Nutfield Technology
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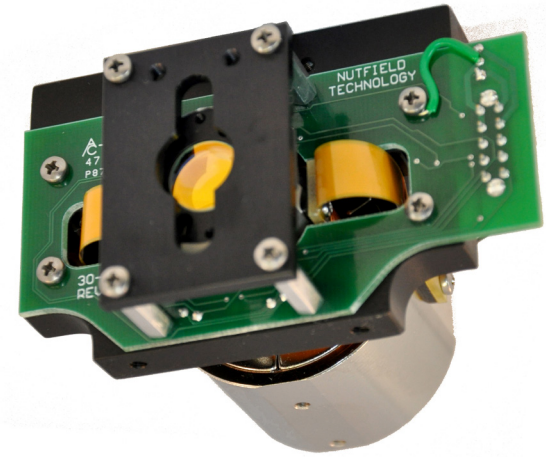
High-Speed Focuser
BLINK

- Very high dynamics – continuous operation @ 50G peak sine
- Large fields, small spots and replaces f-theta lenses
- Frictionless, non-contact air bearing/voice coil design (patent-pending)
- > 500 Hz servo bandwidth
- 13mm clear aperture and 13mm stroke
- Ultra-low reactive forces

"BLINK and you'll miss it... 30 times!"

The natural focal surface of an XY galvo pair is a shallow sphere. One solution to operate on planar samples is an f-theta lens, but these limit your field size, bloat your laser spots, and are expensive. Nutfield Technology's BLINK High-Speed Focuser is a far better solution. When used as the focusing element of a post-objective scanning system, BLINK dynamically maps a focal correction onto the laser beam as a function of its XY position, allowing high speed processing of large planar samples, with very small spot sizes. BLINK also supports the processing of 3D samples. BLINK combines an air bearing guideway with direct voice-coil drive, resulting in a very compact, high-performance focuser. BLINK is capable of continuous operation with a 50G peak sine wave, and its ultra low moving mass minimizes reaction forces. With only one moving part, BLINK offers exceptional reliability and service life when compared to traditional taut band actuators.



When used in combination with our Contour 3-Axis Scan Head, it provides an impressive 170 mm Focus Depth @ 64 µm spot size over a 450mm field! (Nd-YAG)

While direct bonded optics remain the lowest moving mass and highest performance solution, the addition of an industry-standard ½" lens tube is available to address field applications that may require a quick change lens configuration. Our lens tube option still accepts the same ½" singlets as our direct bonded model, but includes an additional length threaded barrel that accepts industry standard 40 pitch retaining rings and soft mounts.

Since 1997, Nutfield Technology has been designing and manufacturing the most advanced galvanometer-based optical scanners, scan heads, and laser controllers/software products available. As the galvo experts, Nutfield Tech offers complete laser scanning solutions. Contact Nutfield Tech today for solutions to all laser applications.

Applications:

- Fast Focusing
- 3-Axis Scanning

SPECIFICATIONS*

*Specifications are subject to change without notice.

Lens size	12.7mm	
Lens mass	2 g	with 1064 nm optics; 10.6 um also available
Moving mass	28 g	with 1064 nm optics installed
Unit mass	540 g	
Stroke	13mm	
Servo bandwidth	> 500 Hz	
Force constant (Kf)	6.1 N/Amp	
Coil resistance	4.5 Ohm	
Position detector resolution	0.2 nm	3-Sigma, DC-5kHz
System resolution	200 nm	typical 16-bit decoding on XY2-100
System repeatability	800 nm	typical 16-bit decoding on XY2-100
Air Supply Requirements:		
Cleanilness	ISO86573-1:2010	Class 3 or better
Flow rate	< 2.5 LPM	@ 80 PSI
Pressure range	60 - 90 PSI	

Frequency	Peak acceleration	Peak current	Average Power
DYNAMIC PERFORMANCE FOR A 1.0 MM STROKE REFERENCE MOVE (BONDED LENS):			
100 Hz	197m/s² (20 G's)	1.0 Amps	2.3 Watts
125 Hz	308m/s² (31 G's)	1.4 Amps	4.4 Watts
141 Hz	392m/s² (40 G's)	1.8 Amps	7.3 Watts
157 Hz	487m/s² (50 G's)	2.2 Amps	11.1 Watts
DYNAMIC PERFORMANCE FOR A 1.0 MM STROKE REFERENCE MOVE (REMOVABLE LENS):			
100 Hz	197m/s² (20 G's)	1.1 Amps	2.7 Watts
125 Hz	308m/s² (31 G's)	1.5 Amps	5.2 Watts
141 Hz	392m/s² (40 G's)	2.0 Amps	8.6 Watts
157 Hz	487m/s² (50 G's)	2.4 Amps	13.2 Watts

CAD DRAWING*

*Measurements in mm.