

# MS3040

Mariner Kit for use with HP Z420 Workstation  
(Minitower configuration)



The HP Z420 Workstation is marine type-approved by all of the major international marine Classification Societies when it is installed in conjunction with our Mariner Kit MS3040.

The MS3040 Mariner Kit affords protection against the effects of vibration and shock experienced in the offshore marine environment and has been type-tested against IACS Unified Requirement E10 and the relevant sections of IEC60945 (see below right for test details).

This type-approved combination of hardware and Mariner Kit can be used as the platform for your critical navigation, control, loading and general purpose applications (please check individual type-approval certificates for any restrictions).

**“Proven solutions for a demanding environment”**



## WHAT IS SO SPECIAL ABOUT THE HP Z420 WORKSTATION?

- ◆ The HP Z420 gives you professional expandability in an accessible tool-free mini-tower form factor
- ◆ Built around the Intel® C602 chipset and the latest Intel® Xeon® processors
- ◆ Up to 8 discrete processing cores, the latest processing and I/O power from Intel®, and the latest graphics technology the HP Z420 has the power you need to get the job done
- ◆ Build the HP Z420 the way you want with multiple SATA and SAS RAID configurations that support a wide range of high-performance, high capacity storage solutions
- ◆ Always know you are a step ahead with 8 DIMM slots in 4-channel memory architecture, delivering up to 64GB and integrated 1600MHz memory
- ◆ Smart chassis offering tool-less access to the inside and easy configurability
- ◆ Optional liquid cooling designed to deliver whisper-quiet performance
- ◆ Converts between minitower and desktop configurations
- ◆ Two full-height PCI Express Gen3 x16 slots; One full-height PCI Express Gen3 x8 slot; One full-height PCI Express Gen2 x8 mechanical / x4 electrical slot; One full-height PCI Express Gen2 x4 mechanical / x1 electrical slot; One full-height PCI slot
- ◆ Three front, six rear and six internal USB ports
- ◆ BFR/PVC-free and ENERGY STAR® qualified configurations featuring 90% efficient power supplies
- ◆ Worldwide product availability
- ◆ Worldwide limited 3-year parts, 3-year labour and 3-year onsite service standard warranty that is extendable up to 5 years

This Mariner system is type-tested against the consolidated, 'worst-case' requirements of all the major international marine Classification Societies:

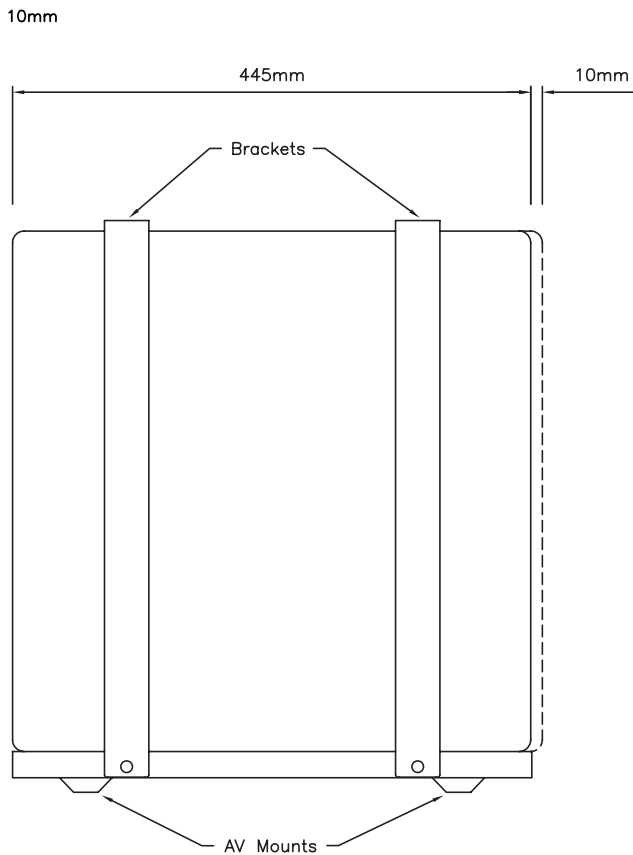
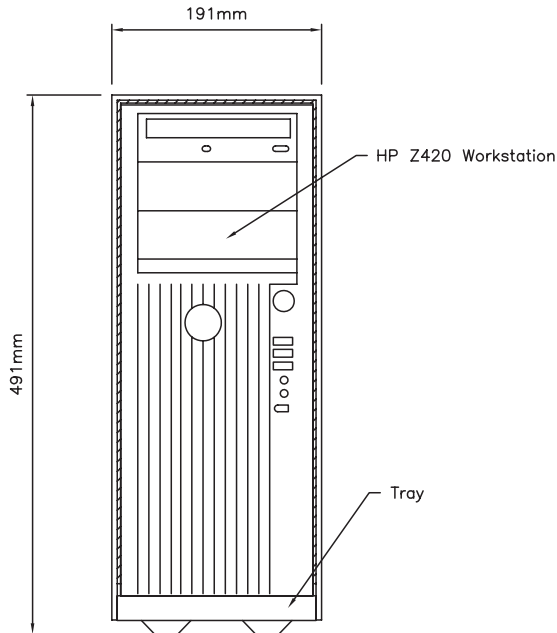
**ABS, BV, CCS, DNV, GL, KR, LR, NKK, PRS, RINA**

Type-tests included on the test programme are as follows:

- > Vibration, Shock, Static and Dynamic Inclination
- > Dry & Damp Heat, Low Temperature
- > Acoustic Noise, Compass Safe Distance
- > High Voltage, Power Supply Variation & Power Supply Failure
- > Conducted LF & RF, Electromagnetic Field
- > Radiated & Conducted Emissions, Electrostatic Discharge
- > Insulation Resistance, Burst / Fast Transients
- > Surge Immunity, Access to Dangerous Voltages

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## OPERATING GUIDELINES

Although all of our equipment is tested against extreme environmental conditions for the purposes of marine type-approval, installation should take into account the following guidelines:

- Keep the equipment away from excessive moisture, direct moisture and the extremes of heat and cold and, wherever possible, ensure that the unit is within the manufacturer's specified operating/non-operating ranges:

	Operating	Non-Operating
<b>Temperature</b>	+5° to +35°C (+40° to +95°F)	-40° to +60°C (-40° to +140°F)
<b>Humidity</b>	8% to 85% (non-condensing)	8% to 90% (non-condensing)

- Leave at least 15.2 cm (6-inch) clearance on all vented sides of the equipment to permit the required airflow
- Never restrict airflow into the equipment by blocking any vents or air intakes
- If the equipment is to be operated within a separate enclosure, intake and exhaust ventilation must be provided

By following these guidelines you will maximise the life of your equipment and minimise service costs.

## STATISTICS

<b>Overall Fitted Dimensions</b>	191mm (w) x 491mm (h) x 455mm (d)
<b>Weight (Mariner Kit only)</b>	Approx 3 kg
<b>Weight (including hardware)</b>	Approx 21 kg
<b>Chipset</b>	Intel® C602
<b>Available Processors</b>	Intel® Xeon® E5-2600 & E5-1600 series processors up to and including 3.60GHz, 20MB cache, 8 cores
<b>Memory</b>	Up to 64 GB 1600 MHz DDR3 unbuffered SDRAM
<b>Hard Drive(s)</b>	Up to 4 HDDs. 250 GB to 3 TB SATA 7200 rpm 6Gb/s; 250 GB to 1 TB SATA 10000 rpm; 300 GB & 600 GB SAS 10000 rpm; 128 GB & 256 GB SATA 6Gb/s SSD
<b>Keyboard</b>	HP Standard (PS/2 or USB)
<b>Mouse</b>	HP 2-Button Optical Scroll (PS/2 or USB)
<b>Network Card</b>	Integrated Intel 82579 LAN
<b>Graphics</b>	No integrated graphics; NVIDIA NVS300 512MB; NVIDIA NVS310 512MB; NVIDIA NVS510 2GB; NVIDIA Quadro 410 512MB; NVIDIA Quadro 600 1GB; NVIDIA Quadro 4000 2GB
<b>Optical Storage</b>	HP SATA DVD-ROM; HP SATA SuperMulti DVD Writer; HP SATA Blu-ray Writer; HP 22-in-1 Media Card Reader
<b>Audio</b>	Integrated HD with Realtek ALC262 Audio
<b>Operating System</b>	Windows® 7 Ultimate 64-bit; Windows® 7 Professional 64-bit; Windows® 7 Professional 32-bit; SUSE Linux Enterprise Desktop 11; Red Hat Enterprise Linux (RHEL); Windows 8 Pro 64-bit
<b>Slots</b>	Two full-height PCI Express Gen3 x16 slots; One full-height PCI Express Gen3 x8 slot; One full-height PCI Express Gen2 x8 mechanical / x4 electrical slot; One full-height PCI Express Gen2 x4 mechanical / x1 electrical slot; One full-height PCI slot
<b>USB Support</b>	4 x USB 3.0 ports - 2 front and 2 rear 11 x USB 2.0 ports - 1 front, 4 rear and 6 internal
<b>Serial Port</b>	1 x internal header (requires optional Serial Port Adapter)