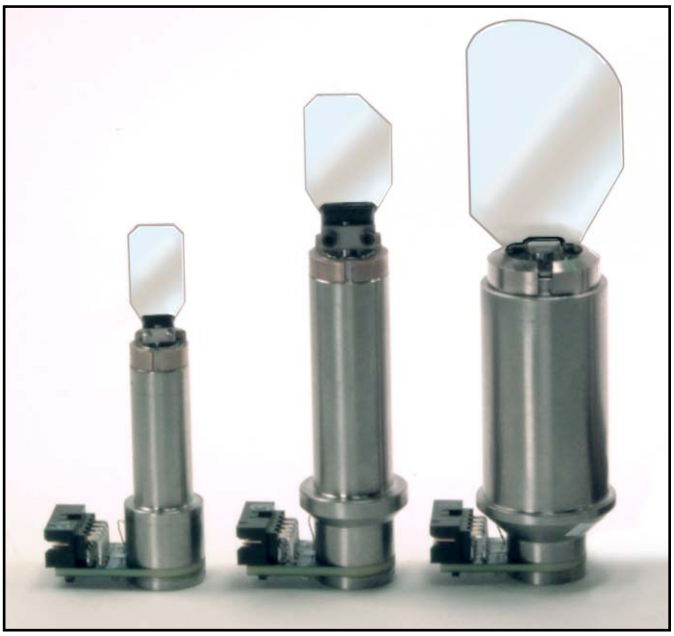
VM*PLUS*

Improved Third Generation Scanner Motors



Key Specifications

- Smaller Size
- Simpler Cabling
- Improved Thermal Drift
- Higher EMI Resistance
- Drop-in Replacement*
- RoHS Compliant

General Scanning's advanced beam and image positioning scanner motors offer high dynamic performance along with high accuracy and instrument grade performance.

Now, The VM*PLUS* scanner motors take this performance to new levels. We combined our advanced 3rd generation VM motor designs, which were known for low inertia and high rigidity, with an entirely new optical position detector. The result is VM*PLUS* .

These new scanner motors deliver the same speed and accuracy, with improved thermal performance and EMI resistance. And the package is significantly smaller than the previous VM motors.

Additionally, any design based on our VM series motors can perform substantially better because the VM*PLUS* motor is a drop-in replacement. That can extend the competitive life of current designs with virtually no added engineering costs.

The VM*PLUS* motors are fully RoHS compliant and are optimized for both large and small signal applications.

Coupled with General Scanning's innovative mirror and mount designs and servo drivers, the VM*PLUS* motors will bring higher levels of performance to your optical scanning applications.

*For Current General Scanning Motors

Technical Specifications

Dynamic Specifications		VM500+	VM1000+	VM2500+
Optimal mirror size	mm, clear aperture	4 - 6	6 - 9	10 - 15
Max Scan Angle	degrees, optical	±40	±40	±40
Non-linearity (max)	% over ±20° optical	0.2	0.2	0.2
Offset Drift (Avg. / [Std Dev])	µ Radians/°C	0/[10]	0/[10]	0/[10]
Gain Drift[1] (Avg. / [Std Dev])	PPM/°C	0/[35]	0/[35]	0/[35]
Small Step Time[2,3] (typical)	µ Second	200	250	200
Operating Temperature	°C	0 - 50	0 - 50	0 - 50
Output Shaft Diameter	mm [Inch]	2.37 [3/32"]	3.96 [5/32"]	Tapered Mount[4]

Motor Specifications		VM500+	VM1000+	VM2500+
Torque Constant	Nm/A	0.004	0.01	0.0078
Coil Resistance (@ 60°C)	Ohms	3.5	3.0	1.9
Coil Inductance (@1 KHz)	mHy	0.23	0.22	0.13
Rotor Inertia	g*cm^2	0.028	0.29	0.5
Thermal Impedance (Coil to Case)	°C/W	2.7	2.0	0.9

1. Gain Drift characteristics are typical, compensated by General Scanning servo. Un-compensated gain average value is 180 PPM/°C with same Standard Deviation
2. Dynamic specifications dependent on mirror inertia, command waveform, servo technology, and tuning
3. Settle to within 1% of position. Mirrors used: 5mm Y Si, 8mm Y Si, 10mm Y SiC respectively
4. General Scanning's patented tapered-mount provides low inertia, high dynamic stiffness, adjustable orientation and field-replaceability

Note: VM*PLUS* Motors are fully RoHS Compliant

Possible Configurations

Innovative Mirrors

- 4-15mm Clear Apertures
- Various Industrial Coatings

Flexible Mounts

- Sleeve and Taper* Designs
- Flexible Orientation/Replacement

*Patented

Improved Motors

- Family of Motors to Support Mirrors up to 15mm
- Patented Optical Position Detector Used by All Sizes

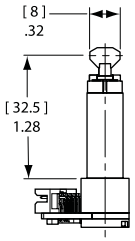
Advanced Servo Electronics

- Single & Dual Axis Options
- Analog and Digital Servo Technology Available

Mounted Mirror Dimensions

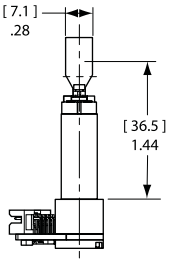
VM500+

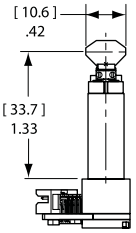
X Scanners



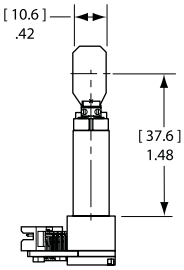
4mm

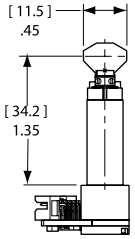
Y Scanners



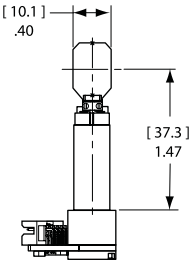


5mm



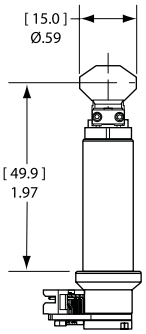


6mm



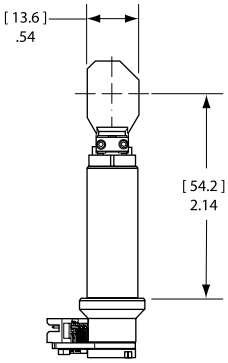
VM1000+

X Scanners



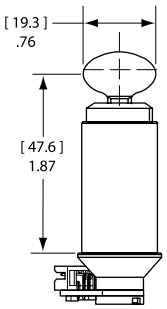
8mm

Y Scanners



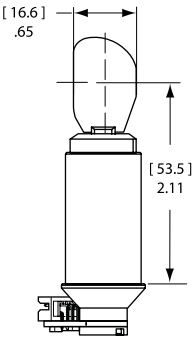
VM2500+

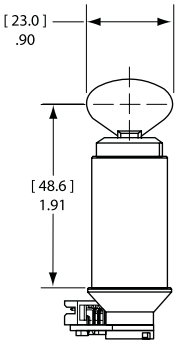
X Scanners



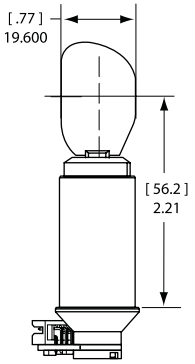
10mm

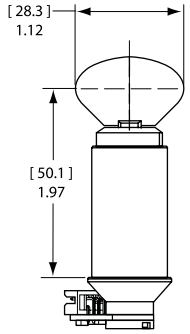
Y Scanners



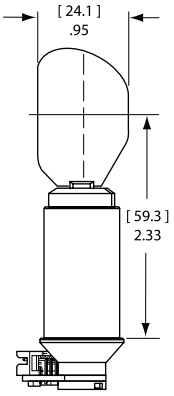


12mm



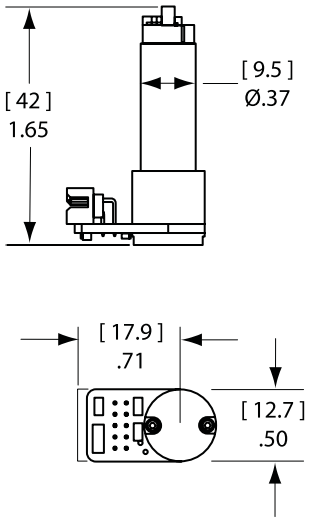


15mm

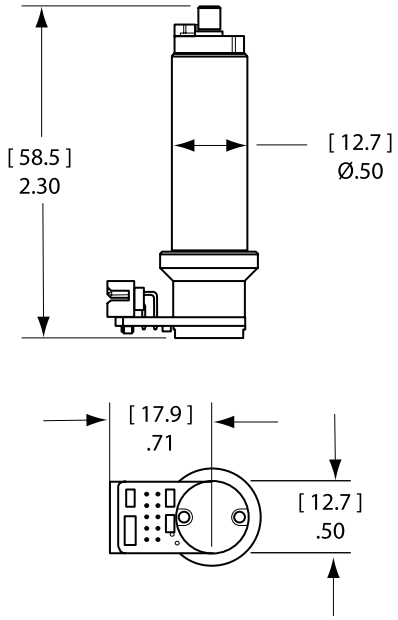


Outline Drawings

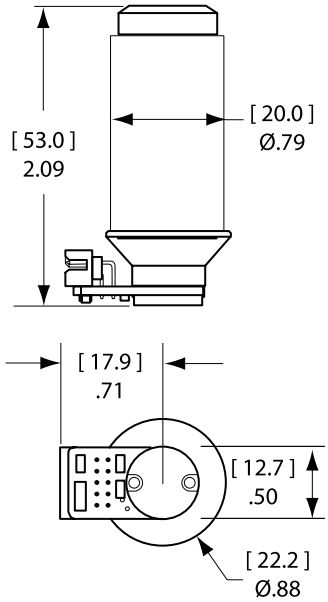
VM500+



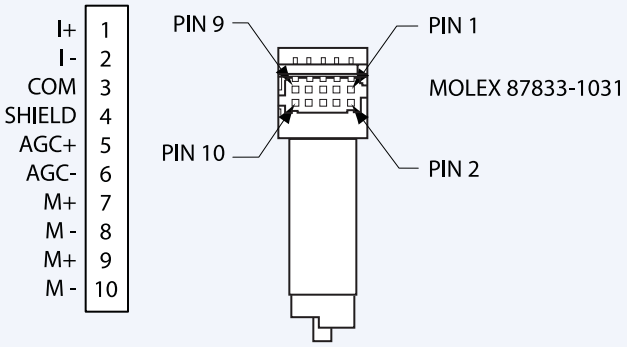
VM1000+



VM2500+



Connector Pinout



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