



- LIBERO CD**
- Put directly into dry ice
 - Measure as low as -95.0 °C



TECHNICAL SPECIFICATIONS LIBERO CD

LIBERO CD

PDF Logger for Direct Placement into Dry Ice

Dry ice is commonly known to reach temperatures of -78.5 °C, so most dry ice data loggers work to -80.0 °C. If you regularly have dry ice shipments, you might wonder why you reach temperatures below that limit. The fact is dry ice can reach temperatures far below -80.0 °C during a regular shipment. Temperatures colder than -80.0 °C in dry ice can occur because of vibration or pressure differences, both things that are likely to happen during your shipment. That's why we designed the LIBERO CD dry ice data logger to measure even the lowest temperature we have seen occurring in dry ice shipments and added on some extra to measure as low as -95.0 °C, so you can ship dry ice without needing to worry.

LIBERO CD PDF Logger

- USB Interface
- Internal temperature sensor
- Extra battery power
- Auto expiry date management
- LIBERO CD PDF Logger
- OK and ALARM indicator
- Shipment information
- Multi-level alarm statistics
- Logging results and statistics
- Temperature graph with alarm limits
- LIBERO CD PDF Report

LIBERO CD PDF Report with multi level alarm criteria

Additional Information

This is an example PDF report of the LIBERO CD dry ice temperature data logger.

In real shipments information for the recipient or shipment specific information (e.g. Transportation Number, Course, Origin, ... or any other information making it easier to systematically analyze recorded data can be added here.

LIBERO Configuration

| | | | |
|---------------------|--|--------------------|----------------------|
| Type: | LIBERO CD V5.11 RC9 | Current State: | Stopped |
| Device ID: | 7406 0000 016 | Start at: | 23 May 2016 18:00:12 |
| Log Interval: | 1 m | First Measurement: | 23 May 2016 18:00:12 |
| Shipment Time Zone: | ETC | Checksum: | CD017 |
| Configured by: | EC134 / uhrenstamm, 23 May 2016 12:12:09 | | |

Alarm Zone

| Alarm Zone | Allowed Time | Total Time | No. of Excursions | Longest Exc. | Status |
|----------------------|-------------------|------------|-------------------|--------------|--------|
| H1: over -20.0 °C | 0 m (any) | 0 m | 0 / unlimited | 0 m | OK |
| H2: over -40.0 °C | 1 h 0 m (sum) | 0 m | 0 / unlimited | 0 m | OK |
| H3: over -60.0 °C | 1 h 0 m (sum) | 0 m | 0 / unlimited | 0 m | OK |
| G: -80.0 to -60.0 °C | unlimited | 15 h 2 m | 0 / unlimited | 0 m | OK |
| L1: below -85.0 °C | 5 d 0 h 0 m (sum) | 0 m | 0 / unlimited | 0 m | OK |
| L2: below -95.0 °C | 0 m (any) | 0 m | 0 / unlimited | 0 m | OK |

MKT Limits and Maximum Duration

| | | | |
|-----------|----------|-------------------|------|
| Duration: | 15 h 2 m | Alarm Conditions: | none |
| MKT: | -78.0 °C | | |

Logging Results

| | | | |
|----------------------|--------------------------------|---------------|----------------------|
| Highest Temperature: | -78.5 °C; 23 May 2016 18:00:12 | Stop at: | 24 May 2016 16:00:00 |
| Lowest Temperature: | -78.5 °C; 24 May 2016 05:54:12 | Alarm at: | none |
| Average Temperature: | -78.0 °C | File created: | 24 May 2016 10:07:34 |

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HIGHLIGHTS

- Internal temperature sensor for placement directly into dry ice
- Covers all scenarios experienced in dry ice, also below -80 °C
- Fully functional immediately upon removing from dry ice
- No equipment or software required to start or for downloading data
- Unmatched accuracy, fully calibrated with traceable certificate
- Compatible with liberoMANAGER cold chain database

Technical Specifications LIBERO CD

| | | |
|---|--|---|
| Type | PDF Logger with multiple alarm levels for direct use in dry ice | |
| Application area | Cold Chain Monitoring – deep frozen or dry ice shipments | |
| Recording options and mode | Single use: start / stop mode | |
| Type of probe | Internal NTC probe | |
| Operating range | -95 °C..+50 °C | |
| Measurement accuracy | ± 0.5 °C [-30.0 °C..+30.0 °C] ± 0.7 °C [-80.0 °C..-30.1 °C] | ± 1.0 °C [+30.1 °C..+50.0 °C] ± 1.5 °C [-95.0 °C..-80.1 °C] |
| Resolution | 0.1 ° | |
| Measurement interval | 1 to 60 minutes, user programmable | |
| Memory capacity | 8'800 measurements values (equals 60 days run time with 10 min interval) | |
| Expiry date & battery life | <ul style="list-style-type: none"> - Data logger can be started any time during shelf life of 12 months - Started data logger runs until memory is full or data logger is stopped - Auto expiry date management: Expired data logger cannot be started anymore - Long time operating range: -80.0 °C..+40.0 °C for entire shelf life - Extended operating range: coverage of peak temperatures to -95.0 °C and +50.0 °C - Use beyond the extended operating range can limit the battery | |
| Certificate | Ilac/NIST/ISO 17025 traceable production calibration certificate | |
| Programmable alarms | <ul style="list-style-type: none"> - 8 temperature alarm levels with single or cumulative delays - 2 temperature thresholds with alarm delay - Alarm on duration / run time | |
| Start-up delay | 0 minutes to 24 h | |
| Display | Multifunction LCD, size: 23.5 x 23.5 mm, with large OK and ALARM indicator | |
| Display functionality | <ul style="list-style-type: none"> - Status: Conf, Start, Run, Stop - OK, ALARM or blank | <ul style="list-style-type: none"> - Current temperature measurement - Configuration profile identification |
| Report | <p>Built-in PDF file generator automatically establishes an evaluation report with embedded data upon connection to a USB port. Complies with the ISO standard 19005-1 Document Management for the long-term preservation of electronic documents (PDF/A) and FDA 21 CFR Part 11.</p> <ul style="list-style-type: none"> - Customizable report title and filename - Text area for additional information (e.g. shipment information, instructions for recipient, etc.) - Immediate release or quarantine based on alarm status - Statistics (min/max, average, alarm) and detailed data logger information (ID, configuration, etc.) - Chart visualizing the temperature curve and alarm limits | |
| Traceability | ID number (traceable to component level) | |
| Case dimension weight | ABS plastic material 96 x 50 x 16 mm (3.8 x 2.0 x 0.6 inch) 50 g (1.8 oz) | |
| Data logger configuration and additional analysis software | liberoCONFIG software to create, store and manage individual settings in a logger profile as well as SmartStart, a liberoCONFIG component allowing a safe and quick application of profiles and shipment information to PDF Logger. elproVIEWER software to access and export embedded data of PDF report, for data analysis and comprehensive report features. Fully compatible with liberoMANAGER database. | |


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