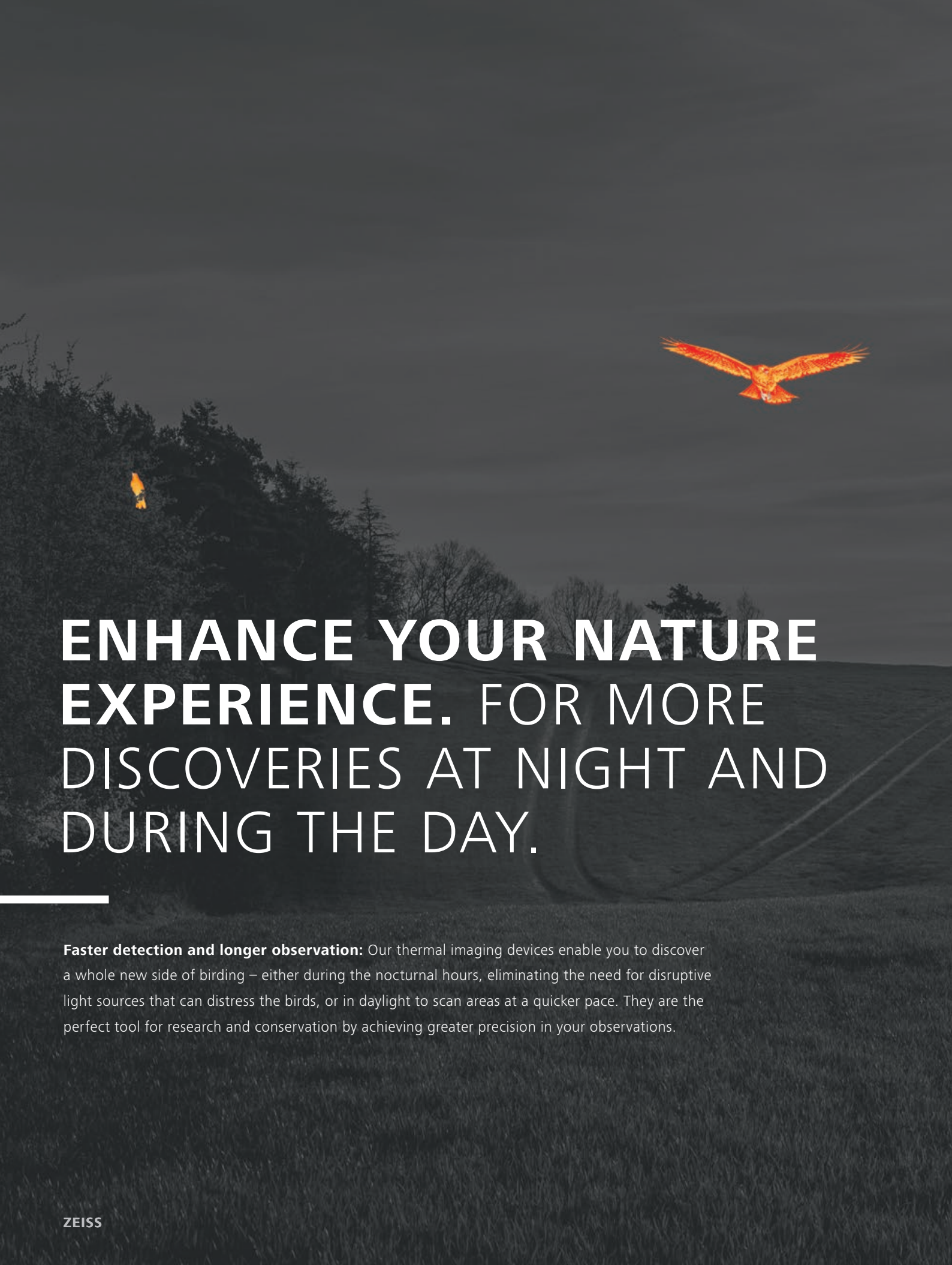
ZEISS Thermal Imaging Cameras for Nature Observation

ZEISS

Seeing beyond



ENHANCE YOUR NATURE EXPERIENCE. FOR MORE DISCOVERIES AT NIGHT AND DURING THE DAY.

Faster detection and longer observation: Our thermal imaging devices enable you to discover a whole new side of birding – either during the nocturnal hours, eliminating the need for disruptive light sources that can distress the birds, or in daylight to scan areas at a quicker pace. They are the perfect tool for research and conservation by achieving greater precision in your observations.

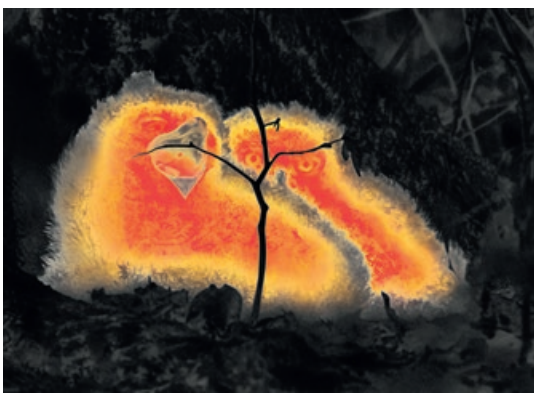
DIFFERENT FIELDS OF APPLICATION.

Nighttime observation

- Observing nocturnal birds such as owls
- Monitoring the migration patterns of nocturnal species
- Detecting roosting birds in trees

Daytime observation

- Identifying and observing birds in open areas, bushes and forests, even those with camouflage
- Exploring the rich biodiversity of tropical regions



Research

- Counting birds
- Monitoring the breeding patterns of birds e.g. nesting control
- Assisting with bird ringing activities
- Tracking and monitoring bat populations

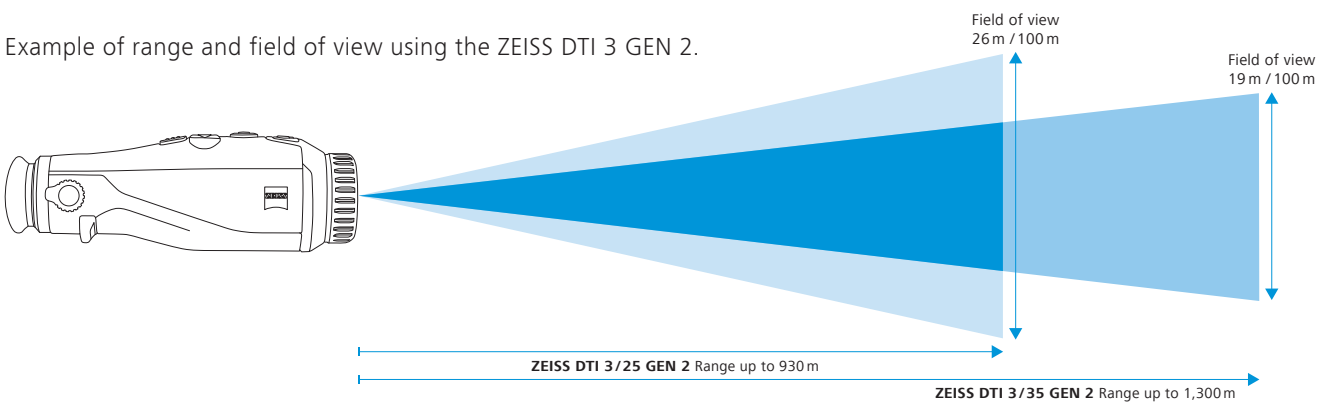
FOCUSING **ON THE ESSENTIALS.**

Cameras	Model	Detail recognition	Observation Range
	**DTI 1**	ZSIP ★	1/25 1,320 m 1/19 1,000 m
	**DTI 3 GEN 2**	ZSIP ★★	3/35 1,300 m 3/25 930 m
	**DTI 4**	ZSIP ★★★	4/50 2,635 m 4/35 1,845 m
	**DTI 6**	ZSIP Pro ★★★★	6/40 2,000 m 6/20 1,000 m

Field of view and range

Our thermal imaging cameras differ in their objective lenses, resulting in distinct optical magnifications, fields of view, and ranges. In rural areas, the range of observation becomes important, and a longer focal length is highly advantageous. This enables effective observation over greater distances. On the other hand, when observing in overgrown and wooded areas, a lens with a shorter focal length is necessary, as it provides a wider field of view to navigate through such environments.

Example of range and field of view using the ZEISS DTI 3 GEN 2.



Specification

Field of view (100 m)	Lens	Sensor	User interface	Optical magnification	Digital zoom	Power management
18 m	25 mm	384 × 288 px 12 µm	ErgoControl concept	2.5×	1.0× – 4.0× TransitionZoom concept	6.5 h (fixed)
24 m	19 mm			1.8×		
19 m	35 mm	384 × 288 px 17 µm		2.4×		8.0 h (fixed)
26 m	25 mm			1.7×		
15 m	50 mm	640 × 512 px 12 µm		2.9×		7.0 h (fixed)
22 m	35 mm			2.0×		
19 m	40 mm*	640 × 480 px 12 µm	Ergo Scroll Control concept	3.0×	1.0× – 10.0 DynamicZoom concept	6.5 h (replaceable)
38 m	20 mm*			1.5×		

*Interchangeable lens

Features

	DTI 1	DTI 3 GEN 2	DTI 4	DTI 6
Button combinations	–	Short cuts	Short cuts	–
Standby mode	–	Smart Standby	Smart Standby	Smart Touchless Standby
Observation modes	Universal, Detection	Universal, Detection, Fog	Universal, Detection, Fog	Universal, Detection, Fog, Identification
Color modes	8	8	8	8
Individual color modes	–	–	–	Yes
Additional features	Picture-in-Picture, Hot tracking	Picture-in-Picture, Hot tracking, Movement Alert	Picture-in-Picture, Hot tracking, Movement Alert	Bino style eyepiece, optimized menu, Made in Germany
Individual settings	(Yes)	(Yes)	(Yes)	Yes

zeiss.com/nature/dti-1

FOR CURIOUS NIGHT OWLS.
LIGHT AND COMPACT OBSERVATION.
ZEISS DTI 1

The ZEISS DTI 1 offers excellent value for those seeking a lightweight and compact companion. It combines ease of use with a compact design and is agile, handy and reliable at the same time. Its simple and intuitive operation makes it the ideal choice for enthusiastic observers who are curious about new experiences.

ZEISS

COMPACT AND LIGHT.
EASY TO USE.

Easy operation

The optimized shape of the housing makes the grip ergonomic and operation intuitive for both right-handed and left-handed users. The intelligent button arrangement and its optimized shape makes controlling the device intuitive.

Compact design

Its lightweight and compact design makes it easier for you to hold the camera – even on long and cold nights.

6.5 h
battery life!

Outstanding ZEISS quality at an entry-level price

World-class image processing doesn't have to be expensive. If you choose the DTI 1, you'll receive a premium product with the familiar ZEISS optics – at an extremely attractive price.

ZSIP

Transition Zoom

Observe your target in 4× magnification, uninterrupted, and without jerkiness – the Transition Zoom allows you to keep a constant eye on the bird you are observing.

TECHNICAL **SPECIFICATIONS.**

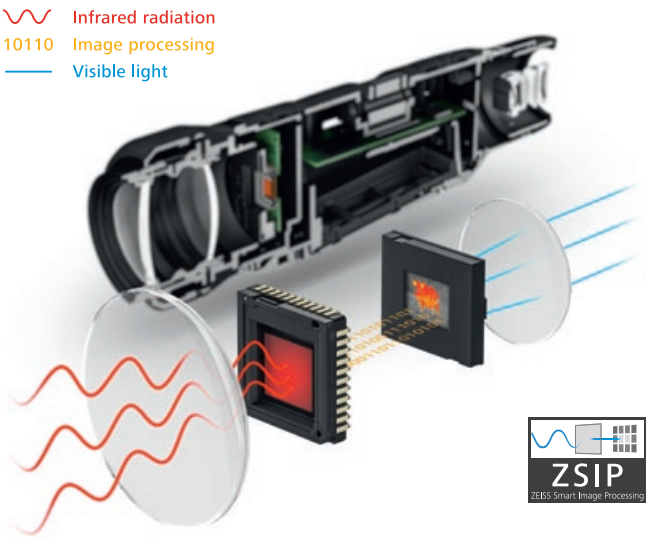
	Thermal Imaging Camera	
Model	**ZEISS DTI 1/19**	**ZEISS DTI 1/25**
Optics		
Focal length	19 mm / F1.0	25 mm / F1.0
Range	~ 1,000 m	~ 1,320 m
Eyepiece field of view in ° (subjective field of view)	Diagonal: 30°	
Lens field of view in m at 100 m	Horizontal: 24 m	Horizontal: 18 m
Lens side field of view in ° (horizontal × vertical)	14° × 10°	11° × 12°
Optical magnification	1.8×	2.5×
Maximum digital zoom	4×	
Zoom increments	In 0.5× increments from: 1.0× – 4.0×	
Sensor		
Sensor resolution	384 × 288 px	
Sensor pixel pitch	12 µm	
NETD value	≤ 35 mK	
Frame rate	50 Hz	
Display		
Display resolution	1,280 × 960 px	
Display type	LCOS	
Electronics		
Interfaces	USB: charging + data transfer WLAN: data transfer	
Battery	Lithium-ion	
Battery life	6.5 h	
External power supply	5 V / 3 A, 9 V / 2 A, 12 V / 1,5 A (USB)	
Internal memory	8 GB	
Video / photo	Yes	
WLAN frequency	2.4 GHz	
WLAN standard	IEEE 802.11 b/g/n	
General		
Ingress protection rating	IP 65	
Operating temperature range	–10 °C / +50 °C (+14 °F / +122 °F)	
Lenght × Width × Height	175 mm × 57 mm × 62 mm	
Weight	360 g	
Order no.	527004	527005

Subject to changes in design and scope of delivery as a result of ongoing technical development.

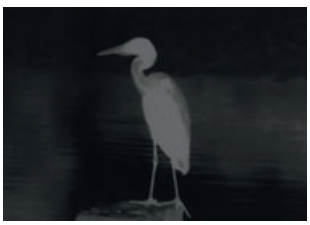
DID YOU KNOW?
ZEISS SMART IMAGE PROCESSING OPTIMIZES YOUR OBSERVATIONS.

When it comes to observing nature during nighttime, clear and precise images play a vital role in capturing every intricate detail. To meet this demand, ZEISS has developed the cutting-edge ZEISS Smart Image Processing algorithm.

This innovative technology is designed to enhance image quality by optimizing sharpness and contrast with precision, resulting in unmatched clarity and detail. With ZSIP, you can be assured of obtaining optimized image quality, delivering the best possible outcome for your observations.



ZEISS Smart Image Processing Pro (ZSIP Pro)



Standard image processing

ZSIP Pro

The ZSIP Pro image processing algorithm (only available in DTI 6) enhances the display of individual heat sources. Thanks to this cutting-edge technology, the bird stands out from the background with optimized clarity, detail recoginition and sharpness.

zeiss.com/nature/dti-3

FOR AN UNFORGETTABLE EXPERIENCE.
DETAILED IMAGES, EVEN IN COMPLETE DARKNESS.

ZEISS DTI 3 GEN 2

Discover new possibilities with thermal imaging technology and our ideal all-rounder: the ZEISS DTI 3 GEN 2. You can easily locate and identify birds and other wildlife without disruptive light sources. But you can also get closer to nature during daytime by identifying and observing hidden and camouflaged birds. With its ergonomic design and a high-resolution AMOLED display, it is our specialized solution that excels in any condition.

ZEISS

EXCELLENT IMAGE PROCESSING.
DURING ALL OBSERVATIONS.

Precise zoom
The fine, gradual zoom adjustment in 0.5× increments offers the perfect combination of magnification and detail recognition.

Enhancements in the DTI 3 GEN 2
- 1,024 × 768 px AMOLED display
- Preprogrammed button combinations for easier handling
- Four new color modes
- Numerous additional features such as Movement Alert

Extra long battery life of **8 h!**

Extra-long battery life
With an impressively long battery life of 8 hours, the ZEISS DTI 3 GEN 2 holds enough charge for two to four birding trips. The Auto Shutoff feature conserves battery power: The DTI will automatically shut off after a freely selectable amount of time as long as you haven't interacted with the thermal imaging camera during this period.

Outstanding optics in ZEISS quality
The innovative ZSIP image processing algorithm optimizes image quality in order to maximize the ability to recognize details in any observation situation.

TECHNICAL **SPECIFICATIONS.**

	Thermal Imaging Camera	
Model	**ZEISS DTI 3/25 GEN 2**	**ZEISS DTI 3/35 GEN 2**
Optics		
Focal length	25 mm / F1.0	35 mm / F1.0
Range	~ 930 m	~ 1.300 m
Eyepiece field of view in ° (subjective field of view)	Diagonal: 30°	
Lens field of view in m at 100 m	Horizontal: 26 m	Horizontal: 19 m
Lens side field of view in ° (horizontal × vertical)	15° × 11°	11° × 8°
Optical magnification	1.7×	2.4×
Maximum digital zoom	4×	
Zoom increments	In 0.5× increments from: 1.0× – 4.0×	
Sensor		
Sensor resolution	384 × 288 px	
Sensor pixel pitch	17 µm	
NETD value	≤ 35 mK	
Frame rate	50 Hz	
Display		
Display resolution	1,024 × 768 px	
Display type	AMOLED	
Electronics		
Interfaces	USB: charging + data transfer WLAN: data transfer	
Battery	Lithium-ion	
Battery life	8 h	
External power supply	5 V / 3 A, 9 V / 2 A, 12 V / 1,5 A (USB)	
Internal memory	32 GB	
Video / photo	Yes	
WLAN frequency	2.4 GHz	
WLAN standard	IEEE 802.11 b/g/n	
General		
Ingress protection rating	IP 66	
Operating temperature range	–10 °C / +50 °C (+14 °F / +122 °F)	
Lenght × Width × Height	187 mm × 60 mm × 65 mm	193 mm × 60 mm × 65 mm
Weight	410 g	420 g
Order no.	527014	527013

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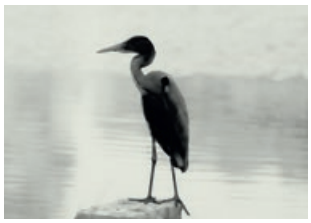
DID YOU KNOW?
THERE ARE NUMEROUS MODES FOR OBSERVING IN THE DARK.

Color modes

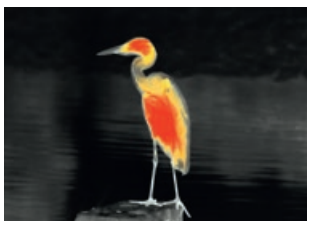
All our DTI models come with a variety of modes that allow you to choose from eight different color palettes. While "Black Hot" and "White Hot" offer high-contrast images perfect for identifying birds, "Red Hot" allows you to quickly pinpoint heat sources in densely vegetated areas. "Rainbow" mode is suitable for detecting smaller temperature differences.

Thanks to the four newly developed color modes, you won't miss a single detail, even on the darkest night. They were specially developed to reduce the glare of the screen in a dark environment and relieve eye strain. "Red Hue" mode helps your eyes adjust to the darkness more easily. "Dark Hue" makes identification more effective by providing a high light density. "Green Hue" shows a lot of details at low screen brightness and "Night Eye" highlights the warmest areas of the thermal image in a pleasant sepia tone.

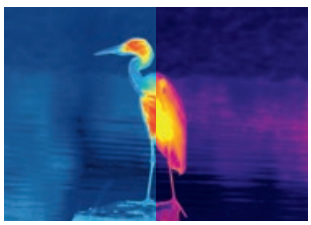
White Hot



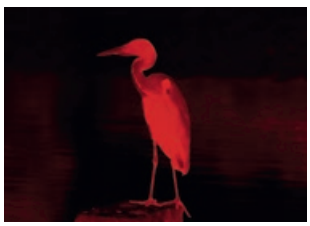
Black Hot



Red Hot

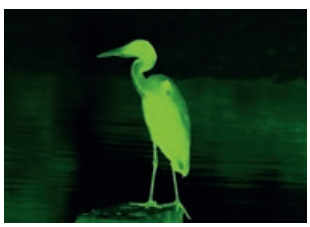


Rainbow

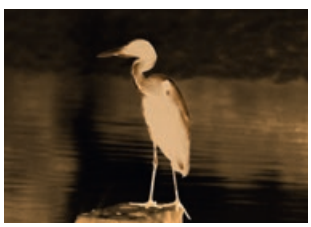


Red Hue

Dark Hue



Green Hue



Night Eye

For illustration purpose only.

IN PRACTICE

Compass overlay

You can use the compass overlay to determine the direction of the observed bird or get your own bearings. This can be especially helpful for orientation, or if you are out birding in company and want to coordinate your different locations and observations.

zeiss.com/nature/dti-4

FOR CONSISTENT OPTIMAL PERFORMANCE. UNPARALLELED IMAGE QUALITY, EVEN OVER LONG DISTANCES.

ZEISS DTI 4

Nature never sleeps. And the passion for observing it doesn't rest either. Although experienced birders already have a wealth of knowledge, for absolute certainty, the right equipment is crucial. The ZEISS DTI 4 is a thermal imaging camera that always performs at its best. With its compact size, a high-resolution 640×512 sensor and ZSIP, it delivers high-contrast, detailed image quality anywhere – even over long distances.

ZEISS

DISCOVER ALL DETAILS – ALL DAY, ALL NIGHT.

Movement Alert

Movement Alert notifies you via an inconspicuous LED signal on top of the device or by activating the display when a heat source moves in the image.

Preprogrammed button combinations

Easily switch settings using preprogrammed shortcuts – even with numb and cold fingers.

Enhanced battery life

With an impressively long battery life, the DTI 4 models will hold enough charge for up to 7 hours. You can extend the battery life even further by activating the Smart Standby function.

7 h battery life!

Detailed image quality in any terrain

Detect the smallest details with the ZSIP image algorithm developed by ZEISS and an improved 640 × 512 px sensor.

ZSIP

TECHNICAL **SPECIFICATIONS.**

	Thermal Imaging Camera	
Model	**ZEISS DTI 4/35**	**ZEISS DTI 4/50**
Optics		
Focal length	35 mm / F1.0	50 mm / F1.0
Range	~ 1,845 m	~ 2,635 m
Eyepiece field of view in ° (subjective field of view)	Diagonal: 30°	
Lens field of view in m at 100 m	Horizontal: 22 m	Horizontal: 15 m
Lens side field of view in ° (horizontal × vertical)	13° × 10°	9° × 7°
Optical magnification	2.0×	2.9×
Maximum digital zoom	4×	
Zoom increments	In 0.5× increments from: 1.0× – 4.0×	
Sensor		
Sensor resolution	640 × 512 px	
Sensor pixel pitch	12 µm	
NETD value	≤ 25 mK	
Frame rate	50 Hz	
Display		
Display resolution	1,024 × 768 px	
Display type	AMOLED	
Electronics		
Interfaces	USB: charging + data transfer WLAN: data transfer	
Battery	Lithium-ion	
Battery life	7 h	
External power supply	5 V / 3 A, 9 V / 2 A, 12 V / 1,5 A (USB)	
Internal memory	32 GB	
Video / photo	Yes	
WLAN frequency	2.4 GHz	
WLAN standard	IEEE 802.11 b/g/n	
General		
Ingress protection rating	IP 66	
Operating temperature range	–10 °C / +50 °C (+14 °F / +122 °F)	
Lenght × Width × Height	193 mm × 60 mm × 65 mm	206 mm × 60 mm × 65 mm
Weight	430 g	470 g
Order no.	527017	527018

Subject to changes in design and scope of delivery as a result of ongoing technical development.

DID YOU KNOW?
THERE ARE NUMEROUS MODES FOR OBSERVING IN THE DARK.

Easy spotting

In "Hot Tracking" mode, the warmest source in the image is displayed inside a red frame. Ideally suited for finding and tracking heat sources in densely vegetated areas.

Hot Tracking mode

Improved focusing

In "Picture-in-Picture" mode, a focus frame highlights the image section. For improved orientation while focusing on the smallest details.

Picture-in-Picture mode

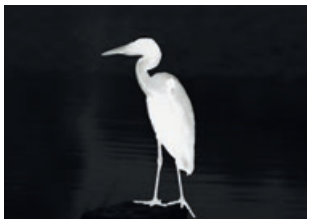
For illustration purpose only.

Predefined observation modes

All of our DTI models offer predefined viewing programs (Universal, Fog, Detection, Identification) that allow the user to quickly and perfectly tailor the image to the situation at hand.

Universal mode

Fog mode



Detection mode

Identification mode

Universal

General observation mode that provides an optimal balance between detection and identification during normal everyday observation.

Fog

This feature maximizes contrast to see as much detail as possible, even in fog or high humidity.

Detection

Emphasizes and highlights heat sources to make them easier to see in a dense forest, for example.

Identification (only DTI 6)

In this mode, crucial recognition features are amplified. The environment is displayed in less detail to make identification easier.

zeiss.com/nature/dti-6

FOR UNCOVERING MORE DETAILS.
WITH EXCELLENT IMAGE QUALITY.

ZEISS DTI 6

When observing birds and other wildlife, every detail counts. The ZEISS DTI 6 thermal imaging cameras ensure you never miss a thing, day or night. The innovative ZEISS Smart Image Processing Pro (ZSIP Pro) algorithm, combined with a 640×480 px sensor and a 1,024×768 px AMOLED display, delivers sharp, high-contrast thermal images. It ensures that you can perfectly identify key details under difficult conditions even when there is low thermal contrast.

ZEISS

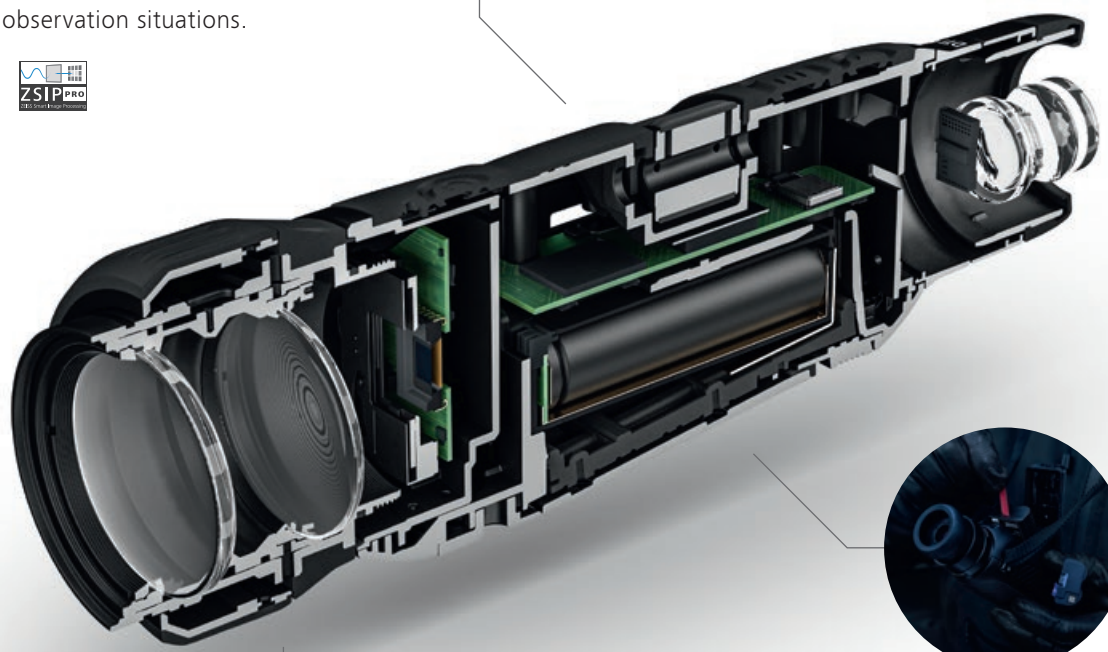
MAXIMUM IMAGING PERFORMANCE IN ALL CONDITIONS.

Unparalleled image quality

Thanks to its high-end eyepiece, state-of-the-art hardware, and the ZEISS ZSIP Pro image processing algorithm, the ZEISS DTI 6 delivers an impressive viewing experience in all observation situations.

Revolutionary ergonomics

The ZEISS DTI 6 features intelligent user interfaces designed for rapid interactions when every second counts. The Scroll Wheel, in combination with the DynamicZoom concept, work together to enable reliable identifications.



Power management

The ZEISS DTI 6's removable battery delivers 6.5 hours of continuous observation time. In addition, the ZEISS DTI 6 can also be charged via a power bank, which provides additional peace of mind.

Interchangeable lens

The ZEISS DTI 6 can be used with a 20 mm focal length lens and a 40 mm focal length lens, allowing the camera to be adapted to any observation situation.

ENHANCE YOUR EXPERIENCE.
WITH PERFECT ACCESSORIES.

CHARGING ACCESSORIES

Rechargeable li-ion battery

High-quality lithium-ion battery with a capacity of 3,200 mAh for long periods of observation with the ZEISS DTI 6. Practical as an additional battery when a power grid isn't available to charge the thermal imaging camera.

Charging cradle

This charging cradle from ZEISS makes it easy to charge the DTI 6 battery. The charging cradle is lightweight, fits in any pocket, and fully charges the battery in only 180 minutes*.

* USB-C at 15 W (5V/3A)

OPTICAL ACCESSORIES

Interchangeable 20 mm lens

Equipped with the 20 mm lens, the ZEISS DTI 6/20 is ideally suited for observing birds in forested areas.

Interchangeable 40 mm lens

The long 40 mm focal length of the ZEISS DTI 6/40 offers a longer range for use in the open field.

OPTICAL EXPERTISE

Outstanding build quality and precision

Thanks to outstanding build quality "Made in Germany" and super-smooth and precise mechanical components, the ZEISS DTI 6 has a premium feel during operation and achieves the best possible thermal performance.

TECHNICAL **SPECIFICATIONS.**

	Thermal Imaging Camera	
Model	**ZEISS DTI 6/20**	**ZEISS DTI 6/40**
Optics		
Focal length	20 mm / F1.0	40 mm / F1.0
Range	~ 1,000 m	~ 2,000 m
Eyepiece field of view in ° (subjective field of view)	Diagonal: 40°	
Lens field of view in m at 100 m	Horizontal: 38 m	Horizontal: 19 m
Lens side field of view in ° (horizontal × vertical)	22° × 16°	11° × 8,2°
Optical magnification	1.5×	3.0×
Maximum digital zoom	10×	
Zoom increments	Variable: 0.1× – 1.0×	
Sensor		
Sensor resolution	640 × 480 px	
Sensor pixel pitch	12 µm	
NETD value	≤ 35 mK	
Frame rate	50 Hz	
Display		
Display resolution	1,024 × 768 px	
Display type	AMOLED	
Electronics		
Interfaces	USB: charging + data transfer WLAN: data transfer Bluetooth: data transfer	
Battery	Lithium-ion	
Battery life	6.5 h	
External power supply	5 V / 3 A, 9 V / 2 A, 12 V / 1,5 A (USB)	
Internal memory	16 GB	
Video / photo	Yes	
WLAN frequency	2.4 GHz	
WLAN standard	IEEE 802.11 b/g/n	
General		
Ingress protection rating	IP 65 / IP 67	
Operating temperature range	–20 °C / +50 °C (–4 °F / +122 °F)	
Lenght × Width × Height	230 mm × 62 mm × 68 mm	228 mm × 69 mm × 73 mm
Weight	690 g	755 g
Order no.	527020-9901	527020-9902

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OUTSTANDING HANDLING
THANKS TO INTELLIGENT FEATURES.

Perfect ergonomics

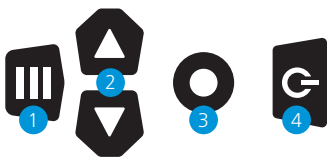
Observation at night requires you to pay close attention to your surroundings. To avoid also having to concentrate on operating your optical device, ZEISS has developed an innovative operating concept: The ErgoControl operating concept with its intelligent positioning of the buttons ensures that every function can be controlled easily and intuitively.

The perfect ergonomic design offers excellent handling in cold and dark conditions. It ensures that both right-handed and left-handed users can operate the device comfortably and also allows it to be operated with just one hand. The ergonomic shape of the device allows the hand to adopt a natural position with the fingertips resting comfortably on the controls. This makes long and fatigue-free observation possible.

Movement Alert

The Movement Alert of the ZEISS DTI 3 GEN 2 and DTI 4 notifies you via an inconspicuous LED signal on top of the device or by activating the display when a heat source moves in the image.

ErgoControl Concept



1. Menu | Color Modes
2. Zoom | Menu Navigation
3. Video | Photo
4. On-/off button

Thanks to the intelligently positioned buttons, all of the functions can be controlled intuitively. The perfectly shaped buttons can be identified quickly – even in the dark or when wearing gloves.

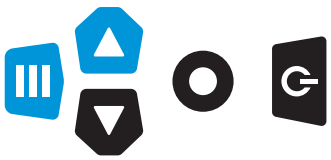
Smart Standby

When Smart Standby is enabled, the device automatically switches to power-saving mode when you tilt it up more than 70° or down more than 52.5°. If you place your thermal imaging camera on an edge when not in use, it automatically switches to intelligent standby mode – at a 45° angle to the left or right.

Take / Record:
Photo short
Video **long**

Scene
Switch

Compass
On / off



Movement Alert
On / off

Shortcuts

Thanks to the shortcuts available on the DTI 3 GEN 2 and 4, you no longer need to open the menu to access most functions. The preprogrammed button combinations allow you to control numerous settings with just a few clicks, such as taking pictures and videos and switching between individual modes.

This makes the device easier to operate and saves crucial seconds for observing birds.

IN PRACTICE

Tripod mounting

For greater flexibility during observation, you can screw the thermal imaging cameras onto a camera tripod with ¼ inch thread.

Become a part of the **ZEISS Birding community:**
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youtube.com/zeissnature

#passionforbirding

zeissnature

Customer Care
Carl Zeiss Sports Optics GmbH – Customer Care
Gloelstraße 3 – 5, 35576 Wetzlar, Germany
Phone +49-800-934-7733 | Fax +49-644-148-369
consumerproducts@zeiss.com

Carl Zeiss AG
Consumer Products Business Group
Carl-Zeiss-Straße 22
73447 Oberkochen
Germany

zeiss.com/nature

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