TrueIR Thermal Imager Series

Data Sheet

Reap the benefits of a high resolution thermal imager that fits within your available budget. With the Fine Resolution capability, you can achieve effective resolution of 320 x 240 pixels from a 160 x 120 pixels detector – four times more resolution, four times more details.

- Four times more pixels with Fine Resolution capability
- View finer object details with 4x digital zoom
- Quick access buttons to easily change settings or functions
- Long product warranty – 3 years
- Ergonomically designed with evenly distributed weight
- In-camera monitoring for temperature trending
- Ability to focus on objects, as close as 10 cm away

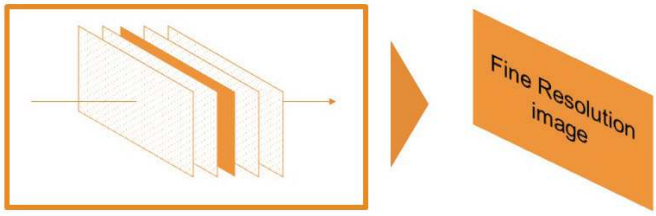
Anticipate ___Accelerate ___Achieve

Agilent Technologies

SEE MORE with U5855A TrueIR Series Thermal Imager

Get more details with Fine Resolution

Fine Resolution is a technology that restores the details originally inherent to the object while enhancing the resolution, at the same time minimizing fuzziness and noise. It is accomplished by performing sophisticated calculations on continuous multi-frames of the image – evaluated for misalignment caused mainly by hand tremor. The firmware then detects and corrects the information between images through one feature pixel.



Continuous multi-frames of low resolution images

Four times more resolution, noise eliminated

With Fine Resolution,

- Get an effective 320 x 240 pixels of radiometric JPEG IR image which is clearer and sharper
- See fine details on objects as close as 10cm, especially when measuring temperature on small components which are close to each other.
- With 4x digital zoom, magnify a thermal image of a far-away objects quickly to identify anomalies and to reveal even finer details.
- These are essential for industrial, building inspection, electronics, as well as medical research.

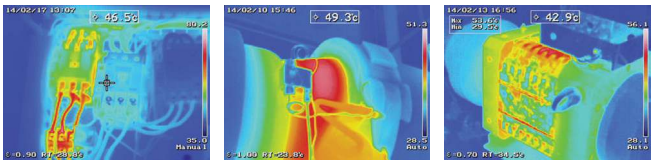


Figure 1. Samples of IR images

Perform more in-camera measurements and analysis

Capture thermal images effectively with its intuitive and easy to use tools:

- Configurable quick access buttons that are able to change functions based on user preference.
- Monitor temperature trends over time for quality checks when monitoring process parameters in industrial plant automation
- Perform analysis using its extensive range of measurement tools.
- Coupled with the U5855A's high sensitivity of 0.07 °C, it can detect the slightest temperature difference to provide more accurate temperature readings.

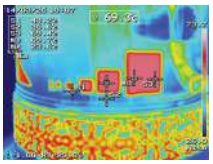


Figure 2.
Center spot, min and max tracking, three moveable spots.

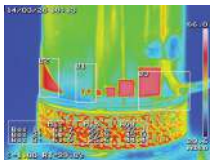


Figure 3.
Three moveable boxes with statistics

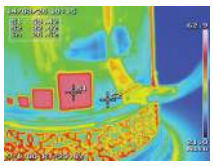


Figure 4.
Delta temperature

Ergonomically designed for comfort

The ergonomically built True*IR* thermal imager is designed to let you carry out daily tasks comfortably. With its evenly distributed weight of only 746 grams and good stability, it fits comfortably in your palm without straining your hands, even when used over a long period of time. With a stable grip, it allows you to single-handedly capture more images and to work more efficiently.

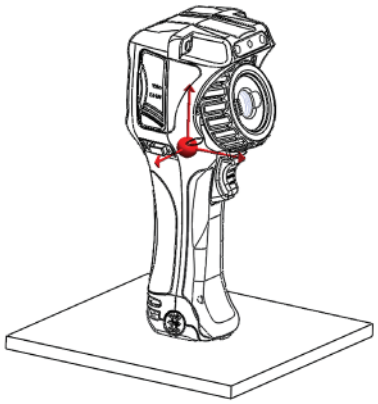


Figure 5. Ergonomically designed to have distributed weight. It can even stand on its own!

Figure 6. Good grip with belt support

True*IR* Analysis and Reporting Tool

Import, analyze, edit and present your thermal images to your clients swiftly with True*IR* analysis and reporting tool. With this PC software, you could change color settings and corrective parameters, add color alarm, or pick and choose any of the six measurement analysis tools or diagrams to help you present your findings to your customers clearly.

Also, generate reports quickly with the help of ready templates and then customize them accordingly based on your clients' requirements.

Features:

- Change color settings and corrective parameters, like emissivity, ambient temperature, atmospheric temperature, and more
- Set color alarm
- Choose between six measurement analysis tools or diagrams like spot, line, line profile, box, histogram and delta temperature
- Capable to display thermal image, visual image, thermal-visual side-by-side, or fusion images as well as its associated photo or note tags
- Create reports based on available templates and then customize them to suit your client' needs
- Generate reports in Microsoft Words or PDF
- Eleven local languages to choose from - English, Spanish, Italian, French, German, Portuguese, simplified Chinese, traditional Chinese, Japanese, Korean and Russian

Download for free from **www.agilent.com/find/TrueIR_ART**

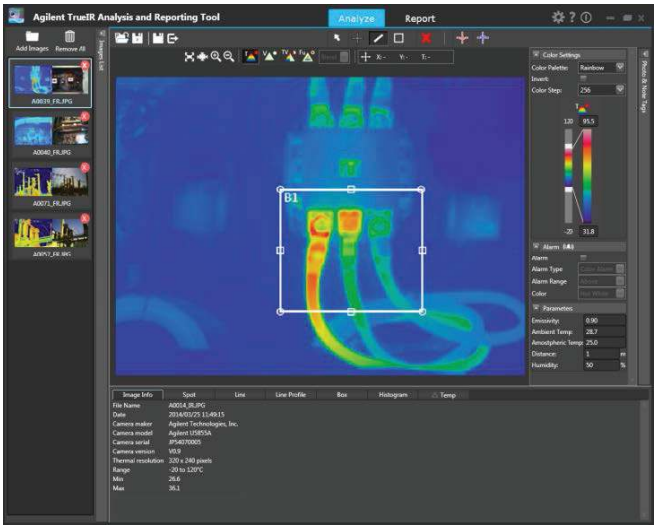


Figure 7. TrueIR Analysis and Reporting Tools GUI

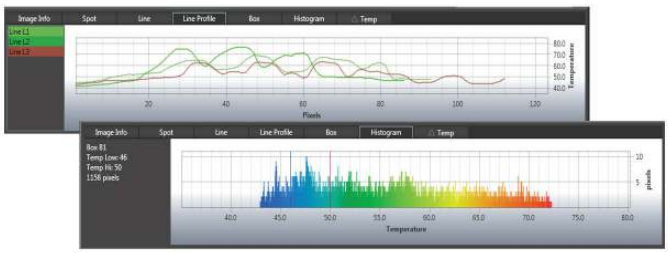


Figure 8. Sample of measurement analysis diagrams

Front and Back Panels

Front panel

Large 3.5 inch color LCD display

Navigation/Enter key

Light/Laser control key

View/Zoom key

Play/Delete key

Power On/Off key

Back/Exit key

Auto/Manual scale key

Quick access buttons to easily change settings or functions

Adjustable hand strap for better grip (for right-handed or left-handed use)

Back panel

Torch light

Laser pointer

Visible image camera

Infrared (IR) image camera lens (with shutter)

Focus adjustment ring

Camera trigger key

Video out port

DC power inlet

SD memory card slot

USB Mini-B port

Specifications

Specifications are warranted in the temperature range of 0 to 40 °C and after 2 minutes of power up, unless otherwise noted.
Supplemental characteristics – which are not warranted, but are descriptions of performance – are determined either by design or testing.

Performance Specifications

Parameter	Specification
Basic Performance	
Temperature measurement range	–20 ~ 350 °C Range 1: –20 to 120 °C Range 2: 0 to 350 °C
Thermal sensitivity	Range 1: 0.07 °C (at 30 °C) Range 2: 0.1 °C (at 30 °C)
Accuracy[1] At 0 ~ 40 °C ambient temperature	±2 °C or ±2% (whichever is greater)
Detector type	Uncooled Focal Plane Array (α-Si)
Detector Resolution	160 × 120
Fine Resolution	320 × 240 (IR pixels)
Spectral range	8 to 14 µm
Frame rate	9 Hz
Field of view (FOV)	28° (H) × 21° (V)
Spatial resolution (IFOV)	Fine Resolution OFF: 3.1 mRad Fine Resolution ON: 2.1 mRad
Focal distance	10 cm to infinity
Focus mechanism	Manual focus
Image Processing and Enhancement	
Correction parameters	Emissivity, reflected temperature, object distance, ambient temperature, humidity, transmissivity
Emissivity correction	0.1 to 1.0 Predefined emissivity table
Digital zoom	Zoom ratio: 4× continuous
Color palette	Rainbow, iris, hot iron, gray, inverted gray
Camera mode	IR image, visible image, picture in picture, blend
Measurements and Alarm	
Measurements	Center spot, 3x moveable spots, max/min tracking, delta temperature, 3x moveable boxes (with min/max/avg)
Color alarm	High/low temperature in all areas Alarm zones: Above/below/inside/outside

1. Minimum distance with accuracy, 10 cm to 50 cm: ±4 °C or ±4%.

Supplemental Characteristics

Parameter	Characteristic
Storage device	Supports up to 32 GB SDHC memory card with class 4 and above
Image format	IR image: Radiometric JPEG Visible image: JPEG
State storage memory	Three user-configurable stored states
Tagging/annotation	3 photo tags, note tag, note tag from template (downloadable from the Agilent Web site)
I/O	USB 2.0 mass storage NTSC/PAL via video RCA cable
Language	English, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish, Simplified Chinese, Traditional Chinese
Built-in quick start tutorial	Available

Product Characteristics

Product	Characteristic
Power supply	
Power adapter	• Line voltage range: 50/60 Hz, 100 – 240 VAC (Auto/Universal voltage), 1.2 A • MAINS supply voltage fluctuations not to exceed ±10% of the nominal voltage • Output voltage: 12 VDC, 3 A • Installation Category I (Isolated ELV supply source – connected to MAINS through an AC/DC power adapter)
Battery	• Li-Ion rechargeable battery, 7.4 VDC, 2500 mAh • Operating time: 4 hours
Display	3.5″ TFT
Visible camera	3.1 MP
Built-in led torch	Available
Laser pointer	Class 2
Warm-up time	2 minutes
Operating environment	
Temperature	• –15 °C to 50 °C
Humidity	• 50% RH to 95% RH at 40 °C
Storage compliance	
Temperature	• –40 °C to 70 °C
Humidity	• 95% RH at 40 °C
Altitude	• Up to 2000 m
Pollution degree	• 2
Safety compliance	• Laser safety: IEC 60825-1:2001/EN 60825-1:2001 (Laser Class 2) • IEC 61010-1:2010/EN 61010-1:2010
EMC compliance	• IEC 61326-1:2005/EN61326-1:2006 • CISPR11:2003/EN55011:2007, Group 1 Class A • Canada: ICES/NMB-001: Issue 4, June 2006 • Australia/New Zealand: AS/NZS CISPR 11:2004
Shock	Tested to IEC 60068-2-27 Ed. 3.0
Vibration	Tested to IEC 60068-2-6
Tripod mount thread	ISO 1222:2010 Standard screw thread, ¼ - 20 UNC
Drop test	2 m
Protection class	2
IP rating	IP 54
Dimensions (W × H × D)	95 × 250 × 85 mm
Weight	0.746 kg (with battery)
Warranty	Refer to **www.agilent.com/go/warranty_terms** 3 years for the product 3 months for the standard accessories unless otherwise specified
Calibration cycle	1 year

Ordering information

Standard shipped accessories

Power adapter with power cord
Rechargeable Li-Ion battery
SD memory card
Video RCA to RCA interface cable, 2 m
USB Standard-A to Mini Type-B interface cable, 1 m
Rugged, hard carrying case
Quick start guide
Certificate of calibration

U5855A

Optional accessories

U5751A	Power adapter (with power cord)	
U5752A	Rechargeable Li-Ion battery	
U5753A	External battery charger (2-bay)	
U5761A	Video RCA to RCA interface cable, 2 m	
U5762A	USB Standard-A to Mini Type-B interface cable, 1 m	
U5771A	Rugged carrying case, hard	
U5772A	Hand strap, Adjustable for right-handed and left-handed use