# EZ-0745-ZC

EITZENBERGER
KINEMATIK MIT LUFT

## Key Features

- Linear Axis for Vertical Installation
- Rotation Angle ± 3°
- Max. Load 10 kg
- Integrated Weight Compensation
- Absolute Linear Encoder
- Dynamic Drive by Voice Coils
- Integrable in X/Y Stages (e.g. EZ-0715)

# Air-Bearing ZC-Axis EZ-0745

## Concept and Design

The EZ-0745 air-bearing ZC axis is intended for integration into an XY stage (e.g. EZ-0715).

Due to the highly integrated design, a low overall height of only approx. 138 mm is required.

The rotation angle is limited to ± 3°.

A high repeatability of ± 1.5 µrad enables very precise alignment of the substrate.

The Z axis is secured against rotation via 2 air bearing pads and is dynamically driven by 2 opposing voice coils. An air-bearing pneumatic cylinder is integrated for weight decoupling.

An individual, customer-specific adjustment of the Z-stroke is possible.
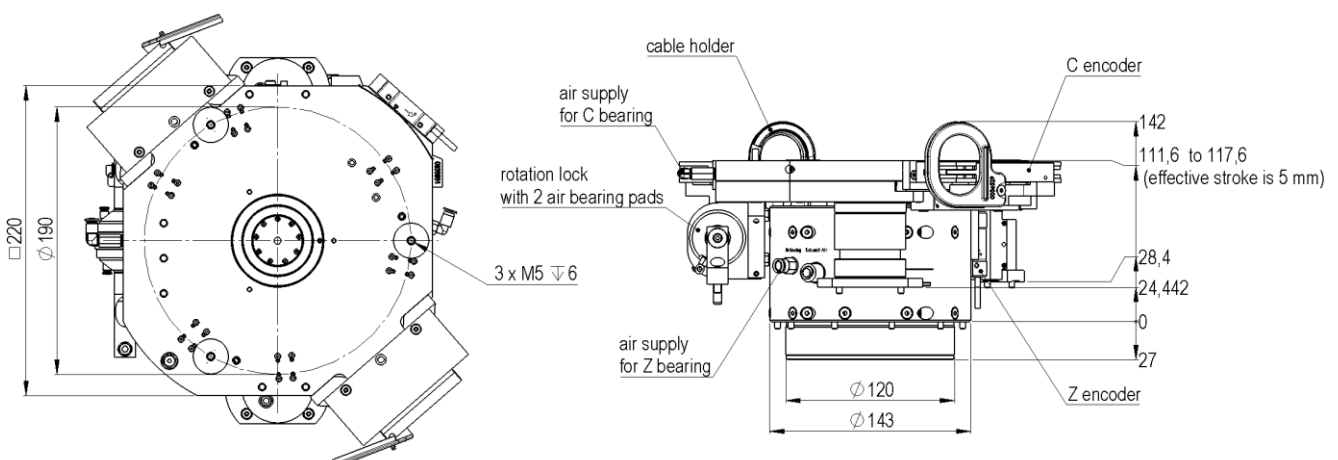
## Applications

High-precision positioning tasks, scanning, exposure, laser engraving, laser processes in general

## Drive Control

We offer the ZC axis EZ-0745 with the following drive controls:

- Kollmorgen Servostar AKD / S300 / S700
- ACS Controller with NanoPWM
- Triamec

## Specifications

| Type | Unit | Value |
|---|---|---|
| Rotation Angle (C) | ° | ± 3 |
| Stroke in Z | mm | 5 |
| Straightness (ZTX, ZTY) | nm | < 100 |
| Pitch, Yaw (ZRX, ZRY) | µrad | < 5 |
| Roll (ZRZ) | µrad | < 10 |
| Position Stability in Z [1] | nm | < 40 |
| Accuracy Z [1] | nm | ± 30 |
| Position Accuracy C [1] | µrad | ± 5 |
| Repeatability C [1] | µrad | ± 1.5 |
| Max. Speed unloaded | mm/s | 10 |
| Max. Acceleration unloaded | mm/s² | 2,000 |

| Mechanical Data | Unit | Value |
|---|---|---|
| Mounting Position | | vertical |
| Diameter Cylinder x Height | mm | 143 x 169 |
| Total Mass | kg | 10.6 |
| Max. Load | kg | 10 |
| Material | | aluminium hardcoated/anodized |

| Encoder | | Value |
|---|---|---|
| Type | | absolute |
| Signal | | EnDat2.2 |

| Drive | Unit | Value |
|---|---|---|
| Drive Type C-Axis | | synchronous, ironless |
| Intermediate Circuit Voltage C-Axis | $V_{DC}$ | max. 60 |
| Nominal/Peak Force C-Axis | N | 32 / 115 |
| Nominal/Max. Current C-Axis | $A_{rms}$ | 2.8 / 10 |
| Drive Type Z-Axis | | voice coil, linear |
| Intermediate Circuit Voltage Z-Axis | $V_{DC}$ | max. 120 |
| Nominal/Peak Force Z-Axis | N | 38 / 120 |
| Nominal/Max. Current Z-Axis at 48 V | A | 1 / 3.2 |

| Interfaces and Environment | Unit | Value |
|---|---|---|
| Supply Pressure | bar | 5 |
| Air Consumption | Sl/min | ca. 50 |
| Clean Room Suitability | | applicable |

| Drive Control | | Value |
|---|---|---|
| Standard | | Kollmorgen AKD / S300 / S700 |
| High End | | ACS Controller, Triamec |

[1] measured with ACS amplifier

Subject to technical modifications and typographical errors.

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