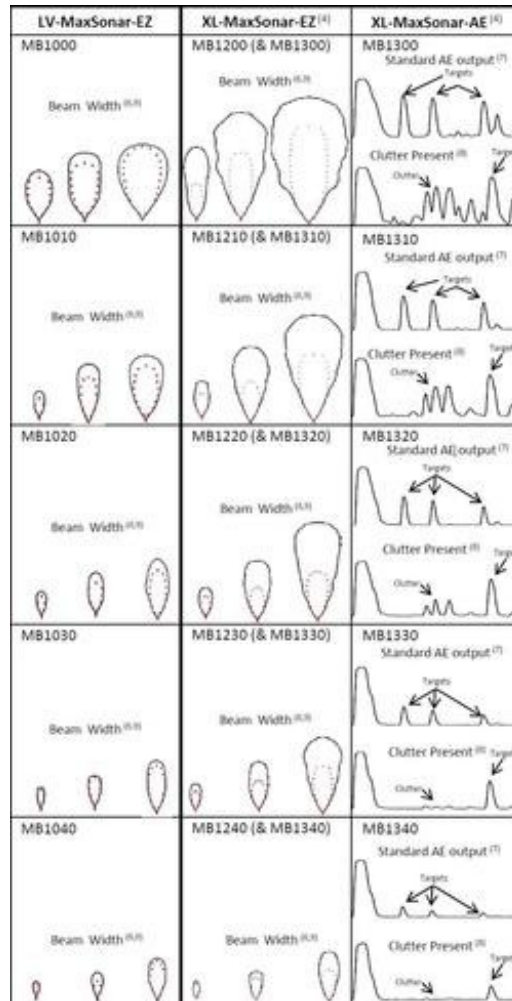


## Maxbotix LV-MaxSonar-EZ1 Sonar Range Finder MB1010



MaxBotix ultrasonic sensor line comparison chart.

### Overview

The Maxbotix LV-MaxSonar-EZ family of sonar range finders offers very short- to long-range detection and ranging in an incredibly small package with ultra-low power consumption. The LV-MaxSonar-EZ detects objects from 0 to 6.45 meters (21.2 feet) and provides sonar range information beyond 15 cm (6") with a resolution of 2.5 cm resolution (1 in). Objects between 0 and 15 cm range as 15 cm. The sensor provides three output interfaces, all of which are active simultaneously: digital pulse width output, analog voltage output, and asynchronous serial digital output. The LV-MaxSonar is available in five factory-calibrated beam patterns (EZ0-4).

For a higher-resolution, longer-range version, please consider the XL-MaxSonar-EZ and XL-MaxSonar-AE families of distance sensors.

### Specifications and Features

- **Small and light: 0.870" x 0.785" x 0.645" (2.2 x 2.0 x 1.6 cm), 0.15 oz (4.3 g)**
- **Long range detection: 0 – 6.45 m (21.2 ft)**
- **No dead zone (detections from 0 to 6" are output as 6")**
- **Resolution of 1" (2.5 cm)**
- **Low typical current consumption: 2 mA**

- Runs on 2.5 – 5.5 V
- 42 kHz ultrasonic sensor
- 20 Hz reading rate
- Free-run or triggered operation
- Three interfaces (all are active simultaneously):
  - Serial output: asynchronous, logic-level, inverted, 9600 bps 8N1
  - Analog output:  $(V_{cc}/512)$  / inch (10 mV/inch when input voltage  $V_{cc} = 5$  V)
  - Pulse width output: 147  $\mu$ s/inch

### Selecting the right distance sensor

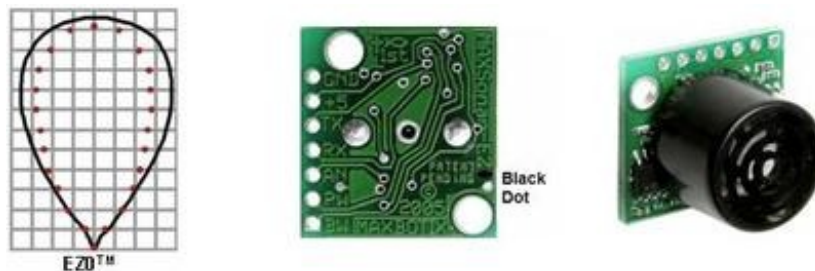
Since there are 15 members of the XL- and LV-MaxSonar acoustic distance sensor family, we recommend using the Maxbotix sonar range finder selection guide when choosing a acoustic range sensor for your application. There are 5 different beam configurations for the LV-MaxSonar family (EZ0 – EZ4), each pictured below.

LV-MaxSonar®-EZ beam patterns	EZ0™	EZ1™	EZ2™	EZ3™	EZ4™
Detection pattern to a 1/8 inch diameter dowel.					
Detection pattern to a 1/4 inch diameter dowel.					
Detection pattern to a 1 inch diameter dowel.					
Detection pattern to a 3 1/4 inch diameter dowel.					

-5V  
 • 3.3V  
V+ supply voltage.  
 (Distances overlaid on a 1 foot grid.)

LV-MaxSonar-EZ beam patterns (range shown on 1-foot grid to various diameter dowels)

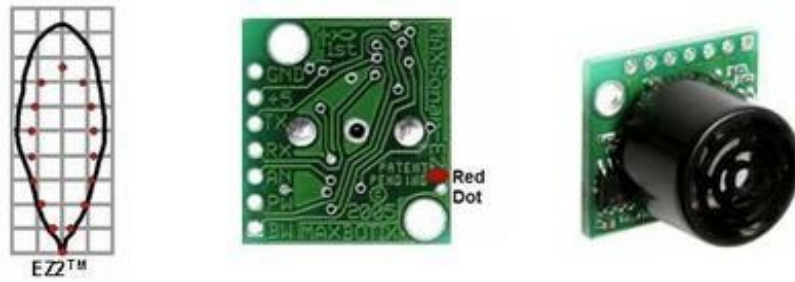
Maxbotix LV-MaxSonar-EZ0 MB1000 beam characteristics:



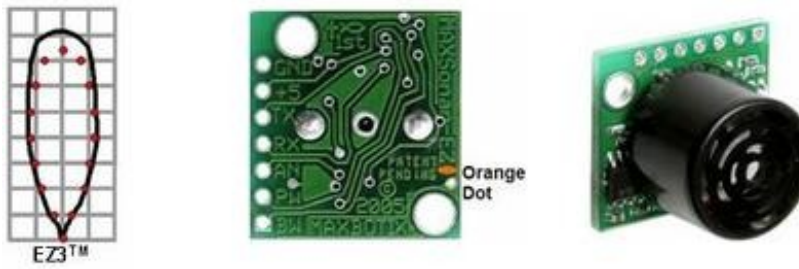
Maxbotix LV-MaxSonar-EZ1 MB1010 beam characteristics:



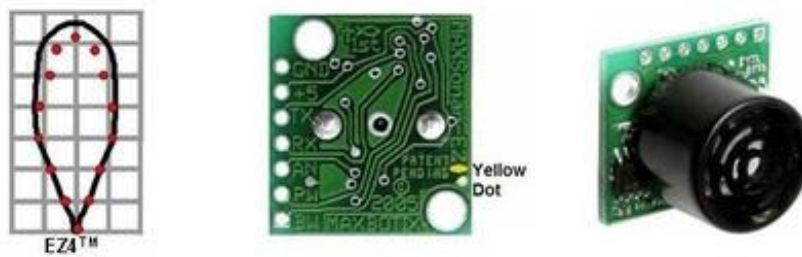
Maxbotix LV-MaxSonar-EZ2 MB1020 beam characteristics:



Maxbotix LV-MaxSonar-EZ3 MB1030 beam characteristics:



Maxbotix LV-MaxSonar-EZ4 MB1040 beam characteristics:



[Documentation on producer website.](#)