

# Infinity

## DMC 1000 Digital Media Camcorder



Grass Valley™ products from Thomson offer the most comprehensive multi-format solutions for acquisition, production, storage, playback, and transmission—and a strong foundation for centralized, proactive status and activity monitoring. These solutions include one of the broadest selections of standard-definition (SD) and high-definition (HD) digital video cameras.

With one of the best-known imaging design teams in the world and multiple technical Emmy® awards, Grass Valley camera products continue to break ground for innovation and creative ideas.

Our Infinity™ Series digital media camcorder (DMC) is a revolutionary step in EFP and ENG acquisition—combining the best of our Emmy award-winning camera engineering with leading IT recording and connectivity technologies. The result is a multi-format solution designed from the ground up to deliver all the benefits of advanced acquisition and recording in an affordable, open, and truly flexible system.

Designed to provide freedom of choice in compression, format support, and recording media, the Infinity Series DMC is a perfect complement to your EFP and ENG workflows. It features multi-format support; advanced CMOS Imagers and digital processing; on-board selectable compression; high-quality audio capabilities; support for IT-based recording media, including REV PRO™ and CompactFlash removable media; and traditional and IT-based connectivity.

### Enhancing Your Workflows

The Infinity DMC enhances and even redefines EFP and ENG workflows by fully embracing IT-based technologies, connectivity, and convenience. You can, for example, use media from the camcorder in a fashion similar to that of videotape in tape-based workflows.

However, Infinity Series products offer more than just videotape replacements. In nonlinear editing environments, for instance, you can connect a REV PRO drive or CompactFlash card reader to a workstation for direct access to the camcorder's media.

For greater accessibility, you can copy the files on the media to a file server for immediate, enterprise-wide use. With metadata assigned at the capture phase, or any time in the process, you can edit, sort, and find files with greater ease no matter where they are stored. We also offer the LCP 400 wireless control panel software that enables you to control the camera and manipulate metadata via a wireless connection.

### Multi-Format Support

The Infinity Series DMC provides a choice of SD and HD formats that are instantly selectable within the camera. This design makes it ideal for multi-format acquisition and for a straightforward migration from SD to HD acquisition and workflows.

The camera's format support includes that for 525i60, 625i50, 1080i50, 1080i60, 720p50, and 720p60. SD formats are selectable in 16:9, 4:3, and letterbox aspect ratios.

## key features

- Three Xensium™ 2/3-inch CMOS imagers
- HD/SD multi-format support including 525i60, 625i50, 720p50/60, 1080i50/60
- Recording/playback to and from integrated REV PRO and CompactFlash media and external devices
- Metadata, video, and audio content written in an open, MXF-based wrapper
- Supports DV25, JPEG 2000, and MPEG-2\* compression schemes
- Traditional and IT-based inputs/outputs
- HDMI viewfinder connector
- Gigabit Ethernet connectivity
- Control over IP connections with Grass Valley C2IP system
- Configurable four-channel audio router with multiple selectable input sources
- Built-in 3.6-inch TFT touch screen
- Supports Grass Valley LCP 400 wireless control panel software

\* MPEG-2 encoding and decoding is available with an optional board

### Advanced CMOS Image Capture, Digital Processing

The Infinity Series DMC features three newly developed Grass Valley Xensium CMOS imagers. These in-house designed imagers provide a full native HD resolution and offer a high dynamic range and signal-to-noise ratio.

The camcorder also features 22-bit digital signal processing to perform all camera image-management functions such as knee, gamma, contours, and variable matrix, with a high level of precision and perfect picture reproduction.

### On-Board Selectable Compression

Infinity Series products provide a choice of compression schemes and bit rates, letting you select what is best for your workflow today and in the future. The DMC supports DV25, JPEG 2000, and MPEG-2 (optional) compression, assignable via its interface. And it is already prepared for the easy integration of new compression standards. Its interface, for example, makes it easy for you to insert a compression-specific board in the future.

The camcorder's DV codec is 25 Mb/s 4:2:0 (PAL) or 4:1:1 (NTSC), making it ideal for immediate use in your workflow today.

The next-generation JPEG 2000 compression scheme can be used for SD and HD acquisition. It provides, high-efficiency compression, 10-bit 4:2:2 encoding, high image quality, and no blocking artifacts—and is fully scalable through its ability to encode once and decode many different resolutions as needed.

### High-Quality Audio Recording

The Infinity Series DMC records uncompressed, real-time, high-quality, four-channel audio with selectable bit rates, and offers mixture of eight selectable analog and digital input sources. It also features AES/EBU inputs and outputs for external audio device connectivity.

### IT-Based Recording Media

The Infinity Series DMC is the first camcorder to use off-the-shelf omega REV removable disks, REV PRO, and professional-grade CompactFlash solid-state memory as recording and playback media.

The extremely durable REV PRO removable disks combine the portability and cost effectiveness of videotape with the speed, flexibility, and ease of use of true nonlinear media such as hard disks.

Professional-grade CompactFlash memory is a readily available solid-state technology that delivers high-level performance for demanding professional video applications. CompactFlash cards are small, lightweight, and extremely durable. They are available in various capacities from dealers worldwide and trends indicate that their storage capacities will continue to increase while their costs decrease.

Both REV PRO and CompactFlash media offer unprecedented advantages in terms of usability, price, and performance, including nonlinear random access to video files, simultaneous playback while recording, and non-degrading archival storage.

### Ultimate Connectivity

The Infinity Series DMC offers the ultimate in connectivity. Its traditional inputs/outputs include BNC connectors for (HD-)SDI, CVBS, TC, and AES digital audio—as well as XLRs for analog audio.

For IT-based connectivity, the camcorder comes with three USB 2.0 connectors (two hosts and one device), one FireWire (IEEE 1394) connector, one HDMI display connector, and two Gigabit Ethernet ports. It can also connect to an external storage device such as a hard drive or flash memory device via USB or FireWire. You can connect viewfinders and other standard display devices, such as HD flat-screen monitors, via the HDMI connector.

### Touch-Screen, Wireless Control

You can manipulate the Infinity Series DMC through traditional controls for standard operation and through a side-panel, TFT touch-screen display. A built-in user interface supports video monitoring, clip management, audio setup and metering, and detailed camera configuration.

You can also use our LCP 400 software to control the camera. Running on a Windows Mobile PDA or Pocket PC Phone, it gives you access to all camera menus and settings—and lets you change them while shooting. It displays audio levels and, thanks to its extremely low latency, lets you make critical adjustments to audio parameters such as gain. And you can create and edit metadata such as names, dates, slugs, locations, and even camera settings before, during, or after the recording.

### Compact Design

Performing anytime, anywhere, and under all circumstances has been one of the main design objectives for the Infinity Series DMC. As a result, it is well balanced, easy to handle, and offers a high level of mobility and comfort with an eye for detail and optimized ergonomics.

With its feature set and connectivity capabilities, the DMC eliminates the need for additional IT peripherals and reduces your travel volume and operational weight requirements. Dedicated accessories such as flight cases, carrier bags and rain covers complement the camcorder.



<b>Specifications</b>		
<b>Infinity Digital Media Camcorder</b>	<b>Infinity DMC – Model No. DMC 1000</b>	
<b>General</b>		
Power	DC 15V (11.0V to 17.0V) Consumption during record standby 45W, with active imaging, view finder, compression, buffer, and lens Consumption while recording 49W, while recording to REV PRO	
Temperature range	Operating: 0°C to 40°C (32°F to 104°F); Storage: -20°C to 60°C (-4°F to 140°F)	
Humidity range	10 to 90% (relative humidity)	
Weight	5 kg (11 lbs.) without viewfinder, 5.7 kg (12.6 lbs.) with HD CRT viewfinder	
Dimensions	240 mm (H) x 150 mm (W) x 330 mm (L) without lens and battery	
<b>Camera Part</b>		
Lens mount	2/3" bayonet type	
Optical system	F1.4 prism	
Optical filters	Motorized: clear, 1/4 ND, 1/16 ND, 1/64 ND	
Color-correction filters	Electronic: 3200K, 4700K, 5600K, 7500K, 2 AWB presets and continuous auto-white, Variable color temperature: 2200°K to 20000°K in 10°K steps	
Pickup device	3 x 2/3" full HD Xensium CMOS imagers	
Digital processing	22-bit accurate processing	
Exposure	Electronic exposure down to 1/2000 sec	
<b>Video Mode</b>	<b>625i/525i</b>	<b>1080i/720P</b>
Temporal frequencies	50/59.94 Hz	50/59.94 Hz
Gain	-6 dB to +42 dB in 3 dB steps (user-definable presets) and variable master gain between -6 dB and +17.9 dB in 0.1 dB steps	
Aspect ratio	16:9, 4:3, and letterbox	16:9
Sensitivity	2000 lux (186 ft.cd.) at F8 typical	
S/N ratio in Y signal	61 dB typical	54 dB typical
Modulation depth	70% at 5 MHz in luminance (Y) signal (16:9)	50% at 800 TV lines (27 MHz) in luminance (Y) signal
<b>Audio</b>	20 Hz – 20 kHz unweighted, 24 bits PCM, 48 kHz, dynamic range 85 dB	
<b>Compression</b>		
DV25	Both PAL (4:2:0) and NTSC (4:1:1)	
JPEG 2000	<b>SD</b>	<b>HD</b>
	10-bit, 4:2:2 30-, 40-, 50 Mb/s	10-bit, 4:2:2 50-, 75-, 100 Mb/s
MPEG-2 (requires the DMC 1120 MPEG-2 option board)	—	<b>HD</b>
		8-bit, 4:2:0 60 and 80 Mb/s, I-Frame
<b>File Formats</b>		
High-quality content	MXF OP-1A (SMPTE 378M), including 4 channels of PCM audio and metadata	
Metadata definition	Compatible with SMPTE Metadata Dictionary RP210	
<b>Built-In Storage</b>		
REV PRO	REV PRO drive	
CompactFlash	2 x Type I and II CompactFlash slots, speed depending on media	
<b>Camcorder Connectors</b>		
Front microphone input	XLR-3 female, balanced +48V XLR-5 female, balanced +48V phantom (requires DMC 1180 option)	
Rear audio inputs	2 x XLR-3 female, mic-/line-level, balanced, +48V selectable	
Additional audio inputs	AES/EBU or embedded (HD-)SDI audio via BNC and 2 channels via wireless receiver slot	

Specifications Cont.	
Audio output	XLR-5 male, line-level, 2-channel mixed balanced 6.3 mm stereo jack earphone
Additional audio outputs	AES/EBU or embedded (HD-)SDI 2 channel audio via BNC
Lens connector	12-pin female Hirose
Viewfinder connector	HDMI type A connector
(HD-)SDI input	BNC, SMPTE 292M (1.5 Gb/s) or SMPTE 259M (270 Mb/s), 0.8 Vp-p, 75Ω
(HD-)SDI output	BNC, SMPTE 292M (1.5 Gb/s) or SMPTE 259M (270 Mb/s), 0.8 Vp-p, 75Ω
Analog video input	BNC, CVBS, blackburst, linear time code or AES/EBU audio, 1.0 Vp-p, 75Ω
Analog video output	BNC, CVBS, linear time code or AES/EBU audio, 1.0 Vp-p, 75Ω
DC 15V in	XLR-4 male (11.0V to 17.0V)
DC 12V out	4-pin Hirose, 12V (11.0V to 17.0V) 1A with tally signal
IT Connectivity	
Ethernet	1 x RJ-45, control and file-transfer connectivity (1 x RJ-45 streaming for future release)
USB	2 x USB A host, 1 x USB B device
IEEE 1394	6-pin IEEE 1394 connector, powers up to 10 W
Supplied Accessories	
User's Guide, Quick Start Guide, Quick Reference Guide	
Options	
2" HD viewfinder	Model No. DMC 1100
Display	HD B/W CRT
Resolution	>600 TV lines (center)

### Ordering Information

Please contact your authorized Grass Valley representative.  
Financing available through Grass Valley Financial Services.

### Support Services & Training

The Grass Valley Support Services & Training team delivers complete service solutions that enhance your return on Grass Valley products and global systems solutions. Advanced training and proactive support, by reducing down time, keeps your equipment and staff performing at optimum productivity and quality.

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For specific requests, our worldwide experienced Support Services & Training experts can build and assist you with customized solutions.

For more information contact your authorized Grass Valley representative or visit us online at [www.thomsongrassvalley.com/support](http://www.thomsongrassvalley.com/support).

### Headquarters

**Thomson Worldwide Headquarters**  
17 rue du Petit Albi – BP 8244  
95801 Cergy Pontoise Cedex  
FRANCE

**Cameras**  
Kapittelweg 10  
4827 HG Breda  
P.O. Box 90159  
4800 RP Breda  
The Netherlands

[www.thomsongrassvalley.com](http://www.thomsongrassvalley.com)

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### Sales and Technical Support Numbers

North America		Pacific	
Sales/Support	+1 800 547 8949	Sales	+852 2531 3000
	+1 530 478 4148	Support	+852 2531 3056
Fax	+1 530 478 3347	Fax	+852 2802 2996
Latin America		Rest of the World	
Sales	+1 305 477 5488	Sales	+33 (0) 1 34 20 70 00
Support	+1 530 478 4148	Support	+800 80 80 20 20
Fax	+1 305 477 5385		(West/North Europe only)
			+33 (0) 1 48 25 20 20
			(East Europe, Middle East, Africa)
		Fax	+33 (0) 1 34 20 70 47