

argus®

thermal imaging from e2v



Argus® Mi-TIC Thermal Imaging Camera

Introduction

The Argus® Mi-TIC is the world's smallest high resolution thermal imager for fire fighting applications. The camera provides a crystal clear image with a superb dynamic range: you can clearly view extremely high temperatures without whiteout, and at the same time still see very low temperature objects, which is ideal for casualty searches.

Every Argus® Mi-TIC is supplied with a unique dual use desktop / in-truck charger station which securely retains and charges both the thermal imager and a spare battery. The charger stations can be daisy-chained together up to a maximum of 6 units.

PERSONAL

Weighing less than 750g (26 oz) the Argus® Mi-TIC is a small format thermal imager that can be easily and comfortably held in the palm of your hand. Unlike many thermal imagers, the Argus® Mi-TIC design allows it to be worn in multiple ways – in the hand, inside a pocket, clipped outside a pocket, clipped to a lanyard or hung around the neck.

SIMPLE

With a thumb operated green on/off button and superb start up time of under 5 seconds, the Argus® Mi-TIC is simple to use.

SAFE

The use of Lithium Iron Phosphate technology ensures the Argus® Mi-TIC delivers 2 hours of battery life over 1,000s of cycles. They are inherently safe due to the use of patented nanophosphate® technology.

Camera Standard Features

The Argus® Mi-TIC comes with the most advanced features available in any Thermal Imaging Camera. These include:

- Direct Temperature Measurement (DTM).
- Tri-Mode Sensitivity.
- Customisable Start-up Screen.
- Toggle between application specific colour modes*
 - Fire Mode
 - Overhaul / Search Mode
- Digital Zoom*.
- User Replaceable Germanium window - no need to send camera back to the factory.
- No PC Software required for image and video download - when the camera is docked, it is recognised as a removeable device, just like a USB memory stick
- Picatinny rail - for mounting compatible accessories, eg. Streamlight LED Flashlight or Laser

* 3 button variants only

Camera Optional Accessories

- Argus® Mi-TIC Video Software Pack - enable 'Black Box' video capture (minimum 8 hours) and image marker. (Order code: ARG_MI_IV)
- AA Battery Pack. (Order code: ARG_MI_BAA)
- Argus® Mi-TIC Black Hard Case. (Order code: ARG_MI_BHC)
- Argus® Mi-TIC Lithium Phosphate Battery (High capacity). (Order code: ARG_MI_BLPL)
- Argus® Mi-TIC Sunshroud. (Order code: ARG_MI_SS)
- Streamlight TLR-1® LED flash light (Order code: ARG_MI_LED)*
- Streamlight TLR-2® LED flash light & laser (Order code: ARG_MI_LASER)*

Camera Standard Accessories

The Argus® Mi-TIC comes with the following accessories as standard:

- Two Argus® Mi-TIC Lithium Phosphate Battery Packs. (Standard) (Order code: ARG_MI_BLPS)
- Truck / Desktop Charger Dock with mains plug and universal mounting plate. (US, UK, Europe, Aus and South America) (Order code: ARG_MI_CS)
- Retractable Lanyard. (Order code: ARG_MI_RL)
- Picatinny rail accessory mount. (Order code: ARG_MI_RAIL)
- USB Connection Lead for connecting dock to PC / Laptop. (Order code: ARG_MI_USB)
- Pocket Clip (Order code: ARG_MI_PCLIP)
- Quick Start Guide.

Camera Order Codes

The Argus® Mi-TIC has the following order codes:

Order Code	Resolution	Buttons	Frame Rate
MI-160-1	160x120	1	30Hz
MI-169-1	160x120	1	9Hz
MI-160-3	160x120	3	30Hz
MI-169-3	160x120	3	9Hz
MI-320-1	320x240	1	30Hz
MI-329-1	320x240	1	9Hz
MI-320-3	320x240	3	30Hz
MI-329-3	320x240	3	9Hz

Warranty

- 24-month warranty as standard (exclusions apply).
- Warranty can be extended for up to an additional three years at the time of purchase (exclusions apply).

Camera Specification

Environmental Data

Thermal conditions	The camera has been designed to operate: <ul style="list-style-type: none"> • continuously between -10°C (14°F) and +80°C (176°F) or • 150°C (300°F) for 15 minutes • 260°C (500°F) for 5 minutes
Sealing	IP67, will withstand short-term immersion in water
Impact	The camera will withstand a drop from a height of 2 metres (78 inches) onto concrete
Storage	It is recommended that for maximum effective operational life, the storage temperature is kept between -10°C and +40°C (14°F and 104°F)

Optical Data

Detector	Uncooled Microbolometer
Sensor type	Amorphous Silicon (ASi)
Sensor material	MI-160 : 160 x 120 pixels; MI-320 : 384 x 288 pixels
Resolution	25µ
Pixel size	8 – 14 µm
Spectral response	70 mK (0.07 °C) typical (Minimum Discernible Temperature Difference)
MDTD	-40°C to 1000°C (-40°F to 1832°F)
Dynamic range	120Hz for 160x120 sensor, 60 Hz for 384x288 sensor
Refresh rate	0°C to 1000°C (32°F to 1832°F)
Direct temperature measurement (DTM)	
Lens	Germanium
Lens material	1 m to infinity, optimised at 4 m (3 feet to infinity, optimised at 13 feet)
Focal length	f/1.0
Aperture	50° horizontal, 37.5° vertical
Field of view	
Display	
Type	High grade, Industrial, colour TFT active matrix LCD
Size	69 mm (2.7 inches)
Pixel format	QVGA 320 x 240, (each pixel RGB format, total pixels 230,400 pixels)
Video input	Sensor synchronised direct digital drive
Backlight	400cd/m ²

Mechanical Data

Camera dimensions (H x W x D)	200 mm x 88 mm x 85 mm (without Picatinny rail)
Camera weight	580g (1lb and 4 oz) without battery 740g (1lb and 10 oz) with std battery 830g (1lb and 13 oz) with high capacity battery
Battery dimensions (H x W x D)	87mm x 76mm x 28mm (std battery) 87mm x 76mm x 35mm (high capacity battery)
Battery weight	160g (6oz) (std battery) 250g (9oz) (high capacity battery)
Charger dimensions (H x W x D)	167mm x 112mm x 120mm
Charger weight	550g (1lb and 3 oz)
Main camera body	Radel [®] R-5100 and Santoprene [®]
LCD window	Ultrason [®] E 2010 HC
LCD bumper	Santoprene [®]
Ge window collar	Radel [®] R-5100 and Santoprene [®]
Lens window	Germanium (2 mm thick) with durable coating



Electrical Data

Power consumption	<3 W typical
Start-up time	<5 seconds typical
Battery type	Lithium Iron Phosphate Rechargeable Battery
Battery capacity	1100 mAh, 6.6V (std battery); 2500mAh, 6.6V (high capacity battery)
Std Battery life	In excess of 2 hours @ ambient temperature (22 °C, 72 °F)
Std Battery charge time	1 hours nominal
High Capacity Battery Life	In excess of 5 hours @ ambient temperature (22°C, 72°F)
High Cap, Battery charge time	2 hours nominal
Battery recharge cycles	Over 1000 cycles
Battery sealing	IP67
Charging temperature	0°C to 40°C (32°F to 104°F)
Charger input voltage	11V – 30V DC (12 V and 24 V vehicle systems)
Charger operating temperature	0 °C to 40 °C (32 °F to 104°F)

Compliance Data

RFI/EMC	
Emissions	BS EN 61000-6-3:2007, BS EN 50498:2010, ICES-003(2012), FCC CFR-47 Subpart B, AUS/NZ 4251.1
Immunity	BS EN 61000-6-2:2005, BS EN 50498:2010
Safety	IEC 60950-1 and related national standards ANSI/ISA 12.12.01:2007 Class I, Division 2, Groups A, B, C, D T4. (Pending)
Vibration/Shock	BS EN 60721-3-2 Class 2M3.
RoHS	All parts of the system are compliant with EU directive 2011/65/EC

* Please refer to the Streamlight operating instructions for these products.