

Ihr sicherer Gewinn

Formgebung, Bauart

Platzsparend dank kompakter Bauart
Hohe Positioniergenauigkeit
Stabilität und Belastbarkeit durch
spielfreie Nadellagerführungen
Hundertprozentige Reproduzierbarkeit dank
formschlüssigem Aufbau

Hubeinstellung, Überwachung

Einfaches und schnelles Einrichten dank Hubjustierung
unter Druck
Kein Nachjustieren der Sensoren
Hohe Verfügbarkeit durch einfachen Austausch
handelsüblicher Sensoren im Servicefall

Kombinationsmöglichkeiten

Minimaler Konstruktions- und Montageaufwand dank
durchdachtem System und einheitlichem Rastermass

Your definitive gain

Style, Design

Space-saving thanks to compact design
High positioning accuracy, stability and load
carrying capacity through the use of zero-play, double
guided carriages with needle roller bearings
One-hundred percent reproducibility thanks to positive
interlocking design

Travel Adjustment, Monitoring

Simple and fast setup thanks to travel adjustment under
pressure
No readjustment of the sensors
High availability due to easy exchange of commercial
sensors in the event of service

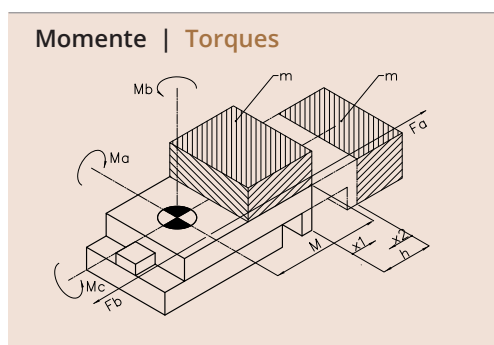
Combination Options

Minimal construction and assembly work thanks to well
thought out system and uniform grid spacing

Linearmodule | Linear Modules

Technische Daten – Zusammenfassung S-Baureihe | Technical Data – Summary S-Series

| | | pneumatisch Pneumatic | | | | | | | | | |
|---|---------|-------------------------|-------|-------|--------|-------|-------|--------|-------|-------|-------|
| | | LM 4 S | | | LM 5 S | | | LM 6 S | | | |
| | | S-30 | S-60 | S-90 | S-60 | S-90 | S-120 | S-60 | S-120 | S-180 | S-240 |
| Hublängen h [mm]: Stroke lengths h [mm]: | 0-30 | | | | | | | | | | |
| | 0-60 | | | | | | | | | | |
| | 0-90 | | | | | | | | | | |
| | 0-120 | | | | | | | | | | |
| | 0-180 | | | | | | | | | | |
| | 0-240 | | | | | | | | | | |
| Theor. Kraft (bei 5 bar) Fa/Fb [N]: Theor. force (at 5 bar) Fa/Fb [N]: | 100/86 | | | | | | | | | | |
| | 157/131 | | | | | | | | | | |
| | 245/206 | | | | | | | | | | |
| Max. zulässige Masse [kg]: Max. permissible mass [kg]: | 2 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
| | 6 | | | | | | | | | | |
| Zylinderdurchmesser [mm]: Cylinder diameter [mm]: | 1x16 | | | | | | | | | | |
| | 1x20 | | | | | | | | | | |
| | 1x25 | | | | | | | | | | |
| Luftverbrauch pro Zyklus bei 5 bar und Nennhub [NI]: Air consumption per cycle at 5 bar and nominal stroke [NI]: | | 0.06 | 0.12 | 0.18 | 0.2 | 0.3 | 0.4 | 0.3 | 0.6 | 0.9 | 1.2 |
| Gewicht [kg]: Weight [kg]: | | 0.6 | 0.7 | 0.8 | 1.2 | 1.4 | 1.5 | 2.0 | 2.6 | 3.2 | 3.8 |
| Angriffspunkt für alle Momente [mm]: Point of application of force for all torques [mm]: | M | 55 | 70 | 85 | 75 | 90 | 100 | 100 | 130 | 160 | 200 |
| Max. statische Momente [Nm]: Maximum static torques [Nm]: | Ma | 10 | 20 | 20 | 25 | 25 | 25 | 60 | 60 | 80 | 100 |
| | Mb | 10 | 20 | 20 | 25 | 25 | 25 | 60 | 60 | 80 | 100 |
| | Mc | 30 | 30 | 30 | 80 | 80 | 80 | 100 | 100 | 100 | 120 |
| Anschlag vorne Verstellbereich [mm]: Front stop range of adjustment [mm]: | x2 | 0-30 | 0-60 | 0-90 | 0-60 | 0-90 | 0-120 | 0-60 | 0-120 | 0-180 | 0-240 |
| Anschlag hinten Verstellbereich [mm]: Rear stop range of adjustment [mm]: | x1 | 0-30 | 0-30 | 0-30 | 0-40 | 0-40 | 0-40 | 0-30 | 0-60 | 0-60 | 0-60 |
| Wiederholgenauigkeit [mm]: Repeat accuracy [mm]: | | ±0,01 | ±0,01 | ±0,01 | ±0,01 | ±0,01 | ±0,01 | ±0,01 | ±0,01 | ±0,01 | ±0,01 |
| Pneumatikanschluss Pneumatic connection | | M 5 | M 5 | M 5 | M 5 | M 5 | M 5 | G1/8 | G1/8 | G1/8 | G1/8 |



* Für Berechnungen gilt: $M_a/M_{a \max} + M_b/M_{b \max} + M_c/M_{c \max} < 1$
 * Bei Belastungen die während der Fahrt des Schlittens auftreten ist $M_{\max} = 20\% M_{\max \text{ statisch}}$ einzusetzen

* This applies to calculations: $M_a/M_{a \max} + M_b/M_{b \max} + M_c/M_{c \max} < 1$
 * For stresses during the drive of the carriage $M_{\max} = 20\% M_{\max \text{ static}}$

Linearmodule | Linear Modules

Belastungsdiagramme | Load Diagrams

Längsbelastung

Die Grafik zeigt die Auslenkung f des Schlittens unter der Einwirkung der Kraft F bei max. Hub.

Axial Load

The graph shows the deflection f of the slide under the effect of the force F at maximum Stroke.

Querbelastung

Die Grafik zeigt die Auslenkung f des Schlittens unter der Einwirkung der Kraft F bei max. Hub.

Transverse Load

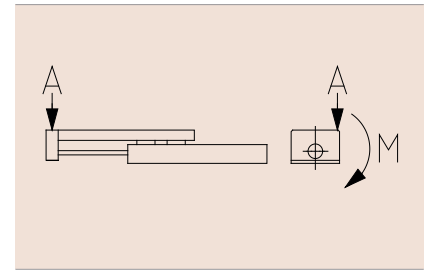
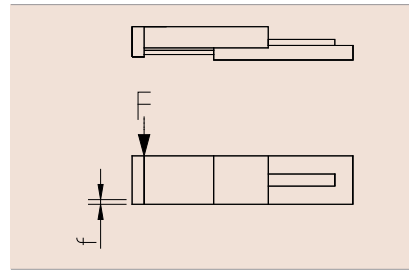
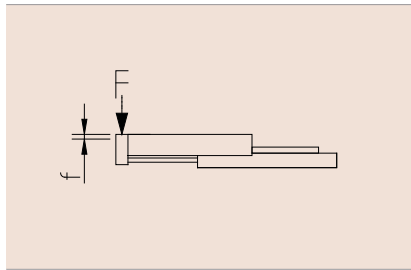
The graph shows the deflection f of the slide under the effect of the force F at maximum Stroke.

Seitenbelastung

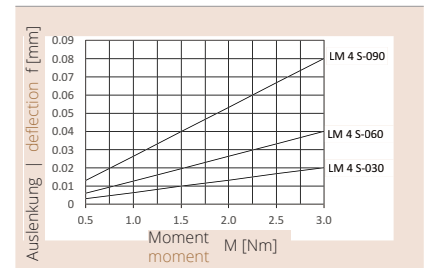
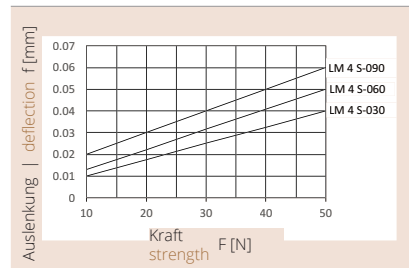
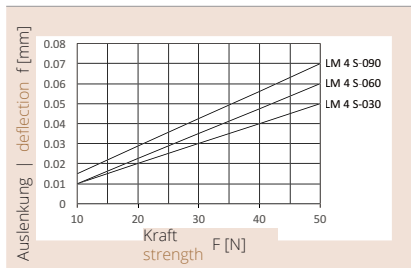
Die Grafik zeigt die Auslenkung des Schlittens bei Punkt A unter Einwirkung des Moments bei max. Hub.

Lateral Load

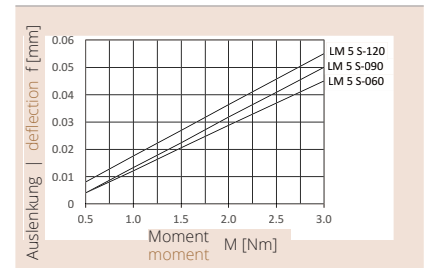
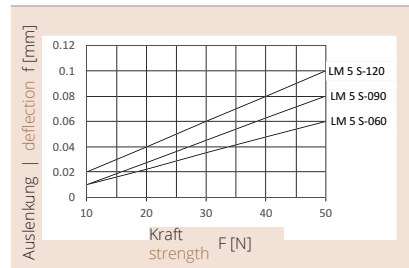
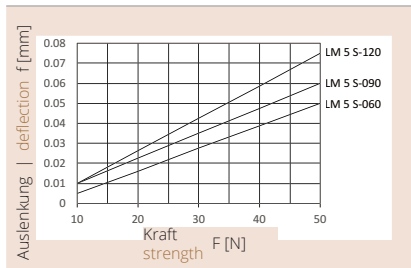
The graph shows the deflection f of the slide at point A under the effect of the torque by maximum Stroke.



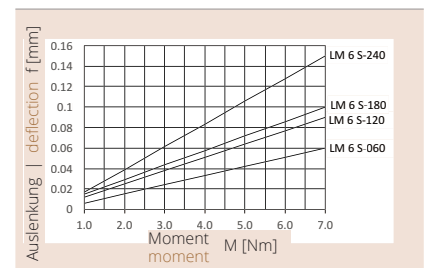
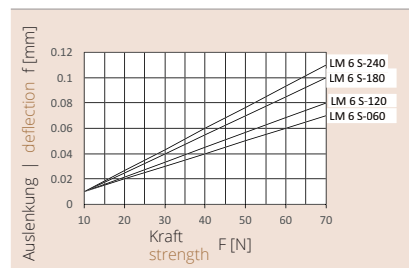
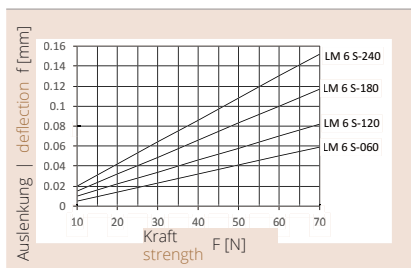
LM 4 S



LM 5 S



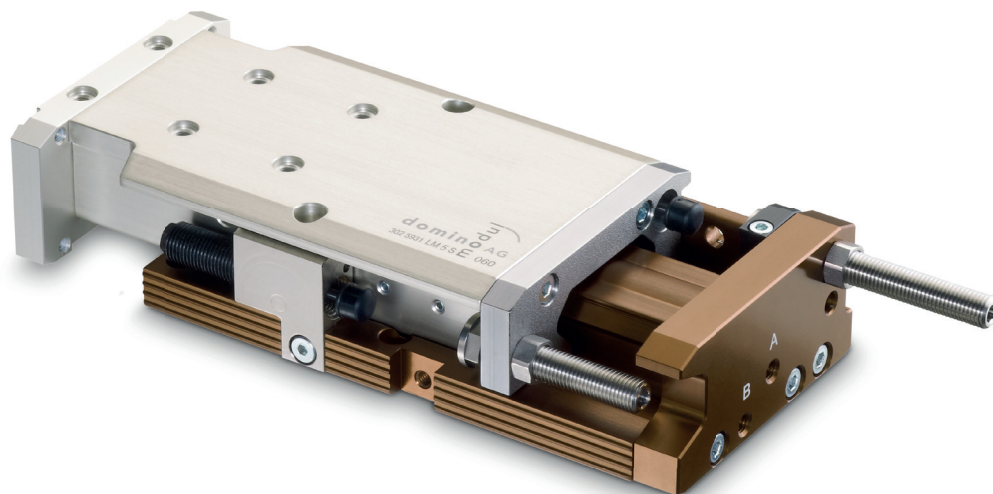
LM 6 S



Linearmodule | Linear Modules

LM 5 S – pneumatisches Linearmodul | LM 5 S – Pneumatic Linear Module

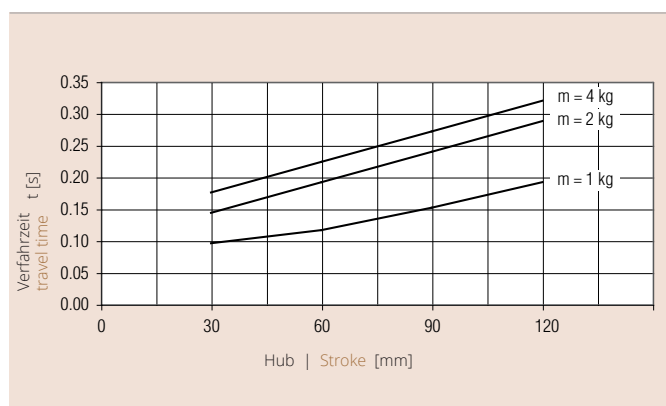
LM 5 S



Technische Daten, hubunabhängig | Technical data, stroke-independent

| | | |
|--------------------------------|-------------------------------|----------------------------------|
| Zylinderdurchmesser | Cylinder diameter | 1 x Ø20 mm |
| theor. Kraft (bei 5 bar) Fa/Fb | Theor. force (at 5 bar) Fa/Fb | 157 N/131 N |
| max. Geschwindigkeit | Max. speed | 0,5 m/s |
| Pneumatikanschlüsse | Pneumatic connections | M5 |
| Medium Druckluft | Medium Compressed-air | trocken gefiltert dry filtered |
| Betriebsdruckbereich | Operating pressure range | 3 – 7 bar |
| Temperaturbereich | Temperature range | 0 – 60°C |
| Wiederholgenauigkeit | Repeat accuracy | +/-0.01 mm |
| max. zulässige Masse | Max. permissible mass | 4 kg |

Technische Daten, hubabhängig | Technical data, stroke-dependent
 Siehe Seite 36 | See page 36



Zulässige Verfahrzeit t in Abhängigkeit der Hublänge und der Zusatzmasse m

Die aus dem Diagramm ermittelte Verfahrzeit t darf nicht unterschritten werden, diese ist ohne Ventilschaltzeit bei Nenn- druck 6 bar gemessen. Empfehlung: Bei Auslegung der Achse sollte die Verfahrzeit t um 20% erhöht angenommen werden.

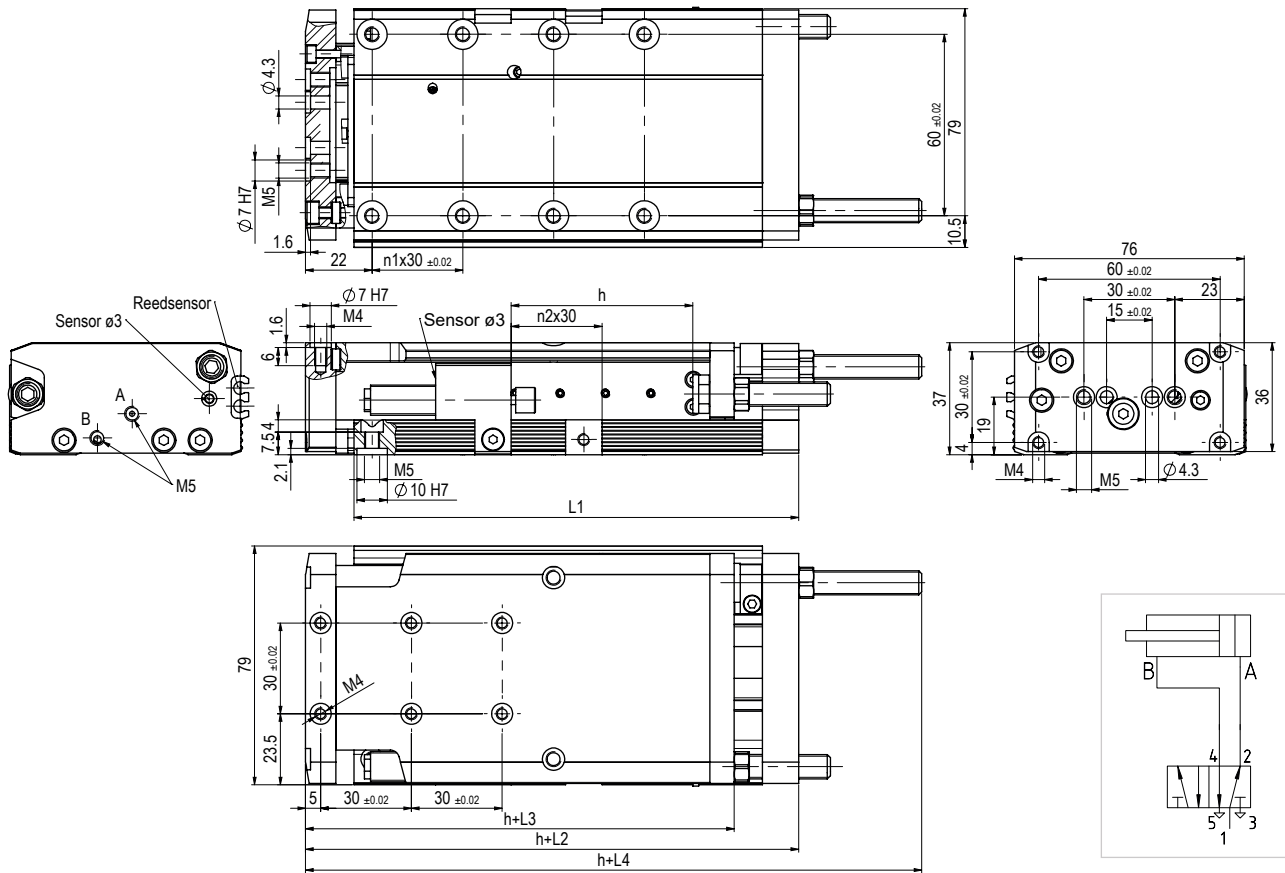
Permissible travel time t relative to the stroke length and the additional mass m

The travel time t determined from the diagram may not be exceeded this is measured without valve switching time at nominal pressure 6 bar. Recommendation: During the design of the axis, the travel time t should be assumed to be about 20% more.

Linearmodule | Linear Modules

LM 5 S – pneumatisches Linearmodul | LM 5 S – Pneumatic Linear Module

Massbild und Pneumatikschema | Dimensional drawing and pneumatic diagram



Bezeichnung

| Designation | h | L1 | L2 | L3 | L4 | n1 | n2 |
|-------------|-----|-------|-------|-------|-------|----|----|
| LM 5 S-60 | 60 | 147.0 | 163.0 | 141.7 | 203.7 | 3 | 1 |
| LM 5 S-90 | 90 | 181.5 | 197.5 | 176.2 | 238.2 | 4 | 2 |
| LM 5 S-120 | 120 | 211.0 | 227.0 | 205.7 | 266.7 | 5 | 3 |

| Bezeichnung | Designation | Bestellnr. | Order no. |
|--|---|------------|-----------|
| LM 5 S-60 | | 302 5931 | |
| LM 5 S-90 | | 302 6925 | |
| LM 5 S-120 | | 302 5803 | |
| LM 5 S-60 Frontplatte rostfrei | Frontplate stainless | 309 0130 | |
| LM 5 S-90 Frontplatte rostfrei | Frontplate stainless | 309 0131 | |
| LM 5 S-120 Frontplatte rostfrei | Frontplate stainless | 309 0132 | |
| inkl. hydraulische Stossdämpfer und 4 Zentrierringe Ø 10 | Incl. hydraulic shock absorber and 4 Centering rings Ø 10 | | |

| Zubehör | Accessories | Bestellnr. | Order no. |
|---------------------------|---------------------------|------------|-----------|
| Zentrierring Ø 10 | Centering ring Ø 10 | 300 1522 | |
| Endschalter Ø 3 | Limit switch Ø 3 | 300 3162 | |
| Endschalter Reed für Nute | Reed switch for flute | 300 1288 | |
| Zentrierkupplung ZK 5/6 | Centering coupling ZK 5/6 | 300 2478 | |
| Stossdämpfer | Shock absorber | 303 5678 | |