



HOBO® Data Loggers

6401

HOBO® Temp, HOBO® Pressure, and HOBO® Light Intensity

The standard HOBO® TEMP data logger will record 1,800 measurements over the deployment setting you choose. If more memory is required, choose the HOBO TEMP H8 Series data logger which will record 7,944 measurements. All measurements are stored in non-volatile EEPROM

memory which saves your accrued data if the unit is damaged or if the battery is removed. The HOBO data loggers are not waterproof and require protective housing (see submersible cases 89165 or 89525, sold separately) for use outdoors or in condensing environments.

HOBO® Temp

Use this logger to continuously record temperature changes in °C or °F. To record temperature outside or underwater, place the HOBO® TEMP inside an optional submersible case.

HOBO® Pressure

Designed to record the changes in atmospheric pressure. Air pressure data can be shown as psia, mbars, or in. Hg.

HOBO® Light Intensity

Designed as a durable, reusable, general purpose light intensity logger. Sensitivity ranges from approximately 0.01 lumens/square foot to 10,000 lumens/square foot. A simple log amplifier dependent on temperature fluctuations provides the HOBO LI with its wide dynamic light range.

HOBO® Data Loggers Specifications

	Temp	Atmospheric Pressure	Light Intensity
Logging Ranges	-20°C to +70°C, -4°F to 158°F	0.5 to 16 psia, 30 to 1,100 mb, 1 to 33 in. Hg	0.01 lumens/sf to 10,000 lumens/sf
Best Accuracy	0.7°C at 20°C	±1% of full scale over temp. of 0° to 50° C	
Best Resolution	0.4°C/0.72°F	0.4% of full scale	
Sampling Interval	0.5 sec. - 4.8 hrs. (up to 360 days)	0.5 sec. - 4.8 hrs. (up to 360 days)	0.5 sec. - 4.8 hrs. (up to 360 days)
Sampling Capacity	1,800 measurements	1,800 measurements	1,800 measurements
Operating Temperature	-20°C to ±70°C	-39°C to +75°C non condensing	-39°C to +75°C non condensing
Requirements		none	none
Dimensions	2.375" x 1.875" x 0.75"	1.8" x 1.9" x 0.6"	1.8" x 1.9" x 0.6"
Weight	1 oz.	2 oz.	1 oz.
SN	89421	89167	89418
\$	1-5 6+		
Options and Accessories			
USB Serial Adapter	3 oz. 89349	3 oz. 89349	3 oz. 89349
Submersible Case	Clear (rated to 400 ft.)	5 oz. 89165	5 oz. 89165
	White (rated to 100 ft.)	4 oz. 89525	4 oz. 89525
	Desiccant Packs, 25	1 lb. 89455	1 lb. 89455
Replacement Lithium Battery	3V 3.6V	1 oz. 02190	1 oz. 89168

All require Starter Kit 89429 or 89439.



HOBO® Pro Temp/RH Rain Shield

6500
Protects your HOBO® Pro Temp/RH logger!

Designed for use with HOBO® Pro Temp/RH loggers, this shield provides protection in areas exposed to rain or overhead sprinklers. Mounting bracket and mounting hardware included for mounting on a pole, post, or flat vertical surface.

HOBO Pro Temp/RH Rain Shield
11 oz. **89537**



HOBO® Pro Series Weatherproof Data Loggers

5511

100% Weatherproof!

These 100% weatherproof data loggers automatically archive seven levels of historical data providing a duplicate record of your valuable data. Other features include high speed data offload (full 64K in approximate 1 minute with the HOBO Shuttle or BoxCar Pro software, each sold separately), user-selectable 8- or 12-bit resolution on temperature measurements, user-selectable sampling intervals (0.5 seconds to 9 hours, recording times up to 3 years), non-volatile EEPROM memory that retains data even if battery fails, programmable start time/date, drop-proof to 5', screw tabs for easy mounting, and a 3-year, user-replaceable battery. Three models are available.

HOBO® Pro Series Weatherproof Data Loggers Specifications

	Temperature	Temperature/RH	Temp/External Temp
Logging Ranges	-22°F to +122°F (-30°C to +50°C)	0% to 100% RH; weatherproof RH sensor	-40°F to +212°F (-40°C to +100°C [external])
Accuracy	High	±0.3°F (±0.2°C) at +70°F	±0.3°F (±0.2°C) at +70°F
	Standard	±0.7°F (±0.4°C)	±0.7°F (±0.4°C)
	Drift		1% per year (typical)
Resolution	High	0.04°F (0.02°C) at +70°F	0.04°F (0.02°C) at +70°F
	Standard	0.68°F (0.38°C)	0.68°F (0.38°C)
Response Time	<34 minutes in still air	34 min. temp, <5 minutes in still air - RH	<34 min. internal sensor (<5 min. in air; external)
Sensor			0.2" Dia. on 6' cable fits in 1/4" holes
Operating Environment	-22°F to 122°F (-30°C to +50°C)	+32°F to +122°F (0°C to +50°C)*	-22°F to 122°F (-30°C to +50°C)
Measurement Capacity	High 32,645	32,645	32,645
Standard	65,291	65,291	65,291
Weight	5 oz.	5 oz.	6 oz.
Sn	89430	89432	89431
\$	1-4 5+		
Accessories			
USB Serial Adapter	3 oz. 89349	3 oz. 89349	3 oz. 89349
Replacement Battery	1 oz. 89483	1 oz. 89483	1 oz. 89483
Radiation Shield	3 lbs. 94563	3 lbs. 94563	3 lbs. 94563

Requires Starter Kits 89429 or 89439.

*Note: Intermittent condensing environment up to 30°C, non-condensing up to 50°C.

HOBO® TEMP H8 Series

6501

Ideal for indoor use!

Each logger holds up to 7,944 measurements in °C or °F, can be delay-launched, has battery-level indication at launch, and is compatible with the HOBO Shuttle (sold separately). Several models are available to meet your datalogging needs. The single channel HOBO TEMP H8 is ideal for temperature measurement. The two-channel HOBO TEMP/EXTERNAL H8 measures temperature with an internal sensor and accepts attachable temperature sensors for pinpoint temperature measuring through two channels. The HOBO RH/TEMP H8 measures temperature and

relative humidity. The HOBO RH/TEMP/2X External H8 has built-in temperature and humidity sensors and also has two external inputs which accept plug-in temperature sensors (sold separately). The HOBO RH/TEMP/LIGHT H8 logger measures temperature, relative humidity, and light intensity and accepts an external temperature sensor (sold separately, below). To record temperature outside or underwater, use an optional submersible case (89165 or 89525). BoxCar® Starter Kit is required for use (sold separately). Battery included with each data logger.



		TEMP H8	TEMP/External H8	RH/TEMP H8	RH/TEMP/2X External H8	RH/TEMP/LIGHT H8
Logging Ranges	Non-condensing	-4°F to +158°F	-4°F to +158°F	25% - 95%	25% - 95%	25% - 95%, 20-600 lum/sf
Best Accuracy		±0.7°C at 20°C	±0.7°C at 20°C	±5% RH, ±0.7°C at 20°C	±5% RH, ±0.7°C at 20°C	±5% RH, ±0.7°C at 20°C
Best Resolution		0.4°C (0.7°F) at 20°C	0.4°C (0.7°F) at 20°C	0.4°C (0.7°F) at 20°C	0.4°C (0.7°F) at 20°C	0.4°C (0.7°F) at 20°C
Sampling Interval		0.5 sec. to 9 hrs.	0.5 sec. to 9 hrs.	0.5 sec. to 9 hrs.	0.5 sec. to 9 hrs.	0.5 sec. to 9 hrs.
Deployment Duration		≤1 year	≤1 year	≤1 year	≤1 year	≤1 year
Operating Temp.	Non-condensing	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Measurement Capacity		7,944	7,944	7,944	7,944	7,944
Dimensions		2.375" x 1.875" x 0.75"	2.375" x 1.875" x 0.75"	2.375" x 1.875" x 0.75"	2.375" x 1.875" x 0.75"	2.375" x 1.875" x 0.75"
Weight		2 oz.	2 oz.	2 oz.	2 oz.	2 oz.
Sn		89426	89427	89482	89538	89481
\$	1-9					
	10+					
Accessories						
Temperature Probe	with 6' L Cable	3 oz. 89428	3 oz. 89428	3 oz. 89428	3 oz. 89428	3 oz. 89428
	with 20' L Cable	8 oz. 89540	8 oz. 89540	8 oz. 89540	8 oz. 89540	8 oz. 89540
	with 50' L Cable	1 lb. 89541	1 lb. 89541	1 lb. 89541	1 lb. 89541	1 lb. 89541
USB Serial Adapter		3 oz. 89349	3 oz. 89349	3 oz. 89349	3 oz. 89349	3 oz. 89349
Submersible Case	Clear (rated to 400 ft.)	5 oz. 89165	5 oz. 89165	5 oz. 89165	5 oz. 89165	5 oz. 89165
	White (rated to 100 ft.)	4 oz. 89525	4 oz. 89525	4 oz. 89525	4 oz. 89525	4 oz. 89525
Replacement 3V Lithium Battery		1 oz. 02190	1 oz. 02190	1 oz. 02190	1 oz. 02190	1 oz. 02190

Requires Starter Kits 89429 or 89439, page 436.

HOBO® Temperature Probes For H8 Family

6497

Use these plug-in probes with any of the HOBO® H8 loggers with an external input. The stainless steel model features a 4" food-grade probe with a sharp tip for easy insertion in foods. **Temperature range:** -40°F to +212°F (-40°C to +100°C).

Temperature Probe with 6' Cable	3 oz.	89428
		5+

Temperature Probe with 20' Cable	8 oz.	89540
		5+

Temperature Probe with 50' Cable	1 lb.	89541
		5+

Stainless Steel Temperature Probe with 6' Cable	3 oz.	89542
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HOBO® H8 Outdoor/Industrial 4-Channel External Data Logger

6496

Specially designed for outdoor and industrial use.

This rugged 4-channel data logger is housed in a weatherproof case tested to NEMA 6 standards. The data logger is drop-proof to 5' and can store up to 32,520 measurements. The data logger also has a programmable start time/date feature. Data offload is easy, and the data logger works with the optional HOBO® Shuttle (sold separately). The user-replaceable battery lasts 1 year. The data logger's non-volatile EEPROM memory retains data even in the case of battery failure. Accepts external sensors and input cables for temperature.

AC current 4-20 milliamps, 0-2.5 volts. BoxCar® Starter Kit is required for use (sold separately).

Sampling Interval: 0.5 seconds to 9 hours. **Time Accuracy:** ±1 minute per week at +68°F (+20°C). **Operating Temperature:** -4°F to +158°F, -20°C to +70°C. **Replacement Battery:** 89423. **Dimensions:** 5.50" x 5.375" x 1.25".

HOBO H8 Outdoor/Industrial 4-Channel External Data Logger	11 oz.	89536
		5+



HOBO® Shuttle

5510

Download and re-launch in the field!

A convenient way to read-out and re-launch HOBO Pro, HOBO H8 Series Data Loggers and Onset Datalogging Rain Gauge (sold separately) – plus it lets you bring the data back to your host PC! With a capacity for 51 full 8K loggers, there is no need to remove your loggers from the field for downloading or re-launch. Data readout time from the logger and data off-load time to your PC each take less than 2 minutes for each logger! Other features include single-button operation, LED status lights, non-volatile EEPROM memory which retains memory even if battery fails, a weatherproof case, and a one-year warranty from the manufacturer.

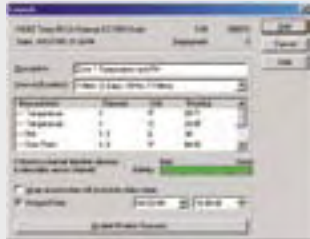
Includes a 1' connector cable which fits inside the case. Requires three AA batteries. Battery life should be greater than 85% prior to launch of the HOBO Shuttle. BoxCar® Pro software is required for use (sold separately).

Operating temperature range: -20°C to +70°C (-4°F to +158°F). **Storage temperature:** -40°C to +75°C (-40°F to +158°F). **Size:** 4.3" x 3.5" x 0.8".

HOBO Shuttle	4 oz.	89425
		5+
AA cell, pack of 4	7 oz.	02352



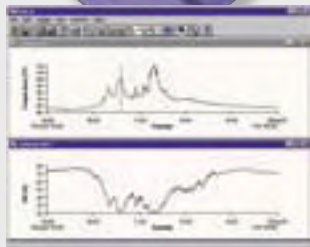
Ⓞ Combination English and Metric



BoxCar® Starter Kit 6498

Provides basic launch, readout, plotting, and export capabilities for HOBO® and StowAway™ loggers and shuttles. For PCs running DOS, Windows 3.1x or Windows 95/98/NT. PC interface cable and manual included.

BoxCar Starter Kit
4 oz. **89429**



BoxCar® Pro 4.3 Starter Kit 6499

This software allows advanced data display and analysis and accommodates multiple logger launch. You can plot multiple parameters on the same graph (each with their own units) and then focus in on your data of interest using the zoom and axis-control tools. Supports all Onset loggers and shuttles (including HOBO® and StowAway™) and the HOBO® Weather Station Logger. PC interface cable and manual included. **Minimum system requirements:** PC system running Windows XP/2000/ME/98, at least one available serial COM port, CD-ROM drive, 16-bit minimum color display, and 10 MB of available disk space.

BoxCar Pro 4.3 Starter Kit
12 oz. **89439**



HOBO® Water Temp Pro Logger

4178

Ideal for temperature measurement in long-term underwater applications.

Built to withstand extended periods of immersion, the compact HOBO® Water Temp Pro Logger provides reliable, accurate underwater temperature measurement. The precision sensors and electronics are sealed in a durable case waterproof to 100' and has almost neutral buoyancy. The logger is less than 5" long, and the low-visibility case keeps the logger hidden from view. An optional high-impact protective rubber boot is ideal for use during times of high water flow or flooding when the logger may come in contact with moving debris. The Water Temp Pro Logger requires an infrared base station (sold separately) and BoxCar® Pro software (sold separately) for system launch and data retrieval. The high-speed infrared communications offloads data in less than 30 seconds (built-in PC serial port required), and the infrared communications port is located opposite the bail end for convenient access while tethered. You can offload data, as well as check the logger and battery status, even while logging. A blinking LED indicates that the logger is recording data. To reduce visibility in the field, this feature can be turned off. Non-volatile EEPROM memory retains measurements in the event of battery failure. NIST traceable certification.

		HOBO Water Temp Pro Logger
Temperature Range	Non-Freezing Water	0°C to 50°C (32°F to 122°F)
	Air	-20°C to 70°C (-4°F to 158°F)
Accuracy		±0.2°C at 0°C to 50°C (±0.36°F at 32°F to 120°F)
Resolution		0.02°C at 25°C (0.04°F at 77°F)
Measurement Capacity		21,580 measurements
Sampling Interval		user-selectable 1 sec. to 9 hrs.
Memory Modes		stop or wrap-around when full
Time Accuracy		better than ±1 min./month
Response Time	Water	<5 minutes, typical 90%;
	Air	<12 minutes, typical 90%
Battery		3.6V lithium battery, factory replaceable only
Battery life		6 years (Temperature extremes will reduce battery life.)
Dimensions		4.5" x 1.19" with 0.25" hole in mounting ball.
Weight		1.4 oz.
SN		89362
\$	Each	
	10+	
Accessories		
Infrared Base Station		5 oz. 89363
Protective Boot		0.8 oz. 89364

StowAway® TidbiT™ Weatherproof & Waterproof Temperature Loggers

5516

For outdoor soil temperature or underwater temperature logging applications.

The StowAway® TidbiT™ family of loggers offers enhanced features in a waterproof package. Tidbit has 32K memory. Each unit features 50 pre-selected intervals from 0.05 seconds to 9 hours (42 intervals from 0.05 seconds to 4.8 hours), as well as custom intervals, with deployment durations of up to 6 years (Optic StowAway Temp), 5 years (TidbiT). Programmable delayed start for up to three months; trigger start with coupler or magnet; two blinking lights which confirm operation and indicate out-of-range status; and multiple sampling with minimum, maximum, or averaging. Use the Optic Base Station™ and TidbiT Coupler™ (required, sold separately in Optic Base Station/Coupler Kit 89521) for communicating with a host computer. Select the optional Optic Shuttle™ Field Data Transporter (89520 sold separately) for convenient and reliable data transfer from field locations. Select from BoxCar® Starter Kits (89429 or 89439 sold separately) to start the loggers and readout the data which can be plotted or transferred to popular spreadsheet programs. These rugged, 32K loggers are completely sealed in epoxy for submersion in water to 1,000'. Five-year, non-replaceable battery.



	TidbiT	TidbiT
Temperature Range	-5°C to +37°C	-20°C to +50°C
Response Time	Water	5 minutes
	Air	20 minutes
Best Accuracy	±0.2°C	±0.4°C
Best Resolution	@ 10°C 0.16°C	0.3°C
Dimensions	1.2" x 1.6" x .8"	1.2" x 1.6" x .8"
Weight	8 oz.	8 oz.
SN	89419	89420
\$	1-9	
	10+	
Accessories		
Optic Base Station/Coupler Kit	7 oz. 89521	7 oz. 89521
Optic Shuttle Field Data Transporter	4 oz. 89520	4 oz. 89520
	2+	2+

Note: To achieve specified accuracy, these loggers should not be used in condensing environments and in water temperatures higher than 86°F (30°C) for more than 8 weeks cumulatively. Such exposure will lead to measurement drift and eventual failure.

¹Requires Optic Base Station/Coupler Kit and Box Car® Software Starter Kit

HOBO® U12 Series Data Loggers

3898

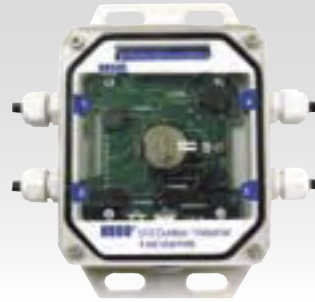
Providing excellent reliability and accuracy, these data loggers feature 4 input channels, 12-bit resolution, and direct USB communication capability for fast downloading. Use GreenLine™ or HOBOWare™ software (sold separately) for launching, offload, and data viewing. Indoor and outdoor models available.

Memory: 64K (43,000 12-bit measurements). **Accuracy:** ±2mV ±2.5% of absolute reading. **Operating temperature range:** -4°F to 158°F (-20°C to 70°C).

Temperature Probes

Use these plug-in probes with the HOBO® U12 loggers. The stainless steel model features a 4" food-grade probe with a sharp tip for easy insertion in foods. **Temperature range:** -40°F to 212°F (-40°C to 100°C).

Temperature Probe with 6' Cable	Ⓢ	3 oz.	89428
			5+
Temperature Probe with 20' Cable	Ⓢ	4 oz.	89540
			5+
Temperature Probe with 50' Cable	Ⓢ	10 oz.	89541
			5+
Stainless Steel Temperature Probe with 6' Cable		3 oz.	89542



HOBO U12 Indoor Data Logger

Features include programmable start time/date or push-button start, programmable sampling rate (1 second to 18 hours), a variety of event types (button push/release, host PC connection, low battery) stored to data file asynchronously during logging, battery level indication at launch, battery level recording as a separate channel, a blinking LED to confirm operation, and non-volatile memory that retains data even if the battery fails. The user-replaceable CR-2032 lithium battery has a typical life of one year. **Dimensions:** 2.3" x 2.9" x 0.85".

HOBO U12 Indoor Data Logger	3 oz.	89458
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HOBO U12 Outdoor/Industrial Data Logger

Ideal for use in harsh outdoor and industrial applications, this logger is housed in a NEMA 6-rated weatherproof case. Sensor connections are easily seen through the clear cover. Other features include event type (host PC connection, low battery) storage to data file asynchronously during logging and battery level recording as a separate channel. The user-replaceable battery lasts approximately one year. **Dimensions:** 5.5" x 5.38" x 1.25".

HOBO U12 Outdoor/Industrial Data Logger	11 oz.	89447
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HOBOWare™ Software

3899

Use this software for easy launch and readout of your HOBO® U12 data logger as well as flexible plotting of data! Data can be exported for more in-depth analysis using other programs including spreadsheets. The software allows you to set launch parameters such as which channels to record, sample interval, and start type (immediate, delayed, interval, or triggered); monitor battery level; and synchronize logger clocks to the computer clock. With the graphing capability, you can view multiple parameters from a single logger on one graph, zoom in on data of interest, set axes ranges, display data in different formats, and display recorded events in graphs or file exports. You can also verify logger operation before launch or during logging, as well as displaying real-time sensor readings, memory used, and battery voltage. One-click conversion allows for easy data upload into Microsoft® Excel software or other programs. Windows® and Mac versions available. The Windows version offers enhanced features which allow for the combination of data from multiple loggers or deployments, saving of current

data for future use, linear scaling for external inputs, listing of recently-accessed files, and automatic internet updates. HOBOWare Software, and manual included.

System requirements for HOBOWare: **Windows:** Microsoft Windows XP Professional or Home Edition, Windows 2000 Professional, or Windows 2000 Server; Sun Java Runtime Environment (JRE) version 1.4.2 or greater (included on the HOBOWare installation CD); 256 MB system RAM (512 MB recommended); 3.5 MB free disk space after installing the Java Runtime Environment; USB port; 800 x 600 (minimum) display resolution, 256 colors (1,024 x 768 or greater recommended). **Mac:** Mac with an available USB port. **Supported operating systems:** Mac OS X version 10.2.6 or 10.2.8, with Java Runtime Environment (JRE) version 1.4.1_01-69.1 or greater; or Mac OS X version 10.3.1 or greater, with Java Runtime Environment (JRE) version 1.4.2 or greater.

New! HOBOWare for Windows	▲	10 oz.	89479
HOBOWare for Macintosh	▲	7 oz.	89459
USB interface cable		5 oz.	89341



Optic StowAway™ Temp Data Loggers

5517

Ideal for field monitoring of water or air temperature.

Streamlined design allows for easy deployment while the dark, translucent case keeps it camouflaged. Available with 8K (7,944 data points) or 32K (32,520 data points) of memory, these data loggers have a response time of only four minutes! The BoxCar® Starter Kits (required; sold separately) allow you to choose such features as delayed launch, external start, multiple sampling, and selectable intervals.

Temperature Range: -5°C to +37°C (23°F to 99°F). **Accuracy:** ±0.2°C. **Resolution:** 0.16°C/0.29°F. **Power:** Factory replaceable battery lasts up to 6 years. Waterproof to 100 feet.

Optic StowAway with 8K Memory ¹	3 oz.	89518
		10+
		20+
Optic StowAway with 32K Memory ¹	3 oz.	89519
		10+

Optic Shuttle™ Field Data Transporter

Use the Optic Shuttle™ in combination with the Optic StowAway® Temp, StowAway® TidbiT™ or TidbiT™ XT for convenience in transporting data from the field to your computer. Just insert any of these loggers into this waterproof Shuttle and press the button to automatically off load data and restart the logger. The Shuttle stores data from up to 16 full 8K Optic StowAway, StowAway TidbiT or TidbiT XT loggers or 4 full 32K Optic StowAway loggers and has a 90-second data transfer time from an 8K logger. Information is easily downloaded to your computer using the Optic Base Station®, and the appropriate Coupler. Software sold separately. Factory replaceable battery lasts up to 6 years.

Optic Shuttle Field Data Transporter	4 oz.	89520
		2+

Optic Base Station/Coupler Kit

This kit includes the Optic Base Station™ with couplers and is required for use with your Optic StowAway® Temp and StowAway® TidbiT™ and TidbiT™ XT. Optional Box Car or Box Car Pro Starter Kits enable you to choose such features as selectable intervals, delayed launching, triggered external start, and multiple sampling. The software also allows you to set an alarm which will alert you when a logger has recorded outside the preset range. Starter Kits (89429 and 89439, sold separately) are available for PC only.

Optic Base Station/Coupler Kit	7 oz.	89521
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Note: To achieve specified accuracy, these loggers should not be used in condensing environments and in water temperatures higher than 86°F(30°C) for more than 8 weeks cumulatively. Such exposure will lead to measurement drift and eventual failure.

¹Requires Optic Base Station/Coupler Kit and Box Car® Software Starter Kit

Ⓢ Combination English and Metric

▲ **Note:** Software and Videos are non-returnable if the seal is broken or opened.