

# CRYSTAL2-I TIME-ALIGN®

## APPLICATIONS

Stadium Sound Reinforcement      House of Worship  
Auditorium Sound Reinforcement      Theatrical Sound Reinforcement  
Nightclub Installations

## DESCRIPTION

The CRYSTAL2-I is a permanent installation full range loudspeaker system offering high fidelity, high efficiency and high output. Its designed for applications where high sound pressure and highly directive long throw capability are required. The Time-Aligned™ studio quality sound provides detail and clarity at a distance. The CRYSTAL2-I produces high definition sound over its narrow controlled coverage angle making audience coverage effective in various configurations. Engineered for mid and far field performance it is well known for its exceptional fidelity and high output capability.

Useful for performance and live sound applications, the CRYSTAL2-I excels in speech projection at a distance. With its fidelity, size and output its perfect for large venue presentations systems. The addition of a Bag End subwoofer will expand its capabilities for more demanding applications.

Its made from durable birch plywood with a black textured finish and a black coated steel grille. Fly points and an optional Yoke-U-bracket allow the CRYSTAL2-I to be easily installed and arrayed.



## SPECIFICATIONS

### System Type:

2-way vented 2.5 ft<sup>3</sup>

### Enclosure:

15 mm 13-ply birch plywood horizontally arrayable

### Finish:

Black Ro Tex™ true water born environmental finish

### Grille:

14 Gauge black powder coated perforated steel in a welded extruded aluminum frame

### Low Frequency Components:

2 – E-12F 12" Transducers, 2.5" Voice coil, Neodymium magnet

### High Frequency Components:

Transducer, 1.4" Exit compression driver, 3" Titanium diaphragm, Elliptic conical waveguide

### Input Connector:

Cinch 142 screw terminal barrier strip

### Internal Amplification:

Optional self powered

### Hardware:

Fly points  
Optional Crystal-F1 or Crystal-F2 rigging kit for flying multiple cabinet arrays

### Fly Points Safe Working Load:

200 lbs Upper most rigging points

### Crossover Type:

Passive Time-Align® equalizer type @ 1.9 kHz

### Time Offset Between Driver:

< ± 25 Microseconds

### Sensitivity:

103 dB SPL (2.83 V @ 1m)

### Frequency Response:

80 Hz to 18 kHz ±3 dB

### Low Frequency Limit:

80 Hz

### Maximum Calculated Continuous Acoustic Output:

130 dB SPL @ 1 m

### Power Handling:

2000 W continuous (IEC 60268)

### Recommended Amplifier Power:

1500 to 3000 W at rated impedance

### Rated Impedance:

8 ohms

### Coverage Pattern:

55 degrees horizontal (-6 dB)  
40 degrees vertical (-6 dB)

### Recommended High Pass Filter:

60 Hz

### Polarity:

A positive asymmetrical signal applied to the + terminal will result in a positive asymmetrical acoustical pressure

### Dimensions:

38" h x 14" w x 16" d  
97 cm x 36 cm x 41 cm

### Weight:

103 lbs  
47 kg

### Custom Finishes:

Optional custom finishes include white, unfinished ready to paint and outdoor weather treatment.

### 70/100/140 Volt Operation:

Optional 600 W taped internal transformer

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# CRYSTAL2-1 TIME-ALIGN®

## About Time-Align® Technology

Time-Align® assures that the fundamental and overtones of a complex, transient, acoustical signal are presented to the listener in the same relationship as the electrical signal at the input terminals of the loudspeaker. The conventional loudspeaker spreads out the sound in time. When a rapid series of transients occur the results are blurring and lost detail. With

Time-Align®, a transient is presented as a tight package of energy, with the same time relationships as the natural sound. This means that a rapid series of transients will be heard clearly.

True Time-Alignment™ requires much more than just physically lining up the loudspeaker components. It requires consideration of the driver placement, driver delay and adjustment of the crossover delay parameters. This achieves the precise simultaneous acoustical arrival time of each driver throughout the crossover region.

The first Time-Aligned™ Loudspeaker was invented by EM Long Associates in 1976 utilizing the Time-Align® generator invented and built by Ronald Wickersham. In 1980 Bag End® incorporated Time-Align® technology into our full range loudspeaker systems. Along with state-of-the-art laboratory instruments, the proprietary Time-Align® generator is still in use today to verify the time domain performance of our loudspeaker systems. When comparing a genuine Bag End® Time-Aligned™ loudspeaker system to any other, our technology and design is easy to hear and appreciate. The dramatic clarity, realism, and overall pleasant sound of our Time-Aligned™ systems are well noted worldwide.

## About our Ro Tex™ Finish

The durable Ro Tex™ finish is found on Bag End™ "R" series or Road cabinets. Ro Tex™ is a water base, environmentally safe finish that is made in Europe and is uniquely strong and long lasting. As it solidifies and attaches to the wooden cabinet it bonds with the wood to make a super hard permanent finish. It is lightly textured offering both an attractive and rugged finish.

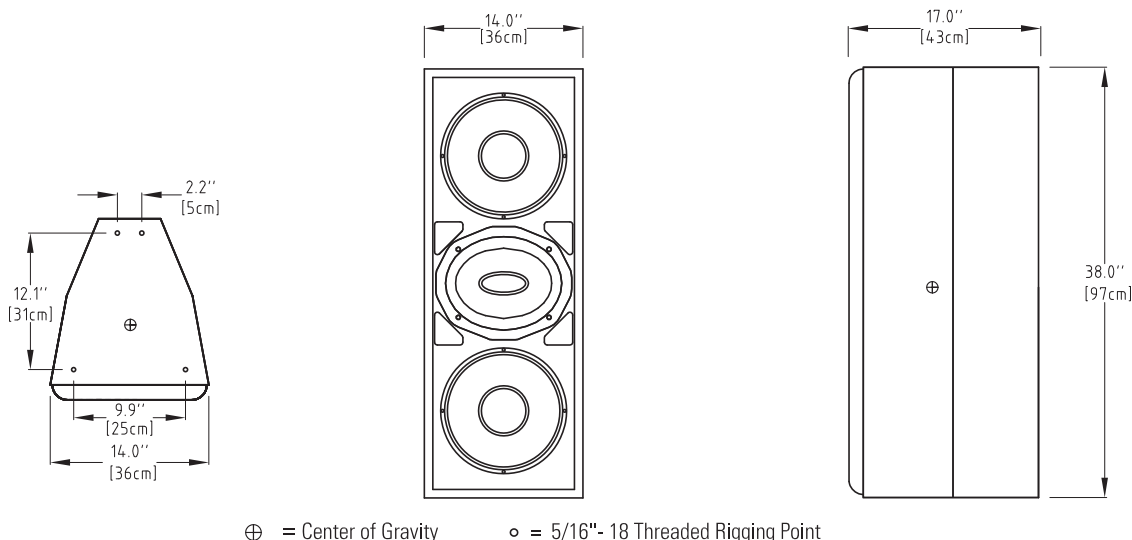
## About BAG END® Loudspeakers

Bag End loudspeakers began in 1976 in a small shop by people dedicated to the pursuit of making high quality loudspeaker systems. Over the decades Bag End® has employed the very best construction techniques and innovative acoustical designs into their products. The ground breaking introductions of the Time-Align® and ELF™ Technologies into sound reinforcement and studio monitor loudspeakers in the 1980's was followed by Minima One™ self-powered systems and the highly unique E-Trap™, electronic bass trap. Over the decades, Bag End® has been a leader in providing uniquely good sounding products and extraordinary service to our customers world wide.



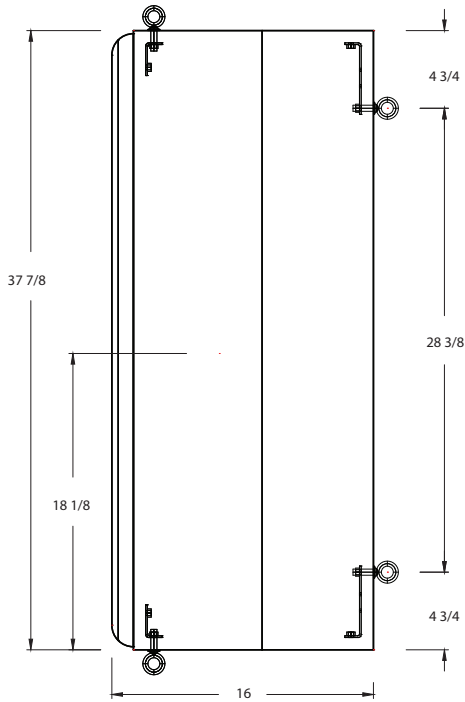
*The Crystal2 is shown in an array using the Crystal rigging pan*

## DIMENSIONS

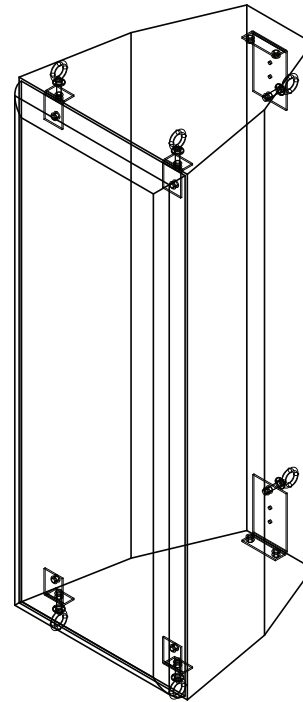


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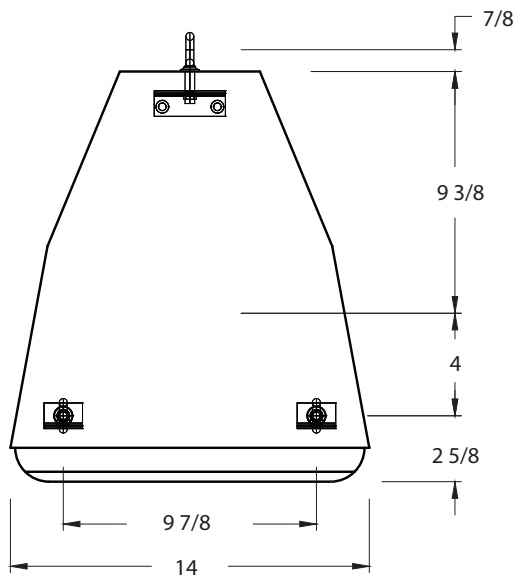
SIDE VIEW



ISOMETRIC VIEW



TOP VIEW



**Key**

Center of Gravity: +

**Warnings**

Mounting and rigging loudspeakers requires experienced professionals. Improperly installed loudspeakers can result in property damage, personal injury, death and/or liability to the installing contractor.

**Flypoints**

Optional hardware includes 5/16-18 threaded flypoints as shown.