General Questions

How much does it cost?

International pricing will vary in different parts of the world. Here are the current prices for Cinedeck EX and Cinedeck RX and options as of September 2011, all prices US-MSRP:

- Cinedeck EX with standard display: $8,495
- Cinedeck EX with Hi-Brite display: $8,990
- Cinedeck RX (4RU half-rack): $14,995
- EXSync timecode module for Cinedeck EX: $895 (more info below)
- Ambient Master Clock for Cinedeck RX: $895 (more info below)
- Cinedeck Stereoscopic Option for 3D: $199 (included with RX model, details below)
- Cinedeck SI-2K Camera Option: $3495 (more info below)

Are there any codec support differences between Cinedeck EX & Cinedeck RX?

No there are absolutely no differences between the two Cinedeck offerings. Both systems capture to the following codecs:

- Apple ProRes: 4444, 422 (HQ), 422, 422(LT), 422 (Proxy)
- Avid DNxHD: 175/185/220x, 175/185/220, 115/120/145, 36/45 to MXF OP-Atom or .MOV
- CineForm: Filmscan1, Filmscan2, Keying, High, Medium, Low
- Uncompressed 444 (10-bit) or 422 (8 or 10-bit) recording .MOV (via single or dual-link 3G HDSDI and HDMI)

What happened to Cinedeck EXTREME?

Cinedeck EXTREME has simply been rebranded as “Cinedeck EX” in order to more directly align to our product family naming structure with the addition of the new Cinedeck RX. There has been no change to Cinedeck EX hardware.

What are the primary differences between Cinedeck EX and Cinedeck RX?

Both Cinedeck models have the same basic tool suite, and media captured on one model system should be fully interoperable on another model. The following table highlights the primary differences between the two models.

Here's a quick glance at the differences between the models:

x – included in standard product

o – available option

	Cinedeck EX	Cinedeck RX
Signal I/O		
Dual-Link HDSDI	1	1
3G HDSDI	2	2
HDMI v.1.4	1 in, 1 out	1 in, 1 out
GigE LAN	Single	Dual
Analog Composite	X	X
Component	X	X
Per channel line mic impedence switch	X	X
AES Audio	X	X
Balanced 2 CH Audio	X	X
Analog Color Black or Tri-Level Sync	X	X
Interconnectivity		
Removable 2.5" SSD Drives	1	4
VGA	X	X
USB2	2	1
USB3		2
eSATA	1	2
GigE LAN	Single	Dual
WiFi	X	
Headphone jack (for monitoring)	X	X
IRIG Timecode		X
LTC Timecode		X
EXSync (for jam sync to external clock)	O	
Ambient Master Clock (for sync to external clock)		O
Image Analysis Tools		
WaveForm	X	X
Vectorscope	X	X
Histogram	X	X
Focus tools	X	X
Clipping	X	X
Codec Support		
Apple ProRes (including 4444)	X	X
Avid DNxHD (MXF or MOV Wrapped)	X	X
CineForm Filmscan 1, Filmscan2, Keying, High, Medium, Low	X	X
Uncompressed 422 (8 and 10-bit)	X	X
Uncompressed 444	X	X

	Cinedeck EX	Cinedeck RX
Resolutions		
HD - 1080i, 1080p, 1080PsF, 720p	X	X
SD - PAL/NTSC, 480	X	X
SI-2K Uncompressed	O	
Physical Attributes		
Dimensions	5"h x 8"w x3.5"d	7"h x 8.5"w x9"d 4RU half-rack
Weight	4 lbs	10 lbs
7" Touchscreen - 250 NITS	X	
7" Touchscreen - 1000 NITS	O	
7" Touchscreen - 800 NITS		X
Redundant Power Supply		X
Camera mountable (choice of Anton Bauer or V-Gold mount)	X	
Rackmountable		X
Recording Capabilities		
Mix & Match Encode		X
Camera inputs	1	2 Double dual-stream (2 channels, 1 codec or 1 channel, 2 codecs)
Redundant Files		X
Stereoscopic 3D	O	X
Other Features		
Remote TCP/IP Deck Control Application	X	X
Realtime Upconvert SD to HD	X	X
Realtime Downconvert HD to SD	X	X
Realtime Crossconvert	X	X

What's new in the Cinedeck EX version 2.5 release?
Version 2.5, released in November 2011, delivers a range of customer-requested features that support an even better operational experience for Cinedeck users. These include a new and enhanced playback engine, expanded timecode operations, upgraded audio metering displays, and a new Windows-based, desktop remote controller for multiple Cinedeck EX systems.

Chief among the enhancements of the Cinedeck v2.5 release is a new playback engine, which has been completely rewritten and provides a vastly improved user-experience compared to prior versions. Crucially, the new engine enables users to take advantage of Cinedeck Controller, a free Windows-based desktop application, which provides basic deck control of the Cinedeck EX. Cinedeck

Controller, which comes bundled with the new software release, allows users to remotely control up to 24 Cinedeck units, browse a list of clips recorded in the current scene folder, and to control recording and playback on multiple units independently or simultaneously.

Among the many expanded timecode operations, Cinedeck v2.5 adds support for Adrienne Electronic's LTC devices, including the use of Adrienne's mini USB timecode reader. Cinedeck EX already supports Ambient Recording timecode systems.

Redesigned audio meters now show audio in dBFS (full scale) from -60dB to 0dB, with levels displayed in an array of colors making them easier to read in the field. Along with a range of general playback fixes, other enhancements include new edge detection displays, with edges in red, rather than black, to increase legibility.

Where can the release be found?
Version 2.5 requires a completely fresh OS firmware update, as well as an application update. Here are the instructions to download the update from our FTP site:
ftp://ftp.dbox.com
username: cinedeckupdate
password: update123
folder: Restore_Disk_ Update
NOTE: Have your Cinedeck Restore USB key handy.
Installation instructions: (Ideally this is done on a pc, or on the Cinedeck unit.)
We suggest an FTP client like filezilla or similar for the download. It is ~850MB (total OS replacement.)
1. Download the files instructions.txt and xpe-full.zip from the FTP server.
2. Follow the step-by-step instructions in instructions.txt to install the OS and application update.

What features were released in Version 2.0?
Cinedeck released a major new version of software for Cinedeck EX in March 2011. The v2.0 release featured a massive amount of new capabilities; here are some of the highlights:

> Avid DNxHD Support
> Avid centric workflows immediately benefit from the direct onboard capture to any flavor of MXF-wrapped Avid DNxHD, including 220x, 220, 175x, 175, 145, 36 (proxy.) Plain QuickTime (.mov) also supported.

Apple ProRes Support
Apple Final Cut workflows immediately benefit from the direct onboard capture to all five Apple Pro Res codecs: Apple ProRes 4444, Apple ProRes 422 (HQ), Apple ProRes 422, Apple ProRes 422 (LT) and Apple ProRes 422 (Proxy.)

Uncompressed HD
FullStream Uncompressed™ option provides ability to record in 10-bit uncompressed 444 and uncompressed 422 in either 8 or 10-bit, superior to HDCAM SR. FullStream Uncompressed is now standard on Cinedeck EX and records to .mov files.

Usability and performance improvements in v2.0 included:

Upconvert/Downconvert/Crossconvert capabilities
Failsafe Input Settings
Battery meter
Disk capacity warning tally
New file deletion protection measures
Audio metering and controls
Waveform monitor improvements
Support for optional EXSync timecode module

In July 2011 Cinedeck released version 2.1 for Cinedeck EX. The version 2.1 release had a whole host of ease of use refinements including improved uncompressed 444 capabilities, improved SSD management, and greater fan speed control. There were plenty of meaningful bug fixes included in the release as well that addressed a range of issues including better timecode management and MXF handling.

Are there any codec support differences between Cinedeck EX and Cinedeck RX?
No there are absolutely no differences between the two Cinedeck offerings. Both systems capture to the following codecs:

- Apple ProRes: 4444, 422 (HQ), 422, 422(LT), 422 (Proxy)
- Avid DNxHD: 175/185/220x, 175/185/220, 115/120/145, 36/45 recording MXF OP-Atom or .MOV
- CineForm: Neo (for 3D), Filmscan1, Filmscan2, Keying, High, Medium, Low
- Uncompressed 444 (10-bit) or 422 (8 or 10-bit) recording .MOV (via single or dual-link 3G HDSDI and HDMI)

What is the version number for Cinedeck RX?
With the initial shipment of Cinedeck RX in Q4 2011 the software revision number will be v 2.5.

How does Cinedeck EX or Cinedeck RX improve my camera's images?
Cinedeck devices use the camera's optics to more accurately capture what the camera is seeing - bypassing lower quality lossy compression. Cinedeck EX and Cinedeck RX capture to both cinema grade visually lossless codecs or fully uncompressed HD, an immediate image quality upgrade for cameras that capture to low bit rate, highly compressed, lossy formats. Cinedeck EX and Cinedeck RX help operators extend the life of their cameras by providing them with the best images they have ever captured. The devices also provide a "unified master format" regardless of camera vintage or manufacturer.

Can I connect an external display to Cinedeck EX or Cinedeck RX?
There are multiple methods for attaching external displays to the Cinedeck systems:

- The VGA output enables a 1280 x 800 "clone" of the Cinedeck user interface on a computer display
- HDSDI or HDMI outputs enable HD or SD "clean video" monitoring with the realtime upconversion/downconversion capabilities.

What sort of conversion does Cinedeck EX or Cinedeck RX perform?
Cinedeck EX and Cinedeck RX both support a large number of realtime upconvert/crossconvert/downconvert formats. The conversions can be performed both on the way into the device, was well as on playout on material that has been captured on disk. For more information, please reference the Cinedeck EX User Manual: http://www.cinedeck.com/customercare/manual/
The Cinedeck RX User Manual will be posted as soon as it is available.

What is the "double dual stream" feature?
Cinedeck RX introduces a unique first –of-a-kind feature we've dubbed "double dual-stream". This feature provides simultaneous redundant file capture, each to a pair of disks.

· Capture two channels at one time, with one codec per channel, each writing 2 disk copies (master/safety) simultaneously OR
· Supports full mix/match of simultaneous recording of one channel to any two codecs with redundant disk copies of each [For example: 1 Avid DNxHD, 1 Apple ProRes]

Is there any performance limitation to the mix/match combination?
All dual encodes need to be limited to 30p framerates or less.

What is the FullStream Uncompressed™ Option?
Cinedeck EX with FullStream Uncompressed™ offers the highest quality acquisition and mastering format ever available in a portable HD DDR.

FullStream Uncompressed™ is now available standard on Cinedeck EX and Cinedeck RX. FullStream Uncompressed™ enables:

- Uncompressed 10 bit 444 HD Recording
- Uncompressed 10 bit 422 HD Recording
- Uncompressed 8 bit 422 HD Recording

NOTE: Cinedeck certifies only certain types of SSD media that have been tested to ensure that they support the datarates required to sustain uncompressed capture/playback. Certified SSD media must be purchased separately from a Cinedeck Authorized Reseller.

Is it possible to record uncompressed 1080 in 50 or 60p? (It is not evident in the quality settings.)
Cinedeck RX records codec quality up to 1080 50p or 60p uncompressed 10-bit. Cinedeck EX records CineForm 8-bit as the only 50p/60p capable codec at present.

What is the EXSync™ timecode module?
The EXSync™ timecode module for Cinedeck EX is a $895 (US) hardware option that is supported as of the version 2.0 Cinedeck EX software. The EXSync timecode module is factory installed and can be ordered with new units.

Can the EXSync timecode module be added to existing units?
EXSync can be added to Cinedeck EX as a “return to factory” installation. Please contact your Cinedeck Authorized reseller who will make arrangements to have EXSync installed.

What does the EXSync timecode module do?
EXSync enables a Cinedeck EX to jam sync timecode from an external master clock. This functionality ensures that there is a consistent timecode stamp across multiple Cinedecks or other timecode based devices.

How does the EXSync timecode module work?
The EXSync timecode module connects to a master clock source via an industry standard 5 pin LEMO connector. An LED on Cinedeck EX will flash red until the unit has been temporarily connected to a source. Once TC has been sync’d, the LED flashes green, indicating successful jam sync. Additionally, a “master Cinedeck” equipped with EXSync can serve as a master clock source for other EXSync equipped Cinedeck EX, or for Cinedeck RX units with the Ambient Master Clock option.

What is the Ambient Master Clock option?
The Ambient Master Clock option for Cinedeck RX is a $895 (US) hardware option that is supported by Cinedeck RX. The Ambient Master Clock option is factory installed and can be ordered with new units.

Can the Ambient Master Clock option be added to existing units?
The Ambient Master Clock option can be added to Cinedeck RX as a "return to factory" installation. Please contact your Cinedeck Authorized reseller who will make arrangements to have the Ambient Master Clock option installed.

What the Ambient Master Clock option do?
The Ambient Master Clock option enables a Cinedeck RX to jam sync timecode from an external master clock. This functionality ensures that there is a consistent timecode stamp across multiple Cinedecks or other timecode based devices.

How does the Ambient Master Clock option work?
The Ambient Master Clock option connects to a master clock source via an industry standard 5 pin LEMO connector. An LED on Cinedeck RX or Cinedeck EX will flash red until the unit has been temporarily connected to a source. Once TC has been sync'd, the LED flashes green, indicating successful jam sync. Additionally, a "master Cinedeck" equipped with the Ambient Master Clock or EXSync can serve as a master clock source for other Ambient Master Clock or EXSync equipped Cinedeck systems.

What is different between the Ambient Master Clock option and the EXSync timecode module?
The Ambient Master Clock option for Cinedeck RX and the EXSync timecode module for Cinedeck EX are functionally identical.

What about support for LTC or IRIG timecode?
Cinedeck RX provides support for both LTC or IRIG. Cinedeck EX can have a usb-based LTC reader connected to it. One such offering is available from Adrienne Electronics, model USB-TC.

What are the dimensions of Cinedeck EX?
The dimensions of Cinedeck EX are 5" x 8" x 3.5",
12.7cm x 20.3cm x 8.9cm.

How much does Cinedeck EX weigh?
Without a battery, Cinedeck EX weighs a mere 3.5 pounds (1.6 kg)
With an Anton Bauer Dionic 90 battery, Cinedeck EX weighs 5.3 pounds (2.4 kg).
With an IDX Endura 10 V-mount battery Cinedeck EX weighs 5.1 pounds (2.3 kg).

What are the dimensions of Cinedeck RX?
The dimensions of Cinedeck RX are 7" h x 8.5" w x 9" d,
17.8cm x 21.6cm x 22.9cm. The system fits in a 4RU half rack.

How much does Cinedeck RX weigh?
Without 4 SSDs installed, Cinedeck RX weighs 10 pounds (4.5 kg)

Can Cinedeck RX run on batteries?
While Cinedeck RX does not have direct battery connectivity, brick power sources may be attached to it.

What kind of battery does Cinedeck EX use?
Cinedeck EX can be ordered with either an Anton Bauer or V-Mount battery configuration.

I purchased an early version of Cinedeck EX with a V-Mount, is there a method for using a larger IDX battery?
Cinedeck now as an IDX riser available to enable the use of larger IDX batteries. This is a simple upgrade, please consult your Cinedeck Authorized Reseller for more details.

How long will the batteries last?
Battery life is affected by numerous variables, age and temperature being principle amongst them. Under temperate operating conditions, a fairly new Anton Bauer Dionic 90 will last 60-80 minutes. An IDX Endura 10 will last 60-80 minutes.

I assume that I can connect a DC power source as well?
Cinedeck EX ships with a localized power supply with appropriate certifications and plug configurations for most countries in the world. The power cable connects via a locking 2-pin LEMO connector.

Is it possible to switch to a DC power source when I need to change a battery?
Cinedeck EX supports hot-swappable power. If you need to change a battery in the middle of a take it is possible to plug in the DC power source and proceed to switch batteries wit out stopping the recording.

What about DC power for Cinedeck RX?
Cinedeck RX is provisioned with dual redundant wide input DC power, with a range of 12-28v (via dual wall adapters.)

What is the power consumption of Cinedeck EX?
The power draw of Cinedeck EX varies according to the format being encoded, and the nature of the configuration. Typically the device draws between 50-60 watts. The Hi-Brite model draws between 60 and 70 watts.
Note: A Sony SRW-1 will pull 100 watts.

What is the power consumption of Cinedeck RX?
The power draw of Cinedeck RX varies according to the format or combination of formats that are being encoded, and the nature of the configuration. Typically the device draws up to 70 watts when in multicam capture mode (described below). When idle, Cinedeck RX will consume between 35-40 watts.
Note: A Sony SRW-1 will pull 100 watts.

What is Cinedeck RX "Double Dual Stream" function?
Cinedeck RX has a unique architecture that provides simultaneous redundant file capture, each to a pair of disks. Users have the option of either:

- Capturing 2 cameras in multicam mode to a single codec simultaneously, each writing 2 copies (master/safety), or
- 1 camera into two different codecs.

What combination of codecs can be captured together on a Cinedeck RX?
Cinedeck RX supports full mix and match of simultaneous recording of one channel to any two codecs, with redundant disk copies of each. For example, Avid DNxHD and Apple ProRes. No other system has this capability.

Cinedeck Stereoscopic Option for 3D
What is the Cinedeck Stereoscopic Option for 3D?
Cinedeck announced the Stereoscopic Option for 3D at NAB 2011 with a scheduled availability of Q4 2011. The Cinedeck Stereoscopic Option adds dual camera monitoring, capture, and playback with full HD-SDI or HDMI monitoring.

Does the Stereoscopic Option for 3D capture in 8 or 10-bit?
Cinedeck EX supports stereoscopic 8-bit capture to the CineForm codec. Cinedeck RX supports 10-bit stereoscopic capture to any codec that supports 10-bit, up to and including uncompressed 422 10-bit, 30. Cinedeck RX has a different architecture that enable 10-bit stereo encode/decode performance.

How much does the Stereoscopic Option for 3D cost?
Cinedeck has reduced the price of the Stereoscopic Option for 3D from $995 to $199 since the quality is limited to 8-bit on Cinedeck EX. The option is included on Cinedeck RX, and will function at full 10-bit quality.

Is stereo 8-bit useful?
8-bit stereoscopic quality is absolutely acceptable for many production applications. It is worth noting that Panasonic's uni-body 3D cameras, the

original AG 3D1A and the newer HPX170 Pro 3D Stereo camera, as well as the Sony HXR-NX3D1 NXCAM 3D camera are all 8-bit through and through.

How can you capture stereo imagery via HDMI when there is only a single HDMI input?
The single HDMI input on Cinedeck EX supports the v1.4a spec which means it can capture either side by side or interleaved from sources such as the AJA 5M muxer or from single 3D cameras with dual lenses such as the Panasonic 3DA1. The files written that are captured in this manner are identical to those files captured via the dual HDSDI feeds.

What sorts of features are in the Stereoscopic Option?
The Stereoscopic Option enables up/down and side-by-side image display. The full complement of Cinedeck image analysis tools can be applied to each camera signal.

How much does it cost?
The Stereoscopic Option is $199 (US) and is built on CineForm's award-winning Neo 3D and First Light stereoscopic production technology. The Stereoscopic Option will be available from Cinedeck Authorized Resellers.

Does the Stereoscopic Option work on Cinedeck RX?
The Stereoscopic Option will be included standard on the Cinedeck RX.

When will it be available?
The Stereoscopic Option is expected to be available Q4 2011.

Cinedeck Stereoscopic 3D mode on Cinedeck RX
Cinedeck RX in Stereoscopic 3D mode provides dual camera capture and playback with full HD-SDI or HDMI monitoring.

How can you capture stereo imagery via HDMI when there is only a single HDMI input?
The single HDMI input supports the v1.4a spec which means it can capture either side by side or interleaved from sources such as the AJA 5M muxer or from single 3D cameras with dual lenses such as the Panasonic AG 3DA1 or Panasonic HPX170. The files written that are captured in this manner are identical to those files captured via the dual HDSDI feeds.

What sorts of features are in the Stereoscopic 3D mode?
Stereoscopic 3D mode enables up/down and side-by-side image display. The full complement of Cinedeck image analysis tools can be applied to each camera signal.

What codecs are supported in Stereoscopic 3D mode?
Cinedeck RX records 2 streams of CineForm Digital Intermediate to a single file or 2 streams of Avid DNxHD, Apple ProRes, CineForm or Uncompressed (up to 10-bit 422 30fps) to two separate files.

Cinedeck SI-2K Option
What is the SI-2K Option?
Cinedeck offers support for the Silicon Imaging SI-2K camera, which offers SI-2K 12-bit RAW 2K or HD Uncompressed and CineForm recording, 3D-LUT color processing with dual SDI monitoring on Cinedeck EX.

What are some of the features, in addition to support for the SI-2K camera?
- 2048 x 1152 resolution support
- 3D LUT "look" color metadata display
- RGB>YUV conversion for SDI output
- Power and camera cable included

How much does the SI-2K Option cost?
The SI-2k Option is $3,495 US, and is available from Cinedeck Authorized Resellers.

Any special requirements for running the SI-2K Option?
The SI-2K option will work with any SI-2K cameras running v2.0 or later of the SI software. If a customer is running v1.1 SI-2K softwar,e they will need to arrange for an additional upgrade directly from Silicon Imaging: ari@siliconimaging.com.

Does the SI-2K option replace the HD-SDI I/O board?
The SI-2K option is software only – there is no hardware change whatsoever.

Is there HD-SDI I/O via the SI-2K option?
While in the SI-2K mode the SDI output is active for monitoring purposes. The SDI input is not available in this mode.

When using the SI-2K input can you select the different recording formats such as ProRes, DNXHD, CineForm and uncompressed?
Currently the only supported codec for recording in the SI-2K option is CineForm RAW in QT Filmscan or Uncompressed. You can bring footage directly into FCP or Avid and render the raw to ProRes or DnXHD with baked in colorimetry or use CineForm First Light to adjust. For more information on First Light: http://www.cineform.com/neo3d/first_light.php

When using the SI-2K option, does it give you two inputs and allow you to shoot 3D (with the Stereoscopic Option)?

Cinedeck EX has only a single LAN connector, so only a single SI-2K camera may be attached. Customers interested in a 3D mirror rig should consider a product offered for sale from Silicon Imaging: Cinedeck SI 3D. Please contact ari@siliconimaging for further details.

Is the SI-2K option available for Cinedeck RX?
There are currently no plans to announce support of the SI-2K option on Cinedeck RX.

What is Cinedeck SI 3D?
Cinedeck SI 3D is comprised of a variant of Cinedeck EX specifically designed to support 2 SI 2K cameras via dual LAN connections.

How can I purchase a Cinedeck SI 3D?
Cinedeck SI 3D is available exclusively via the Silicon Imaging reseller channel. It lists for $14,000 (US) and includes Silicon DVR software, as well as camera and power cables for 3 SI-3D cameras. For further information, please contact Ari Presler of Silicon Imaging at: ari@siliconimaging.com

What if I want to create 3D content with the SI-2K camera?
Silicon Imaging offers a different product based on the Cinedeck HW. The Cinedeck SI-3D product is different from Cinedeck EX in both HW I/O and software functionality.

Can I capture dual SI-2K cameras into a Cinedeck RX?
There are no plans to announce support of dual SI-2K camera capture on Cinedeck RX. If market demand warrants, this is something we will likely make available.

SSD's & Media Performance

Can I use any SSD media in Cinedeck EX or Cinedeck RX?
Theoretically any solid-state media (SSD) rated for use in a laptop should afford a degree of playback performance. As with any application requiring a sustained high throughput, certain devices perform better than others. Cinedeck has tested a number of these devices and recommends that you purchase and use only Cinedeck Certified media as listed in the pricebook.

What type of media does Cinedeck RX use?
Cinedeck RX has four removable (front accessible) 2.5" SSD disk drives. The same mechanisms utilized in Cinedeck EX will work in Cinedeck RX, ensuring compatibility.

What about uncompressed playback?
For uncompressed playback, SSD RAID is no longer required. The current generation of 2.5" SSDs with Sandforce Controllers should provide sufficient throughput for uncompressed datarates.

Do I need to reformat a drive after I have finished a production?
There is no need to reformat an SSD media prior to reuse. The files can simply be erased within the Cinedeck software, or be deleted via Windows File Manager.

For further information about the care and feeding of SSD media, please consult the Cinedeck User Manual: http://www.cinedeck.com/customercare/manual/

What is the format of the files being written to disk?
All CineForm, Uncompressed and Apple ProRes encoded files are being written as QuickTime (.MOV) files. Avid DNxHD is written as either MXF-wrapped Op-Atom .MOV or .MOV

What is the format of the SSD volume?
Cinedeck EX and Cinedeck RX SSD media is shipped ready to operate formatted as NTFS.

What is the disk connectivity?
The SSD media connects via eSATA, which has a bus limit of 300MB/sec (real world is ~270MB/sec.)

How much content can I store on a media?

Well over 100 minutes can fit on a single 128GB SSD, depending on framerate. Here is a chart detailing sample capacities at 1080/23.98 fps:

Format	Bit Depth	Resolution	Chroma Sampling	Bitrate	File size@ 1 hour	Minutes per 128GB SSD	Minutes per 256GB SSD
CineForm 422	10	1920x1080	4:2:2		56.2 GB	132	264
CineForm 444	10	1920x1080	4:4:4	25-120Mbps	70.25GB	108	216
CineForm RAW	12	2048x1152	Raw bayer	30-140 Mbps	84.3 GB	90	180
ProRes 422 Proxy	8	1920x1080	4:2:2	45Mbps	15.82 GB	486	972
ProRes 422 HQ	10	1920x1080	4:2:2	147Mbps 220Mbps	51.69 GB 77.36 GB	126 72	252 144
ProRes 4444	10	2K, 1920x1080	4:4:4	330Mbps	132.78GB	48	96
DNxHD36	8	1920x1080	4:2:2	36Mbps	15.22 GB	504	1008
DNxHD145	8	1920x1080	4:2:2	145Mbps	48.81 GB	156	312
DNxHD220	8	1920x1080	4:2:2	220Mbps	73.84 GB	102	210
DNxHD220x	10	1920x1080	4:2:2	220Mbps	82.5 GB	192	216
Uncompressed	10	1920x1080	4:2:2	2237Mbps	625.18GB	12.6	25.2

A comprehensive list of storage times per codec may be found in the appendix of the Cinedeck User Manual: http://www.cinedeck.com/customercare/manual/

Can I access the SSD via the eSATA port for direct downloading of files recorded on to Cinedeck EX?

Support for direct download from Cinedeck EX via eSATA is not supported at this time. However, the SSD may be ejected and placed in the SSD docking station

supplied with the Cinedeck EX system, which has both eSATA and USB connectivity. Direct download by eSATA is supported in Cinedeck RX thru either the eSATA connector on the front or rear of the chassis.

How do I view files once they are in the docking station?
The docking station can connect to either a Mac or a PC via USB or eSATA. Once connected, the files are available to be copied onto another volume. If preferred, and depending on the non-linear editing system and the format recorded to, the files will open up directly in the editor for immediate manipulation in post.

Can I view the footage on any computer?
CineForm provides a free QuickTime plug-in that enables playback of CineForm files on either a Mac or a PC. The Neo plug-in decoder is available for download here: http://estore.cineform.com/neoplayer.aspx

Avid offers a downloadable DNxHD QuickTime software codec:
http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=263545

Apple offers a downloadable ProRes QuickTime software decoder for use on a PC:
http://support.apple.com/downloads/Apple_ProRes_QuickTime_Decoder_1_0_for_Windows

What are the transfer rates for copying from the docking station to another volume?
The transfer speeds via USB 2.0 are up to 480Mbps.
The transfer speeds via eSATA are 2-3GB/minute depending on host.
The transfer speeds via USB 3.0 (available only on the Cinedeck RX) are theoretically up to 10 times faster than USB 2.0. That said, it is reasonable to expect to achieve around 3.2 Gbit/s (0.4 GB/s or 400 MB/s).

What about attaching external drive mechanisms to the eSATA port?
Attaching an external eSATA drive is no problem.
On Cinedeck EX:
Simply connect the eSATA device via the provided cable and it should appear as the record drive once Cinedeck EX has booted up. Important: Remove any SSD media you may have loaded in the onboard storage bay as Cinedeck EX can only target one recording volume at a time.

On Cinedeck RX:
Cinedeck RX features eSATA connectivity on both the front and back of the rackmount chassis. Cinedeck RX enables the ability to target multiple recording volumes simultaneously through a simple menu “destination” selection. For further details please consult the Cinedeck RX manual.

What non-linear editing systems will work with the CineForm files?

- Adobe Premiere Pro
- Apple Final Cut Pro
- Avid Media Composer v5 and later (via AMA interface)
- Grass Valley Edius
- Sony Vegas

How do I get my media from an SSD into an Avid Media Composer project?
Cinedeck EX harnessed the Avid Media Toolkit to ensure native MXF support of AAF-aware OP-Atom wrapping of Avid DNxHD recorded clips. Here are the steps to take the shortest route from production to post:

- Eject the SSD card from Cinedeck EX or Cinedeck RX
- Place card into the (included) SSD upload station connected to your editing system via USB or eSATA
- Copy clips directly into the Avid MediaFiles folder with an (included) script (found in the Cinedeck Extras folder)
- Drag and drop the Avid DNxHD files directly into the bin of your project.

What if I have an Avid editor that is earlier than the current version 5.0?
Many pre-version 5 Avid Media Composer, DS, and Symphony editors are able to use Avid MetaFuze to convert CineForm MOV files to DNxHD. Make sure you have the Neo decoder installed on your editing system, along with MetaFuze. While picture and sound will come across, some metadata may not be carried. Visit this site for more information on Avid MetaFuze, including a free download: http://www.avid.com/US/solutions/workflow/MetaFuze

The CineForm Neo decoder is available for download here: http://estore.cineform.com/neoplayer.aspx

What sort of conversion/ingest times should I expect heading in to post with CineForm files?
Provided the files have been captured to any of the CineForm formats the files will be drag and drop compatible – no additional rendering or processing required.

Codecs
One of the primary performance advantages of Cinedeck EX and Cinedeck RX is the ability to select from a wide variety of edit-ready codecs or uncompressed. Recording directly to the Codec format optimized for your post workflow means you may wind up saving tens of thousands of dollars and days of production time by eliminating the time consuming transcoding from an acquisition format to a post format.

What is the CineForm digital intermediate codec?
The CineForm digital intermediate codec provides image quality that rivals HDCAM SR. It can write files with up to 12 bit precision, in RGB, YUV, and RAW chroma formats. The many CineForm codec settings, combined with its digital intermediate metadata handling, make CineForm ideal for standing up to the rigors of compositing and keying.

Here are some useful resources for learning more about the CineForm codec:

- Quality Comparison versus HDCAM SR: http://techblog.cineform.com/?p=540
- CineForm Workflow Overview: http://techblog.cineform.com/?p=1284
- Understanding Active Metadata: http://techblog.cineform.com/?p=1271
- First Light Video Tutorial: http://www.vimeo.com/11886542
- Download NEO Player (Mac OS X): http://www.cineform.com/downloads/NeoPlayerMacV508b135-100616.zip (4MB)
- Download NEO Player v5 (Windows): http://www.cineform.com/downloads/NeoPlayerV506b265-100712.zip (5MB)

How can I compare the various CineForm codec settings?

- CF Low – similar to DVCProHD
- CF Medium – similar to HDCam
- CF High – similar to HDCAM SR SQ
- CF Film Scan1 – between HDCAM SR SQ and HQ
- CF Film Scan2 – roughly equivalent to HDCAM SR HQ
- Keying –optimized for pulling chroma keys

The most commonly selected format for mastering is the *CF High* setting. The *Keying* setting should be selected when producing for chroma keyed content. This setting is optimized for keying, with equal weight being given to the chroma-values, providing incredibly pristine keys in either 8 or 10 bit.

Does Apple provide a decoder for ProRes?
Apple offers free Apple ProRes QuickTime decoders that allow both Mac and Windows users to play Apple ProRes files through QuickTime.
Download the Decoder for Mac here: http://support.apple.com/kb/DL1
Download the Decoder for Windows here:
http://support.apple.com/kb/DL2

For further information regarding Apple ProRes, here is a helpful whitepaper on the Apple website: http://images.apple.com/support/finalcutpro/docs/Apple-ProRes-White-Paper-July-2009.pdf

Will Cinedeck support the new Avid DNxHD 444 codec?
Cinedeck has ever intention to support the DNxHD 444 10-bit codec recently announced by Avid. This is one of the virtues of the Cinedeck software-centric architecture: as new codecs become available they can be added much more easily than FPGA based solutions.

Where can I learn more about Avid DNxHD?
For further information regarding Avid DNxHD there is a helpful whitepaper on the Avid website: http://www.avid.com/static/resources/US/documents/dnxhd.pdf

What framerates are currently possible with uncompressed formats on Cinedeck EX?
Cinedeck EX supports the following uncompressed resolutions/framerates. As SSD technology bandwidth improves this list will expand:

- 8 bit YUV 422 - 23.976/24/25/29.97
- 10 bit YUV 422 - 23.976/24/25/29.97
- 10 bit RGB 444 - 23.976/24/25

What framerates are currently possible with uncompressed formats on Cinedeck RX?
Cinedeck RX supports the following uncompressed resolutions/framerates:

- 8 bit YUV 422 - 23.976/24/25/29.97/50/59.94/60
- 10 bit YUV 422 - 23.976/24/25/29.97/50/59.94/60
- 10 bit RGB 444 - 23.976/24/25

Metadata
What sort of metadata is supported by Cinedeck EX or Cinedeck RX?
Cinedeck EX and Cinedeck RX support all the standard industry metadata that is carried by the CineForm “active metadata” file structure. In addition, we support UTC and GPS coordinate metadata. This information may be accessed via CineForm's First Light application. First Light is included with Neo/4K/3D and is available for a 15 day trial evaluation on www.cineform.com

What is Active Metadata?
Active metadata refers to data stored within a compressed CineForm file that specifies an operation to be performed on the decoded bitstream prior to delivering the decoded data to the calling application. Active Metadata is a valuable technique to preserve highlight detail from the camera’s sensor. In a typical digital camera, white balance and color matrix processing is “flattened” into the bitstream. Such processing can reduce highlight detail significantly depending on the amount of processing. As long as color information is stored as “active metadata” instead, highlights from the camera’s sensor remain in the source bitstream and color processing remains a post process. Color information

can always be changed or eliminated altogether without impacting the original source data.
For more information on Active Metadata:

- Understanding Active Metadata: http://techblog.cineform.com/?p=1271

Audio

How many total audio channels are available for input?
Cinedeck EX and Cinedeck RX support audio input in any of the following separate configurations. Only one of these input sets is available for capture at a time:

- 8 channels embedded via SDI
- 8 channels embedded via HDMI
- 2 channels analog: Line, Mic, or Mic w/ 48v phantom power source
- 2 channels via AES/EBU

NOTE: These inputs are discreet and may not be mixed and matched.

How many audio channels can be recorded?
Cinedeck EX and Cinedeck RX record up to eight channels of audio.

Are there preamps?
Cinedeck EX and Cinedeck RX have preamps, with full level control.

How do I change the audio record settings?
The Cinedeck user interface provides the ability to display up to 8 channels of audio. There is per channel gain control and master level gain control.

Can I monitor the audio from the device directly?
Cinedeck EX has a stereo mini headphone jack and the volume level is controlled via the user interface.

Monitor

What is the resolution of Cinedeck EX display?
Cinedeck EX has the highest native resolution 7" touchscreen panel available today. The resolution is 1024 x 600.

What is the brightness of the screen?
Cinedeck EX is available in 2 screen configurations: standard and Hi-Brite. The standard screen is 250 NITS. The Hi-Brite – designed for use in direct sunlight settings, is 1000 NITS.
Cinedeck RX has a high brightness rating of 800 NITS.

What's the screen life of the Hi-Brite vs. standard display?
The life of a display is very much dictated by how well it is cooled. In the case of Cinedeck EX we have provisioned with a large copper heat sink, located directly behind the display. We anticipate that the screen life of the Hi-Brite should be no different than a standard, ~ 15,000 hours. In the case of the RX, the unit has

been designed to maximize laminar air flow from the air conditioned front of a rack such as in a mobile truck setting, with the exhaust exiting at the rear of the rack.

Deck Control

Can I control Cinedeck EX or Cinedeck RX from my camera?
Cinedeck EX and Cinedeck RX are able be controlled from any camera that provides an SDI output. Set the camera mode to “record-run” and both Cinedeck devices will start/stop based on the change in timecode.

What about control over TCP-IP?
Cinedeck has recently announced the Cinedeck Controller application. Based on industry standard protocols, the Cinedeck Controller application drives up to 24 channels (12 Cinedeck RX systems) from a single interface. The ability to remotely record, playback, fast forward and rewind multiple Cinedeck RX units in sync makes the controller application a centralized point of control and management for any facility or OB setting.

How much does the Cinedeck Controller application cost?
The Cinedeck Controller will be included with Cinedeck RX and Cinedeck EX and will be distributed free of charge to existing customers.

How many Cinedecks can I control simultaneously?
A total of 12 Cinedeck EX and/or Cinedeck RX systems can be controlled simultaneously via the Cinedeck Controller application.
How many channels can I control on each Cinedeck?
A total of 2 channels can be controlled at a time per Cinedeck RX, a single channel per Cinedeck EX.

Will the controller app automatically detect Cinedecks on the network?
The initial release will require that the Cinedeck Controller be set to point to the IP addresses of all the Cinedecks to be controlled.

Can the Cinedecks be set up remotely?
In the initial release, each Cinedeck will have to be individually configured with respect to input settings, codecs etc.

Can I manage folders/files remotely?
File management is possible either by local touchscreen operation or via a remote administrator station. This means that Cinedeck EX or Cinedeck RX system can be managed from any (Windows) laptop or desktop, and soon via a browser, with no additional hardware requirements.

Have there been any changes to the automatic file name generation based on

project, scene and take?
The current auto file-naming feature remains in tact.

What about RS-422 control?
RS-422 is not supported at this time. When RS-422 control is supported we will make it available via a free software upgrade. Please make sure you are registered on the Cinedeck website so you are alerted once it is available: http://www.cinedeck.com/registration/

Supported Cameras
What cameras do Cinedeck EX and Cinedeck RX work with?
Cinedeck EX works with a most commercial digital cinema cameras on the market today. It conveniently can receive outputs via HD-SDI, HDMI, or LAN. Analog connectivity is also supported via a breakout cable. For the latest list of tested cameras, please visit the Cinedeck website: http://www.cinedeck.com/#!cinedeck/work-with-camera

Do you support the new Sony PVM-F3 camera and the S-Log firmware option?
Cinedeck EX and Cinedeck RS RX works beautifully with the Sony F3 camera. This combo has been used on numerous productions, including the feature film The Ghost of Goodnight Lane. Here is a profile of one such production as featured in Creative Cow: http://magazine.creativecow.net/article/cinedeck-extreme-enhances-sony-f3-workflow
Here is a great behind the scenes video of the world's first S-Log shoot at NAB 2011: http://vimeo.com/22576231?ab

Do you support the ARRI ALEXA or the RED ONE or RED EPIC?
As Cinedeck EX and Cinedeck RX sports HD-SDI connectivity, the output of the ARRI ALEXA or RED EPIC HD-SDI can be fed directly into it. The RED ONE has a 720p output that we support for on set monitoring.

Does Cinedeck EX and Cinedeck RX support record triggering from the camera?
Cinedeck EX works with any camera that is in record-run mode, In the TC tab, set to SDI:auto. Cinedeck systems will record when it sees the timecode change and stop when the timecode stops changing.

Do you support ARRIRAW?
We are working with the development team at ARRI to ensure comprehensive support for the ARRIRAW™ format, and to achieve formal certification as part of their Partner Program. ARRIRAW certification will be announced upon full completion of the certification process.

OK, but will it work on my Cinedeck?

It is too early to make a definitive declaration that it will be able to work on your box. If it is determined an upgrade is required we will provide a reasonable upgrade path to our existing customers.

Do you support R3D?
Cinedeck understands the market interest and demand to support file types such as R3D. Cinedeck EX and Cinedeck RX are software upgradeable, which means that additional features and functionality will be able to be added via software update. Some of these updates will be free, others will be chargeable.

What about the Canon 5D Digital SLR camera? Cinedeck EX seems like a perfect fit!
We have had a great amount of interest in Canon's 5D camera. Unfortunately, no DSLR manufacturer *as yet* provides a full-frame 1080i image out of the camera. Further, the image output tends to have a lookaround or overlays on the image. As of now the cropped 1080i resolution is seen as inadequate for professional post. Here is a link to an excellent resource for Canon 5D cinematographers:
http://magiclantern.wikia.com/wiki/Magic_Lantern_Firmware_Wiki
The Magic Lantern firmware adds incredible additional cinematographic tools to the Canon 5D.

Do you support the Silicon Imaging SI-2K camera?
Yes, Cinedeck offers a special software option for the SI-2K for $3495 (US-MSRP.) This price includes the cabling needed to connect the SI-2K to the Cinedeck unit. For more details, please see an earlier section of this document.

Accessories
Can I attach a controller?
We have had customers report that they have had success with a wired remote record connected via USB. The Swifty is one such device and is available from Origin Industries: http://www.orin.com/access/swifty/
A simple mini 2 button mouse that can be connected to the Swifty via a mini – mini cable is available for triggering: http://miniurl.com/47436
Cinedeck is working to improve remote wired and remote wireless triggering solutions. Please check back for updates on this testing/qualification effort.

Can I control Cinedeck EX or Cinedeck RX from a wireless device?
Cinedeck EX is able to be controlled via WIFI by utilizing a third party remote access software such as RealVNC. RealVNC enables the entire Cinedeck EX UI to be accessed via a separate computer. Other than reliable real time video playback over WiFi, all other functionality is active on the accessing device. Here is the link to RealVNC: http://www.realvnc.com/

Can I use an Apple iPad or Apple iPhone to control Cinedeck EX?
We have had reports of customers using third party software such as TeamViewer http://www.teamviewer.com/download/index.aspx to control Cinedeck EX device from Apple iPad and Apple iPhone. We will be publishing a TechNote to provide step by step configuration instructions.

Is there support for a GPS device?
Cinedeck EX works with the Garmin model 18x GPS antenna. The GPS connects via USB on Cinedeck EX. Metadata for longitude, latitude and altitude coordinates are displayed on the front screen, and is saved with the recorded CineForm files. NOTE: Other USB Garmin antennas may work but have not been tested. Cinedeck RX does not have GPS support at this time.

