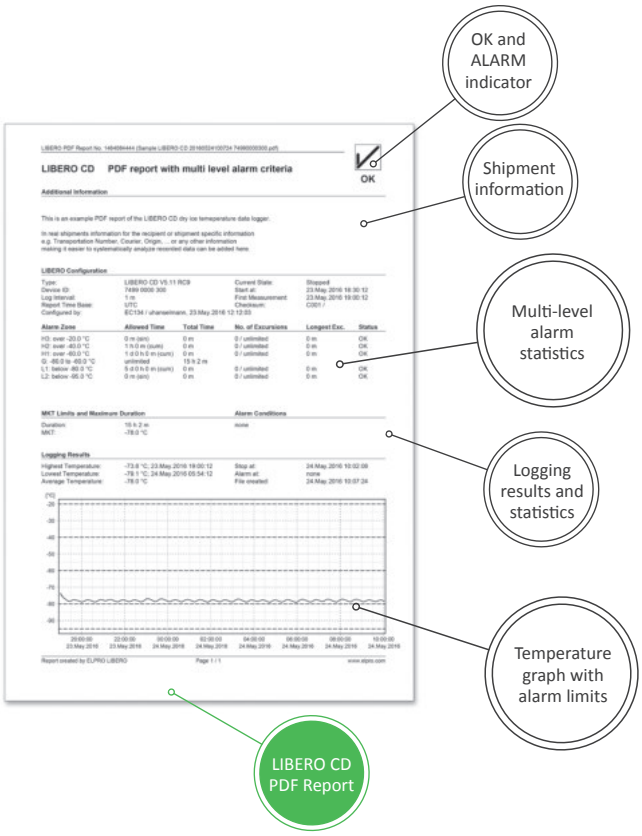
LIBERO CD
- Put directly into dry ice
- Measure as low as -95.0 °C

ELPRO

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.



we prove it.

- 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
- Unmatched accuracy, fully calibrated with traceable certificate
- Compatible with liberoMANAGER cold chain database

Technical Specifications LIBERO CD

Version 2018

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] ± 1.0 °C [+30.1 °C..+50.0 °C] ± 0.7 °C [-80.0 °C..-30.1 °C] ± 1.5 °C [-95.0 °C..-80.1 °C]
Resolution	0.1 °
Measurement interval	1 to 60 minutes, user programmable
Memory capacity	24'200 measurements values (equals 168 days run time with 10 min interval)
Expiry date & battery life	- Data logger can be started any time during shelf life - Started data logger runs until memory is full or data logger is stopped (max. expiry date +30 days) - Auto expiry date management: After expiry, display changes status and logger cannot be started anymore - Use below -80 °C for prolonged time can limit battery life
Certificate	Ilac / NIST/ ISO 17025 traceable production calibration certificate
Programmable alarms	- 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	- Status: Conf, Start, Run, Stop - Current temperature measurement - OK, ALARM or blank - Configuration profile identification
Report	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. - 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)
Certifications	CE | EN12830 | EMC | RTCA DO-160 | RoHS | Safe Transport of Chemical Goods
Data logger configuration and additional analysis software	liberoCONFIG and SmartStart software to create, store and manage individual settings in a settings profile. liberoMANAGER database as cloud service to store shipment reports and results, analyze shipments, manage release status and trigger customer specific workflows in cold chain processes. elproVIEWER software to access and export embedded data of PDF report, for data analysis and comprehensive report features (for users not using liberoMANAGER).