FLUID AUDIO

IMAGE 2

User Guide

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English

Introduction

Fluid Audio is proud to introduce the Image 2 3-way active studio monitor. Each cabinet contains 4 drive units housed in a sealed enclosure with a frequency response of 28 Hz to 27 kHz. In addition to groundbreaking new features, the Image 2 has extremely low distortion, wide dynamic range and ultra-fast transient response. The Image 2 sets a new standard in near to mid field monitoring.

Following in the footsteps of Fluid Audio's Fader Pro Series FPX7, the Image 2 uses a waveguide mounted AMT tweeter. Air Motion Transformer tweeters have been legendary in the audio industry because of their transparent sound, fast attack and high efficiency. Designed by Dr. Oskar Heil, the pleated diaphragm of the AMT behaves somewhat like bellows that "squeeze" the sound out in an accordion-like fashion. This design results in an incredibly fast response and reproduces the finest details.

The 5” midrange uses an anodized aluminum cone and is housed in its own sealed enclosure. Aluminum is an excellent alloy for smaller driver cones because of its exceptional stiffness to weight ratio, making it fast and highly articulate. The shorting ring in the magnet structure keeps audible distortion very low.

The 2 x 8” side-firing woofers also share their own sealed enclosure. This allows for much lower usable frequencies due to the inherent 6db roll-off and also acts as a “restoring force” in addition to the woofer's suspension. The 8” woofers also employ a proprietary woofer stabilizer, Vi-bracer technology which connects the two subwoofers causing outward pressure adding additional bracing for the entire cabinet. This design drastically reduces distortions normally created by flexing of the cabinet and allows the system to reproduce tones with transparency and detail across the entire audio spectrum.

What's Inside?

Your Image 2 box contains:

- One (1) Image 2
- Detachable AC power cord
- This users guide
- Acoustic isolation pads
- USB cable

Warnings

Please read and follow the safety information below:

The Mains power voltage must never exceed 250 VAC. Connecting the power cord to AC power line voltages over 250 VAC will damage the amplifier and may cause the risk of fire. Such damage is NOT covered under warranty.

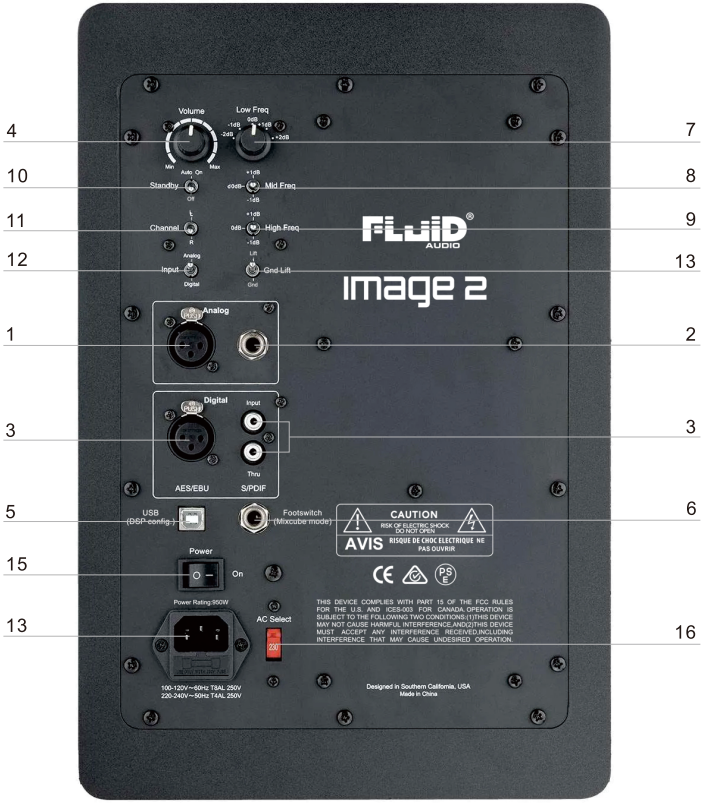
- Do not remove the rear amplifier panel. There is a risk of electric shock. No user serviceable parts are inside.Please refer service issues to a qualified technician.
- Do not operate this device with an ungrounded mains power cable or a mains connection that is ungrounded. This may result in personal injury.
- Do not place open flames such as lighted candles on or near this device.
- Do not expose this device to water, rain or high humidity. Do not place objects filled with liquids, such as vases, on or near this device.

Rear panel Mains power input layout.

- This speaker requires adequate airflow to maintain proper cooling. Do not obstruct airflow around the speaker.
- Do not operate this device in ambient temperatures above 30°C (85°F). Over-temperature may cause device failure.

Caution! This speaker is capable of producing sound pressure levels in excess of 85dB which may cause permanent hearing damage. Always verify that input signal levels are attenuated before powering on the speaker.

Inputs & Controls/Amp panel



1. ANALOG INPUT XLR: This input is designed to receive analog balanced line level audio signals from sources such as preamplifiers, sound cards, monitor controllers and mixing consoles. It accepts XLR input connections with either balanced or unbalanced wiring. The input wiring of an XLR connector should be as follows:

- XLR PIN 1 . . . . . signal ground (shield)
- XLR PIN 2 . . . . . positive (+)
- XLR PIN 3 . . . . . negative (-)

2. TRS INPUT: This jack accepts 1/4" connections with either balanced or unbalanced wiring. For balanced wiring, a three-conductor TRS plug is necessary. The input wiring of a TRS connector should be as follows:

- TRS TIP · · · · · · · · · · · · signal positive (+)
- TRS RING · · · · · · · · · · signal negative (–)
- TRS SLEEVE · · · · · · · · signal ground (shield)

Unbalanced 1/4" wiring can be done with either a two- or three-conductor (TS or TRS) plug. A two-conductor (TS) plug automatically grounds the signal negative input, whereas a three-conductor (TRS) plug, wired unbalanced, provides the option of leaving the negative input open or grounded. We recommend that you ground the unused negative input (this can be done by wiring the ring and sleeve of the TRS plug together).

3. DIGITAL INPUTS: The Image 2 speaker provides an AES/EBU Digital In connector as well as S/PDIF Digital In and S/PDIF Digital Thru connectors. The digital inputs accept sample rates of 44.1, 48, 88.2, 96, 176.4 and 192kHz (+/–10 percent) at 16-bit or 24-bit resolution. Only one digital input connector (AES/EBU In or S/PDIF In) may be used at a time. (NOTE: The Image 2 loudspeaker only supports non-encoded AES or S/PDIF signals.)

AES/EBU Digital In
The AES/EBU digital input is a female XLR connector.

S/PDIF Digital In
This S/PDIF connector is for connecting digital audio from a S/PDIF source device, or from the S/PDIF Thru connector of another Image 2 speaker.

The S/PDIF Digital input connector passes audio from only S/PIDF, out THRU to a S/PDIF Digital Input connector of another Image 2 speaker. To connect both speakers digitally via the AES/EBU Digital Input, a digital splitter must be used.

Analog to Digital Conversion	Word Length: 24 bit Sample Rate: 64 kHz/88.2 kHz/96 kHz/192kHz Oversampling= 64x Signal/Noise ≧110dB
Digital Input	XLR female AES/EBU (AES3 standard) Input Impedance = 110Ohms Word Length: 24 bit Sample Rate: Auto-detect Sample Rate (28 kHz to 216 kHz) Signal/Noise ≧130dB

4. VOLUME: Twenty one position detented knob adjusts the loudness in precise increments. The 0dB setting corresponds to a sensitivity of 90dB at 1 meter distance using a -15dBV input signal.

5. USB input: This accepts the USB-B type connector from your PC to import room correction files to the Image 2's DSP.

6. FOOT SWITCH INPUT: This accepts the ¼" plug of the Image 2 foot switch (sold separately). This foot switch allows you to switch between Flat voicing and Mixcube mode.

7. LOW FREQUENCY ADJUST: This allows you to “dial in” the amount of bass you want below 70Hz. There is 0, +1, +2, -1, -2.

8. MID FREQUENCY ADJUST: This switch allows for mid frequency contouring at 2.0kHz. There is 0, +1 and -1.

9. HIGH FREQUENCY ADJUST: This switch allows for high frequency contouring above 8kHz. There is 0, +1, -1.

10. STANDBY AUTO ON SWITCH: By default, the speakers are set to “Auto Standby” (switch in up position). In this mode, Standby is activated. To exit Standby mode, send an audio signal to the monitor, gradually increasing the sound level of the audio source and the unit will come out of standby. After approximately 45 minutes without receiving an audio signal, the monitors will automatically go into Standby mode. In Standby, power consumption is less than 0.5W. Automatic Standby can also be disabled with this switch. To do this, place the selector in the down position, or “Off”. When the selector is in this position, the speaker remains fully powered up at all times. When the "ON-OFF" switch is in the "OFF" position, the unit will never go into standby mode.

11. CHANNEL SELECT SWITCH: The Image 2 speaker has a digital channel assignment switch that lets you monitor the left channel or right channel of the digital input.

12. INPUT SELECT: This selects what kind of signal the Image 2 will be receiving, Analog or Digital. If Digital is selected, the Analog input will not work and visa-versa.

13. POWER RECEPTICLE: Accepts a detachable 3-circuit line IEC power cord in order to power the monitor.

14. FUSE HOLDER: Holds the external main fuse.

15. POWER ON/OFF SWITCH: This switch turns the monitor on and off. Make sure to power the monitor off when connecting the power cable.

16. AC SELECT SWITCH: Set at the factory to either 115V or 220V depending on the region of sale/operation.

Front Panel Features

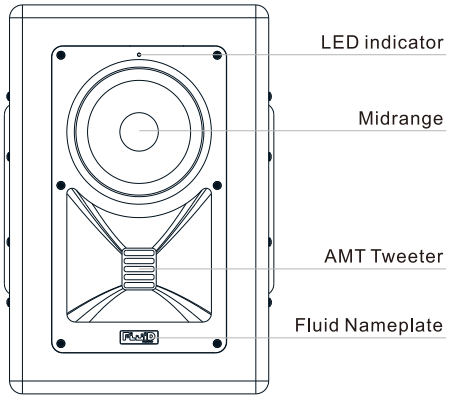


Image 2 LED (front panel)

There are four LED Status indications:
Standby: The LED turns bright red then fades to 50% after 5 seconds.
Power On: The LED turns bright green then fades to 50% after 5 seconds.
Amplifier Clipping: The LED flashes bright red continuously
Thermal Protection: LED pulses RED until the temperature of the amp comes down to normal

Quick Start

1. Plug in the grounded mains power cable (see warnings on previous pages for details).

2. Plug in an analog balanced audio signal from a source such as a pre-amplifier, sound card, monitor controller or mixing console to INPUT XLR / TRS connector. Ensure that the audio signal is fully attenuated.

3. Power on the speaker with the rocker switch located towards the bottom of the amp panel. The LED indicator on the front of the speaker will illuminate bright green for a couple of seconds and then turn 50% brightness.

4. Turn up the audio signal and enjoy!

Breaking-in

The transducers used in the Image 2 monitors are complex mechanical elements which require a breaking in period to operate at their best and to become acclimated to the temperature and humidity of their environment. The length of time this takes can vary depending on the conditions, and can sometimes last several weeks. Avoid listening at high volume during the first few hours of use. In order to shorten the breaking-in period, we advise you to let your equipment operate for about twenty hours at medium volume with programs having significant low-frequency content. Once the transducers' characteristics have totally stabilized, you will be able to enjoy the full performance of your Image 2 monitors.

Limiters

Peak Limiter

The Low and High frequency channels have individual Peak Limiters designed to protect each driver from high amplitude, short duration audio input signal spikes that might cause damage due to over excursion of the voice coil. These limiters are implemented digitally within the DSP in such a manner that they have zero effect on the audio signal below their thresholds.

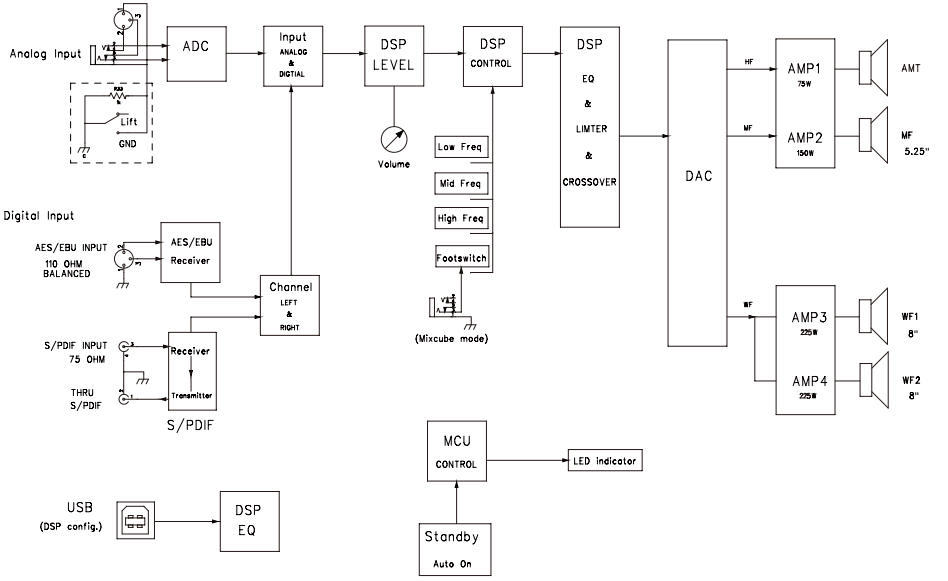
RMS Limiter

The Low and High frequency channels have individual RMS Limiters designed to protect each driver from long duration, high amplitude audio input signals that might cause thermal damage due to the voice coil. These limiters are implemented digitally within the DSP in such a manner that they have zero effect on the audio signal below their thresholds.
Caution: Signals large enough to trigger any of the limiters can generate very high sound pressure levels that may result in permanent hearing damage.

Over Current

In the event of a large audio input signal that might damage the amplifiers or power supply due to current overload, the power supply is designed to enter into Over Current protect mode. This state typically results from a large, broadband input signal burst that flat lines the limiters on all four channels simultaneously. While the fault persists, the amplifier power rails shut down, the speaker goes quiet, and the front panel LED turns red. Once the audio input signal is turned down the speaker should reboot within a few seconds. If the speaker fails to reboot or the LED light goes out completely, dis-connect the audio input cable and power cycle the speaker. Verify the signal level is attenuated be-fore reconnecting audio input cable.
Caution: Signals that cause Over Current protection to trigger can generate very high sound pressure levels that may result in permanent hearing damage.

Signal Flow Diagram

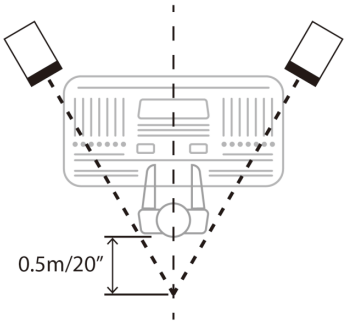


Positioning

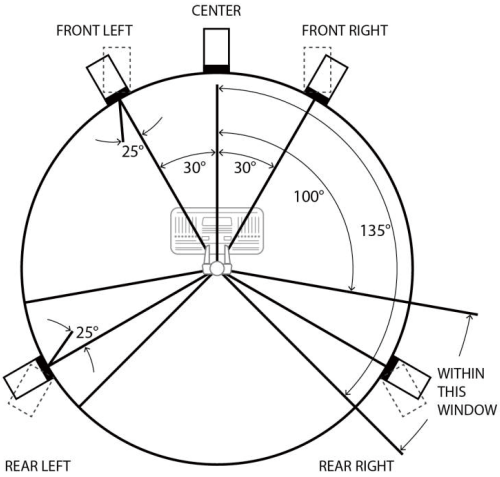
The acoustic center of the Image 2 is located right on axis with the AMT tweeter. The tweeter has been placed in a wave guide that effectively pushes it back into the cabinet, so that its voice coil is on the same plane as the voice coil of the midrange. This is called mechanical time-alignment. Due to this design, the sound arriving at the listening position will be at the same time from both drivers, so Image 2 can be used equally well as a nearfield or midfield monitor. The minimum recommended listening distance is 3.0 feet (91 cm). While speaker positioning can often be dependent on the nature of the room, a good starting point is to create an equilateral triangle between the two speakers and the listening position. The speakers should be angled inward, or “toed in”, so the tweeter axes aims towards the listener's ears, crossing a few inches behind the head. A “typical” placement scenario might have the speakers positioned 1.5 feet (46 cm) from the front wall, your ears at tweeter level and the speakers and listening position forming an equilateral triangle with 4.0 feet (120 cm) sides. However, every room has its unique characteristics. Therefore, the optimal listening distances, speaker height and distances from walls are matters for experimentation. The Image 2 is well equipped to work at a variety of listening distances.

Stereo Positioning

The following diagram shows the recommended setup for stereo monitoring:

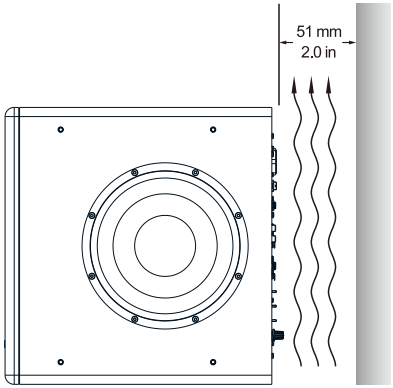


Surround Positioning:
The following diagram shows the recommended setup for use in a 5.0 surround environment (a subwoofer is not shown in this diagram:



Cooling

While the amplifier modules that drive the Image 2 are very efficient, the speaker still generates a heat that must be dissipated. This heat is transmitted to the air via convection from the rear amplifier plate. In order to ensure proper airflow, a minimum of 2.0 inches (51 mm) clearance should be maintained between the speaker and any large obstructions like walls. An ambient room temperature below 30°C (85°F) should be maintained. Over-temperature may cause the speaker to overheat and shut down.



Maintenance

Exterior surfaces of this product may be cleaned using a non-abrasive, lint-free cloth lightly damped with water. Disconnect the mains power cable when cleaning to avoid risk of electric shock. Do not use alcohol-based cleaners. Driver active surfaces such as diaphragms and surrounds may be cleaned using dry soft bristle or soft paint brushes. Driver diaphragms are very delicate and easily damaged, so proceed with great care. New artist-type brushes or cosmetic brushes work well for this task. Gently brush dust away from the surface starting at the center of the driver diaphragm and moving radially outward. Avoid applying inward pressure to the driver diaphragm. Repairs, maintenance, or other servicing of this product when its interior compartment is exposed should only be performed under specific advice from Fluid Audio by a qualified technician or by a Fluid Audio dealer.

Technical Support and Service

Your Fluid Audio authorized dealer/distributor is usually the best resource for technical support regarding your specific application. You can also contact Fluid Audio directly:
support@fluidaudio.com
+1 805 424-7447
To obtain repair service please refer to Warranty Section in this manual.

Mixcube Mode
(Small, full-range speaker emulation)

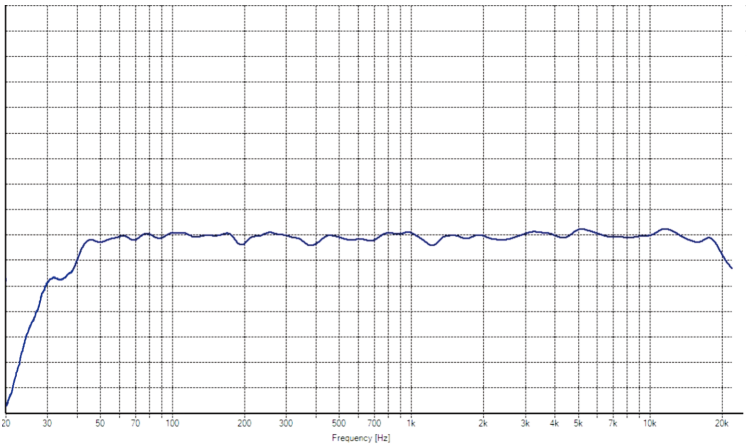
The Image 2 Mixcube mode is a secondary DSP voicing that allows for a completely different set of reference monitors at the press of a footswitch. Despite the numerous advantages of high-resolution monitors like the Image 2, many engineers still rely on their smaller, full-range Mixcubes as secondary references. These speakers have long traditions and people find them familiar and useful for focusing in on certain aspects of their mix. However, it's also a fact that crowding your console with those extra boxes degrades the sound field of the primary reference monitors. Not to mention, the additional cost of buying more speakers. Image 2 offers a convenient solution by emulating the sound and translation characteristics of your old Mixcube monitors.

Image 2 Voicing Frequency Responses

FLAT

Optimal setting for accuracy, transparency and outstanding translation. This setting has a flat frequency response and extremely fast transient response. This is the default voicing setting when the footswitch is not connected to the speaker.

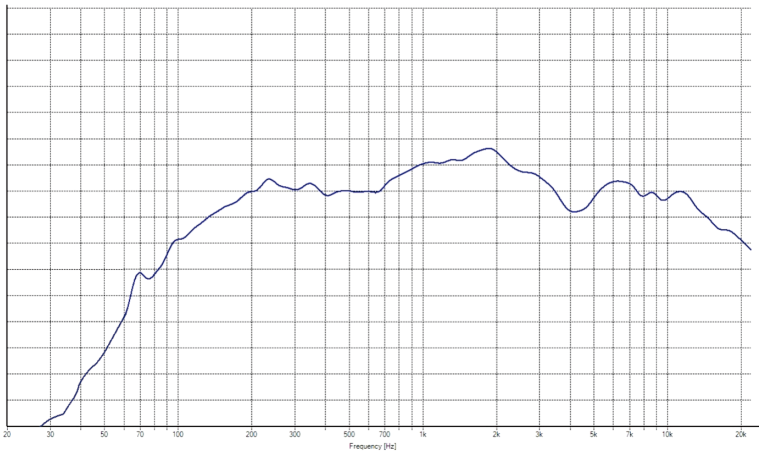
Image 2 main EQ curve, measured at 1.5m, 6th octave smoothed



CUBE

This setting emulates the frequency, phase and transient response of classic, single full-range driver Mixcubes. In order to switch to Mixcube mode, the footswitch must be plugged into the footswitch input on the rear panel of Image 2 (pictured below). NOTE: If room correction is loaded into the DSP, this will not apply on this setting.

Image 2 Mixcube mode EQ curve, measured at 1.5m, 6th octave smoothed



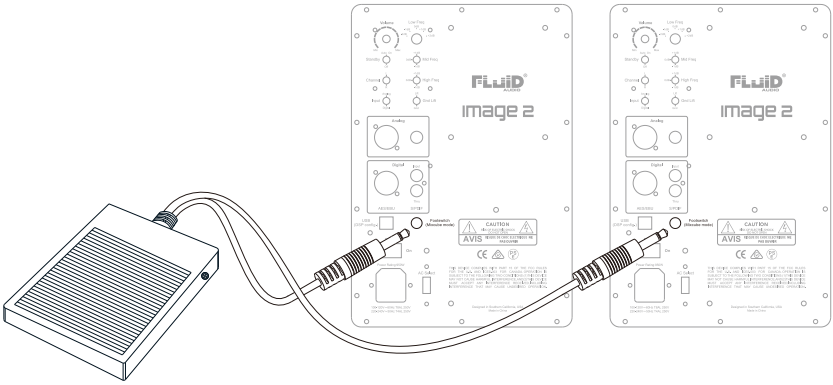
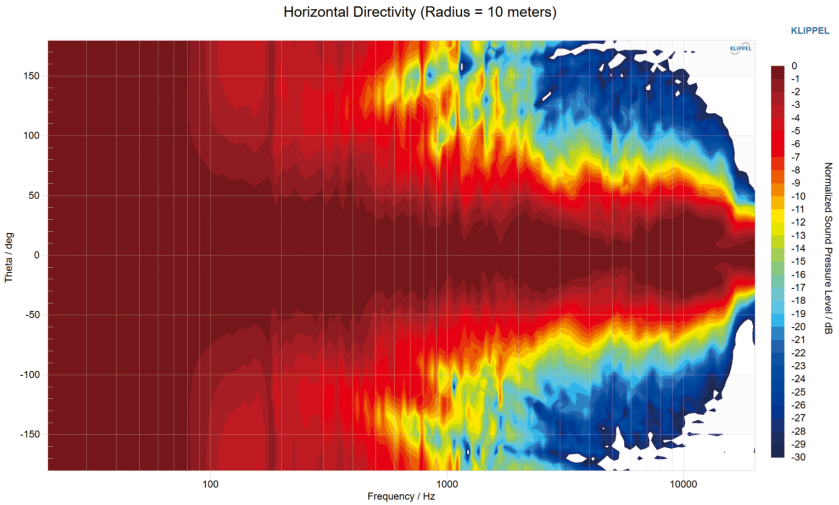
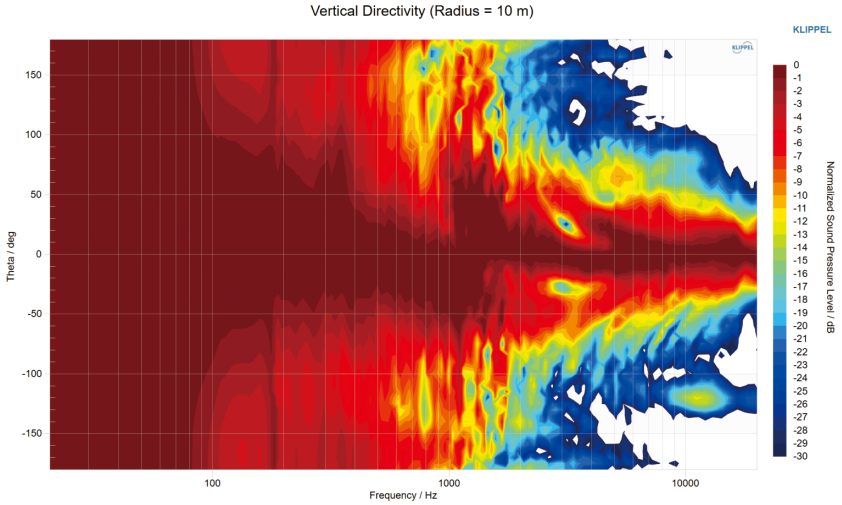


Image 2 Directivity Responses

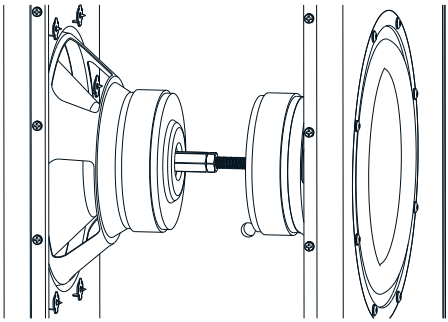




Vi-bracer™ Technology

Cabinet vibrations caused by the speaker drivers are a significant source of distortion and coloration in most systems. As the driver motor (magnet and voice coil) forces the cone to move outward to produce the low frequency sound you hear, it also pushes sound inward, back inside the cabinet. These sound waves are slowed by the damping material inside the cabinet. By doing this, internal “standing waves” are minimized so the sound does not reflect back to the cone creating distortion. The Image 2 takes a leap further by employing our proprietary Vi-bracer technology. As the force created by the speaker drivers is transmitted through the driver frame to the cabinet, vibration of the cabinet walls creates audible distortion emitted through the cone, coloring the sound. This problem is exaggerated in the low frequency drivers where the cone motion is greatest. While the Image 2 is built with a well braced cabinet, we also tackle the problem by eliminating vibrations before they begin. This is achieved through our innovative vibration cancellation design. The low frequency drivers are mounted on opposing sides of the cabinet and their motors are tied together with outward pressure. As the cones are driven in and out in opposite directions the forces exerted on the motors cancel one another. The vibrations never make it to the cabinet because they are not allowed to develop in the first place. This layout has further benefits: since the drivers are locked together, the motors and frames function as massive internal metal cabinet bracing. And because the wavelengths generated by the woofers are much larger than the speaker cabinet dimensions, the drivers radiate as if they were a single point source.

Image 2



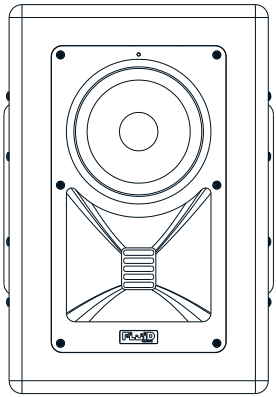
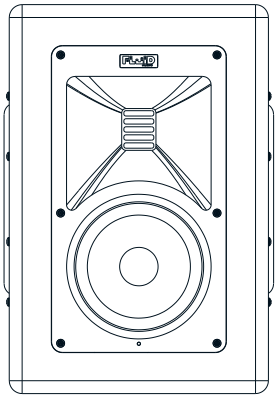
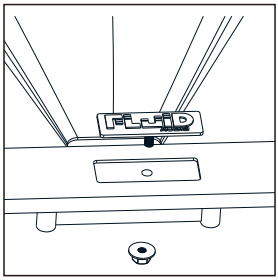
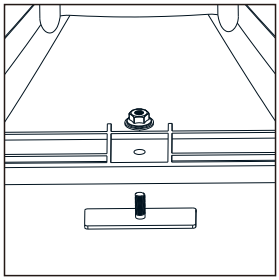
Room Correction File Import

Mixing engineers frequently use room correction software to “tune” their rooms. Once they mix on corrected speakers they never go back. This is the revolutionary benefit of room correction: Being able to have optimally flat speakers in a not so optimum room. However, running the room correction software constantly on your computer, whether in your DAW or outside your DAW, has its drawbacks. Firstly, it uses a fair amount of your CPU's resources, which could be used on other plug-ins. Second, there is also some latency using outboard software as it's using the CPU power of your computer. Lastly, if the room correction software is running inside your DAW program, and you want to play something through your speakers like a reference mix that isn't in DAW, it won't be corrected, and will sound totally different making mix checks cumbersome and difficult.

Fluid Audio has fixed this problem by being able to export files from room correction software like Sonarworks, and using our DSP application, upload the files to the Image 2 onboard DSP. Having the correction file on the speaker's DSP allows you to hear the corrected speaker whether you're in your DAW or not. It also allows you to save computer resources as that job it offloaded to the Image 2 DSP. **All sources being played through the Image 2 will be corrected.**

Reversable Logo

Depending how you set up and orient your speakers, the tweeter and logo can be either on the bottom (as it comes from the factory) or tweeter/logo on the top. When the tweeter is on top, you'll find that the logo is now upside down. You can, however, flip the logo around so that is then “right side up” and correctly oriented with the speaker's position. The tweeter faceplate must be removed first (with a 3mm hex wrench), and then a 5.5mm wrench is required to loosen the nut on the back of the logo. Once the nut is removed, the logo can be pushed out and flipped around. Do the reverse to reassemble.

Specifications

Item:	Image 2 Technical Specifications
Description:	3-way active monitor with Mixcube Mode and Room Correction file upload
Controls:	Input level stepped attenuator
Input Impedance:	Balanced XLR, 20k Ohm Impedance
Sensitivity:	90dB @ 1 meter with -15dBV input signal (Level control set to 0dB)
Frequency Response:	+/- 4.6dB 28Hz-20kHz ; +/- 2.0dB 80Hz-20kHz
Bass Response:	-3 dB @ 40Hz, Q = 0.707 Slope = 24 dB/octave
Crossover Frequencies:	115 / 2800 Hz (Controlled by onboard DSP)
Cabinet:	21.7 liters total internal volume, Sealed woofer and midrange enclosures.
Tweeter:	AMT (Air motion transformer)
Midrange:	5.0” aluminum cone, Low distortion motor with shorting ring
Woofers:	8” paper cone, +/- 8.2 mm linear excursion
High Frequency Amplifier:	75W (RMS), 100W(Peak)
Mid Frequency Amplifier:	150W (RMS), 200W(Peak)
Low Frequency Amplifier:	225W x 2 (RMS), 800W(Peak)
AC Power Input:	100 VAC or 220 VAC (switch set at factory)
Power Consumption:	Idle: 7W, Maximum: 950W
Weight - Speaker:	N.W.: 28.4 lbs each (12.8 kgs); Shipping: 31.5 lbs each (14.3 kgs)
Shipping Dimensions L×W×H:	18.9 × 14.6 × 20.4 inches (480 × 372 × 518 mm)
Product Dimensions L×H×D:	9.5 × 14.3 × 13.8 inches (242 × 363 × 350 mm)

Limited Warranty

Fluid Audio warrants electronic components and cabinetry for a period of three (3) years against manufacturing defects, covering parts and labor for necessary repairs. Moving speaker components such as tweeters, midranges and woofers are warranted for a period of one (1) year against manufacturing defects. Shipping fees incurred from returns for under-warranty service in the first 30-days will be paid by Fluid Audio. All shipping fees both to and from Fluid Audio following this 30-day period must be paid by the customer. All returns, both during and following the 30-day period, must be affected via the Procedures for obtaining Warranty Service described below. Fluid Audio makes no other warranty, either express or implied, including but not limited to implied warranties of merchantability, fitness for a particular purpose, or conformity to any representation or description, with respect to this product other than as set forth below.

Warranty Conditions

The above Limited Warranty is subject to the following conditions:
This warranty covers only normal use of the product. Fluid Audio shall not be liable under this warranty if any damage or defect results from (i) misuse, abuse, neglect, improper shipping or installation; (ii) disasters such as fire, flood, lightning or improper electric current; or (iii) repairs, service or alteration by anyone other than an authorized Fluid Audio representative; (iv) damages incurred through incorrect connection or handling, abnormal conditions, high humidity, deliberate abuse, power surges, water spills, or any other accidents.

You must retain your bill of sale or other proof of purchase to receive warranty service. No warranty extension will be granted for any replacement part(s) furnished to the purchaser in fulfillment of this warranty. To return a defective product, please contact our Customer Service Department at https://fluidaudio.com/support-request/ (preferred) or support@fluidaudio.com for a Return Merchandise Authorization (RMA) number and follow the Return of Products Instructions below. The RMA is valid for 10 days from date of issuance. Returns will not be accepted without an RMA.

Procedures for Obtaining Warranty Service

RMA (Returning Merchandise Authorization) Policy: If repairs are required, the customer must obtain an RMA (Return Merchandise Authorization Number) number and provide proof of purchase. RMA and services are rendered by Fluid Audio only. Any shipping costs after 30 days (starting from the original date of purchase) on any item returned for repair are solely the customer's responsibility. All returned parts must have an RMA number written clearly on the outside of the package along with a letter detailing the problems and a copy of the original proof of purchase. No COD packages will be accepted. No package will be accepted without an RMA number written on the outside of the package.

1. If the product must be repaired, an RMA number will be issued for shipment to our repair department. Please follow the instructions given by Fluid Audio technical support staff to ship your product. Fluid Audio will not accept any shipments without an RMA number.

2. Pack the product in its original box or a well-protected box, as outlined by Fluid Audio Customer Service. Fluid Audio will not be responsible for shipping damage/loss of any product not shipped in its original packaging. Fluid Audio will not be responsible for shipping damage/loss of any product outside the original 30-day paid service period. It is very important that you write the RMA number clearly on the outside of the package. Ship the product with a copy of your bill of sale or other proof of purchase, your name, address, phone number, email address, description of the problem(s), and the RMA number you have obtained to the address provided to you by Fluid Audio Customer Service.

3. Upon receiving the product, Fluid Audio will repair or replace your product (at Fluid Audio's discretion) and will ship it back to you within 2 weeks (dependent on parts availability) via FedEx, UPS. Or other select carrier.

4. Cross-exchange (Parts only): You will need to provide a valid credit card number as a deposit guarantee when the RMA number is issued. Once approval has been obtained on your credit card, the part(s) will be shipped FedEx, UPS, or other select carrier. You will need to ship defective part(s) back to Fluid Audio within 15 days to avoid charges to your credit card. If such charges are incurred, the shipped part(s) will be billed at the then current price.

5. Fluid Audio will pay for shipping to and from the customer only within the first thirty days following the original product ship date. Following this 30-day period all shipping fees both for under warranty and post warranty repairs are the sole responsibility of the customer. The customer also assumes full liability for losses or damages resulting from shipping as well as all responsibility to pursue remuneration for such issues with their selected carrier.

Post Warranty Repair

Fluid Audio accepts no liability for problems caused by after-market software or hardware modifications or additions. Fluid Audio is not responsible for any loss of work (“down time”) caused by a product requiring service. This warranty is null and void if the defect or malfunction was due to damage resulting from operation not within manufacturer specifications. It will also be null and void if there are indications of misuse and/or abuse. Fluid Audio has the option of voiding the warranty if anyone other than a Fluid Audio technician attempts to service the product. Fluid Audio will not warrant any problems arising from an act of God (lighting, flooding, tornado, etc.), electrical spikes or surges, or problems arising out of hardware, software, or additional devices added to complement any product manufactured by Fluid Audio. Under no circumstances will Fluid Audio be responsible for any refund or remuneration exceeding the original purchase price of the product less any shipping fees. Fluid Audio will not be held responsible for typographical errors on sales receipts, repair tickets, or on our website. Fluid Audio makes every effort to make sure all information on our website is correct.

Service Request

In order to serve you better, please complete the service request form in the following link for your Fluid Audio studio monitors. Once submitted and reviewed, a service representative will contact you. https://fluidaudio.com/support-request/

FLUID AUDIO

For company and product information,please visit us on the web at fluidaudio.com