

# **200 Gbyte, 2.5-inch, High Endurance Solid State Drive Specification, 12Gbps SAS-3 Interface**

Gen1 3D MLC

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This document provides the specification for the 200 Gbyte, 2.5-inch, High Endurance Solid State Drive with a 12 Gigabits per second (Gbps) SAS-3 interface.

## Disk Drive Installation

To install a disk drive, refer to the product documentation located in the [Oracle Help Center \(http://docs.oracle.com/en/engineered-systems/\)](http://docs.oracle.com/en/engineered-systems/).

The Disk Drive Bracket Assembly consists of the disk drive attached to a bracket, and must not be disassembled.

## Drive Specification

**TABLE 1** Power Requirements

| Condition                                                                    | +5VDC (-5%, +10%) | +12VDC (-5%, +10%) |
|------------------------------------------------------------------------------|-------------------|--------------------|
| Startup current peak                                                         | 0.403A            | 0.612A             |
| Read/Write peak                                                              | 0.766A            | 0.723A             |
| Read/Write typical (rms)                                                     | 0.413A            | 0.572A             |
| Maximum power (Max power is measured as the average power in a 1ms interval) | 3.46W             | 8.94W              |

**TABLE 2** Physical Characteristics

| Height (max) | Width (max) | Depth (max) | Weight  |
|--------------|-------------|-------------|---------|
| 0.591 in.    | 2.75 in.    | 3.955 in.   | 4.9 oz  |
| 15 mm        | 69.85 mm    | 100.45 mm   | 0.14 kg |

**Note** - The physical characteristics do not include the bracket.

**TABLE 3** Usage Information

| Usage                                                                       | Description                                                                                                                       |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Useful life                                                                 | Minimum 5 years                                                                                                                   |
| Expected annualized failure rate (AFR) for normal 24/7 operating conditions | 0.4335%                                                                                                                           |
| Operating temperature (Case)                                                | 0 to 65 degrees Celsius<br><b>Note</b> - Derating of AFR applies above 40 degrees Celsius.                                        |
| Maximum temperature (SMART trip)                                            | 70 degrees Celsius (Drive voids warranty above 85 degC)<br><b>Note</b> - Drive may be rendered unusable above 85 degrees Celsius. |
| Other environmental factors                                                 | Conforms to IEC standards                                                                                                         |

**TABLE 4** Drive Performance

| Attribute                | Value                                        |
|--------------------------|----------------------------------------------|
| Capacity, formatted      | 200,049,647,616 bytes (512 bytes per sector) |
| Random 4KB read per sec  | 390K IOPS                                    |
| Random 4KB write per sec | 220K IOPS                                    |

| Attribute                        | Value                                                                 |
|----------------------------------|-----------------------------------------------------------------------|
| Sustained sequential read        | 2200 MB/sec                                                           |
| Sustained sequential write       | 1100 MB/sec                                                           |
| Interface data transfer rate     | 12Gbps/6Gbps/3Gbps/1.5Gbps (auto negotiation, dual port, full duplex) |
| Power-on to ready (no rebuild)   | < 10 sec                                                              |
| Power-on to ready (full rebuild) | 30 sec                                                                |
| End-to-end                       | T10DIF Type 1 no performance impact                                   |

**TABLE 5** SSD Characteristics

| Attribute                      | Value                         |
|--------------------------------|-------------------------------|
| NAND geometry                  | Intel Gen1 3D MLC, 32Gbps/die |
| Number of NAND channels        | 12                            |
| NAND Transfer rate per channel | 667 MT/sec                    |
| Rated PE cycles                | 20,000                        |
| Over provisioning              | 284.00%                       |
| Page size                      | 16,384 bytes                  |
| Erase block size               | 16,777,216 bytes              |

## Product Documentation

You can find a broad selection of documentation at the [Oracle Help Center \(http://docs.oracle.com/en/\)](http://docs.oracle.com/en/).

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