



Dolby Lake Processor



The Dolby Lake Processor offers a visionary approach to controlling and optimizing any loudspeaker system in any venue, while simultaneously improving the sound quality.

The Dolby® Lake® Processor marks the next generation in digital loudspeaker control and equalization technology. With unsurpassed audio quality and the most advanced loudspeaker processing available, it will instantly improve the sound of any system. Effortless control is provided through wireless tablet software or the new, patent-pending, front-panel Portal metering and control interface.

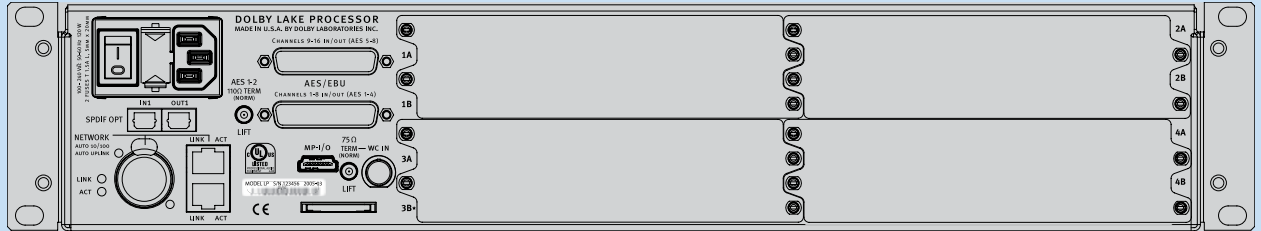
The basic platform offers complete, native-digital signal-processing functionality, with support for up to four-in by twelve-out for loudspeaker applications and eight-in by eight-out for EQ applications. The signal processing can also be changed to provide an EQ four-by-four together with a loudspeaker two-by-six configuration.

The Lake Processor includes several advanced technologies for improving sound quality. These include Raised Cosine Equalization (the foundation underlying the revolutionary Ideal Graphic EQ™ and Lake Mesa EQ interfaces), plus linear phase crossovers, LimiterMax™ loudspeaker protection, and Iso-Float Ground Isolation.

Four slots provide additional configurability, for adding analog I/O and other capabilities via expansion cards. We offer the Lake Processor in five preconfigured versions. Converter cards can be easily added at any time, in the shop or in the field, to meet changing needs.

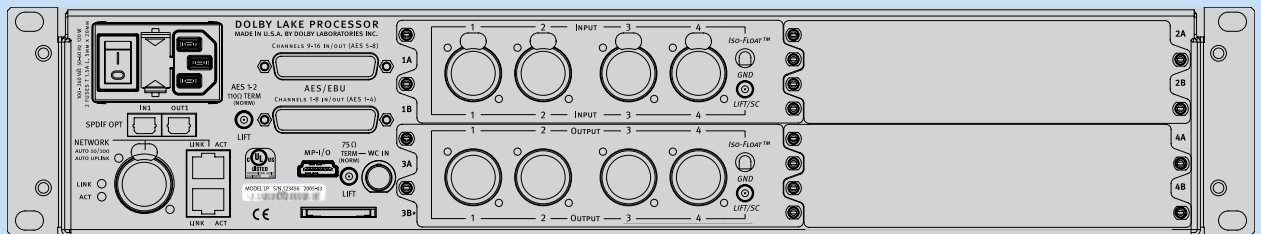
Dolby Lake Processor Configurations, Rear-Panel Views

Shown here are the five factory configurations, and two expansion cards. The Lake Processor can be easily upgraded or reconfigured to meet specific requirements.



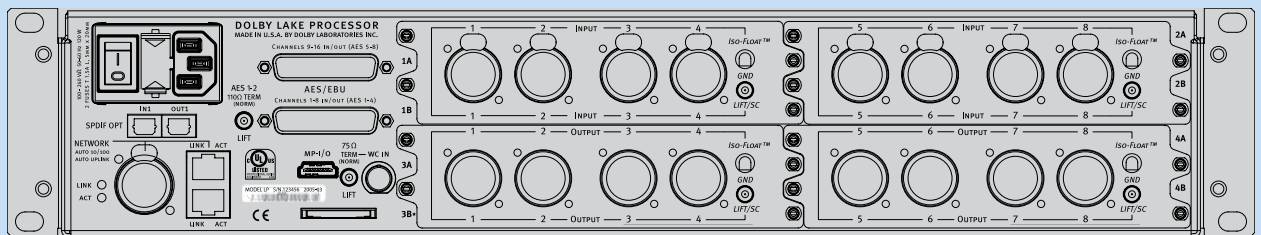
Dolby Lake Processor LPD

The LPD provides the foundation of the Dolby Lake processing system, offering native digital I/O in AES/EBU format. It also has a S/PDIF input and output for interfacing with consumer devices. Four card slots can incorporate analog converters.



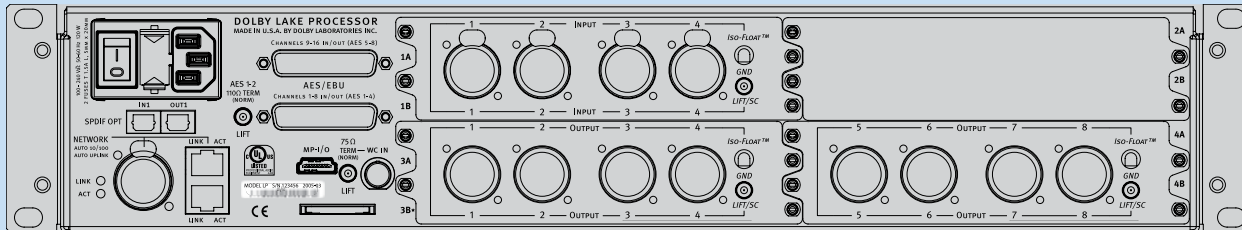
Dolby Lake Processor LP4D4

The entry-level analog- and digital-enabled Lake Processor, the LP4D4 is the next-generation Lake Mesa Quad EQ. It has two analog converter cards to provide four analog inputs and four analog outputs for EQ-purposed signal processing.



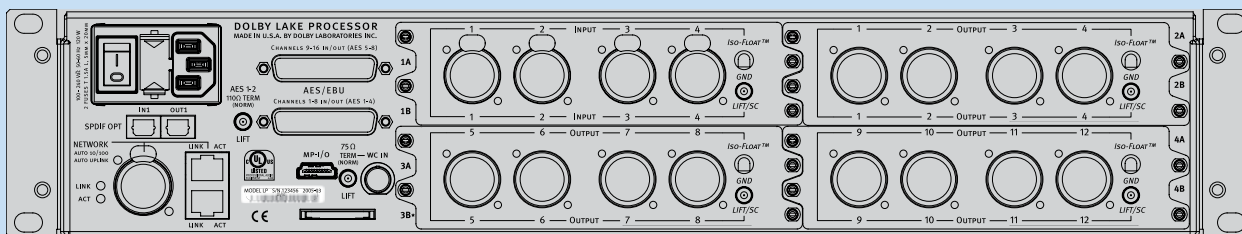
Dolby Lake Processor LP8D8

The top-of-the-line for Lake Mesa EQ processing, the LP8D8 provides eight channels of analog inputs and outputs. This fully configured processor offers the ultimate surround-sound loudspeaker management solution.



Dolby Lake Processor LP4D8

The LP4D8 fulfills our most frequent customer request—additional inputs and outputs. It brings a four-by-eight configuration to Lake loudspeaker processing, and it is capable of running four two-way crossovers for monitor applications.



Dolby Lake Processor LP4D12

The flagship Lake loudspeaker processor, the LP4D12 takes the next step, providing an ultimate loudspeaker management system. The LP4D12 is capable of running up to four three-way crossovers.

Upgrade Kits

We developed the Dolby Lake Processor for maximum field flexibility. Currently, the following upgrade kits are available:

Quad D/A Converter Upgrade, KIT982

The Quad D/A Converter kit allows you to upgrade your Dolby Lake Processor to include more analog output channels, or reconfigure your analog I/O on an as-needed basis. As an example, multiple Quad D/A kits can convert your digital-only processor into a digital-input, twelve-analog-output unit.

Quad A/D Converter Upgrade, KIT983

The Quad A/D Converter kit allows you to upgrade your Dolby Lake Processor to include more analog input channels, or reconfigure your analog I/O on an as-needed basis. For example, this card can make your four-by-eight loudspeaker processor into an eight-by-eight Mesa EQ.



Dolby Lake Processor Operating Specifications

Front-Panel Interface



Displays

Four daylight readable custom LCD Portal displays, 3 × 10 user configurable character displays per Portal, 2 × 104 circular meter segments per Portal, 16 mute and soft function buttons per Portal, arrow keys and ME button for Portal control and parameter adjustment

Ethernet

Auto 10/100, Auto Uplink: 1 RJ-45

Mute Enable Button

Enables muting of outputs and inputs via Portal mute buttons

Meter Button

Toggles through input and output meter displays

Menu Button

Provides a menu driven interface for full-function front-panel control

Audio Performance

Conversion Resolution

24-bit

Internal Sample Rate

96 kHz

Internal Data Path

32-bit floating point

System Propagation Delay

<2 ms from any input to any output (analog or digital)

Maximum Available Delay

2 s from any input to any output

Sample Rate Converters

Operating Sample Rates

44.1 kHz, 48 kHz, 88.1 kHz, 96 kHz

Resolution

24-bit

THD + Noise

0.0003% typical, 20 Hz to 20 kHz, unweighted

Dynamic Range

140 dB typical, 20 Hz to 20 kHz, unweighted

Back-Panel Interface

Analog I/O Connectors

XLR

AES/EBU I/O Connectors

DB-25, with selectable termination on pairs 1 and 2

S/PDIF I/O Connectors

Toslink™ optical

Word Clock Input

BNC with selectable termination

Ethernet

Auto 10/100, Auto Uplink: 2 RJ-45, 1 EtherCon™

Power

3-pin IEC, 2 fuses T 1.5A L, 5 × 20 mm

Digital-to-Analog Outputs

Frequency Response

+0/−0.1 dB, 3 Hz to 20 kHz

THD + Noise

0.00040% typical at 1 kHz

0.00056% typical, 20 Hz to 20 kHz, unweighted

Dynamic Range

113 dB typical, 20 Hz to 20 kHz, unweighted

Output Impedance

50Ω

Maximum Output Level

+21 dBu

Crosstalk

−100 dB, 2 Hz to 40 kHz

Analog-to-Digital Inputs

Frequency Response

+0/−0.2 dB, 2 Hz to 20 kHz

THD + Noise

0.00022% typical at 1 kHz, 0.00033% typical, 20 Hz to 20 kHz, unweighted at +21 dBu headroom setting

Dynamic Range

116 dB typical, 20 Hz to 20 kHz, unweighted at +21 dBu headroom setting

Input Impedance

20 kΩ balanced, 10 kΩ unbalanced

Maximum Input Level

+26 dBu

Input Sensitivity Settings for Digital Full-Scale

+10 dBu, +16 dBu, +21 dBu, +26 dBu

Common Mode Rejection

65 dB, 20 Hz to 20 kHz, 75 dB typical at 1 kHz,

70 dB typical at 20 kHz

Crosstalk

−100 dB, 2 Hz to 40 kHz

Combined A/D and D/A

THD + Noise

0.00050% typical at 1 kHz, 0.00063% typical,

20 Hz to 20 kHz, unweighted

Dynamic Range

113 dB typical, 20 Hz to 20 kHz, unweighted

AES/EBU I/O and S/PDIF I/O

Supported Resolutions

Up to 24-bit

Supported Sample Rates

44.1 kHz, 48 kHz, 88.1 kHz, 96 kHz

Power Requirements

100–240 VAC ±10%, 120 W maximum

Dimensions and Weight

2-RU rackmount: 8.74 × 48.26 × 35 cm

(3.44 × 19 × 13.78 inches); net: 9 kg (20 lb)

Regulatory Notices

North America: complies with limits for a Class A digital device, per Part 15 of FCC rules, and Industry Canada ICES-003 specifications. UL Listed for the US and Canada. Europe: complies with requirements of Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC. Carries CE marking accordingly.

Warranty

One-year limited, parts and labor; see disclaimer. Specifications subject to change without notice.

Disclaimer of Warranties

Equipment manufactured by Dolby Laboratories is warranted against defects in materials and workmanship for a period of one year from the date of purchase. There are no other express and implied warranties and no warranty of merchantability or fitness for a particular purpose, or of noninfringement of third-party rights (including, but not limited to, copyright and patent rights).

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