

About the Company

Thorlabs Ltd is an a leading manufacturer of motion control systems, vibration isolation systems, machine vision products and multi-element optical systems for fiber-optic, semiconductor and reprographic applications.

We offer customers an in-depth understanding of optical component manufacture, allowing us to quickly and confidently develop optimal positioning solutions.

As a part of Thorlabs inc., manufacturers of innovative photonics products, we are committed to providing the service, relationships and attention to detail that make businesses excel.

Trademarks

THORLABS is a registered trademark of Thorlabs Inc.

Revision History

Issue No.	Date	Summary
1	060406	Initial Issue

Technical Support

Thorlabs provide a comprehensive after sales service. Contact us through your local representative, or at the address below:

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Product Warranty

All Thorlabs products are covered by a manufacturers warranty against faulty workmanship and materials, valid for 12 months from the date of original purchase. All products returned under warranty must be returned in their original packaging.

Prior to installation, the equipment referred to in this handbook must be stored in a clean, dry environment, in accordance with any instructions given. Periodic checks must be made on the equipment's condition.

Customer Feedback

It is always helpful to have detailed and accurate information about any problems encountered by customers

We welcome comments or suggestions about any aspect of the equipment and instruction handbooks.

Compact Single Axis Piezo Actuator

Model Numbers NFA100

1.1 Introduction

The NFA100 Compact Piezo Actuator offers 90µm of piezoelectric controlled displacement in a very small form factor. The internal mechanism is flexure-based, and intrinsically possesses very low friction and high stiffness, allowing the NFA100 to be positioned with low settling time and high repeatability. The relatively long piezoelectric controlled travel is accomplished using a large displacement piezo stack that is mechanically multiplied to provide the full 90µm of travel.

The drive voltage required for the full range of travel is 75V, while the displacement resolution is typically limited by the piezoelectric driver that is used to power the actuators. When driven by the Thorlabs BPC101 piezoelectric controller, the actuator returns a resolution of 25nm. Load capacity is 1Kg (2.2 lbs) in a horizontal direction.

The device is also vacuum compatible, making it an ideal tool to address a broad range of applications, including semiconductor manufacturing, specialized microscopy studies, MEMs manufacturing and testing, and traditional optical component manufacturing.



NFA100 Compact Single Axis Piezo Actuator

1.2 Dimensions

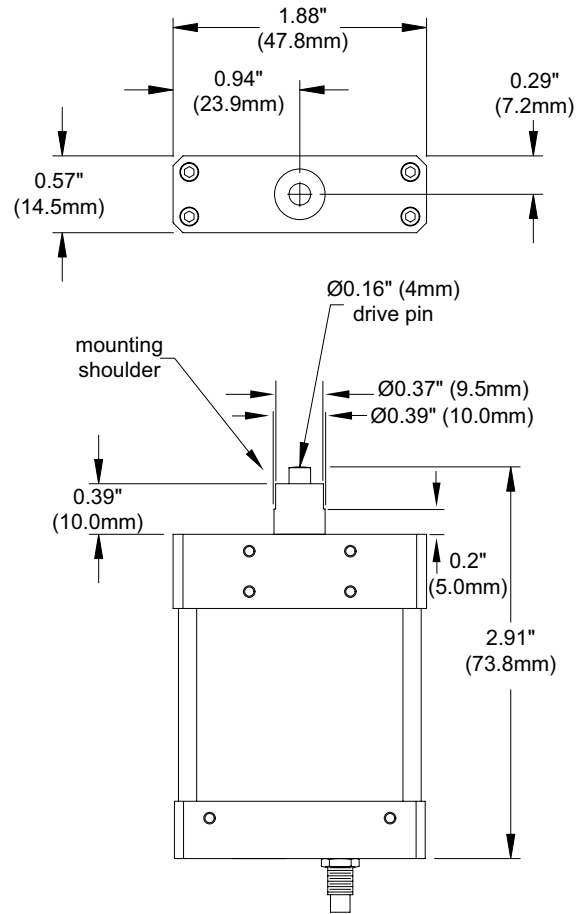


Fig. 1.1 Dimensions

1.3 Specifications

Piezoelectric Travel: 90µm

Load Capacity: 1kg in Horizontal Orientation

Piezoelectric Resolution: 25nm

Resonant Frequency: >150Hz with 100g Mass

Stiffness: 0.3N/µm

Thermal Stability: 1µm/°C

Electrical Connector: Male SMC

Weight: 92g (3.2oz) without cable

Dimensions: 73.8 x 47.8 x 7.2mm (2.91 x 1.88 x 0.29 in.)

THORLABS

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