

# Datasheet

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## *Black Oak Engineering* precision electronic instruments

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### Bee – Laboratory Thermometer with pH and BLE options

Part number BE-BETH  
Version 1.1



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*Description.* The Bee is a handheld NIST-traceable laboratory thermometer with an illuminated digital display. It is designed for use in the laboratory and in industry. User settings are easily programmed. It has a high capacity, rechargeable battery. It has nonvolatile memory for data logging. The electronics uses extreme low power design, so that many hours of reliable use are available. The case may easily be mounted to a vertical surface. The standard temperature probe is thermistor based in a laboratory grade stainless steel jacket. The Bee may be charged via its USB-C connector, which may also be used for programming and data output.

#### *Standard Probe*

- Standard is thermistor based. Other technologies available as options.
- Range: -20 to 120 °C (-4 to 248 °F).
- Accuracy:  $\pm 1\%$ , calibrated to NIST standard at factory.
- Materials: Gold-plated connector, Teflon® (PTFE) jacketed coaxial cable, silicone strain relief, 304 stainless steel probe.
- Dimensions: cable 45.7 cm (18"), probe 10 cm (4").

#### *Specifications*

- Battery capacity: 200 mA-hr.
- USB-C connection for battery charging, programming, and data output.
- Typical use time (highly dependent upon setup): 78 hours.
- Memory: 128 kByte EEPROM (retains memory even if power lost).
- Certifications: CE, IEC for laboratory instrumentation, REACH, RoHS3.
- .Step model available from BOE.

#### *Standard includes*

- Temperature probe.
- 3' (1 m) USB-C cable.

#### *Available options*

- BLE Bluetooth communications. Globally certified. Append '+BLE' to part number.
- Precise standard pH probe interface. Standard BNC type. Append '+pH' to part number.
- Both options may be added.

#### *Mechanical & Environmental*

- Temperature range. -4 to +158 °F, -20 to +70 °C.
- Enclosure is black ABS with rough surface, UL94.
- 3.0 × 3.0 inches (7.6 × 7.61 cm) with 0.25 inch (0.64 cm) flanges.

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- Height 0.79 inch (2.0 cm).
- .Step available from BOE.
- Humidity / water exposure: IP54. Mount with USB access on bottom. Dust protected and water splash tolerant.

### *Approvals & Compliance*

- RoHS. REACH.
- California Prop 65. There are no listed toxic materials in the PCBA.
- CE. The system is designed and tested to meet or exceed CE requirements for laboratory, non-safety-critical electronic devices.

BOE is continuously improving. We also strive to keep one step ahead of procurement shortfalls. We will deliver to you the latest hardware version possible. In some cases specifications will change.

*Warranty Policy.* Any instrument ordered from BOE may be returned for full refund, less shipping costs, within 30 days of delivery, provided that the instrument has not, in the opinion of BOE been damaged or misused. An RMA number is required in all cases. See our *Standard Terms & Conditions – Instruments* for more details.

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