

TOSHIBA

Capacity to Grow. Reliability to Stay Ahead.

Toshiba N300 NAS Internal Hard Drive



When you need your technology to scale at the rate of your business, the Toshiba N300 NAS Internal Hard Drive is there every step of the way. Designed for home office and small office network attached storage and multi-RAID systems, the N300 delivers the speed to let you access your data quickly and the high workload reliability to help keep your NAS system running 24/7¹⁰.

Toshiba N300 NAS Internal Hard Drive

Application

Home & small office NAS / Desktop RAID and servers
Multimedia server storage / Private Cloud Storage
Small Business Server and Storage



Product image may represent a design model.



High Reliability

Designed for 24/7
NAS systems¹⁰



Rich Scalability

Support up to 8 drive bays⁴



High Performance

7200 RPM drive with
large cache size



Protection

Mitigate Rotational
Vibration with built-in
RV sensors



Built to Last

Workload rate up to
180 TB/yr^{6,10}. MTTF
Up to 1.2 million hours⁷



Massive Capacity

Store and access
your critical data and
important documents



Peace of Mind

Toshiba Three-year
limited warranty⁸

Toshiba N300 NAS Internal Hard Drive

Capacity ¹	<u>18TB</u>	<u>16TB</u>	<u>14TB</u>	<u>12TB</u>
Model Number (Retail Packaging)	HDWG51JXZSTA	HDWG31GXZSTA	HDWG51EXZSTA	HDWG21CXZSTA
Model Number (Bulk)	HDWG51JUZSVA	HDWG31GUZSVA	HDWG51EUZSVA	HDWG21CUZSVA
Basic Specifications				
Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor²	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes	Yes
RoHS Compatible³	Yes	Yes	Yes	Yes
Sector Size	512e	512e	512e	512e
Features				
Drive Bays Supported⁴	Up to 8	Up to 8	Up to 8	Up to 8
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes
Shock Sensors	Yes	Yes	Yes	Yes
Drive Stabilization Technology	Yes (Dual Tied)	Yes (Dual Tied)	Yes (Dual Tied)	Yes (Dual Tied)
Toshiba Cache Technology	Yes	Yes	Yes	Yes
Recording Technology	CMR	CMR	CMR	CMR
Performance				
Rotation Speed [RPM]	7,200	7,200	7,200	7,200
Max Data Transfer Speed⁵ [MB/s Typ.] (Sustained)	281	274	281	253
Cache Size [MB]	512	512	512	256
Reliability				
24x7 Operation¹⁰	Yes	Yes	Yes	Yes
Workloads [TB/Year] ^{6,10}	180	180	180	180
MTTF [Hours] ⁷	1,200,000	1,200,000	1,200,000	1,000,000
Unrecoverable Error Rate	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴
Load/Unload Cycles	300,000	300,000	300,000	300,000
Limited Warranty [Years] ⁸	3	3	3	3
Power Management				
Supply Voltage	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC ±5 % 12 VDC ±10 %
Power Consumption (Operating) [W]	7.48	6.91	7.38	6.49
Power Consumption (Active Idle) [W]	4.14	4.03	3.77	4.28
Environmental				
Temperature (Operating) [°C]	5 to 60 (surface)	0 to 65 (surface)	5 to 60 (surface)	5 to 60 (surface)
Temperature (Non-Operating) [°C]	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Vibration (Operating) [m/s ²]	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)
Vibration (Non-Operating) [m/s ²]	29.4 {3.0 G} (5 to 500 Hz)	29.4 {3.0 G} (5 to 500 Hz)	29.4 {3.0 G} (5 to 500 Hz)	29.4 {3.0 G} (5 to 500 Hz)
Shock (Operating) [m/s ²]	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)
Shock (Non-Operating) [m/s ²]	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)
Acoustics (Sound Power) Idle Mode [dB]	20	20	20	20
Physical				
Height [mm Max.]	26.1	26.1	26.1	26.1
Length [mm Max.]	147.0	147.0	147.0	147.0
Width [mm Max.]	101.85	101.85	101.85	101.85
Weight [g Max.]	720	720	705	720
Bottom Holes Type⁹	TYPE1	TYPE1	TYPE1	TYPE1

Toshiba N300 NAS Internal Hard Drive

Capacity ¹	10TB	8TB	6TB	4TB
Model Number (Retail Packaging)	HDWG11AXZSTA	HDWG480XZSTA	HDWG460XZSTA	HDWG440XZSTA
Model Number (Bulk)	HDWG11AUZSVA	HDWG480UZSVA	HDWG460UZSVA	HDWG440UZSVA

Basic Specifications

Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor²	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes	No
RoHS Compatible³	Yes	Yes	Yes	Yes
Sector Size	512e	512e	512e	512n

Features

Drive Bays Supported⁴	Up to 8	Up to 8	Up to 8	Up to 8
Rotational Vibration (RV) Sensors	Yes	Yes	Yes	Yes
Shock Sensor	Yes	Yes	Yes	Yes
Drive Stabilization Technology	Yes (Dual Tied)	-	-	-
Toshiba Cache Technology	Yes	Yes	Yes	Yes
Recording Technology	CMR	CMR	CMR	CMR

Performance

Rotation Speed [RPM]	7,200	7,200	7,200	7,200
Max Data Transfer Speed⁵ [MB/s Typ.] (Sustained)	248	260	250	232
Cache Size [MB]	256	256	256	256

Reliability

24x7 Operation¹⁰	Yes	Yes	Yes	Yes
Workloads [TB/Year] ^{6,10}	180	180	180	180
MTTF [Hours] ⁷	1,000,000	1,000,000	1,000,000	1,000,000
Unrecoverable Error Rate	1 per 10 ¹⁴	1 per 10 ¹⁵	1 per 10 ¹⁵	1 per 10 ¹⁵
Load/Unload Cycles	300,000	300,000	300,000	300,000
Limited Warranty [Years] ⁸	3	3	3	3

Power Management

Supply Voltage	5 VDC +10 / -5 % 12 VDC ±10 %	5 VDC ±5 % 12 VDC ±10 %	5 VDC ±5 % 12 VDC ±10 %	5 VDC ±5 % 12 VDC ±10 %
Power Consumption (Operating) [W]	9.48	8.41	7.72	6.84
Power Consumption (Active Idle) [W]	7.22	5.61	4.93	4.04

Environmental

Temperature (Operating) [°C]	0 to 65 (surface)	5 to 65 (surface)	5 to 65 (surface)	5 to 65 (surface)
Temperature (Non-Operating) [°C]	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Vibration (Operating) [m/s ²]	7.35 {0.75 G} (5 to 300 Hz) 2.45 {0.25 G} (300 to 500 Hz)	7.35 {0.75 G} (2 to 300 Hz) 4.90 {0.50 G} (300 to 350 Hz) 2.45 {0.25 G} (350 to 500 Hz)	7.35 {0.75 G} (2 to 300 Hz) 4.90 {0.50 G} (300 to 350 Hz) 2.45 {0.25 G} (350 to 500 Hz)	7.35 {0.75 G} (2 to 300 Hz) 4.90 {0.50 G} (300 to 350 Hz) 2.45 {0.25 G} (350 to 500 Hz)
Vibration (Non-Operating) [m/s ²]	29.4 {3.0 G} (5 to 500 Hz)	29.4 {3.0 G} (5 to 500 Hz)	29.4 {3.0 G} (5 to 500 Hz)	29.4 {3.0 G} (5 to 500 Hz)
Shock (Operating) [m/s ²]	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)	686 {70 G} (2 ms duration)
Shock (Non-Operating) [m/s ²]	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)
Acoustics (Sound Power) Idle Mode [dB]	34	31	31	31

Physical

Height [mm Max.]	26.1	26.1	26.1	26.1
Length [mm Max.]	147.0	147.0	147.0	147.0
Width [mm Max.]	101.85	101.85	101.85	101.85
Weight [g Max.]	770	720	700	693
Bottom Holes Type⁹	TYPE1	TYPE2	TYPE2	TYPE2

TOSHIBA

Toshiba Consumer Internal Hard Drives.

A drive for every storage application.



Image does not represent actual product.

To see our full line of consumer HDD storage products, visit: storage.toshiba.com/consumer-hdd

¹ One Gigabyte (1GB) means $10^9 = 1,000,000,000$ bytes and One Terabyte (1TB) means $10^{12} = 1,000,000,000,000$ bytes using powers of 10. A computer operating system, however, reports storage capacity using powers of 2 for the definition of $1GB = 2^{30} = 1,073,741,824$ bytes and $1TB = 2^{40} = 1,099,511,627,776$ bytes, and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system and other factors.

² 2.5-inch and 3.5-inch mean the form factor of HDDs. They do not indicate drive's physical size.

³ Toshiba Storage & Electronic Devices Solutions Company defines "RoHS-Compatible" products as products that either (i) contain no more than a maximum concentration value of 0.1% by weight in Homogeneous Materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) and of 0.01% by weight in Homogeneous Materials for cadmium; or (ii) fall within any of the application exemptions set forth in the Annex to the RoHS Directive (Directive 2011/65/EC of the European Parliament and of the Council of 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment). "Homogeneous Material" means a material of uniform composition that cannot be mechanically disjointed (meaning separated, in principle, by mechanical actions such as unscrewing, cutting, crushing, grinding and/or abrasive processes) into different materials. Examples of "Homogeneous Materials" would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings.

⁴ As for "Drive Bays Supported", please contact your Solutions Provider because the compatibility with the host device will vary based on the system.

⁵ The maximum sustained data rate and interface speed may be restricted to the response speed of host system and by transmission characteristics. Read and write speed may vary depending on the host device, read and write conditions, and file size. Transfer speed varies by capacity.

⁶ Annual Workload Rating: HDDs keep track of various drive usage such as power on hours, lifetime writes and lifetime reads from the host computer. With this data we calculate an Annualized Workload Rate, under 40 deg. C ambient environments, $\text{Annualized Workload Rate} = (\text{Lifetime Writes} + \text{Lifetime Reads}) * (8760 / \text{Lifetime Power On Hours})$ in case Power On time is 8760h or longer. Otherwise (i.e. Power On time is shorter than 8760h), $\text{Annualized Workload Rate} = (\text{Lifetime Writes} + \text{Lifetime Reads})$ Each drive is designed to perform up to the Annualized Workload Rate stated, after which the drive may be expected to decline. The Annualized Workload Rate in no way alters the warranty policy for such drive. Workload is defined as the amount of data written, read or verified by commands from host system.

⁷ MTTF (Mean Time to Failure) 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.

⁸ Standard limited warranty applies. The warranty brochure can be viewed online at <http://storage.toshiba.com/consumer-hdd/warranty-info>.

⁹ Location of bottom mounting hole is different from product. For more information, please see the following page. <https://toshiba.semicon-storage.com/us/design-support/faq/storage-holes.html>

¹⁰ Drive life may vary depending on usage and workload. See also MTTF and Annual Workload Rating for more detail.

Product prices, specifications, configurations, colors, components, features, and availability are subject to change without notice.

Compatibility may vary depending on user's hardware configuration and operating system.

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