

# WD VelociRaptor™ VR150M-1

## Enterprise Hard Drives



WD VelociRaptor drives offer maximum speed, low power consumption, and cool operation perfect for blade servers, performance enthusiast systems, workstations, and low-end servers. Available in a 2.5-inch form factor for use in enterprise applications or designed into a 3.5-inch mounting frame for installation in high-performance 3.5-inch enabled systems and chassis.

### Product Benefits

- **Killer Speed** – Built on the performance bloodlines of WD Raptor®, these 10,000 RPM drives, with a SATA 3 Gb/s interface and 16 MB cache, deliver mind-bending performance. Not only are they 35 percent faster than the previous generation WD Raptor drives, but they also beat out all other competitors in the field.
- **Rock-solid Reliability** – Designed and manufactured to mission-critical enterprise-class standards to provide enterprise reliability in high duty cycle environments. With 1.4 million hours MTBF, these drives have the highest available reliability rating on a high capacity SATA drive.
- **Double the Capacity** – State-of-the-art technology packs twice the capacity per disk compared to its older brother WD Raptor resulting in up to 300 GB of high-performance storage space in this enterprise-class 2.5-inch drive. (Not compatible with notebook computers)
- **Small form factor** – This ultra fast 2.5-inch hard drive is engineered to fit into blade servers and other enterprise storage configurations. (Not designed for use in laptop or notebook computers)
- **Ultra-cool operation** – WD VelociRaptor consumes 35% less power than the previous generation of WD Raptor.
- **NoTouch™ ramp load technology** – The recording head never touches the disk media ensuring significantly less wear to the recording head and media as well as better drive protection in transit.
- **Pre-emptive Wear Leveling (PWL)** – Designed to ensure reliability for applications that perform a high number of incoming commands.
- **Rotary Acceleration Feed Forward (RAFF™)** – Optimizes operation and performance when the drives are used in vibration-prone, multi-drive chassis.

### Applications

Servers, network attached storage, scientific computing, video surveillance, enterprise backup, document and image management, digital video.

### The WD Promise

WD understands the importance of the information you save to your hard drive and we are committed to protecting that data with exceptionally reliable products, advanced data protection technology, and superior customer support. No one does more to safeguard your data than WD.



#### Capacities

74, 150, and 300 GB

#### GB per Platter

150 GB

#### Model Numbers

WD3000BLFS  
WD3000HLFS  
WD1500BLFS  
WD1500HLFS  
WD740BLFS  
WD740HLFS



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### Physical Specifications<sup>1</sup>

	74 GB	150 GB	300 GB
Model numbers	WD740BLFS WD740HLFS	WD1500BLFS WD1500HLFS	WD3000BLFS WD3000HLFS
Formatted capacity	74,355 MB	150,039 MB	300,069 MB
User sectors per drive	145,226,112	293,046,768	586,072,368
Interface	SATA 3 Gb/s	SATA 3 Gb/s	SATA 3 Gb/s
Form factor	2.5-inch (WD740BLFS) 3.5-inch (WD740HLFS)	2.5-inch (WD1500BLFS) 3.5-inch (WD1500HLFS)	2.5-inch (WD3000BLFS) 3.5-inch (WD3000HLFS)
Bytes per sector (STD)	512	512	512
Dedicated landing zone	Yes	Yes	Yes
Actuator latch/auto park	Yes	Yes	Yes
SATA latching connector	Yes	Yes	Yes
RoHS compliant <sup>2</sup>	Yes	Yes	Yes

### Performance Specifications<sup>1</sup>

Data Transfer Rate	
<i>Buffer to host</i>	3 Gb/s
<i>Host to/from drive</i>	120 MB/s sustained
Average seek	4.2 ms (read), 4.7 ms (write)
Track-to-track seek	0.7 ms average
Rotational speed	10,000 RPM
Latency	3 ms average
Read cache	Adaptive
Write cache	Yes
Buffer	16 MB
Drive ready time	7 sec. average
Load/unload cycles <sup>3</sup>	50,000 minimum
LBA support	Yes
Error rate (non-recoverable)	<1 in 10 <sup>15</sup> bits read

### Physical Dimensions

WDxxxxBLFS Drives	
Height	0.59 in. (15.0 mm) max
Length	3.94 in. (100.0 mm) max
Width	2.75 in. (69.85 mm) ± .01 in.
Weight	0.48 lb. (219 gm) ± 10%

WDxxxxHLFS Drives	
Height	1.028 in. (26.1 mm) max
Length	5.787 in. (147.0 mm) max
Width	4.0 in. (101.6 mm) ± .01 in.
Weight	1.08 lb. (489 gm) ± 10%

### Power Requirements (average)

Mode	12V (±10%)	5V (±5%)	Power
<i>Read/Write</i>	225 mA	675 mA	6.08W
<i>Idle</i>	200 mA	425 mA	4.53W
<i>Standby</i>	6 mA	70 mA	0.42W
<i>Sleep</i>	6 mA	70 mA	0.42W

### Environmental Specifications<sup>4</sup>

Shock	
<i>Operating (2 ms)</i>	30G (read/write), 65G (read)
<i>Non-operating (2 ms)</i>	300G
<i>Half sine wave measured in 2 ms duration, measured without isolation.</i>	

### Vibration

<i>Operating</i>	
- Random	0.008 g <sup>2</sup> /Hz (10 to 300 Hz)
- Linear	20-300 Hz, 0.75G (0 to peak)
<i>Non-operating</i>	
- Random	0.05 g <sup>2</sup> /Hz (10 to 300 Hz)
- Linear	20-500 Hz, 4.0G (0 to peak)

### Operating Temperature & Humidity

<i>Temperature</i>	5° C to 55° C
<i>Humidity</i>	5-95% RH non-condensing
<i>Thermal Gradient</i>	20° C/hour max

### Non-Operating Temperature & Humidity

<i>Temperature</i>	-40° C to 70° C
<i>Humidity</i>	5-95% RH non-condensing
<i>Thermal Gradient</i>	30° C/hour

### Acoustics (average)

<i>Idle mode</i> <sup>5</sup>	27 dBA
<i>Performance seek mode</i> <sup>5</sup>	34 dBA

### Reliability

<i>MTBF</i> <sup>6</sup>	1,400,000 hours
<i>Limited warranty</i> <sup>7</sup>	5 years

### For service and literature:

support.wdc.com	
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<sup>1</sup> As used for storage capacity, one megabyte (MB) = one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabit per second (Gb/s) = one billion bits per second. Effective maximum SATA 3 Gb/s transfer rate calculated according to the Serial ATA specification published by the SATA-IO organization as of the date of this specification sheet. Visit [www.sata-io.org](http://www.sata-io.org) for details.

<sup>2</sup> WD hard drive products manufactured and sold worldwide after June 1, 2006, meet or exceed Restriction of Hazardous Substances (RoHS) compliance requirements as mandated by the European Union for electrical and electronic products. The RoHS Directive 2002/95/EC of the European Parliament, which is effective in the EU beginning July 1, 2006, aims to protect human health and the environment by restricting the use of certain hazardous substances in new equipment, and consists of restrictions on lead, mercury, cadmium, and other substances.

<sup>3</sup> Controlled unload at ambient condition.

<sup>4</sup> No non-recoverable errors during operating tests or after non-operating tests.

<sup>5</sup> Sound power level.

<sup>6</sup> 100% workload at 50°C on base casting.

<sup>7</sup> The term of the limited warranty may vary by region. Visit [support.wdc.com/warranty](http://support.wdc.com/warranty) for details.