

**NDS 70**

**Miniature Translation Stages with piezo electric inertial drive for NOVA system**



**Specifications**

- Piezo driven step motor with low hysteresis
- holds reached position without current
- step width about 20 nm
- positioning accuracy better than 50 nm
- velocity up to 1.2 mm/s
- only closed-loop application
- xy combinations
- CNC-machined aluminium body
- precision ball bearing guides
- no limit switches necessary
- vacuum preparation optionally
- customized designs possible
- driven by NOVA controller (NC.00x.x000)

**Technical Data**

|                       |                     |
|-----------------------|---------------------|
| Travel:               | 15 mm               |
| Max. speed:           | 1.5 mm/s            |
| Mass:                 | 120 g               |
| Electrical connector: | 8pin SRC-MiniBridge |

**Load characteristics**

|                        |          |
|------------------------|----------|
| Max. load              |          |
| $M_x, M_y, M_z$        | 0.5 Nm   |
| $F_x$ (blocking force) | 9 (10) N |
| $F_y, F_z$             | 30 N     |

**Resolution**

|            |              |
|------------|--------------|
| Standard   | 1 $\mu$ m    |
| Premium    | 0.5 $\mu$ m  |
| High End   | 0.1 $\mu$ m  |
| Excellence | 0.05 $\mu$ m |

(other resolutions on request)

**Scale tape**

|                              |  |
|------------------------------|--|
| Material                     | Steel                                  |
| Grating period               | 20 $\mu$ m                             |
| Length of scale              | measuring length + 22 mm               |
| Reference mark               | at the center of the scale             |
| Linear expansion coefficient | $23.8 \times 10^{-6} \text{ grd}^{-1}$ |
| Accuracy class               | $\pm 1 \mu\text{m/m}$                  |

**Electrical Data**

|                           |                           |
|---------------------------|---------------------------|
| Scanning frequency        | max. 400 kHz              |
| Output signal             | RS 422 with interpolation |
| Supply voltage            | 5 V DC +/- 10%            |
| Power consumption         | 150 mA                    |
| Cable length              | 1.5 m                     |
| Operating temperature     | 0° – 55° C                |
| Vibration (50 – 2,000 Hz) | < 200 $\text{ms}^{-2}$    |
| Shock (11 ms)             | < 400 $\text{ms}^{-2}$    |

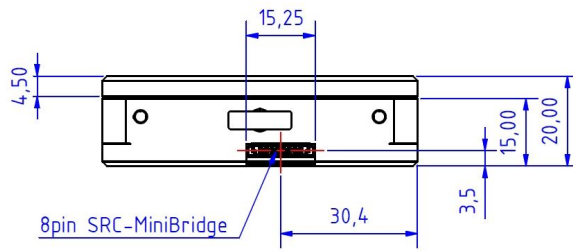
**Application Examples**

- Micro-/Nano Technology
- Bio Technology
- Microscopy
- Quality Control
- Metrology
- R & D

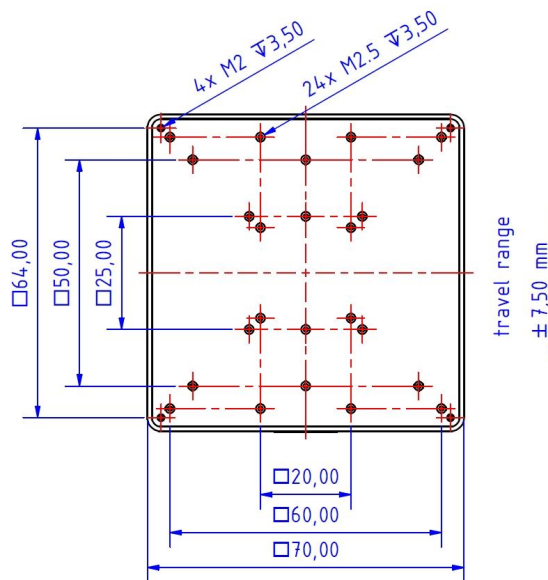
|   |                     |             |             |              |  |  |  |        |   |            |           |             |             |              |
|---|---------------------|-------------|-------------|--------------|--|--|--|--------|---|------------|-----------|-------------|-------------|--------------|
| <b>Miniature Translation Stage NDS 70 NOVA</b>  | <b>Part no.</b>     |             |             |              |  |  |  |        |   |            |           |             |             |              |
|   | <b>NDS.070.15□□</b> |             |             |              |  |  |  |        |   |            |           |             |             |              |
| <table border="0" style="margin: auto;"> <tr> <td style="padding: 0 10px;">0</td> <td style="padding: 0 10px;">6</td> <td style="padding: 0 10px;">9</td> </tr> <tr> <td style="border-top: 1px solid black; border-left: 1px solid black; border-right: 1px solid black; width: 20px; height: 10px;"></td> <td style="border-top: 1px solid black; border-left: 1px solid black; border-right: 1px solid black; width: 20px; height: 10px;"></td> <td style="border-top: 1px solid black; border-left: 1px solid black; border-right: 1px solid black; width: 20px; height: 10px;"></td> </tr> </table>  | 0                   | 6           | 9           |              |  |  | <table border="0"> <tr> <td style="padding-right: 5px;">Vacuum</td> <td style="padding-right: 5px;">no</td> <td style="padding-right: 5px;"><math>10^{-6}</math></td> <td style="padding-right: 5px;"><math>10^{-9}</math></td> </tr> </table> | Vacuum | no  | $10^{-6}$  | $10^{-9}$ |             |             |              |
| 0   | 6                   | 9           |             |              |  |  |  |        |   |            |           |             |             |              |
|   |                     |             |             |              |  |  |  |        |   |            |           |             |             |              |
| Vacuum  | no                  | $10^{-6}$   | $10^{-9}$   |              |  |  |  |        |   |            |           |             |             |              |
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| 2   | 3                   | 5           | 6           |              |  |  |  |        |   |            |           |             |             |              |
|   |                     |             |             |              |  |  |  |        |   |            |           |             |             |              |
| Resolution  | 1 $\mu$ m           | 0.5 $\mu$ m | 0.1 $\mu$ m | 0.05 $\mu$ m |  |  |  |        |   |            |           |             |             |              |
| <p>Remarks:<br/>Vacuum application is possible only without electrical circuit. You need the electronic module NDEM 3 for closed loop application as driving unit.</p>  |                     |             |             |              |  |  |  |        |   |            |           |             |             |              |

**NDS 70, 15 mm travel**

Front view:



Top view:



Rear view:

