Surveillance Storage Sizing Calculator

One formula sizes any system. Figures are illustrative; pair with the article and your vendor's bitrate.

The storage formula

Storage (GB) = bitrate (Mbps) x 10.8 x cameras x retention days x recording factor. 1 Mbps continuous = 10.8 GB/day. GB / 1,000 = TB. Then x ~1.5 for RAID + headroom = provisioned TB.

Bitrate by resolution and codec (continuous, H.265 ~ half of H.264)

Resolution	H.264	H.265	Storage/day (H.265)
1080p / 2 MP	2.5-5 Mbps	1.5-3 Mbps	~16-32 GB
4 MP / 2K	3.2-8 Mbps	2.2-4.2 Mbps	~24-45 GB
4K / 8 MP	8-12 Mbps	4-10 Mbps	~43-108 GB

Worked example - 40 cameras, 4 MP, 2 Mbps, H.265, continuous

2 x 10.8 = 21.6 GB/camera/day. x 40 x 30 days = 25,920 GB ~ 26 TB raw. x ~1.5 = ~39 TB provisioned. Retention swings it: 7 days ~6 TB, 90 days ~78 TB, 1 year ~315 TB.

Retention - the two limits

MUST keep (floor): retail/office 30-90 days; gaming and banking longer. MAY keep (ceiling): GDPR Art. 5(1)(e); EDPB norm ~72 hours, erase when no longer necessary. Size for the shortest lawful, adequate period.

Levers, ranked by impact

1. Retention days - linear on storage, the biggest lever. 2. Codec - H.265 ~ half of H.264. 3. Recording mode - motion/event cuts 50-80%. 4. Resolution + frame rate. 5. RAID level + headroom (added after, not a saving).

Your site - fill in and multiply	
A. Cameras	_____
B. Bitrate per camera (Mbps)	_____
C. Recording factor (1.0 cont. / ~0.2 motion)	_____
D. Retention (days)	_____
Raw GB = B x 10.8 x A x D x C	_____
Raw TB = Raw GB / 1,000	_____
Provisioned TB = Raw TB x ~1.5	_____

Illustrative arithmetic on 2026 ranges. Bitrate moves with scene and motion; the ~1.5x provisioning factor depends on RAID level and array size. This is engineering guidance, not legal advice - confirm retention rules with counsel.