

DL-801/2-M

Infrared and visible-light dual detection



5-inch touch LCD screen with a 180-degree rotatable lens, compass, laser ranging, GPS, Bluetooth and Wi-Fi transmission.

DL-801/2-M

High-resolution thermal imaging camera

amperis

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High-precision detector with up to a 2048x1536 super pixel, intelligent diagnosis and a 5-inch touch screen.

Overview



Thermal overlay on the touch screen, with the viewfinder above



Rear view: touch screen, controls and connectors

High-precision resolution

The DL-801/2-M camera is built around a 640x480 (DL801-M) or 1024x768 (DL802-M) uncooled FPA detector, and can reach a super pixel of 1280x960 or 2048x1536, for high-resolution image and measurement work.

Intelligent diagnosis

- Intelligent shooting and diagnosis carried out according to preset inspection tasks.
- 5-inch high-definition colour touch LCD screen, plus a 0.5-inch colour OLED viewfinder.
- 180-degree rotatable lens that keeps the screen visible from any shooting angle.
- Full-screen switching between infrared and visible light, picture in picture, thermal overlay and dual-band fusion image.

Location and orientation

A built-in compass, laser ranging, GPS and Bluetooth and Wi-Fi transmission accompany every image with the shooting location and orientation, in addition to the temperature data.



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Built-in 128 GB memory plus an expandable 32 GB SD card, Mini-USB Type C, Wi-Fi, Bluetooth and HDMI.

Interface and connectivity



Connectors, memory card slot and control buttons



Palette and image-processing controls on the touch screen

Image processing and palettes

- 11 palettes to choose from, including iron red, rainbow, black and white and inverted black and white.
- Automatic or manual adjustment of contrast and brightness, with an automatic enhancement mode.
- Built-in microphone for up to 60 seconds of voice recording per stored image, playable over Bluetooth.
- Predefined text annotation and sketch notes on the stored images.

Storage and transfer

Images are stored on the built-in 128 GB memory and on an external, expandable 32 GB SD card, in JPEG and DLV format with the infrared raw measurement data, or in MPEG4 for video. The Mini-USB Type-C port can also transmit a raw data video stream for real-time analysis.

Power and connectivity

- Rechargeable lithium battery with 3 hours of continuous operation and automatic sleep and shutdown.
- Smart charger, or an AC power adaptor or a 12 V in-car power supply for random charging.
- Wi-Fi and Bluetooth transmission, and an HDMI video output.



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Image analysis and report generation software

Analysing images on a PC

The infrared images, stored in DLV format with their raw measurement data, and the raw video stream that the Mini-USB Type-C port can output, allow the thermal information captured on site to be reviewed and analysed on a PC screen, together with the text annotations, sketch notes and voice notes attached to each image.

- Reviewing the palette, the emissivity and the background and atmospheric transmission correction applied to each stored image.
- Comparing the infrared and visible-light images, and the picture-in-picture and dual-band fusion views, of every point inspected.
- Locating each image on a map from its GPS position, and checking the shooting orientation recorded by the compass.

Generating reports

From the images analysed on the PC, inspection reports are produced with the temperature data, the text and voice annotations and the corresponding visible and infrared images, ready to be filed or sent to the client.



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Detector comparison: DL801-M / DL802-M

Both models share the same uncooled FPA detector technology; they differ in resolution, field of view and the top end of the extended temperature range.

Item	DL801-M	DL802-M
Detector resolution	640 x 480	1024 x 768
Field of view (FOV)	25° x 19°	28.7° x 21.7°
Spatial resolution (IFOV)	0.67 mrad	0.49 mrad
Super pixel (super resolution)	1280 x 960	2048 x 1536
Extended temperature measurement range	up to 1200 °C or 1500 °C	up to 1200 °C or 2000 °C



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Detector, image and display (common to both models)

Detector type	Uncooled FPA
NETD	0.03 °C @ 30 °C
Frame rate	60 Hz
Focal	Automatic/manual focus/electric focus/touch screen
Spectral range	7-14 um
Visual camera built-in	8 MP, CMOS module, built-in LED fill light
Zoom	1-40 times continuous digital zoom
LCD display	5-inch colour LCD capacitive touch screen
Viewfinder	HD 0.5-inch colour OLED
Image display	Full-screen switching of infrared or visible light, picture in picture, thermal overlay, dual-band fusion image
Palette	11 kinds of palettes to choose from (iron red, rainbow, black and white, black and white reverse, etc.)
Image processing	Automatic/manual adjustment of contrast and brightness, automatic enhancement mode



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Measurement

Precision	+/-1 °C or +/-1 % (0-150 °C); +/-2 °C or +/-2 % (within range)
Temperature measurement correction	Automatic / manual
Measurement mode	Real-time 10 movable points, 10 movable areas (highest, lowest and average temperature), movable line temperature measurement, isothermal analysis, temperature difference measurement, temperature alarm (sound, colour)
Setting	Date/time, temperature unit °C/K, language, contrast/brightness, LCD backlight
Emissivity correction	Adjustable from 0.01 to 1.0 (in increments of 0.01), or corrected using a predefined substance emissivity meter
Background temperature correction	Automatic, according to the input background temperature
Atmospheric window correction	Yes, adjustable
Atmospheric transmittance correction	Automatic, according to the input target distance, relative humidity and ambient temperature



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Other settings, storage and power

Laser	Laser ranging
GPS	Yes
Electronic compass	Yes
Microphone	Yes
Buzzer	Yes
Fill light	2 LED
Storage card	Built-in 128 GB memory and external 32 GB SD card (expandable)
Storage method	Manual/automatic photo or video
Infrared image format	JPEG and DLV format, with infrared raw measurement data image; MPEG4 format for video recording
Visible light image format	JPEG / DLV / MPEG4 format
Voice notes	60 seconds of voice recording, stored with the image (built-in microphone, can be recorded and played via Bluetooth)
Text annotation	Yes, can be predefined
Sketch notes	Yes
Battery type	Lithium battery, rechargeable
Battery working time	3 hours continuous work
Charging type	Smart charger charging or random charging (AC power adapter or 12 V in-car power supply)
Power saving mode	Automatic sleep and shutdown



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Environment, physical characteristics and interface

Working temperature	-15 °C to +50 °C
Storage temperature	-40 °C to +70 °C
Humidity	<= 95 % (non-condensing)
Encapsulation	IP54
Shock resistance	30G, IEC68-2-27
Vibration resistance	2G, IEC68-2-6
EMC	GB/T 18268.1-2010
Weight	<= 1.65 kg (including battery and standard lens)
Dimension	225 x 145 x 100 mm
Tripod	1/4"-20-UNC
Power supply	Yes, DC 12 V
Memory card slot	SD card holder
USB	Yes, Mini-USB Type C, can transmit raw data video stream for real-time analysis
Wi-Fi	Yes
Bluetooth	Yes
Video output	HDMI



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