

# LI19

## Handheld read-out unit / datalogger

*LI19 is a high accuracy handheld read-out unit / datalogger. It is used to make mobile measurements, for short term datalogging (as a static logger), and as an accurate millivolt amplifier directly connected to a PC. LI19 can be used with a variety of sensors. LI19's most common application is with heat flux- and solar radiation sensors. LI19 battery life and memory allow continuous measurement for up to 50 days.*



**Figure 1** LI19 read-out unit / datalogger



**Figure 2** application example: LP02 second class pyranometer with LI19 read-out unit / datalogger

### Introduction

LI19 is typically used to display the measured solar radiation or heat flux. It measures a DC voltage. Once programmed with the sensitivity of the connected sensor, the display will show the actual value of the heat flux or solar radiation in  $W/m^2$ . LI19 is programmed through its PC user interface. We recommend downloading the latest software. LI19 is battery powered, using 2 x AA-type batteries. Fresh batteries allow more than 50 days of operation. The system is supplied in a practical transport case, for easy transport and protection during field measurement campaigns. LI19 may be used with pyranometers and heat flux sensors.

### Operation

Operation of LI19 is easy. Directions for use:

- switch on LI19, connect the sensor
- optional: mark the units of measurement on LI19, in the window below the display
- connect LI19 to a PC, using the USB cable and the LI19 software
- program sensor model and sensitivity
- switch off LI19 and restart LI19, check sensor sensitivity settings on the display (displayed 1 s after startup)
- optional: program the storage interval and starting time of storage. NOTE: switching off LI19 will discontinue data storage
- disconnect LI19 from the PC
- start a mobile measurement
- later actions: export data to the PC

### Suggested use

- short-term field measurement of solar radiation or heat flux
- amplification of heat flux sensor signals
- education in solar energy

### Latest software

the latest software should be downloaded from <http://www.hukseflux.com/page/downloads>

## LI19 design

LI19 is built for easy use with a large size LCD, displaying quantities in  $W/m^2$ , and a USB connection.



**Figure 3** application example: with HF03 heat flux sensor



**Figure 4** LI19 in use with LP02 in field measurement

## Delivery

- LI19 with 2 x AA battery
- 2 spare batteries (type AA)
- LI19 software
- transport case with space for sensors
- LI19 product certificate
- strip with measurement unit markers
- USB cable

## LI19 specifications

Output on display	heat flux
Input	solar radiation
Conversion	analogue voltage division by the sensor sensitivity
Display definition	4 digits with sign
Display refreshment rate	$1 s^{-1}$
Calibration uncertainty	0.1 %
Temperature dependence	$< 0.5 \% + 3 \times 10^{-6}$ V over rated range
Sample rate	$2 s^{-1}$
Rated input range	6.25 to $200 \times 10^{-3}$ V (selectable)
A/D conversion	16 bits
Stored measurement definition	minimum maximum and average over storage interval with conversion to $W/m^2$
Storage capacity	3518 measurements
Storage interval range	2 to 65535 s (selectable)
Compatibility with Hukseflux sensor models	LP02, HFP01, SBG01, HF03
Battery type	2 x AA
Internal power supply voltage	3 VDC
Battery life	> 50 days (on fresh batteries)
Rated operating temperature range	$-10$ to $+40$ °C
System requirements for use with PC	Windows XP and higher
Connection to PC	USB 1.1 / 2.0 low speed
User interface on PC	LI19 software
IP protection class	IP40
Connection to sensor	2 x (female chassis plug for 4 mm banana with screwed signal wire clamp)
Weight	0.175 kg (net) 1.3 kg with carrying case
Dimensions LI19	(70 x 146 x 25) mm
Dimensions transport case	(400 x 300 x 120) mm

## See also

- LP02 / LI19 second class pyranometer with LI19
- HF03 / LI19 heat flux sensor for flare radiation / heat flux measurement

Interested in this product?  
E-mail us at: [info@huksefluxusa.com](mailto:info@huksefluxusa.com)