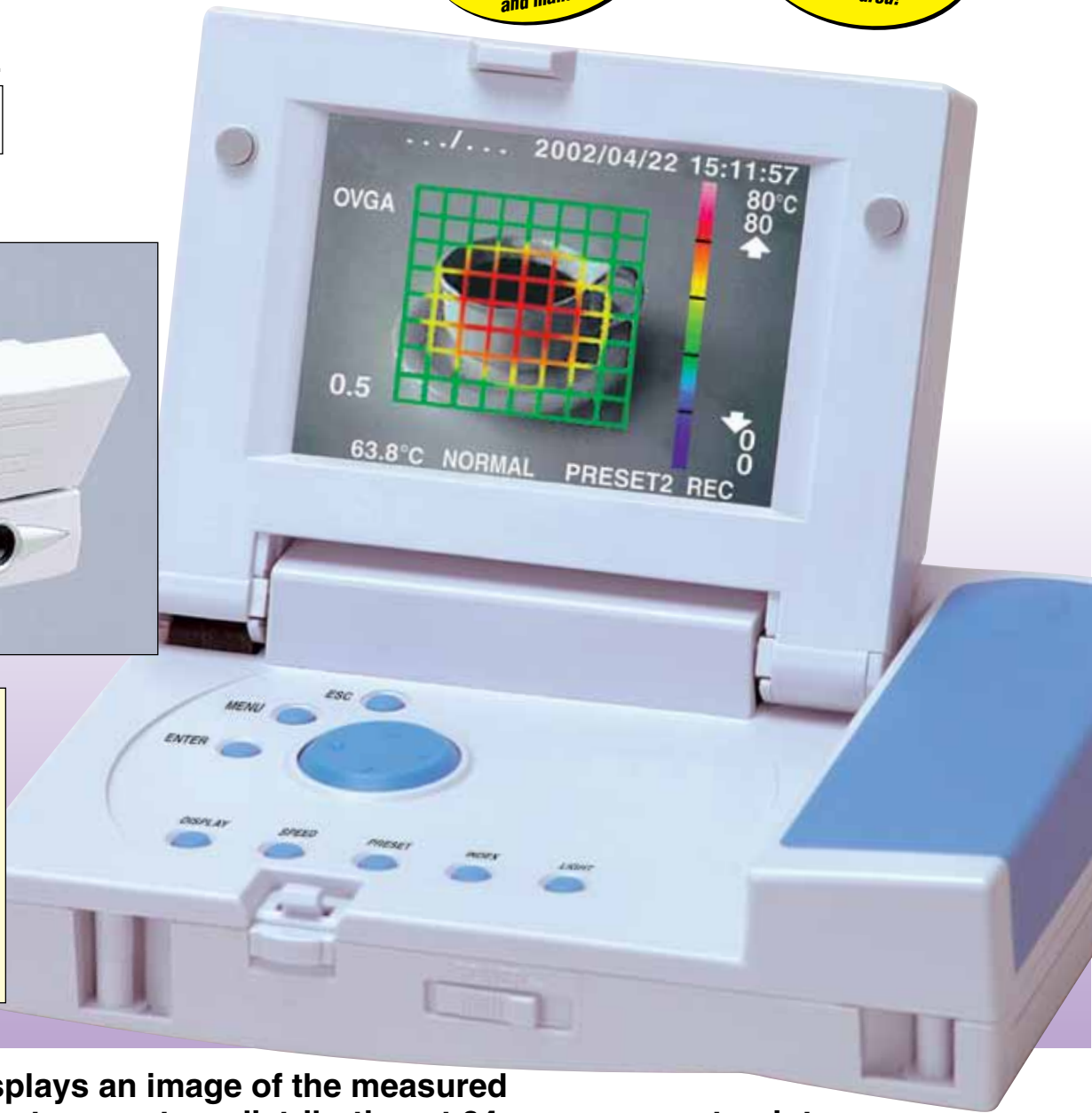# Thermal Imaging Thermometer
OMEGASCOPE®

Complete with 16MB flash card, flash card reader, hand strap, batteries, AC adaptor, carrying case, video cable and manual.

Simultaneously record both image and temperatures at 64 points while viewing the object being measured!

OS-XL

1 YEAR WARRANTY

Lightweight tripod with carrying case included.

The OS-XL displays an image of the measured subject and the temperature distribution at 64 measurement points.
The most advanced temperature gage—brought to you by OMEGA®

The OS-XL is a 2-dimensional infrared thermometer equipped with a newly developed 64-element thermopile array sensor. The OS-XL is not just another non-contact temperature measurement device–the OS-XL allows the user to view and verify the measurement subject on the LCD screen while simultaneously measuring the temperature at 64 points. The OS-XL can actually display and save data with a graphic representation of the temperature distribution overlaid on an image of the subject being measured. Furthermore, device operation is extremely easy, similar to that of a digital camera, greatly increasing operation efficiency.

The OS-XL offers exceptional functionality that has never been available before at this amazingly low price. Combining OMEGA's original technologies and concepts, the OS-XL takes the lead in the field of temperature measurement.

⚠️ **CAUTION! – This product is not intended for medical use or use on humans**
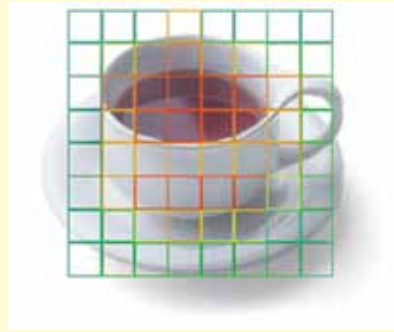
Conventional Infrared Thermometers

Can measure the temperature at a target point.

Thermography

Provides detailed information about the temperature distribution of an entire object.
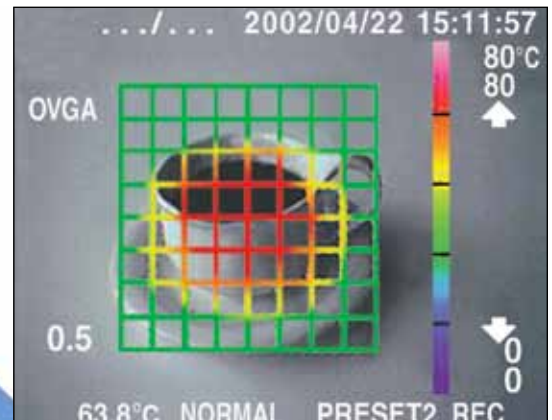
The OS-XL

Provides an easy-to-understand image display that simultaneously shows the image of the measurement subject and the temperature distribution at 64 measurement points.

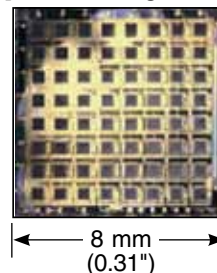**The OS-XL shown smaller than actual size.**

The OS-XL screen display in 64-frame gridline display mode.
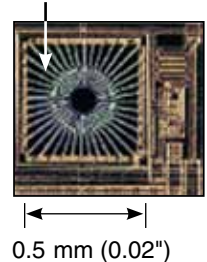

The Newly Developed 64-Element Thermopile Array

A thermopile is the heart of most of today's leading infrared thermometers. The Thermopile Array consists of a matrix of multiple thermopile elements, but attempts to put this technology into practical application have been hindered by size and sensitivity problems. OMEGA has managed to overcome these problems using semiconductor processing based micromachining, successfully developing a micro-size, high-sensitivity thermopile. The resulting 64-element Thermopile Array consists of an 8 x 8 matrix of 0.5 mm^2 (0.02"^{2}) elements, the first such matrix in the world to be put into practical application.

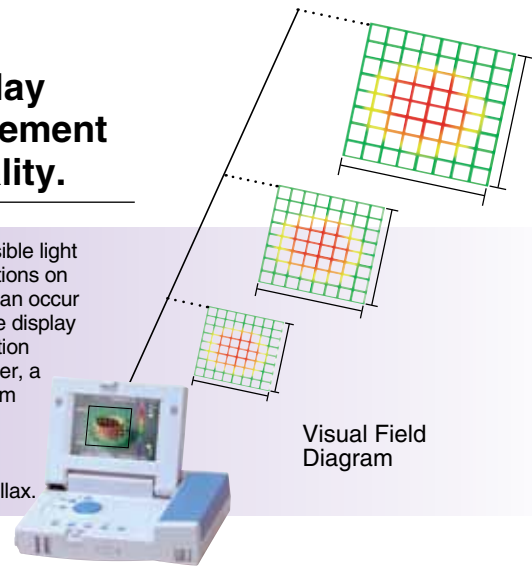**[Sensor Configuration]**

8 mm (0.31")

Light Receptor

0.5 mm (0.02")

The true value of the OS-XL lies in its ability to display temperature distribution on an image of the measurement subject. The OS-XL provides even greater functionality.

The image of the object being measured is divided into a 64-frame grid. The temperature distribution is displayed in corresponding colors on the grid lines framing each area. Temperature is measured in each frame. The cursor can be used to select a specific frame in order to display the temperature for that area in 0.1° increments. The OS-XL provides easy operations for both measuring and recording data. The OS-XL also provides a diverse range of settings functions and data options supporting "smart temperature measurement" with its enhanced functionality.
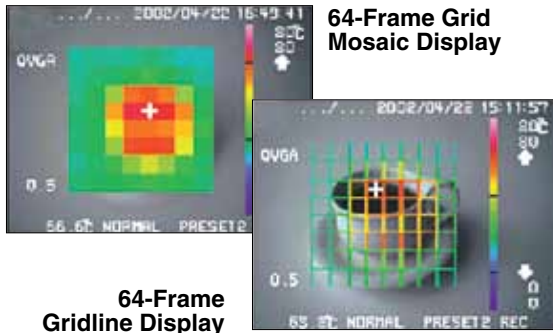
The infrared lens and visible light lens are at different locations on the OS-XL, so parallax can occur between the temperature display area and the actual location being measured. However, a 3-stage (0.5 m [1.64'], 1 m [3.28'] and infinity) measurement distance setting can be used to compensate for the parallax.

Visual Field Diagram

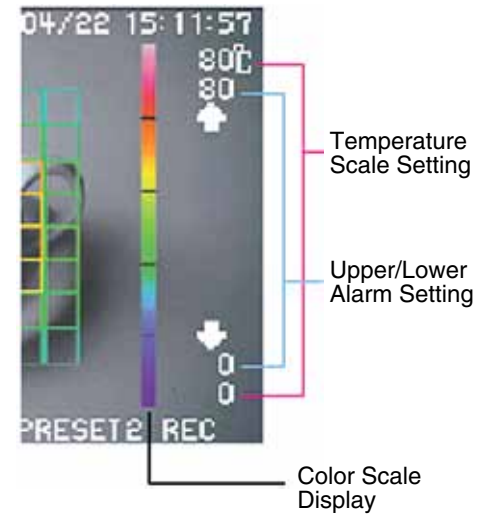## A Variety of Display Modes, Each With a Diverse Range of Settings

The user can freely switch between image display modes.

The user can select between three types of image modes: Visible Image Display, 64-Frame Grid Mosaic Display, and 64-Frame Gridline Display.

64-Frame Grid Mosaic Display

64-Frame Gridline Display
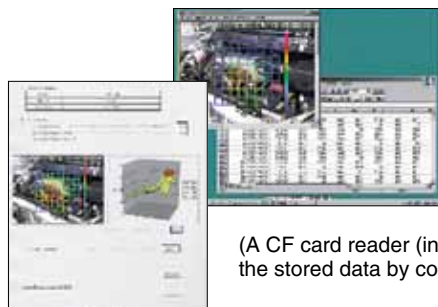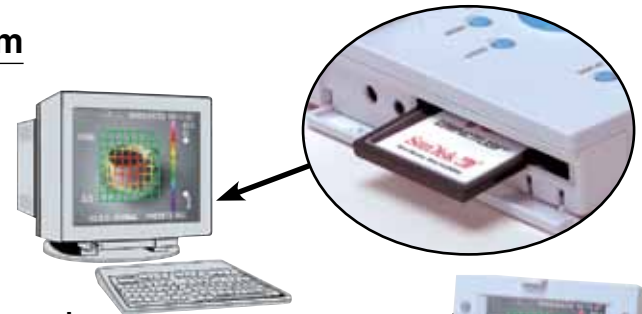
Convenient, Detailed Settings

The OS-XL provides a variety of convenient functions including a temperature scale that can be user-set to a range from -50 to 1000°C. Upper and lower alarm limit settings are used to issue an audible alarm and an alarm message if the temperature exceeds the set range. A color scale display corresponds to an image of the temperature range of the measurement subject.

Temperature Scale Setting

Upper/Lower Alarm Setting

Color Scale Display

Effectively Utilize Data in an Expandable System

All recorded data is saved on a Compact Flash (CF) card.

The OS-XL is equipped with a Compact Flash card slot so that image data and measurement data can be easily saved and stored. All of the measured values for each grid frame are saved for each image. The OS-XL can simultaneously record data for 64 measurement locations.

(Images are saved in JPEG format, and measured values are saved simultaneously as a CSV-format file.)

The OS-XL saves data in formats that can be easily edited by computer.
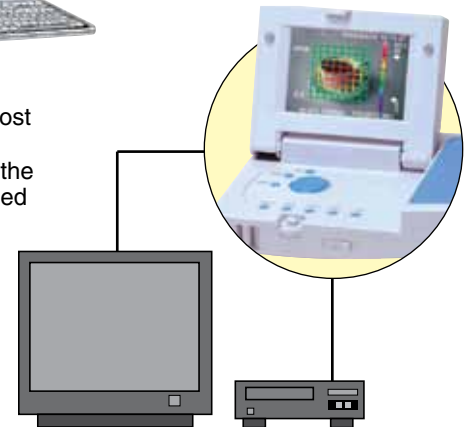
The data saved on the CF card can be read by most computers. It is easily viewed and edited without using specialized software. With Microsoft Excel, the image and measurement data can also be analyzed and used to generate illustrated reports.

(A CF card reader (included) is needed to access the stored data by computer.)

Measurement conditions can be easily recorded using the OS-XL's video output.

The OS-XL is equipped with a video output jack, so the measurement conditions can be easily recorded on videotape or monitored on a large-screen TV.

(Please use the video cable included with your unit for video output.)

*The product names listed are trademarks or registered trademarks of their respective corporations

Convenient, Easy-to-Use, High-Performance Functions

• Sharp, bright, high-visibility TFT color LCD monitor
The bright 3.8-inch TFT color LCD monitor provides sharp, clear, high-resolution images. The LCD image is easy-to-see, even when making measurements outdoors. The sharp display also provides a clear numeric display of the measurement data.
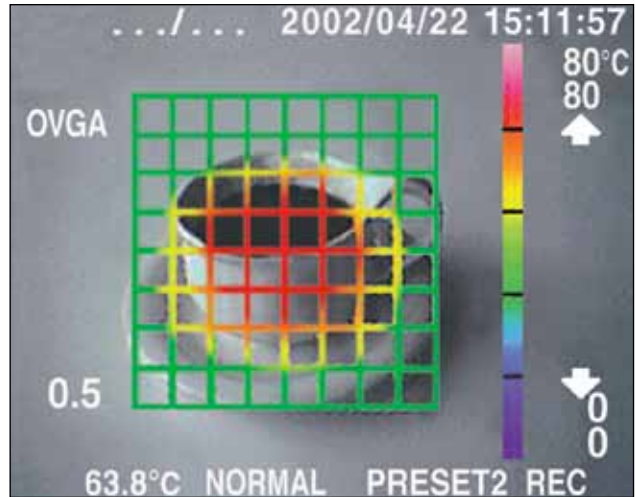
• Automatic continuous measurements
With the "Logging" function, the OS-XL can be used to make automatic continuous measurements at a fixed location, such as the continuous monitoring of temperature fluctuations at a specific location.
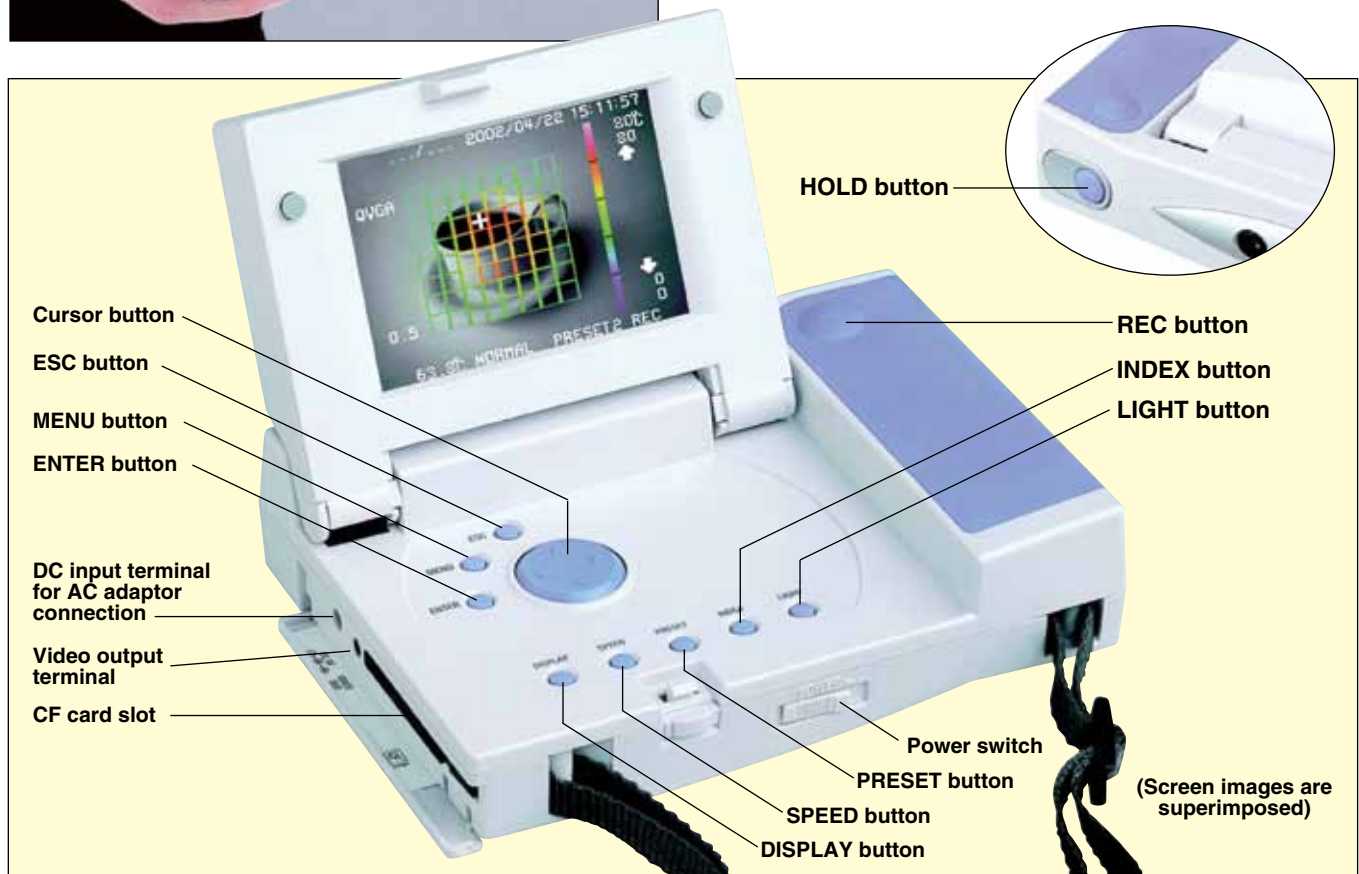(The OS-XL can be mounted on a standard camera tripod.)

• Automatic power shutoff function
This energy-efficient measurement gage can be set to turn off automatically if no buttons are pressed for one minute.

Easy Operation, with the Feel of a Digital Camera

In addition to making measurements, the OS-XL also makes it easy to save data—just line up the object being measured in the LCD monitor and press the "Save" button. The lightweight, compact body of the OS-XL makes it an exceptionally convenient measurement device.

J

Cursor button

ESC button

MENU button

ENTER button

DC input terminal for AC adaptor connection

Video output terminal

CF card slot

HOLD button

REC button

INDEX button

LIGHT button

Power switch

PRESET button

SPEED button

DISPLAY button

(Screen images are superimposed)

A Diverse Range of Applications in a Wide Variety of Fields

✔ **Equipment Maintenance**
- Maintenance and inspection of electric power transformers
- Maintenance and inspection of plant facilities
- Diagnosis of thermal insulation of material deterioration
- Thermal design of floor heating systems
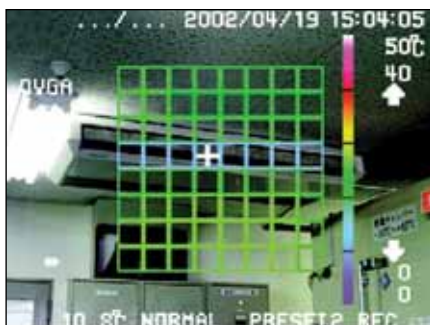- Diagnosis of outer wall shielding

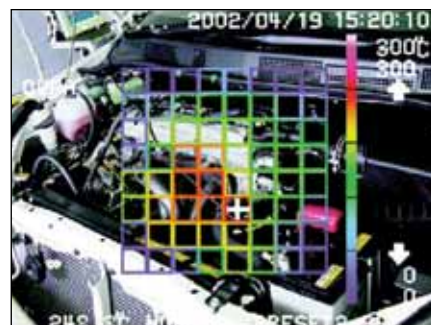✔ **Industrial Line Monitoring**

✔ **Research and Development**
- Test products used in environmental tests
- Thermal changes in circuit boards during operation

✔ **Quality Control**
- Temperature control in freezers and refrigerators
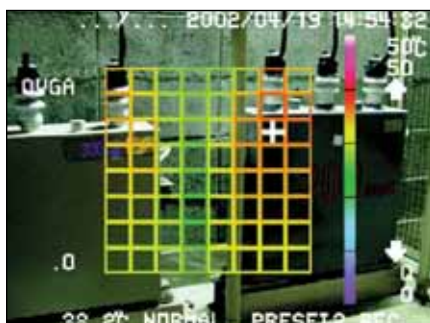- Temperature control during product receiving and shipping

For air-conditioning equipment maintenance

For the thermal measurement of engine parts

For the temperature control of boilers

For electrical equipment maintenance

For the temperature control of food products

Specifications

Temperature Measurement Unit

Temperature Measurement Range: -50 to 1000°C (-58 to 1832°F)

Temperature Sensor Element: 64-element thermopile array sensor

Measured Points: 64 points (8 elements horizontally by 8 elements vertically)

Measured Point Pitch: 55 mm (2.17") at a distance of 1 m (3')

Measurement Area: 44 x 44 cm (17.3 x 17.3") at a distance of 1 m (3')

Measured Wavelength: 8 to 16 μm

Thermal Emissivity Compensation: 0.10 to 1.00 in 0.01 increments

Display Resolution: 0.1°C/1°C

Measurement Precision: Within ±2°C [0 to 200°C (32 to 392°F)] (when the ambient temperature is 23±5°C, the relative humidity is 35% to 75%, and the thermal emissivity of the measurement subject is 1.00)

Visible Imaging Unit

Imaging Device: CMOS color image sensor

Angle of View: 50° (horizontally)

Minimum Measurement Distance: 0.5 m (1.64')

Display Unit

LCD Monitor Size: 96.5 mm (3.8") (320 x 240 pixels)

Display Type: Transmission TFT color LCD

Backlight: Cold cathode tube

Additional Specifications

Temperature Data: Color frame display for each measurement point (the corresponding display colors can be user set)

Display Method

Selected Measurement Points: Numeric display

Display Language: English

Temperature Display: °C/°F

Data Memory: Compact flash card (8 MB to 128 MB)

Automatic Measurement: Automatic saving of visible image data and temperature data at set time intervals (minimum interval: 1 minute)

Data Storage Formats:
  Visible Image Data: JPEG (VGA/QVGA), temperature
  Data: CSV-Format File
Image Data Deletion: Data can be selectively deleted.
Power Supply: 6 "AA" batteries and AC adaptor (all included)
Video Image Output:
NTSC/PAL video output

Operating Range (Temperature and Humidity):
  Temperature: 0 to 40°C
  Relative Humidity: 35% to 85% (no condensation on device)
External Dimensions:
55 H x 123 D x 167 mm W (2.2 x 4.8 x 6.6") with the display unit closed

Mass: Approx 700 g (1.5 lb) excluding batteries and CF card
Functions
Alarm function (buzzer and message display), auto power off, calendar, battery alarm (battery power meter displayed on the monitor)

OS-XL shown with 16MB flash card, flash card reader, hand strap, AC adaptor, rugged carrying case and video cable.
Unit also includes 6 "AA" alkaline batteries, tripod and operator's manual (not shown).

To Order

Model No.	Description
OS-XL	OMEGASCOPE® infrared thermometer

Accessories

Model No.	Description
OS-XL-FCR	Spare flash card reader
OS-XL-ADAPTER	Spare AC adaptor
OS-XL-VIDEO	Spare RCA video cable
OM-3000-SC	Spare soft carrying case
TRIPOD	Spare lightweight tripod with carrying case

Unit comes complete with 16MB flash card, flash card reader, hand strap, 6 "AA" alkaline batteries, AC adaptor, carrying case, tripod, video cable and complete operator's manual.
***Ordering Example: OS-XL,** infrared thermometer.*

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