TOSHIBA

Keep Creativity Flowing

Toshiba X300 Pro Performance Internal Hard Drive

Image does not represent actual product.

Expand your creative horizons and unlock your imagination with Toshiba's X300 Pro Performance Internal Hard Drive designed to take you places.

Built for high-end workstations and multi-media systems, the X300 Pro can support high intensity workloads up to 300TB/yr[5] with increased reliability of up to MTTF 1.0 million hours[6] and room up to 20TB[1] of storage capacity.

Optimized to handle high-end graphics and videos, the X300 Pro hard drive delivers a fast 7200 RPM rotational speed and large cache size to help shorten response time. This drive offers time-tested quality that is backed by Toshiba's five year limited warranty[7] and that gives you the peace of mind to create with confidence.

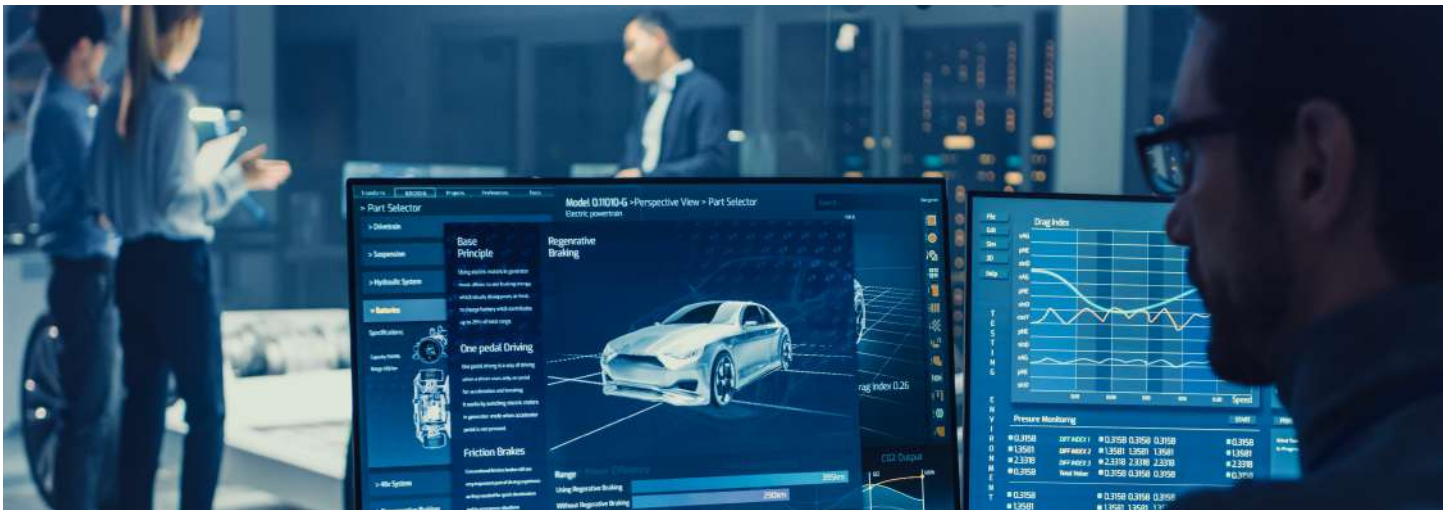
The X300 Pro Performance Hard Drive is here so you can create like a pro.

Toshiba X300 Pro Performance Internal Hard Drive

Product image may represent a design model.

Application[12]

Professional desktop workstations
Multi-media design workstations
High end gaming computers
High workload performance PC



Powerful Versatility
Designed for professional content creators of all kinds. CMR technology[10] for broad compatibility[12].

Advanced Precision
State-of-the-art actuator enables high-precision head positioning with accurate data tracking. Drive stabilization technology* helps reduce system-induced vibrations.

Available on select models only

Capacity for More
Store your growing content libraries with up to 20TB[1] storage capacity.

Enhanced Performance
7200 RPM speed with up to 512MB cache size. Powered by Toshiba cache technology.

Optimized for High-Intensity Workload
Workload rate of up to 300 TB/yr[5]. MTTF up to 1.0 million hours[6].

Data Protection
Ramp loading technology & built-in shock sensors to help protect your content.

Peace of Mind
Toshiba Five-year limited warranty[7].

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Toshiba X300 Pro Performance Internal Hard Drive

Capacity[1]	20TB	18TB	16TB
Model Number (Retail Packaging)	HDWR62AXZSTB	HDWR51JXZSTB	HDWR51GXZSTB
Model Number (Bulk)	HDWR62AUZSVB	HDWR51JUZSVB	HDWR51GUZSVB
Basic Specifications			
Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor[2]	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes
RoHS Compatible[3]	Yes	Yes	Yes
Sector Size	512e	512e	512e
Features			
Shock Sensor	Yes	Yes	Yes
Drive Stabilization Technology	Yes (Dual Tied)	Yes (Dual Tied)	Yes (Dual Tied)
Toshiba Cache Technology	Yes	Yes	Yes
Ramp Loading Technology	Yes	Yes	Yes
Recording Technology[10]	CMR	CMR	CMR
Performance			
Rotational Speed [RPM]	7,200	7,200	7,200
Cache Size [MB]	512	512	512
Reliability			
Workload Rate [TB/Year][5]	300	300	300
MTTF [Hours][6]	1,000,000	1,000,000	1,000,000
Unrecoverable Error Rate	1 per 10^{15}	1 per 10^{14}	1 per 10^{14}
Load/Unload Cycles	300,000	300,000	300,000
Limited Warranty [Years][7]	5	5	5
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]	7.30	7.48	7.48
Power Consumption (Active Idle) [W]	4.41	4.14	4.14
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 {0.75G} (5 to 300Hz) 2.45 {0.25G} (300 to 500Hz)	7.35 {0.75G} (5 to 300Hz) 2.45 {0.25G} (300 to 500Hz)	7.35 {0.75G} (5 to 300Hz) 2.45 {0.25G} (300 to 500Hz)
Vibration (Non-Operating) [m/s^2]	29.4 {3.0G} (5 to 500Hz)	29.4 {3.0G} (5 to 500Hz)	29.4 {3.0G} (5 to 500Hz)
Shock (Operating) [m/s^2]	490 {50G} (2 ms duration)	686 {70G} (2 ms duration)	686 {70G} (2 ms duration)
Shock (Non-Operating) [m/s^2]	1,960 {200G} (2 ms duration)	2,450 {250G} (2 ms duration)	2,450 {250G} (2 ms duration)
Acoustics (Sound Power) **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.]	720	720	720
Bottom Holes Type[8]	TYPE1	TYPE1	TYPE1

TOSHIBA

Toshiba X300 Pro Performance Internal Hard Drive

Capacity[1]	14TB	12TB	10TB
Model Number (Retail Packaging)	HDWR51EXZSTB	HDWR51CXZSTB	HDWR51AXZSTB
Model Number (Bulk)	HDWR51EUZSVB	HDWR51CUZSVB	HDWR51AUZSVB
Basic Specifications			
Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor[2]	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes
RoHS Compatible[3]	Yes	Yes	Yes
Sector Size	512e	512e	512e
Features			
Shock Sensor	Yes	Yes	Yes
Drive Stabilization Technology	Yes (Dual Tied)	Yes (Dual Tied)	Yes (Dual Tied)
Toshiba Cache Technology	Yes	Yes	Yes
Ramp Loading Technology	Yes	Yes	Yes
Recording Technology[10]	CMR	CMR	CMR
Performance			
Rotational Speed [RPM]	7,200	7,200	7,200
Cache Size [MB]	512	512	512
Reliability			
Workload Rate [TB/Year][5]	300	300	300
MTTF [Hours][6]	1,000,000	1,000,000	1,000,000
Unrecoverable Error Rate	1 per 10^{14}	1 per 10^{14}	1 per 10^{14}
Load/Unload Cycles	300,000	300,000	300,000
Limited Warranty [Years][7]	5	5	5
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]	7.38	6.85	6.85
Power Consumption (Active Idle) [W]	3.77	3.30	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 {0.75G} (5 to 300Hz) 2.45 {0.25G} (300 to 500Hz)	7.35 {0.75G} (5 to 300Hz) 2.45 {0.25G} (300 to 500Hz)	7.35 {0.75G} (5 to 300Hz) 2.45 {0.25G} (300 to 500Hz)
Vibration (Non-Operating) [m/s^2]	29.4 {3.0G} (5 to 500Hz)	29.4 {3.0G} (5 to 500Hz)	29.4 {3.0G} (5 to 500Hz)
Shock (Operating) [m/s^2]	686 {70G} (2 ms duration)	686 {70G} (2 ms duration)	686 {70G} (2 ms duration)
Shock (Non-Operating) [m/s^2]	2,450 {250G} (2 ms duration)	2,450 {250G} (2 ms duration)	2,450 {250G} (2 ms duration)
Acoustics (Sound Power) **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.]	705	690	690
Bottom Holes Type[8]	TYPE1	TYPE1	TYPE1

TOSHIBA

Toshiba X300 Pro Performance Internal Hard Drive

Capacity[1]	8TB	6TB	4TB
Model Number (Retail Packaging)	HDWR480XZSTB	HDWR460XZSTB	HDWR440XZSTB
Model Number (Bulk)	HDWR480UZSVB	HDWR460UZSVB	HDWR440UZSVB
Basic Specifications			
Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor[2]	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes
RoHS Compatible[3]	Yes	Yes	Yes
Sector Size	512e	512e	512e
Features			
Shock Sensor	Yes	Yes	Yes
Drive Stabilization Technology	-	-	-
Toshiba Cache Technology	Yes	Yes	Yes
Ramp Loading Technology	Yes	Yes	Yes
Recording Technology[10]	CMR	CMR	CMR
Performance			
Rotational Speed [RPM]	7,200	7,200	7,200
Cache Size [MB]	256	256	256
Reliability			
Workload Rate [TB/Year][5]	300	300	300
MTTF [Hours][6]	1,000,000	1,000,000	1,000,000
Unrecoverable Error Rate	1 per 10^{14}	1 per 10^{14}	1 per 10^{14}
Load/Unload Cycles	300,000	300,000	300,000
Limited Warranty [Years][7]	5	5	5
Power Management			
Supply Voltage	5 VDC ± 5 % 12 VDC ± 10 %	5 VDC ± 5 % 12 VDC ± 10 %	5 VDC ± 5 % 12 VDC ± 10 %
Power Consumption (Operating) [W]	8.41	7.72	6.81
Power Consumption (Active Idle) [W]	5.61	4.93	4.00
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 {0.75G} (2 to 300Hz) 4.90 {0.50G} (300 to 350Hz)	7.35 {0.75G} (2 to 300Hz) 4.90 {0.50G} (300 to 350Hz)	7.35 {0.75G} (2 to 300Hz) 4.90 {0.50G} (300 to 350Hz)
Vibration (Non-Operating) [m/s^2]	29.4 {3.0G} (5 to 500Hz)	29.4 {3.0G} (5 to 500Hz)	29.4 {3.0G} (5 to 500Hz)
Shock (Operating) [m/s^2]	784 {80G} (2 ms duration)	784 {80G} (2 ms duration)	784 {80G} (2 ms duration)
Shock (Non-Operating) [m/s^2]	2,450 {250G} (2 ms duration)	2,450 {250G} (2 ms duration)	2,940 {300G} (2 ms duration)
Acoustics (Sound Power) **Idle Mode** [dB]	31	31	31
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.]	720	700	693
Bottom Holes Type[8]	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. Actual formatted storage capacity may vary.

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

[3] Toshiba Electronic Devices & Storage Corporation 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] 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.

[5] 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, Annualized Workload Rate = (Lifetime Writes + Lifetime Reads) * (8760 / Lifetime Power On Hours) in case Power On time is 8760h or longer. Otherwise (i.e. Power On time is shorter than 8760h), Annualized Workload Rate = (Lifetime Writes + 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.

[6] MTTF (Mean Time to Failure) or MTBF (Mean Time Between 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 or MTBF. MTTF (Mean Time to Failure) or MTBF (Mean Time Between Failure) of the HDDs during its life time is 600,000 hours and AFR(Annualized Failure Rate) is 1.46%, or 1.0 million hours and AFR(Annualized Failure Rate) is 0.88%, or 1.2 million hours and AFR (Annualized) Failure Rate) is 0.73%. This assumes power-on hours are 24 x 7 in normal usage (8760 h/year power on hours, up to 180 TB/year or up to 300 TB/year total data transfers, 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.

[7] Standard limited warranty applies. The warranty brochure can be viewed online at http://storage.toshiba.com/consumer-hdd/warranty-info.

[8] 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

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

[10] CMR is Conventional Magnetic Recording technology.

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

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

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