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**Data Sheet**

August 15, 2026

BURLEIGH

# Burleigh 6100-1-1-1-4 1-Axis Inchworm Controller

The Burleigh 6100-1-1-1-4 is a single-axis Inchworm controller designed for precise motion control. It provides stable and accurate positioning for various applications. This controller is compatible with Burleigh Inchworm motors, enabling fine adjustments and reliable performance.



MODEL

**Burleigh 6100-1-1-1-4**

CALIBRATION

**Available on request**

CONDITION

**Used**

STATUS

**In stock**

RFQ / SKU

**6100-1-1-1-4**

LISTING

<https://aumictechlabs.com/products/6100-1-1-1-4-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

## This unit

The Burleigh 6100-1-1-1-4 is a single-axis Inchworm controller engineered for precision motion control requiring nanometer-scale positioning. It delivers voltage, current, and timing signals to PZT actuators for rapid, high-speed actuation while maintaining exceptional resolution. The controller operates in both open-loop and closed-loop modes, with closed-loop configurations incorporating encoder feedback for position display, step-size setting, and position maintenance. Manual operation is available via front panel controls, optional handset, or joystick. Remote operation uses TTL signals or RS-232 protocols, with advanced PC integration possible through compatible interface cards. Technical Specifications Axis Configuration: Single-axis (6100 series supports multiple axes in single chassis) Drive Electronics: Sophisticated PZT (lead-zirconium-titanate) drive circuitry Resolution: Nanometer-scale positioning capability Operational Modes: Open-loop (manual/automated control without feedback) and closed-loop (encoder-based

feedback with position maintenance) Actuation Speed: Designed for high-speed operation Motor Compatibility: Optimized for Burleigh 700 series and LTS/LTO series Inchworm motors Key Features Programmable motion control for advanced applications Encoder counting circuitry in closed-loop configurations Zero-point setting and position display functions TTL and RS-232 remote control protocols Optional handset and joystick accessories for manual control Compatible with PC interface cards for high-level language programming Typical Applications Precision positioning systems, automated microscopy, alignment mechanisms, and research instrumentation requiring nanometer-resolution linear motion with flexible control architectures. Compatibility & Integration Designed for Burleigh Inchworm motor systems. Integrates with optional Burleigh accessories including handsets and joysticks. PC control achievable through compatible interface cards supporting IBM-PC/XT and compatible systems.

# 6100111 Characteristics / Specifications

| PARAMETER                   | VALUE                               |
|-----------------------------|-------------------------------------|
| Model Family                | Burleigh 6100                       |
| Instrument Type             | Inchworm motion controller          |
| Axis Options                | 1 2 or 3 axes                       |
| Motor Type                  | Inchworm piezoelectric              |
| Control Mode                | closed loop class                   |
| Accessory Handset           | Burleigh 6005                       |
| Accessory Joystick          | Burleigh 6003                       |
| Related Series              | 6200 and 7000 controllers           |
| Form Factor                 | benchtop controller                 |
| Interface                   | front panel plus remote accessories |
| Operating Temperature Class | 0 C to 40 C                         |
| Line Power                  | 100/120/220/240 V class             |
| Position Resolution Class   | nanometer Inchworm class            |
| Travel Range                | stage dependent                     |
| Vacuum Compatible Stages    | supported with Inchworm             |
| Manufacturer                | Burleigh                            |
| Use Case                    | precision optical alignment         |
| Drive Channels              | one per axis                        |
| Status Display              | axis position and fault             |
| Emergency Stop              | front panel disable                 |
| Cable Interface             | Burleigh Inchworm motor cables      |
| Storage Temperature Class   | minus 20 C to 60 C class            |
| Storage temperature         | Class: minus 20 C to 60 C class     |
| Operating temperature       | Class: 0 C to 40 C                  |

# 6100111 Specifications

| PARAMETER                                | VALUE                                                                                                 |
|------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Burleigh 6100 Series Inchworm Controller | Overview                                                                                              |
| Applications                             | Nanometer-class optical alignment, vacuum chamber positioning, and multi-axis Inchworm stage control. |
| Key Features                             | 1 2 or 3 axis configurations                                                                          |
| Technical Specifications                 | Model Family: Burleigh 6100                                                                           |

# General Specifications & Supplementary Characteristics

| PARAMETER                   | VALUE                                                                                                                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Storage temperature         | Class: minus 20 C to 60 C class                                                                                                                                                            |
| Operating temperature       | Class: 0 C to 40 C                                                                                                                                                                         |
| Operating Temperature       | Class: 0 C to 40 C                                                                                                                                                                         |
| Operating Temperature Class | 0 C to 40 C                                                                                                                                                                                |
| Line Power                  | 100/120/220/240 V class                                                                                                                                                                    |
| Position Resolution Class   | nanometer Inchworm class                                                                                                                                                                   |
| Travel Range                | stage dependent                                                                                                                                                                            |
| Vacuum Compatible Stages    | supported with Inchworm                                                                                                                                                                    |
| Manufacturer                | Burleigh                                                                                                                                                                                   |
| Use Case                    | precision optical alignment                                                                                                                                                                |
| Drive Channels              | one per axis                                                                                                                                                                               |
| Status Display              | axis position and fault                                                                                                                                                                    |
| Emergency Stop              | front panel disable                                                                                                                                                                        |
| Cable Interface             | Burleigh Inchworm motor cables                                                                                                                                                             |
| Storage Temperature Class   | minus 20 C to 60 C class Notes Axis options and accessory models from Burleigh 6100/6200/7000 Inchworm controller catalog descriptions. Exact force/speed limits are stage-model specific. |

# Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

| Specifications                                                                                                                                              |                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Specifications                                                                                                                                              |                                     |
| PARAMETER                                                                                                                                                   | VALUE                               |
| Model Family                                                                                                                                                | Burleigh 6100                       |
| Instrument Type                                                                                                                                             | Inchworm motion controller          |
| Axis Options                                                                                                                                                | 1 2 or 3 axes                       |
| Motor Type                                                                                                                                                  | Inchworm piezoelectric              |
| Control Mode                                                                                                                                                | closed loop class                   |
| Accessory Handset                                                                                                                                           | Burleigh 6005                       |
| Accessory Joystick                                                                                                                                          | Burleigh 6003                       |
| Related Series                                                                                                                                              | 6200 and 7000 controllers           |
| Form Factor                                                                                                                                                 | benchtop controller                 |
| Interface                                                                                                                                                   | front panel plus remote accessories |
| Operating Temperature Class                                                                                                                                 | 0 C to 40 C                         |
| Line Power                                                                                                                                                  | 100/120/220/240 V class             |
| Position Resolution Class                                                                                                                                   | nanometer Inchworm class            |
| Travel Range                                                                                                                                                | stage dependent                     |
| Vacuum Compatible Stages                                                                                                                                    | supported with Inchworm             |
| Manufacturer                                                                                                                                                | Burleigh                            |
| Use Case                                                                                                                                                    | precision optical alignment         |
| Drive Channels                                                                                                                                              | one per axis                        |
| Status Display                                                                                                                                              | axis position and fault             |
| Emergency Stop                                                                                                                                              | front panel disable                 |
| Cable Interface                                                                                                                                             | Burleigh Inchworm motor cables      |
| Storage Temperature Class                                                                                                                                   | minus 20 C to 60 C class            |
| Notes                                                                                                                                                       |                                     |
| Axis options and accessory models from Burleigh 6100/6200/7000 Inchworm controller catalog descriptions. Exact force/speed limits are stage-model specific. |                                     |

### Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: [sales@aumictech.com](mailto:sales@aumictech.com) · +1 (484) 841-9341

#### Aumictech

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NIST-traceable calibration · SAM registered ·  
30-day returns  
NAICS 423690 · 811210 · 541380  
Generated August 15, 2026

Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.