

SAFETY AND
INNOVATION

argus[®]
thermal imaging from e2v

TT / **TYPE**
OFFICER PATROL



The Argus[®] TT-Type thermal imaging camera is specially designed to help police, security and law enforcement officers detect the heat signatures of people and objects.

The Argus[®] TT-Type can be used in conditions of zero visibility including complete darkness and smoke. This is because the energy being sensed is heat rather than light allowing the camera to be used in both day and night operations and for many different applications.

The Argus[®] TT-Type is a robust, self-contained, simple-to-operate thermal imaging camera with integrated torchlight. It is lightweight and ergonomic, capable of withstanding harsh environments and contains many of the most advanced features available for any thermal imaging camera.

The Argus[®] TT-Type is available with either a 320 x 240 pixel or 160 x 120 pixel Amorphous Silicon (ASi) Microbolometer Detector and a choice of lenses is available to suit the application. The camera has been designed using advanced digital imaging technology and techniques for superior performance and application specific functionality.

TO BOOK A DEMONSTRATION OR FIND OUT MORE GO TO:

argusdirect.com

CAMERA STANDARD FEATURES

The Argus[®] TT Type comes with the most advanced features available in any Thermal Imaging Camera. **These include:**

Integrated Torchlight	Direct Temperature Measurement
Dimmable LCD Display	Choice of Colour Modes additional colour modes optionally available
Digital Image Capture 1000 images (option)	Customisable Start-up Screen
Digital Video Capture (option)	Time and Date
Image/Video Replay (option)	Digital Zoom
Fast 5 second power-up, standby mode not required	On Screen Set-up Menu
Up to 5 hours Battery Life	

CAMERA STANDARD ACCESSORIES

The Argus[®] TT Type comes with the following accessories as standard:

Quick Start Guide	Video Output Cable
User Manual	4GB Memory Card
Rechargeable Battery Pack	USB Cable
Mains Charger	Neck Strap
In-Car Charging Cable	Lens Cloth

CAMERA OPTIONAL ACCESSORIES

Security Application Colour Modes - ARG_TTP_AM_F	Image and Video Capture - ARG_TTP_IV
Sport Application Colour Modes - ARG_TTP_AM_S	AA Battery Holder - ARG_TT_AA
Specialist Application Colour Modes - ARG_TTP_AM_SS	Black Hard Case - ARG_TT_BHC
Marine Application Colour Modes - ARG_TTP_AM_M	Argus Soft Case - ARG_TTP_SC
	Additional Li-ion battery - ARG_TTP_BP
	TT Camera Holster -ARG_TTH
	<small>Please refer to the Argus website for details.</small>

CAMERA ORDER CODES

Code	Resolution	Field of View	Frame rate
TT160A	160x120	50°	30Hz
TT169A	160x120	50°	9Hz
TT160B	160x120	26°	30Hz
TT169B	160x120	26°	9Hz
TT320B	320x240	50°	30Hz
TT329B	320x240	50°	9Hz
TT320C	320x240	24°	30Hz
TT329C	320x240	24°	9Hz

PERFORMANCE

160 x 120 Pixel Sensor - 50° Field of View lens



160 x 120 Pixel Sensor - 26° Field of View Lens



320 x 240 Pixel Sensor - 50° Field of View lens



320 x 240 Pixel Sensor - 24° Field of View Lens



Note: Identification at 6.25cm/pixel. Recognition as person/object at 25cm/pixel. Detection of person at 66.7cm/pixel.

OPTICAL DATA

Detector

Sensor type	Un-cooled Microbolometer		
Sensor material	Amorphous Silicon (ASi)		
Resolution	384 x 288 array (320 x 240) used or 160 x 120		
Pixel size	25µ		
Spectral response	8 – 14µm		
MDTD	<100 mK typical (Minimum Discernible Temperature Difference)		
Dynamic range	-40°C to 150°C (-40°F to 300°F)		
Refresh rate	60Hz (TT320), 120 Hz (TT160)		
Direct Temperature Measurement (DTM)	-20°C to 150°C (-4°F to 300°F)		

Lens

Lens material	Germanium		
Type	A	B	C
Focal length	4.3mm	8.6mm	19mm
Aperture	f/1.0	f/1.0	f/1.3
Field of view TY160	50°	26°	-
Field of view TY320	-	50°	24°

Display

Type	High grade, Industrial, colour TFT active matrix LCD
Size	90mm (3.5 inch) Diagonal
Pixel format	QVGA 320 x 240, (each pixel RGB format, total pixels 230,400 pixels)
Backlight	High Brightness dimmable
Standard Colour Modes	White hot, Black hot
Update rate	30fps (TT--0); 9fps (TT--9)
Image Capture	JPEG or RAW format, 1000 images
Video Capture	AVI (MJPEG) format, approx 0.2GB/hr 10fps (TT--0); 9fps (TT--9)
Torchlight Type	High performance power LED
Beam width	12° typical

ELECTRICAL DATA

Interfaces

Power	12VDC for use with supplied mains or vehicle adaptor leads
Computer	Mini-USB (USB2) (USB Mass Storage Device)
Video Output	NTSC 525 line 60 Hz, EIA RS-170 30fps (TT--0); 9fps (TT--9)
Memory Card	Compatible with MicroSD
Power Consumption	3W typical
Start-up time	5 seconds typical
Battery type	Li-ion (DR5)
Battery life	Up to 5 hours
Battery recharge time	4 hours approx in camera 3 hours approx in external charger
Charging temp.	0°C to 40°C (32°F to 104°F)
Alternative Battery (option)	Lithium AA FR6 Primary x 4
Lithium AA Battery Life	Up to 5 hours
External power/charging	100 - 240 VAC 50/60Hz or 12VDC (with vehicle adaptor)

MECHANICAL DATA

Camera dims (H x W x D)	283mm x 91mm x 73mm
Camera weight	<0.725 kg (1.6 lb) including battery
Hand Grip Diameter	164mm Max
ENVIRONMENTAL	
Operating Temperature	-20°C to +60°C (-4°F to 140°F)
Long term storage	-20°C to +60°C (camera) -10°C to +50°C (Li-ion battery)
Sealing	Waterproof (IP65)*
Vibration/Shock	EN 60721-3-2 Class 2M3
EMC Emissions	BS EN & AS/NZ 61000-6-3:2007 EN 50489:2010 FCC CFR 47 PART 15b:2010 ICES-003(2004) (Canada)
EMC Immunity	BS EN 61000-6-2:2005 EN 50498:2010
RoHS	Compliant
Safety	IEC 60950-1 and related national standards

* Connector cover fitted.

WARRANTY

24-month warranty as standard.

Warranty can be extended for up to an additional three years at the time of purchase (exclusions apply).

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