

# MicroBeam™ Low Profile Shuttle Stage

## Features

- Ultra-compact — only 50mm high with 75mm square carriage
- Extremely precise, non-contact air bearing ways
- Linear motor provides zero backlash direct drive
- Single and dual carriage designs available



## Miniature Air Bearing Linear Motor Stage

DPS MicroBeam linear motor positioners are specifically designed to meet the highest performance in the smallest package possible. Microbeam stages cross-section of 104mm x 50mm tall make it one of the smallest airbearing stages on the market. This allows the stage to be used in applications limited by space. Dual axis versions are also available where the motion of the two carriages is parallel to less than 2 arc-seconds.

MicroBeam stages incorporate proprietary porous bearing technology, avoiding the clogging problems associated with orifice bearing designs. For

high resolution applications demanding rapid settling, MicroBeam stages are an ideal match to our NanoDrive™ ultra-low noise and low distortion sinusoidal linear amplifier.

In constant velocity, the MicroBeam stage provides the highest performance of a sinusoidal commutation from brush-type amplifiers because of its unique magnetic circuit no commutations are required. Standard travels of 40, 100, 150, and 200mm are available with encoders resolutions of 100, 40, 20, 10, and 1nm. Both single and dual carriage versions available.

### MICROBEAM LOW PROFILE SHUTTLE STAGE SPECIFICATIONS

Specification	MB-40 Stage	MB-100 Stage	MB-150 Stage	MB-200 Stage
<b>Travel (millimeters)</b>	40	100	150	200
<b>Overall Height (millimeters)</b>	50	50	50	50
<b>Accuracy (microns)</b>	3	4	6	8
<b>Resolution (for all)</b>	0.05, 0.1, 0.5, 1.0 microns			
<b>Repeatability (for all)</b>	+/- 1 count			
<b>Maximum Acceleration (G)</b>	2	2	2	2
<b>Load Capacity (kg)</b>	6	9	9	9
<b>Moving Mass (kg)</b>	0.4	0.6	0.6	0.6
<b>Total Mass (kg)</b>	3.2	5	6.5	8
<b>Motor</b>	Single Phase Brush	3 Phase Brushless	3 Phase Brushless	3 Phase Brushless
<b>Fundamental Motor Constant (N-m/√Watt)</b>	1.4	1.73	1.73	1.73
<b>Motor Force Constant (N/A)</b>	5.2	5.5	5.5	5.5
<b>Back-emf Constant (V/m/s)</b>	5.2	5.5	5.5	5.5
<b>Coil Resistance (Ohms)</b>	5.7	4.8	4.8	4.8
<b>Coil Inductance (mH)</b>	0.0	1.25	1.25	1.25
<b>Continuous Current (Amps)</b>	1.5	2.5	2.5	2.5
<b>Peak Current (Amps)</b>	4.5	7	7	7
<b>Continuous Force (N)</b>	7.9	9	9	9
<b>Peak Force (N)</b>	23	25	25	25
<b>Continuous Power Rating (Watts)</b>	13.5	20	20	20
<b>Thermal Resistance (° C/W)</b>	5.8	4	4	4
<b>Pitch &amp; Yaw (arc seconds)</b>	2	3	4	5
<b>Straightness &amp; Flatness (microns)</b>	0.25	0.5	1	2



**Danaher  
Precision  
Systems**

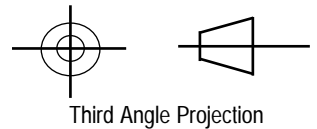
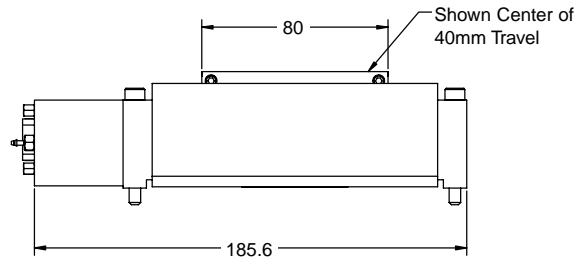
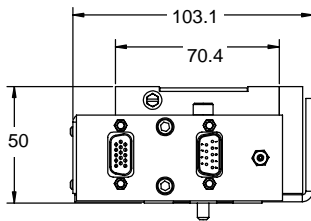
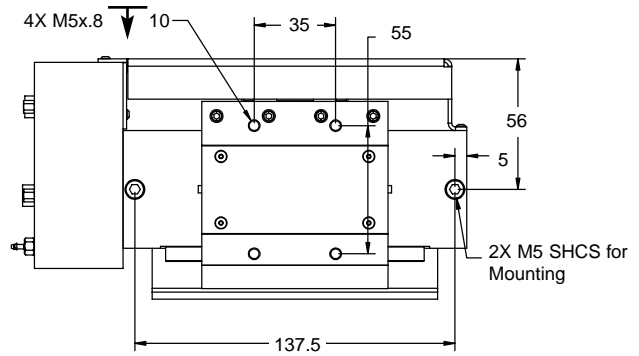


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Travel	A	B
100mm	278.6	230.5
150mm	386.6	280.5
200mm	468.6	330.5

**Moving The World, One Nanometer At A Time.**

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