EXASCEND

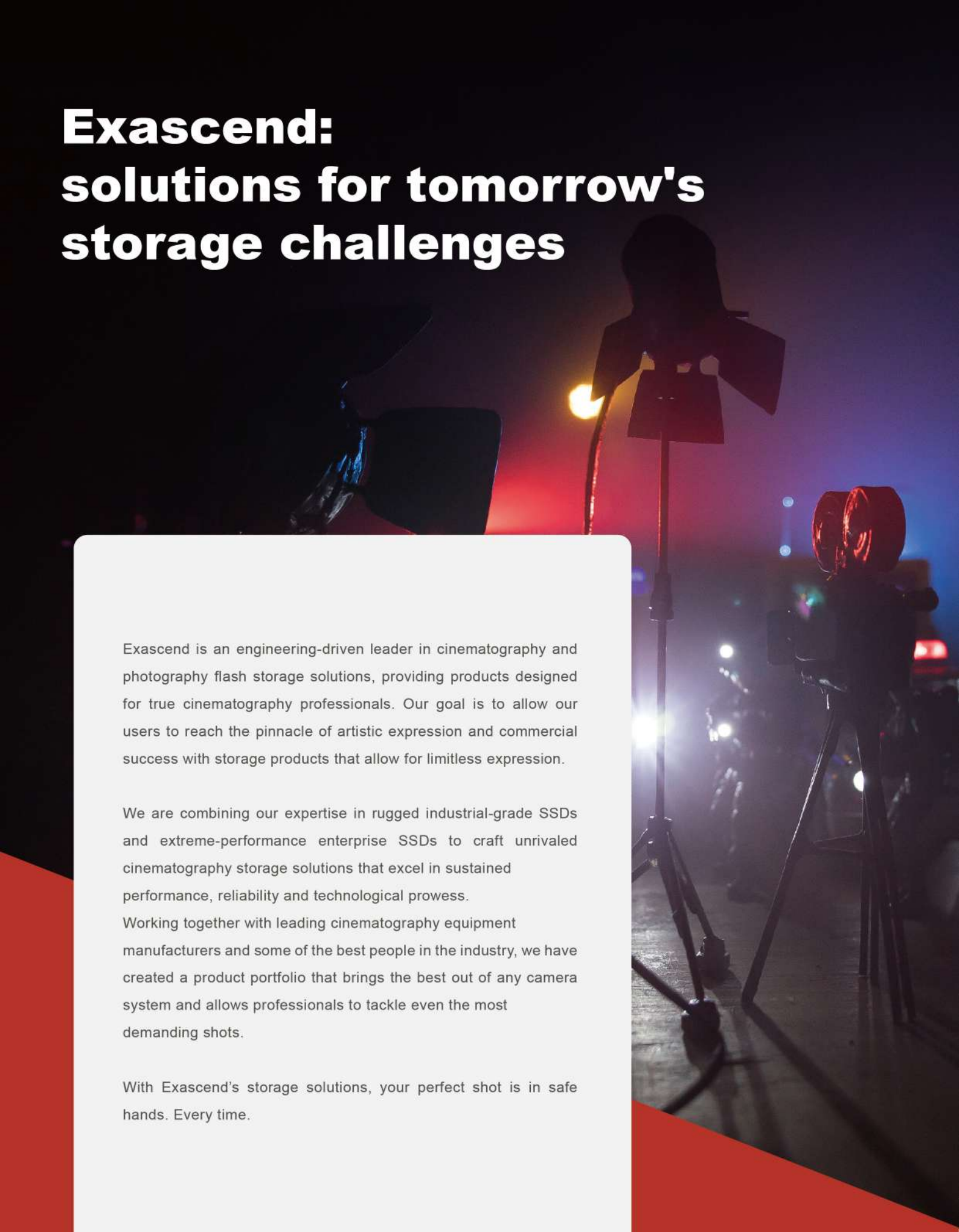
www.exascend.com

Professional Cinematography Solutions

CFexpress, CFast, SD and microSD cards and readers for cinematography professionals

Contents

Exascend: solutions for tomorrow's storage challenges



Exascend is an engineering-driven leader in cinematography and photography flash storage solutions, providing products designed for true cinematography professionals. Our goal is to allow our users to reach the pinnacle of artistic expression and commercial success with storage products that allow for limitless expression.

We are combining our expertise in rugged industrial-grade SSDs and extreme-performance enterprise SSDs to craft unrivaled cinematography storage solutions that excel in sustained performance, reliability and technological prowess.
Working together with leading cinematography equipment manufacturers and some of the best people in the industry, we have created a product portfolio that brings the best out of any camera system and allows professionals to tackle even the most demanding shots.

With Exascend's storage solutions, your perfect shot is in safe hands. Every time.

Application: broadcast and cinema

High-end broadcasting and cinematography are uniquely demanding. High-resolution and high-FPS capture require massive capacities in the tiniest form factors. A single hiccup is enough to ruin a whole shoot and cause a budget overrun. Unwavering recording stability is the key.

Do you have the right professional tools at your disposal?

Key challenges

The need for speed

The enormous amounts of data generated by modern cameras need hardware that can process data at the same rate that it is created.

No room for performance drops

Great top performance is impressive, but it is pointless if it cannot be sustained over time. Even the shortest moment of reduced performance causes dropped frames or worse.

Uncompromising shooting environments

The world of professional broadcasting and cinematography puts gear to the test in the most challenging environments imaginable.

Our solutions

Performance to the core

Our products are designed to squeeze out every last bit of performance from their components, ensuring the best possible performance for your equipment.

Storage that keeps up

Our hardware and firmware are carefully tuned to maintain exceptional performance even under sustained load, guaranteeing a smooth shooting experience without any frame drops.

Industrial ruggedness everywhere

We engineer products for the toughest industrial settings imaginable and bring all that industrial-grade expertise to our broadcast and cinematography products.

Recommended product series

NVMe SSD

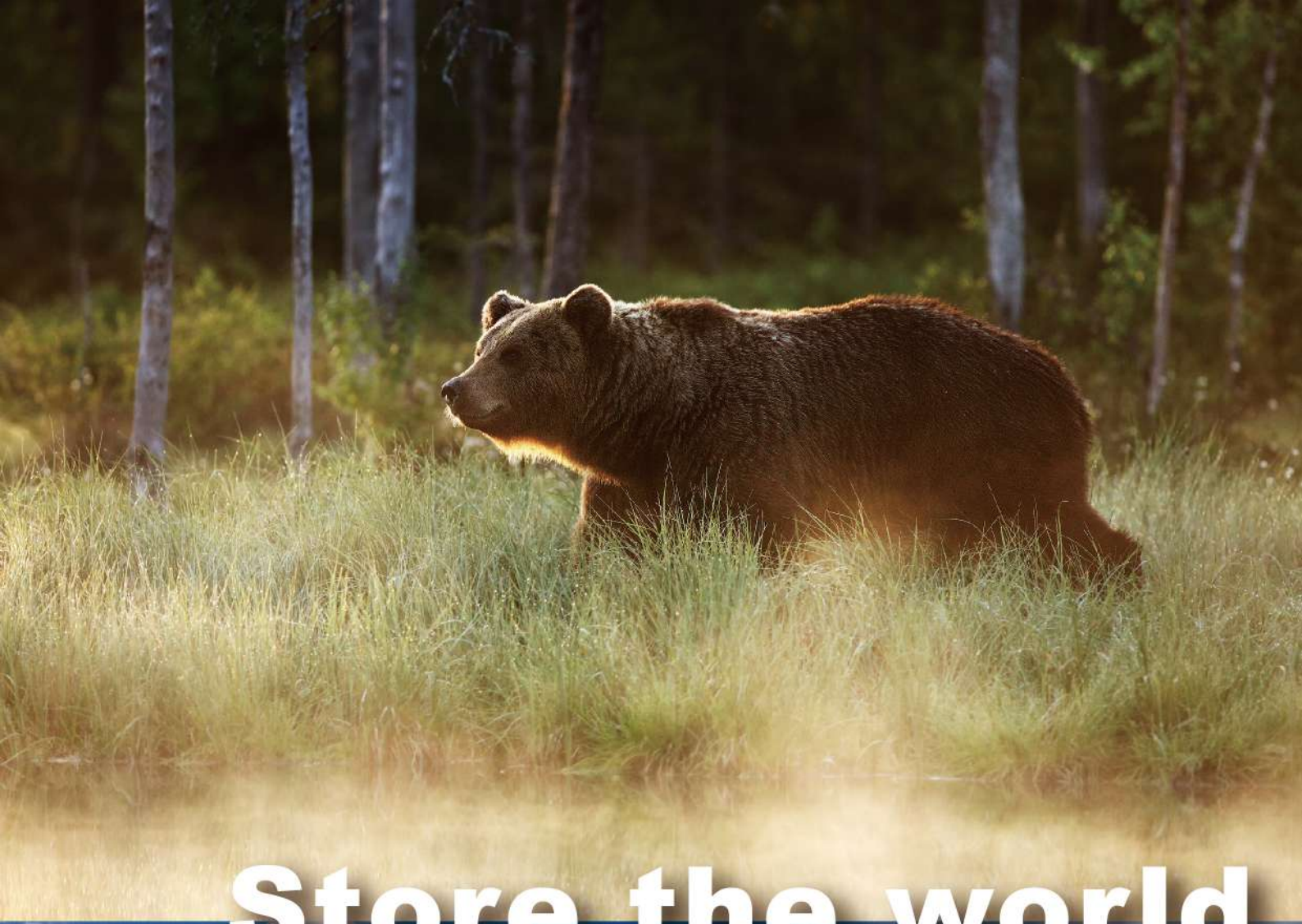
CFexpress

CFast

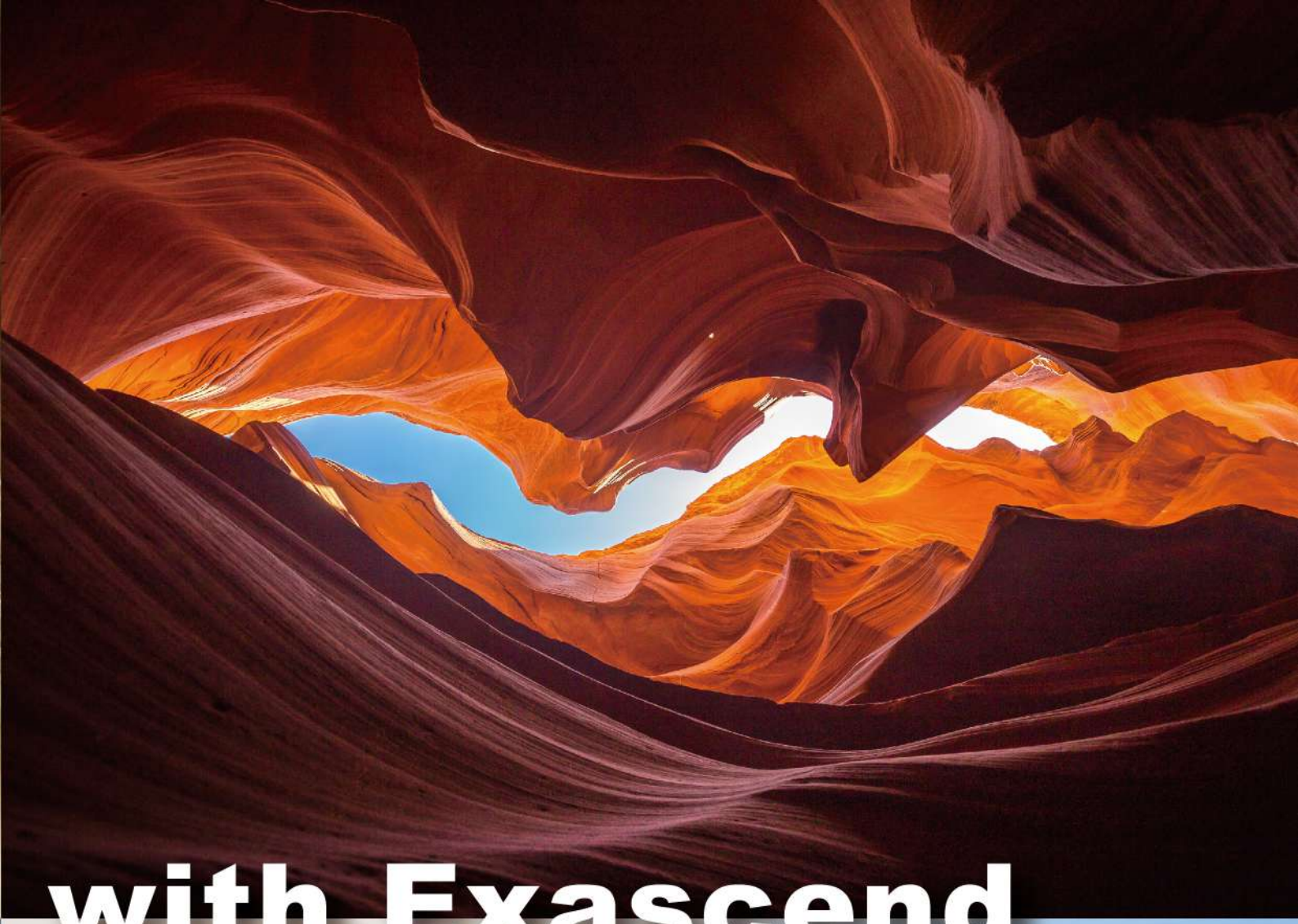
SD

microSD

Card reader



Store the world



with Exascend

Tough environments

Scorching heat and freezing cold. High humidity, external shocks, and constant vibrations. Media storage needs to handle everything a challenging shot throws at them.

Dropped frames and ruined shots

High-bitrate capture in ultra-high resolutions puts shots at high risk of suffering frame drops and other recording issues that can be extremely costly.

Professional challenges

Poor equipment compatibility

Different camera systems have different requirements, making it crucial to use recording media that allows you to bring the full potential out of your equipment.

Data corruption and footage loss

Data corruption and loss is a constant risk with a myriad of potential causes including accidents, hardware damage, and electromagnetic interference.

Engineered for sustained performance

With patented technologies and unique firmware design, Exascend's storage solutions provide extreme sustained performance that does not waver under heavy load.

Industrial-grade storage

Exascend's storage products are designed for the toughest industrial applications and are hardened against environmental threats – enabling high performance and reliability anywhere.

Fully tested and certified

Our storage solutions are created in partnership with leading camera system manufacturers and undergo stringent testing to certify that they deliver uncompromised performance in all equipment.

Factory data recovery

Exascend's exclusive factory data recovery service ensures that your footage has the highest chance of full recovery in the case of an accident. Our engineering team knows the ins and outs of each product and possesses the knowledge and experience required for successful data rescue.

Cinema-optimized solutions

Our secret recipe

Adaptive Thermal Control™

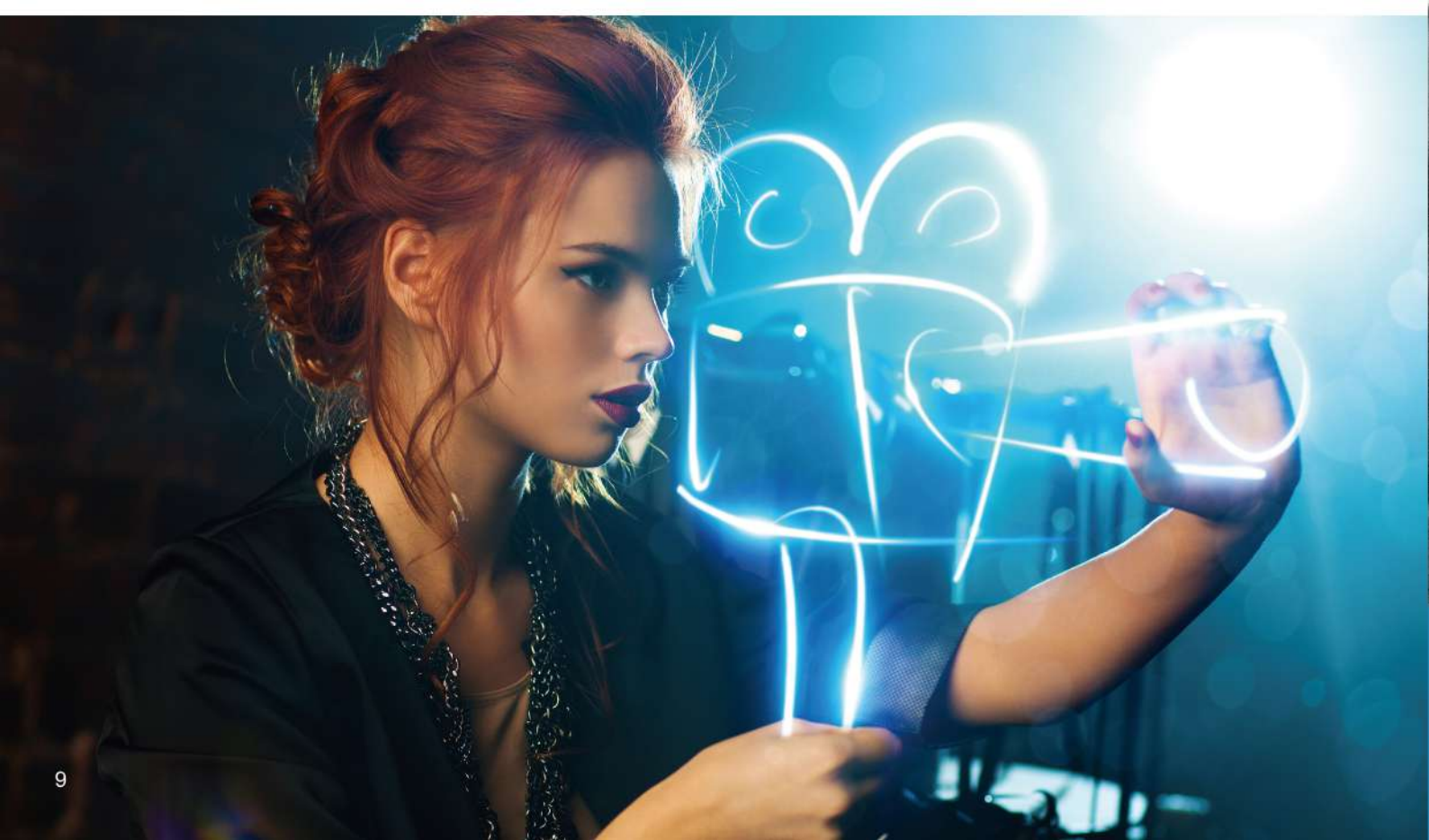
Exascend's storage products are designed for the toughest industrial applications and are hardened against environmental threats – enabling high performance and reliability anywhere.

SuperCruise™

A unique firmware algorithm developed by Exascend that optimizes the ratio of free block availability and usage while prioritizing and regulating response time, thus ensuring consistent high performance without any shot-ruining stuttering or frame drops.

Data Integrity Plus

Feature set that includes advanced technologies such as RAID ECC, automatic data refresh and end-to-end data path protection (ETEP) – guaranteeing that not a single piece of footage data gets corrupted in transit or while stored in your Exascend card.



Having full confidence in that every shot is perfectly recorded and stored means complete freedom to focus on what's important.

Professional cinematography solutions

CFexpress Type B

With Exascend's CFexpress Type B cards, you get extremely high-performance storage with over 300 percent faster read and write speeds than comparable CFast cards. These cards feature Exascend's trademark sustained performance-enhancing technologies and unique hardware design with the world's fastest mass-market card type – providing ample performance to take on the pinnacle of cinematography.

Nitro

Series	Nitro	
Capacity	1 TB	512 GB
Max. read/write	1,850/1,700 MB/s	
Sustained read/write	1,850/1,700 MB/s	
Temperature	-10–70 °C	
Performance guarantee	VPG400-certified sustained performance IP67-certified ruggedness	

Essential

Series	Essential				
Capacity	2 TB	1 TB	512 GB	256 GB	128 GB
Max. read/write	1,800/1,700 MB/s				1,800/1,400 MB/s
Sustained read/write	1,800/1,400 MB/s			1,800/900 MB/s	1,200/450 MB/s
Temperature	-10–70 °C				


1TB
EXASCEND
NITRO
CFEXPRESS
TYPE B
1TB
VPG400-CERTIFIED
CINEMATOGRAPHY STORAGE
1,700 MB/s
1,700 MB/s
12K RAW
EXASCEND
NITRO
1TB
READ: 1,850 MB/s
WRITE: 1,700 MB/s
EXASCEND

Element

Series	Element		
Capacity	1 TB	512 GB	256 GB
Max. read/write	1,800/1,400 MB/s	1,800/1,200 MB/s	
Sustained read/write	1,800/1,200 MB/s	1,800/900 MB/s	1,800/450 MB/s
Temperature	-10-70°C		

CFexpress Type B reader

Exascend's premium CFexpress Type B reader provides CFexpress users with ultra-fast data transfer rates of up to 20 Gbps to get footage from the camera system into their post-production workflow - wasting no time on slow transfers.

- Unlimited CFexpress performance
- USB 3.2 Gen 2 interface
- Up to 20 Gbps tansfer speed
- Fully compatible with USB 2.0–3.1 & Thunderbolt 3
- Device-powered with USB
- Ruggedized aluminum casing and extra-rugged cables
- ESD protection
- Two-year limited warranty


2 TB
EXASCEND
1,800
1,700
1,400
8K 2TB
ESSENTIAL
2 TB
EXASCEND
ESSENTIAL
8K
2 TB
1800
1700

CFexpress Type A

Exascend's CFexpress Type A memory card combines cinema-grade performance with the compact CFexpress Type A form factor. Optimized for professional photography and cinematography, the CFexpress Type A card features patented technologies to ensure top-level stability without any frame drops.

Essential

Series	Essential		
Capacity	240 GB	180 GB	120 GB
Max. read/write	800/700 MB/s		
Sustained read/write	800/400 MB/s	800/450 MB/s	800/550 MB/s
Temperature	0-70°C		


EXASCEND
ESSENTIAL
CF express Type A
8K
ULTRA HD
240GB
800 Read MB/s
700 Write MB/s
EXASCEND
ESSENTIAL
CF express Type A
8K
ULTRA HD
180GB
800 Read MB/s
700 Write MB/s
EXASCEND
ESSENTIAL
CF express Type A
8K
ULTRA HD
120GB
800 Read MB/s
700 Write MB/s

CFast

Our CFast cards provide the industry's highest sustained performance, ensuring that even long shoots are perfectly recorded without any performance hiccups. Developed together with leading camera system designers and certified with all major manufacturers, you can trust Exascend's CFast cards with bringing the best out of your equipment.

Series	Essential			
Capacity	1 TB	512 GB	256 GB	128 GB
Max. read/write	550/530 MB/s			
Sustained read/write	520/520 MB/s	520/420 MB/s	520/400 MB/s	520/280 MB/s
Temperature	-5–70 °C			

CFast reader

The perfect choice for blazing-fast footage offloading, Exascend's CFast reader ensures that you do not spend any unnecessary time waiting for files to transfer between your devices. Going from filming to post-production has never been easier.

- Unlimited CFast 2.0 performance
- USB 3.2 Gen 2 interface
- Up to 500 MB/s transfer speed
- Fully compatible with USB 2.0–3.1 & Thunderbolt 3
- Device-powered with USB
- Ruggedized aluminum casing and extra-rugged cables
- ESD protection
- Two-year limited warranty


Memory Card
CFast Type I
CFast 2.0
EXASCEND
ESSENTIAL
1 TB
520
500
ESSENTIAL
AN ESSENTIAL SOLUTION FOR HIGH RESOLUTION 4K RAW VIDEO CAPTURE
USB 3.2 Gen 2
10 Gbps
EXASCEND
CFast 2.0 Reader
EXASCEND
ESSENTIAL
CFast 2.0
130
4K
1 TB
520 Read MB/s
500 Write MB/s

SD card

Exascend's brand-new SD card lineup finally delivers Exascend's trademark cinematography expertise and extreme performance in the high-speed SD (UHS-II) card format. These cards are ideal for ultra-high resolution photography and enthusiast video capture, providing the perfect balance between price and performance.

UHS-II

Series	Catalyst		Essential		
Capacity	128 GB	64 GB	256 GB	128 GB	64 GB
Interface	UHS-II				
Max. read/write	300/280 MB/s		300/260 MB/s		
SD card speed class	V90				
Temperature	-25–85°C				

Series	Catalyst		
Capacity	512 GB	256 GB	128 GB
Interface	UHS-II		
Max. read/write	280/150 MB/s	280/180 MB/s	280/100 MB/s
SD card speed class	V60		
Temperature	-25–85°C		

UHS-I

Series	Catalyst			Essential	
Capacity	256 GB	128 GB	64 GB	128 GB	64 GB
Interface	UHS-I				
Max. read/write	180/150 MB/s			170/140 MB/s	
SD card speed class	V30				
Temperature	-25–85°C				


Memory Card
SDXC UHS-I
V30
EXASCEND
CATALYST
128GB
R 180 MB/s
W 150 MB/s
V30
CATALYST
A MUST-HAVE SOLUTION FOR
HIGH RESOLUTION 4K VIDEO
128GB
180 Read MB/s
150 Write MB/s
Designed for Cinematography by Exascend.
5-year limited warranty.
SD
ESSENTIAL
256GB
R 300 MB/s
W 260 MB/s
V90
CATALYST
512GB
R 280 MB/s
W 150 MB/s
V60
ESSENTIAL
128GB
R 170 MB/s
W 140 MB/s
V30

microSD card

Exascend's microSD memory card meets U3 and V30 speed ratings, guaranteeing a minimum sustained write speed of 30 MB/s – ideal for 4K RAW video capture and action shots. The microSD cards enable quick app launch time, letting users free up storage space, playback media and perform in-app tasks with ease.

UHS-I

Series	Catalyst		
Capacity	256 GB	128 GB	64 GB
Interface	microSDXC UHS-I U3		
Max. read/write	180/150 MB/s		
Speed class	V30		
Application performance class	A2		
Temperature	-25–85°C		

UHS-I

Series	Element
Capacity	128 GB
Interface	microSDXC UHS-I U3
Max. read/write	100/40 MB/s
Speed class	V30
Application performance class	A1
Temperature	-25–85°C


EXASCEND
64GB
EXASCEND
128GB
EXASCEND
256GB
A2 V30

Compatible brands

Certified compatibility*

Camera systems where Exascend's memory cards have undergone extensive testing and been certified as fully compatible.

For more compatibility information, visit exascend.com/compatibility/.

CFexpress Type B

Manufacturer	Model
Canon	EOS 1DX MKIII/R5/R5 C/R3
Nikon	Z9/Z 7II/Z 6II/Z7/Z6/D6/D5/D850/D500
Panasonic	LUMIX DC S1R/S1/GH6
Phase One	iXM-100/50/RS150F, iSM-RS100F, XF IQ4 150MP/150MP Achromatic/ 150MP Trichromatic

CFexpress Type A

Manufacturer	Model
Sony	a1, a7S III, a7 IV, FX3, FX6

CFast

Manufacturer	Model
ATOMOS	Ninja Star
Blackmagic Design	Pocket Cinema Camera 4K/6K, URSA Mini Pro 4.6K/ 4.6K G2/12K, HyperDeck Extreme 8K HDR
Canon	EOS C200/C300 MKII/C700/ C700 FF/1D MKII/1DX MKII, XC10, XC15
Hasselblad	H6D 50c/100c/400c MS
Z CAM	E2 F6 / E2 F8 / E2 S6 / E2 M4

SD card (UHS-II)

Manufacturer	Model
Blackmagic Design	Pocket Cinema Camera 4K/6K/6K Pro, URSA Mini Pro 4.6K/ 4.6K G2, URSA Mini Pro 12K/Broadcast/Broadcast G2
Blackmagic Design	HyperDeck Shuttle HD, HyperDeck Studio HD Mini/ HD Plus/HD Pro/4K Pro, Video Assist 12G HDR
Canon	EOS R3/R6/R5/R5C/C300 Mark III/C500 Mark II/ C300 Mark II/C200/C70/C700, VIXIA HF R800, XC15/10, XA11
Fujifilm	GFX-100/100S/50R/50S, X-H1, X-T4/T3/T20/T2/T1, X100F, X-Pro3/2/1
Hasselblad	X1D II 50c
Nikon	Z5/7II/6II, D850/500/780 SD
Panasonic	LUMIX DC-S1H/S1R/S1/GH6/GH5/G100/G9S/S5/-BGH1, LUMIX S1H/S1R/S1, LUMIX DMC-G85/GX8
Sony	a1, a7S III, a7C, a7R IV, a7R III, a9 II

*Exascend's memory cards work flawlessly with yet-to-be-certified systems as well.

Co-branded products

EXASCEND + Z CAM

Z CAM-optimized CFast 2.0 developed in collaboration with Z CAM's engineering team

EXASCEND + ARCHON

RED APPROVED

Ultra-fast CFast and CFexpress cards designed exclusively for RED's KOMODO and V-RAPTOR camera systems. Certified by RED engineers and designated as officially RED-approved storage media.

RED APPROVED

Extreme RED performance

Read performance	560 MB/s
Write performance	500 MB/s
Capacity	512 GB/1 TB

Exascend *Archon*

CFast 2.0

Optimized for RED KOMODO

All the performance and impeccable stability required in enterprise applications...
...in a compact and rugged CFast card.

Truly uncompromised cinematography storage.

RED APPROVED

Extreme RED performance

Read performance	1,700 MB/s
Write performance	1,600 MB/s
Capacity	1 TB/2 TB

Exascend *Archon*

CFexpress Type B

Optimized for RED V-RAPTOR

Cinematography is our passion and storage is our expertise. That's why we're so excited to bring our industry-leading CFexpress technology to RED professionals and the cutting edge of cinematography.

CFexpress card

Basic features

- PCIe NVMe 1.3, Gen 3 x2
- Advanced ECC and global wear-leveling algorithm
- Firmware power loss protection (PLP) for additional data protection

Exclusive features

- RAID ECC for full data integrity
- Tamper-proof firmware with cryptographic signature
- Firmware integrity plus: ROM-based backup of multiple firmware images
- Data Retention Plus™: dynamically refreshes data to strengthen data retention

Optional features

- Performance, power and thermal throttling

Product series	CFexpress Type B			CFexpress Type A
Sub-series	Nitro	Essential	Element	Essential
Physical information				
Interface	PCIe Gen 3 x2			
Capacity	512 GB ~ 1 TB	128 GB ~ 2 TB	256 GB ~ 1 TB	120 GB ~ 240 GB
Flash type	3D TLC			
Input voltage	3.3V±5%			
Power consumption	Active<4.5W; Idle<0.3W			Active <1.75W; Idle <0.5W
Performance				
Maximum sequential read (MB/s)	1,850	1,800	1,800	800
Maximum sequential write (MB/s)	1,700	1,700	1,400	700
Sustained sequential read (MB/s)	1,850	1,800	1,800	800
Sustained sequential write (MB/s)	1,700	1,400	1,200	550
Max. 4K random read (IOPS)	300,000			55,000
Max. 4K random write (IOPS)	250,000			115,000
Reliability/endurance				
Operational temperature (°C)	-10 ~ 70			0 ~ 70
Storage temperature (°C)	-45 ~ 90			-10 ~ 70
UBER	<1 sector per 10^{17} bits read			
TBW (max. capacity)	600	1,200	600	150
MTBF (hours)	2,000,000			
Warranty (years)	5			
Planned schedule	MP	MP	MP	MP

* Warranty valid for the stated number or years or until the device has reached the guaranteed TBW
* DWPD stands for Drive Writes Per Day. TBW = DWPD * capacity * warranty * 365/1000

CFast card

Basic features

- PCIe NVMe 1.3, Gen 3 x2
- Advanced ECC and global wear-leveling algorithm
- Firmware power loss protection (PLP) for additional data protection

Exclusive features

- RAID ECC for full data integrity
- Tamper-proof firmware with cryptographic signature
- Firmware integrity plus: ROM-based backup of multiple firmware images
- Data Retention Plus™: dynamically refreshes data to strengthen data retention

Optional features

- Performance, power and thermal throttling

Product series	CFast
Physical information	
Form factor	Type I
Interface	SATA-III, 6.0 Gbps
Capacity	128 GB ~ 1 TB
Flash type	3D TLC
Input voltage	3.3V±5%
Power consumption	Active<5W; Idle<0.5W
Performance	
Maximum sequential read (MB/s)	550
Maximum sequential write (MB/s)	530
Sustained sequential read (MB/s)	520
Sustained sequential write (MB/s)	520
Max. 4K random read (IOPS)	98,000
Max. 4K random write (IOPS)	89,000
Sustained 4K random read (IOPS)	98,000
Sustained 4K random write (IOPS)	53,000
Reliability/endurance	
Operational temperature (°C)	-5 ~ 70
Storage temperature (°C)	-40 ~ 85
UBER	<1 sector per 10^{17} bits read
TBW (max. capacity)	600
MTBF (hours)	2,000,000
Warranty (years)	5
Planned schedule	MP

* Warranty valid for the stated number or years or until the device has reached the guaranteed TBW
* DWPD stands for Drive Writes Per Day. TBW = DWPD * capacity * warranty * 365/1000

SD/microSD card

Key features

- Extreme UHS-II & UHS-I performance
- Reliable video performance (SD cards) and application performance
- Designed for demanding cinematography applications
- Water, dust, impact, X-ray and magnetism resistant
- Generous five-year warranty

Product series	SD				microSD	
Sub-series	Catalyst		Essential		Catalyst	Element
Physical information						
Form factor	SDXC				microSDXC	
Interface	UHS-II	UHS-I	UHS-II	UHS-I	UHS-I	
Capacity	64 GB ~ 512 GB				64 GB ~ 256 GB	128 GB
Performance						
Maximum sequential read (MB/s)	300	180	300	170	180	100
Maximum sequential write (MB/s)	280	150	260	140	150	40
Speed class	V90/V60	V30	V90	V30	V30	
Application performance	N/A				A2	A1
Reliability/endurance						
Operational temperature (°C)	-25 ~ 85					
Storage temperature (°C)	-45 ~ 90					
Warranty (years)	5					
Planned schedule	MP					

* Warranty valid for the stated number or years or until the device has reached the guaranteed TBW
* DWPD stands for Drive Writes Per Day. TBW = DWPD * capacity * warranty * 365/1000

Card reader

Key features

CFexpress reader (20 Gbps)

- Ultra-fast 20 Gbps CFexpress data rate
- Lightning-fast offloading of footage
- Robust aluminum casing
- Backwards compatible with all SD cards
- Recommended for use with Exascend Archon and Nitro CFexpress series

CFexpress reader (10 Gbps)

- 10 Gbps CFexpress data rate
- Robust aluminum casing
- Recommended for use with Exascend Essential and Element CFexpress series

CFast reader

- Up to 500 MB/s transfer speeds
- Robust aluminum casing
- Recommended for use with Exascend Archon and Essential CFast series

CFexpress/SDexpress 2-in-1 reader

- 2-in-1 design
- 10 Gbps CFexpress data rate
- Robust aluminum casing
- Allows the simultaneous use of two cards
- Recommended for use with Exascend Archon and Nitro CFexpress series; Catalyst and Essential SD series

SD/microSD 2-in-1 reader

- 2-in-1 design
- Up to 300 MB/s UHS-II speeds and 180 MB/s UHS-I speeds (DDR200)
- Allows the simultaneous use of two cards
- Recommended for use with Exascend Catalyst and Essential SD series; Essential microSD series

Product series	CFexpress reader (20 Gbps)	CFexpress reader (10 Gbps)	CFast reader	CFexpress/SDexpress 2-in-1 reader	SD/microSD 2-in-1 reader
Physical information					
Dimensions (mm)	99.8 (L) x 58.5 (W) x 18 (H)	62.4 (L) x 57.4 (W) x 15 (H)	60.6 (L) x 62.6 (W) x 14.8 (H)	63 (L) x 65.5 (W) x 16.4 (H)	54 (L) x 33.3 (W) x 9 (H)
Weight (g)	150	90	81	90	12
Connection Interface	USB 3.2 Gen 2				USB 3.2 Gen 1
USB type	USB Type-C				USB Type-A
Memory card supported	CFexpress Type B	CFexpress Type B	CFast Type I cards	CFexpress Type B SDexpress All SD cards	SD/SDHC/SDXC (UHS-II & UHS-I), microSD/microSDHC / microSDXC (UHS-I)
Performance					
Maximum transfer speed	20 Gbps	10 Gbps	10 Gbps	10 Gbps	5 Gbps
Reliability/endurance					
Operational temperature (°C)	-10 ~ 50				0 ~ 60
Storage temperature (°C)	-20 ~ 55				-40 ~ 85
Warranty (years)	2				

* Warranty valid for the stated number or years or until the device has reached the guaranteed TBW
* DWPD stands for Drive Writes Per Day. TBW = DWPD * capacity * warranty * 365/1000

Exascend International

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High Tech Campus 32, 5656 AE Eindhoven, Eindhoven, Netherlands

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