

TOSHIBA

Capacity to Grow. Reliability to Stay Ahead.

Toshiba's N300 NAS internal hard drive is designed to meet the reliability, performance, and scalability requirements of 24/7¹⁰ network attached storage application for personal, home office and small business use.



N300 NAS Internal Hard Drive

Designed to handle high data workloads in a multi-user NAS environment, the N300 hard drive supports up to 180 TB/year⁶ workload rate and delivers a fast 7200 RPM spin speed with up to 1GB cache to help keep your NAS system running 24/7¹⁰.

The N300 has built-in Rotational Vibration (RV) sensors to help mitigate system-induced vibrations and ensure smooth data access in multi-bay NAS environments.

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.



Image does not represent actual product.

TOSHIBA

N300 NAS Internal Hard Drive

Application¹⁴

- 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 12
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



Capacity ¹	<u>22TB</u>	<u>20TB</u>	<u>18TB</u>
Model Number (Retail Packaging)	HDWG82CXZSTA	HDWG82AXZSTA	HDWG81JXZSTA
Model Number (Bulk)	HDWG82CUZSVA	HDWG82AUZSVA	HDWG81JUZSVA
Basic Specifications			
Interface	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
Advanced Format (AF)	Yes	Yes	Yes
RoHS Compatible³	Yes	Yes	Yes
Sector Size	512e	512e	512e
Features			
Drive Bays Supported⁴	Up to 12	Up to 12	Up to 12
Rotational Vibration (RV) Sensors	Yes	Yes	Yes
Native Command Queuing (NCQ)	Yes	Yes	Yes
Shock Sensors	Yes	Yes	Yes
Toshiba Cache Technology	Yes	Yes	Yes
Recording Technology¹⁵	CMR	CMR	CMR
Performance			
Rotation Speed [RPM]	7,200	7,200	7,200
Max Data Transfer Speed⁵ [MB/s Typ.] (Sustained)	298	294	294
Cache Size [MB]	1024	1024	1024
Reliability			
24x7 Operation¹⁰	Yes	Yes	Yes
Maximum Workload Rate [TB/Year] ^{6,10}	180	180	180
MTTF [Hours] ⁷	1,200,000	1,200,000	1,200,000
Unrecoverable Error Rate	1 per 10 ¹⁵	1 per 10 ¹⁵	1 per 10 ¹⁵
Load/Unload Cycles	600,000	600,000	600,000
Limited Warranty [Years] ⁸	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 %
Power Consumption (Operating) [W] ¹¹	7.62	7.62	7.41
Power Consumption (Active Idle-A) [W] ¹²	4.35	4.35	4.16
Environmental			
Temperature (Operating) [°C]	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)
Temperature (Non-Operating) [°C]	-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)
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)
Shock (Operating) [m/s ²]	490 {50 G} (2 ms duration)	490 {50 G} (2 ms duration)	490 {50 G} (2 ms duration)
Shock (Non-Operating) [m/s ²]	1,960 {200 G} (2 ms duration)	1,960 {200 G} (2 ms duration)	1,960 {200 G} (2 ms duration)
Acoustics Idle Mode [dB]	20	20	20
Physical			
Height [mm Max.]	26.1	26.1	26.1
Length [mm Max.]	147.0	147.0	147.0
Width [mm Max.]	101.85	101.85	101.85
Weight [g Max.]	730	730	730
Bottom Holes Type⁹	TYPE1	TYPE1	TYPE1

Capacity ¹	16TB	14TB	12TB
Model Number (Retail Packaging)	HDWG81GXZSTA	HDWG81EXZSTA	HDWG51CXZSTA
Model Number (Bulk)	HDWG81GUZSVA	HDWG81EUZSVA	HDWG51CUZSVA
Basic Specifications			
Interface	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
Advanced Format (AF)	Yes	Yes	Yes
RoHS Compatible³	Yes	Yes	Yes
Sector Size	512e	512e	512e
Features			
Drive Bays Supported⁴	Up to 12	Up to 12	Up to 8
Rotational Vibration (RV) Sensors	Yes	Yes	Yes
Native Command Queuing (NCQ)	Yes	Yes	Yes
Shock Sensors	Yes	Yes	Yes
Toshiba Cache Technology	Yes	Yes	Yes
Recording Technology¹⁵	CMR	CMR	CMR
Performance			
Rotation Speed [RPM]	7,200	7,200	7,200
Max Data Transfer Speed⁵ [MB/s Typ.] (Sustained)	294	294	281
Cache Size [MB]	1024	1024	512
Reliability			
24x7 Operation¹⁰	Yes	Yes	Yes
Maximum Workload Rate [TB/Year] ^{6,10}	180	180	180
MTTF [Hours] ⁷	1,200,000	1,200,000	1,200,000
Unrecoverable Error Rate	1 per 10 ¹⁵	1 per 10 ¹⁵	1 per 10 ¹⁴
Load/Unload Cycles	600,000	600,000	300,000
Limited Warranty [Years] ⁸	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 %
Power Consumption (Operating) [W] ¹¹	6.94	6.94	6.85
Power Consumption (Active Idle-A) [W] ¹²	3.66	3.66	3.30
Environmental			
Temperature (Operating) [°C]	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)
Temperature (Non-Operating) [°C]	-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)
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)
Shock (Operating) [m/s ²]	490 {50 G} (2 ms duration)	490 {50 G} (2 ms duration)	686 {70 G} (2 ms duration)
Shock (Non-Operating) [m/s ²]	1960 {200 G} (2 ms duration)	1960 {200 G} (2 ms duration)	2,450 {250 G} (2 ms duration)
Acoustics Idle Mode [dB]	20	20	20
Physical			
Height [mm Max.]	26.1	26.1	26.1
Length [mm Max.]	147.0	147.0	147.0
Width [mm Max.]	101.85	101.85	101.85
Weight [g Max.]	730	730	690
Bottom Holes Type⁹	TYPE1	TYPE1	TYPE1

Capacity ¹	10TB	8TB
Model Number (Retail Packaging)	HDWG71AXZSTA	HDWG780XZSTA
Model Number (Bulk)	HDWG71AUZSVA	HDWG780UZSVA
Basic Specifications		
Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor ²	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes
RoHS Compatible ³	Yes	Yes
Sector Size	512e	512e
Features		
Drive Bays Supported ⁴	Up to 8	Up to 8
Rotational Vibration (RV) Sensors	Yes	Yes
Native Command Queuing (NCQ)	Yes	Yes
Shock Sensors	Yes	Yes
Toshiba Cache Technology	Yes	Yes
Recording Technology ¹⁵	CMR	CMR
Performance		
Rotation Speed [RPM]	7,200	7,200
Max Data Transfer Speed ⁵ [MB/s Typ.] (Sustained)	281	281
Cache Size [MB]	512	512
Reliability		
24x7 Operation ¹⁰	Yes	Yes
Maximum Workload Rate [TB/Year] ^{6,10}	180	180
MTTF [Hours] ⁷	1,000,000	1,000,000
Unrecoverable Error Rate	1 per 10 ¹⁵	1 per 10 ¹⁵
Load/Unload Cycles	600,000	600,000
Limited Warranty [Years] ⁸	3	3
Power Management		
Supply Voltage	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %
Power Consumption (Operating) [W] ¹¹	9.07	9.07
Power Consumption (Active Idle-A) [W] ¹²	5.74	5.74
Environmental		
Temperature (Operating) [°C]	5 to 60 (surface)	5 to 60 (surface)
Temperature (Non-Operating) [°C]	-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)
Vibration (Non-Operating) [m/s ²]	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)
Shock (Non-Operating) [m/s ²]	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)
Acoustics Idle Mode [dB]	34	34
Physical		
Height [mm Max.]	26.1	26.1
Length [mm Max.]	147.0	147.0
Width [mm Max.]	101.85	101.85
Weight [g Max.]	755	755
Bottom Holes Type ⁹	TYPE1	TYPE1

Capacity ¹	6TB	4TB
Model Number (Retail Packaging)	HDWG760XZSTA	HDWG740XZSTC
Model Number (Bulk)	HDWG760UZSVA	HDWG740UZSVC
Basic Specifications		
Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor ²	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes
RoHS Compatible ³	Yes	Yes
Sector Size	512e	512e
Features		
Drive Bays Supported ⁴	Up to 8	Up to 8
Rotational Vibration (RV) Sensors	Yes	Yes
Native Command Queuing (NCQ)	Yes	Yes
Shock Sensors	Yes	Yes
Toshiba Cache Technology	Yes	Yes
Recording Technology ¹⁵	CMR	CMR
Performance		
Rotation Speed [RPM]	7,200	7,200
Max Data Transfer Speed ⁵ [MB/s Typ.] (Sustained)	281	281
Cache Size [MB]	512	512
Reliability		
24x7 Operation ¹⁰	Yes	Yes
Maximum Workload Rate [TB/Year] ^{6,10}	180	180
MTTF [Hours] ⁷	1,000,000	1,000,000
Unrecoverable Error Rate	1 per 10 ¹⁵	1 per 10 ¹⁵
Load/Unload Cycles	600,000	600,000
Limited Warranty [Years] ⁸	3	3
Power Management		
Supply Voltage	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %
Power Consumption (Operating) [W] ¹¹	8.19	7.43
Power Consumption (Active Idle-A) [W] ¹²	4.92	4.14
Environmental		
Temperature (Operating) [°C]	5 to 60 (surface)	5 to 60 (surface)
Temperature (Non-Operating) [°C]	-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)
Vibration (Non-Operating) [m/s ²]	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)
Shock (Non-Operating) [m/s ²]	2,450 {250 G} (2 ms duration)	2,450 {250 G} (2 ms duration)
Acoustics Idle Mode [dB]	34	34
Physical		
Height [mm Max.]	26.1	26.1
Length [mm Max.]	147.0	147.0
Width [mm Max.]	101.85	101.85
Weight [g Max.]	730	710
Bottom Holes Type ⁹	TYPE1	TYPE1

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. MTTF (Mean Time to Failure) of the HDDs during its life time is 1.0 million hours and AFR(Annualized Failure Rate) is 0.88%, or 1.2 million hours and AFR is 0.73%, or 2.5 million hours and AFR is 0.35% (depending on HDD models). This assumes power-on hours are 24 x 7 in normal usage (8760 h/year power on hours, up to 180TB/year, or up to 300TB/year, or up to 550TB/year total data transfers (depending on HDD models), and average HDA surface temperature:40°C or less). Use at case HDA surface temperature above 40°C may degrade product reliability and reduce warranty period.

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.

¹¹ Operating watt is measured using 80 % random read/write and 20 % performance idle.

¹² Idle is active idle.

¹³ Product prices, specifications, configurations, colors, components, features, and availability are subject to change without notice.

¹⁴ Compatibility may vary depending on user's hardware configuration and operating system.

¹⁵ CMR is Conventional Magnetic Recording Technology.

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2026.02.25-2564-R6.0