

## SILENCER SHEETS

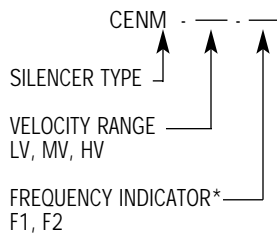
### DESCRIPTION

Vibro-Acoustics' CENM silencers do not contain glass fiber and are void of any fill material whatsoever. The Helmholtz resonator principle is used as the primary sound-reducing mechanism. Splitters, sometimes called baffles, incorporate expansion chambers. The chambers are covered by specially tuned perforated metal. Space outside the duct connection size is also used for expansion chambers.

CENM silencers incorporate a full 90 degree and/or a partial bend to fit the duct system configuration. The splitters are aerodynamically designed to turn the air efficiently and minimize pressure drop. They vary in quantity and thickness, and air passages also vary in size.

### MODEL NAMES

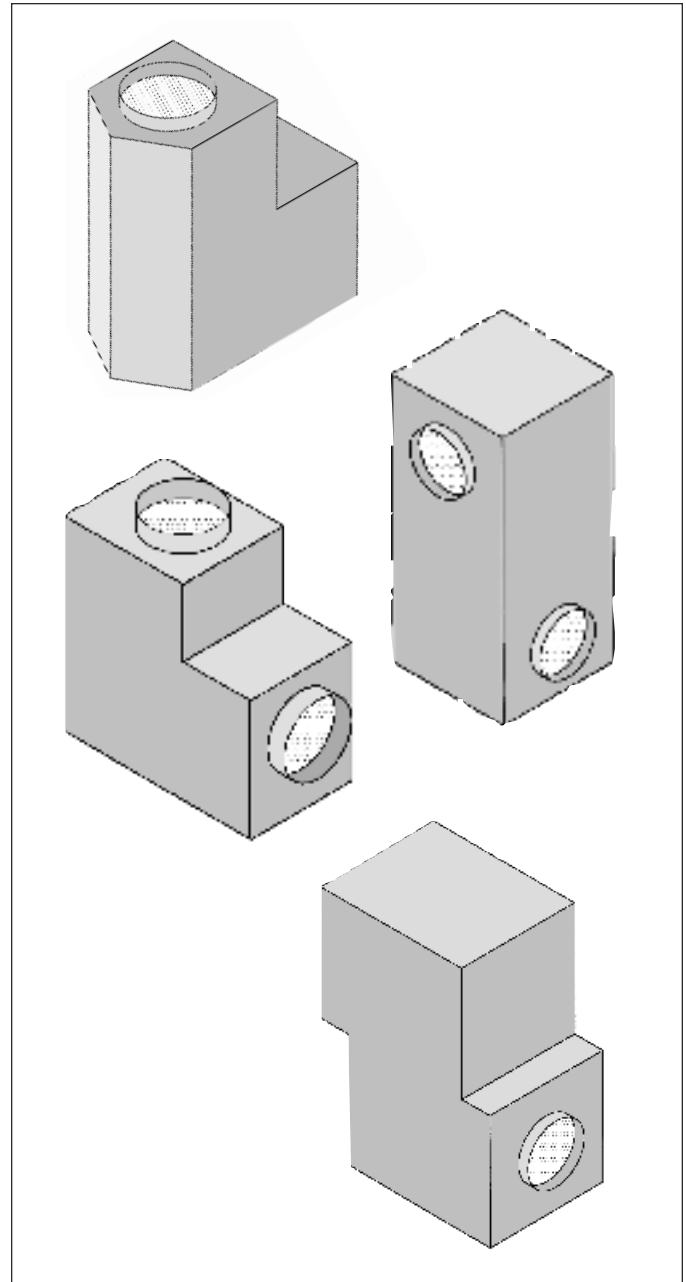
Vibro-Acoustics' silencer model names are coded to help identify their recommended application range.



\*The lower the Frequency Indicator, the better the silencer's insertion loss in the low frequency range. The higher the Frequency Indicator, the better the silencer's insertion loss in the mid to high frequency ranges.

### APPLICATION

- ◆ when there is not enough space for straight CNM silencers (straight silencers should not be located within three diameters of duct elbows or bends)
- ◆ wherever glass fiber is not acceptable in duct and air handling systems
- ◆ when it is necessary to periodically sterilize the entire interior of the silencer
- ◆ in laboratory fume hood systems, pharmaceutical manufacturing facilities, food processing plants, hospitals, clean rooms, kitchen exhausts, etc.
- ◆ in supply, return or exhaust ductwork
- ◆ on the receiver side of valves, dampers,



terminal boxes, etc.

- ◆ normal recommended duct velocity range
 

CENM-LV	0-1250 fpm
CENM-MV	1250-1750 fpm
CENM-HV	1750-2250 fpm

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### FEATURES AND BENEFITS

- ◆ allows silencing when space does not permit the use of straight CNM silencers (see SAS 3)
- ◆ aerodynamic splitters and specially designed air passage ways efficiently turn the air for minimum pressure drop
- ◆ multiple configurations available such as
  - ◆ offset inlet and/or outlet connection
  - ◆ "Z" shaped (two Elbows of any angle in series)
  - ◆ outer body shape and dimensions contoured to fit available space
- ◆ no glass fiber particles to contaminate the airstream
- ◆ no glass fiber to host contamination within the silencer
- ◆ ability to sterilize the silencer
- ◆ available in any diameters from 8" to 16"; also available in larger diameters - contact our application engineers
- ◆ can be selected to suit the acoustic, space, or energy-cost requirements
- ◆ construction quality and aerodynamic design optimized to give reliable performance, best acoustics, lowest pressure drop and lowest overall cost

### CAUTIONS / WHEN NOT TO USE CENM SILENCERS

- ◆ when there is enough straight duct length to effectively use CNM straight silencers (see SAS 3)
- ◆ when break-out noise is of prime concern CENM silencers may be appropriate selections. They may require mass/stiffness added to their outer casing (see HTL Silencers SS7)

### PERFORMANCE DATA / TESTING

See Performance Data section.

Vibro-Acoustics' 4th generation aero-acoustic laboratory was specially designed to enable Elbow Silencer testing. It was the first laboratory to be NVLAP accredited for the ASTM E-477 silencer test code. NVLAP is administered by the U.S. Dept. of Commerce. See the Corporate/Laboratory Section.

### SILENCER SELECTION AND LOCATION

Vibro-Acoustics offers multiple selection methods, from Vibro-Acoustics Full-Service complete analysis to Do-It-Yourself quick selections. See the Selection/Specification Section for details.

### STANDARD CONSTRUCTION FEATURES

- ◆ galvanized, lockformed casing constructed to SMACNA standards
- ◆ 2" slip connection at each end
- ◆ special "tuned" perforated galvanized splitters
- ◆ splitters configured with internal "tuned" chambers
- ◆ no acoustical media
- ◆ 90 degree and/or partial bend to fit system ductwork and space available

### SPECIAL CONSTRUCTION OPTIONS

- ◆ heavier gauge casings and perforated metal
- ◆ continuously welded casings
- ◆ special materials e.g. stainless steel, aluminum
- ◆ flanges
- ◆ access doors
- ◆ high transmission loss (HTL) casings to prevent break-out/break-in noise
- ◆ built in transitions
- ◆ for details of above and more special options see Special Construction Options (pg. 3.33 to pg. 3.37).

### TO SPECIFY

See example specification located in the Selection/Specification section.