-stander Position (LpA)
Idle	26.8	22.5	21.3	20.2	28.2	23.6	23.0	21.8
HDD Operating	26.8	22.5	21.7	20.4	28.3	23.8	22.1	22.3
ODD Operating	42.3	37.6	36.4	34.5	42.0	37.3	22.5	21.8
90% CPU	33.2	26.4	22.9	21.5	31.6	26.0	23.5	22.8

All tests are conducted according to ISO 7779 and declared according to ISO 9296 except 90% CPU. For this mode, the system CPU was stressed at 90% utilization with no other peripheral device actively seeking. This test mode is not specified in ISO 7779, but was measured using the same microphone distances and measurement techniques defined for the other reported operating modes.
Declared Sound Power rounded to nearest tenth of a bel per ISO 9296 section 4.4.2