

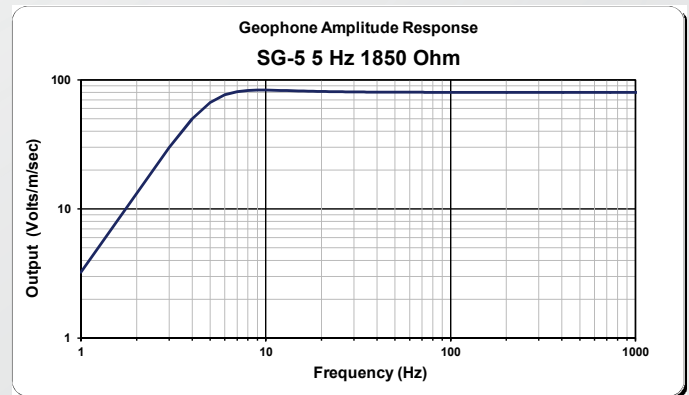
# Geophones Specifications

## HIGH-SENSITIVITY GEOPHONES SENSORS

### SG-5

Natural Frequency ( $\pm 7.5\%$ )	5 Hz
Coil Resistance ( $\pm 4\%$ )	1850 $\Omega$
Pk-Pk Coil Travel	3 mm
Harmonic Distortion <sup>(1)</sup>	$\leq 0.075\%$
Sensitivity ( $\pm 5\%$ )	80 V/m/s
Open Circuit Damping ( $\pm 7.5\%$ )	0.6
Moving Mass	22.7 g
Spurious Frequency	$\geq 150$ Hz
AC Impedance	5082 $\Omega$ (12 Hz)
Diameter	32 mm
Length	43 mm
Weight	170 g
Operating Temperature	-40° to 80 °C

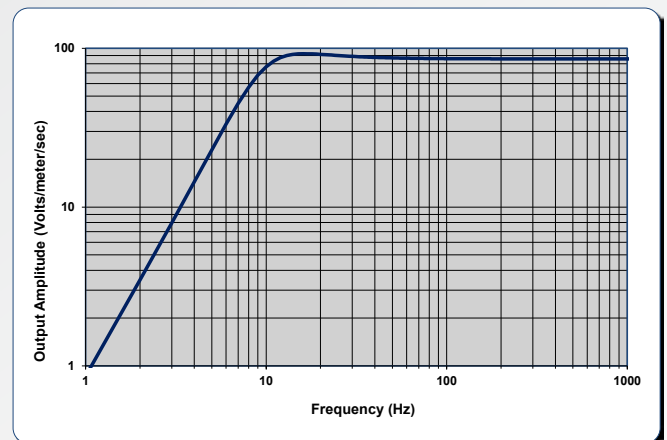
Parameters are specified at 22 °C - 0 to 15 degree tilt



### SG-10HS

Natural Frequency ( $\pm 3.5\%$ )	10 Hz
Coil Resistance ( $\pm 3.5\%$ )	1800 $\Omega$
Pk-Pk Coil Travel	2.6 mm
Harmonic Distortion <sup>(1)</sup>	$\leq 0.1\%$
Sensitivity ( $\pm 3.5\%$ )	85.8 V/m/s
Open Circuit Damping ( $\pm 3.5\%$ )	0.56
Moving Mass	19.5 g
Spurious Frequency	$\geq 250$ Hz
AC Impedance	6875 $\Omega$ (12 Hz)
Diameter	32 mm
Height	43 mm
Weight	170 g
Working Temperature	-40° to 80 °C
Storage Temperature	-40° to 80 °C

Parameters are specified at 22 °C - 0 to 15 degree tilt

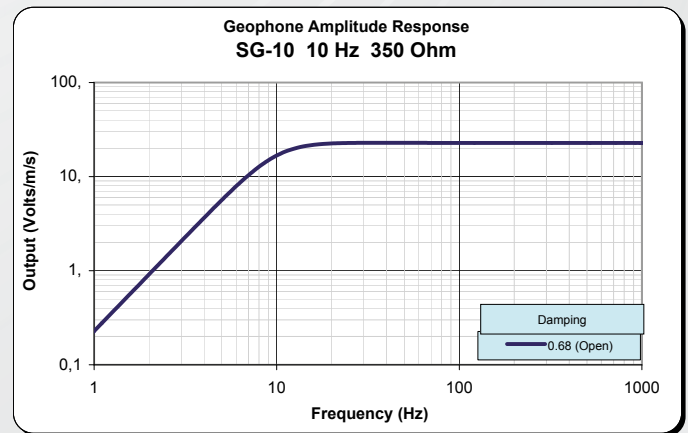


## HIGH-PERFORMANCE GEOPHONES SENSORS

### SG-10

Operating Position	Vertical
Natural Frequency ( $\pm 2.5\%$ )	10 Hz
Coil Resistance ( $\pm 3.5\%$ )	350 $\Omega$
Pk-Pk Coil Travel	1.78 mm
Harmonic Distortion <sup>(1)</sup>	$\leq 0.075\%$
Sensitivity ( $\pm 2.5\%$ )	22.8 V/m/s
Open Circuit Damping ( $\pm 5\%$ )	0.68
Damping Constant ( $R_c B_c f_n$ )	4925 $\Omega$ Hz
Moving Mass	8.4 g
Spurious Frequency	$\geq 240$ Hz
AC Impedance	1049 $\Omega$ (12 Hz)
Diameter	27.4 mm
Length	30.15 mm
Weight	78 g
Operating Temperature	-40° to 90 °C

Parameters are specified at 20 °C - 0 to 15 degree tilt



### SGH-10

Operating Position	Horizontal
Natural Frequency ( $\pm 2.5\%$ )	10 Hz
Coil Resistance ( $\pm 3.5\%$ )	350 $\Omega$
Pk-Pk Coil Travel	1.78 mm
Harmonic Distortion <sup>(1)</sup>	$\leq 0.075\%$
Sensitivity ( $\pm 2.5\%$ )	22.8 V/m/s
Open Circuit Damping ( $\pm 5\%$ )	0.68
Moving Mass	8.4 g
Spurious Frequency	$\geq 240$ Hz
AC Impedance	1049 $\Omega$ (12 Hz)
Diameter	27.4 mm
Height	30.15 mm
Weight	78 g
Operating Temperature	-40° to 90 °C

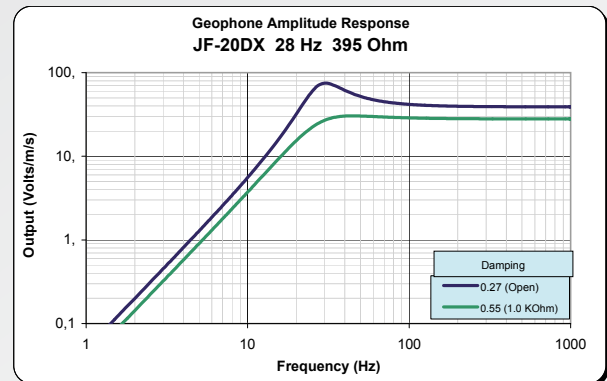
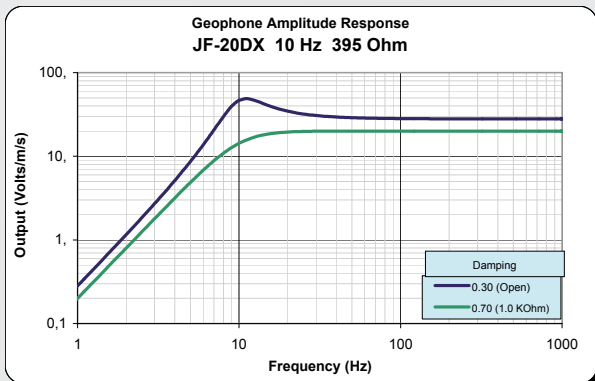
Parameters are specified at 20 °C - 0 to 5 degree tilt

# CONVENTIONAL GEOPHONE SENSORS

## JF-20DX

<b>Natural Frequency (<math>\pm 5\%</math>)</b>	10 Hz	14 Hz	28 Hz	40 Hz
<b>Coil Resistance (<math>\pm 5\%</math>)</b>	395 $\Omega$			575 $\Omega$
<b>Pk-Pk Coil Travel</b>	1.5 mm			
<b>Harmonic Distortion <sup>(1)</sup></b>	$\leq 0.2\%$			
<b>Open Circuit Sensitivity</b>	28.0 V/m/s		39.0 V/m/s	42.0 V/m/s
<b>Open Circuit Damping</b>	0.30	0.22	0.27	0.37
<b>Damping Constant (<math>R_T B_c f_n</math>)</b>	5672 $\Omega\text{Hz}$		11003 $\Omega\text{Hz}$	17119 $\Omega\text{Hz}$
<b>Moving Mass</b>	11 g			8.2 g
<b>Spurious Frequency</b>	> 200 Hz	> 250 Hz	> 350 Hz	> 380 Hz
<b>Damping with Resistor (<math>\pm 5\%</math>)</b>	0.707	0.512	0.552	0.576
<b>Damped Sensitivity (<math>\pm 5\%</math>)</b>	20.1 V/m/s	20.1 V/m/s	28 V/m/s	30.4 V/m/s
<b>Diameter</b>	25.4 mm		27 mm	
<b>Length</b>	33.5 mm			
<b>Weight</b>	87 g		100 g	95 g
<b>Operating Temperature</b>	-40° to 70 °C			

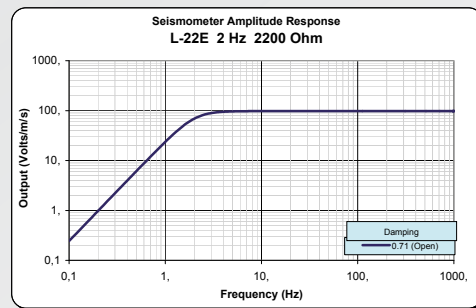
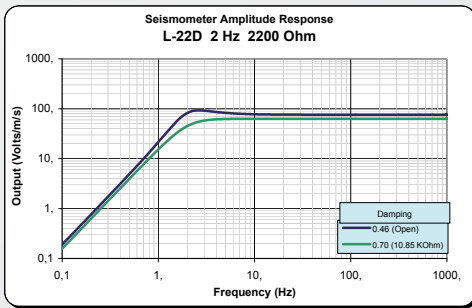
Parameters are specified at 22 °C - 0 to 20 degree tilt



# SEISMOMETERS

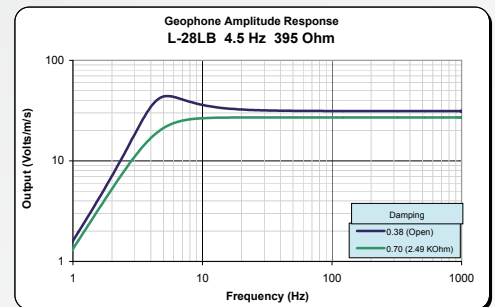
	L-22D			L-22E		
Natural Frequency ( $\pm 0.2$ Hz)	2 Hz					
Coil Resistance	510 $\Omega$	2200 $\Omega$	8540 $\Omega$	510 $\Omega$	2200 $\Omega$	8540 $\Omega$
Pk-Pk Coil Travel	3.81 mm					
Sensitivity	36.5 V/m/s	75.7 V/m/s	149.2 V/m/s	47.1 V/m/s	97.9 V/m/s	192.8 V/m/s
Open Circuit Damping	0.46			0.71		
Damping Constant ( $R_T B_C f_n$ )	1453 $\Omega\text{Hz}$	6266 $\Omega\text{Hz}$	24323 $\Omega\text{Hz}$	2427 $\Omega\text{Hz}$	10470 $\Omega\text{Hz}$	40644 $\Omega\text{Hz}$
Shunt Resistor Value	2516	10854	42133	na	na	na
Damping with Resistor	0.70			na		
Moving Mass	72.8 g					
Diameter	60.3 mm					
Length	50.8 mm					
Weight	425 g					

Parameters are specified at 20 °C - 0 degree tilt



## L-28LB

Natural Frequency ( $\pm 0.5$ Hz)	4.5 Hz	
Coil Resistance	395 $\Omega$ ( $\pm 6,5$ %)	630 $\Omega$ ( $\pm 7,5$ %)
Pk-Pk Coil Travel	4 mm	
Harmonic Distortion <sup>(1)</sup>	0.20 %	
Sensitivity	31.3 V/m/s	39.5 V/m/s
Open Circuit Damping	0.38	
Damping Constant ( $R_T B_C f_n$ )	4103 $\Omega\text{Hz}$	6543.8 $\Omega\text{Hz}$
Moving Mass	19 g	
Diameter	31.8 mm	
Length	38.1 mm	
Weight	141.75 g	

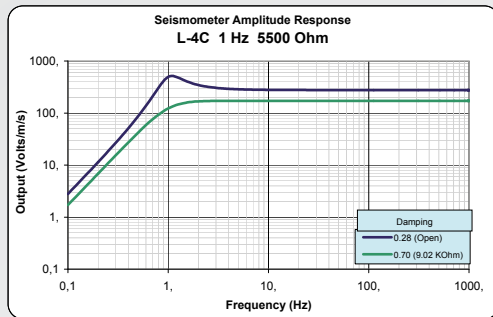
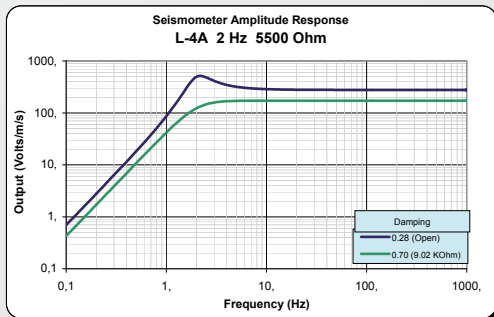


Parameters are specified at 20 °C and no tilt unless otherwise noted.

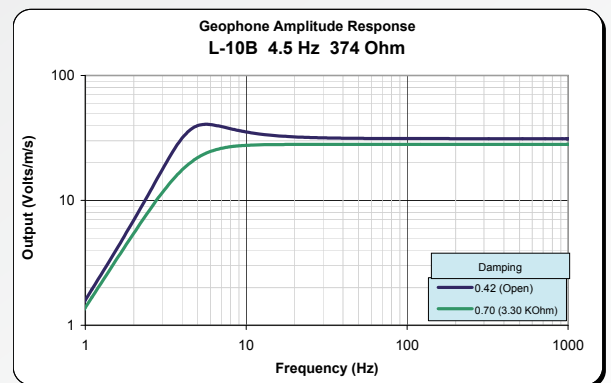
# SEISMOMETERS

	L-4A			L-4C		
Natural Frequency	2 Hz ( $\pm 0.25$ Hz)			1 Hz ( $\pm 0.05$ Hz)		
Coil Resistance	500 $\Omega$	2000 $\Omega$	5500 $\Omega$	500 $\Omega$	2000 $\Omega$	5500 $\Omega$
Pk-Pk Coil Travel	6.25 mm					
Sensitivity	83.5 V/m/s	166.9 V/m/s	276.8 V/m/s	83.5 V/m/s	166.9 V/m/s	276.8 V/m/s
Open Circuit Damping (vertical units only)	0.28					
Damping Constant ( $R_T B_C f_n$ )	554 $\Omega$ Hz	2217 $\Omega$ Hz	6097 $\Omega$ Hz	1109 $\Omega$ Hz	4434 $\Omega$ Hz	12194 $\Omega$ Hz
70% Damping Shunt Resistor	820	3279	9016	820	3279	9016
Moving Mass	500 g			1000 g		
Diameter	76 mm					
Length	130 mm					
Weight	1700 g			2150 g		
Operating Temperature	-30° to 60 °C					

Parameters are specified at 20 °C - 0 degree tilt



	L-10B	
Natural Frequency ( $\pm 0.5$ Hz)	4.5 Hz	
Coil Resistance ( $\pm 6.5$ %)	374 $\Omega$	3600 $\Omega$
Pk-Pk Coil Travel	2 mm	
Harmonic Distortion <sup>(1)</sup>	0.20 %	
Sensitivity ( $\pm 10$ %)	31.2 V/m/s	96.9 V/m/s
Open Circuit Damping ( $\pm 10$ %)	0.42	
Damping Constant ( $R_T B_C f_n$ )	4561.5 $\Omega$ Hz	43907.8 $\Omega$ Hz
Moving Mass	17 g	
Spurious Frequency	na	
Diameter	31.75 mm	
Length	35.56 mm	
Weight	141.75 g	



Parameters are specified at 20 °C - 0 degree tilt

**GEOPHONE TESTER : SGT-II**

PARAMETER	RANGE	ACCURACY OF MEASUREMENT
Natural Frequency	1 to 100 Hz	± 2 %
Coil Resistance	20 to 10000 Ω	± 1 %
Harmonic Distortion	0 to 20 %	± 10% of reading
Sensitivity	0 to 1000 V/m/s	± 2 %
Damping	0.1 to 1.2	± 1 %
Dynamic Impedance	20 to 24000 Ω	± 1 %
Leakage Test	0.1 to 10 MΩ	± 10 % (after proper zero)
Storage Capacity	AIU-II	20000 records minimum
	OIU - PC based	limited only by PC disk space approx. 7500 records/Mbyte)
Battery Run Times	AIU-II	14 hours typical @ 25 °C on internal batteries
Charger Power Requirements	AIU-II	10.5 - 16 Volts DC @ 1.5 Amps maximum
Operating Temperatures	AIU-II	-20° to 50 °C

NOTE: The following specifications assume a properly calibrated AIU.

**HYDROPHONE TESTER : SGT-H**

PARAMETER	RANGE	ACCURACY OF MEASUREMENT
Natural Frequency	1 to 100 Hz	± 3 %
Coil Resistance	20 to 10000 Ω	± 1 %
Damping	0.1 to 1.2	± 3 %
Sensitivity	0 to 100 V/bar	± 4 %
Dynamic Impedance	20 to 24000 Ω	± 2 %
Leakage Test	0.1 to 10 MΩ	± 10 % (after proper zero)
Humidity	10 to 90 %, noncondensing	-
Power	100-240 VAC, 47-63 Hz, 30 W	-
Sealing	Not sealed against moisture or dust	-
Dimensions, LxWxH (chamber only)	518 mm x 225 mm x 244 mm	-
Weight (chamber only)	7.2 kg (15.8 lbs)	-
Transport Case Dimensions, LxHxH	630 mm x 492 mm x 352 mm	-
Transport Weight	19.4 kg (42.7 lbs)	-
Storage Temperature	-20° to 60 °C	-
Operating Temperature	+15° to 25 °C	-

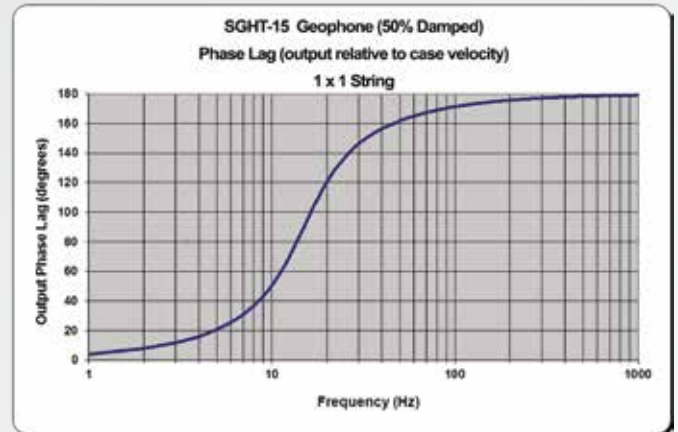
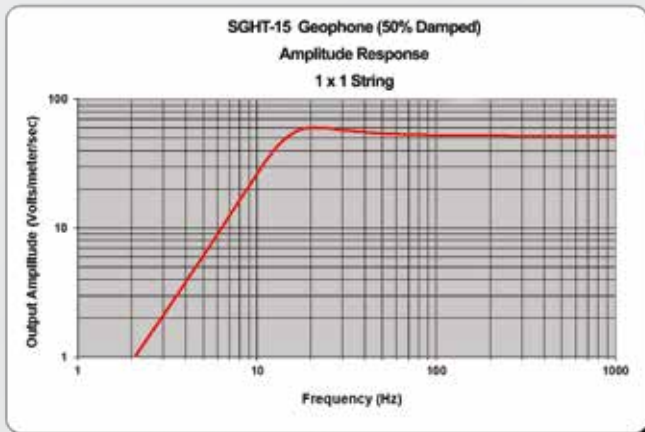
## SGHT-15

	NOMINAL	HORIZONTAL	0° to 180°
Natural Frequency	15 Hz	± 5 %	- 5 % to + 15 %
Coil Resistance	2350 Ω	± 5 %	± 5 %
Sensitivity	52.0 V/m/s	- 15 % to + 5 %	- 15 % to + 5 %
Open Circuit Damping (without damping resistance)	0.50	- 15 % to + 15 %	- 20 % to + 15 %
Distortion <sup>(1)</sup>		≤ 0.2 %	≤ 0.9 %
Moving Mass	7.4 g		
Spurious Frequency		≥ 365 Hz	≥ 280 Hz
Coil Excursion Pk-Pk		<3.0 mm (<0.118 in)	<0.6 mm (<0.024 in)

## PHYSICAL CHARACTERISTICS

Length	27.5 mm (1.082 in)
Diameter	22.25 mm (0.874 in)
Weight	43 g (1.517 oz)
Storage Temperature	-40 °C to 100 °C
Operating Temperature	-40 °C to 210 °C
Polarity	Positive terminal indicated by « + » sign
Working Position	Omni-tilt

All electromechanical specifications are valid @ 20 °C



(1) measured at 17.8 mm/sec pk-pk velocity and the higher of either 12 Hz or the nominal natural frequency

All dimensions are for basic unit only (no land or marsh case)

Note: Sercel reserves the right to change its specifications without prior notice.



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