WD Purple™ drives are engineered specifically for surveillance to help withstand the elevated heat fluctuations and equipment vibrations within NVR environments. An average desktop drive is built to run for only short intervals, not the harsh 24/7 always-on environment of a high-definition surveillance system. With WD Purple, you get reliable, surveillance-class storage that's tested for compatibility in a wide range of security systems. Exclusive AllFrame™ technology helps reduce frame loss and improve overall video playback. WD Purple 8TB[4] and higher drives have additional performance headroom to support a new generation of AI-enabled NVRs, video analytics appliances, and deep-learning servers.

Industry-leading storage. Surveillance you can trust.

Western Digital is a worldwide leader in the hard drive industry. With WD Purple surveillance storage, you have a drive engineered for high temperature, always-on surveillance systems so you can rely on quality video playback when you need it most. Whether you're protecting loved ones or monitoring your business, WD Purple offers performance you can trust.

Western Digital's Exclusive AllFrame Technology

All WD Purple™ drives are equipped with AllFrame technology, which improves ATA streaming to help reduce frame loss, improve overall video playback, and increase the number of hard drive bays supported within an NVR. WD Purple capacities up to 6TB[4] feature AllFrame 4K technology enabling high-quality recording in a multitude of security systems. WD Purple 8TB, 10TB, 12TB, 14TB, and 18TB capacities feature AllFrame AI technology that enables not only recording multiple streams per camera but also supports an additional 32 streams for Deep Learning analytics within the system.

Enhanced Workload Ratings

WD Purple drives with AllFrame 4k technology feature a workload rating of up to 180TB/year – up to three times that of desktop drives – to handle the unique demands of modern video surveillance DVR and NVR systems. WD Purple drives with AllFrame AI technology feature a workload rating up to 360TB/year to support the growing use of deep learning analytics.

Multiple Cameras, Multiple Streams

Modern recorders now support multiple video streams per camera. WD Purple™ 8TB and higher capacity drives are optimized to support up to 64 HD single-stream cameras[13], and can also support many of the latest smart cameras that transmit multiple streams. With so many options, you have the flexibility to upgrade or expand your security system in the future.

Designed for Today's and Tomorrow's Surveillance Solutions

With an MTBF of up to 1.5 million hours[1], WD Purple drives are engineered for mainstream surveillance DVRs and NVRs that operate 24/7. With tarnish-resistant components[1] and support for more than eight bays[2], WD Purple drives deliver reliable operation in large scale surveillance systems even in harsh environments.

Field-proven High Capacity

Now on its 6th generation, field-proven HelioSeal™ technology delivers trusted high-capacity WD Purple™ storage (10TB, 12TB, 14TB, and 18TB[4]) for the massive storage needs of 4K surveillance video and deep learning analytics.

Wide Compatibility. Seamless Integration.

WD Purple™ hard drives are built with compatibility in mind, so you can quickly and seamlessly add capacity to your surveillance system. With a wide range of industry-leading enclosures and chipsets supported, you're sure to find the DVR or NVR configuration that's right for you.

Proactive storage management with WDDA

Western Digital Device Analytics™ (WDDA) provides a wealth of storage device parametric operational and diagnostic data to the system; algorithms interpret the data and direct the system to alert system administrators of specific recommended actions to address potential issues. WDDA is intended to empower OEMs, system integrators, and IT professionals to better monitor and proactively manage supported storage devices to maintain optimal operation.

Three Year Limited Warranty

As an industry-leading hard drive manufacturer, Western Digital stands behind their surveillance storage solutions with a 3-year limited warranty included with every WD Purple drive.

Product Highlights

- Capacity up to 18TB
- Engineered specifically for surveillance security systems.
- Tuned for write-intensive, low bit-rate, high stream-count workloads typical to most surveillance applications.
- AllFrame AI technology delivers additional enhancements and higher workload rate for AI-enabled recorders, systems, and solutions.
- Supports up to 180 TB/yr workload rate** (Up to 360 TB/yr workload rate on drives that support AllFrame AI technology).
- Support for more than eight bays.
- Tarnish-resistant components.
- 3-years limited Warranty

INTERFACE	MODEL NUMBERS
SATA 6 Gb/s	WD180PURZ
	WD140PURZ
FORM FACTOR	WD121PURZ
3.5-inch	WD102PURZ
	WD101PURZ
RPM	WD82PURZ
5400 / 7200 RPM	WD84PURZ
	WD62PURZ
CAPACITIES	WD60PURZ
1TB to 18TB	WD40PURZ
	WD30PURZ
	WD20PURZ
	WD10PURZ

THE WESTERN DIGITAL ADVANTAGE

Western Digital puts our products through extensive Functional Integrity Testing (F.I.T.) prior to any product launch. This testing ensures our products consistently meet the highest quality and reliability standards of the Western Digital brand.

Western Digital also has a detailed Knowledge Base with more than 1,000 helpful articles as well as software and utilities. Our customer support lines have long operational hours to ensure you get the help you need when you need it. Our toll-free customer support lines are here to help, or you can access our Western Digital Support site for additional details.

Specifications[4]

	18TB	14TB	12TB	10TB	10TB	8TB
Model Number[3]	WD180PURZ	WD140PURZ	WD121PURZ	WD102PURZ	WD101PURZ	WD82PURZ
Formatted capacity[4]	18TB	14TB	12TB	10TB	10TB	8TB
Form factor	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
RoHS compliant[5]	Yes	Yes	Yes	Yes	Yes	Yes
Product Features						
Cameras supported[13]	Up to 64 HD	Up to 64 HD	Up to 64 HD	Up to 64 HD	Up to 64 HD	Up to 64 HD
Drive Bays Supported	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit
AI Streams	32	32	32	32	32	32
Firmware Feature Name	AllFrame AI	AllFrame AI	AllFrame AI	AllFrame AI	AllFrame AI	AllFrame AI
Tarnish resistant components	Yes	Yes	Yes	Yes	Yes	Yes
Performance						
Interface transfer rate (max)[4] Buffer to host Host to/from drive (sustained)	6 Gb/s 272 MB/s	6 Gb/s 255 MB/s	6 Gb/s 245 MB/s	6 Gb/s 265 MB/s	6 Gb/s 245 MB/s	6 Gb/s 245 MB/s
Cache (MB)[4]	512	512	256	256	256	256
RPM	7200	7200	7200	7200	7200	7200
Reliability/Data Integrity						
Load/unload cycles[6]	600,000	600,000	600,000	600,000	600,000	600,000
Annualized workload rating[7]	360TB/yr	360TB/yr	360TB/yr	360TB/yr	360TB/yr	360TB/yr
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}
MTBF	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Limited warranty (years)[8]	3	3	3	3	3	3
Power Management[9]						
Average power requirements (W) Read/Write Idle Standby and Sleep	6.3 5.9 0.9	6.0 5.7 0.8	6.6 5.6 0.6	9 8 0.5	6.3 5.2 0.5	8.6 7.4 0.4
Environmental Specifications[10]						
Temperature (°C, on the base casting)						
Operating[11] Non-operating	0 to 65 -40 to 70	0 to 65 -40 to 70	0 to 65 -40 to 70	0 to 65 -40 to 70	0 to 65 -40 to 70	0 to 65 -40 to 70
Shock (Gs) Operating (2 ms, read/write) Operating (2 ms, read) Non-operating (2 ms)	50 50 250	70 70 300	30 65 250	70 70 250	30 65 250	30 65 250
Acoustics (dBA)[12] Idle Seek (average)	20 27	20 36	20 29	34 38	20 29	27 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
Length (in./mm, max)	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147
Width (in./mm, ± .01 in.)	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6
Weight (lb/kg, ± 10%)	1.52/0.69	1.52/0.69	1.46/0.66	1.65/0.75	1.43/0.65	1.58/0.715

[1] Up to 1.5M MTBF for 8TB, 10TB, 12TB, 14TB, and 18TB capacities (up to 1.0M MTBF for lower capacities). MTBF specifications are based upon internal testing using a 40°C base casting temperature. MTBF is based on a sample population and is estimated by statistical measurements and acceleration algorithms. MTBF does not predict an individual drive's reliability and does not constitute a warranty.

[2] For capacities 4TB and higher.

[3] Not all products may be available in all regions of the world.

[4] As used for storage capacity, one gigabyte (GB) = one billion bytes and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabit per second (Gb/s) = one billion bits per second. Effective maximum SATA 6 Gb/s transfer rate calculated according to the Serial ATA specification published by the SATA-IO organization as of the date of this specification sheet. Visit www.sata-io.org for details.

[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] Controlled unload at ambient condition.

[7] 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.

[8] See support.wdc.com/warranty for regional specific warranty details.

[9] Power measurements at room-ambient temperature.

[10] No non-recoverable errors during operating tests or after non-operating tests.

[11] On the base casting.

[12] Sound power level.

[13] 8TB and above, single stream @ 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.

Western Digital.

WD Purple™

Specifications[4]

	8TB	6TB	6TB	4TB	3TB	2TB	1TB
Model Number[3]	WD84PURZ	WD62PURZ	WD60PURZ	WD40PURZ	WD30PURZ	WD20PURZ	WD10PURZ
Formatted capacity[4]	8TB	6TB	6TB	4TB	3TB	2TB	1TB
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
RoHS compliant[5]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product Features							
Cameras supported	Up to 64 HD	Up to 64	Up to 64	Up to 64	Up to 64	Up to 64	Up to 64
Drive Bays Supported	16	16	16	16	8	8	8
AI Streams	--	--	--	--	--	--	--
Firmware Feature Name	AllFrame 4K	AllFrame 4K	AllFrame 4K	AllFrame 4K	AllFrame 4K	AllFrame 4K	AllFrame 4K
Tarnish resistant components	Yes	Yes	Yes	Yes	No	No	No
Performance							
Interface transfer rate (max)[4] 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)	194 MB/s	185 MB/s	175 MB/s	150 MB/s	145 MB/s	145 MB/s	110 MB/s
Cache (MB)[4]	128	128	64	64	64	64	64
RPM	5640	5640	5700	5400	5400	5400	5400
Reliability/Data Integrity							
Load/unload cycles[6]	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Annualized workload rating[7]	180TB/yr	180TB/yr	180TB/yr	180TB/yr	180TB/yr	180TB/yr	180TB/yr
Non-recoverable read errors per bits read	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}
MTBF	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Limited warranty (years)[8]	3	3	3	3	3	3	3
Power Management[9]							
Average power requirements (W) Read/Write	6.2	6.2	5.3	5.1	5.0	4.4	3.8
Idle	5.5	5.5	4.9	4.5	4.4	4.1	3.2
Standby and Sleep	0.4	0.4	0.4	0.4	0.4	0.4	0.6
Environmental Specifications[10]							
Temperature (°C, on the base casting) Operating[11]	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65
Non-operating	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Shock (Gs) Operating (2 ms, read/write)	30	30	30	30	30	30	30
Operating (2 ms, read)	65	65	65	65	65	65	65
Non-operating (2 ms)	250	250	250	250	250	250	250
Acoustics (dBA)[12] Idle	25	25	25	25	23	23	21
Seek (average)	30	30	28	28	24	24	22
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, ± .01 in.)	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6
Weight (lb/kg, ± 10%)	1.58/0.72	1.58/0.72	1.65/0.75	1.50/0.68	1.40/0.64	1.32/0.60	0.99/0.45

[1] Up to 1.5M MTBF for 8TB, 10TB, 12TB, 14TB, and 18TB capacities (up to 1.0M MTBF for lower capacities). MTBF specifications are based upon internal testing using a 40°C base casting temperature. MTBF is based on a sample population and is estimated by statistical measurements and acceleration algorithms. MTBF does not predict an individual drive's reliability and does not constitute a warranty.

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[9] Power measurements at room-ambient temperature.

[10] No non-recoverable errors during operating tests or after non-operating tests.

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