

### LIBERO Ti1-D

- Multi-Level PDF Logger
- Put directly into dry ice



TECHNICAL SPECIFICATIONS LIBERO Ti1-D

## LIBERO Ti1-D

### Multi-Level PDF Logger for direct placement into dry ice

LIBERO Ti1-D is the PDF Logger that simplifies your data logging requirements for dry ice shipments. With its internal temperature sensor and the extra battery power needed to withstand the tough dry ice environment, the LIBERO Ti1-D is the perfect solution to monitor dry ice shipments. Fully configurable by the user, supporting up to six temperature levels and the possibility to add shipment-specific information allows an individual configuration of the LIBERO Ti1-D. Release products based on the OK or ALARM status on the display, download the PDF report and forward it to the sender or to liberoMANAGER, ELPRO's cold chain database, for further analysis.

USB interface

Large display

Internal temperature sensor

Extra battery power

LIBERO Ti1-D PDF Logger

OK and ALARM indicator

Shipment information

Multi-level alarm statistics

Logging results and statistics

Temperature graph with alarm limits

LIBERO Ti1-D PDF Report

LIBERO Ti1-D PDF report of LIBERO Dry Ice PDF Logger

Additional Information

This is an example PDF report of the LIBERO Ti1-D with multiple alarm limits. In real shipments, information for the recipient or shipment specific information (e.g. Transportation Number, Container, Origin, ...) or any other information making it easier to systematically analyze recorded data can be added here.

Device Configuration		Inspection Range:	Last Transit to Arrived
Type:	Libero Ti1-D V1.35	Current Date:	Logging Arrived
Logger ID:	1401489	Remaining Battery:	100 %
Log Interval / Duration:	2 m / 22.2 d	Log Mode:	2012-11-20 12:33:54
Report Time Base:	GMT	Checksum:	0x11 / 3398 268 803
Configured by:	CS3, ECT2/cawker, 2012-11-20 11:37:54		

Alarm Zones	Allowed Time	Total Time	No. of violations	Status
Z1: over 0.0 °C	0 s (0m)	0 s	0 / 10m	OK
Z2: over 20.0 °C	0 s (0m)	0 s	0 / 10m	OK
Z3: over 40.0 °C	24.0 h (sum)	0 s	0 / 10m	OK
Z4: 40.0 to 60.0 °C	unlimited	60.7 h	0 / 10m	OK
Z5: below -80.0 °C	0 s (0m)	0 s	0 / 10m	OK
Z6: below -90.0 °C	0 s (0m)	0 s	0 / 10m	OK

Logging Results

Parameter	Value	Transit Start at	2012-11-20 12:33:54
Highest Temperature:	-42.3 °C	2012-11-22 15:55:54	Transit Start at
Lowest Temperature:	-79.0 °C	2012-11-20 15:27:54	Arrived at
Average Temperature:	-78.3 °C	Alarm at:	none
Min°C		File created:	2012-11-23 10:38:23

Temperature graph with alarm limits

we prove it.



- Internal temperature sensor for placement directly into dry ice
- Immediately creates a PDF report upon removing from dry ice
- Simple and safe, no equipment, no software
- Compatible with liberoMANAGER cold chain database
- Fully compliant with industry guidelines

## Technical specifications LIBERO Ti1-D

<b>Type</b>	PDF Logger with multiple alarm levels
<b>Application area</b>	Cold Chain Monitoring - dry ice shipments
<b>Recording options and mode</b>	Single use, start/stop mode
<b>Type of probe</b>	Internal NTC probe
<b>Measurement range</b>	-90 °C..+70 °C
<b>Measurement accuracy</b>	± 0.2 °C in the range of -10 °C..+25 °C ± 0.5 °C in the range of -35 °C..-10.1 °C as well as +25.1 °C..+70 °C ± 1.8 °C in the range of -85 °C..-35.1 °C
<b>Resolution</b>	0.1 °
<b>Measurement interval</b>	1 to 60 minutes, user programmable
<b>Memory capacity (run time)</b>	16'000 measuring data points
<b>Expiry date &amp; battery life</b>	- 14 months shelf-life - 100 days logging time overall - 20 days logging time at exposure to -80 °C
<b>Certificate</b>	14 month validation certificate
<b>Programmable alarms</b>	- 6 temperature alarm levels with single or cumulative delays - 2 temperature thresholds with alarm delay
<b>Start-up delay</b>	0 minutes to 24 h
<b>Display</b>	Multifunction LCD, size: 23.5 x 23.5 mm, with OK and ALARM indicator
<b>Display functionality</b>	- Status: Conf, Start, Transit, Arrived - OK, ALARM or blank - Current temperature measurement - Configuration profile identification - Remaining battery life in days - Statistical data (min, max, average) - Start & end marking functionality with TRANSIT & ARRIVED buttons
<b>Report</b>	Built-in PDF file generator automatically establishes an evaluation report with embedded raw 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 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) & detailed logger information (ID, configuration, etc.) - Chart visualizing the temperature curve and alarm limits
<b>Traceability</b>	ID number
<b>Case / dimension / weight</b>	ABS plastic material / 110 x 62 x 20 mm (4.4 x 2.5 x 0.8 inch) / 86 g (3.03 oz)
<b>Data logger configuration</b>	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 Loggers is downloadable free of charge.



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