

TECHNICAL DATA

# Fluke Calibration 6102/7102/7103 Micro-Bath



## Key features

Hart Scientific manufactures these Micro-Baths for calibration of thermometers and sensors that do not fit in block calibrators.

## Product overview: Fluke Calibration 6102/7102/7103 Micro-Bath

### Portable and extremely stable

- World's smallest portable calibration baths
- Calibrates sensors of any size or shape
- Stability to  $\pm 0.015$  °C
- Ranges from  $-30$  °C to  $200$  °C

Need portability and extreme stability? Fluke Calibration [Micro-Baths](#) have both. We invented the Micro-Bath. And, while many have tried to duplicate it, none of them use proprietary Fluke Calibration controllers, so none of them deliver performance like a Fluke Calibration bath. Micro-Baths can be used anywhere for any type of sensor. The 6102 weighs less than 4.5 kg (10 lb.), with the fluid. It's lighter and smaller than most dry-wells, has a spill-proof lid, and is easier to carry than your lunch. You can take it where you need to go without carts or excessive effort. Micro-Baths can even be transported with the fluid in them.

Wherever you go with your Micro-Bath, you can count on its performance. Each model is stable to  $\pm 0.03$  °C or better, depending on the fluid you use. Uniformity is  $\pm 0.02$  °C or better for low uncertainties using a reference thermometer. Display

accuracy has been improved to  $\pm 0.25\text{ }^{\circ}\text{C}$  for quick calibrations without a reference thermometer. In short, you get the stability and precision of a liquid bath in a dry-well-sized package. Don't be fooled by competitors who pour oil into a dry-well and call it a bath. Micro-Baths are maximized for true fluid-bath performance.

With a 48 mm (1.9-inch) diameter, 140 mm (5.5-inch) deep tank, a Micro-Bath can calibrate any type of sensor including short, square, or odd-shaped sensors. The problems of fit and immersion are virtually eliminated by using a fluid medium rather than a dry-block calibrator. Micro-Baths are perfect for liquid-in-glass and bimetal thermometers.

The 6102 has a temperature range from  $35\text{ }^{\circ}\text{C}$  to  $200\text{ }^{\circ}\text{C}$ , the 7102 covers  $-5\text{ }^{\circ}\text{C}$  to  $125\text{ }^{\circ}\text{C}$ , and the 7103 extends from  $-30\text{ }^{\circ}\text{C}$  to  $125\text{ }^{\circ}\text{C}$ . Stability, uniformity, and accuracy specifications cover the entire range for each bath, not just the best temperature.

All Micro-Baths have RS-232 ports and can be used with [MET/TEMP II software](#) (described on page 81). Also included are contacts to calibrate a thermal switch, eight set-point memory storage, ramp-rate adjust, and over-temperature safety cutout.

You may have noticed we haven't touted our CFC-free refrigeration. Yes, cold Micro-Baths are CFC-free, and also compressor-free. That's right—no heavy, noisy compressor to lug around. We achieve our temperature range and stability with only one moving part. This means more durability and less weight. Fluke Calibration manufactures and sells temperature calibration baths of every size and shape, and now we have the smallest and lightest baths in the industry to go with the dozens of other models we make.

Look at the specs, price, and value of these portable instruments and you'll know why Fluke Calibration is the number-one company in this business.

## Specifications: Fluke Calibration 6102/7102/7103 Micro-Bath

| Specifications        | 6102   | 7102   | 7103   |
|-----------------------|--|--|--|
| Range                 | $35\text{ }^{\circ}\text{C}$ to $200\text{ }^{\circ}\text{C}$ ( $95\text{ }^{\circ}\text{F}$ to $392\text{ }^{\circ}\text{F}$ )                                  | $-5\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$ ( $23\text{ }^{\circ}\text{F}$ to $257\text{ }^{\circ}\text{F}$ )                                  | $-30\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$ ( $-22\text{ }^{\circ}\text{F}$ to $257\text{ }^{\circ}\text{F}$ )                                |
| Accuracy              | $\pm 0.25\text{ }^{\circ}\text{C}$   | $\pm 0.25\text{ }^{\circ}\text{C}$   | $\pm 0.25\text{ }^{\circ}\text{C}$   |
| Stability             | $\pm 0.02\text{ }^{\circ}\text{C}$ at $100\text{ }^{\circ}\text{C}$ (oil 5013)<br>$\pm 0.03\text{ }^{\circ}\text{C}$ at $200\text{ }^{\circ}\text{C}$ (oil 5013) | $\pm 0.015\text{ }^{\circ}\text{C}$ at $-5\text{ }^{\circ}\text{C}$ (oil 5010)<br>$\pm 0.03\text{ }^{\circ}\text{C}$ at $121\text{ }^{\circ}\text{C}$ (oil 5010) | $\pm 0.03\text{ }^{\circ}\text{C}$ at $-25\text{ }^{\circ}\text{C}$ (oil 5010)<br>$\pm 0.05\text{ }^{\circ}\text{C}$ at $125\text{ }^{\circ}\text{C}$ (oil 5010) |
| Uniformity            | $\pm 0.02\text{ }^{\circ}\text{C}$   | $\pm 0.02\text{ }^{\circ}\text{C}$   | $\pm 0.02\text{ }^{\circ}\text{C}$   |
| Resolution            | $0.01\text{ }^{\circ}\text{C}/\text{ }^{\circ}\text{F}$  | $0.01\text{ }^{\circ}\text{C}/\text{ }^{\circ}\text{F}$  | $0.01\text{ }^{\circ}\text{C}/\text{ }^{\circ}\text{F}$  |
| Operating temperature | $5\text{ }^{\circ}\text{C}$ to $45\text{ }^{\circ}\text{C}$  | $5\text{ }^{\circ}\text{C}$ to $45\text{ }^{\circ}\text{C}$  | $5\text{ }^{\circ}\text{C}$ to $45\text{ }^{\circ}\text{C}$  |
| Heating time          | $25\text{ }^{\circ}\text{C}$ to $200\text{ }^{\circ}\text{C}$ : 40 minutes   | $25\text{ }^{\circ}\text{C}$ to $100\text{ }^{\circ}\text{C}$ : 30 minutes   | $25\text{ }^{\circ}\text{C}$ to $100\text{ }^{\circ}\text{C}$ : 35 minutes   |
| Cooling time          | $200\text{ }^{\circ}\text{C}$ to $100\text{ }^{\circ}\text{C}$ : 35 minutes  | $25\text{ }^{\circ}\text{C}$ to $0\text{ }^{\circ}\text{C}$ : 30 minutes   | $25\text{ }^{\circ}\text{C}$ to $-25\text{ }^{\circ}\text{C}$ : 45 minutes   |
| Well size             | 64 mm dia. x 140 mm deep (2.5 x 5.5 in) (working area is 48 mm [1.9 in] in diameter)   |  |  |
| Size (W x H x D)      | 14 x 26 x 20 cm<br>(5.5 x 10.38 x 8 in)  | 18 x 31 x 24 cm<br>(7.2 x 12 x 9.5 in)   | 23 x 34 x 26 cm<br>(9 x 13.2 x 10.5 in)  |
| Weight                | 4.5 kg (10 lb) with fluid  | 6.8 kg (15 lb) with fluid  | 9.8 kg (22 lb) with fluid  |
| Volume                | 0.75 L (1.6 pints)   | 0.75 L (1.6 pints)   | 1.0 L (2.11 pints)   |
| Power                 | 115 V AC ( $\pm 10\%$ ), 2.3 A or<br>230 V AC ( $\pm 10\%$ ), 1.1 A,<br>switchable, 50/60 Hz, 270 W  | 115 V AC ( $\pm 10\%$ ), 1.8 A or<br>230 V AC ( $\pm 10\%$ ), 0.9 A,<br>switchable, 50/60 Hz, 200 W  | 94–234 V AC ( $\pm 10\%$ ), 50/60<br>Hz, 400 W   |
| Computer interface    | RS-232 included  |  |  |



|                            |                                       |   |  |
|----------------------------|---------------------------------------|---|--|
| NIST-traceable calibration | Data at 50°C, 100°C, 150°C, and 200°C | Data at -5°C, 25°C, 55°C, 90°C, and 121°C | Data at -25°C, 0°C, 25°C, 50°C, 75°C, 100°C, and 125°C |
|----------------------------|---------------------------------------|---|--|

## Ordering information



### **Fluke 6102**

Fluke Calibration 6102 Micro-Bath  
Micro-Bath, 35°C to 200°C

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Includes:

- Transport seal lid
  - 2082-M test lid
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### **Fluke 7102**

Fluke Calibration 7102 Micro-Bath  
Micro-Bath, -5°C to 125°C

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Includes:

- Transport seal lid
  - 2085 test lid
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### **Fluke 7103**

Fluke Calibration 7103 Micro-Bath  
Micro-Bath, -30°C to 125°C

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Includes:

- Transport seal lid
  - 2085 test lid
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