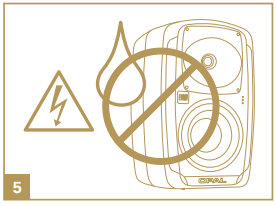
# EVENT® OPAL

user manual

## important safety instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety.
   If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
    When a cart is used, use caution when moving the cart/aparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Keep packaging out of reach of children.
16. Take care when lifting the speaker. The supplied bag is not designed to support the speaker's weight.
17. The EVENT Opal is a precision monitoring tool capable of producing high sound pressure levels that could cause permanent hearing loss.
    Please exercise caution when listening, ideally using an SPL meter to monitor output levels.
18. Never touch the heatsink (blue) while in operation. Never cover the Opal while turned on. Ensure there is suitable ventilation around the rear of the cabinet for heat dissipation.
19. The appliance coupler shall remain operable once the product is installed.
20. Warning - To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
21. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
22. The Opal is a free-standing speaker and is designed for operation on open surfaces such as speaker stands or a work surface. Do not operate the Opal within cabinets or any enclosed space with limited ventilation.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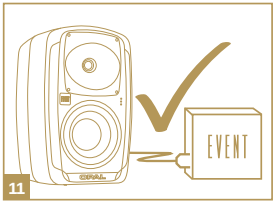
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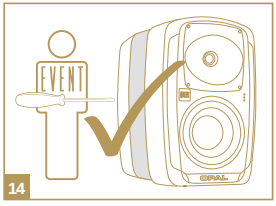
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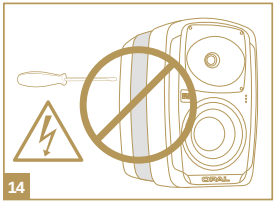
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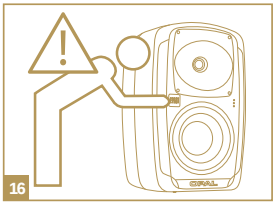
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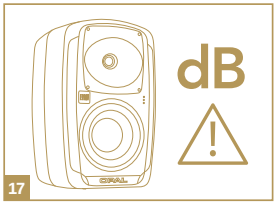
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BURN HAZARD
CAUTION
HOT SURFACE
18

## introduction

Thank you for purchasing the EVENT Opal. Before you set up your speakers for the first time, please read through this user manual to ensure you are able to get the most out of your investment.

The 'no compromise' design brief for these speakers was essentially the impossible. The Opal was to be an 8-inch two-way speaker with the same dynamic and extended mid-range as the most expensive three-way systems.

It had to feature extended and powerful bass response, and have seamless and transparent integration through all the frequency range. Distortion was entirely unacceptable.

After many years of research and engineering, EVENT has defied conventional audio philosophy and created the Opal. Its woofer, tweeter, amplifier and cabinet all feature innovative and unique design and technology elements, combined to create one of the finest studio monitoring system ever released.

The EX8 driver provides characteristics previously unheard of in any other 8" speaker. It provides a raw response of 30Hz-10KHz and a power handling of 1000 watts. Its high-power neodymium motor offers 36mm of linear excursion which gives the listener an extremely detailed and high level of high-speed bass.

The Opal's patented X-Coil configuration increases the EX8 driver speed and lowers harmonic distortion by up to 18dB, which results in mid-range accuracy that truly surpasses even the finest three-way studio monitors. The EX8 bespoke cone material provides extension and control to complete this revolutionary driver.

The ULD1 tweeter combines ultra-light and rigid beryllium-copper with one of the most powerful neodymium tweeter motors of any system available, to provide the Opal with unbelievable high frequency definition while minimising any distortion. It is mounted in a fully rotatable waveguide to provide complete versatility in application.

The Opal cabinet is moulded from aluminium to provide strength and minimise resonance. It is curved in a combination of complex radii, completely minimising flat or cornered sections that can cause diffraction issues. A “no compromise” approach to port design has resulted in front mounted variable impedance bass reflex ports that eliminate problems created by rear reflection ports that rely on room acoustics, and also air distortion artifacts found in conventional front ported systems. This gives the Opal fast, deep and accurate bass response.

The Opal’s drive electronic system is purely high fidelity analogue, providing 750 watts of peak power in two-way configuration and giving the Opal a transient response and low distortion that surpasses the capabilities of any other monitoring system.

All these elements combine to provide the Opal dynamic extended mid range and powerful low end with seamless integration across the frequency range, and the widest sweet spot of any system currently available.

The EVENT Opal is truly a revolution in studio monitoring.

## the opal - front

## the opal - rear

## front control panel


**Level:** Allows for modification of the input sensitivity, from -6dB to +6dB in regards to the reference sensitivity of 0.775v RMS. The default setting is 0.

**Space:** Allows for the setting of Full, Half and Quarter space to compensate for the low frequency output caused by the speaker location. If placed in an open environment, select 'Full' space. If placed against a wall, select 'Half' space. If placed in a corner, select 'Quarter' space.

**Room EQ Controls**
The room equalisation controls allow for the implementation of an acoustic filter that can be used to eliminate room resonance under 200Hz that can cause less defined bass reproduction.

**Q:** Adjusts the width (in frequency) of the acoustic filter.

**Freq:** Adjusts the center position of the acoustic filter, from 40Hz to 280Hz.

**Depth:** Adjusts the intensity of the acoustic filter - 1 (0dB), 2 (2dB), 3 (4dB), 4 (8dB), 5 (14sB), 6 (20dB). The default setting is 0dB - filter not engaged.

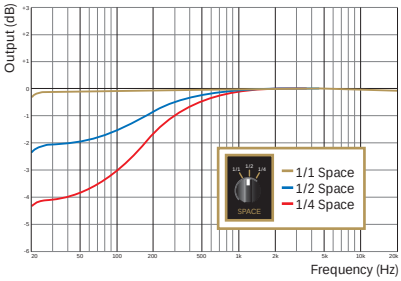
**LF shelf:** Allows for the implementation of a shelving filter, centered at 200Hz. Available options are -1.5, -.75, 0, +.75 and +1.5dB. The default setting is 0 - filter not engaged.

**HF shelf:** Allows for the implementation of a shelving filter, centered at 5kHz. Available options are -1.5, -.75, 0, +.75 and +1.5dB. The default setting is 0 - filter not engaged.

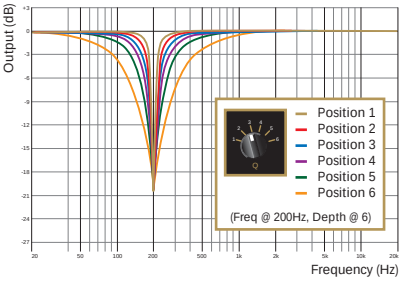
**DIM:** Allows for the adjustment of the brightness of the EVENT rotatable badge on the front of the cabinet. Settings range from 0 (completely off) to 4. The default setting is 2.

# filter response graphs

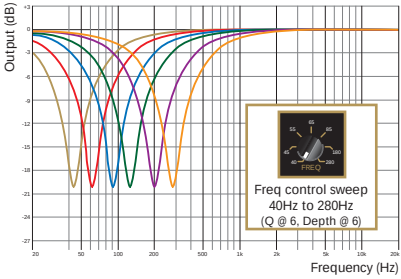
## Space Filter



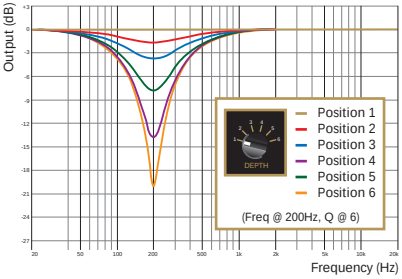

## Q Filter



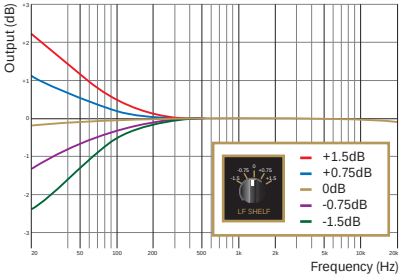

## Freq Filter



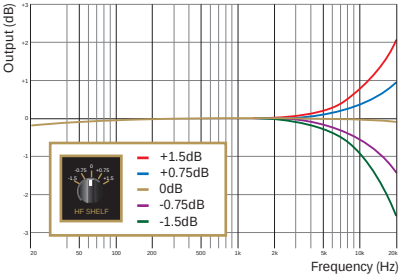

## Depth Filter




## Low Frequency Shelving Filter




## High Frequency Shelving Filter



## rear panel


**Mains Input:** Connect the mains supply here. Ensure that you use only the cable supplied or a genuine EVENT replacement. Note that the amplifier is not entirely disconnected from mains power unless this cable is completely disconnected.

**Mains Switch:** Use the Mains Switch to turn the Opal on or off.

**Module Dock:** The Module Dock is a proprietary EVENT expansion Input/Output, allowing the future expansion of the Opal without needing to invest in an entirely new speaker. If a module is connected, the expansion module status LED at the bottom left of the front of the Opal will illuminate.

**Balanced/Unbalanced Signal Input:** The Opal allows for the input of a balanced or unbalanced line input. The port accepts an XLR style cannon jack or a ¼" mono jack.

Please note that the Opal is fixed to operate in the voltage range in the region that it is sold in.

When unpacked the Opal's Mains Input will be covered by a label identifying which region your Opal is set to. Please check that your mains voltage is consistent with the Opal's voltage rating before connecting to the mains supply.



# status LEDs

The EVENT Opal is an extremely powerful studio monitoring tool, therefore care needs to be taken when listening. Professional monitoring should ideally be performed between 85-95dB. While the Opal provides ample headroom above these levels, extended listening can cause permanent hearing damage as well as over excurt the EVENT EX8 driver.

The Opal features four status LEDs to indicate the speaker and amplifier status. It is important to familiarise yourself with the function of these LEDs as they will communicate the status of your speaker and the inputs.

**Startup sequence :** When the Opal is first switched on and is running a self diagnosis, the output will be muted and the middle LED will illuminate white for twelve seconds, then flash for ten seconds. Following this the Opal will be ready for use.

**Top light (yellow):** In the event that the input signal begins to overload the amplifier, the top light will illuminate **yellow**.
This is intended as a warning only and it is up to the listener to determine if the audio level needs to be decreased.

**Middle light (white/orange) :** Following the startup sequence, the middle light will only illuminate **white** in the event of an excessive input level. The Opal will automatically attenuate output levels for ten seconds to allow the operator time to correct the source level.

The middle light will illuminate **orange** in the event of excessive temperature, and the speaker output will automatically attenuate to allow the Opal to reset. In this case it is important to lower the speaker temperature to reasonable level, after which the Opal will automatically reset.

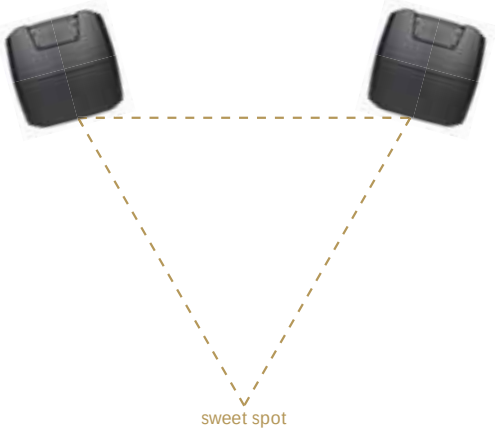
**Bottom light (red) :** The bottom light will only illuminate red in the event of a fault condition. In this case the Opal requires factory service (see **warranty information**).

Operation of the **expansion module status LED (blue)** will depend on the actual module being used. Consult the expansion module user guide for more information.

## positioning your speakers

The EVENT Opal monitors are physically identical. When used in a stereo configuration, there is no physical or acoustic distinction between the left and right speakers. While we recommend mounting the Opal in vertical orientation, it has been designed to allow horizontal alignment (see **horizontal mounting**).

For precise calibration within your monitoring environment please utilise the **Event StudioEQ** system, available free of charge when you register your monitors online at **www.eventelectronics.com**.




Mount the speakers slightly inward, so that the driver components directly face the listening position. When oriented this way, the listener is in the “sweet spot” which yields the most accurate stereo reproduction. If you need a wider sweet spot to allow for greater listener movement or for group monitoring, face the speakers in a slightly more open position, but never more than necessary.

While not ideal, if you must mount the speakers substantially above or below ear level, you will also need to tilt the cabinets downward or upward to keep the driver components directly facing you.

It is important to note that the listening space has a large effect on the performance of speakers, particularly the low frequency response. It is best to try your monitors in a variety of positions to acheive optimum results. Additionally the Opal’s in-built acoustic filters can be introduced (see **front control panel**).

# horizontal mounting

The EVENT Opal has been designed to overcome the performance issues exhibited in traditional monitoring systems when mounting the speaker horizontally.

The key to this performance gain is the Opal's rotatable high-frequency waveguide.

For more information on rotating the Opal waveguide please visit **www.eventelectronics.com**. Please note that this operation should only be carried out by qualified service personnel.

Note that when mounting the Opal horizontally, the tweeter should always be on the inside, as shown below.

The EVENT badge is also rotatable. To lift the badge from its magnetic mounting gently pry from the bottom with a flat screwdriver.

**Please note that the supplied rubber plinth should always be used when mounting the speaker either vertically or horizontally, to prevent any movement of the cabinet.**

## warranty information and support

The EVENT Opal is supplied with a two year manufacturer's warranty from date of purchase, covering defect in product or workmanship.

The warranty excludes defects caused by modification, shipping damage, or failure to use the speaker as per the instruction guide.

Please retain your sales receipt as proof of purchase.

If you experience any problems with your Opal, please contact the EVENT Customer Service department via the details below.

Before calling, however, we ask that you please consult the Technical Support section of our web site, www.eventelectronics.com.

Please note that there are no user serviceable parts within the EVENT Opal. For any servicing please refer to an authorised service technician.

If you believe your monitor is in need of repair, please contact the Event Customer Service department to request a Return Authorization Number (RA#). We can accept for servicing only those units that are accompanied by an RA#. Units shipped without an RA# number will be refused.

**EVENT Electronics Customer Support:**

**Email :** techsupport@eventelectronics.com

## studioEQ calibration system

The EVENT StudioEQ system allows for precise calibration and measurement of your speakers, with respect to your listening space and position.

For more information, please visit **www.eventelectronics.com**

STUDIO EQ

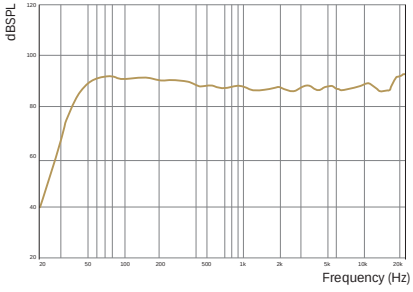
EVENT OPAL

# specifications

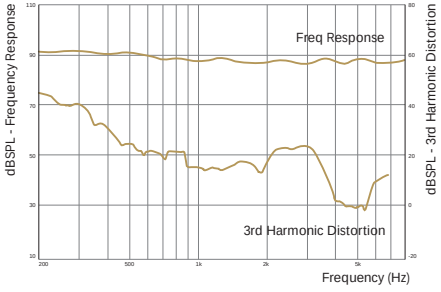
## system

| | |
|---|---|
| Frequency Response | 35Hz – 22kHz (see graph) |
| Crossover Frequency | 1600Hz |
| Crossover Type | Acoustic 8th Order (48dB/Oct) |
| 3rd Harmonic Distortion @ 90dB SPL, 1m | 500 - 7kHz - 0.08%<br>200 - 20kHz - 0.2%<br><200Hz - 1.5% |
| Acoustic Output - SPL @ 1m<br>Long Term (80Hz - 20kHz)<br>Peak (80Hz - 20kHz) | <br>111dB<br>114dB |
| Signal Input | Combo XLR, ¼" TRS (bal/unbal) |
| Input Sensitivity | .755 v/rms is 0dBu |
| AC Input Voltage | 90-110V, 110-120V or 220-240V<br>(preset at factory) |
| AC Input Connector | 2-Pin IEC |
| Average Long-Term Power Consumption | 220 watts |
| Quiescent Power Consumption | <20 watts |

**Frequency Response**




**Freq Response vs 3rd Harmonic Distortion**



## low frequency transducer - EX8

| | |
|---|---|
| Piston Diameter | 180mm (7.1”) |
| Voice Coil Configuration | X-Coil double<br>Low distortion design |
| Voice Coil Diameter | 66mm (2.6”) |
| X-Coil Diameter | 65.2mm (2.56”) |
| Former Material | High Strength Polyamide -<br>Glass Fiber |
| Voice Coil Wire | Copper Clad Al |
| Magnet Type | Neodymium |
| Magnetic Gap Design | XBL - Split Gap |
| Impedance Nominal in Cabinet | 5 Ohms |
| Cone Type | Carbon fiber composite |
| Power Handling | |
| Continuous Pink Noise | 240 watts |
| Program Power | 360 watts |
| Peak Power | 720 watts |

## high frequency transducer - ULD1

| | |
|---|---|
| Dome Diameter | 25.4mm (1”) |
| Voice Coil Diameter | 25.0mm (0.98”) |
| Magnet Type | Neodymium |
| Impedance DCr | 6 Ohms |
| Impedance Nominal in Cabinet | 5 Ohms |
| Dome Type | Beryllium Copper |
| Power Handling | |
| Continuous Pink Noise | 25 watts (above 1.6kHz) |
| Program Power | 50 watts (above 1.6kHz) |
| Peak Power | 100 watts (above 1.6kHz) |

# specifications

## low frequency amplifier

| | |
|---|---|
| Frequency Response | 20Hz - 20kHz (±0.1dB) |
| Operating Band Pass | 20Hz - 1,600Hz |
| Total Harmonic Distortion | 0.009% @ 300 watts into 5 ohm load |
| Voltage Gain | 24dB |
| Long Term Power @ 5 Ohms* | 270 watts |
| Continuous Power @ 5 Ohms** | 387 watts |
| Burst Power @ 5 Ohms*** | 600 watts |
| Output Topology | Class AB |
| Cooling | Convection - Aluminium Heat Sink |

## high frequency amplifier

| | |
|---|---|
| Frequency Response | 20Hz - 20kHz (±0.1dB) |
| Operating Band Pass | 1,600Hz - 20,000Hz |
| Total Harmonic Distortion | 0.003% @ 90 watts into 5 ohm load |
| Voltage Gain | 15dB |
| Long Term Power @ 5 Ohms* | 50 watts |
| Continuous Power @ 5 Ohms** | 112 watts |
| Burst Power @ 5 Ohms*** | 140 watts |
| Output Topology | Class AB |
| Cooling | Convection - Aluminium Heat Sink |

* Both high frequency and low frequency were measured simultaneously for this specifictation.

** Continuous power was measured using 1kHz sine wave signal

*** Burst power was measured using a 1kHz burst tone waveform where the burst portion contains four cycles (on) and the low level (off) signal contains 200 cycles. This test signal succinctly represents the strain and demands placed on the amplifier by music content containing high transients.

## physical

| | |
|---|---|
| Cabinet Volume | 28 Litres |
| Cabinet Construction | High Pressure Injection-Moulded Aluminium |
| Cabinet Finish | Black Powdercoat |
| Low Frequency Vents | Two Variable Impedance Ports (patent pending) |
| Waveguide Construction | High Pressure Injection-Moulded Aluminium |
| Waveguide | Elliptical waveguide - Rotatable |
| Mounting Points | Four each<br>M8 Omni-mount Pattern |
| Cabinet Dimensions | 295mmW x 450mmH x 273mmD<br>11.6”W x 17.7”H x 10.8”D |
| Cabinet Weight | 21.2kg<br>46.74lb |
| Shipping Dimensions | 390mmW x 575mmH x 380mmD<br>15.4”W x 22.6”H x 15”D |
| Shipping Weight | 24.3kg<br>53.57lb |
| Operating Temperature Range | 5-35 ° C / 40-95 ° F |
| Agency Approvals | CE, UL, CCC, C-Tick, SASO, NON, EK, PSE |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