Product Features

- Silent operation – undetectable
- Best SWaP Performance
- Closest Back Working Distance
- Negligible EMI/RFI signature – no distortion
- Holding and braking without power consumption
- MIL-STD-810F Compliant for shock, vibration, and temperature – Safe & Reliable

Product Description

Nanomotion’s LF14 Linear Filter Changer is designed to meet the most challenging operating conditions of optical systems. The LF14 operates linearly with a direct drive Edge motor, providing the lightest weight configuration while maintaining the closest back working distance.

The LF14 is provided with a blade that can accommodate different filter diameters and is capable of moving 14mm in 100 msec. The filter housing is supported by the Edge-Actuator bearing structure on one side and an outboard shaft bearing on the other, to eliminate any deflection or vibration.

Standard configurations utilize the Edge motor with a miniature position sensor, integral to the filter changer assembly, for closed loop operation. The filter changer is supported by our ASIC that closes the velocity loop and serves as a drive & control.
**Linear Filter Changer**

**MECHANICAL DRAWINGS AND INTERFACE**

**TECHNICAL SPECIFICATIONS**

**Mechanical**
- Retainer Diameter: 11 mm
- Total weight: 15 gr
- Moving mass: 1.5 gr
- Back working distance: 3.5 mm

**Performance**
- Stroke time: 150 msec
- Operation from -40 °C to 70 °C
- Vibration: 10 g rms (holds position without power)
- Shock: 300 g, any orientation
- Position holding @ power off: 10 g linear acceleration
- MTBF: 50,000 hours

**Electrical**
- Drive voltage: 4.2V
- Power consumption at idle:
  - Max: 500mW
  - Idle: 8mW (keeps position)

**ELECTRICAL INTERFACE**

**Connector to PCB Interface**

**Pin Number**
- 1: N.C. DISCONNECTED
- 2: SC_1 PR1 COLLECTOR
- 3: GND GROUND
- 4: SA_1 PR1 ANODE LED
- 5: SCL NM MOTOR COMMON
- 6: P_2 NM MOTOR PHASE 2
- 7: P_1 NM MOTOR PHASE 1
- 8: SA_2 PR2 ANODE LED
- 9: GND GROUND
- 10: SC_2 PR2 COLLECTOR

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