

TECHNICAL SPECIFICATIONS

OCP 42

Power consumption	3 W
Weight	1.2 kg
Dimensions H x W x D	354 x 80 x 110 mm
Operating temperature	0°C to +40°C
OCP42 connectors:	
Preview	9 pin sub-D
CCU	9 pin sub-D (RS 422 and 12 V DC power input)
Loop	9 pin sub-D
DC in	XLR 4-pin 12 V DC

1.5" (4 cm) Viewfinder

Tube	1.5" (4 cm) black and white
High resolution	700 TV lines
Rotation	+135°/-90°
Adjustment	70 mm lateral, 30 mm longitudinal
Weight	0.72 kg
Operating temperature	-20°C to +45° C

5.5" (14 cm) Viewfinder

Tube	5.5" (14 cm) black and white
High resolution	600 TV lines
High brightness	600 Nits
Power consumption	1 A
Weight	3 kg
Operating temperature	-20°C to +45° C

7" (17 cm) Viewfinder

Tube	17 cm (7") black and white,
flat	
High resolution	750 TV lines
High brightness	600 Nits
Rotation +90°	Tilt +-50°
Weight	7 kg

Environmental conditions

Environmental conditions for camera head, Microcam, Sportcam, adapters, viewfinders and Optic Extender:	
Temperature	-20° to +45° C
Electromagnetic compatibility	EN 50081-1, EN 50082-1
Relative humidity	(non-condensing) for 48 hours 93% RH at 40°C, IEC standard 68-2-3 (NFC 20703)

Environmental conditions for CCU and OCP40 control panel:

Electrical safety	conforms to EN 60950
Temperature	0° to +40°C
Electromagnetic compatibility	EN 55022 Class A standard
Relative humidity	(non-condensing) for 48 hours 93% RH at 40°C, IEC standard 68-2-3 (NFC 20703)

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TTV/LDK 1707 12-BIT DIGITAL TRIAX CAMERA

THE 1707 DIGITAL
CAMERA.
BRINGING ULTIMATE
QUALITY TO THE
DIGITAL FUTURE



12-BIT DIGITAL TRIAX CAMERA. 16/9-4/3

THE NEW GENERATION 1707 CAMERA,
PRODUCING IMAGES OF THE FINEST QUALITY



There has never been a camera as digital as this, from the 12 bit converters, all the way to the output of the digital triax base station.

The new generation 1707 camera brings you stability, clarity, and reproducibility, in other words, the ultimate in quality. With the 1707 you will be ready for the digital future, able to shoot in 16/9 or 4/3, producing images of the finest quality, without compromise.

12-bit Quantization

The 12-bit processing brings with it new power and a picture quality formerly unattainable in 10-bit digital cameras. These 2 bits make all the difference in increasing the dynamic range, providing excellent color accuracy in the crucial over-exposed areas, and providing exceptionally clean, noise free blacks.

Stability and Reproducibility

Use of 12-bit analog-digital converters has made possible an increase in digital processing capability, thereby reducing the analog pre-processing required in comparison with 10-bit cameras. Non-linear functions, such as white compression and gamma correction, are now carried out in the digital domain. In addition, adoption of an uncompressed digital link between camera and CCU ensures link transparency. This new architecture provides extremely stable camera settings, excellent reproducibility and complete camera-CCU interchangeability.

Technology

Thomson has designed ASICs (application specific integrated circuits) using the most advanced

technologies. Such technologies are essential for the complex image processing algorithms that make it possible to provide broadcast quality pictures at the same time as minimising the camera's volume and power requirements.

CCD Sensor Block

The 1707 camera offers a wide choice of sensors, enabling each operator to choose the one best suited to his requirements, with regard to technology and price.

Among the sensors available, the 1707 may be fitted with the very latest generation of IT (Interline Transfer) CCDs, in 4/3 format or switchable 16/9 - 4/3. These offer the benefit of microlens technology, as well as new improvements that mean "smear", frequently associated with such sensors, is virtually imperceptible.



1707 Microcam

The Microcam is the ultra-compact split-head option for the 1657D. It comprises a 1707 camera body, with the CCD block mounted remotely. The camera body and block are linked by a standard, 26-pin, multicore cable of up to 100 metres length, with automatic cable compensation. This system produces a very compact camera head, enabling shots that would be impossible with a conventional camera; at the same time the picture quality of the 1707 is maintained, providing a perfect match with other 1707 cameras being used. Moreover, the CCD block can be quickly refitted to the camera body to produce a conventional portable camera, once again.

1707 Sportcam

The Sportcam version of the 1707 camera provides the same performance and functionality as a traditional studio camera. This concept gives great flexibility in use, allowing rapid conversion from a portable configuration into a studio or field production configuration with a 17 cm (7") viewfinder. This versatility is increased further by the capacity to accept large lenses with different mounting systems,

simply by changing the Sportcam™ adapter front plate. This allows the customer to rent lenses with less need to check cross compatibility.

In the Sportcam™, everything has been designed to make life easier for the cameraman. The 17 cm (7") viewfinder offers excellent resolution and its very bright output makes this viewfinder particularly suitable for outdoor shooting. In addition, control panels enables the cameraman to select which video he wants to see in the viewfinder, as well as activating the various markers he may want to use.

Viewfinder

The 1707 camera operates with 1.5" or 5.5" viewfinders from the Thomson range. The new 5.5" viewfinder is a compact unit with excellent ergonomics and superb design. It is the first viewfinder using LCD technology to display the camera number on 3 sides. These LCD panels not only display the camera number, but also becomes red as soon as the camera goes "On Air". Selection of the camera number, as well as the viewfinder "standby" position, can be achieved remotely from the control panel.



THE 1707, BRINGING HIGH PERFORMANCE AND FLEXIBILITY WHAT EVER THE REQUIREMENT



OCP 42 (Operational Control Panel)

Design a camera control system capable of accessing all the functions of a digital camera, while remaining simple, compact and economical: that was the specification to which THOMSON engineers designed the OCP 42.

With its LCD display and easy-to-use paged menu system, the OCP 42 combines control of the most sophisticated functions with vital speed of access to standard adjustments such as contour, iris or black level. A memory card can be used to store operating settings for several cameras (up to 24) or to store the technical values and operating settings for a single camera. In this case, the card could be used to restore all the original settings for a camera on its return from hire.



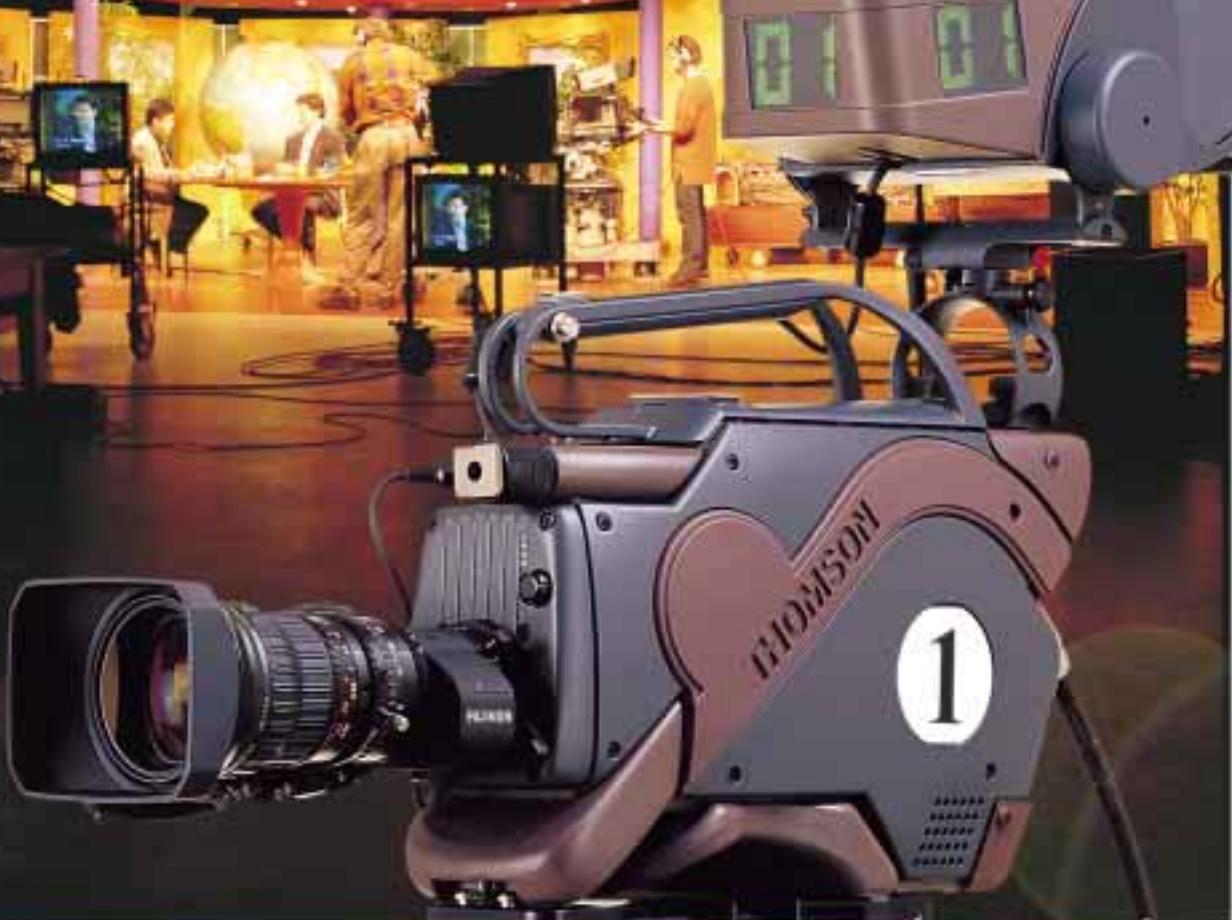
Dual Skin Detail

This correction allows the amplitude of the contour signal to be varied as a function of colour. To ensure satisfactory rendering in portrait shots, for example, the amount of detail in the face would be reduced relative to the rest of the picture. To make this function more flexible, two different hues may be selected anywhere in the colour spectrum.



Contrast compression with Colour Restoration

The compression system is used to reproduce parts of the picture that are very brightly lit and which exceed nominal level, by reducing the dynamic range. This process, unique to THOMSON,



restores the luminance and chrominance, as well as contours in over-exposed areas, thereby avoiding desaturation. This system allows fullest use to be made of the wide contrast range available from the sensors and 12-bit analog/digital conversion.



Black Stretch

This function allows blacks either to be expanded or compressed, without affecting the rest of the picture. It is particularly useful in recovering detail from large shaded areas, typically views of the whole of a stadium, where part is in sunshine and part in shadow. Conversely, it allows contrast to be increased in pictures where it is low, as in foggy scenes, for instance.



Direct Access to Colour Temperature

The 1707 camera has an exclusive system that enables the camera colour temperature to be set in steps of 100°K, between 2,200° K and 9,900° K. This function opens up new opportunities for creativity, enabling the colour balance of a picture to be altered simply by changing the colour temperature parameter. Perfectly reproducible « moods » can quickly be achieved in shooting situations where the style of picture aids dramatic effect.



4:2:2 Uncompressed Digital Triax

The 1707 camera includes an all-new Digital Triax link. Thomson's unique digital triax system transmits a 4:2:2 signal without compression from camera to CCU, delivering at the CCU outputs the highest quality images with up to 500 m of cable.

The quality of digital transmission ensures complete transparency of the link, allowing camera-CCU interchange without risk of colour changes. A true studio camera, the 1707 offers every feature necessary for its integration into a production environment, including facilities to fit a teleprompter on the camera.

Optic Extender

The Optic Extender has been designed to extend the digital triax link used with a 1707 camera. While keeping the remote feed of the camera unit, this optic extender allows the following links:

- 2 km for a 1707 camera in Sportcam configuration,
- 3 km for a 1707 camera in portable configuration.



Talkback

The 1707 camera includes a talkback channel:

- variable listening level for the cameraman. The high power available allows good audibility, even with very loud ambient sound levels, as at rock concerts.
- control room level (input/output) adjustable in 6 dB steps from -6 to +12 dB.
- connections compatible with 4-wire or RTS/Clearcom systems.

Microphone

A microphone input is available at the rear of the camera:

- CD quality digital sound transmission from camera to CCU
- sensitivity adjustable on the camera
- +48 V phantom powering

Teleprompter

Optionally, the 1707 camera may be fitted with a second video return channel. If used as a teleprompter channel, an external DC/DC converter is required to power the teleprompter monitor.

This unit is powered from the camera via its DC utility power output.



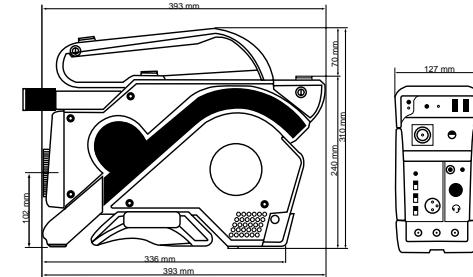
Triax CCU

Remarkably light (7 kg) and compact (3U high, half 19" rack size), the CCU DT500 will fit easily into any control room. It has analog composite as well as 270 Mb/s 4:2:2 serial digital outputs.

TECHNICAL SPECIFICATIONS

1707 Camera Head

Standard Sensors	PAL, NTSC 1707 TX: 3 CCD 2/3" IT "low smear" (Interline Transfer) 813 H x 503 V pixels in NTSC, 4/3 format 813 H x 585 V pixels in PAL, 4/3 format 1707 WIDE LS: 3 CCD 2/3" IT "low smear" (Interline Transfer) 1020 H x 505 V pixels in NTSC, 16/9-4/3 format 1008 H x 591 V pixels in PAL, 16/9-4/3 format 1707 WIDE FX: 3 CCD 2/3" FIT (Frame Interline Transfer) 1020 H x 491 V pixels in NTSC, 16/9-4/3 format 1008 H x 585 V pixels in PAL, 16/9-4/3 format 1707 WIDE FX 1250: 3 CCD 2/3" FIT (Frame Interline Transfer) 1270 H x 503 V pixels in NTSC, 16/9-4/3 format 1255 H x 587 V pixels in PAL, 16/9-4/3 format 1707 WIDE FX 1250: 85% typ. at 5 MHz 1707 WIDE LS and WIDE FX: 75% typ. at 5 MHz 1707 TX and FX: 65 % typ. at 5 MHz	Shutter Clear scan Weight Camera head connectors: Cameraman headset vf out monitor out mic in ret. 1 out prompter/ret. 2 out DC out lens Operating temperature	1/60, 1/120, 1/250, 1/500, 1/1000 s 60.3 Hz to 200 Hz in NTSC; 50.3 Hz to 200 Hz in PAL approx. 5.5 kg with 1.5" viewfinder, excluding lens Tuchel or XLR5, talkback headset connector Chuomusen, 20 pin, composite video, Y or YCrCb BNC, 1 Vpp, viewfinder video (Y or composite) or composite video XLR3 female (with +48 V phantom powering) BNC, VBS 1 Vpp BNC, VBS 1 Vpp Lemo, 30-50 V DC, 70 W utility power output for optional external DC/DC converter 12 pin connector for portable lens -20°C to +45° C
Modulation depth			
Horizontal resolution	950 TV lines in 16/9 750 TV lines in 4/3		
Vertical resolution	Standard or extended (PAL: 530 lines in extended mode)	Multicore cable Microcam/camera body	CCZA type cable, 26-pin
Registration	Zones 1, 2, 3: 0.05% (excluding lens errors)	distance	0 to 100m
Splitter	RGB splitter aperture f/1.4, with infra-red and anti-aliasing filters	Dimensions	138 x 155 x 105 mm (excluding grip and viewfinder)
Sensitivity	2,000 lux at f/8 (reflectance 89.9, color temperature 3,200°K)	Fixing	2 3/8" bolts for tripod mount 4 M4 screws and 3 M3 screws for "mini-wedge"
Minimum light level	approx. 5.5 lux (lens aperture f/1.4, gain 21 dB)	Weight	2.5 kg with viewfinder, excluding lens
Signal/noise ratio	63 dB typical NTSC; 61 dB typical PAL	Microcam connectors:	
Filter wheels	second wheel and motorisation optional	camera body video out	26-pin BNC, 1 Vp-p, 75 Ω (viewfinder video)
Wheel 1:	Neutral density: clear, 1/4, 1/16, 1/64, cap	mic in	XLR 3 (with 12V phantom powering)
Wheel 2:	special effects: clear, 4-point star, dense fog, light fog	viewfinder	Chuomusen 21-pin (B/W, component or RGB, composite video, video return)
Gain	-3, 0, +3, +6, +9, +12, +15, +18, +21 dB	lens	Hirose 12-pin



Microcam

Multicore cable	CCZA type cable, 26-pin
Microcam/camera body	
distance	0 to 100m
Dimensions	138 x 155 x 105 mm (excluding grip and viewfinder)
Fixing	2 3/8" bolts for tripod mount 4 M4 screws and 3 M3 screws for "mini-wedge"
Weight	2.5 kg with viewfinder, excluding lens
Microcam connectors:	
camera body video out	26-pin BNC, 1 Vp-p, 75 Ω (viewfinder video)
mic in	XLR 3 (with 12V phantom powering)
viewfinder	Chuomusen 21-pin (B/W, component or RGB, composite video, video return)
lens	Hirose 12-pin

TECHNICAL SPECIFICATIONS

Sportcam

Weight	10 kg without viewfinder	Max. control panel-CCU distance	30 m, powered from the CCU
Sportcam connectors:			500 m without power (RS422 SMPTE protocol)
vf in	Hirose 12-pin (for camera head connection)	Mains supply	90-135 / 180-270 V AC, 47-63 Hz
vf out	for 17 cm (7") viewfinder connection	Consumption	100 W max.
ext on air	2-pin	Weight	6.8 kg approx.
lens in	Hirose 10-pin (electronic converter side)	Dimensions	approx. 225 x 135 x 385 (3U high, half 19" rack)
lens	24 pin on Sportcam front panel, for lens with Thomson mount (others on request)	Operating temperature	0°C to +40°C
script light	6-pin lighting supply for script support	CCU connectors:	
power in	4-pin power supply for Sportcam	Remote	control panel-OCP link (SMPTE), 9 pin sub-D
		Intercom	4-wire or RTS/Clearcom talkback, 9 pin sub-D, -6 to +12 dB

Optic Extender

Max. Hybrid Optical Fiber distances	6500 ft - 2000 m in Sportcam configuration (heavy lens and 17 cm viewfinder)	Tally	
	10000 ft - 3000 m in portable configuration (light lens and 1.5" viewfinder)	Mic output	
	CCU - CCU Box : 25 m	Genlock ext. ref.	
Max. Triax distances	Cam Box - Camera head: 500 ft - 150 m with ext. Ø 9 mm cable 1000 ft - 300 m with ext. Ø 13 mm cable	Video ret. 1	
		Prompter/Video ret. 2	

CCU Box

Dimensions	330 x 230 x 110 mm		
Mains supply	100-120V / 220-240V AC, 50 or 60Hz		
CCU Box connectors:			

CCU Box connectors:

triax	Lemo 75 Ω, Lemo 50 Ω, Lemo 4E, Fischer, King	Serial digital output 1-2-3	
Hybrid cable	Lemo Hybrid connector		3 digital outputs, 270 Mb/s serial 4:2:2, 10 bits, BNC

Camera Box

Dimensions	330 x 230 x 110 mm		
Mains supply	100-120V / 220-240V AC, 50 or 60Hz		
Camera box connectors:			

Camera box connectors:

triax	Lemo 75 Ω, Lemo 50 Ω, Lemo 4E, Fischer, King	Camera	
Hybrid cable	Lemo Hybrid connector		Lemo 75 Ω, Lemo 50 Ω, Lemo 4E, Fischer, King triax connector

CCU DT 500

Max. triax distances	800 ft - 250m with ext. Ø 9 mm cable (cable attenuation 7.8 dB at 60 MHz)		
	1600 ft - 500m with ext. Ø 13 mm cable (cable attenuation 3.9 dB at 60 MHz)		