

X300

Capacity *1	16 TB	14 TB	12 TB	10 TB	8 TB	8 TB	6 TB	6 TB	5 TB	4 TB
Drive model number	HDWR31G	HDWR21E	HDWR21C	HDWR11A	HDWR180	HDWF180	HDWR160	HDWE160	HDWE150	HDWE140
Basic Specifications										
Interface *3	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Sector size	512e	512e	512e	512e	512e	512e	512e	512e	512e	512e
Features										
Drive Bays Supported *2	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public
24 x 7 Operation (Workloads [TB/year] *4)	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public
Performances										
Rotation Speed [rpm]	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200
Max Data Transfer Speed [MB/s Typ.](Sustained) *3	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public	Non-Public
Buffer Size [MB]	512	256	256	256	256	128	256	128	128	128
Reliability										
MTTF [hours] *5	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Unrecoverable Error Rate	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	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	300,000	300,000	300,000	300,000	300,000	300,000
Power Requirements										
Supply Voltage	5 V DC +10% / -7% 12 V DC ±10 %	5 V DC ±5 % 12 V DC ±10 %	5 V DC ±5 % 12 V DC ±10 %	5 V DC +10 / -5 % 12 V DC ±10 %	5 V DC +10 / -5 % 12 V DC ±10 %	5 V DC +6 / -5 % 12 V DC ±10 %	5 V DC +10 / -5 % 12 V DC ±10 %	5 V DC ±5 % 12 V DC ±5 %	5 V DC ±5 % 12 V DC ±5 %	5 V DC ±5 % 12 V DC ±5 %
Power Consumption (Spin up (+12V DC)) [A] *6	1.47	1.65	1.65	1.44	1.44	1.83	1.44	2.4	2.4	2.4
Power Consumption (Operating) [W] *7	6.91	6.77	6.77	9.92	9.92	9.2	9.92	11.3	11.3	11.3
Power Consumption (Active Idle) [W]	4.03	4.54	4.54	7.22	7.22	6.2	7.22	7.5	7.5	7.5
Dimensions										
Height [mm Max.]	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
Length [mm Max.]	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
Width [mm Max.]	101.85	101.85	101.85	101.85	101.85	101.85	101.85	101.85	101.85	101.85
Weight [g Max.]	720	720	720	770	770	770	770	720	720	720
Bottom holes type *8	TYPE1	TYPE1	TYPE1	TYPE1	TYPE1	TYPE1	TYPE1	TYPE1	TYPE1	TYPE2
Environmental Requirements										
Temperature (Operating) [°C]	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)	5 to 60 (surface)	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	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Vibration (Operating)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)	7.35 m/s ² (0.75G) (5 to 300Hz) 2.45 m/s ² (0.25G) (300 to 500Hz)
Vibration (Non-operating)	29.4 m/s ² (3.0G) (5 to 500Hz)	29.4 m/s ² (3.0G) (5 to 500Hz)	29.4 m/s ² (3.0G) (5 to 500Hz)	29.4 m/s ² (3.0G) (5 to 500Hz)	29.4 m/s ² (3.0G) (5 to 500Hz)	29.4 m/s ² (3.0G) (5 to 500Hz)	49.0 m/s ² (5G) (5 to 500Hz)	29.4 m/s ² (3.0G) (5 to 500Hz)	49.0 m/s ² (5G) (5 to 500Hz)	49.0 m/s ² (5G) (5 to 500Hz)
Shock (Operating)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)	686 m/s ² (70G) (2 ms duration)
Shock (Non-operating)	2,450 m/s ² (250G) (2 ms duration)	2,450 m/s ² (250G) (2 ms duration)	2,450 m/s ² (250G) (2 ms duration)	2,450 m/s ² (250G) (2 ms duration)	2,450 m/s ² (250G) (2 ms duration)	2,450 m/s ² (250G) (2 ms duration)	2,450 m/s ² (250G) (2 ms duration)	2,450 m/s ² (250G) (2 ms duration)	2,940 m/s ² (300G) (2 ms duration)	2,940 m/s ² (300G) (2 ms duration)
Acoustics(Sound Power) Idle mode [dB]	20	20	20	34	34	33	34	34	31	31

*1: One Gigabyte (1GB) means 10⁹ = 1,000,000,000 bytes and One Terabyte (1TB) means 10¹² = 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 = 2³⁰ = 1,073,741,824 bytes and 1TB = 2⁴⁰ = 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: As for "Drive Bays Supported", please contact your Solutions Provider because the compatibility with the host device will vary based on the system.

*3: Read and write speed may vary depending on the host device, read and write conditions, and file size.

*4: Workload is defined as the amount of data written, read or verified by commands from host system.

*5: 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.

*6: Not including glitch less than 100 μs.

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

*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>