

## Three USB-Interface Shutterless Compact Long-Wavelength IR Camera Modules:

- Horizontal FOV Angle of 90° (Model LW10F90-U)
- Horizontal FOV Angle of 42° (Model LW10F42-UT)
- Horizontal FOV Angle of 12° (Model LW10F12-UT)



### Main Features

#### > Lineup of Lenses with Various Focal Lengths:

- Three models of camera modules are offered with optimal lenses covering a wide angle of applications from wide-angle to mid-telephoto range.
- LW10F90-U : f=1.9mm (Horizontal FOV Angle 90°)
- LW10F42-UT: f=3.7mm (Horizontal FOV Angle 42°) (\*1)
- LW10F12-UT: f=13mm (Horizontal FOV Angle 12°) (\*1)

\*1: Focus adjustment mechanism is incorporated.

#### > Consistent High Performance in Both Thermal Imaging and Temperature Measurement:

- Pixel-by-pixel measurement of temperature (\*2) is achieved through the use of Tamron's high-performance lenses and proprietary temperature signal processing developed for shutterless measurement. Thermal image and temperature data are simultaneously available.
- Temperature precision of  $\pm 2^{\circ}\text{C}$  (target temperature is within  $10\text{-}60^{\circ}\text{C}$ )

\*2: LW10F90-U: temperature measurement only in the central area

#### > Incorporation of Shutterless Feature:

- Shutterless feature eliminates incursion of shuttering noise and interruption of image sequence. New modules improve on reliability, free from durability issue related with a mechanism shutter.

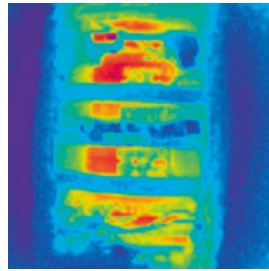
#### > USB interface:

- UART communication with Micro USB Type-B connector.

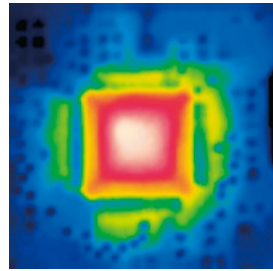
## Examples of Application (Thermal Analysis of equipment and components)



Module with Micro USB Type-B



Thermal analysis of equipment



Thermal emission analysis



Ex) Visible Image

For the purpose of detection of abnormal temperatures to monitor facility equipment or devices, LW10F series are capable of temperature analysis by selecting the applicable lens depending on the measurement area and point.

## Specifications

| Models   |              | LW10F90-U  | LW10F42-UT   | LW10F12-UT                     |
|--|--------------|--|--|--------------------------------|
| Detector   | Type         | Uncooled Microbolometer (8~14 $\mu$ m)   |  |                                |
|  | Resolution   | 80 (H) $\times$ 80 (V)   |  |                                |
|  | Shutter      | No   |  |                                |
| Lens Type  | Focal length | f=1.9mm  | f=3.7mm  | f=13mm                         |
|  | F/No         | F/1.3  | F/1.1  | F/1.1                          |
|  | H.FOV        | 90°  | 42°  | 12°                            |
|  | M.O.D        | 80cm   | 50cm   | 20cm                           |
| Output resolution  |              | 80 (H) $\times$ 80 (V)   |  |                                |
| Output data  |              | 16bit data (temperature) / 8bit data (thermal images)  |  |                                |
| Temperature range of measurement target / Temperature precision* |              | Only in the central area (9 $\times$ 9 pixels)<br>10°C ~ 60°C, $\pm$ 2°C<br>(Ambient temperature: 10°C ~ 40°C)<br>10°C ~ 100°C, $\pm$ 5°C<br>(Ambient temperature: 0°C ~ 60°C) | 10°C ~ 60°C, $\pm$ 2°C<br>(Ambient temperature: 10°C ~ 40°C)<br>10°C ~ 100°C, $\pm$ 5°C<br>(Ambient temperature: 0°C ~ 60°C) |                                |
| Interface  |              | USB2.0 (UART 2 ports)<br>(Micro USB Type-B connector/Original protocol)  |  |                                |
| Power supply   |              | 5V DC (via USB)  |  |                                |
| Power consumption  |              | Max 1.0W   |  |                                |
| Operating temperature  |              | 0°C ~ +60°C  |  |                                |
| Dimensions (W $\times$ H $\times$ D)                             |              | 46 $\times$ 46 $\times$ 37.4mm   | 46 $\times$ 46 $\times$ 42.6mm   | 46 $\times$ 46 $\times$ 54.4mm |
| Weight   |              | 132g   | 153g   | 186g                           |

\* Surface temperature distribution is displayed, not absolute temperature values. (Variance may occur due to difference in measurement conditions.)

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