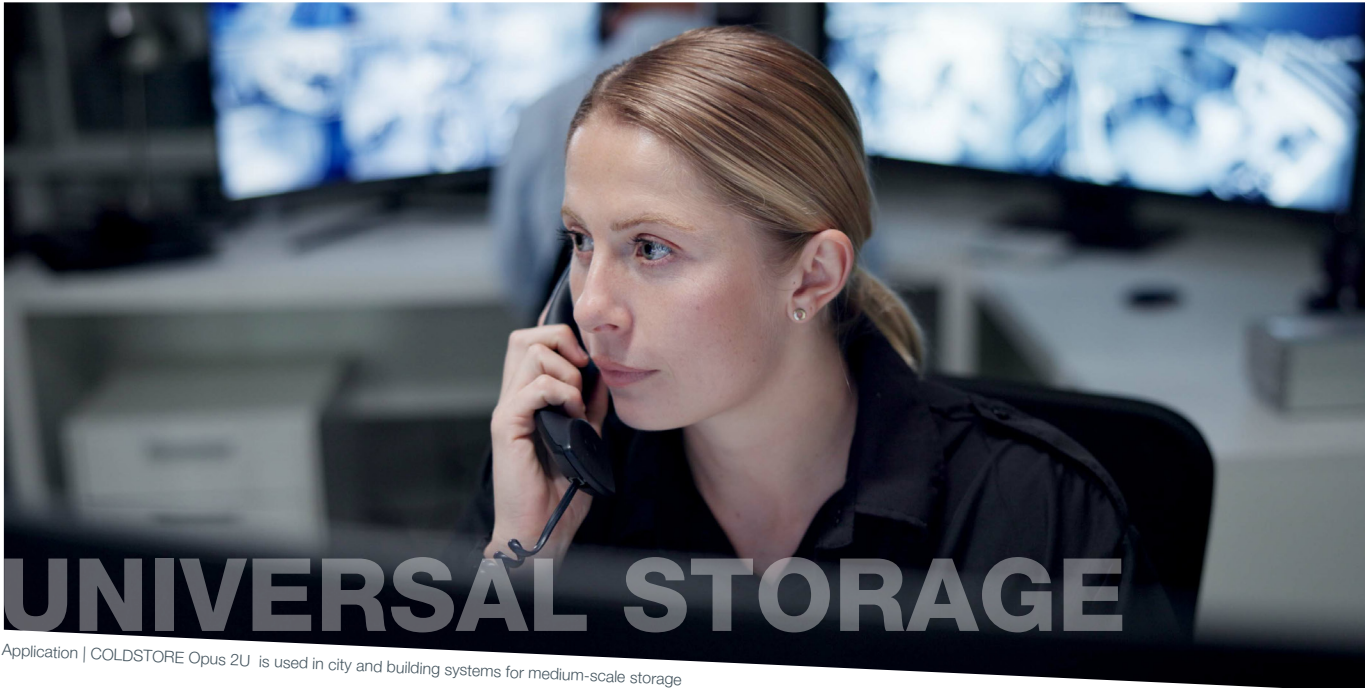OPEN SURVEILLANCE STORAGE SYSTEM

# COLDSTORE OPUS® 2U

UNIVERSAL STORAGE

Application | COLDSTORE Opus 2U is used in city and building systems for medium-scale storage

## An open VMS storage system incorporating LAID™ technology and very low TCO

COLDSTORE's mirrored recording and sequential writing pattern across the array offers extreme hard disk reliability and very low power consumption.

| Network attached sequential storage system designed for video

| Incorporates LAID™ for low power and high disk reliability

| 8-bay system with up to 192TB capacity

| Immediate compatibility with future larger disks

| Only 60 watts power consumption (at full disk capacity)

| Supports all third-party Video Management Systems

| Reliable and proven COLDSTORE technology

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# The COLDSTORE Opus series works with any Video Management System which supports external storage

COLDSTORE 2U Opus is ideal for smaller projects using a third-party VMS which requires affordable high storage capacity, extended disk lifetimes, and long file retention.

## Reliability Assured

Our Linear Array of Idle Disks (LAID™) technology produces a powerfully simple and reliable system which provides generous video storage capacity at low cost. Whilst simple in concept, it has far-reaching beneficial effects and delivers a highly reliable storage system which dramatically extends disk lifetime, even when using the lowest-cost disks available.

## Low Power, Low Cost

COLDSTORE Opus 2U is designed to provide the key features and reliability of COLDSTORE technology at a lower cost and in a smaller rackmount format. It is aimed at small to medium-sized projects with camera counts of up to 100 channels with typical bit-rates. Dual Gigabit Ethernet ports handle all the video traffic from the chosen VMS or NVR system.

## Extended Disk Lifetimes

Disks are used sequentially, with all of the disks not in use being switched off, saving power and thus greatly reducing temperature, vibration and wear – the three primary disk killers.

The system uses a unique mirrored overlapping-pair writing pattern to provide full data redundancy during the critical writing process. This delivers the redundancy of RAID1 on write, but unlike RAID1, does not require double the number of disks.

Within the array, the use of sequential overlapping mirrored writing pairs requires only two active disks at any one time with the others switched off. This greatly reduces wear and further reduces array vibration and operating temperature. Thus every disk is off, on average, for 75% of the time in the
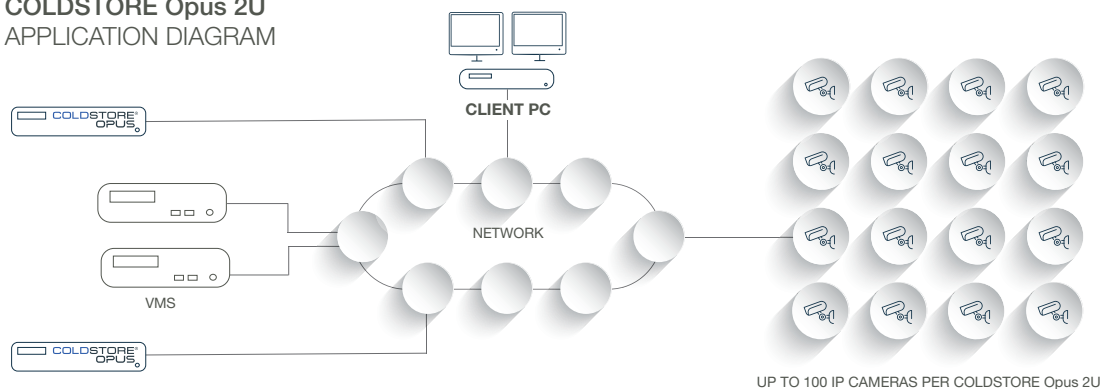
8-Bay system. Disks automatically switch on for playback, but typically playback from non-writing disks is infrequent and hardly affects the average duty cycle. Hard disk lifetimes of 10 years are achievable.

## Purpose-Designed System

COLDSTORE Opus 2U is built around an industry standard main-board system with a power-efficient CPU and standard disk backplanes.

Even a fully populated 192TB array will use around 60 watts. This low power consumption extends the electronic component lifetime, which, combined with extended disk lifetimes, reduced cooling costs and lower UPS purchase cost, results in a very low overall total cost of ownership.

## COLDSTORE Opus 2U
## APPLICATION DIAGRAM



CLIENT PC

NETWORK

VMS

UP TO 100 IP CAMERAS PER COLDSTORE Opus 2U

*The VMS server writes to COLDSTORE Opus across the network. Multiple servers can write to a single COLDSTORE Opus,* *or one server can write to multiple COLDSTOREs depending on VMS type. In principle, individual video streams can be* *routed to any COLDSTORE on the network under the control of specific types of third-party video management systems.*

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# The 2U model provides advanced COLDSTORE® technology benefits, including high disk reliability, at lower cost

The compact 2U version of COLDSTORE Opus delivers up to 192TB of storage capacity at a low power level of 60W, even when fully populated.

## Configuration + Management

COLDSTORE Opus 2U is simple to configure, manage and monitor through Veracity's configuration tool, SITESCAPE or via a web browser. These allow automatic device discovery, configuration of settings, analysis of disks and a basic level of diagnostics.

## Simple Disk Management

COLDSTORE Opus 2U can use almost any make, model and capacity of 3.5" SATA disk drives including any mix of drives. Disks may be added "on the fly" and will automatically be incorporated into the array.

The physical location of specific time spans can be identified through SITESCAPE and disks may be extracted for archive or bulk evidential transport if the VMS supports the feature.

Despite being only 2U high, this COLDSTORE Opus can provide up to 192TB of disk capacity (168TB effective) at very low power consumption. For example, 192TB is sufficient for 100 cameras at 4Mbps per camera for over 31 days.

Veracity's configuration tool SITESCAPE, combined with the COLDSTORE Opus storage system is user friendly and the hard disks are easy to manage by system integrators and end-users alike.

## Open Storage System

COLDSTORE Opus is a new system design which supports all brands of Video Management System, allowing customers to use their favoured or existing VMS while taking advantage of all the COLDSTORE benefits for video storage.

## Other COLDSTORE Models

Veracity provides COLDSTOREs in 2U, 3U and 4U formats with a wide range of disk capacities and capabilities.

The 3U models have 16 bays with 384TB and the 4U models can have over 1PB of disk capacity.

Veracity also offers embedded NVR options for all types of COLDSTORE, combining the NVR recording process with the video storage system in a single unit, scalable to handle large numbers of cameras.

Veracity also offers the LINKLOCK range of very highly cyber-secure embedded-recording systems designed for critical national infrastructure applications, including single-camera and mobile devices. See our website for further information.

| Disk Size | TB | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Raw Capacity | TB | 32 | 48 | 64 | 80 | 96 | 112 | 128 | 144 | 160 | 176 | 192 |
| Effective Capacity | TB | 28 | 42 | 56 | 70 | 84 | 98 | 112 | 126 | 140 | 154 | 168 |

COLDSTORE Opus maximum disk capacity is always increasing. Please check our website for the most up-to-date disk capacities.

# TECHNICAL **SPECIFICATION**

# COLDSTORE OPUS®
## 2U

### GENERAL

| | |
|---|---|
| Storage Array Type | Networked attached sequential array running LAID™ writing pattern |
| Drive Bays | 8 x 3.5" (lockable drive trays included) |
| Network Interface | Dual gigabit Ethernet |
| Data Throughput | Third-party VMS dependent (unlimited scalability with multiple COLDSTOREs) |

### SYSTEM

| | |
|---|---|
| O.S. | Embedded Linux on solid state memory |
| Time Synchronisation | Via NTP (recommended) |
| System Integration | Direct from third-party client application |
| Configuration | Over LAN via Veracity's SITESCAPE application or web browser |
| Management | Over LAN via Veracity's SITESCAPE application or web browser |
| Compatibility | Compatible with all third-party VMS systems supporting external storage |

### CAPACITY

| | |
|---|---|
| Disk Capacity | SATA disks of any capacity and almost all makes and models are supported COLDSTORE supports 24TB disks and has forward compatibility for future larger disks. (Check www.veracityglobal.com for up-to-date disk capacities) |
| Array Capacity | Maximum array capacity is currently - 192TB (with current max available 24TB disks) Effective capacity - Mirrored Overlapping Pair - 168TB |

### POWER

| | |
|---|---|
| Power Supply Type | Dual redundant hot-swappable PSUs |
| Power Supply Rating | 110-240V AC Input (Auto sensing) |
| Power Consumption | 60 watts typical maximum (PSU rated at 550W) |

### PHYSICAL/ENVIRONMENTAL

| | |
|---|---|
| Dimensions | 19" rack width, 2U high, 573mm deep (W 442mm x D 573mm x H 90mm) |
| Weight | 11.7kg (26lbs) (including mounting rails but without disks) |
| Operating Temperature | 5°C to 50°C (41°F to 122°F) |
| Relative Humidity | Up to 85%, non-condensing |
| Compliance | CE, FCC, UKCA, RoHS, BIS |

### PRODUCT CODES

| | |
|---|---|
| CSTORE8-2UD-OP-UK | COLDSTORE Opus 8-bay 2U storage array, mounting rails and UK power cables |
| CSTORE8-2UD-OP-EU | COLDSTORE Opus 8-bay 2U storage array, mounting rails and EU power cables |
| CSTORE8-2UD-OP-US | COLDSTORE Opus 8-bay 2U storage array, mounting rails and US power cables |

COLDSTORE Opus 3U is also available with 16 x 24TB x 3.5" drives offering up to 384TB storage capacity.

COLDSTORE Opus 4U is also available with 45 x 20TB x 3.5" drives offering up to 900TB storage capacity.

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See **www.veracityglobal.com** website for country and region specific contacts.