



## STUDIO REFERENCE SERIES

# Studio Reference I Studio Reference II

The stunning realism you will experience when listening to a Crown® Studio Reference™ amplifier will redefine your expectations. The evolution of this studio standard ushers in a new era of powerful, ultraquiet amplifiers capable of faithfully reproducing the most demanding of signals. This kind of sonic integrity does not happen accidentally. It demands the leadership and technical excellence for which Crown has long been known.

With the best transfer function in the industry, ultra-high dynamic range and extraordinary damping factor, your Studio Reference amplifier comes closer to the ideal “straight wire with gain” than any other amplifier. As you listen, it will become apparent—the amplifier’s low-frequency transient response is the standard by which all others must be judged.

Studio Reference amplifiers integrate several cutting edge technologies that make them the most accurate reference amplifiers available. For example, in Stereo mode each channel can actually be treated as a separate amplifier because of its separate high-voltage power supplies and ultra-low crosstalk.

Crown’s unconventional Grounded Bridge™ circuitry delivers incredible voltage swings without using stressful output transistor configurations like other more traditional amplifiers. This results in significantly lower distortion and superior reliability.

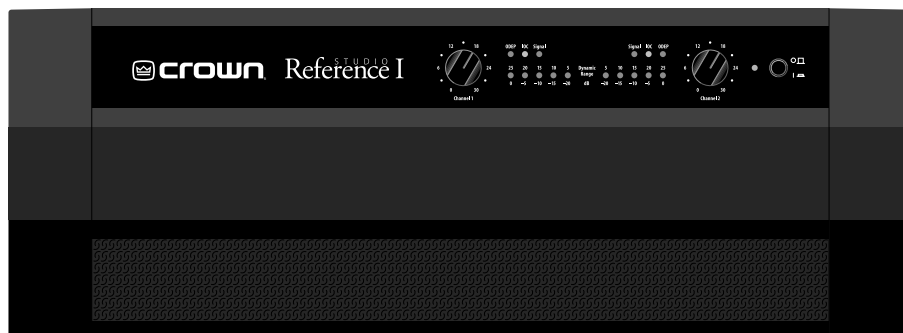
For more details about the Studio Reference I and Studio Reference II, contact the Crown Technical Support Group at 800-342-6939 or 574-294-8200. Also, visit the Crown Audio website at [www.crownaudio.com](http://www.crownaudio.com).

### Specifications

The following apply to units in dual mode with both channels driven into 8 ohm loads and an input sensitivity of 26 dB gain unless otherwise specified.

#### Power

**Output Power:** See power charts below.



### Features

- **Patented ODEP® (Output Device Emulation Protection) circuitry detects and compensates for overheating and overload to keep the amplifier working when others would fail.**
- **IOC® (Input/Output Comparator) circuitry immediately alerts you of any distortion that exceeds 0.05% to provide dynamic proof of distortion-free performance.**
- **PIPTM (Programmable Input Processor) connector accepts accessories that tailor your amplifier to suit specific applications.**
- **Extremely wide dynamic range.**
- **Ultra-high damping factor delivers superior loudspeaker motion control for the cleanest, tightest bottom end you’ve ever felt—or heard.**
- **Super-low harmonic and intermodulation distortion give your amplifier the best transfer function in the business.**
- **Two mono modes (Bridge-Mono and Parallel-Mono) for driving a wide range of load impedances.**
- **Custom-designed, tape-wound, low-noise toroidal supplies with extremely high power density.**

### Performance

**Frequency Response:** ±0.1 dB from 20 Hz to 20 kHz at 1 watt.

**Phase Response:** +5 to -15 degrees from 20 Hz to 20 kHz at 1 watt.

**Signal-to-Noise (A-weighted) below rated full bandwidth power:** Studio Reference I: 120 dB. Studio Reference II: 117 dB.

**Total Harmonic Distortion (THD):** Less than 0.1% at full bandwidth power.

**Intermodulation Distortion (IMD):** (60 Hz and 7 kHz 4:1)

**Studio Reference I:** < 0.005% from full bandwidth power to 78 watts, rising linearly to 0.025% at 78 milliwatts.

**Studio Reference II:** < 0.005% from full bandwidth power to 36 watts rising linearly to 0.025% at 36 milliwatts.

#### Crosstalk (below rated full bandwidth power):

**Studio Reference I:** >100 dB from 20 Hz to 400 Hz and >70 dB at 20 kHz.

**Studio Reference II:** >100 dB from 20 Hz to 400 Hz and >65 dB at 20 kHz.

**Damping Factor:** >20,000 from 10 Hz to 400 Hz.

#### Voltage Gain (at the maximum level setting):

**Studio Reference I:**  
103:1 ± 6% or 40 dB ± 0.5 dB at 0.775 volt sensitivity.  
57:1 ± 6% or 35 dB ± 0.5 dB at 1.4 volt sensitivity.  
20:1 ± 6% at 26 dB gain ± 0.5 dB.

**Studio Reference II:**  
69:1 ± 6% or 37 dB ± 0.5 dB at 0.775 volt sensitivity.  
38:1 ± 6% or 32 dB ± 0.5 dB at 1.4 volt sensitivity.  
20:1 ± 6% at 26 dB gain ± 0.5 dB

**Load Impedance:** Safe with all types of loads. 4-8 ohms in Stereo mode, 8-16 ohms in Bridge-mono mode, and 2-4 ohms in Parallel-Mono mode.

**AC Line Voltage and Frequency Configurations Available (± 10%):** 50 or 60 Hz; 100, 120, 200, 220 or 240VAC. Power draw at idle is 90 watts or less.

### Studio Reference I

\*1 kHz Power

4 ohm Stereo (per channel)	<b>1,160W</b>
8 ohm Stereo (per channel)	<b>780W</b>
8 ohm Bridge-Mono	<b>2,220W</b>
16 ohm Bridge-Mono	<b>1,580W</b>
2 ohm Parallel-Mono	<b>2,315W</b>
4 ohm Parallel-Mono	<b>1,565W</b>

\*1 kHz Power: refers to maximum average power in watts at 1 kHz with 0.05% THD.

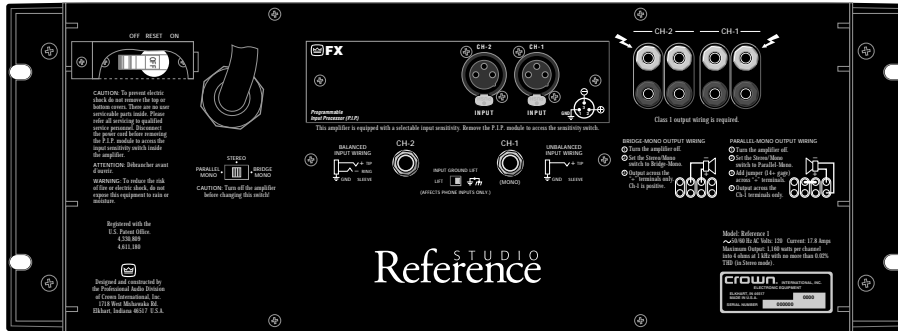
### Studio Reference II

\*1 kHz Power

4 ohm Stereo (per channel)	<b>555W</b>
8 ohm Stereo (per channel)	<b>355W</b>
8 ohm Bridge-Mono	<b>1,100W</b>
16 ohm Bridge-Mono	<b>715W</b>
2 ohm Parallel-Mono	<b>1,115W</b>
4 ohm Parallel-Mono	<b>710W</b>

\*1 kHz Power: refers to maximum average power in watts at 1 kHz with 0.05% THD.

# Studio Reference I Studio Reference II



## Controls

**Power:** A two-position front panel pushbutton on/off switch. Four-second turn-on delay.

**Level:** An independent 31-position detented front-panel level control for each channel.

**Reset Switch:** This back panel switch can be used to trip and reset the AC mains circuit breaker.

**Stereo/Mono Switch:** Back-panel switch selects between Stereo, Bridge-mono, and Parallel-mono modes.

**Ground Lift Switch:** The input signal ground may be isolated from the AC ground with this back-panel switch to help prevent unwanted ground loops. It affects only the phone jacks. It has no effect on the PIP module's XLR connectors. Activating the switch inserts an impedance between the sleeve of each phone input jack and the circuit ground.

**Input Sensitivity Switch:** The three-position input sensitivity switch inside the amplifier can be accessed by removing the PIP module. Settings include 0.775 volts and 1.4 volts for rated output, and 26 dB voltage gain.

**Meter Switches:** Two switches behind the front panel can make the output meters display either the dynamic range of the output signal in dB (factory default), or the output level in dB.

## Indicators

**Signal Presence:** The green front panel indicator for each channel flashes synchronously with the channel's output signal to indicate its presence.

**Enable Indicator:** This indicator lights when the amplifier has been "enabled" or turned on, and AC power is available.

**ODEP Indicators:** During normal operation of the amplifier, the ODEP (Output Device Emulation Protection) indicators glow brightly to show the presence of reserve thermodynamic energy. They dim proportionally as energy reserves decrease. In the rare event that energy reserves are depleted, the indicators turn off and ODEP proportionally limits the output drive so the amplifier can safely continue operating even under severe conditions. These indicators also help to identify more unusual operating conditions.

**Input/Output Comparator:** The red Input/Output Comparator (IOC) indicator for each channel flashes if any type of distortion reaches 0.05%.

**Dynamic Range/Level Meters:** A five-segment output meter is provided for each channel. The meters are factory-set to show dynamic range of the signals in dB, which is computed as the ratio of peak to average output power. Also, the meter can optionally be set to show output levels.

## Input/Output

**Input Connectors:** Balanced ¼-inch (6.35-mm) phone jack for each channel. Balanced three-pin female XLR connector on the PIP-FX for each channel.

**Input Impedance:** Nominally 10 k ohms, balanced. Nominally 5 k ohms, unbalanced.

**Input Sensitivity:** Configurable for 26 dB gain, 0.775 volt sensitivity, or 1.4 volt sensitivity.

**Output Connector:** Two pairs of versatile 5-way binding posts are provided for the output of each channel so multiple loudspeakers can be connected easily. They accept banana plugs, spade lugs or bare wire.

**Output Impedance:** <10 milliohms in series with 2.5 microhenries.

**DC Output Offset:** ± 2 millivolts.

## Output Signal

**Dual:** Unbalanced, two channel.

**Bridge-Mono:** Balanced, single channel. Channel 1 controls are active; channel 2 controls should be turned down.

**Parallel-Mono:** Balanced, single channel. Channel 1 controls are active; channel 2 controls should be turned down.

## Protection

Studio Reference amplifiers provide extensive protection and diagnostics capabilities. Protection systems include ODEP, standby mode, an AC circuit breaker and transformer thermal protection. These systems will prevent amplifier damage in virtually any situation. A four-second turn-on delay prevents power-on thumps.

## Construction

Durable black finish on aluminum chassis.

**Dimensions:** EIA Standard 19-inch (48.3-cm) rack mount width (EIA RS-310B), 7 inches (17.8 cm) high and 16 inches (40.6 cm) deep behind mounting surface and 2.75-inch (7-cm) protrusion in front of mounting surface

## Net Weight:

**Studio Reference I:** 60.7 lb (27.6 kg)  
**Studio Reference II:** 56.1 lb (25.5 kg).

## Shipping Weight:

**Studio Reference I:** 74.2 lb (33.7 kg)  
**Studio Reference II:** 69.6 lb (31.6 kg).

**Cooling:** Flow-through ventilation from front to sides. On-demand proportional speed fan.



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## Crown's Three-Year, No-Fault, Fully Transferable Warranty

Crown offers a Three-Year, No-Fault, Fully Transferable Warranty for every new Crown amplifier—an unsurpassed industry standard. With this unprecedented No-Fault protection, your new Crown amplifier is warranted to meet or exceed original specifications for the first three years of ownership. During this time, if your amplifier fails, or does not perform to original specifications, it will be repaired or replaced at our expense. About the only things not covered by this warranty are those losses normally covered by insurance and those caused by intentional abuse. And the coverage is transferable, should you sell your amplifier.

See your authorized Crown dealer for full warranty disclosure and details. For customers outside of the USA, please contact your authorized Crown distributor for warranty information or call 574-294-8200.