# EL-PDF-1 Series
# Temperature Data Loggers with Built-in PDF Report Generator


- ✓ Reusable, stand-alone temperature data loggers
- ✓ Generates an internal PDF report. Looks like a USB drive to any connected computer
- ✓ Compatible with all computer platforms and operating systems
  - ✓ Mac, PC, Linux, macOS, Windows, etc.
- ✓ Sold in 10-packs for specific temperature monitoring markets:
  - ✓ Chilled Goods (2 to 8 °C)
  - ✓ Frozen Foods (-20 to -16 °C)
  - ✓ Ripening Goods (12 to 14 °C)
  - ✓ Ambient pharmaceuticals (8 to 25°C)
- ✓ Encapsulated packaging seals out dust and water up to 1 meter of immersion (IP67)
- ✓ Samples and records temperature with a time and date stamp once every 10 minutes
- ✓ Cumulative record time is over 220 days over one or more measurement sessions
- ✓ Built-in alarm LED triggers at preset temperature values
- ✓ No software to install. The instrument is completely self-contained

DATAQ INSTRUMENTS

# EL-PDF-1 Description

EL-PDF-1 data loggers can be initiated on-the-spot and are supplied ready-to-operate: A built-in temperature sensor, no battery to install and no software to ever download and run. Simply press and hold the START button until the STATUS LED shows green, deploy the logger in the environment you want to monitor, and walk away. It's that easy.


A pre-programmed 30-minute delay prevents alarms from triggering until the logger is fully saturated in the ambient temperature it's monitoring. The logger samples at a fixed rate of one sample every 10 minutes, and contains enough memory to provide over 220 days of total record time. At any time during the recording process the logger's STATUS button can be pressed to activate built-in LEDs. That action saves a marker in the recorded data stream to indicate the event. At the same time LEDs illuminate to indicate device status and alarm states. If pre-programmed temperature extremes were breached, the LEDs provide an instant visual indication while the logger continues to record.

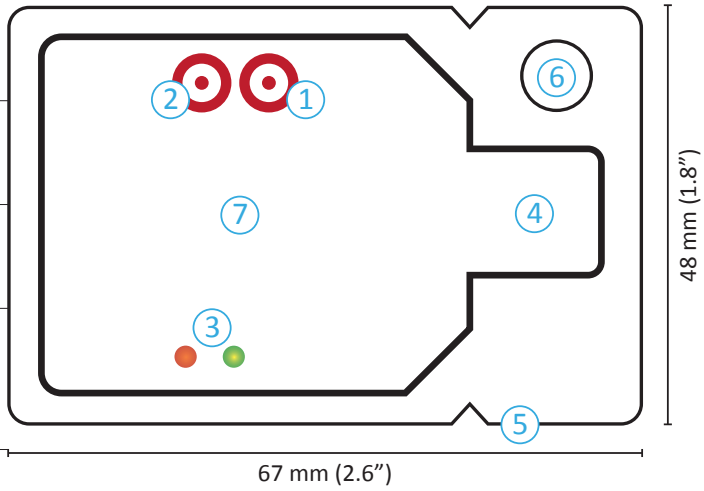
After deployment the logger's integral plastic bag is opened to expose its USB port. Connect the logger to any computer running any operating system and the logger appears as a USB drive containing a PDF report file. Simply move the report to your computer to review and disseminate as you would any file. Afterward, re-deploy the data logger for other recording sessions again and again over the logger's estimated 220-day life. The optional EL-CC-BAG is available to maintain the instrument's IP67 rating after its first use.

| | Type | | | |
|---|---|---|---|---|
| | Frozen | Chilled | Ripening | Pharmaceutical |
| High temperature alarm* | -16 °C | 8°C | 14°C | 25°C |
| Low temperature alarm* | -20°C | 2 °C | 12°C | 8°C |
| Logging interval (record time) | 10 minutes (220 days cumulative with or without reuse) | | | |
| Model | EL-PDF-1-002 | EL-PDF-1-001 | EL-PDF-1-003 | EL-PDF-1-004 |

* Alarms are delayed 30 minutes from startup. This allows the data logger to acclimate to its environment to prevent false alarms

# EL-PDF-1 Series Close-up

| | |
|---|---|
| 1 | Start /stop button. Press and hold until the LED lights green to begin recording. Alarms are automatically held off for 30 minutes to allow the logger to settle into the environment. Press again at anytime to see alarm and device status. |
| 2 | Press the Status button during recording to reveal any alarm states generated during the session. |
| 3 | Status LEDs. Two LEDs indicate device and alarm status (see next section for details.) |
| 4 | USB interface connector for uploading temperature, date and time in the PDF report. Afterward, the instrument is reusable for other sessions. |
| 5 | Hermetically-sealed packaging designed for IP67 exposure. Drop the entire logger into the environment you want to measure without damage. Tear to open, and use optional EL-CC-BAG to protect the logger after first use. |
| 6 | Mounting hole for convenience. |
| 7 | Model information including model number, its targeted use (frozen foods, chilled food, ripening foods or pharmaceuticals) and its specific alarm limits. |



## EL-PDF-1 Series Alarm and Status LED

After the EL-PDF-1 Series logger is deployed and monitoring temperature its Start/Status button may be pressed at any time to instantly reveal both the status of the device and the temperature alarm state through two LEDs. This action simultaneously inserts an event marker in the recorded data stream for future reference. The logger is preprogrammed to suppress alarms until 30 minutes after deployment, allowing full exposure to ambient temperature to prevent a false alarm.

| | Description | Comment |
|---|---|---|
|  | **Red with a Green single flash**<br>The logger is ready to begin a new recording session | Push the Start/Stop button to begin a new session |
|  | **Green, single flash**<br>The data logger is currently logging data. An alarm HAS NOT been triggered. | No action required. |
|  | **Red, single flash**<br>The data logger is currently logging data. An alarm HAS been triggered. | Check alarm condition in the PDF report after the recording session. |
|  | **Green, double flash**<br>The data logger has stopped logging data because its memory is full. An alarm HAS NOT been triggered. | Plug the EL-PDF-1 data logger into the USB port of any computer to download the embedded PDF report. Begin a new deployment afterward if desired. |
|  | **Red, double flash**<br>The data logger has stopped logging data because its memory is full. An alarm HAS been triggered. | Plug the EL-PDF-1 data logger into the USB port of any computer to download the embedded PDF report, including the alarm condition. Begin a new deployment afterward if desired. |
|  | **No LEDs flash**<br>The logger's battery is dead. | Replace the logger. |

## No Software to Install; Use on ANY Computer Platform and OS

The EL-PDF-1 temperature data logger is a completely self-contained instrument, placed into service on-the-spot without any software to download or install.

A computer is needed only to access the PDF report the instrument creates in its own internal memory. When a recording session terminates you simply tear the EL-PDF-1's hermetically-protective plastic skin to reveal a USB interface plug. Inserting the device into the USB port of a PC allows it to behave like a USB drive. Open the drive to reveal the recorded PDF data file, and simply move it to your PC for review as you would any other file. Afterward, the instrument is ready for another recording session. The optional EL-CC-BAG ensures continued IP67 protection after the first use.

Best of all, the instrument is computer platform and operating system independent. Use it with any computer that can read a USB drive and interpret a PDF file.

# PDF Report Overview

The reporting system of the EL-PDF-1 is a self-generated PDF report that contains all the information necessary to interpret recorded temperature data while the instrument was deployed.

**Time- and Date-stamped Data**

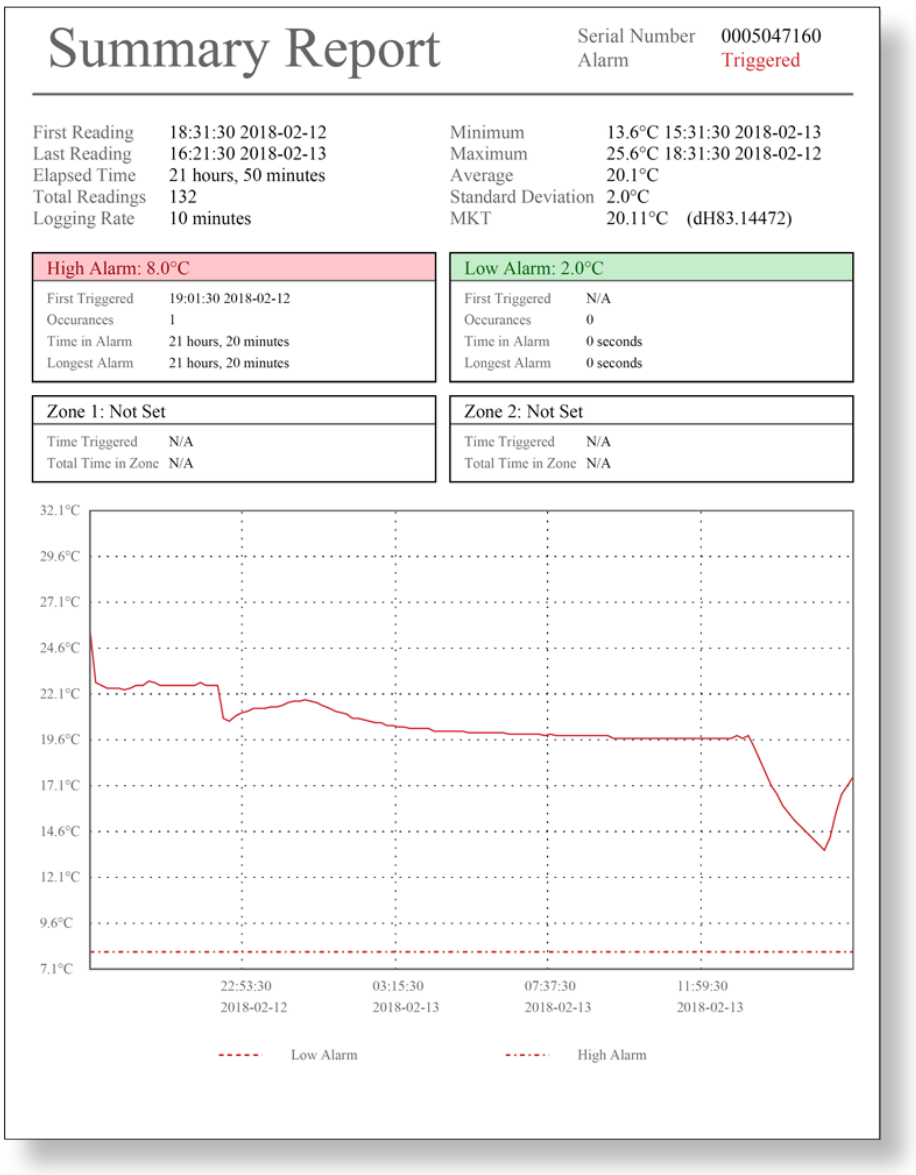
All displayed data is associated with a time and date of capture, including alarm events and the total time the instrument was in an alarm state.

**Statistical Data Overview**

The instrument calculates minumum, maximum, standard deviation, and average values for the recording session and folds this data into the PDF report. Also included is a calculated value for mean kinetic temperature. Changes in temperature (even if within accepted limits) can compromise product integrity versus instances where temperature is constant. MKT takes these fluctuations into account, representing them as a single temperature for enahnced product expiration decisions where wide temperarture excursions are present, like what might be experienced in an uncontrolled enviroment.

**Graphical Temperature Trend**

Finally, the PDF report provides a graphical presentation of data recorded during the session as a function of °C versus time and date. Temperature excursions and extremes are easily viewed, including relationships to high and low temperature limits.




# Specifications

| | |
|---|---|
| Measurement range | -30 to +60°C (-22 to +140°F) |
| Internal Resolution | 0.1°C (0.1°F) |
| Accuracy (overall error) | ±0.5°C maximum (±1°F) |
| Battery life | 12 months (minimum) |
| Environmental protection | IP67* |
| Memory (Samples) | 32,600 each for temp, date, time |
| Sampling Interval | 10 minutes, fixed |
| Maximum Possible Record Time | 220 days |

* Protected from dust; Protected against the effects of immersion in water to depth between 15 cm and 1 meter

| Ordering Guide | | | |
|---|---|---|---|
| | Preset Temperature Alarm Set Points | | |
| Description | Low | High | Order No. |
| **EL-PDF-1-001 (sold as a package of 10)**<br>Temperature data logger for CHILLED foods. | 2°C (35.6°F) | 8°C (46.4°F) | EL-PDF-1-001 |
| **EL-PDF-1-002 (sold as a package of 10)**<br>Temperature data logger for FROZEN foods. | -20°C (-4°F) | -16°C (3.2°F) | EL-PDF-1-002 |
| **EL-PDF-1-003 (sold as a package of 10)**<br>Temperature data logger for RIPENING foods. | 12°C (53.6°F) | 14°C (57.2°F) | EL-PDF-1-003 |
| **EL-PDF-1-004 (sold as a package of 10)**<br>Temperature data logger for ambient pharmaceuticals. | 8°C (46.4°F) | 25°C (77.0°F) | EL-PDF-1-004 |
| **Optional Accessories** | | | |
| **EL-CC-BAG (sold as a package of 5)**<br>Waterproof, re-sealable bags for data logger re-use with IP67 protection. | | | EL-CC-BAG |

## Included


**Model EL-PDF-1 data logger 10-pack**
**(choose one of four models)**

## Optional


**Model EL-CC-BAG 5-pack**
**(EL-PDF-1 data logger not included)**

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