



# RMS22ac

Self Powered Dual 12 inch Reference Subwoofer

reference  
MONITOR



## Overview

The RMS22ac is a dual 12 inch, direct radiating reference subwoofer that is designed to provide the precise transient response and extended low frequency response required of a studio subwoofer but with the power handling and output capability required in larger spaces. Its 4 inch voice coils, strong neodymium magnets, and innovative laminar flow ports permit low frequency extension to 22 Hz in an enclosure of the same size as the RM22ac Dual 12 inch Coaxial Reference Monitor. The RMS22ac is available both in the standard studio version, which includes four M6 mounting points for use with third-party isolation feet, and in an installation version which includes twelve M10 eye bolt points and two M10 yoke points.

Four back panel selectable presets allow a user to select a 4th order 80 Hz low pass filter for conventional applications, or an 8th order 120 Hz low pass filter for LFE applications. Additional presets optimize the response for use with RM22ac or RM28ac full range Reference Monitors. A full complement of input filters and delay, as well as signal levels and amplifier status, may be accessed via Ethernet, using **Armonia Pro Audio Suite™** control software. In addition, a pre-output EQ stage is available for programming custom presets. These presets may be saved and later recalled using the back panel Preset Select button or software.

The RMS22ac's robust transducers are powered by two 1600 watt amplifier channels, designed and manufactured in Italy by Powersoft. The amplifier incorporates state-of-the-art Class-D technology with Power Factor Correction to produce extremely high efficiency, low noise, and low intermodulation distortion.

The RMS22ac is primarily intended for use as a mid-to-far-field subwoofer in recording studios and A/V production suites; but it is also an ideal choice for cinemas, museum exhibit spaces, multimedia presentation facilities, boardrooms, and high end home theaters: any environment in which pristine audio quality is desired and a protective grille is not necessary.

## Performance Specifications<sup>1</sup>

### Operating Mode

Single-amplified w/ DSP

### Operating Range<sup>2</sup>

22 Hz to 135 Hz

### Nominal Beamwidth

Spherical within operating range

### Transducers

LF: 2x 12.0" woofers, 4.0" voice coil; neodymium magnet

### Power Handling @ Nominal Impedance<sup>3</sup>

89 V / 2000 W @ 4 Ω (2x 1000 W @ 8 Ω)

### Nominal Sensitivity @ Input Voltage<sup>4</sup> (half / whole space)

98 dB / 92 dB @ 2.00 V

### Nominal Maximum SPL (half / whole space)

137 dB / 131 dB peak  
131 dB / 125 dB continuous

### Equalized Sensitivity @ Input Voltage<sup>5</sup> (half / whole space)

94 dB / 88 dB @ 2.00 V

### Equalized Maximum SPL<sup>6</sup> (half / whole space)

133 dB / 127 dB peak  
127 dB / 121 dB continuous

## Physical Specifications

### Mounting / Suspension Points

Studio Version:

(4) M6 x 1.0 mounting points for user-supplied isolation feet

Installation Version:

(12) M10 x 1.5 suspension points, (2) M10 x 1.5 yoke points

### Dimensions / Weight

See page 5

### Finish

Black or white painted enclosure

## Options

Custom color finish



## Audio Input

### Connectors

Analog In: Female XLR  
Analog Out: Male XLR  
AES3 In: Female XLR  
Ethernet / AESOP: 2x 8P8C (RJ45)

### Analog Input Wiring

Pin 1: Chassis  
Pin 2: Signal +  
Pin 3: Signal -

### Input Impedance

10 k $\Omega$  balanced to ground

### Input Sensitivity

1.5 Vrms / 6.0 dBu

### Maximum Input Voltage

6.3 Vrms / 18.2 dBu

### Controls

Preset Select: 1 thru 4, press and hold 3 sec to access 5 thru 8  
Input Select: Analog, AES3 A, AES3 B, AES3 A+B  
Input EQ: In / Out  
Input Volume: Full clockwise = nominal gain

### LED Indicators

Ready, signal, temp, limit, protect, selected preset,  
selected input, input EQ in

## Digital Signal Processing

### DSP Encoding

24 bit / 48 kHz

### DSP Latency

Analog Input: 3.52 ms

### Input Processing (software accessible)

Three layers raised cosine parametric or graphic EQ  
Filter Types: Peaking, asymmetrical, low and high shelf, low and high pass  
Delay: 2 seconds  
Gain  
Polarity  
Mute

### Pre-Output Processing (software accessible)

Sixteen bands parametric EQ  
Filter Types: Peaking, low and high shelf, low and high pass, band pass, band stop, all pass  
Delay: 2 seconds  
Gain  
Mute

## Amplifier

### Type

Two-channel Class D

### Output Power

EIAJ test, 1 kHz, 1% THD: 2x 1600 W @ 4  $\Omega$   
Maximum Output Voltage: 2x 150 V peak

### Frequency Response

10 Hz to 25 kHz,  $\pm 3$  dB, for 1 W @ 4  $\Omega$

### S/N Ratio

> 115 dBA, 20 Hz to 20 kHz

### Crosstalk Separation

> 71 dB @ 1 kHz

### Slew Rate

50 V / microsecond @ 8  $\Omega$ , input filter bypassed

### Damping Factor

> 10000 @ 100 Hz

### Distortion

THD+N: < 0.05% from 0.1 W to full power (typically < 0.02%)  
SMPTE IMD: < 0.05% from 0.1 W to full power (typically < 0.02%)  
DIM100 IMD: < 0.05% from 0.1 W to full power (typically < 0.02%)

### Efficiency

> 75% (typical)

### Cooling

Temperature-controlled variable speed internal fan

### Maximum Operating Ambient Temperature

40° C

### Protection Systems

Over-temp power limiting, thermal shutdown, short-circuit,  
overload output protection

## AC Mains

### Connections

Mains In: Neutrik powerCON NAC3MPA  
Mains Out: Neutrik powerCON NAC3MPB

### Mains Voltage

100 to 240 V~, 50/60 Hz with PFC

### Current Draw (1/8 max output power)

5.2 to 2.6 A

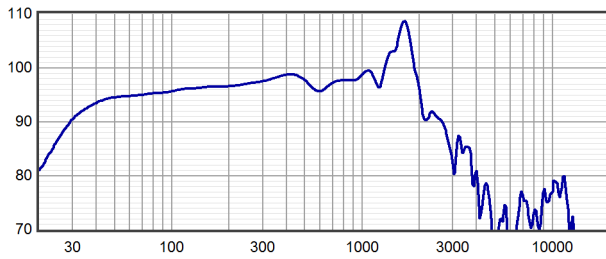
### Thermal Emission (1/8 power @ 4 $\Omega$ )

297 BTU/h 75 kcal/h

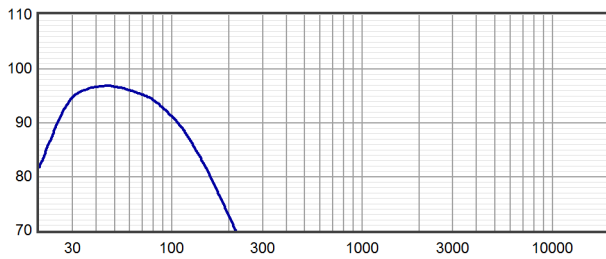


## product specification

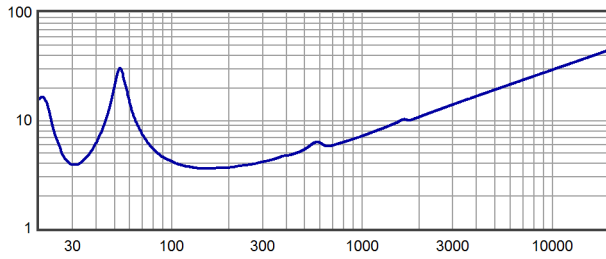
Axial Sensitivity (dB SPL, 2.00 V @ 1 m, half space)<sup>7,8</sup>



Axial Processed Response (dB, half space)<sup>7,9</sup>



Impedance (ohms)





## product specification

### Technologies

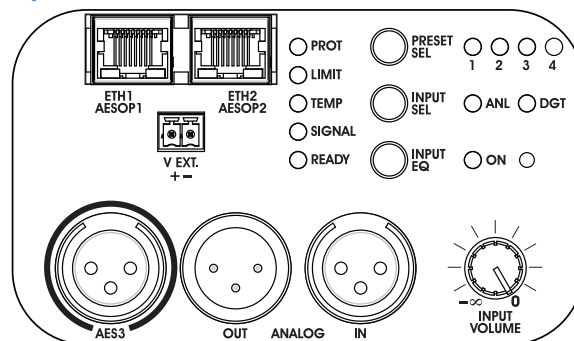
The 12 inch woofers in the RMS22ac have 4 inch voice coils, unusually strong neodymium magnet structures, and dual silicone impregnated spiders for high excursion and long term stability. This allows the pair of woofers to handle 2000 watts of long term power, while providing low frequency extension to 22 Hz.

Unique laminar flow ports allow the RMS22ac to provide extremely high volume velocity with no audible turbulence. Due to this innovative port design, even very low frequency signals can be reproduced faithfully at high SPLs, with ultra-low distortion and exceptional linearity.

### Mechanical Specification Drawings

2D and 3D DXF dimensional drawings are available for download at [www.fulcrum-acoustic.com/support](http://www.fulcrum-acoustic.com/support).

### Input Panel



### RMS22ac Presets

Preset 1	80 Hz, 4th Order Low Pass
Preset 2	120 Hz, 8th Order Low Pass
Preset 3	RMS22ac Sub + RM28ac Monitor
Preset 4	RMS22ac Sub + RM22ac Monitor

Presets 5-8 user-programmable in **Armonia Pro Audio Suite™** control software. Press and hold rear panel Preset Select button 3 seconds to access these presets.

### Notes

<sup>1</sup> **Performance Specifications** All acoustic specifications rounded to nearest whole number. External DSP with Fulcrum Acoustic-provided settings is required to achieve the specified performance.

<sup>2</sup> **Operating Range** The frequency range within which the processed response is within 10 dB of the average.

<sup>3</sup> **Power Handling** Based on the AES power handling of the transducers.

<sup>4</sup> **Nominal Sensitivity** The 1-meter-referenced SPL produced by a 1 watt band limited pink noise signal, with no processing applied.

<sup>5</sup> **Equalized Sensitivity** The 1-meter-referenced SPL produced when an EIA-426-B signal is applied to an equalized loudspeaker system, at a level which produces a total power of 1 watt, in sum, to the loudspeaker subsections.

<sup>6</sup> **Equalized Maximum SPL** The 1-meter-referenced SPL produced when an EIA-426-B signal is applied to an equalized loudspeaker system, at a level which drives at least one subsection to its rated power.

<sup>7</sup> **Resolution** All response graphs are subjected to 1/6 octave cepstral smoothing with a gaussian weighting function.

<sup>8</sup> **Axial Sensitivity** The SPL plotted against frequency for a 1 watt swept sine wave, referenced to 1 m with no signal processing.

<sup>9</sup> **Axial Processed Response** The axial magnitude response with recommended signal processing applied.

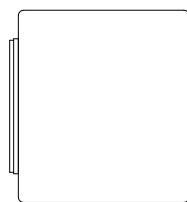


product specification

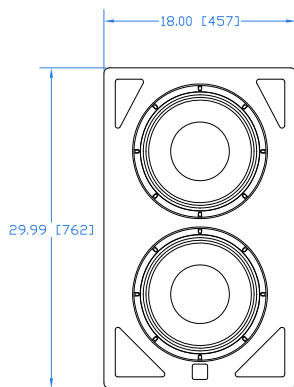
Notes:

1. Net Weight = Approx. 91.0 lb / 41.3 kg
2. Ship Weight = Approx. 102.0 lb / 46.0 kg
3. Symbol  $\odot$  = M6 FOOT mounting point (user-supplied)
4. Symbol  $\oplus$  = CoG

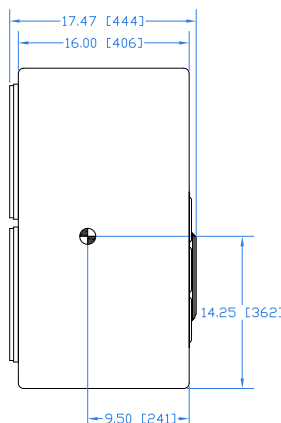
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2	RE-ORIENT DRAWING LAYOUT	RAF 05/17/18
3	RE-FORMAT TEXT	RAF 07/11/18



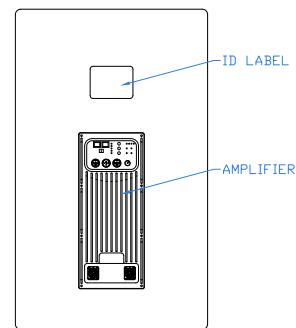
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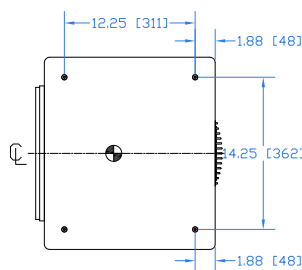
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RIGHT SIDE

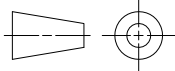


BACK



BOTTOM

THIRD ANGLE PROJECTION



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ANGLES ±1/2°

(X.XX) = REF DIMS NO TOLERANCE IMPLIED

TSC = THEORETICAL SHARP CORNER

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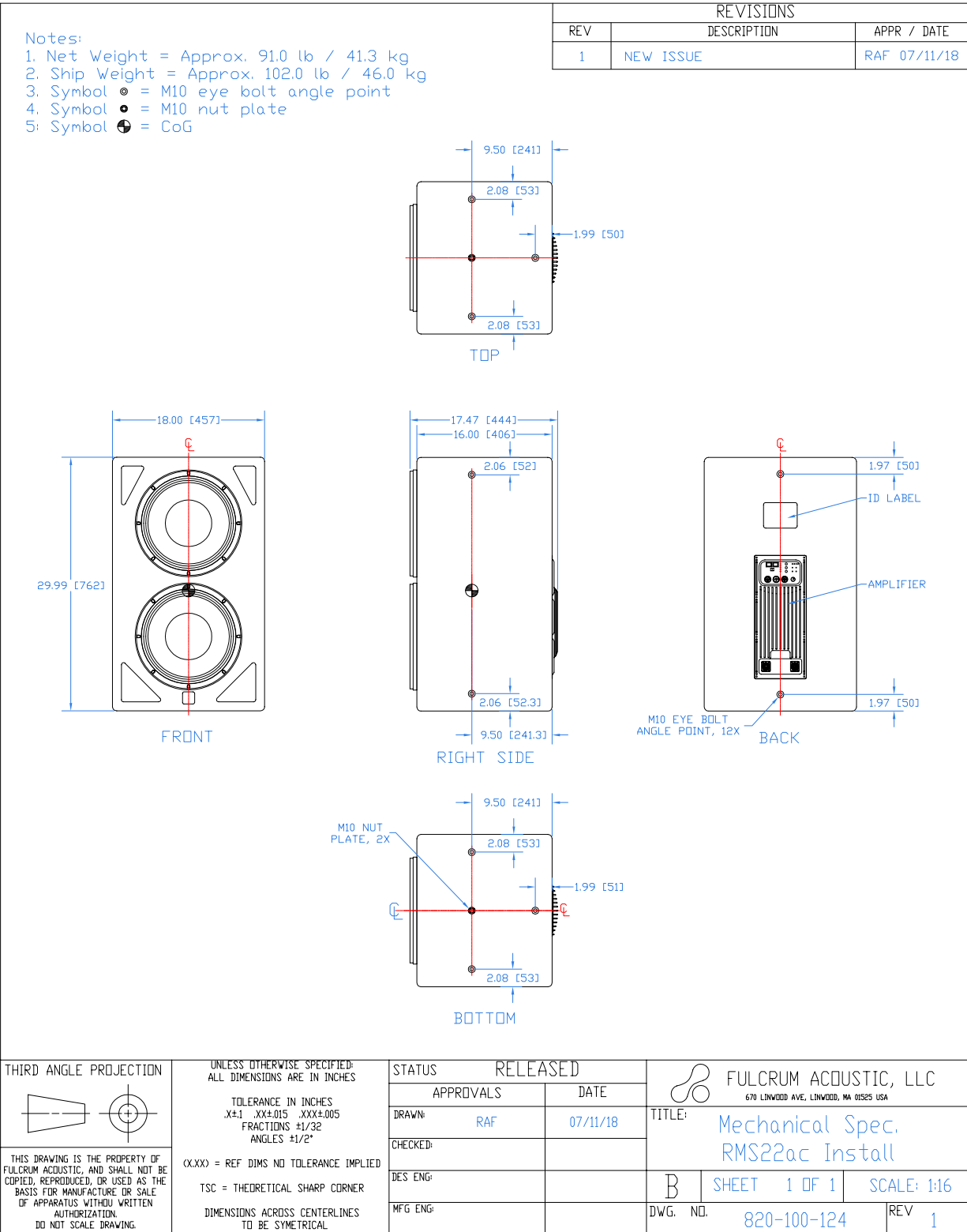
TITLE: Mechanical Spec.  
RMS22ac Studio

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product specification



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