

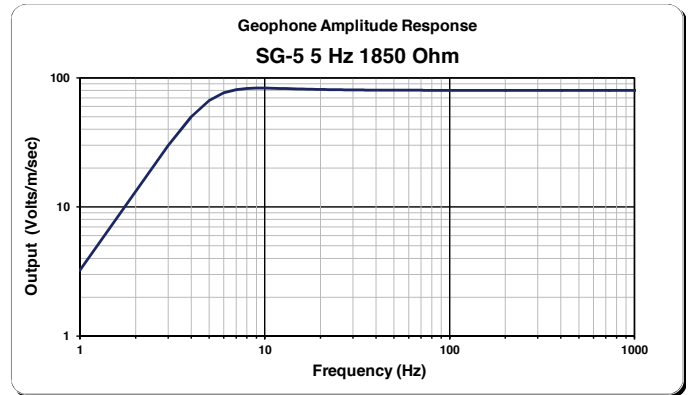
## Geophones

### 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>   | $\leq 0.1\%$          |
| 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         |

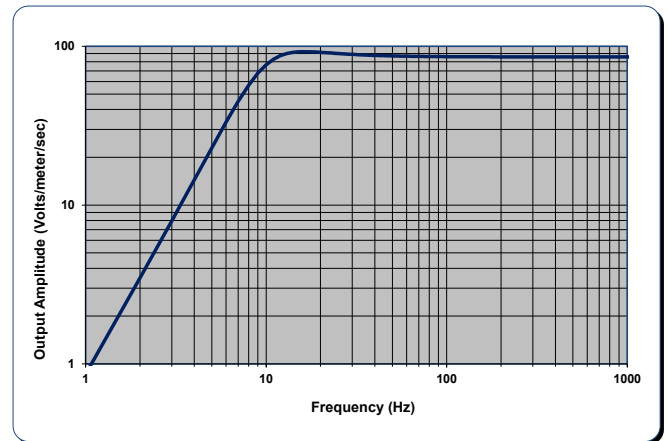
Parameters are specified at 22 °C - 0 to 10 degree tilt



#### 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

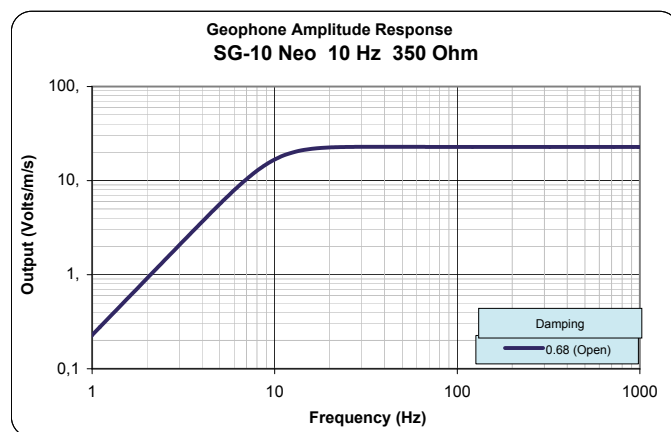


## HIGH-PERFORMANCE GEOPHONES SENSORS

### SG-10 Neo

|                                    |                        |
|------------------------------------|------------------------|
| 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> | $\leq 0.05\%$          |
| Sensitivity ( $\pm 2.5\%$ )        | 22.8 V/m/s             |
| Open Circuit Damping ( $\pm 5\%$ ) | 0.68                   |
| Damping Constant ( $R_i B_c f_n$ ) | 4925 $\Omega\text{Hz}$ |
| 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

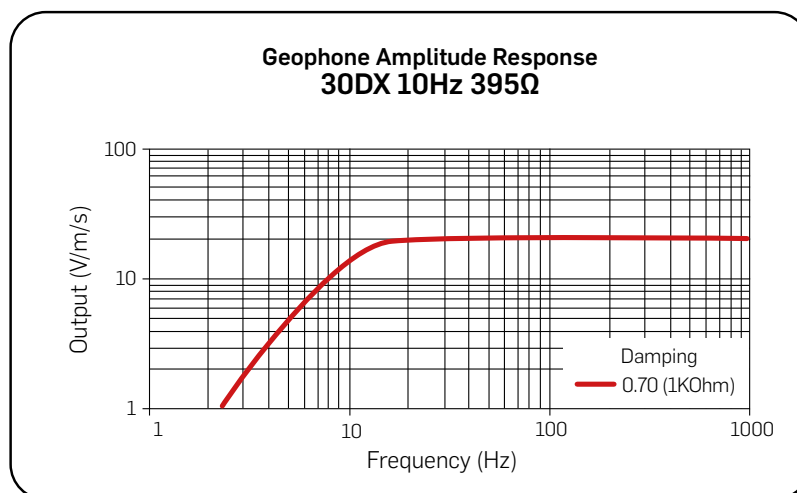


## CONVENTIONAL GEOPHONE SENSORS

### JF-30DX

|                                       |                         |
|---------------------------------------|-------------------------|
| Coil resistance                       | 395 $\Omega$ $\pm$ 2.5% |
| Open circuit sensitivity              | 28 V/m/s typical        |
| Sensitivity with shunt resistor (1 K) | 20.1 V/m/s $\pm$ 2.5%   |
| Natural frequency                     | 10 Hz $\pm$ 2.5%        |
| Open circuit damping                  | 0.3 typical             |
| Damping with shunt resistor (1K)      | 0.707 $\pm$ 2.5%        |
| Harmonic Distortion <sup>(1)</sup>    | $\leq$ 0.1%             |
| Moving Mass                           | 11 g                    |
| Spurious Frequency                    | $\geq$ 250Hz            |
| Coil travel (Peak-Peak)               | 1.52 mm                 |
| Resistance with shunt resistor (1K)   | 283 $\Omega$ $\pm$ 2.5% |
| Operating Temperature                 | From -40° to +80° C     |

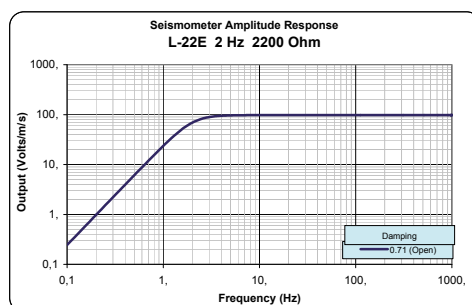
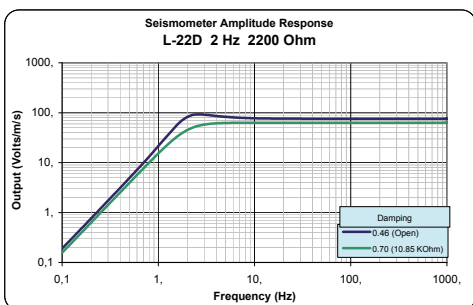
Except where otherwise noted all electromechanical specifications are valid at 22°C and from 0 to 10 degree tilt.



## SEISMOMETERS

|                                                                  | L-22D      |            |             | L-22E      |            |             |
|------------------------------------------------------------------|------------|------------|-------------|------------|------------|-------------|
| Natural Frequency (± 0.2 Hz)                                     | 2 Hz       |            |             |            |            |             |
| Coil Resistance                                                  | 510 Ω      | 2200 Ω     | 8540 Ω      | 510 Ω      | 2200 Ω     | 8540 Ω      |
| 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 <sub>T</sub> B <sub>c</sub> f <sub>n</sub> ) | 1453 ΩHz   | 6266 ΩHz   | 24323 ΩHz   | 2427 ΩHz   | 10470 ΩHz  | 40644 ΩHz   |
| 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      |            |             |            |            |             |

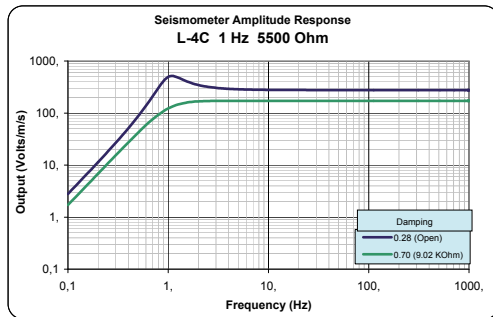
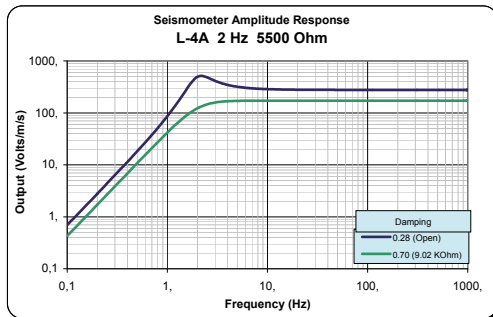
Parameters are specified at 20 °C - 0 degree tilt



## SEISMOMETERS

|                                                                  | L-4A             |             |             | L-4C             |             |             |
|------------------------------------------------------------------|------------------|-------------|-------------|------------------|-------------|-------------|
| Natural Frequency                                                | 2 Hz (± 0.25 Hz) |             |             | 1 Hz (± 0.05 Hz) |             |             |
| Coil Resistance                                                  | 500 Ω            | 2000 Ω      | 5500 Ω      | 500 Ω            | 2000 Ω      | 5500 Ω      |
| 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<br>(vertical units only)                    | 0.28             |             |             |                  |             |             |
| Damping Constant (R <sub>T</sub> B <sub>c</sub> f <sub>n</sub> ) | 554 ΩHz          | 2217 ΩHz    | 6097 ΩHz    | 1109 ΩHz         | 4434 ΩHz    | 12194 ΩHz   |
| 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



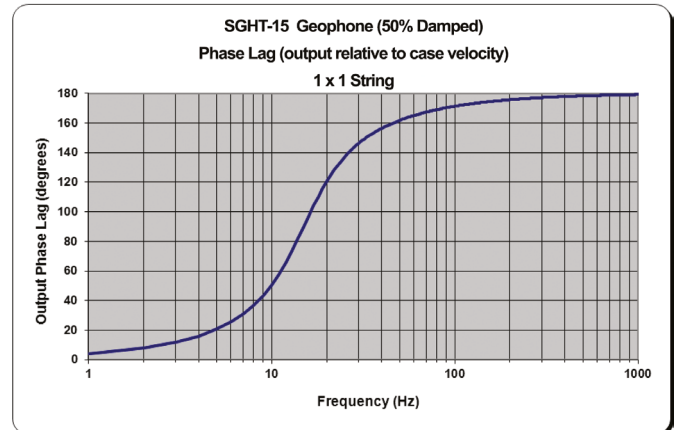
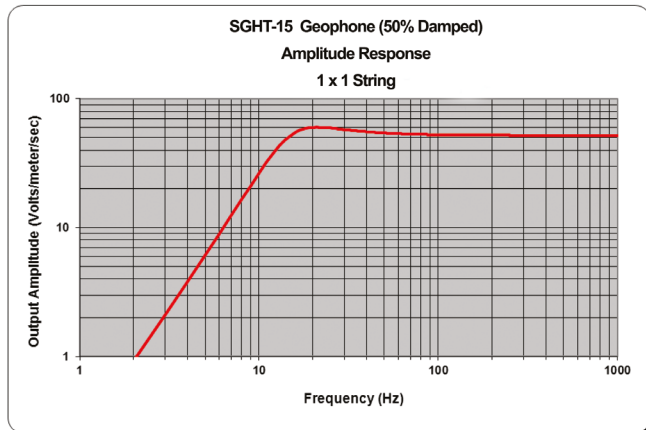
## SGHT-15

|                                                   | 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.



**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<br>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.

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