PRODUCT BRIEF SURVEILLANCE HARD DRIVES

Highlights

- Up-to 24TB[1] capacity
- Enterprise-class reliability and performance
- 5-year limited warranty[8]
- 550TB per year workload rating[3]
- Up-to 2.5 million hours Mean Time Between Failure (MTBF)[4]
- Innovative AllFrame™ technology helps reduce dropped frames
- Western Digital Device Analytics™ (WDDA) proactive health management

WD Purple® Pro

Professional Grade Storage for Smart Video Recording and AI Video Analytics

WD Purple® Pro delivers ultimate reliability and performance for the most demanding video recording and analytics environments

Higher Capacity Drives for More Demanding Smart Video Solutions

WD Purple® Pro delivers big capacities up to 24TB[1] for larger scale deployments and longer-term video retention requirements.

Enterprise Class Reliability

True enterprise class drives designed with the highest level of reliability. With up to 2.5 million hours MTBF[4] and backed with a 5-year limited warranty[8], WD Purple® Pro is built for high-end video recorders and analytics servers.

High Performance for Simultaneous Video Recording and Real-Time AI Analysis

WModern cameras and AI-enabled recording systems send multiple streams of high-definition video, picture files and metadata to storage. WD Purple® Pro drives deliver our highest level of performance to accurately store all streams

Built for Advanced Smart Video Workloads

WD Purple® Pro delivers higher workload capability up-to 550TB/year[3]. Keep up with heavy video data capture and AI analysis found in advanced video management systems

Innovative AllFrame™ Technology

AllFrame™ technology intelligently guides video, picture and meta data streams to disk while helping to reduce dropped video frames

Proactive Drive Health Insights with WDDA™

Western Digital Device Analytics™ (WDDA) monitors drive health and recommends action to improve drive operation. Requires compatible video recorder or system.

WD Purple® Pro Smart Video Hard Drive

Specifications

	24TB[1]	22TB[1]	18TB[1]	14TB[1]	12TB[1]	10TB[1]	8TB[1]
Model Number	WD240PURP	WD221PURP	WD181PURP	WD142PURP	WD121PURP	WD101PURP	WD8002PURP
Formatted capacity[1]	24TB	22TB	18TB	14TB	12TB	10TB	8TB
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recording technology	CMR	CMR	CMR	CMR	CMR	CMR	CMR
RoHS compliant[5]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product Features							
Cameras supported	Up to 64 HD[2]	Up to 64 HD[2]	Up to 64 HD[2]	Up to 64 HD[2]	Up to 64 HD[2]	Up to 64 HD[2]	Up to 64 HD[2]
AI streams	32	32	32	32	32	32	32
Firmware feature name	AIIFrame AI	AIIFrame AI	AIIFrame AI	AIIFrame AI	AIIFrame AI	AIIFrame AI	AIIFrame AI
Tarnish resistant components	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Performance							
Interface transfer rate (max)							
Buffer to host	6 Gb/s	6 Gb/s	6 Gb/s	6 Gb/s	6 Gb/s	6 Gb/s	6 Gb/s
Host to/from drive (sustained)[6]	287 MB/s	265 MB/s	272 MB/s	255 MB/s	245 MB/s	265 MB/s	267 MB/s
Cache (MB)[1]	512	512	512	512	256	256	256
RPM	7200	7200	7200	7200	7200	7200	7200
Reliability/Data Entigrity							
Load/unload cycles[7]	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Annualized workload rating[3]	Up to 550 TB/yr	Up to 550 TB/yr	Up to 550 TB/yr	Up to 550 TB/yr	Up to 550 TB/yr	Up to 550 TB/year	Up to 550 TB/year
Non-recoverable read errors per bits read	<1 in 10^15	<1 in 10^15	<1 in 10^15	<1 in 10^15	<1 in 10^15	<1 in 10^15	<1 in 10^15
MTBF[4]	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,000,000	2,000,000
Limited Warranty (years)[8]	5	5	5	5	5	5	5
Power Management							
Average power requirements (W)							
Read/write	6.5	6.9	6.3	6.6	6.6	9	7.3
Idle	5.9	5.6	5.9	5.7	5.6	8	6.5
Standby and sleep	1.2	1.2	0.9	0.9	0.6	0.5	0.3
Environmental specifications							
Temperature							
Operating	0˚C to 65˚C	0˚C to 65˚C	0˚C to 65˚C	0˚C to 65˚C	0˚C to 65˚C	0˚C to 65˚C	0˚C to 65˚C
Non-operating	-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	-40˚C to 70˚C	-40˚C to 70˚C
Shock (Gs)							
Operating	40	40	50	50	30	70	30
Operating	40	40	50	50	65	70	65
Non-operating	200	200	250	250	250	250	250
Acoustics (dBA)							
Idle	20	20	20	20	20	34	27
Seek (average	32	32	27	27	29	38	29
Physical Dimensions							
Height (in/mm, max)	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1
Length (in/mm, max)	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147
Width (in/mm, ± .01in)	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6
Weight (lb/kg, ± 3%)	1.48/0.67	1.48/0.67	1.52/0.69	1.52/0.69	1.46/0.66	1.65/0.75	1.58/0.715

[1] 1MB = one million bytes, 1GB = one billion bytes, and 1TB = one trillion bytes. 1TB = one trillion bytes. Actual user capacity may be less, depending on operating environment.
[2] Single stream per camera @ 3.2Mbps (1080p, H.265, 25 fps). Results may vary depending on camera resolution, file format, frames per second, software, system settings, video quality, and other factors.
[3] 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
[4] Projected values. When final, MTBF specifications will be based on a sample population and are estimated by statistical measurements and acceleration algorithms under typical operating conditions, workload of 220TB/year, and drive temperature of 40°C. Derating of MTBF will occur above these parameters, up to 550TB writes per year, and 65°C drive temperature. MTBF ratings do not predict an individual drive's reliability and do not constitute a warranty. [5] 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 in electrical and electronic equipment.
[5] WD hard drive products manufactured and sold worldwide after June 8, 2011, meet or exceed Restriction of Hazardous Substances (RoHS) compliance requirements as mandated by the RoHS Directive 2011/65/EU.
[6] Up to stated speed. 1 MB/s = 1 million bytes per second. Based on internal testing; performance may vary depending upon host device, usage conditions, drive capacity, and other factors.
[7] Controlled unload at ambient condition
[8] See support.wdc.com/warranty for regional specific warranty details.

Western Digital.

5601 Great Oaks Parkway
San Jose, CA 95119, USA
www.westerndigital.com

©2024 Western Digital Corporation or its affiliates. All rights reserved. Western Digital, the Western Digital design, the Western Digital logo, AIIFrame, OptiNAND, WD Purple, WDDA, and Western Digital Device Analytics are registered trademarks or trademarks of Western Digital Corporation or its affiliates in the US and/or other countries. All other marks are the property of their respective owners. Product specifications subject to change without notice. Pictures shown may vary from actual products.