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Product Overview

The Spectral DMC-30SS Studio Standard Preamp

Spectral Audio is a company which was founded on research in high-end preamplifier design and our depth of commitment to the importance of this work runs deep. For this reason, engineering priority has always been placed on development of the most advanced reference preamplifiers possible. The DMC-30 series has occupied a special place among Spectral reference preamps, moving the state-of-the-art steadily forward with a constant evolution of performance innovation and refinement. Now Spectral introduces a new reference preamplifier for the most demanding musical application, the DMC-30SS Studio Standard. The DMC-30SS Studio Standard combines new technology advances from state-of-the-art recording with extreme precision componentry and micro-detailed layout to again redefine the art of preamplifier design.

In previous DMC-30 generations, emphasis on active amplifier development has resulted in major advances in line section refinement, culminating in the unparalleled performance of the SHHA high-speed output modules. Due to the over-capacity and robust design of the original DMC-30, this unstressed platform has required very little improvement to support ever evolving performance in this area. In the DMC-30SS, Spectral engineers return to basic issues of foundation

infrastructure with a new 'clear sheet' systemboard design. The result is a fresh interpretation of the elegant DMC-30 topology implemented with the most uncompromising new power supplies, circuit layout and control elements ever used in an audio preamp.

The New Floating Power System

Music and theater systems are becoming larger and more complex so that stray interferences from other components and environmental sources must be prevented from entering and contaminating sensitive audio signals. A common path occurs from power cords that transmit noise residue and harmonics from large amplifiers, video equipment and other components. Higher frequency digital noise may propagate through signal cables to add further sonic loss. The floating power or battery-like regulator was developed for the SDR-4000 Reference CD Processor and it has demonstrated a superior isolation of noises that occur from power line and audio/video sources. Its combination of dense physical size and electrically open circuit character, outperforms batteries and other devices to provide very pure floating power. Amplifier circuits within the DMC-30SS receive highly regulated voltages as if from small batteries. But unlike batteries, the floating shunt regulator isolates both low and high frequency noise contamination so circuits are neither subject to outside noise, nor pass residue from amplification of contaminated audio signals. This environmental isolation improves performance from complex sound systems as well as assures unhindered performance from the DMC-30SS itself.

The Spectral 'Floating Power' regulator is a superior approach to noise isolation. While some interferences can be blocked by various AC line isolation products, their use is often problematic with unpredictable sonic side effects and additive distortions. Spectral 'Floating

Power' is an integrated system for noise suppression which outperforms external AC line conditioning products which impose their own sonic colorations.

The Case for Uncompromising Attenuation

Certain devices in a high-end preamplifier fundamentally determine the ultimate performance possible in the component. Since a preamplifier basically amounts to an adjustable line amplifier, the role of the volume control or gain attenuator system is especially critical and will have a strong influence over the final sonics of the component. Most of today's high-end preamps incorporate various digital and IC based attenuator systems to control gain, while a minority still use mechanical controls, potentiometers, switches or relay arrays. In our experience, all of these approaches have serious compromises which limit signal transparency, dynamic range, step resolution or reliability.

Today, digital based IC attenuators are ubiquitous in modern audio design. But even the most exotic of these digital and solid-state attenuators color the sound in various ways. Spectral engineers have long experience researching digital and DAC attenuators and find that none of these gain controls are really up to the demands of high-end preamp use, let alone for critical recording applications. We find the best relay and switch based resistor attenuators to be much better sonically than any digital control. Unfortunately, they in turn suffer from dynamic range and contact life limitations, more importantly they are not a realistic option when continuous gain adjustment is required.

Since digital attenuators are not sonically transparent and stepped resistor attenuator controls have step size, contact life and dynamic range limitation, the ultimate gain control would have to be a continuously variable potentiometer or fader. Unfortunately, no pot or fader currently available is transparent or linear enough for the most critical gain adjustment applications in audio.

Spectral Develops the Super Fader Technology

To solve the problems of existing gain control systems Spectral engineers have been working with a leading

aerospace contractor. Out of this multi-year effort comes an extraordinary ultra-precision gain control. The Spectral 'Super Fader' combines mechanical precision, advanced materials science and unrestricted use of exotic materials to create a level control that behaves like an infinite number of theoretically ideal resistors. Inside, the critical moving parts are precision machined from solid precious metals. These wipers have many surfaces that are spring pressured as a group to contact micro-polished optically flat resistance elements. Exemplary mechanical design and fabrication alignment is used to prevent localized heating from circulating currents. Ultra-pure contact metal eliminates solid-state or junction distortions which occur from plated parts used in other controls. When such precision and material commitments are combined, noise and error in the presence of test signals is immeasurable and other performances are very near to ideal thermal accuracy limits. With polished custom element and ball-bearing construction, there is every indication that this superior performance will remain intact even after 100 million operations. The 'Super Fader' potentiometer outperforms all existing gain control systems with virtually infinite service life. We hear a clarity and transparency, as if a wire has been substituted for the control.

The Spectral DMC-30SS Studio Standard

Spectral founders are deeply committed to high-end audio design in a most uncompromising way. In a world of relativism and compromise we believe that highly accurate reproduction most fully honors fine recorded performances as well as being profoundly musical. The DMC-30 Studio Standard Preamplifier is our most advanced expression of this ideal. Exhaustive testing under live recording conditions has created a true reference. With virtually no coloration or character of its own, the DMC-30SS is an extraordinarily transparent and truthful window on great music.

The DMC-30SS is for the serious music enthusiast who is a patient and sophisticated listener. We hope you will take an evening to experience the new DMC-30SS. We think you will discover a new world of expressiveness and life in all your favorite recordings.