

## Weiss HELIOS Reference DAC

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### *A Different Path to State-of-the-Art Digital Playback*

Digital playback has entered a new era. Today, the finest digital systems can exceed \$100,000, with some approaching \$250,000. These products represent extraordinary achievements, and a belief that the final increments of performance are worth pursuing without compromise.

HELIOS was created from a different philosophy. Rather than asking how complex a digital system can become, Daniel Weiss asked a different question: after more than forty years designing digital audio at the highest professional level, what truly determines how close we get to the original musical performance?

### **The Advantage of Experience**

Before creating high-end audio products, Daniel Weiss helped create the professional digital tools used to make the recordings we listen to. His work developing digital processing systems, equalizers, and mastering tools earned him the 2021 Technical GRAMMY Award for outstanding contributions to the recording industry.

The significance of that honour is best understood by the company it places him in. Past Technical GRAMMY recipients include Thomas Edison, Ray Dolby, Rupert Neve, Robert Moog, and Les Paul, a short list of people whose work changed how all music is recorded and heard. Daniel Weiss earned his place on it for digital audio.

**That experience is the foundation of HELIOS.**

### **Digital Performance Begins Before the DAC Chip**

Many manufacturers buy the same excellent converter chips. What separates one DAC from another is not the chip, it is what the engineer does with it.

HELIOS runs four converter channels in parallel for each audio channel.

The reason is a quiet principle of engineering. The audio signals in the converters are identical, so they are correlated and add together fully, gaining 6 dB for every doubling of the number of channels. The noise in each converter is random and uncorrelated, so it adds more slowly, gaining only 3 dB per doubling. The signal climbs faster than the noise, and that widening gap is a lower noise floor and more of the low-level detail that carries air, depth, and the sense of a real performance, combined with Weiss's expertise in digital processing, filtering, and clocking.

This is what implementation means, and it is why two DACs built on the same chip can sound nothing alike. It also leads directly to the part of the design that matters most: the analog stage.

### **The Analog Stage Defines the Final Result**

Once digital becomes analog, everything matters. For HELIOS, Weiss developed its own discrete OP2-BP operational amplifiers rather than relying on conventional integrated circuits. The analog section uses a minimalist, short signal path designed to preserve purity, transparency, and musical expression.

Most DACs perform their final analog amplification with a monolithic op-amp, a complete amplifier mass-produced on a single off-the-shelf chip. Weiss builds its own instead. The OP2-BP is a discrete operational amplifier, assembled from individually selected transistors and components rather than etched onto a sliver of silicon, and its performance exceeds the commonly available monolithic chips other manufacturers rely on.



**Daniel Weiss** with the 2021 Technical GRAMMY Award, in the Weiss workshop in Zurich.

The difference shows in the numbers, the OP2-BP helps give HELIOS a signal-to-noise ratio of 128 dB, and in the listening, where it is credited with greater low-level detail, a more three-dimensional soundstage, and clarity that holds even at low volumes. The clearest measure of its quality may be this: other high-end manufacturers purchase the OP2-BP from Weiss to use in their own products. When competitors pay to put your analog stage in their gear, the engineering speaks for itself.

**Power Without Interference**

HELIOS uses separate power supplies for digital and analog circuitry, including dedicated transformers and local linear regulation. This reduces noise and interaction between circuits, allowing low-level musical information to emerge naturally.

**Professional DSP: From the Studio to Your Home**

Unlike traditional DAC companies, Weiss has decades of experience creating digital processing tools used in mastering studios. HELIOS includes advanced DSP algorithms derived from this expertise, allowing the listener to optimize playback without sacrificing resolution.

**Recognition**

HELIOS was named Stereophile's 2024 Digital Source Product of the Year and awarded their highest Class A+ Recommended Component rating. Remarkably, this recognition extends throughout the Weiss range:

**Three DACs. Three price points. One design philosophy.**

Every Weiss DAC carries Stereophile's highest Class A+ recommendation.

|                 |                      |                                                               |
|-----------------|----------------------|---------------------------------------------------------------|
| <b>\$25,790</b> | HELIOS Reference DAC | <i>2024 Product of the Year</i> • <i>Stereophile Class A+</i> |
| <b>\$14,990</b> | DAC502-MK2           | <i>Stereophile Class A+</i>                                   |
| <b>\$3,990</b>  | DAC204-MK2           | <i>Stereophile Class A+</i>                                   |

*The \$3,990 DAC204-MK2 was also named runner-up for Stereophile's 2025 Digital Product of the Year — a sub-\$4,000 DAC competing for the same crown as the cost-no-object machines.*

**Expertise Over Excess**

The final steps toward perfect reproduction are always the most difficult and expensive. HELIOS was not designed to be the most elaborate digital product ever created. It was designed by one of the world's foremost digital engineers to focus engineering effort exactly where it matters most.

Because extraordinary digital playback is not achieved by price alone. It is achieved through knowledge, experience, and execution.



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