

TECHNICAL DATA



FEATURES

- Automatic lens recognition automatically identifies the temperature calibration data associated with each of the interchangeable lenses
- 3.5" colour TFT LCD capacitive touch screen with sun visor
- High thermal sensitivity (NETD) of <80mK
- Built-in laser and white LED flashlight
- Built-in visible light digital camera
- Includes 7.5mm (29.8 x 22.6° FOV) lens
- 20x continuous zoom
- Infrared and visual images, picture-in-picture, as well as visual image with infrared overlay
- Three spot, three area with min/max and average, two-line and isothermal measurement analysis
- Automatic hot/cold spot indicator
- Choice of six colour palettes including custom
- Automatic image capture
- Save images with voice annotations
- Video recording with voice annotations
- Micro SD memory card extension possible
- Includes thermal imager, 7.5mm lens, lens cap, micro SD memory card, video output cable, headset, USB cable, hood, tripod stand, shoulder strap, two batteries, charger, AC adapter, user manual, software CD (Multiple languages) and hard carrying case



SPECIFICATIONS

- IR Resolution:** 160 x 120 pixels
- Field of View:** 29.8 x 22.6°
- Detector Type:** Uncooled microbolometer
- Thermal Sensitivity (NETD):** <0.08°C (80mK)
- Image Capture Frequency:** 50Hz
- Focus:** Manual
- Temperature Range:** -20 to 400°C (-4 to 752°F)
- Accuracy:** ±2°C (±3.6°F) or ±2% of reading
- Storage Medium:** 4GB micro SD card
- Interface:** USB-mini, audio, composite video (PAL and NTSC), Micro SD slot
- Drop Test:** 2m
- Encapsulation:** IP65
- Power Supply:** 7.4V lithium polymer battery
- Battery Life:** 4 hours
- Dimensions/Weight:** 243 x 103 x 160mm/920g

ORDERING INFORMATION

- R2100 Thermal Imager
- RL-11 20.6° 11mm Replacement Lens
- RL-22 10.4° 22mm Replacement Lens
- RL-33 6.9° 33mm Replacement Lens
- R2100-7.4V Spare Battery

- R2100-NIST Thermal Imager & NIST



REED R2100 Thermal Imager

Industrial and Commercial Maintenance Use

- Temperature Measurement Range: -28 to 400°C (-4 to 752°F)
- Thermal Sensitivity: <math><0.08^{\circ}\text{C}</math> @ 30°C (86°F) / 80mK

- 1 3.5" touch screen with innovative sun visor
- 2 Interchangeable lenses
- 3 20x continuous zoom
- 4 Fusion display of IR and visible images
- 5 Area min/max with auto hot/cold spot markers
- 6 Picture-in-picture
- 7 Annotate images with voice and text
- 8 Video and snapshot storage on MicroSD Card

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Imaging and Optical Data

Field of View (FOV)	29.8 x 22.6°
Minimum Focus Distance	0.2m (0.66')
Spatial Resolution	(IFOV) 3.33 mrad
Thermal Sensitivity / NETD	<0.08°C @ +30°C (+86°F) / 80mK
Image Frequency	50Hz
Focus	Manual
Zoom	1-20x continuous, digital zoom
Rotate	0-360°, continuous change by 1°

Detector Data

Detector Type	Focal plan array (FPA), uncooled microblometer
Spectral Range	8-14µm
IR Resolution	160x120 pixels
IR Resolution	N/A

Image Presentation

Display	2.5" TFT, capacitive touch screen
Image Modes	IR image, visual image, picture in picture
Picture in Picture	IR area on visual image or visual image area on IR
Color Palettes	GRAY / GRAYINV IRON / IRONINV / RAINBOW / FEATHER

Measurement

Object Temperature Range	Low Range: -20 to 150°C (-4 to 302°F) High Range: 0 to 400°C (32 to 752°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading

Measurement Analysis

Spotmeter	3
Emissivity Adjustable	0.01~1.0 Adjustable
Emissivity Table	Emissivity table of predefined materials
Line	2 lines (horizontal and vertical)
Area	3 boxes with max. / min. / average
Automatic Hot/Cold Detection	Auto hot or cold spotmeter markers
Isotherm	Detect high / low temperature / interval
Measurement Corrections	Emissivity, ambient temperature, distance, relative humidity, offset temperature

Set-Up

Laser / Floodlight	< class2 / white LED floodlight
Set-Up Commands	Local adaptation of units, language, date and time formats, information of camera
Language Selection	English, Chinese, French, German, Spanish

Storage of Videos

Storage Media	4 GB Micro SD
Video Storage Format	Standard MPEG-4, 640 x 480 @ 30fps, on memory card >60 minutes
Video Storage Mode	IR / visual images, simultaneous storage of IR and visual images

Storage of Images

Image Storage Format	Standard JPEG, including measurement data, on memory card >1000 pictures
Images Storage Mode	IR / visual images; simultaneous storage of IR and visual images

Digital Camera

Built-In Visible Light Digital Camera	640x480 pixels
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Data Communication Interfaces

USB Interfaces	USB-mini, data tranform between camera and PC
Cloud Computing Service	N/A
Wi-Fi Connectivity	N/A
Video Out	Composite (PAL and NTSC)

Power System

Battery	Lithium polymer battery, 4 hours operating time
Input Voltage	DC 9V to 12V
Charging System	In Camera (AC Adapter)
Power Management	Automatic shutdown and sleep mode (User selectable)

Environmental Data

Operating Temperature Range	-20 to 50°C (-4 to 122°F)
Storage Temperature Range	-40 to 70°C (-40 to 158°F)
Relative Humidity (Operating and Storage)	10% RH~90% RH
Encapsulation	IP65
Drop Test	2m
Bump	25g (IEC60068-2-29)
Vibration	2g (IEC60068-2-6)

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High Resolution IR Images

19,200 pixels (160 x 120) Infrared resolution

Visible Light Digital Camera

640x480 resolution with flash provides sharp images regardless of lighting conditions

Picture in Picture

Displays thermal image super-imposed over a digital image

LED Flashlight

Allows the visual camera and fusion to be used in poorly lit environments

Wide Temperature Range

From -20 to 400°C targeting electrical and industrial applications

±2% Accuracy

Reliable temperature measurement

Thumbnail View

Easy to view and analyze images quickly



Automatic Lens Recognition

Automatically identifies the temperature calibration data associated with each of the interchangeable lenses

Audio Recorded with the Video Image

A speaker to listen to audio recorded with the video image

Capacitive Touch Screen

More easy, productive and effective to operate

Lithium Polymer Rechargeable Battery

Lasts >4hrs continuous use; replaceable

Copy to USB

Easily uploads images from camera to USB memory card

Area (Min/Max) Mode

Shows the Minimum or the Maximum Temperature reading in the selected area

Applications:

- Plant/General Maintenance
- HVAC/R & Plumbing
- Transportation/Automotive
- Cooling and Reheating
- Serving areas
- Food Service Equipment
- Cold Storage
- Home & Building Inspection
- Electrical & Mechanical Inspection
- Predictive Maintenance
- Health & Safety
- Equine & Veterinary
- Road Construction
- Workplace Ergonomics

Replacement Lenses

- **RL-11 Replacement Lens (20.6°/11mm):**
D:S; @ 100' (12.2 m): 36.3 x 27.2' Resolution = 2.7" (69.1mm)
- **RL-22 Replacement Lens (10.4°/22mm):**
D:S; @ 100' (12.2 m): 18.2 x 13.7' Resolution = 1.37" (34.8mm)
- **RL-33 Replacement Lens (6.9°/33mm):**
D:S; @ 100' (12.2 m): 12.2 x 9.1' Resolution = 0.91" (23.1mm)

Included

- Standard Lens (29.8°/7.5mm): Distance to Spot Size;
D:S; @ (12.2 m): 53.3 x 39.9' Resolution = 4" (101.6mm)

Recognizable lenses increase camera resolution at longer distances.
No camera calibration required.



11mm Lens
RL-11



22mm Lens
RL-22



33mm Lens
RL-33

