

Chaparral Model 60 UHP

Ultra High Pressure Infrasound Microphone



Overview

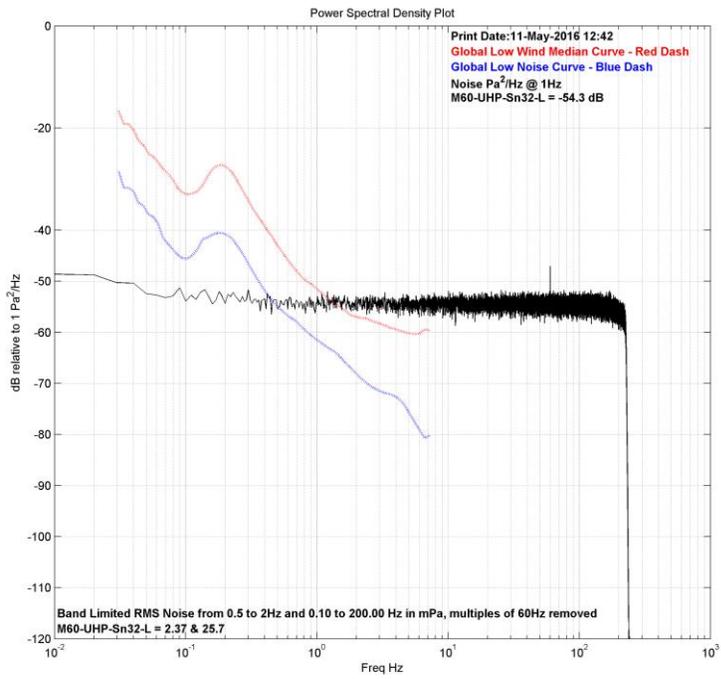
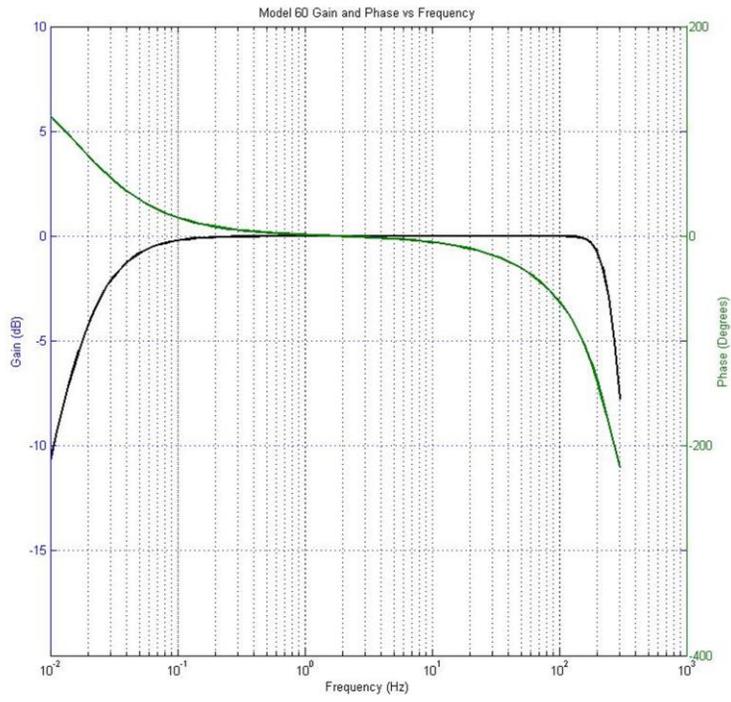
The Chaparral Physics M60 UHP is a high performance microphone optimized for making quantitative measurements of volcanic eruptions and other large amplitude acoustic events. The M60 series of infrasound sensors are the smallest, and lightest, research grade infrasound microphones on the market today. This makes them ideal for use at remote sites and in portable applications. The low power consumption further reduces overall system weight.

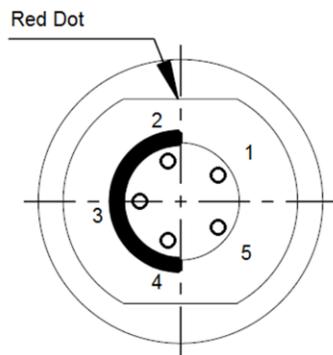
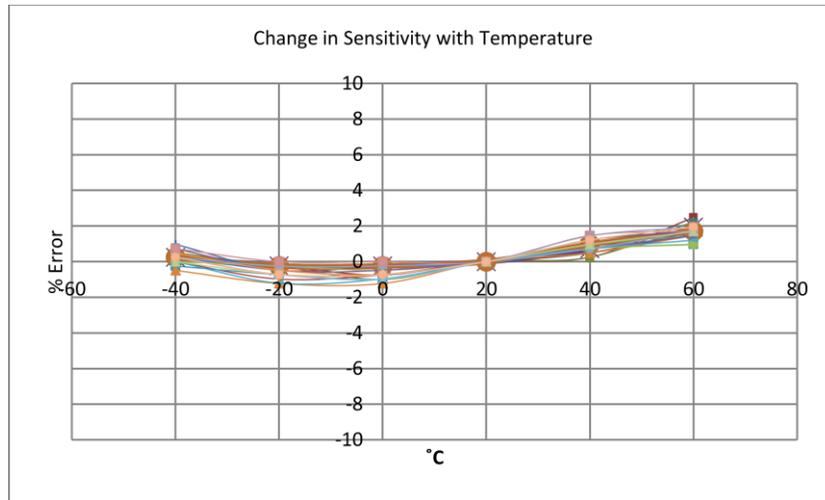
Features

- Dramatically smaller and lighter than competing sensors
- Rugged and field ready
- Low power consumption
- Large dynamic range
- 13 octave bandwidth
- Outstanding temperature stability
- Low vibration sensitivity
- Excellent unit to unit matching of sensitivity and frequency response
- Cost effective

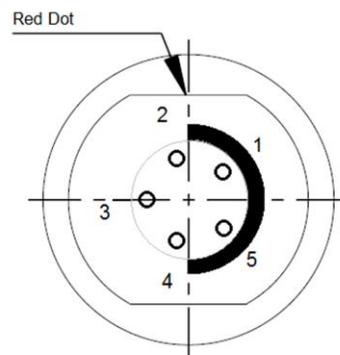
Specifications

Full Scale Range	2000 Pascal peak to peak (151 dB)
Frequency response	Flat to within ± 3 dB from 0.03Hz to 245Hz
Dynamic range	109 dB
Nominal Sensitivity	9 mV/Pa @ 1 Hz Individual sensor's calibrated value is $\pm 5\%$ from nominal. Calibration value is traceable to Los Alamos National Laboratory (LANL) calibration chamber.
Self noise (typical)	4.0 $\mu\text{Pa}^2/\text{Hz}$ @ 1 Hz (-54 dB, relative to 1 Pa^2/Hz) 25.7 mPa RMS 0.1 to 200 Hz 2.4 mPa RMS 0.5 to 2 Hz
Output	
Output type	Differential
Maximum output	18 V p-p (signal+ to signal-) 9 V max signal to ground. With no signal applied the outputs idle at +4.5 V with respect to ground.
Output load	Recommended resistive load $>10\text{k}\Omega$ Recommend capacitive load $< 3.3\mu\text{F}$
Short circuit protection	Protected against momentary shorts from signal+ to signal- and signal to ground.
Power requirements	
Voltage	9.25 V $< V_{in} < 20$ V Battery powered operation recommended to optimize noise performance
Power consumption	Less than 100 mW, <10 mA @ 10 V
Mating connector	Fischer S 102 A054-130+
Physical	
Dimensions	3.75" diameter, 1.688" tall (not including the calibration tube)
Weight	7.1oz
Operating temperature	-40°C to +65°C
Humidity	95% (non-condensing)





Fischer DBPE A054-130 Panel mount recepticle
Viewed from the front of the sensor



Fischer S 102 A054-130+ male cable termination
Rear view (solder side)

Pin	Signal	Wire Color
1	+10 V	Red
2	* Power gnd	Black
3	Sig+	Yellow
4	* Signal gnd	Green
5	Sig-	White

* Shorted together internally