



# N300 NAS Hard Drives

### Built for 24/7 reliability

Toshiba N300 NAS Hard Drive offers unprecedented reliability for NAS and other high-performance storage systems. It is optimized to meet the reliability, endurance, performance and scalability requirements of 24-hour/7-day high-capacity storage. Suitable for personal, home office and small business use. The N300 is available in capacities of up to 22 TB.



### Use for

- NAS and Multimedia Server
- Desktop RAID and Server
- Private Cloud Storage
- Small Business Server and Storage

### **Top Features**

- Designed for 24/7 operation
- Up to 8 drive bays
- Workload up to 180 TB/year
- MTTF/MTBF up to 1.2 million hours
- 7200 rpm speed with up to 512 MiB buffer
- CMR technology
- 3.5-inch Form Factor

### **Capacities**

| 22 | 20 | 18 | 16 | 14 |
|----|----|----|----|----|
| TB | TB | ТВ | ТВ | ТВ |

| 12 | 10 | 8  | 6  | 4  |
|----|----|----|----|----|
| TB | TB | TB | TB | TB |

## **TOSHIBA**





### NAS Hard Drives

| Capacity *1                          |               | 22 TB  | 20 TB        | 18 TB        | 16 TB                   | 16 TB                   | 14 TB                   | 14 TB                      | 12 TB                            | 12 TB                      |  |  |
|--------------------------------------|---------------|--|--------------|--------------|-------------------------|-------------------------|-------------------------|----------------------------|----------------------------------|----------------------------|--|--|
| Parts Number                         |               | HDWG62CUZSVA   | HDWG62AUZSVA | HDWG51JUZSVA | HDWG51GUZSVA            | HDWG31GUZSVA            | HDWG51EUZSVA            | HDWG21EUZSVA               | HDWG51CUZSVA                     | HDWG21CUZSVA               |  |  |
| Basic Specifications                 |               |  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Recording Technolog                  | y             |  |              |              |                         | CMR                     |                         |                            |                                  |                            |  |  |
| Interface SATA 6.0 Gbit/s            |               |  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Mechanical Design                    |               |  |              |              |                         | He                      |                         |                            |                                  |                            |  |  |
| Form Factor *2                       |               |  |              |              |                         | 3.5-inch                |                         |                            |                                  |                            |  |  |
| Sector Size                          |               |  |              |              |                         | 512e                    |                         |                            |                                  |                            |  |  |
| Features                             |               |  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Drive Bays Supported                 | I             |  |              |              |                         | up to 8                 |                         |                            |                                  |                            |  |  |
| 24 / 7 Operation                     |               |  |              |              |                         | yes                     |                         |                            |                                  |                            |  |  |
| Rotational Vibration S               | Sensor        |  |              |              |                         | yes                     |                         |                            |                                  |                            |  |  |
| Shock Sensor                         |               |  |              |              |                         | yes                     |                         |                            |                                  |                            |  |  |
| Performances                         |               |  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Rotation Speed                       |               |  |              |              | 7200 rpm                |                         |                         |                            |                                  |                            |  |  |
| Sustained data transfer rate *3      |               | 281<br>(268 t  |              |              | 274 MB/s<br>(262 MiB/s) | 281 MB/s<br>(268 MiB/s) | 260 MB/s<br>(248 MiB/s) | 281 MB/s<br>(268 MiB/s)    | 253 MB/s<br>(242 MiB/s)          |                            |  |  |
| Buffer Size *4                       |               |  |              | 512          | MiB                     | ,                       |                         | 256 MiB                    | 512 MiB                          | 256 MiB                    |  |  |
| Reliability                          |               | •  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| MTTF / MTBF *5                       |               |  |              | 1 200 00     | 00 hours                |                         |                         | 1 000 000 hours            | 1 200 000 hours                  | 1 000 000 hours            |  |  |
| Unrecoverable Error Rate 1 per 10E15 |               |  |              |              | 1 per 10E14             |                         |                         |                            |                                  |                            |  |  |
| Maximum rated workload *6            |               |  | 180 TB/year  |              |                         |                         |                         |                            |                                  |                            |  |  |
| Load/Unload cycles                   |               | 300 000 times  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Power Requirements                   | i             |  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Supply Voltage                       |               | 12 VDC ±10 %<br>5 VDC +10 / -7 %                                       |              |              |                         |                         |                         | 12 VDC ±10 %<br>5 VDC ±5 % | 12 VDC ±10 %<br>5 VDC +10 / -7 % | 12 VDC ±10 %<br>5 VDC ±5 % |  |  |
| Power Consumption                    | Operating     | 8.0  | 2 W          | 7.4          | 8 W                     | 6.91 W                  | 7.38 W                  | 6.77 W                     | 6.85 W                           | 6.49 W                     |  |  |
| rower consumption                    | Active Idle   | 4.35 W   | 4.41 W       | 4.1          | 4 W                     | 4.03 W                  | 3.77 W                  | 4.54 W                     | 3.3 W                            | 4.28 W                     |  |  |
| Environmental                        |               |  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Temperature                          | Operating     | 5 to 60 °C (Surface) 0 to 65 °C (Surface)                              |              |              |                         |                         | 5 to 60 °C (Surface)    |                            |                                  |                            |  |  |
| remperature                          | Non-operating | -40 to 70 °C   |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Vibration                            | Operating     | 7.35 m/s² {0.75 G} (5 to 300 Hz)<br>2.45 m/s² {0.25 G} (300 to 500 Hz) |              |              |                         |                         |                         |                            |                                  |                            |  |  |
|                                      | Non-operating | 29.4 m/s² {3.0 G} (5 to 500 Hz)  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Shock                                | Operating     | 490 m/s² {50 G} (2 ms duration) 686 m/s² {70 G} (2 ms duration)        |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| SHOCK                                | Non-operating | 1960 m/s² {200 G} (2 ms duration) 2450 m/s² {250 G} (2 ms duration)    |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Acoustics (Active Idle)              |               |  |              |              |                         | 20 dB (Typ.)            |                         |                            |                                  |                            |  |  |
| Physical                             |               |  |              |              |                         |                         |                         |                            |                                  |                            |  |  |
| Dimension                            |               |  |              |              | 147 (L) x               | 101.85 (W) x 26.1 (H) r | mm (Max)                |                            |                                  |                            |  |  |
| Weight                               |               |  |              | 720 g (Max)  |                         |                         | 705 g (Max)             | 720 g (Max)                | 690 g (Max)                      | 720 g (Max)                |  |  |

<sup>\*1</sup> Definition of capacity: One terabyte (TB) = one trillion bytes, but storage capacity actually available may vary depending on operating environment and formatting. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

\*2 "3.5-inch" means the form factor of HDDs. They do not indicate drive's physical size.

<sup>2 3-3</sup> Read and write speed may vary depending on the host device, read and write conditions, and file size.
4 A mebibyte (MiB) means 1 048 576 bytes.

<sup>\*5</sup> MTTF/MTBF (Mean Time to Failure/Mean Time Between Failures) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may be different from the MTTF/MTBF.

\*6 Workload is a measure of the data throughput of the year, and it is defined as the amount of data written, read or verified by commands from the host system.

<sup>•</sup> Product image may represent a design model.

<sup>•</sup> Before creating and producing designs and using, customers must also refer to and comply with the latest versions of all relevant information of this document and the instructions for the application that Product will be used with or for.

## TOSHIBA



### NAS Hard Drives

| Capacity *1            |               | 10 TB  | 8 TB   | 8 TB  | 6 TB   | 6 TB  | 4 TB   | 4 TB  | 4 TB   |  |
|------------------------|---------------|--|--|---|--|---|--|---|--|--|
| Parts Number           |               | HDWG71AUZSVA   | HDWG780UZSVA   | HDWG480UZSVA  | HDWG760UZSVA   | HDWG460UZSVA  | HDWG740UZSVC   | HDWG440UZSVA  | HDWQ140UZSVA   |  |
| Basic Specifications   |               |  |  |   |  |   |  |   |  |  |
| Recording Technolog    | Sy            |  |  |   | CI   | MR  |  |   |  |  |
| Interface              |               |  |  |   | SATA 6.  | 0 Gbit/s  |  |   |  |  |
| Mechanical Design      |               | Air  |  |   |  |   |  |   |  |  |
| Form Factor *2         |               |  |  |   | 3.5-   | inch  |  |   |  |  |
| Sector Size            |               |  |  | 51  | 12e  |   |  | 51  | 2n   |  |
| Features               |               |  |  |   |  |   |  |   |  |  |
| Drive Bays Supported   | d             |  |  |   | up   | to 8  |  |   |  |  |
| 24 / 7 Operation       |               |  |  |   | y.   | es  |  |   |  |  |
| Rotational Vibration : | Sensor        |  |  |   | y.   | es  |  |   |  |  |
| Shock Sensor           |               |  |  |   | y.   | es  |  |   |  |  |
| Performances           |               |  |  |   |  |   |  |   |  |  |
| Rotation Speed         |               |  |  |   | 7200   | ) rpm   |  |   |  |  |
| Sustained data trans   | fer rate *3   |  | MB/s<br>MiB/s)   | 260 MB/s<br>(248 MiB/s)   | 281 MB/s<br>(268 MiB/s)  | 250 MB/s<br>(239 MiB/s)   | 281 MB/s<br>(268 MiB/s)  | 232 MB/s<br>(222 MiB/s)   | 204 MB/s<br>(195 MiB/s)  |  |
| Buffer Size *4         |               | 512  | 2 MiB  | 256 MiB   | 512 MiB  | 256 MiB   | 512 MiB  | 256 MiB   | 128 MiB  |  |
| Reliability            |               |  |  |   |  |   |  |   |  |  |
| MTTF / MTBF *5         |               |  |  |   | 1 000 00   | 00 hours  |  |   |  |  |
| Unrecoverable Error    | Rate          |  |  |   | 1 per 10E15  |   |  |   | 1 per 10E14  |  |
| Maximum rated work     | cload *6      |  |  |   | 180 T  | B/year  |  |   |  |  |
| Load/Unload cycles     |               | 600 00   | 00 times   | 300 000 times   | 600 000 times  | s 300 000 times 600 000 times 300 000 times   |  |   |  |  |
| Power Requirement      | s             |  |  |   |  |   |  |   |  |  |
| Supply Voltage         |               |  |  |   |  |   | C ±10 %<br>C ±5 %  |   |  |  |
| D                      | Operating     | 9.07 W   | 8.19 W   | 8.41 W  | 7.43 W   | 7.72 W  | 6.75 W   | 6.84 W  | 9.6 W  |  |
| Power Consumption      | Active Idle   | 5.74 W   | 4.92 W   | 5.61 W  | 4.14 W   | 4.93 W  | 3.49 W   | 4.04 W  | 5.2 W  |  |
| Environmental          |               |  |  |   |  |   |  |   |  |  |
| Tomorovaturo           | Operating     | 5 to 60 °C   | 5 to 60 °C (Surface) 5 to 65 °C (Surface) 5 to 60 °C (Surface) 5 to 65 °C (Surface) 5 to 60 °C (Surface) 5 to 65 ° |   |  |   | 5 to 65 °C (Surface)   | 0 to 65 °C (Surface   |  |  |
| Temperature            | Non-operating |  |  |   | -40 to   | 70 °C   |  |   |  |  |
| Vibration              | Operating     | 7.35 m/s² {0.75 G} (5 to 300 Hz)<br>2.45 m/s² {0.25 G} (300 to 500 Hz) |  | 7.35 m/s² {0.75 G}<br>(2 to 300 Hz)<br>4.90 m/s² {0.50 G}<br>(300 to 350 Hz)<br>2.45 m/s² {0.25 G}<br>(350 to 500 Hz) | 7.35 m/s <sup>2</sup> {0.75 G}<br>(5 to 300 Hz)<br>2.45 m/s <sup>2</sup> {0.25 G}<br>(300 to 500 Hz) | 7.35 m/s² {0.75 G}<br>(2 to 300 Hz)<br>4.90 m/s² {0.50 G}<br>(300 to 350 Hz)<br>2.45 m/s² {0.25 G}<br>(350 to 500 Hz) | 7.35 m/s² {0.75 G}<br>(5 to 300 Hz)<br>2.45 m/s² {0.25 G}<br>(300 to 500 Hz) | 7.35 m/s² {0.75 G}<br>(2 to 300 Hz)<br>4.90 m/s² {0.50 G}<br>(300 to 350 Hz)<br>2.45 m/s² {0.25 G}<br>(350 to 500 Hz) | 7.35 m/s² {0.75 G<br>(5 to 300 Hz)<br>2.45 m/s² {0.25 G<br>(300 to 500 Hz) |  |
|                        | Non-operating | 29.4 m/s <sup>2</sup> {3.0 G} (5 to 500 Hz)                            |  |   |  |   |  |   | 49.0 m/s² {5.0 G}<br>(5 to 500 Hz)   |  |
| Shock                  | Operating     | 686 m/s² {70 G} (2 ms duration)  |  |   |  |   |  |   |  |  |
| JIIUCK                 | Non-operating | 2450 m/s² {250 G} (2 ms duration)                                      |  |   |  |   |  |   |  |  |
| Acoustics (Active Idle | )             | 34 dE  | 3 (Typ.)   | 31 dB (Typ.)  | 34 dB (Typ.)   | 31 dB (Typ.)  | 34 dB (Typ.)   | 31 dB (Typ.)  | 30 dB (Typ.)   |  |
| Physical               |               |  |  |   |  |   |  |   |  |  |
| Dimension              |               |  |  |   | 147 (L) x 101.85 (W)   | x 26.1 (H) mm (Max)   |  |   |  |  |
|                        | Weight        |  |  |   | _  | _   |  |   |  |  |

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