



HOB0 Pendant data loggers are economical, weatherproof and waterproof temperature data loggers designed for a variety of short and long-term monitoring applications.

Key Advantages:

- Low-cost temperature, light intensity, and acceleration loggers
- Waterproof housing for wet or underwater use
- Data readout in less than 30 seconds via fast Optic USB interface



BASE-U-1 is required with these loggers

Weatherproof housing tested to NEMA 6 and IP67

HOB0 Pendant Loggers

Memory:	UA-001-08 — 6,500 temperature measurements UA-001-64 — 52,000 temperature measurements UA-002-08 — 3,500 temperature & light measurements UA-002-64 — 28,000 temperature & light measurements
Sample rate:	1 second to 18 hours, user-selectable
Battery life:	1-year (typical)—user-replaceable
Water Depth Rating:	30m from -20 to 20°C (100' from -4° to 68°F)



Temperature

Measurement range:	-20° to 70°C (-4° to 158°F) in air -20° to 50°C (-4° to 122°F) in water
Accuracy:	± 0.54°C from 0° to 50°C (0.97°F from 32° to 122°F)
Resolution (10-bit):	0.1°@ 25°C (0.2°@ 77°F)
Response Time:	15 minutes (to 90% in airflow of 1 m/s) 5 minutes (to 90% in water)

NIST-traceable temperature accuracy certification available. (See page 72).

Light Intensity

Range:	UA-002-08 & UA-002-64 only Designed for general purpose measurement of relative light levels 0-323,000 lumens/m ² [0-30,000 footcandles (lumens/ft ²)]
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HOB0 Pendant G

Memory:	UA-004-64 — 64,000 1-axis measurement — 32,000 2-axes measurements — 21,333 3-axes measurements
Sample rate:	100 per second (100 Hz) to 18 hours, user-selectable
Battery life:	1-year (typical)—user-replaceable
Operating range:	-20° to 70°C (-4° to 158°F) in air -20° to 50°C (-4° to 122°F) in water








Acceleration

Measurement range:	± 3 G
Accuracy:	±2.5% FS @ 25°C (77°F)—Factory-calibrated
Resolution (8-bit):	0.02 G

Tilt/Motion

Measurement range:	0° to 180° from vertical
Accuracy:	±4.3° @ 90° to ±22.3° @ 0° and 180°
Resolution (8-bit):	±4.3° @ 90° to ±13° @ 0° and 180°

HOBO Pendant Comparison						
		Temperature w/ Alarm Logger	Temperature w/ Alarm Logger	Temperature/ Light Logger	Temperature/ Light Logger	Acceleration/ Tilt/Motion
						
		UA-001-08	UA-001-64	UA-002-08	UA-002-64	UA-004-64
Number of Channels		1	1	2	2	3
Internal Sensors	Temperature	yes	yes	yes	yes	--
	Light Intensity	--	--	yes	yes	--
	Acceleration	--	--	--	--	yes
Size	cm	5.8 x 3.3 x 2.3	5.8 x 3.3 x 2.3	5.8 x 3.3 x 2.3	5.8 x 3.3 x 2.3	5.8 x 3.3 x 2.3
	inches	2.3 x 1.3 x 0.9	2.3 x 1.3 x 0.9	2.3 x 1.3 x 0.9	2.3 x 1.3 x 0.9	2.3 x 1.3 x 0.9
Hole in mounting bail	mm	3.2	3.2	3.2	3.2	3.2
	inches	0.13	0.13	0.13	0.13	0.13
Weight	grams	18	18	18	18	18
	ounces	0.6	0.6	0.6	0.6	0.6

Complete system requires logger, software and base station or shuttle.

Ordering Information	
Data Loggers	
HOBO Pendant Temperature w/Alarm, 8k	UA-001-08
HOBO Pendant Temperature w/Alarm, 64k	UA-001-64
HOBO Pendant Temperature w/Light, 8k	UA-002-08
HOBO Pendant Temperature w/Light, 64k	UA-002-64
HOBO Pendant Acceleration/Tilt/Motion	UA-004-64
Software	
HOBOware Pro Software (Windows/Mac)	BHW-PRO-CD
Pendant Base Station**	BASE-U-1
Optional Communications and Accessories	
HOBO U-Shuttle (requires Base Station)*	U-DT-1
HOBO Waterproof Shuttle with Couplers*	U-DTW-1
Solar Radiation Shield***	M-RSA
* Requires HOBOware Pro software. See page 52 for details.	
** HOBO Waterproof Shuttle or Optic USB Base Station (BASE-U-4) may be used instead of the Pendant Base Station (BASE-U-1) (See pages 70-71 for details).	
*** Accurate temperature measurements in sunlight require a radiation shield. HOBOware includes USB interface cable	

HOBOware software is available for download via the web. Visit onsetcomp.com for details.





HOBO Water Temp Pro v2 Logger

U22-001

11.4 x 3.0 cm
(4.5 x 1.19 in)
hole in mounting bail
6.3 mm (0.25 in)
42 g (1.5 oz)



Protective Boot
BOOT-xxx

The HOBO Water Temp Pro v2 data logger features 12-bit resolution and a precision sensor for $\pm 0.2^{\circ}\text{C}$ accuracy over a wide temperature range. Designed with a durable, streamlined case for extended deployment in fresh or salt water, the Water Temp Pro v2 is equipped with an Optic USB interface for data offload in the field, even when the data logger is wet.

Key Advantages:

- Research-grade measurements at an affordable price
- Waterproof to 120 meters (400 feet)
- Data readout in less than 30 seconds via fast Optic USB interface

Memory: 42,000 measurements
Sample rate: 1 second to 18 hours, fixed - or multiple-rate up to 8 user-defined sampling intervals
Battery life: 6 years (typical) — factory-replaceable



Measurement range: -40° to 70°C (-40° to 158°F) in air
 -40° to 50°C (-40° to 122°F) in water
Accuracy: $\pm 0.21^{\circ}\text{C}$ from 0° to 50°C (0.38°F from 32° to 122°F)
Resolution (12-bit): 0.02°C @ 25°C (0.04°C @ 77°F)
Response time: 18 minutes (to 90% in airflow of 1 m/s)
5 minutes (to 90% in water)

NIST-traceable temperature accuracy certification service available. (See page 72).



BASE-U-4 or U-DTW-1 is required with this logger (coupler is included)

Complete system requires logger, software and base station or waterproof shuttle.

Ordering Information

Data Logger	HOBOware Water Temp Prov2 Logger	U22-001
Software	HOBOware Pro Software (Windows/Mac)	BHW-PRO-CD
	Optic USB Base Station with Couplers**	BASE-U-4
Optional Communications and Accessories		
	HOBO U-Shuttle (requires Base Station)*	U-DT-1
	HOBO Waterproof Shuttle with Couplers**,*	U-DTW-1
	Protective Boot, black	BOOT-BLK
	Protective Boot, white	BOOT-WHT
	Solar Radiation Shield***	M-RSA

* Requires HOBOware Pro software. See page 52 for details

** HOBO Waterproof Shuttle can also be used as a Base Station. (See pages 70-71 for details on Data Shuttles and Base Stations)

*** Accurate air temperature measurement in sunlight requires a radiation shield. HOBOware includes USB interface cable

HOBOware software is available for download via the web. Visit onsetcomp.com for details.



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Tidbit v2 Temp Logger

UTBI-001

3.0 x 4.1 x 1.7 cm
(1.2 x 1.6 x 0.65 in)
hole in mounting bail 4.6 mm (0.19 in)
23 g (0.8 oz)



**Protective Boot
BOOT-TIDBIT-WH**




**Protective Boot
BOOT-TIDBIT-BK**

Onset's smallest data logger, the Tidbit v2, has 12-bit resolution and a precision sensor for $\pm 0.2^{\circ}\text{C}$ accuracy over a wide temperature range. It is waterproof to 300m (1000 ft) and can be used in a wide range of water temperature monitoring applications.

Key Advantages:

- Onset's smallest temperature logger
- Waterproof to 300 meters (1,000 feet)
- Data readout in less than 30 seconds via fast, optical USB interface

Memory: 42,000 measurements
Sample rate: 1 second to 18 hours, fixed - or multiple-rate up to 8 user-defined sampling intervals
Battery life: 5 years (typical) — non-replaceable 

Measurement range: -20° to 70°C (-4° to 158°F) in air
 -20° to 30°C (-4° to 86°F) in water
Accuracy: $\pm 0.21^{\circ}\text{C}$ from 0° to 50°C (0.38°F from 32° to 122°F)
Resolution (12-bit): 0.02° @ 25°C (0.04° @ 77°F)
Response time: 20 minutes (to 90% in airflow of 1 m/s)
5 minutes (to 90% in water)

NIST-traceable temperature accuracy certification service available. (See page 72).



BASE-U-4 or U-DTW-1 is required with this logger (coupler is included)

Complete system requires logger, software and base station or waterproof shuttle.

Ordering Information

Data Logger

HOBO Tidbit v2 Temp UTBI-001

Software

HOBOWare Pro Software (Windows/Mac) BHW-PRO-CD
Optic USB Base Station with Couplers* BASE-U-4

Optional Communications and Accessories

HOBO U-Shuttle (requires Base Station) U-DT-1
HOBO Waterproof Shuttle with Couplers* U-DTW-1
Protective Boot 5-pack, black BOOT-TIDBIT-BK
Protective Boot 5-pack, white BOOT-TIDBIT-WH
Solar Radiation Shield** M-RSA

* HOBO Waterproof Shuttle can also be used as a Base Station.
(See pages 70-71 for details on Data Shuttles and Base Stations)

Requires HOBOWare Pro software. See page 52 for details

** Accurate air temperature measurement in sunlight requires a radiation shield.
HOBOWare includes USB interface cable

HOBOWare software is available for download via the web. Visit onsetcomp.com for details.



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The HOBO U12 Deep Ocean temperature data logger is designed to track water temperatures in the most extreme ocean environments. Built with a virtually indestructible Titanium housing, the logger can withstand corrosive salt water and exposure to extreme temperature and pressure at depths of up to 11,000 meters.

Key Advantages:

- Withstands depths up to 11,000m (36,080 ft)
- Extended temperature range: -40 to 125C
- Fast readout via direct USB interface
- Titanium housing for use in saltwater



HOBO U12 Titanium Deep Ocean Temperature Logger

U12-015-03
 114 x 20.6 mm diameter
 (4.5 x 0.81 in diameter)
 6.4mm (0.25 in) mounting hole
 105 g (3.7 oz)

Memory: 43,000 measurements
 Sample rate: 1 second to 18 hours, user-selectable
 Battery life: 3-years (typical)—factory-replaceable



Temperature Measurement

range: -40° to 125°C (-40° to 257°F)
 Accuracy: ± 0.25°C from 0° to 50°C (0.45°F from 32° to 122°F)
 Resolution 12 bit: 0.02°@ 25°C (0.04°@ 77°F)
 Response time: <4 minutes (to 90% in water)

NIST-traceable temperature accuracy certification available. (See page 72).

Complete system requires logger and software.

Ordering Information	
Data Loggers	
HOBO U12 Deep Ocean Temperature Logger	U12-015-03
Software	
HOBOware Pro Software (Windows/Mac)	BHW-PRO-CD
Optional Communications	
HOBO U-Shuttle*	U-DT-1
*Requires HOBOware Pro software, see page 52 for details. HOBOware includes USB interface cable	

HOBOware Software is available for download via the web. Visit onsetcomp.com for details.



The Deluxe Kit

HOBO Water Level Kits combine high-accuracy water level measurements with out-of-the-box convenience. The Deluxe Kit includes a carrying case, two HOBO Water Level Loggers (one 13' and one 13', 30' or 100'), HOBOware Pro software, and a HOBO Waterproof Data Shuttle. The Starter Kit includes a HOBO Water Level Logger, HOBOware Pro Software, and an Optic USB Base Station. Available in 13', 30', and 100' depths.

Key Advantages:

- 0.01 foot accuracy
- No bulky vent tubes
- Convenient connector-free data offload
- Fully-sealed housing ensures years of trouble-free operation



The Starter Kit

Data Loggers/ Waterproof

Ordering Information						
Product Number	KIT-S-U20-04	KIT-D-U20-04	KIT-S-U20-01	KIT-D-U20-01	KIT-S-U20-02	KIT-D-U20-02
HOBO Loggers Range	U20-001-04 0-13'	U20-001-04 Kit includes two 0-13'	U20-001-01 0-30'	U20-001-01 Kit includes one 0-13' and one 0-30'	U20-001-02 0-100'	U20-001-02 Kit includes one 0-13' and one 0-100'
Communications	BASE-U-4 base station	U-DTW-1 waterproof shuttle	BASE-U-4 base station	U-DTW-1 waterproof shuttle	BASE-U-4 base station	U-DTW-1 waterproof shuttle
Carrying Case	Not included	Included	Not included	Included	Not included	Included
HOBOware Pro Software	BHW-PRO-CD (included)					
Logger Housing	Stainless steel					

HOBOware software is available for download via the web. Visit onsetcomp.com for details.





HOBO Water Level Logger

U20-001-xx

2.46 cm diameter x 15 cm (0.97 x 5.9 in)

hole in mounting bail 6.3 mm (0.25 in)

Stainless: 210 g (7.4 oz)

Titanium: 140 g (4.8 oz)*

HOBO Water Level data loggers offer high accuracy at an affordable price, with no cumbersome vent tubes or desiccants to maintain. These data loggers are ideal for recording water levels and temperatures in shallow wells, streams, lakes and freshwater wetlands.

Key Advantages:

- Available in 4 depth ranges
- No-vent-tube design for easy and reliable deployment
- Available in stainless steel and titanium* versions
- Durable ceramic pressure sensor for reliable performance
- Calibration certificate included

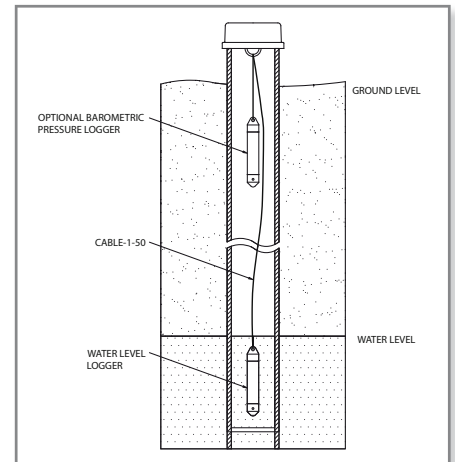
Memory: 21,700 combined pressure and temperature measurements

Sample rate: 1 second to 18 hours, fixed- or multiple-rate up to 8 user-defined sampling intervals

Battery life: 5 years (typical) — factory-replaceable



HOBOWare software provides easy conversion to accurate water level readings, fully-compensated for barometric pressure, temperature and water density.



Simple wireline mounting makes it easy to hang logger in wells, hidden from vandals, with no vent cables to worry about.

- Includes calibration certificate of accuracy in accordance with NIST-traceable standards at three pressure points distributed throughout the range.
- Fully-sealed housing ensures many years of trouble-free operation.
- Suitable for deployment in water or air; case materials resistant to fuels, solvents and lubricants.
- Use either an extra HOBO Water Level Logger, a HOBO U30 monitoring system (see page 44), or import ASCII barometric data for barometric compensation (typically one barometric data set can be used with all water level loggers in that area).

NIST-Traceable temperature accuracy certification service available (See page 72).

****Titanium version recommended for saltwater deployment.***

HOBO Water Level Specifications					
Model	Range**	Factory Calibrated Range (0° to 40°C; 32° to 104°F)	Water Level Accuracy (Typical Error)***	Resolution	Burst Pressure**
U20-001-04 U20-001-04-Ti	0-4 m (0-13 ft) 0-145 kPa (0-21 psia)	69 to 145 kPa (10-21 psia)	±0.3 cm (0.01 ft) (±0.075% FS)	0.14 cm (0.005 ft)	310 kPa (45 psia) 18 m (60 ft) depth
U20-001-01 U20-001-01-Ti	0-9 m (0-30 ft) 0-207 kPa (0-30 psia)	69 to 207 kPa (10-30 psia)	±0.5 cm (0.015 ft) (±0.05% FS)	0.21 cm (0.007 ft)	310 kPa (45 psia) 18 m (60 ft) depth
U20-001-02 U20-001-02-Ti	0-30 m (0-100 ft) 0-400 kPa (0-58 psia)	69 to 400 kPa (10-58 psia)	±1.5 cm (0.05 ft) (±0.05% FS)	0.41 cm (0.013 ft)	500 kPa (72.5 psia) 40.8 m (134 ft) depth
U20-001-03 U20-001-03-Ti	0-76 m (0-250 ft) 0-850 kPa (0-123 psia)	69 to 850 kPa (10-123 psia)	±3.8 cm (0.125 ft) (±0.05% FS)	0.87 cm (0.028 ft)	1200 kPa (174 psia) 112 m (368 ft) depth

Temperature Specifications (all models)

Model	Range	Accuracy	Resolution (10-bit)	Response Time
All models	-20° to 50°C (-4° to 122°F)	±0.37° @ 20°C (0.67° @ 68°F) ±0.5° over -5° to 50°C (±0.9° over 23° to 122°F)	0.1° @ 20°C (0.18° @ 68°F) 0.5° over -5° to 50°C (0.9° over 23° to 122°F)	3.5 minutes (to 90% in water)

- ** **Depth range specifications are nominal values based on using the logger at sea level.**
 *** **Using reference water level measurement and Barometric Compensation Assistant (included with HOBOWare).**

Complete system requires logger, software, and base station.

Ordering Information	
Data Loggers	
Stainless steel ranges:	0-30' U20-001-01 0-100' U20-001-02 0-250' U20-001-03 0-13' U20-001-04
Titanium	0-30' U20-001-01-TI 0-13' U20-001-04-TI
Software	
HOBOWare Pro Software (Windows/Mac)	BHW-PRO-CD
Optic USB Base Station with Couplers*	BASE-U-4
Optional Communications and Accessories	
HOBO U-Shuttle (requires Base Station)*	U-DT-1
HOBO Waterproof Shuttle with Couplers**	U-DTW-1
1/16 in Teflon-coated stainless steel cable:	
50 feet	CABLE-1-50
300 feet	CABLE-1-300
Crimp Sleeve for cables (12-pack)	CABLE-1-CRIMP
Protective Housing	HOUSING-U2X
Water Level Logger Carrying Case	U20-CASE-1
* Requires HOBOWare Pro software, see page 52 for details.	
** HOBO Waterproof Shuttle can also be used as a Base Station. (See pages 70-71 for details on Data Shuttles and Base Stations). HOBOWare includes USB interface cable.	

HOBOWare software is available for download via the web. Visit onsetcomp.com for details.



HOBO U24 Conductivity Loggers are high-accuracy, cost-effective data loggers for a variety of fresh and saltwater monitoring applications. Ideal for environmental impact studies, stormwater management, and water quality studies, HOBO conductivity loggers are easy to deploy and maintain, and provide 0.1°C temperature accuracy with fast response.

The HOBO U24-001 measures conductivity and temperature in freshwater; the HOBO U24-002 measures conductivity, salinity and temperature in saltwater.



Key Advantages:

- Non-contact capacitive sensor reduces measurement drift
- Easy access to sensor for cleaning and shedding air bubbles
- HOBOware Pro software provides compensation for fouling using calibration points from the start and end of each deployment
- Optical interface provides high-speed, reliable data offload in wet environments
- Compatible with HOBO Waterproof Shuttle for easy and reliable data retrieval



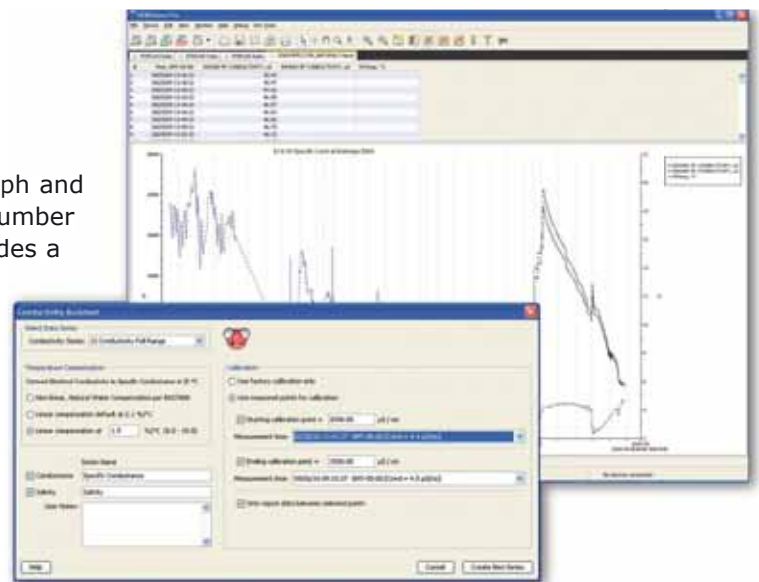
Durable construction, easy maintenance




HOBO Conductivity Loggers feature durable, non-corrosive housings for extended deployment in fresh and saltwater environments. Unlike conductivity loggers that are designed with electrode-based sensors, HOBO Conductivity loggers feature non-contact capacitive sensors that make them less susceptible to sensor degradation and drift. This reduces the frequency of having to visit the field sites to offload data and/or take calibration readings.

These loggers also provide open access to the sensor for easy cleaning and better water flow. This, in turn, provides faster response times and fewer air bubbles. An optical communication interface eliminates the possibility of water-related damage and failures associated with mechanical plug-in connectors.

Powerful software

Onset's HOBOware Pro software makes it easy to graph and analyze conductivity and salinity data, and offers a number of features that simplify monitoring projects. It provides a choice of methods for easy, accurate conversion of conductivity data to specific conductance, and uses PSS-78 to calculate salinity. HOBOware Pro also provides a simple approach for drift and fouling compensation using calibration points from the start and end of each deployment. Data from multiple loggers can easily be viewed on a single graph and analyzed.



HOBO Conductivity Loggers Specifications		
	Conductivity U24-001	Conductivity/Salinity U24-002
		
Price		
Conductivity Calibrated Measurement Ranges	Low Range: 0 to 1,000 $\mu\text{S/cm}$ Full Range: 0 to 10,000 $\mu\text{S/cm}$	Low Range: 100 to 10,000 $\mu\text{S/cm}$ High Range: 5,000 to 65,000 $\mu\text{S/cm}$
Conductivity Calibrated Range – Temperature Range	5° to 35°C (41° to 95°F)	
Specific Conductance Accuracy (in Calibrated Range)	Low Range: 3% of reading, or 5 $\mu\text{S/cm}$, and Full Range: 3% of reading, or 20 $\mu\text{S/cm}$, whichever is greater, using conductivity assistant and calibration measurements	3% of reading or 50 $\mu\text{S/cm}$, whichever is greater for up to 55,000 $\mu\text{S/cm}$, using Conductivity Assistant and calibration measurements, and up to 5% for up to 65,000 $\mu\text{S/cm}$
Conductivity Resolution	1 $\mu\text{S/cm}$	2 $\mu\text{S/cm}$
Temperature Accuracy (in Calibrated Range)	0.1°C (0.2°F)	
Temperature Resolution	0.01°C (0.02°F)	
Response Time	1 second to 90% of change (in water)	
Measurement and Operating Range	0° to 36°C (32° to 97°F) -non-freezing	-2° to 36°C (28° to 97°F) -non-freezing
Memory	18,500 temperature and conductivity measurements when using one conductivity range; 14,400 sets of measurements when using both conductivity ranges (64kbytes)	
Sample rate	1 second to 18 hrs, fixed or multiple-rate sampling with up to 8 user-defined sampling intervals	
Clock Accuracy	\pm 1 minute per month	
Battery	3.6 Volt lithium battery	
Battery Life	3 years (at 1 minute logging), typical	
Maximum Depth	70 m (225 ft)	
Weight	193 gm (6.82 ounces), buoyancy in freshwater: -59.8 gm (-2.11 ounces) (it sinks)	
Size	3.18 cm diameter x 16.5 cm, with 6.3 mm mounting hole (1.25" diameter x 6.5", ¼" hole)	
Wetted Housing Materials	Delrin®, epoxy, stainless steel retaining ring, polypropylene, Buna rubber O-ring, titanium pentoxide. All materials are suitable for long-term use in saltwater	

Complete system requires logger, base station or waterproof shuttle and software.

Ordering Information	
Logger	
HOBO Conductivity Logger 0 to 10,000 $\mu\text{S/cm}$	U24-001
HOBO Conductivity Logger 100 to 65,000 $\mu\text{S/cm}$	U24-002
Software	
HOBOware Pro Software (Windows/Mac)	BHW-PRO-CD
Optic USB Base Station with Couplers*	BASE-U-4
Communications	
HOBO U-Shuttle (requires Base Station)	U-DT-1
HOBO Waterproof Shuttle with Couplers	U-DTW-1
* HOBO Waterproof Shuttle can also be used as a Base Station. (See pages 70-71 for details on Data Shuttles and Base Stations).	
Accessories	
Protective Housing	HOUSING-U2X
1/16 in Teflon-coated stainless steel cable:	
50 feet	CABLE-1-50
300 feet	CABLE-1-300
Crimp Sleeve for cables (12-pack)	CABLE-1-CRIMP
<i>HOBOware includes USB interface cable.</i>	
HOBOware software is available for download via the web. Visit onsetcomp.com for details.	