

# MICOS

MOTION CONTROL & OPTICS **USA**

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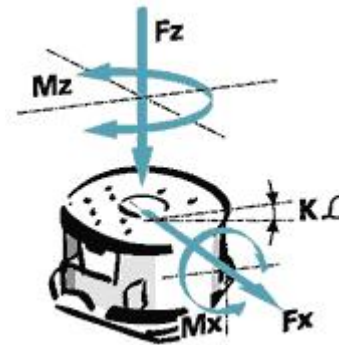
Ultra Precision Rotation Stage UPR-300 AIR

Direct Drives



## Key features

- High precision Toroid air bearings (patented 44.01262.4-09)
- High stiffness
- Torque motor
- Flatness < 0.1  $\mu\text{m}$
- Eccentricity < 0.1  $\mu\text{m}$
- Wobble < 2.5  $\mu\text{rad}$
- Repeatability 0.0004°
- Angular glass scale
- Speed up to 720°/sec
- Load up to 30 kg
- Clean room compatibility
- [Download PDF data sheet ...](#)



## FACTS

Load Characteristics	Fx (N)	Fz (N)	Mx (Nm)	Mz (Nm) (Peak)	Mz (Nm) (Con.)	ka ( $\mu\text{rad}/\text{Nm}$ )
TM-020	150	300	80	60	10	-

## DESCRIPTION

Air-bearing Ultra-Precision-Rotation Stages of the structural series **UPR-300 AIR** and **UPR-160 AIR** are utilized wherever a maximum of quality concerning running - and positioning accuracy is requested. UPR-

Rotation Stages **UPR-300 AIR** are standard equipped with optical angular systems. Standard resolutions up to 0.0002° can be achieved. For need of better positioning accuracies, resolutions or a larger free center

300 AIR Rotation Stages are mainly employed for measuring-, calibrate-, inspection systems and they are perfectly suited for mask exposition in semiconductor technologies. All Rotation Stages UPR-300 AIR are directly driven by a torque motor. A special, newly developed Toroid-air bearing (patent applied) guarantees more stiffness.

hole Rotation Stages UPR-300 AIR can be offered with different angular systems. All Ultra-Precision-Rotation Stages UPR-300 AIR are equipped with a contactless reference- and limit switch.

#### Technical data

<b>Rotation Range (°)</b>	<b>360, endless</b>
Worm Gear reduction	-
Accuracy (°)	+/- 0.001388
Repeatability (°)	+/- 0.0001
Reversal Error (°)	-
Velocity Range (°/sec)	0.001 ... 720
Flatness (µm)	+/- 0.05
Eccentricity (µm)	+/- 0.05
Wobble (µrad)	+/- 1.25

#### Speed max. (°/sec)

TM-020	720
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#### Resolution Closed-Loop (°)

AE-010, Angular scale (50-times interpolation)	0.0001
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#### Winding Constant

Torque constant (Nm/Ams)	3.33
Back EMF constant, peak value V/(rads/sec)	2.7
Electrical resistance at 80° (Ohm)	1.42
Electrical inductance (mH)	3.23
Continuous current at 80° (Ams)	6.33

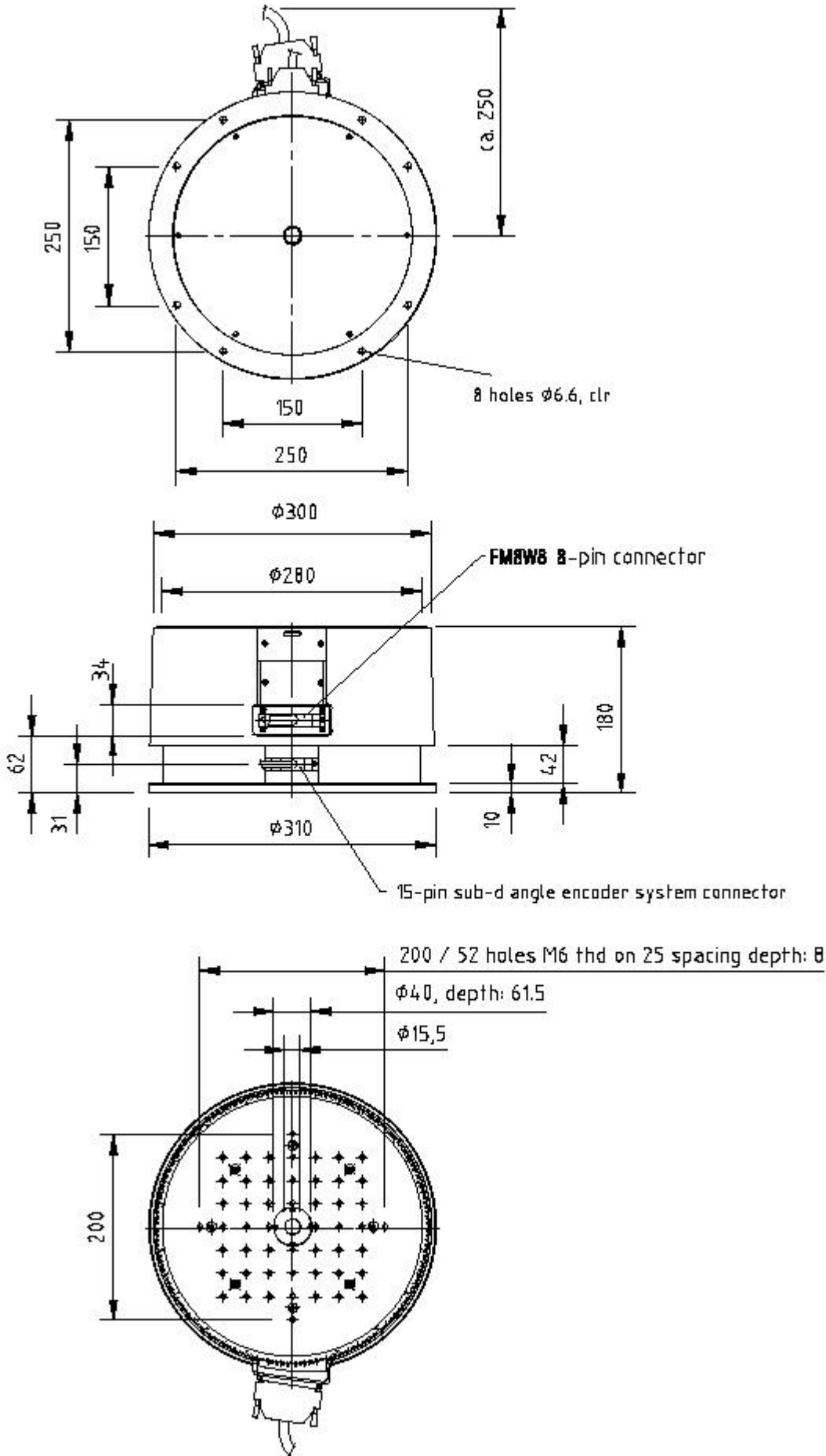
#### Compressed Air compare DIN ISO 8573-1

Leakage rate (L/min)	22 ... 25
Compressed Air range (bar)	4.5 ... 5.5

<b>Material</b>	Special Aluminium, black anodized
<b>Weight (kg)</b>	26.7

**Note:** Flatness < 0.1 µm, Eccentricity < 0.1 µm and Wobble < 2.5 µrad based on bearings (not rotation platform)

[Download PDF](#)



TM-020

UPR-300 AIR Ordering information

Ultra Precision Rotation Stage	Order-No.
UPR-300 AIR	6830-9-100

Ultra Precision Rotation Stage AIR options		Order-No.
<b>Air Supply</b> compare DIN ISO 8573-1 Compressed Air	Technical data: Particular size ..... Class 1 Contained Oil ..... Class 1 Condensing point .... Class 2-3	 K700-4-001
<b>Air Checker</b>	Pressure Sensor with motor disable	

Founded in 1990, MICOS specializes in the development, manufacturing and marketing of ultra-high precision positioning components and systems for research and industry. We are experts in vacuum, ultra-high vacuum, clean room, and extreme climate environments down to 77 Kelvin. ▶▶

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