

Fully-integrated linear micro positioning stage has no backlash; features low run-out, tilt and yaw.  
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# New Scale News

January 2014

Greetings!

We hope to see you at Photonics West in San Francisco! We'll be showing off our latest innovation, the M3-LS Linear Smart Stage. This stage supports high side loads and will appeal to those of you who have been using the M3-L actuator to move your own stages. As always, our goal is to simplify your system integration.

Like all M3 Modules, the M3-LS stage has the drive electronics built right in. You can run it directly from USB, SPI or I2C interface. You can read more or watch the video below.

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## ~ New product

### Ultra-compact smart stage operates directly from USB, SPI or I2C

*Fully-integrated linear micro positioning stage enables precise and repeatable positioning of optics, probes, sensors and more*

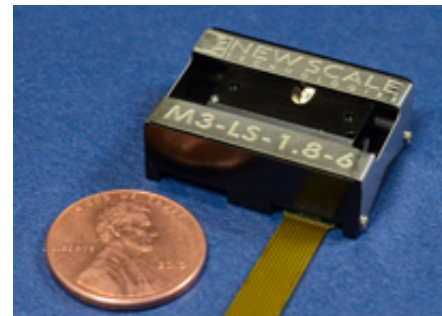
The M3-LS Linear Smart Stage is the latest addition to the M3 micro-mechatronic smart module family. The miniature 28 x 20 x 9.5 mm USB stage offers:

- 0.5  $\mu\text{m}$  resolution
- Less than 10  $\mu\text{m}$  run-out
- Less than 1 mrad pitch and yaw
- 6 mm travel range
- Low power use (3.3 V DC, 500 mW when moving)

All electronics are completely integrated in the tiny stage housing, making system integration simple and fast. No external control board is needed. Input to the stage is simple high-level motion commands via USB, using New Scale's Pathway™ PC software. Control multiple stages from a single screen, and use the powerful script generator to create command sequences for automated operations.

The stage can also be driven directly from a system processor via I2C or SPI standard serial interface.

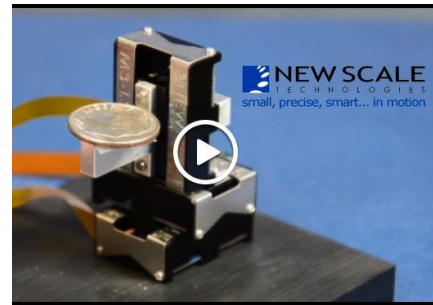
The New Scale M3-LS Smart Stage provides significant advancements in features and performance over the company's M3-L Smart Actuator introduced in 2010. An actuator, intended for pushing and pulling axial loads, does not tolerate side forces. In contrast, this new ultra-compact stage supports side loads of up to 20 grams without loss of precision or speed. No separate bearing or guide mechanism



M3-LS Linear Smart Stage has integrated drive electronics for smallest size, fast and simple system integration.

is required.

The 6 mm travel stage requires only 3.3 V DC input and uses just 500 mW (when moving), which can be supplied by standard batteries, USB or other common power source. No power is required for the motor to hold position, and the integrated electronics can be switched to sleep mode for extreme low-power applications.



[VIEW THE VIDEO of the M3-LS Linear Smart Stage in action](#)

The M3-LS Linear Smart Stage is ideal for use in hand-held or portable OEM instruments for high-resolution RF tuning, precision photonics, laser beam targeting, UAV/UGV controls, miniature cameras, metrology, biomedical automation and more.

**Learn more:**

- [Watch the video](#) (3:19)
- [Get details and specifications](#)
- [Download data sheet with drawings](#) (736Kb PDF)

## ~ Video broadcast

### Photos from half a mile away? Supercamera makes it possible

WNCN TV in Durham NC aired a segment in November about Duke and Aqueti's supercamera, which uses custom M3-L Smart Modules.

This "What's Next" segment presents a camera that "blows away your smart phone or your long-lens fisheye... and could change the way we view photography." The 250-megapixel qG camera from Duke University and Aqueti can capture a panoramic shot from a half a mile away, which can be zoomed 10 to 20 times to reveal "crystal clear" details without pixilation.



[Watch the video on WNCN.com](#)

The camera integrates 34 micro-cameras, each focused by a custom New Scale M3-L smart module. See Aqueti's Scott McCain assemble the camera and show off the stunning results.

- [Watch the video on WNCN.com](#) (3:28, autoplays)

## ~ See us at Photonics West

February 4-6, 2014  
San Francisco, CA USA  
South Hall | **Booth #516**

Come see the new M3-LS Linear Smart Stage, and ask us how we can help solve your micro positioning challenges.



For conference programs, exhibit information and registration visit <http://spie.org/x23685.xml>.

## ~ Contact us

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