# 

## Memory Card Choice of Professionals

# CFexpress, Gold and Cobalt

#### Designed for what's next

The ProGrade Digital Gold and Cobalt CFexpress memory card families are based on proven, Solid State Drive (SSD), Quad-lane PCIe controller technology that offers both best-in-class value and performance options for imaging devices of the future. Non-Volatile Memory Express (NVMe) host controller interface in the CFexpress standard ensures that host and card performance are optimized for our leading edge CFexpress product lines. All ProGrade Digital CFexpress cards are compliant with the CompactFlash Association, CFexpress 2.0 and 4.0 specifications-including PCIe and NVMe interoperability compliance.

For mainstream imaging applications, our Gold label cards support burst write speeds up to 3000MB/second – ideal for DSLR and Mirrorless, full frame burst, shooting. In our Gold label cards, the sustained write speed across the entire volume ensures uninterrupted recording for a broad range of compressed video modes. In addition, our 256GB, 512GB, 1TB, and 2TB Gold cards have a sustained write speed of 850MB/s and 1500MB/s respectively, which allow capture of RAW 4K & 6K video across their entire density. Finally, our Cobalt label card has a sustained write speed of 2100MB/s which allow capture of RAW 6K & 8K video across the entire volume. Both card families provide sequential read speeds of up to 3400MB/sec. ensuring that offload time is minimized, and workflow efficiency is greatly improved.

With specific focus on 4K video capture, one hour of raw 4K video requires a card write speed between 380 and 1,000MB/sec dependent on color depth and frame rate. As shown in the table below, ProGrade Digital offers cards that are capable of capturing even cinema-grade raw 4K video at up-to 12 bits of color depth, and up-to 60fps. 8K Raw video at up-to 30fps is also possible on our Cobalt class cards

2 <sub>TB</sub> <sup>№</sup> 3400	<b>1.3</b> TB <b>*:3400</b>
MB/s	MB/s
Sus.W: <b>1500</b>	Sus.W:2100
MB/s	MB/s



#### **Capture Performance** Broadcast Episodic Cinema ProRes4444\* ProRes422HO\* Raw\*\* Color Depth Color Depth Color Frames/ Write Frames/ Write Frames/ Write Depth MB/sec MB/sec MB/sec sec sec sec **4**K 10 30 78 10 30 176 10 24 265 236 10 353 **4**K 10 60 60 10 60 664 10 24 212 10 24 318 10 24 597 6K 6K 10 60 530 10 60 795 10 30 746 10 24 377 10 24 565 10 24 1062 8K 1414 10 942 10 60 10 30 1327 8K 60 \*From Apple ProRes white papers Gold Cobalt \*\*No oversampling included

From a workflow perspective, read speed in cards is essential in terms of minimizing delay for content ingest into the editing environment. ProGrade Digital Gold and Cobalt CFexpress 4.0 Type B cards provide nearly 2x the performance level or CFexpress Type B 2.0 cards - dramatically improving workflow efficiency.

O)





### 

# Memory Card Choice of Professionals

# CFexpress, Gold and Cobalt

#### **ProGrade Digital CFexpress Type B Delivers:**

		Cobalt					
	256GB	512GB	1TB	2TB	1.3TB		
	Max Read: 3400MB/s	Max Read: 3400MB/s	Max Read: 3400MB/s	Max Read: 3400MB/s	Max Read: 3400MB/s		
Densities and	Max Write: 3000MB/s	Max Write: 3000MB/s	Max Write: 3000MB/s	Max Write: 3000MB/s	Max Write: 3000MB/s		
Performances	Sus Write: 850MB/s	Sus Write: 850MB/s	Sus Write: 1500MB/s	Sus Write: 1500MB/s	Sus Write: 2100MB/s		
Interface	NVMe 1.4 c with PCIe Gen4 interconnect						
Operating Voltage	+3.3V; Min = +3.0V, Max = +3.6V						
Max Operating Current	900mA for Gold & 1200mA for Cobalt						
ECC Engine	LDPC						
Power Management	Supports Power States (PS0, PS1, PS2, PS3, and PS4) with PS4 power consumption under 2mW						
Storing Temperature	-20C to 85C						
Operating Temperature	-10°C to 70°C						
Operating & Storage Humidity	95% or less (non-condensing)						
Shock	50G, 11ms duration						
Vibration	10Hz - 200Hz / 1.52mm displacement 10Hz - 2000Hz, 15G acceleration						
Altitude	2.26psi/Altitude:24384m						
SMART & Sanitize	Yes						
X-ray Proof	Yes						
Dimensions	Type B: 29.6mm x 38.5mm x 3.8mm						
Warranty	3-year						

- Fully compliant with CompactFlash  $^{\rm \tiny M}$  Association 4.0 specification and backwards compatible with 2.0 specification

- NVMe host interface with PCIe Gen4 X2 interconnect
- Low standby power through NVMe PS0 PS4 support enabling extended battery life
- Metal enclosure/encasement to endure high temperatures while providing better thermal conductivity
- Built-in thermal throttling to protect your card and its content in the event of overheating
- Designed to provide peak performance for flagship cinema, video and photography cameras
- Optimized controllers specifically designed for use in professional-grade cameras
- Rigorous full card testing with serialized tracking of key components and manufacturing data for the highest quality control

Ø

- Component-level testing down to individual memory chips for optimal quality
- Refresh Pro<sup>™</sup> enabled to quickly refresh card performance and monitor card health





**4K** 

t

#### www.progradedigital.com

1GB=1,000,000,000 bytes. Actual user storage is less. Up to 200MB/s read speed; write speed is lower. Speed is based on internal testing; user's performance may be lower depending on host device, interface, usage conditions and other factors. 1MB = 1,000,000 bytes.

©2023 ProGrade Digital, Inc All rights reserved. Information, products, and/or specifications are subject to change without notice. ProGrade Digital, Inc is not responsible for omissions or errors in typography or photography. ProGrade and the ProGrade Logo are trademarks of ProGrade Digital in C. ProGrade Digital is a uthorized licensee of SDXC, microSDXC, CFast 2.0, CompactFlash, and CFexpress trademarks. All other brand or product names in the release are trademarks or their respective holders. See product packaging and www.progradedigital.com for additional information and limitations. ProGrade Digital memory cards and card readers are available for purchase online at ProGradeDigital.com, plus the company's Amazon and B&H Photo and Video websites.

in

ProGradeDigital 1660 Hamilton Ave. Suite 101, San Jose, CA 95125, USA