

SM-24 Geophone Element

- Tight specification, low-distortion geophone
- Extended spurious over 240 Hz, allowing full bandwidth at 2-ms sampling
- Backwards compatible with SM-4, SM-4 Superphone™ range, and SM-24ST
- Horizontal element available for shear-wave and 3-C recording.
- 3-year non-prorated warranty
- Lowest lifecycle cost of ownership in the industry
- Installed base of over 8 million worldwide (est.)

The SM-24 geophone element is designed to offer the highest performance in seismic exploration based upon field-proven ION Sensor technology. Low distortion, combined with excellent specifications, provide high-fidelity data in 2-D and 3-D surveys. The extended bandwidth allows the full potential of 2-ms/24-bit recording systems to be realized. The tight specifications, unique element design, and exceptional quality of the Sensor SM- 24 make it the lowest life cycle cost of ownership geophone in the industry.



Applications: 2D & 3D seismic exploration with bandwidth from 10 Hz up to 240 Hz.
 Implementation: Can be installed in a variety of ION Sensor geophone cases.

Specifications for: SM-24 Geophone Element

Frequency

Natural frequency	10 Hz
Tolerance	± 2.5%
Maximum tilt angle for specified Fn	10°
Typical spurious frequency	>240 Hz

Distortion

Distortion coil to case velocity with 17.78mm/s (0.7 in/s) p.p.	<0.1%
Distortion measurement frequency	12 Hz
Typical distortion (string of 12 in series, measured at 12 Hz)	0.03 %

Damping

Open circuit (typical)	0.25
Damping calibration shunt resistance	1,339
Damping with calibration shunt	0.6
Tolerance with calibration shunt	+ 5 % - 0 %

Specifications for: SM-24 Geophone Element

Sensitivity

Sensitivity	28.8 V/m/s (0.73 V/in/s)
Tolerance	± 2.5 %
RtBcfn	6,000 Hz
Moving mass	11 g (0.38 oz)
Max coil excursion p.p.	2 mm (0.08 in)

Coil Resistance

Standard	375
Tolerance	+/- 2.5 %

Physical Characteristics

Diameter	25.4 mm (1 in)
Height	32 mm (1.26 in)
Weight	74 g (2.6 oz)
Operating temperature range	-40°C to +100°C (-40°F to +212°F)

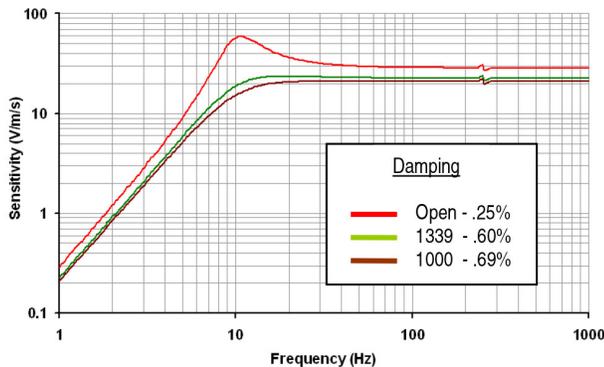
Warranty

Warranty period	3 years
	<i>* Warranty excludes damage caused by high voltage and physical damage to the element case.</i>
	<i>All parameters are specified at +20°C in the vertical position unless otherwise stated.</i>

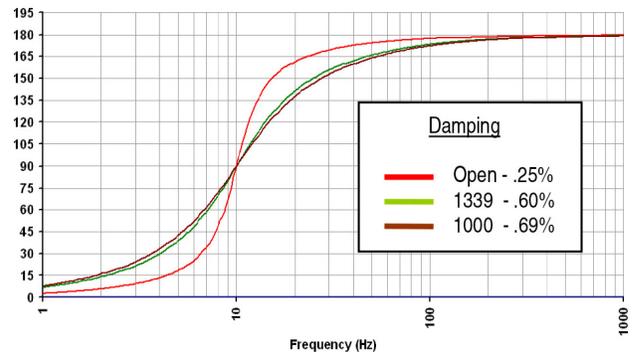
Ordering information

SM-24	P/N 1004117
SM-24/U-B 10 Hz 375 Ohm	
(upright basic unit with insulating disc)	

Geophone Response Curve – SM-24 10 Hz



Geophone Phase Lag – SM-24 10 Hz



About ION

ION has been a technology leader for over 50 years with a strong history of innovation. Leveraging innovative technologies, ION creates value through data capture, analysis and optimization to enhance companies' critical decision-making abilities and returns. Our offerings are focused on improving E&P decision-making, enhancing reservoir management and optimizing offshore operations.