Free sample from The Drone Kit & Flight Planner. This is worksheet 7 of 11. Get all 11 worksheets: dronegearsetup.com/kit/drone-kit-flight-planner

Card Capacity, Bitrate & ND

Enough card for the day, and the right shutter

Pilot	**Date**
Aircraft	**Codec**

Recording minutes equal card capacity in gigabytes multiplied by 8,000, divided by bitrate in megabits per second, divided by 60. At 150 Mbps a 256 GB card holds roughly 3 hours 45 minutes of 4K; at 300 Mbps it holds about 1 hour 50 minutes. Drone video cards need a V30 rating as an absolute minimum.

Card capacity against the shoot

Input	Your figure	Notes
Codec and bitrate (Mbps)		
Card capacity (GB)		
Recording minutes on that card		GB x 8000 / Mbps / 60
Airborne minutes planned (from sheet 3)		
Ratio of card to flight time		Aim for at least 1.5x
Cards carried		
Speed class		V30 minimum, V60 or V90 for high bitrates
Offload target on site		Laptop, SSD, or none

Format the card in the aircraft before every job, and offload before you leave the site if the job matters. A card is the cheapest thing on the shoot and the only single point of failure that loses the whole day.

Shutter and ND

The 180 degree shutter rule sets shutter speed to 1 divided by twice the frame rate: 1/50 at 24 fps, 1/60 at 30 fps.

Condition	Typical ND	Used on the day	Result
Bright sun, clear sky	ND32 or ND64		
Hazy sun	ND16 or ND32		
Overcast	ND8 or ND16		
Golden hour	None, or ND4		
Dusk	None		

Every stop of ND halves the light. If you are fighting to hold 1/50 at the lowest ISO and the picture is still hot, you need a darker filter, not a faster shutter.

Settings recorded for this job

Setting	Value
Resolution and frame rate	
Codec and bitrate	
Colour profile	
White balance, locked value	
ISO	
Shutter	
ND fitted	
Sharpening and noise reduction	

Lock white balance rather than leaving it automatic. A drifting white balance across a single move is the fault that shows up in the edit and cannot be fixed cleanly.

Cards, storage and filters

- **SanDisk Extreme PRO 256 GB microSDXC (U3, V30)**: The safe default. V30 sustained write is the floor for drone video, and this is the card that does not drop frames at high bitrate.
- **SanDisk 1 TB portable SSD (USB-C)**: Offload target on site. Two copies before you leave, or you do not have the footage.
- **USB-C dual-slot SD and microSD card reader**: The offload is only as fast as the reader. The one in the laptop is usually the bottleneck.
- **Freewell All Day 6-pack ND filters (Mini 3 series)**: Covers everything from overcast to hard sun in one pouch, which is what keeps you on the 180 degree rule all day.

Current prices and our latest picks for each item: **dronegearsetup.com/kit/drone-kit-flight-planner/gear/**

Researched guidance, not professional advice. FAA weight thresholds, Remote ID rules and airspace authorizations change. Confirm the current rule at faa.gov/uas before you rely on this kit, and treat every figure here as a planning aid rather than an authorization.