

LDK 140IT(W) DIGITAL DVCPRO50 CAMCORDER



The synonym for picture performance and flexibility

City, country or even world-roving camera operators are challenged by a wide variety of situations in which they always need to perform to the best of their abilities. Those who are hired by various employers are expected to comply with specific preferences, such as, picture impression and recording format. **Picture performance and flexibility are key words here and are synonymous with the LDK 140IT(W).**

The LDK 140IT(W) belongs to the family of most advanced camcorders developed for camera operators all over the world who find themselves working for different employers and in a wide variety of applications, such as, current

affairs, inserts in a magazine-style program, news and outdoor soap shootings. Based upon a highly regarded range of studio and portable triax cameras, the LDK 140IT(W) provides you with digital signal processing you could only dream of previously. The image information of the interline transfer CCD's (which are optionally wide-screen switchable) is immediately digitized using full 12-bit A-to-D converters to ensure optimum scene reproduction. 22-bit digital signal processing is then applied to allow a host of unrivalled features. These include dual Emmy-award-winning skin-contour circuits and easy-to-adjust matrixing memories to make sure that skin colors are reproduced naturally -even when lit by fluorescent lighting.

- **Advanced digital signal processing for superb picture quality**
- **Smart-Touch™ software to easily optimize pictures in all situations**
- **Smart-card storage of personal picture and operational preferences**
- **Intelligent digital automatic operation for ultimate convenience**
- **Superb 4:2:2 video recording on DVCPRO50 tape**
- **DVCPRO and DVCPRO50 switchable**
- **High-quality digital audio processing to support both sound engineers and one-man crews**
- **A host of other features you would only expect on much more expensive cameras**

DVCPRO 50

Smart-Touch™

The more creative aspects of digital technology have been made easily adjustable to meet the prevailing lighting situation or to add a program-specific flavor to your pictures so that your work is even more highly appreciated by producers and audiences. The optional Smart-Touch™ software conveniently provides you with 14 pre-defined scene files, resetting even the most advanced digital settings of your camera to optimize your camcorder's performance for night scenes, sports coverage or to create a variety of film-like images.



Personalizing your LDK 140IT(W)

Storage of preferred camera settings (4 scene and 2 operator files) is then performed via a credit-card-sized smart card. Four scene files are available on a single smart card to store all picture-related parameters, including gain and gamma, black stretch levels and skin contour settings. These inexpensive cards allow you to create a dedicated 'look' and 'feel' for every employer, application or situation –any of which can be instantly recalled at the touch of a button.

The stored operator files - containing information, such as: which text is displayed in the viewfinder, the safe area, gain presets and audio bar - enable the operator to instantly personalize the camera configuration without affecting the picture settings.

And, if you share your camcorder with colleagues or hire your equipment from rental companies, you can turn any LDK 140IT(W) Digital DVCPRO50 Camcorder into 'your favorite' camcorder at the touch of the same button.

Digital automatic operation

Besides technical and creative benefits, the digital signal processing of the LDK 140IT(W) Digital DVCPRO50 Camcorder affords the operational convenience that truly makes your life easier. The LDK 100 Series Camcorders are all equipped with Continuous Auto-White Circuits that monitor -frame- by-frame - possible changes in scene illumination by intelligently picking a reference subject. Extended Auto Iris is another handy feature that you will appreciate. How often did you experience an underexposed or overexposed picture due to the limited range of your lens' iris, e.g., when panning from an indoor scene to a long shot through a window? The LDK 140IT(W) with Extended Auto Iris feature simply stretches that range by imperceptibly adjusting both gain and exposure time.

** For more information on accessories and Smart Touch™ see our separate brochures Camera and Camcorder Accessories and Smart Touch™, available from your Thomson representative or from www.thomsonbroadcast.com*



DVCPRO50 4:2:2 for optimal recording.

All your efforts at making the pictures look perfect will be recorded securely on the internationally successful DVCPRO50 tape standard. 4:2:2 sampling is not only a cost-effective solution it also ensures pictures that are hardly distinguishable from their uncompressed equivalents. However, in case your customer prefers DVCPRO25 as a standard, e.g., for news or magazine-inserts, you can easily switch your LDK 140IT(W) camcorder to meet this request as well.



Superior audio performance

As well as excellent video performance, digital processing also ensures excellent audio performance. Two pairs of 22-bit digitally processed audio channels are at your disposal for perfect recording onto DVCPRO50. An Intelligent Digital Automatic Gain Control recognizes the differences in sound levels, e.g., of background sound, voices or music and selects the correct sound level automatically. This enables hands-free audio recording, a significant benefit in solo or accompanied assignments. An optional wireless microphone receiver can be built in, as required. In combination with the Digital Automatic Gain Control, this assures top-quality sound without having to worry about adjustment.

Operational convenience

Entry of audio and time code settings is made fast and easy by a built-in LCD screen, dedicated buttons and a menu structure to which many camera operators from around the world contributed.

For example:

Sound engineers can now rest assured that recording levels are tamper proof by setting them in a menu to prevent them being altered inadvertently. Gaffer's tape to fix level controls is no longer necessary. Switching between different types of input signals was never this easy. The LDK 140IT(W) simply 'remembers' gain settings and control preferences. This degree of operational convenience can never be obtained from standard camcorders.

And that's not all

Thanks to a low center of gravity and fully adjustable shoulder pad- the ergonomic design and perfect balance of the LDK 100 Series Camcorders guarantees quick and sure operation, leaving the operator complete freedom to concentrate on the subject in front of the lens.

An extensive package of standard accessories comes with every LDK 140IT(W), including a set of smart cards, a wireless infrared remote control, a heavy-duty shoulder strap and rain cover.

Not to forget the -standard - video input to record external video feeds without the need for additional VCR's.

Options like a Serial Digital (SDI) video output with embedded digital audio allows you to simultaneously record material on DVCPRO50 tape and stream the footage into non-linear editing facilities. And, in combination with Local Control Panel, LCP100, the SDI output also makes possible a comprehensive set-up for a vision engineer.

Reason enough to contact your local Thomson representative for a closer look.

LDK 140IT(W) the synonym for picture performance and flexibility



TECHNICAL SPECIFICATIONS

GENERAL

Power requirements	DC 12V (11.0 V to 17.0 V)
Power consumption	27.5 W (rec/play mode, incl. viewfinder)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Operating humidity	<85%
Weight	4.9 kg (including viewfinder)

CAMERA SECTION

General

Digital quantization	12 bits A/D
Digital signal processing	18 MHz and 36 MHz, >22 bits accuracy

Exposure control	down to 1/2000 sec.
Clean scanning	NTSC: 60.1 - 151.0 Hz PAL: 50.1 - 103.0 Hz

Optical system	F1.4 with quartz filter clear, 1/4 ND, 1/16 ND, 1/64 ND
Optical filters	NTSC: 400 (450 in EVR) PAL: 450 (530 in EVR)
Vertical Resolution (TV lines)	(EVR = Extended Vertical Resolution mode) <0.05% (all zones, without lens) 500% (Typical)

Registration	
Dynamic range	

LDK 140ITW

Pick-up device	3 x 2/3" Interline Transfer CCD, Aspect Ratio: switchable 16:9 and 4:3
	NTSC: 1038 (H) x 504 (V) PAL: 1038 (H) x 594 (V)

Picture elements

Smear	-125 dB (typical)
Sensitivity	2000 lux at F11 (typical) in both 16:9 and 4:3 mode

Minimum illumination	approx. 0.5 lux (F1.4 lens, +36 dB gain)
Modulation depth	16:9 mode 70 % typical at 5 MHz 4:3 mode 50 % typical at 5 MHz (Equals Hor. Resolution of 700 TV lines in both 4:3 and 16:9)

S/N ratio	NTSC: 63 dB in both 16:9 and 4:3 mode PAL: 61 dB in both 16:9 and 4:3 mode
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Gain	-6 dB to +36 dB in 3 dB steps
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LDK 140IT

Pick-up device	3 x 2/3" Interline Transfer CCD, Aspect Ratio 4:3
	NTSC: 813 (H) x 503 (V) PAL: 813 (H) x 585 (V)

Picture elements

Smear	-120 dB (typical)
Sensitivity	2000 lux at F11 (typical)
Minimum illumination	approx. 0.25 lux (F1.4 lens, +42 dB gain)

Modulation depth	50 % typical at 5 MHz (Equals Hor. Resolution 700 TV lines)
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S/N ratio	NTSC: 63 dB (typical)
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Gain	PAL: 61 dB (typical) -6 dB to +42 dB in 3 dB steps (user defined presets)
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VTR SECTION

Format	Switchable DVCPRO/DVCPRO50 digital audio/videorecording
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Cue	1 channel (ch 1/2/mix)
CTL	1 track
Tape	1/4-inch Metal Particle tape
Cassette size	97.5 x 64.5 x 14.6 mm (3.8" x 2.5" x 0.6")

FF/REW time	Approx. 3 min. using DP121-66M
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DVCPRO

Digital audio	2x1 channels
Max. recording time	66 min. with DP121-66M
Tape speed	33.820 mm/s

DVCPRO50

Digital audio	2x2 channels
Max. recording time	33 min. with DP121-66M
Tape speed	67.640 mm/s

Video performance

DVCPRO

Sampling	4:1:1
Sampling frequency	Y: 13.5 MHz, Cr,Cb = 3.375 MHz
Compression ratio	5:1
Bitrate	25 Mb/s

DVCPRO50

Sampling	4:2:2
Sampling frequency	Y: 13.5 MHz, Cr,Cb = 6.75 MHz
Compression ratio	3:3:1
Bitrate	50 Mb/s

DVCPRO/DVCPRO50

Quantization	8 bits/sample
Error correction	Reed-Solomon code
Bandwidth	Y: 0 to 5.75 MHz + 1/-3 dB
S/N ratio	>55 dB
K factor (2T)	<2%
Linearity	<2%
Y/C delay	<20ns

Audio performance

Sampling	48 kHz, 22 bits
Processing	24 bits (down converted using noise shaping to 20 bits for dig. ser. out, 16 bits to tape)
	20 Hz to 20 kHz, + 1.0/-1.0 dB
	>100 dB

Frequency response	>90 dB (typ. 95 dB at 1 kHz)
Dynamic range	<0.008% (20 Hz to 20 kHz)
Signal to noise on tape	>80 dB (1 kHz)
Distortion	-128 dBu
Channel separation	
Eff. input noise (MIC)	

INPUTS

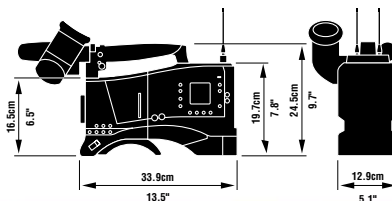
Video/gen lock	BNC (1.0 Vp-p, 75 Ohm)
Time code	BNC 1 Vp-p, approx. 560 ohm
Front mic	1 x XLR 3, balanced, +48 V
Mic/line	2 x XLR 3, balanced (48 V selectable)
	2 kOhm (mic level selected)
	10 kOhm (line level selected)
	RS-232, 9 pin
	(also used for control panel)
	XLR 4
DC 12 V	

OUTPUTS

Video (CVBS)	BNC (1.0 Vp-p, 75 Ohm)
Viewfinder	20 pin
Viewfinder monitor (Y)	BNC (1.0 Vp-p, 75 Ohm)
Digital serial (option)	SMPTE 259M-C/EBU Tech 3267E
Time code	BNC 1.0Vp-p, 75 Ohm
VTR connector (option)	26-pin, component video, XLR 7
or Audio I/O (option)	XLR 3, balanced ch. 1/2/mix, or unbalanced ch. 1 and 2
Audio	-20 dBFS/-18 dBFS +17 dBu (balanced)
	50 Ohm
	12 V, 4 pin mini jack
	12 pin
nom. level	
max. level	
impedance	
DC	
Earphone	
Lens	

SUPPLIED ACCESSORIES

1.5" viewfinder (optional)	Shoulder strap
Raincover	Anton Bauer gold mount plate
User manual	IR remote control
Owner Card (1x)	User Card (2x)
Smart-Touch™ (optional)	Serial digital output (optional)



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Information subject to change without notice

Printed in the Netherlands

3122 787 3700

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