

## TECHNICAL DATA

# Fluke Calibration P3000 Pneumatic Deadweight Testers



## Key features

- 0.015% of reading accuracy standard (0.008% optional)
- 1-30 inHg vacuum (0.03-1 bar vacuum)
- 3-500 psi (0.2-35 bar) pressure
- inH<sub>2</sub>O and mbar ranges available
- Series 3 non-magnetic stainless steel weights
- Units can be trimmed to local gravity FOC

## Product overview: Fluke Calibration P3000 Pneumatic Deadweight Testers

This versatile instrument provides calibrations from 1-30 inHg vacuum (0.03-1 bar) and 3-500 psi (0.2-35 bar) in one extremely accurate yet easy to use primary standard. A selector valve converts the unit from pressure to vacuum mode without the need to exchange pistons. Units are manufactured to the highest standards with certified accuracies traceable to International Standards Laboratories such as the National Institute of Standards and Technology (NIST). These piston/cylinder type pneumatic standards provide excellent stability, repeatability and accuracy. An optional built-in hand pump can be added for both pressure and vacuum generation.

# Specifications: Fluke Calibration P3000 Pneumatic Deadweight Testers

| Accuracy                                                                                                                                                                                                          |                                                  |                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------|
| Accuracy <sup>1</sup>                                                                                                                                                                                             | ±0.015% of reading (±0.008% optional)            |                   |
| 1. Accuracy based on % of reading from 10% to 100% of the piston range when used in accordance with the corrections found on the calibration certificate. Below 10% ± (accuracy class) x 10% of the piston range. |                                                  |                   |
| Mass and PCU Materials of Construction                                                                                                                                                                            |                                                  |                   |
| Standard weight material                                                                                                                                                                                          | Series 3 non-magnetic austenitic stainless steel |                   |
| Weight density                                                                                                                                                                                                    | 7.8 g/cm³                                        |                   |
| Optional fractional weights                                                                                                                                                                                       | Solution heat treated aluminum                   |                   |
| Weight density                                                                                                                                                                                                    | 2.7 g/cm³                                        |                   |
| Models P3011, P3012, P3013, P3022, P3023, P3025 (V)                                                                                                                                                               | Piston material                                  | Ceramic           |
|                                                                                                                                                                                                                   | Cylinder material                                | Martensitic steel |
|                                                                                                                                                                                                                   | Coefficient of expansion                         | 11 ppm/°C         |
| Models P3014, P3015, P3025 (P) P3031, P3032 (P & V)                                                                                                                                                               | Piston material                                  | Tungsten carbide  |
|                                                                                                                                                                                                                   | Cylinder material                                | Martensitic steel |
|                                                                                                                                                                                                                   | Coefficient of expansion                         | 16.5 ppm/°C       |
| Model P3016                                                                                                                                                                                                       | Piston material                                  | Tungsten carbide  |
|                                                                                                                                                                                                                   | Cylinder Material                                | Tungsten carbide  |
|                                                                                                                                                                                                                   | Coefficient of Expansion                         | 11 ppm/°C         |
| General                                                                                                                                                                                                           |                                                  |                   |
| Test port adaptors                                                                                                                                                                                                | 1/8, 1/4, 3/8 and ½ NPT or BSP                   |                   |
| Instrument weight                                                                                                                                                                                                 | 24 lbs                                           |                   |
| Instrument size (W x D x H)                                                                                                                                                                                       | 17.5 x 12 x 8.5                                  |                   |
| Mass set weight (typical)                                                                                                                                                                                         | 65 lbs                                           |                   |
| Minimum Standard Weight Increments                                                                                                                                                                                |                                                  |                   |
| P3012, P3022 Pressure                                                                                                                                                                                             | 1 inH <sub>2</sub> O, (5 mbar)                   |                   |
| P3013, P3023 Pressure                                                                                                                                                                                             | 2 inH <sub>2</sub> O, (10 mbar)                  |                   |
| P3014, P3015, P3025 Pressure                                                                                                                                                                                      | 1 psi, (0.1 bar)                                 |                   |
| P3016, P3031, P3032                                                                                                                                                                                               | 1 psi, (0.1 bar)                                 |                   |
| P3011, P3022, P3023, P3025 Vacuum                                                                                                                                                                                 | 0.2 inHg (10 mbar)                               |                   |
| Optional Fractional Weights                                                                                                                                                                                       |                                                  |                   |
| P3014, P3015, P3025 Pressure                                                                                                                                                                                      | 0.1 psi (0.01 bar)                               |                   |
| Built-in Hand Pumps                                                                                                                                                                                               |                                                  |                   |
| Pressure mode                                                                                                                                                                                                     | Max pressure 300 psi (20 bar)                    |                   |

|                                                     |                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vacuum mode                                         | To 90% vacuum                                                                                                                                                                                                                                                                                             |
| <b>Operating Fluid for Liquid Lubricated Models</b> |                                                                                                                                                                                                                                                                                                           |
| 55-655                                              | Mineral oil (standard)                                                                                                                                                                                                                                                                                    |
| Krytox                                              | For oxygen-safe applications (optional)                                                                                                                                                                                                                                                                   |
| <b>Options</b>                                      |                                                                                                                                                                                                                                                                                                           |
| PressCal Software                                   | Windows-based software program that allows users to easily apply all necessary corrections to enhance the deadweight tester performance. Calibration details are then stored and/or used to automatically create a calibration certificate. PressCal is provided as standard with all 0.008% instruments. |
| Krytox                                              | As operating fluid for liquid lubricated gas operated models.                                                                                                                                                                                                                                             |

## Ordering information



### **Fluke P3011-4-P**

Fluke Calibration P3011-4-P Pneumatic Deadweight Testers  
Vacuum range 3 to 100 kPa

Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
- Vacuum operated – single PCU
- Built-in pump optional

### **Fluke P3011-6-P**

Fluke Calibration P3011-6-P Pneumatic Deadweight Testers  
Vacuum range 30 to 1,000 mbar

Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
- Vacuum operated – single PCU
- Built-in pump optional

### **Fluke P3011-8-P**

Fluke Calibration P3011-8-P Pneumatic Deadweight Testers  
Vacuum range 1 to 30 inHg

Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
- Vacuum operated – single PCU
- Built-in pump optional

### **Fluke P3011-9-P**

Fluke Calibration P3011-9-P Pneumatic Deadweight Testers  
Vacuum range 30 to 760 mmHg

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Vacuum operated – single PCU
  - Built-in pump optional
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### **Fluke P3012-4-P**

Fluke Calibration P3012-4-P Pneumatic Deadweight Testers  
Pressure range 1.5 to 1000 kPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3012-6-P**

Fluke Calibration P3012-6-P Pneumatic Deadweight Testers  
Pressure range 15 to 1,000 mbar

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3012-7-P**

Fluke Calibration P3012-7-P Pneumatic Deadweight Testers  
Pressure range 400 inH<sub>2</sub>O

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3013-4-P**

Fluke Calibration P3013-4-P Pneumatic Deadweight Testers  
Pressure range 3 to 200 kPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3013-6-P**

Fluke Calibration P3013-6-P Pneumatic Deadweight Testers  
Pressure range 30 to 2,000 mbar

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3013-7-P**

Fluke Calibration P3013-7-P Pneumatic Deadweight Testers  
Pressure range 12 to 800 inH<sub>2</sub>O

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3014-1-P**

Fluke Calibration P3014-1-P Pneumatic Deadweight Testers  
Pressure range 0.2 to 10 bar

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3014-2-P**

Fluke Calibration P3014-2-P Pneumatic Deadweight Testers  
Pressure range 0.2 to 10 kgf/cm<sup>2</sup>

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3014-3-P**

Fluke Calibration P3014-3-P Pneumatic Deadweight Testers  
Pressure range 3 to 150 psi

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
- 

### **Fluke P3014-4-P**

Fluke Calibration P3014-4-P Pneumatic Deadweight Testers

Pressure range 20 to 1,000 kPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3014-5-P**

Fluke Calibration P3014-5-P Pneumatic Deadweight Testers  
Pressure range 0.02 to 1 MPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **Fluke P3015-1-P**

Fluke Calibration P3015-1-P Pneumatic Deadweight Testers  
Pressure range 0.2 to 35 bar

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
- 

### **Fluke P3015-2-P**

Fluke Calibration P3015-2-P Pneumatic Deadweight Testers  
Pressure range 0.2 to 35 kgf/cm<sup>2</sup>

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
- 

### **Fluke P3015-3-P**

Fluke Calibration P3015-3-P Pneumatic Deadweight Testers  
Pressure range 3 to 500 psi

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
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### **Fluke P3015-4-P**

Fluke Calibration P3015-4-P Pneumatic Deadweight Testers

Pressure range 20 to 3,500 kPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
- 

### **Fluke P3015-5-P**

Pressure range 0.02 to 3.5 MPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
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### **Fluke P3022-4-P**

Fluke Calibration P3022-4-P Pneumatic Deadweight Testers

Pressure range 1.5 to 100 kPa

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 3 to 100 kPa
  - Built-in pump optional
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### **Fluke P3022-6-P**

Fluke Calibration P3022-6-P Pneumatic Deadweight Testers

Pressure range 15 to 1,000 mbar

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 1,000 mbar
  - Built-in pump optional
- 

### **Fluke P3022-7-P**

Fluke Calibration P3022-7-P Pneumatic Deadweight Testers

Pressure range 5 to 400 in<sub>2</sub>O

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
- Air operated - dual PCU



- Vacuum Range 1 to 30 inHg
  - Built-in pump optional
- 

### **Fluke P3023-4-P**

Fluke Calibration P3023-4-P Pneumatic Deadweight Testers  
Pressure range 3 to 200 kPa

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 3 to 100 kPa
  - Built-in pump optional
- 

### **Fluke P3023-6-P**

Fluke Calibration P3023-6-P Pneumatic Deadweight Testers  
Pressure range 30 to 2,000 mbar

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 1,000 mbar
  - Built-in pump optional
- 

### **Fluke P3023-7-P**

Fluke Calibration P3023-7-P Pneumatic Deadweight Testers  
Pressure range 12 to 800 inHg

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 1 to 30 inHg
  - Built-in pump optional
- 

### **Fluke P3025-1-P**

Fluke Calibration P3025-1-P Pneumatic Deadweight Testers  
Pressure range 0.2 to 35 bar

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 1,000 mbar
  - Built-in pump optional
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### **Fluke P3025-2-P**

## Fluke Calibration P3025-2-P Pneumatic Deadweight Testers

Pressure range 0.2 to 35 kgf/cm<sup>2</sup>

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 760 mmHg
  - Built-in pump optional
- 

### **Fluke P3025-3-P**

Fluke Calibration P3025-3-P Pneumatic Deadweight Testers

Pressure range 0.2 to 35 kgf/cm<sup>2</sup>

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 760 mmHg
  - Built-in pump optional
- 

### **Fluke P3025-4-P**

Fluke Calibration P3025-4-P Pneumatic Deadweight Testers

Pressure range 20 to 3,500 kPa

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Includes

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 3 to 100 kPa
  - Built-in pump optional
- 

### **Fluke P3025-5-P**

Fluke Calibration P3025-5-P Pneumatic Deadweight Testers

Pressure range 0.02 to 3.5 MPa

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 3 to 100 kPa
  - Built-in pump optional
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