



WD Gold™ HDD

Conquering Tough Workloads With Enterprise-class HDDs

Available in 1TB to 20TB¹ capacities, these highly reliable solutions for demanding storage environments provide up to 2.5M hours MTBF, vibration protection technology and a low power draw thanks to HelioSeal[®] technology (for 12TB and above). Specifically designed for use in enterprise-class data centers and storage systems, the WD Gold SATA HDDs deliver the world-class performance you expect from Western Digital[®] hard drives.

Beyond Expectations

WD Gold hard drives are performance-optimized for heavy application workloads and are designed to handle workloads up to 550TB² per year. Available in capacities of 1TB to 20TB¹, WD Gold HDDs solve for the most demanding storage environments.

Enhanced Reliability

With up to 2.5M hours MTBF, WD Gold hard drives deliver enhanced levels of dependability and durability. Built for yearly operation (24x7x365) within the most demanding storage environments.

Vibration Protection

WD Gold has sophisticated monitoring electronics that help correct linear and rotational vibrations in real time using enhanced vibration protection technology for improved performance in high-vibration environments.

Play Well with Others

Specifically designed for use in enterprise-grade storage systems and data centers, the WD Gold SATA HDD is broadly compatible with major enterprise operating systems.

Reimagining the HDD

WD Gold offers 20TB¹ on a 9-disk CMR drive with reimagined HDDs utilizing the first implementation of OptiNAND™ technology's capacity-enabling features.

Leading the Way

Energy-assisted magnetic recording (EAMR) technology enables higher media precision and increases areal density. The triple-stage actuator (TSA) enhances the accuracy of head-positioning and delivers better performance and data integrity to also increase areal density. Both EAMR and TSA are available only in 16TB¹ capacities and above.

5-Year Limited Warranty

Every WD Gold HDD comes with a 5-year limited warranty, so you can be confident in your storage.

Product Highlights

- Take on tough workloads; up to 10 times the typical desktop rates
- Enhanced reliability with up to 2.5M hours MTBF
- Specifically designed for use in enterprise-class storage systems and data centers
- 20TB¹ on a 9-disk CMR drive utilizing the first implementation of OptiNAND technology's capacity-enabling features
- Energy-assisted magnetic recording (EAMR) and triple-stage actuator (TSA) (in 16TB capacities and above)

Specifications

	20TB	18TB	16TB	14TB	12TB	10TB
Model Number	WD201KRYZ	WD181KRYZ	WD161KRYZ	WD141KRYZ	WD121KRYZ	WD102KRYZ
Form Factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
512n / 512e user sectors per drive ³	512e	512e	512e	512e	512e	512e
Formatted Capacity ¹	20TB	18TB	16TB	14TB	12TB	10TB
RoHS compliant ⁴	Yes	Yes	Yes	Yes	Yes	Yes
Performance						
Data Transfer Rate ⁵ (max Sustained)	269MB/s	269MB/s	262MB/s	267MB/s	255MB/s	262MB/s
Performance (RPM)	7200	7200	7200	7200	7200	7200
Cache ⁶	512MB	512MB	512MB	256MB	256MB	256MB
Power Management						
Average power requirements (W)						
Operational ⁷	7.0W	6.5W	6.5W	6.0W	6.9W	9.2W
Idle ⁸	6.0W	5.6W	5.6W	5.5W	5.0W	8.0W
Power efficiency index (W/TB, idle)	0.30	0.31	0.35	0.4	0.4	0.8
Reliability						
MTBF (hours, projected) ⁹	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,000,000
Annualized Failure Rate ⁹ (AFR, %)	0.35	0.35	0.35	0.35	0.35	0.44
Limited Warranty	5 years	5 years	5 years	5 years	5 years	5 years
Environmental						
Operating Temperature	5° to 60°C	5° to 60°C	5° C to 60° C	5° C to 60° C	5° C to 60° C	5° C to 60° C
Non-Operating Temperature	-40° to 70°C	-40° to 70°C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C
Shock (Read/Write) Operating (half-sine wave, 2ms)	50G/50G	50G/50G	50G/50G	70G/70G	70G/70G	70G/50G
Non-operating (half-sine wave, 2ms)	250G	250G	250G	300G	300G	250G
Acoustics (average)						
Idle Mode	20 dBA	20 dBA	20 dBA	20 dBA	20 dBA	34 dBA
Seek Mode	36 dBA	36 dBA	36 dBA	36 dBA	36 dBA	38 dBA
Physical Dimensions						
Height (max)	26.1mm	26.1mm	26.1 mm	26.1 mm	26.1 mm	26.1 mm
Length (max)	147.0 mm	147.0 mm	147.0 mm	147.0 mm	147.0 mm	147.0 mm
Width (± .01 in.)	101.6 mm	101.6 mm	101.6 mm	101.6 mm	101.6 mm	101.6 mm
Weight	1.52 lb (.69 kg) +/- 10%	1.52 lb (.69 kg) +/- 10%	1.52 lb. (.69 kg) ± 10%	1.46 lb. (.66 kg) ± 10%	1.65 lb. (.75 kg) ± 10%	1.58 lb. (.715 kg) ± 10%

Specifications

	8TB	6TB	4TB	2TB	1TB
Model Number	WD8004FRYZ	WD6003FRYZ	WD4003FRYZ	WD2005FBYZ	WD1005FBYZ
Form Factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
512n / 512e user sectors per drive ³	512e	512e	512e	512n	512n
Formatted Capacity ¹	8TB	6TB	4TB	2TB	1TB
RoHS compliant ⁴	Yes	Yes	Yes	Yes	Yes
Performance					
Data Transfer Rate ⁵ (max Sustained)	255MB/s	255MB/s	255MB/s	200MB/s	184MB/s
Performance (RPM)	7200	7200	7200	7200	7200
Cache ⁶	256MB	256MB	256MB	128MB	128MB
Power Management					
Average power requirements (W)					
Operational ⁷	8.8W	7.0W	7.0W	8.1W	8.1W
Idle ⁸	7.4W	5.9W	5.9W	5.9W	5.9W
Power efficiency index (W/TB, idle)	0.9	1.0	1.5	3.0	5.9
Reliability					
MTBF (hours, projected) ⁹	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Annualized Failure Rate ⁹ (AFR, %)	0.44	0.44	0.44	0.44	0.44
Limited Warranty	5 years	5 years	5 years	5 years	5 years
Environmental					
Operating Temperature	5° C to 60° C	5° C to 60° C	5° C to 60° C	5° C to 60° C	5° C to 60° C
Non-Operating Temperature	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C
Shock (Read/Write) Operating (half-sine wave, 2ms)	70G/70G	70G/70G	70G/70G	65G/65G	65G/65G
Non-operating (half-sine wave, 2ms)	300G	300G	300G	300G	300G
Acoustics (average)					
Idle Mode	29 dBA	29 dBA	29 dBA	25 dBA	25 dBA
Seek Mode	36 dBA	36 dBA	36 dBA	28 dBA	28 dBA
Physical Dimensions					
Height (max)	26.1 mm	26.1 mm	26.1 mm	26.1 mm	26.1 mm
Length (max)	147.0 mm	147.0 mm	147.0 mm	147.0 mm	147.0 mm
Width (± .01 in.)	101.6 mm	101.6 mm	101.6 mm	101.6 mm	101.6 mm
Weight	1.58 lb. (.715 kg) ± 10%	1.58 lb. (.715 kg) ± 10%	1.58 lb. (.715 kg) ± 10%	1.41 lb. (.64 kg) ± 10%	1.41 lb. (.64 kg) ± 10%

¹ As used for storage capacity, 1GB = 1 billion bytes and 1TB = one trillion bytes. Actual user capacity may be less depending on operating environment.

² Workload Rate is defined as the amount of user data transferred to or from the hard drive. Workload Rate is annualized (TB transferred X (8760 / recorded power-on hours)). Workload Rate will vary depending on your hardware and software components and configurations.

³ 512e: Advanced Format drive with 512-byte logical sectors and 4K (4096-byte) physical sectors. 512n: Native 512-byte logical and physical sectors.

⁴ This drive is in compliance with the European Union Directive 2011/65/EU and Directive (EU) 2015/863 on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment.

⁵ Data Transfer Rate: MB/s is 1,000,000 bytes; 1MiB = 1,048,576

⁶ Cache Buffer: Portion of buffer capacity used for drive firmware.

⁷ Operational Power: Random RW 50/50 8KB QD=1 @40 IOPS.

⁸ Idle Power: Based on use of Idle_A

⁹ MTBF and AFR: Projected values for model number WD201KRYZ. Final MTBF and AFR specifications will be based on a sample population and are estimated by statistical measurements and acceleration algorithms under typical operating conditions, workload 220TB/year and drive temperature 40C. Derating of MTBF and AFR will occur above these parameters, up to a maximum workload of 550TB writes at 60C device temp. MTBF and AFR ratings do not predict an individual drive's reliability and do not constitute a warranty.

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