OMEGASCOPE® Handheld Infrared Thermometer Goes Wireless

Handheld infrared thermometers are very popular for making on the spot non-contact temperature measurements with little or no setup. These devices are completely self-contained and require no additional wiring or signal processing, unlike thermocouples and RTDs. They are perfect for determining the temperature of objects that are too hot to touch, hazardous to approach, moving object, or just hard to reach. Choices are available that range from no frills models for the simplest applications to full-featured units, which can be indispensable in industrial, commercial, or scientific applications. The OMEGASCOPE® Wireless Handheld Infrared Thermometer Series represents the best-of-breed in this arena. Its low cost, unique built-in wireless capability, and patented dot or circle switchable laser sighting set it well apart from the competition. The numerous standard features such as adjustable Emissivity, the analog output, tripod mount, and large, backlit display also make it best-in-value.

Omegascope® Features

For a product line that is loaded with useful features, the OMEGASCOPE® OS530E Series is an exceptionally economical choice and includes models starting at $295. The unit is rugged and looks it with a hefty, high quality housing that is well-suited to a wide range of settings, including factory conditions where gentle handling is not the norm. There are even protective bumpers around the lens and the LCD display.
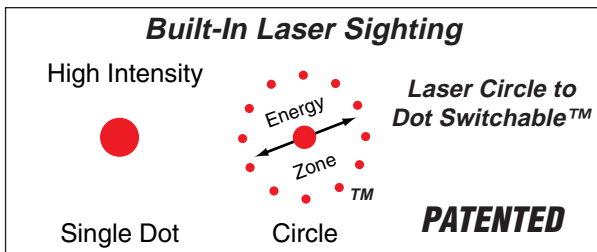
When making a reading, squeeze or lock the trigger and aim the built-in laser sight at the measurement location. The laser sight has a patented feature that allows you to switch between a laser dot for general measurements and a circle which clearly indicates the target area. If a continuous laser beam poses a problem in your environment, the beam can even be set to flashing. In addition, a flashing laser draws more attention and consumes less power. An integral tripod mount and triggger lock permits the unit to be set in one place for long-term monitoring applications.

Built-In Laser Sighting

High Intensity

Single Dot

Energy Zone

Circle

Laser Circle to Dot Switchable™

PATENTED

To get an accurate reading, the Emissivity of the surface being measured must be taken into account. You may have to look this up, but consistent with their "everything you need" philosophy, Omega supplies an Emissivity reference chart with the unit. Once known, it can be set to any value from 0.10 to 1.00 in 0.01 steps.

Being able to make an accurate measurement is good, but, often, having more information is better. In line with this thinking, the OMEGASCOPE® includes min/max/differential, and average temperatures, along with an alarm that can be set to provide visual and audible alerts of an over-temperature situation.

The control panel on this unit is a marvel of simplicity and utility. The amply-sized LCD display is backlit to provide good readability under all conditions and it shows the most important information without having to scroll or change screens. In addition to, the temperature reading in large numerals, the temperature units, Emissivity setting, alarm status, and even the backlight status are shown. Four pushbuttons provide intuitive setup and display control.
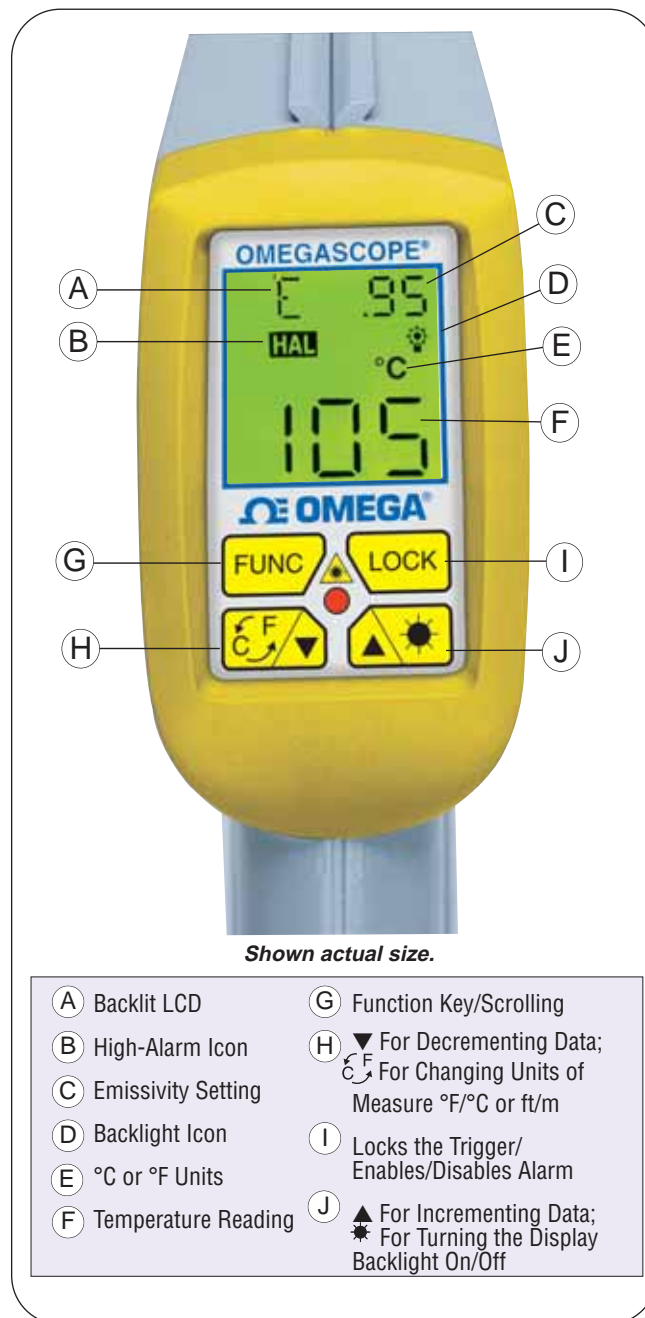
Options

A number of useful options are available for the OMEGASCOPE® that, when needed, improve both performance and utility. For example, although the base temperature range is -10 to 1000 °F (-23 to 538 ºC), it can be extended to as low as -22 °F (-30 ºC) and as high as 1600 °F (871 ºC), and the resolution can be increased from 1 °F to 0.1 °F. If required in your application, NIST calibration is also available. For cases when the target is very small, close-focus models permit measurements with near pinpoint accuracy. For cases when the target is far away, long range model offers solutions. When an infrared measurement just cannot be made or a differential reading is important, the unit accepts plug-in thermocouple surface probes. If the distance to the object is a critical parameter, a patented distance measuring option can be provided either as a field mountable add-on or built into the unit. Some models offer PC interface software with data storage and data logging features. All models also include a standard 1 mV per degree analog output that can be easily interfaced to data acquisition devices or process controllers.

With just the features already delineated, the OMEGASCOPE® would be a great instrumentation value, but what really sets it apart is its built-in wireless measurement capability, which is standard on all models at no extra charge. The companion software is also included for free.

Wireless Capability

The new wireless feature incorporated into the OMEGASCOPE® Series adds many of the capabilities of a more elaborate and complicated hard-wired temperature sensor installation. For instance, it allows you to monitor, record, or data log readings directly to a PC. This PC can be at hand or in a remote location such as a process control center.

Shown actual size.

Ⓐ Backlit LCD	Ⓖ Function Key/Scrolling
Ⓑ High-Alarm Icon	Ⓗ ▼ For Decrementing Data; ⟳F/C For Changing Units of Measure °F/°C or ft/m
Ⓒ Emissivity Setting	
Ⓓ Backlight Icon	Ⓘ Locks the Trigger/ Enables/Disables Alarm
Ⓔ °C or °F Units	
Ⓕ Temperature Reading	Ⓙ ▲ For Incrementing Data; ☀ For Turning the Display Backlight On/Off

When it comes to using the wireless feature, simplicity is the order of the day. Plug the inexpensive $35 flash drive sized receiver into a USB port on a desktop or laptop computer, install the included software, and you are good to go. As an added bonus, this software is compatible with many of Omega's wireless thermocouples, RTDs, and humidity sensors. It can support up to 48 wireless devices, displayed 12 at a time, as shown in the illustration to the right, and can turn your PC into a multi-channel chart recorder and data logger.

The display panel for the OMEGASCOPE® and each of the other connected wireless devices shows the

Log date, time and temperature.

Chart your readings.

sensor type, sensor designator or description, measured temperature, ambient temperature, signal strength and battery condition. High and low temperature alarms are indicated by a blinking red reading.

Omega offers a patented distance measuring option available on all the OS530E series infrared thermometers. This option comes either as built-in or field mountable module. This feature allows the user to correlate the target distance to the target size hence performing accurate temperature measurement.

More About the Software

In addition to its use as a temperature monitor, the free software program provides some powerful analytical tools to help you extract the maximum information from your temperature measurements. The charting function allows you to start, stop and view real time data from the OMEGASCOPE® and any other wireless channels of interest. You have complete control of the plot characteristics, including the following:

Selection of one or more channels to monitor

- Y-axis temperature range
- Line color for each channel
- Interval between readings
- 32,000 data points or continuous readings

A zoom-in, zoom-out feature allows you to examine the data in more detail or view long-term trends. The screen plot can be saved, printed, or imported into a spreadsheet for analysis.

The data logging function records data in a tabular format. As with the charting feature, you select the channels to be recorded, the interval between readings, and the number of data points. After 32,000 readings, the oldest is discarded as a new one is
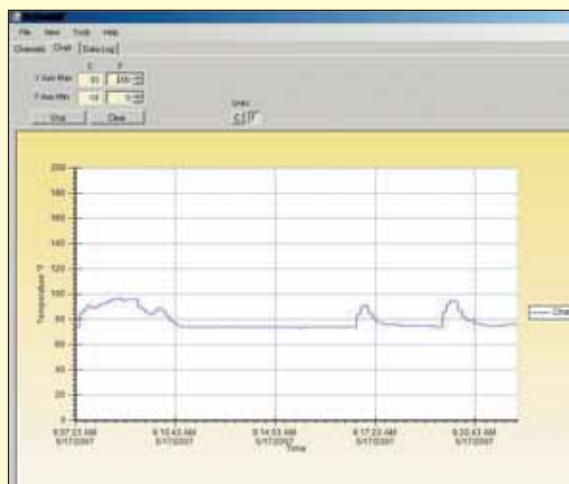
added. Once the logging is stopped, the data can be saved, printed or exported to a spreadsheet for further analysis or for record keeping purposes.

Conclusion

When purchasing instrumentation, value is an important factor. Skimp on features and you may not have what you need. Go all out and you overspend for features that end up being unneeded. With the OMEGASCOPE® Wireless Infrared Thermometer, you can have it all; an economical, full-featured unit with twice the utility of comparable units because of the built-in wireless capability. As always, you can count on Omega's engineers to come through with innovative designs that deliver high performance, high value products at affordable prices.

Fig. 3