MADGETECH
WE BUILD DATA LOGGERS

PST
PACIFIC SENSOR TECHNOLOGIES
MEASURING THE WORLD AND BEYOND

ULT90

Ultra Low Freezer Validation System

MadgeTech's Ultra Low Temperature Freezer Validation System can measure and log temperatures as low as -86 °C (-122 °F). It can be placed in small and large freezers of varying configurations.

The ULT90 includes a USB docking station with 6 feet of cable (IFC300), CryoTemp data loggers, and MadgeTech's FDA 21 CFR Part 11 Secure Software and IQ/OQ/PQ validation protocols.

The system provides a complete stand-alone temperature mapping and validation solution for freezers to ensure uniform storage and testing conditions. For larger freezers, loggers can be plotted in one graph to show variances in different parts of the freezer.

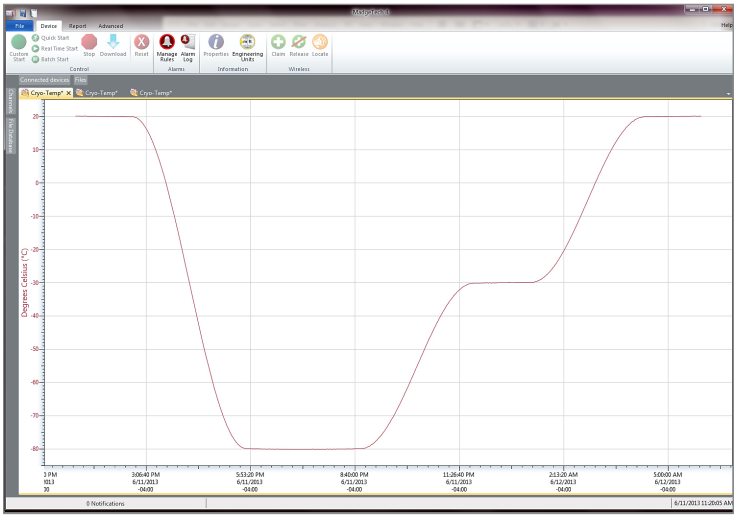
Features

- ISO17025 Accredited Calibration Certificates
- FDA 21 CFR Part 11 Compliant
- IQ/OQ/PQ Validation Protocols
- Available with 9 or 15 Splash Proof CryoTemp Data Loggers
- -86 °C to +35 °C (-122 °F to +95 °F) Temperature Range
- 1 Year Battery Life at -80 °C (-112 °F)
- User-Programmable Temperature Alarms with LED's (OK, Warn, and Alarm)
- Hardware and Software Password Protection
- Simultaneous Starts, Memory Wrap
- User-Programmable Start Times, Sample Intervals, Logger Descriptions, Unique ID's

Applications

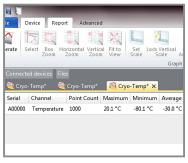
- Ultra Low Freezer Validation
- Ultra Low Freezer Mapping
- Ultra Low Freezer Stabilization Studies
- Temperature Surveys
  - Reveal stratification of air
  - Reveal hot spots
  - Reveal anomalies in chilling systems

MadgeTech 4 Software Features

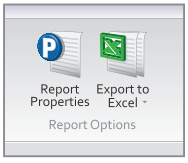


Graph View

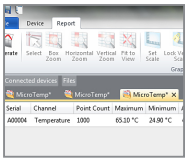
- Multiple graph overlay
- Statistics
- Digital calibration
- Zoom in/ zoom out
- Lethality equations (F0, PU)
- Mean Kinetic Temperature
- Full time zone support
- Data annotation
- Min./Max./Average lines
- Summary view



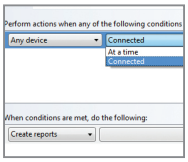
Statistics



Export to Excel



Tabular Data View



Automation

SPECIFICATIONS

Specifications are subject to change without notice. Specific warranty remedy limitations apply. Call (603) 456-2011 or go to **madgetech.com** for details.

TEMPERATURE	
Temperature Sensor	NTC Thermistor
Temperature Range	-86 °C to +35 °C (-122.8 °F to +95 °F)
Temperature Resolution	0.1 °C (0.18 °F)
Calibrated Accuracy	±1.0 °C (1.8 °F)
Specified Accuracy Range	-86 °C to +35 °C (-122.8 °F to +95 °F)

GENERAL	
Start Modes	Software programmable immediate start Delay start up to 30 days in advance Manual start with magnetic switch
Memory	32,767 readings
Wrap Around	Yes
Reading Rate	1 reading every 5 seconds up to 1 reading every 30 minutes
Password Protection	An optional password may be programmed into the device to restrict access to configuration options. Data may be read out without the password.
Temperature Alarm	User selectable high and low limits
Alarm Delay	Software programmable time delay for warn/alarm limits
LEDs	2 status and 1 alarm LED
Calibration	Digital calibration through software
Calibration Date	Automatically recorded within device
Battery Type	3.6 V lithium battery
Battery Life	2 years typical @ +25 °C, 1 min. reading intervals 1 year typical @ -80 °C, 1 min. reading intervals
Data Format	Date and time stamped °C, K, °F or °R
Time Accuracy	±2 minutes/month max at +20 °C to +30 °C ±5 minutes/month max at -80 °C
Computer Interface	IFC300 USB docking station (required); 38,400 baud
Operating System Compatibility	Windows XP SP3 or later
Operating Environment	-86 °C to +35 °C (-122.80 °F to +95 °F) 0 %RH to 100 %RH
IP Rating	IP64 (splash resistant, not submersible)
Dimensions	3.3 in x 2.1 in x 0.4 in (83 mm x 54 mm x 11 mm)
Weight	1.4 oz (40 g) ULT90-9 total – 50.9 oz (1443 g) ULT90-15 total – 59.3 oz (1681 g)
Material	ABS plastic, white, polycarbonate labeling
Approvals	CE

BATTERY WARNING: FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, CRUSH, PENETRATE, OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 100 °C (212 °F).

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Ordering Information

ULT90-9	PN 901807-00	Ultra Low Freezer Validation System includes 9 CryoTemp data loggers with calibration certificates, IFC300 docking station, MadgeTech's FDA 21 CFR Part 11 Secure Software and IQ/OQ/PQ validation protocols.
ULT90-15	PN 901805-00	Ultra Low Freezer Validation System includes 15 CryoTemp data loggers with calibration certificates, IFC300 docking station, MadgeTech's FDA 21 CFR Part 11 Secure Software and IQ/OQ/PQ validation protocols.
IFC300	PN 900315-00	USB docking station