



# On Point Audio, Inc.

## OPA-10 ACTIVE USER MANUAL



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance instructions.



High voltage

The lightening flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

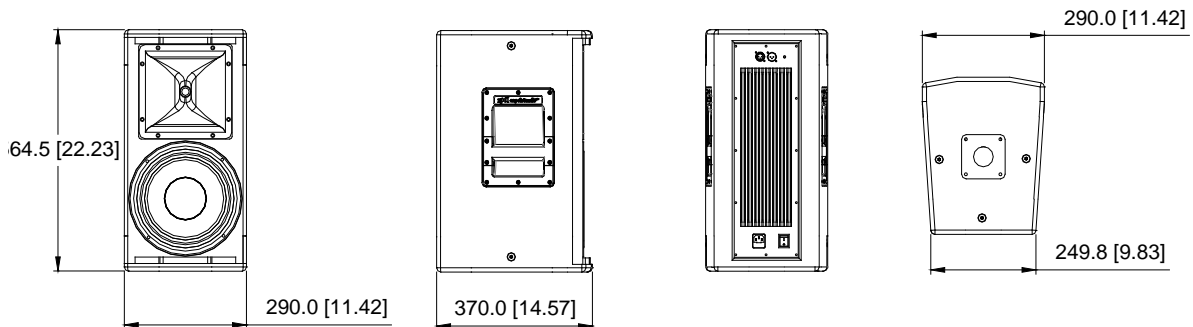
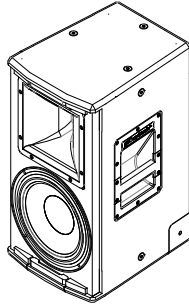


The On Point Audio OPA-10 Active was designed to provide very high performance, high-quality sound reinforcement as well as very high output-to-size ratio. The OPA-10 Active was designed for use in portable and fixed installation indoor environments such as night clubs, houses of worship, meeting halls and general live performance applications. The OPA-10 Active features a compact yet incredibly rugged enclosure design that provides very high acoustic output with excellent sight line characteristics, portability and ease of use.

## Specifications

Frequency Response:	65 Hz – 20,000 Hz
Coverage Pattern:	90° H X 40° V – fully rotatable
Input/Thru Connections:	3 Pin XLR-type (Pin 2 +)
Power:	
Peak - Total System:	2,000 Watts
Continuous- Total System:	1,000 Watts
Peak Low Frequency:	1,000 Watts
Peak High Frequency:	1,000 Watts
Continuous Low Frequency:	500 Watts
Continuous High Frequency:	500 Watts
AC Mains Power: Autoswitching	115 V AC or 230 V AC (104VAC – 253VAC) (50 Hz – 60 Hz)
Input to achieve rated output	1.5 V RMS
Max Acoustic Output (Peak)	131 dB*
Rigging	M10 Stainless Steel (10 Points)
Supplied Accessories	AC Mains Cables 2 each (3 Pin USA and Euro)
Dimensions (H X W X D):	564.5 X 290 X 370 mm 22.2 X 11.4 X 14.57 inches
Weight (kg / lb):	29 kg / 64 lbs
Operating temperature (C/F)	0C-43C / 32F- 110F

\* NOTE: Maximum Acoustic Output is based on smoothed system response, not peak driver response.



## **Read all of the instructions included in this manual**

Copies of this manual should be retained by the system's installer AND end-user.

This manual must be read and understood and ALL warnings must be followed.

Follow all instructions to insure optimal product performance.

The OPA 10-Active is a convection-cooled device and requires at least 6 inches (152 mm) of clearance behind the enclosure to allow the heat sink to adequately cool the internal electronics.

**DO NOT INSTALL NEAR ANY HEAT SOURCES!**

Use **ONLY** the supplied AC Mains connector.

Protect the AC Mains power cord from being walked on or otherwise damaged and inspect for damaged connections and damaged insulation.

The OPA-10 ACTIVE may be suspended. DO NOT SUSPEND ANY ITEMS OR OTHER ENCLOSURES BELOW THE OPA 10 ACTIVE.

DO NOT SUBSTITUTE SUSPENSION HARDWARE.

SUSPENSION SHOULD BE ATTEMPTED BY A PROFESSIONAL THAT IS FAMILIAR WITH LOCAL AND NATIONAL CODES AND SAFE SUSPENSION PRACTICES!

There are NO user serviceable parts inside the enclosure. DO NOT REMOVE THE AMPLIFIER MODULE! (See Service section for details OR contact On Point Audio)

## **FCC STATEMENT**

The OPA 10 Active has been tested and is compliant with the limits for Class B digital devices, per Part 15 of the FCC rules. Test data is available from On Point Audio.

## **INTRODUCTION**

Thank you for purchasing the On Point Audio OPA-10 Active and for your support of our products. The OPA-10 Active will provide you with many years of high performance with proper use and care. Please read this manual completely and become familiar with the design and operation of this advanced active speaker system.

# **CONTENTS**

The OPA-10 Active system is shipped in one carton. The contents of the carton are as follows:

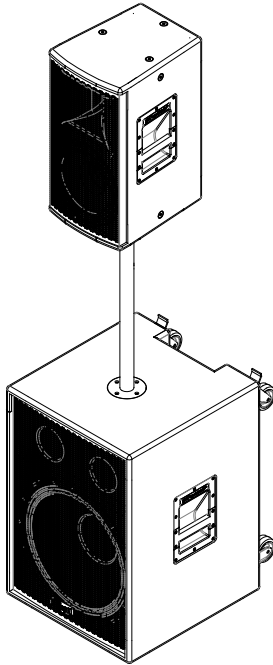
## **OPA-10 Active System**

This system includes one OPA-10 Active loudspeaker including a bi-amplified Class-D digital power amplifier system with onboard Digital Signal Processing (DSP) and two each AC Mains cables.

## **RECOMMENDED ACCESSORIES**

Although not supplied with the OPA-10 ACTIVE System, On Point Audio recommends using the OPA-10 Active system with a high-quality loudspeaker stand when used in portable applications. On Point Audio also recommends the OPA-Sub Active when additional low-frequency output and response is required. The OPA-Sub Active also includes a 35 mm / 1.375 inch diameter mounting pole that allows the OPA10 Active to be safely elevated above the OPA-Sub Active.

The OPA Sub Active pole is NON-adjustable. DO NOT substitute poles. Make sure that the OPA Sub Active is placed on a level surface.



## **OTHER ACCESSORIES**

On Point Audio offers an external U-Bracket for use with OPA-10 Active enclosures. This U-Bracket is the OPA-10-U.

On Point Audio also offers the Eye Bolt Kit that contains 4 x 304-grade stainless steel, forged-shoulder eyebolts for suspending the OPA-10 Active.

## **FEATURES AND APPLICATIONS**

The OPA-10 Active is a professional product and is designed to be used with a high-quality mixing console. The OPA-10 Active does not provide any additional, user-selectable, equalization or gain. Equalization and gain functions should be provided by the mixing console. This design enables gain stages to be limited, thus reducing system noise as well as substantially reducing the possibility of gain stage overloads.

On Point Audio does not feel that adding additional EQ and gain functions are necessary or appropriate for truly professional products. The addition of redundant functions such as EQ and gain are usually the cause of clipping, distortion and greatly-reduced system performance and output. Any venue-specific equalization needs are best provided by high-quality outboard devices or high-performance EQ sections found on professional quality mixing consoles.

The OPA-10 Active features an onboard digital signal processor (DSP) that performs analog to digital conversion, equalization, high-order crossover, delay and system dynamics processing. The system's dynamics processing consists of a compressor/limiter function designed to provide ultra-fast threshold system protection and maximized system dynamics.

## SETUP AND USE OF THE OPA-10 ACTIVE

### AC MAINS CONNECTION

Prior to connecting the AC mains cable, please insure that the AC mains switch on the OPA-10 Active is in the OFF position.



On/Off Switch

The OPA-10 Active will operate on AC mains voltages of 115 volts to 230 volts. (The OPA-10 Active uses an internal "autoswitch" circuit) The required AC mains frequency is between 50 Hz and 60 Hz. The operating voltage is between 104VAC and 253VAC

The OPA-10 Active uses a standard IEC-type AC mains connector system. To mate the AC mains cable with the AC mains connector on the amplifier, simply align the plug with the panel's connector and press the AC mains cable into place. Always support the OPA 10 Active's enclosure with one hand while performing this operation. The AC

mains connector is shown below. It is located on the lower portion of the OPA-10 Active's input panel.

**NOTE: The OPA-10 Active is supplied with two AC Mains cables. Select the cable with the proper termination for the country specific mating receptacle!**



AC Mains panel connector

To disconnect the cable end from the AC mains connector, pull back on the molded plug at the end of the cable, not on the cable itself.



**NOTE: ALWAYS turn off the AC mains power BEFORE attempting to disconnect the AC mains cable from the OPA 10 Active amplifier module!**



**DO NOT CONNECT THE AC MAINS END OF THE AC MAINS CABLE IN AN AREA THAT IS WET OR SUBJECT TO CONDENSATION OR DAMP CONDITIONS!**

Once the AC mains cable is securely connected to both the amplifier and AC mains supply, the OPA-10 Active enclosure may be turned on. It is good practice is to make sure the audio levels on the mixer output (or other source output) are reduced or muted prior to applying power to the OPA-10 Active.

**NOTE: When power is applied to the OPA-10 Active and the unit is turned on, there is approximately a 5 to 15 second delay before the pilot light illuminates.**



Pilot Light



NOTE: If the pilot light does not illuminate within 30 seconds, the unit may be in a FAULT CONDITION. If this occurs, the system should be returned to On Point Audio for evaluation.

THERE ARE NO USER-SERVICABLE PARTS INSIDE. DO NOT REMOVE THE AMPLIFIER MODULE!

### AUDIO CONNECTIONS

The OPA-10 Active includes both male and female XLR-type connectors. Any standard XLR-type cable end connectors may be used.

The image below illustrates the top portion of the OPA 10 Active input plate. Both the audio input and audio thru connectors are shown.



Input

Thru

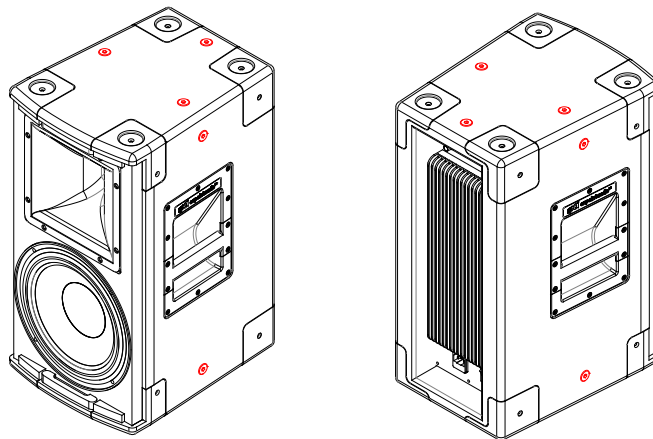
An audio input level of 1.5 V RMS will drive the OPA 10 Active amplifier to full power.

The OPA-10 Active's input section also allows for "paralleling" multiple OPA-10 Active or other powered systems. This function is achieved by using the output/thru XLR-type connector located next to the input XLR-type connector on the OPA-10 Active's amplifier module.

### RIGGING AND SUSPENSION OF THE OPA-10 Active

The OPA-10 Active features 10 x M10 (metric) stainless steel rigging points. These rigging points enable the system to be suspended for temporary or permanent installations. There are three M10 points on the top of the enclosure, three on the bottom of the enclosure and two on each side.

The M10 rigging points are shown in the image below.



Rigging Points shown above



The OPA-10 Active may also be mounted to any high-quality loudspeaker stand with a standard 1.375 inch (35 mm) diameter mounting pole. The mounting pole **MUST** be located on a level surface that is capable of safely supporting the weight of both the loudspeaker stand and the OPA-10 Active.

**DO NOT ADD OR SUSPEND ANY OTHER ITEMS FROM THE OPA-10 Active OR ITS LOUDSPEAKER STAND**



## **WARNING**

**DO NOT ATTEMPT TO SUSPEND ON POINT AUDIO PRODUCTS WITHOUT UNDERSTANDING LOCAL AND NATIONAL CODES THAT APPLY TO OVERHEAD SUSPENSION OF PRODUCTS.**

**DO NOT ATTEMPT TO SUSPEND ON POINT AUDIO PRODUCTS UNLESS YOU ARE A PROFESSIONAL WITH KNOWLEDGE OF LOCAL AND NATIONAL CODES RELATED TO SAFE SUSPENSION AND ARE EXPERIENCED IN SUSPENDING PRODUCTS OVERHEAD.**

**ON POINT AUDIO IS NOT RESPONSIBLE FOR FAILURES RELATED TO NON-COMPLIANCE WITH LOCAL AND NATIONAL CODES AND SAFE SUSPENSION PRACTICE.**

**DO NOT ATTEMPT TO SUSPEND THIS PRODUCT WITHOUT READING AND UNDERSTANDING THE DOCUMENT "Suspension of On Point Audio Products". THIS DOCUMENT MAY BE FOUND AT: [www.onpointaudio.com](http://www.onpointaudio.com).**

**ALL ASSOCIATED RIGGING IS THE RESPONSIBILITY OF OTHERS.**

## **ROTATING THE HF HORN**

The OPA-10 Active's HF horn has a coverage pattern of 90° Horizontal X 40° Vertical which is preferred when the speaker is positioned vertically. The horn/driver assembly can be rotated to deliver 40° X 90° when the speaker is positioned horizontally or for other applications.

To rotate the horn assembly, first remove all the screws on each side of the grille and remove the grille from the system. Then remove the screws around the perimeter of the horn. After doing this, the horn can be easily rotated in either direction thanks to its square shape. It is not necessary to disconnect the connections to the compression driver when rotating the horn.

## **USING THE OPA-10 Active (Application and Trouble Shooting Tips)**

The OPA 10 Active is a high-quality professional sound reinforcement system designed for use in indoor applications. Some basic precautions will insure its long-term reliability.

### **EQUALIZATION AND GAIN**

The OPA-10 Active has all the required equalization and gain functions included in its internal Digital Signal Processor (DSP). Both the equalization and gain functions have been optimized for flat frequency response and maximized system dynamics. The OPA-10 Active does not have user-settable external gain or EQ.

All system gain should be set via the outboard mixing console. The mixing console should be capable of providing sufficient output levels to supply the necessary voltage levels to drive the OPA-10 Active to full power and still insure adequate headroom in the mixing console.

The OPA-10 Active will produce full power with a 1.5 V RMS input signal.

If additional equalization is required, care should be taken to avoid excessive EQ in any frequency band, but particularly at low frequencies. Excessive equalization can produce “band selective” clipping and distortion. All EQ boost levels should be monitored if system distortion is present.

Applications that require excessive low-frequency equalization are almost always an indication that a subwoofer is required. On Point Audio also offers the OPA-Sub Active. The OPA-Sub Active is a companion product designed for use with the OPA-10 Active and it will provide substantial low-frequency acoustic output.

### **DISTORTED SOUND**

When input levels to the OPA-10 Active exceed 1.5 V RMS, the internal dynamics processing functions will engage and provide protection for the system. However, it is still possible to “overdrive” the input section of the system. If distorted sound is present the following steps should be taken:

1. Verify that the mixer’s output is not clipping or overloaded. If the output metering of the mixing console is continuously in the “red” then the output level should be reduced. (occasional “red” indications are usually fine and are dependent on the mixing console’s output capability).
2. Verify that excessive equalization is not present anywhere in the signal chain.
3. Verify that AC mains levels are within the required range.



Voltage measurements on the AC Mains should be performed by a licensed electrician or individual trained in making high-voltage measurements.

## NO SOUND

1. Verify that signal is present on the input of the OPA-10 Active.  
The OPA-10 Active also includes a “signal present” indicator and is positioned immediately below the Pilot light. This indicator will illuminate when an audio signal is present at the input to the system.  
The threshold is approximately -25dBV.
2. Verify that there is AC Mains voltage on the AC Mains input to the OPA-10 Active
3. If AC Mains voltage is present, verify that the OPA 10 Active’s fuse is not blown.



**NOTE:** IF THE FUSE IS BLOWN, REPLACE ONLY WITH THE SAME TYPE OF FUSE. THIS FUSE TYPE IS NOTED ON THE INPUT PANEL NEAR THE FUSE HOLDER. THE LOCATION OF THE FUSE HOLDER IS SHOWN BELOW. **NOTE: 115Vrms AC fuse shown below for example only. Fuse rating will differ based on AC mains voltage.**



FUSE HOLDER (located between the on/off switch and ac mains)

## **PRODUCT SERVICE**



There are NO user-serviceable parts inside the OPA-10 Active's amplifier.

The OPA 10 Active's amplifier module MUST be serviced by an company authorized by On Point Audio.

### **Replacement of Components**



REPLACEMENT OF COMPONENTS MUST BE PERFORMED BY A QUALIFIED TECHNICIAN OR ONE KNOWLEDGABLE IN THE REPLACEMENT OF TRANSDUCER COMPONENTS!

DO NOT ATTEMPT ANY REPAIRS UNLESS THE OPA 10 ACTIVE AMPLIFIER HAS BEEN DISCONNECTED FROM THE AC MAINS SOURCE!

In the event of woofer failure, the woofer may be accessed by removing the front grille and then removing the woofer. This should be done by a qualified technician or contractor. There is no need to remove the amplifier panel in the event of a woofer failure.

In the event of a compression driver failure, the compression driver may be removed by removing the front grill and then removing the high frequency horn and driver assembly. Please note the wiring polarity of the compression driver and insure that the same polarity is observed when replacing the compression driver and horn.