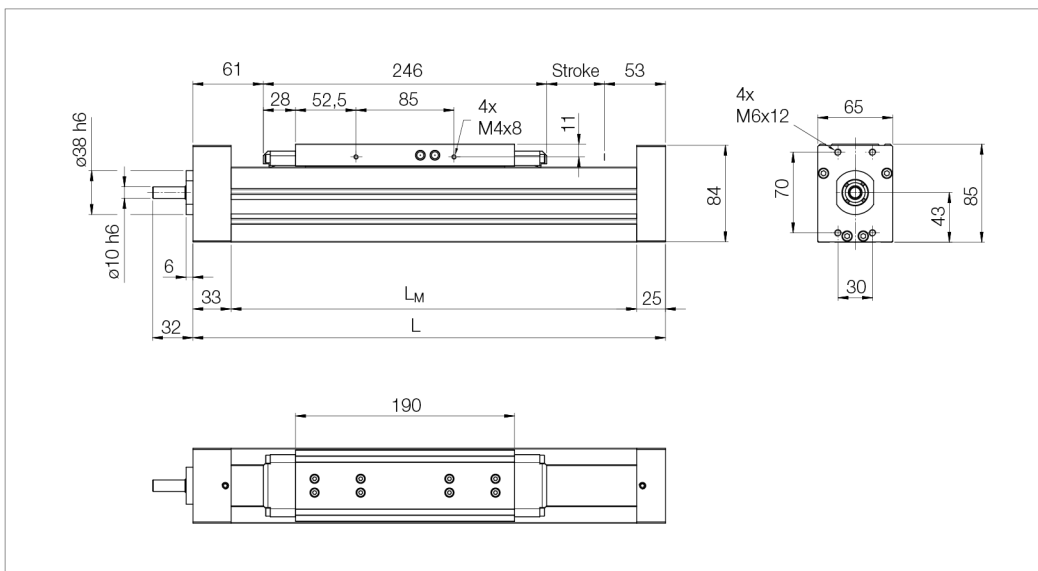


# Linear module LM3...BR...N... with ball screw drive



| Nominal size | Dimensions |                |                   |                    |        |
|--------------|------------|----------------|-------------------|--------------------|--------|
| Designation  | L          | L <sub>M</sub> | Length ball screw | Length steel strip | Weight |
|              | [mm]       | [mm]           | [mm]              | [mm]               | [kg]   |

|              |              |        |        |        |                                 |
|--------------|--------------|--------|--------|--------|---------------------------------|
| LM3...BR...N | Stroke + 360 | L – 58 | L + 22 | L – 22 | 4.60 kg + 0.65 kg/100 mm stroke |
|--------------|--------------|--------|--------|--------|---------------------------------|

| LM         | BSD           | Axial load rates      |                         | Positioning accuracy | Repeating accuracy   | Acceleration                            | Axial play |                    | Idle torque |
|------------|---------------|-----------------------|-------------------------|----------------------|----------------------|-----------------------------------------|------------|--------------------|-------------|
| Size       | d x p<br>[mm] | C <sub>0</sub><br>[N] | C <sub>dyn</sub><br>[N] | [μm/mm]              | [mm]                 | a <sub>max</sub><br>[m/s <sup>2</sup> ] | Type       | Axial play<br>[mm] | [Nm]        |
| LM3...R... | 16 x 5        | 4551                  | 4327                    | 52/300               | < 0.03 <sup>1)</sup> | 10.0                                    | R          | < 0.02             | 0.030       |
|            |               |                       |                         |                      | < 0.01 <sup>1)</sup> |                                         | V          | —                  | 0.100       |
|            | 16 x 10       | 4551                  | 4327                    | 52/300               | < 0.03 <sup>1)</sup> | 10.0                                    | R          | < 0.02             | 0.060       |
|            |               |                       |                         |                      | < 0.01 <sup>1)</sup> |                                         | V          | —                  | 0.200       |
|            | 16 x 16       | 4551                  | 4327                    | 52/300               | < 0.03 <sup>1)</sup> | 10.0                                    | R          | < 0.02             | 0.120       |
|            |               |                       |                         |                      | < 0.01 <sup>1)</sup> |                                         | V          | —                  | 0.320       |

d x p = screw diameter x thread pitch

<sup>1)</sup> backlash not factored in

R = reduced axial play

V = preloaded

| LM          | Movement speed                     |                                    | Moments of inertia                   |                                      | Hub max. | Steel strip | Feed and friction force | Moved mass             |
|-------------|------------------------------------|------------------------------------|--------------------------------------|--------------------------------------|----------|-------------|-------------------------|------------------------|
| Type        | Guide<br>v <sub>max</sub><br>[m/s] | Drive<br>v <sub>max</sub><br>[m/s] | I <sub>y</sub><br>[cm <sup>4</sup> ] | I <sub>z</sub><br>[cm <sup>4</sup> ] | [mm]     |             | F <sub>v</sub><br>[N]   | m <sub>b</sub><br>[kg] |
| LM3...R...N | 5.0                                | 2)                                 | 64.5                                 | 81.7                                 | 2000     | without     | 20.00                   | 1.410                  |
|             |                                    |                                    |                                      |                                      |          | with        | 30.00                   |                        |

2) for ball screw drive, dependent on rotational speed characteristics, spindle length and relevant critical rotational speed.

| Load ratings |                               |                     |                   | Torques           |                                 |                 |                 |                |                |                |  |
|--------------|-------------------------------|---------------------|-------------------|-------------------|---------------------------------|-----------------|-----------------|----------------|----------------|----------------|--|
|              |                               |                     |                   |                   |                                 |                 |                 |                |                |                |  |
| Linear modul | Maximum permissible load [kN] |                     |                   |                   | Maximum permissible torque [Nm] |                 |                 |                |                |                |  |
| Type         | static                        | dynamic             |                   |                   | static                          | dynamic         |                 |                |                |                |  |
|              | C <sub>y0,1,2</sub>           | C <sub>z0,1,2</sub> | C <sub>y1,2</sub> | C <sub>z1,2</sub> | M <sub>x0</sub>                 | M <sub>y0</sub> | M <sub>z0</sub> | M <sub>x</sub> | M <sub>y</sub> | M <sub>z</sub> |  |

The determination of dynamic load ratings and torques is based on a 50,000 m stroke. If comparative values must be calculated for a 100,000 m stroke, the values for M<sub>x</sub>, M<sub>y</sub>, M<sub>z</sub> and C must be divided by the factor 1.26.

With a view to serviceable life, loads of less than 20% of the dynamic load ratings have generally proved to be expedient.

CAD data

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