



# METRONOME TECHNOLOGIE

## **CD3 Signature Integrated CD PLAYER WHITE PAPER**

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**Top loaded Integrated CD player and Transport** based on the Philips CDM12 PRO drive for the laser, servo and control functions.

Proprietary modifications are made to the Philips mechanism to suit the Metronome specifications.

One box design: containing the reading mechanism, control electronic, analogue and digital outputs, and the 4 transformers power supply. This power supply configuration provides a good protection from EMI/RFI radiation from the different stages.

The CD mechanism is isolated from the rest of the unit by a 3 points foam suspension.

### **Metronome Technologie company presentation:**

Metronome Technologie products are manufactured in Toulouse area by a team devoted to CD and D/A technology since 1987.

Metronome have a good experience in manufacturing CD electronic exported world-wide as this company does also, design, conception, development and production for well known high-end companies.

On the side of this EOM production, Metronome Technologie is manufacturing under his own brand name for 5 years now, with dealers or representatives established in France, USA, Canada, Germany, China, Thailand, Denmark, Sweden, Spain, Portugal, Greece, Poland, Austria, Romania, Switzerland, Argentina, New-Zealand, Mexico, India, Singapore, Taiwan, Indonesia, Korea, Japan and Malaysia.

The development of all Metronome Technologie models is done with two main objectives:

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### **International distribution:**

**ACOUSTIC PRECISION *Diffusion***

**acoustic-precision@wanadoo.fr**

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- very nice looking with high level of construction inside and outside of the box,
- the best sound possible in the price target.

Each unit is built in true “battleship” fashion and delivered with vibration draining cone points, fitting 3 Delrin feet to increase stability and vibrations control. A lot of attention is paid to power supplies engineering and to detail which actually does matter.

Thick aluminum slabs are found throughout all products, with beautifully anodized front panels, nearly 2 inches thick, in silver or black version. The compact line is optimized to ensure best mechanical rigidity while working with any decor, assuring a lasting satisfaction in your investment.

Amps and preamp are fully remote controlled. They are designed to match both cosmetically and sonically the digital drivers from METRONOME TECHNOLOGIE .

Also we have great interest to reliability and are open to suggestions and improvement requested by our distributors.

### **Casework:**

The product aesthetic is extremely important : a good products must have a great sound and must have a great visual appearance.

Sliding mechanism: machined and anodised in a 15 mm aluminium slab.

Front panel: 20 mm anodised aluminium with curved shape

The main box is made of 3mm steel with high mechanical rigidity.

### **Mechanical connection to the external world:**

The 3 feet are rigid 100mm Delrin cylinder with cones shapes termination. The Delrin ring assure case damping and the Delrin cones assure an outside vibration evacuation, plus an isolation from support.

### **Suspension:**

The reading mechanism is firmly mounted on a suspended support. This support is made of Methacrylate. This support is decoupled from the outside by a hard foam suspension acting vertically and horizontally.

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### **Reading Mechanism:**

Top loaded CD Transport based on the Philips CDM12 PRO drive for the laser, servo and control functions. Proprietary modifications are made to the Philips mechanism to suit the Metronome specifications.

Clamp and shaft, specially designed are used to maintain for the best the CD in place. Both the use of a special stainless steel and a clamp made of Delrin permit to reproduce the best sound possible with low jitter since the reading is at the pit level.

"Continuous Ground" link from the disc surface to the electrical earth: lower level of CD static charges and better working condition for the reading electronic

Lightning of the CD surface and thickness for better information extraction: the light come inside of the disk through the transparent Perpex clamp. A specially designed transparent "helmet" protect the reading mechanism when the unit is not in use.

### **Signal proceeding and D/A conversion:**

The I2Sdigital signal extracted by the transport mechanism is transferred to the main digital / analogue board. There this I2S signal is firstly upsampled from 44.1kHz / 16 bit to 96 kHz / 24 bit by a digital upsampler. This upsampler by use of FIFO register contribute also to the reduction of jitter.

After upsampling the digital stream is delivered to a 192 kHz 24bit Digital to Analog converter.

### **Analog stage and filtering:**

This D/A converter deliver a balanced analogue signal who is gently filtered then delivered to the analogue output buffer. The output buffer is made around a opamp with high current capability. Passive components include Vishay and Murata resistors and capacitors.

Both balanced and un-balanced outputs are available with the same strait signal pass.

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### **Power supply:**

4 transformers power supply:

- 1 for display
- 1 for digital stages
- 2 for analogue stages

This power supply configuration provides a good protection from EMI/RFI radiation from the different stages.

### **Modular Construction:**

To assure easy product evolution and maintenance the construction is based around 4 independent modules :

1 for transport and control electronic,

1 for display,

1 for the transformers and power supply regulation,

1 for upsampling, Digital/Analog conversion and analogue output stages

### **Sonic objectives:**

The objective of Metronome Technologie is to deliver the most musical signal to musical lovers customers.

Also all the necessary “savoir faire” is included at all stages of design and production of all of the Metronome products: mechanical and electronic design are tuned as to have the best sound possible.

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## **TECHNICAL SPECIFICATIONS :**

<b>Pickup Mechanism:</b>	Philips CDM12 PRO with custom modifications
<b>Standard Digital</b>	Single S/PDIF digital outputs (RCA)
<b>Outputs:</b>	24 bit/192 kHz converter with digital up-sampler 120dB of signal to noise ratio
<b>DAC Resolution:</b>	Balanced and un-balanced outputs
<b>Analog Stage:</b>	EMI rejection by Schaffner filter. Four transformers and 8 regulations for the transport and converter. Detachable AC cord with IEC plug.
<b>Power supply:</b>	
<b>Power consumption:</b>	45VA Two inch thick
<b>Front Panel :</b>	Silver Aluminium with Dark Blue illuminated panel
<b>Dimensions (W x H x D) :</b>	450 x 140 x 375 mm
<b>Weight:</b>	14 Kg / 32 lbs

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