6331/7321/7341/7381 Deep-Well Compact Baths

Highlights

Ample immersion depth and great stability, in a high value compact bath

- 457 mm (18 in) of depth with just 15.9 liters (4.2 gal) of fluid
- Perfect for liquid-in-glass thermometers with optional LIG kit
- Fast, quiet, compact (yet deep!), and economical

Find high temperature baths (300 °C) and refrigerated baths for low temperature calibration (–80 °C), in compact packages, and with deep immersion from Fluke Calibration our metrology baths are well known world-wide for excellent temperature control that maintains excellent temperature stability (±0.005 °C) and uniformity (±0.007 °C).

Description

Need a bath with a lot of immersion depth, great stability, and a low price tag? How about one that minimizes fluid costs, changes temperatures quickly, and runs quietly?

Fluke Calibration's new Deep-Well Compact Bath series features four models covering temperatures from –80 °C to 300 °C.

Each model includes a 457 mm (18-inch) deep tank to accommodate long-stem PRTs, SPRTs, and liquid-in-glass (LIG) thermometers. Access openings are 120 by 172 mm (4.7 in by 6.8 in) so you can calibrate many thermometers simultaneously. Yet only 15.9 liters (4.2 gallons) of fluid are needed to get all the benefits Deep-Well Compact Baths offer.

Using our own best-in-class temperature controller, these baths deliver the performance you need for confidence in your calibrations. The 7381 (–80 °C to 110 °C) features both stability and uniformity better than ±0.007 °C over its entire range. The 7341 and 7321 (–45 °C to 150 °C and –20 °C to 150 °C, respectively) are stable to ±0.005 °C and uniform to ±0.007 °C at temperatures below ambient. And finally, the 6331 provides stability and uniformity from ±0.007 °C to ±0.025 °C over its range from 40 °C to 300 °C.

Be sure to understand the performance of the temperature calibration equipment you buy. Some manufacturers offer only limited (and often difficult to interpret) specifications. The specifications tab includes stability and uniformity values for the entire range of each bath—and tells you what fluid we used in the measurements. If that's still not enough, give us a call and we'll be happy to explain anything—and share data with you.

Fluke Calibration's control system automatically adds refrigeration when you need to cool down quickly, and shuts down refrigeration when you need to heat up quickly. For maximum stability, refrigeration levels are automatically balanced to match the set-point temperature you're working at.

Connect any of these baths to a Fluke Calibration thermometer readout and our industry-leading MET/TEMP II temperature calibration software, and you'll be performing automated probe calibrations within minutes from switch-on.

Want to optimize your bath for calibrating liquid-in-glass thermometers? Simple. With the optional LIG Thermometer Calibration Kit, you get an easy-to-install fluid level adapter tube that raises the meniscus of the bath fluid to within about 12 mm (0.5 in) of the top surface of the bath itself. The kit also includes a thermometer carousel that fits onto the top of the fluid level adapter tube and holds up to ten LIG thermometers in place. A magnifying scope (8X) is also available that mounts to the front of any Deep-Well Compact Bath so you can clearly see the liquid level of your thermometer against its temperature scale.

Like all Fluke Calibration baths, these units come with a report of test that includes one hour of stability data and a verification of set-point accuracy. A convenient overflow reservoir captures any excess fluid resulting from fluid expansion, allowing the trapped fluid to be reused following subsequent fluid contraction. A drain is also provided for easily emptying the bath's tank when needed.

Specifications

Specifications	
Range	6331 35 °C to 300 °C 7321 –20 °C to 150 °C 7341 –45 °C to 150 °C

	7381 –80 °C to 110 °C
Stability	6331 ±0.007 °C at 100 °C (oil 5012) ±0.010 °C at 200 °C (oil 5017) ±0.015 °C at 300 °C (oil 5017) 7321 ±0.005°C at –20°C (ethanol) ±0.005°C at 25°C (water) ±0.007°C at 150°C (oil 5012) 7341 ±0.005°C at –45°C (ethanol) ±0.005°C at 25°C (water) ±0.007°C at 150°C (oil 5012) 7381 ±0.006°C at –80°C (ethanol) ±0.005°C at 0°C (ethanol) ±0.005°C at 100°C (oil 5012)
Uniformity	6331 ±0.007 °C at 100 °C (oil 5012) ±0.017 °C at 200 °C (oil 5017) ±0.025 °C at 300 °C (oil 5017) 7321 ±0.007 °C at –20 °C (ethanol) ±0.00 7 °C at 2 5°C (water) ±0.010°C at 150 °C (oil 5012) 7341 ±0.007 °C at –45 °C (ethanol) ±0.007 °C at 25 °C (water) ±0.010 °C at 150 °C (oil 5012) 7381 ±0.007 °C at –80 °C (ethanol) ±0.007 °C at 0 °C (ethanol) ±0.007 °C at 100 °C (oil 5012)
Heating Time†	6331 130 minutes, from 40 °C to 300 °C (oil 5017) 7321 120 minutes, from 25 °C to 150 °C (oil 5012) 7341 120 minutes, from 25 °C to 150 °C (oil 5012) 7381 60 minutes, from 25 °C to 100 °C (oil 5012)
Cooling Time†	6331 14 hours, from 300 °C to 100 °C (oil 5017) 7321 110 minutes, from 25 °C to –20 °C (ethanol) 7341 130 minutes, from 25°C to –45°C (ethanol) 7381 210 minutes, from 25 °C to –80 °C (ethanol)
Stabilization Time	15–20 minutes
Temperature Setting	Digital display with push-button data entry
Set-Point Resolution	0.01°; 0.00018° in high-resolution mode
Display Resolution	0.01°
Digital Setting Accuracy	±1°C
Digital Setting Repeatability	±0.01°C
Access Opening	120 x 172 mm (4.7 x 6.8 in)
Depth	457 mm (18 in) without Liquid-in-Glass Thermometer Cal Kit 482 mm (19 in) with Liquid-in-Glass Thermometer Cal Kit
Wetted Parts	304 stainless steel
Power†	6331 115 VAC (±10 %), 50/60 Hz, 14.8 A or 230 VAC (±10 %), 50/60 Hz, 7.4 A, specify 7321 115 VAC (±10 %), 60 Hz, 14 A or 230 VAC (±10 %), 50 Hz, 7 A, specify 7341 115 VAC (±10 %), 60 Hz, 16 A or 230 VAC (±10 %), 50 Hz, 8 A, specify 7381 230 VAC (±10 %), 50 or 60 Hz, specify, 10 A
Volume	15.9 liters (4.2 gal)
Size (HxWxD)	1067 x 356 x 788 mm (940 mm from floor to tank access opening) [42 x 14 x 31 in (37 in from floor to tank access opening)]
	6331 41 kg (90 lb.) 7321 62 kg (137 lb.)

Weight	7321 62 kg (137 lb.) 7341 68 kg (150 lb.) 7381 91 kg (200 lb.)
Automation Package	Interface-it software and RS-232 included (IEEE-488 optional)
	†Rated at nominal 115 V (or optional 230 V)

Models and Accessories

Model Name	Description
6331	Deep-Well Compact Bath, 40 °C to 300 °C **Accessory** / **Description** 2020-6331 — Spare Access Cover, Stainless Steel, 6331 2020-6331 — Spare Access Cover, Stainless Steel, 6331
7321	Deep-Well Compact Bath, –20 °C to 150 °C **Accessory** / **Description** 2012-DCB — Spare Access Cover, Plastic, 7321, 7341, 7381 2027-DCBW — TPW Holding Fixture (7321, 7341, 7381)
7341	Deep-Well Compact Bath, –45 °C to 150 °C **Accessory** / **Description** 2012-DCB — Spare Access Cover, Plastic, 7321, 7341, 7381 2027-DCBM — Mercury TP Holding Fixture (7341) 2027-DCBW — TPW Holding Fixture (7321, 7341, 7381)
7381	Deep-Well Compact Bath, –80 °C to 110 °C **Accessory** / **Description** 2012-DCB — Spare Access Cover, Plastic, 7321, 7341, 7381 2027-DCBW — TPW Holding Fixture (7321, 7341, 7381)

Accessories common to all models:

Accessory	Description
2019-DCB Fluid Level Adapter	Fluid Level Adapter
2069 Magnifying Scope	8X Magnifying Scope, with Mounts

2001-IEEE	IEEE-488 Interface

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