

- **Linear Direct Drive System**  
LRAM

# LRAM

## Features, benefits, applications, drawing

### Features

- Short stroke actuator with air bearing
- Compact design
- 2-phase hybrid stepper motor with moving, air-bearing ceramic plate
- Magneto-resistive measuring system
- No cooling required

### Benefits

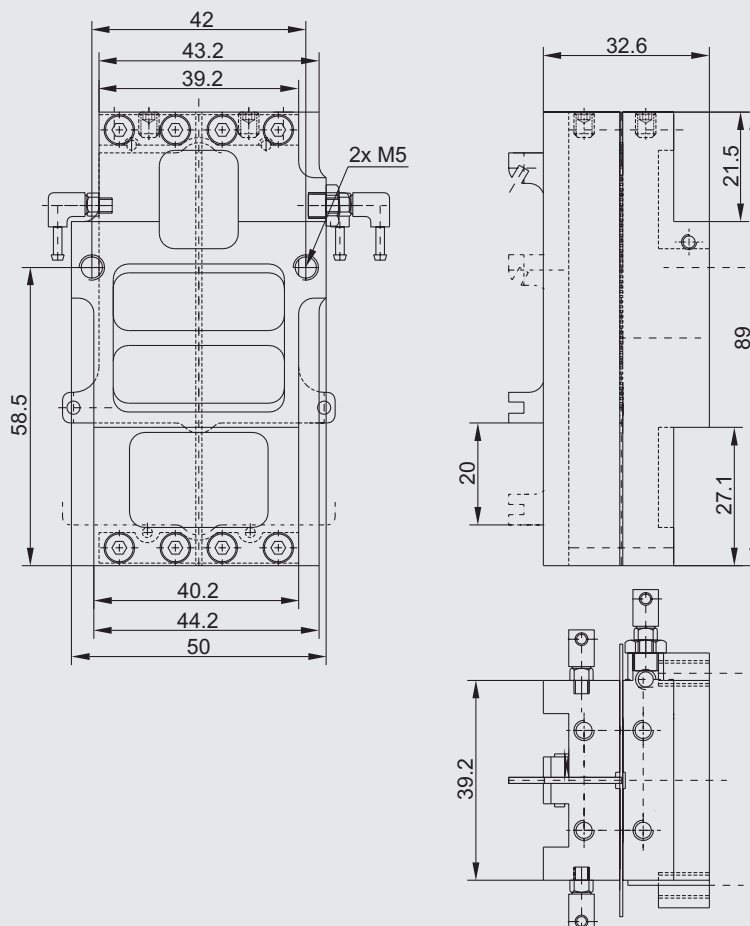
- High acceleration up to  $1000 \text{ m/s}^2$
- Wear-free, precise air bearing
- Only 10 g moving mass made of ceramic and CFK
- Low impulse input into the base system

### Applications

- Handling and test systems
- Pick and place
- Productronics
- Applications with high positioning cycles



### Drawing



# LRAM

## System data, system components, motor data

System data	Symbol	Unit	LRAM
Dimensions	L x W x H	mm	33 x 50 x 89
Total mass	$m_{total}$	g	280
Moving net mass	m	g	10
Stroke	s	mm	20
Maximum acceleration	$a_{max}$	$m/s^2$	1000
Maximum speed	$v_{max}$	m/s	1.5
Repeat accuracy		$\mu m$	<2
System components	Symbol	Unit	LRAM
Air bearing			
· Air gap		$\mu m$	10
· Air pressure	p	bar	3 – 4
· Air consumption at 3 bar (25 °C)		l/min	9
Measuring system			Magneto-resistive measuring system, 1 V <sub>pp</sub>
Motor data	Symbol	Unit	LRAM
<b>Motor:</b> 2-phase hybrid stepper motor			
Holding force at 3 A	$F_H$	N	10
Self-holding force	$F_S$	N	<1.5
Resistance/phase	$R_{25}$	$\Omega$	0.25
Inductance/phase	L	mH	0.30
Peak current	$I_p$	A <sub>rms</sub>	5
Nominal current	$I_c$	A <sub>rms</sub>	3
DC link voltage	$U_{DCL}$	V	50



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