

MODEL CP650

DIGITAL CINEMA PROCESSOR

The Dolby® CP650 Digital Cinema Processor is the exhibition industry's preferred cinema processor worldwide. Continuing the long evolution of Dolby cinema sound, it is the only all-digital cinema processor for the playback of all current Dolby soundtrack formats, combining advanced signal-processing technology, highest-quality components, and sophisticated manufacturing processes to provide the best sound and utmost reliability.

Thanks to built-in features such as Dolby Digital Surround EX™ decoding and four AES digital inputs, the Dolby CP650 Digital Cinema Processor is the most cost-effective Dolby processor. Excellent reproduction of analogue soundtracks is facilitated by fully digital implementations of Dolby A-type and Dolby SR decoding.

Addressing the future of exhibition, the Dolby CP650 has an expansion slot that provides a convenient upgrade path to new developments, such as multichannel audio decoding for digital cinema. Upgradeable software also helps to ensure the CP650's role in the future, while a built-in Ethernet interface opens up a new world of remote control and monitoring applications.

External setup software (available in several languages) facilitates calibration, troubleshooting, software upgrades, and transfer of settings via a personal computer. A connection port is conveniently located behind the front-panel access door.

The Dolby CP650 features a built-in real-time analyzer and EQ Assist™ system that enable quick theatre equalization. These features, combined with Auditorium Assist™, provide every theatre operator with the necessary tools to keep their cinema sounding as good as the first day it opened. An easy-to-read LCD screen and simple front-panel format selection and control keys help simplify operation of the CP650, as well as installation and service.

Designed to satisfy the needs of today's multiplexes, the Dolby CP650 Digital Cinema Processor is also a bridge to the entertainment complex of the future for exhibitors dedicated to providing their audiences with the best motion picture presentation possible, both today and tomorrow.



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SYSTEM CONFIGURATION OPTIONS

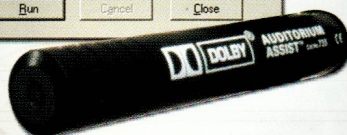
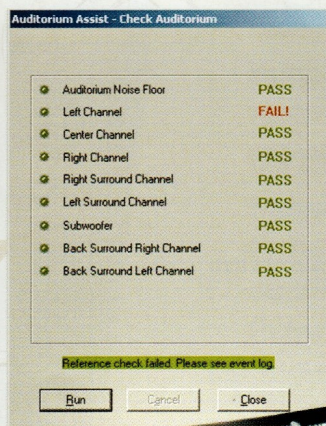
The Dolby CP650 Digital Cinema Processor is available in the following three configurations:

Supported Formats	Model CP650 (Standard)	Model CP650D	Model CP650SR
Nonsync	♦	♦	♦
Two-channel PCM	♦		
External six-channel analogue (magnetic)	♦	♦	♦
Dolby analogue (A-type and SR)	♦	♦	♦
Dolby Digital	♦	♦	
Dolby Digital Surround EX	♦		
Dolby Digital (consumer version)	♦		
Signal Inputs			
Nonsync	♦	♦	♦
External six-channel analogue	♦	♦	♦
Optical	Balanced SVA inputs for two projectors	Balanced SVA inputs for two projectors	Balanced SVA inputs for two projectors
Microphone	Balanced input for PA or B-chain alignment mic/multiplexer	Balanced input for PA or B-chain alignment mic/multiplexer	Balanced input for PA or B-chain alignment mic/multiplexer
Digital 4 x AES-3	♦	(Optional) Cat. No. 790 card required	(Optional) Cat. No. 790 card required
Signal Outputs			
Audio output	Balanced	Balanced	Balanced
Impedance	100Ω (load >600Ω)	100Ω (load >600Ω)	100Ω (load >600Ω)
Maximum level	+26 dBu	+26 dBu	+26 dBu
RS-232C connection to computer	♦	♦	♦
Hearing impaired	♦	♦	♦
Ethernet	♦	♦	♦
Upgrade Options			
Dolby Digital			UD/650; upgrade kit converts CP650SR to CP650D
Dolby Digital Surround EX		UEX/650; upgrade kit converts CP650D to CP650	
Digital Crossover	Cat. No. 791 card required	Cat. No. 790 and Cat. No. 791 card required	Cat. No. 790 and Cat. No. 791 card required
Auditorium Assist	Cat. No. 735 microphone kit	Cat. No. 735 microphone kit	Cat. No. 735 microphone kit

For additional technical specifications, please see back page.

ADDITIONAL FEATURES

Continuing to expand upon its innovative design, the Dolby CP650 Digital Cinema Processor now adds three more features to provide for your cinema of the future.

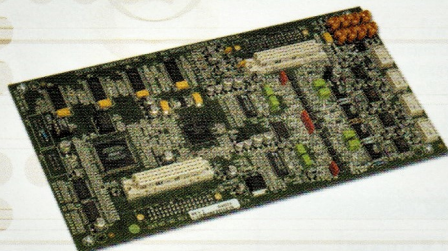


Cat. No. 735 Microphone and "Auditorium Reference" setup screen

CAT. NO. 735 AUDITORIUM ASSIST MICROPHONE

Providing a consistent entertainment experience – to match the first day your cinema opened for your audience – is the goal of every cinema operator. With Auditorium Assist, you now have a simple and reliable procedure to indicate the stability of the theatre's speakers, crossovers, amplifiers, and auditorium acoustics.

After aligning the room per SMPTE/ISO standard 2969 (X-Curve), the frequency response and sound level of each speaker are checked and stored in the Dolby CP650 memory as the "Auditorium Reference". Whenever Auditorium Assist is subsequently selected, all channels are measured and compared to these reference settings, highlighting any changes from the approved "Auditorium Reference". Auditorium Assist also checks and compares the level of the ambient noise floor in the auditorium to the reference level originally stored.

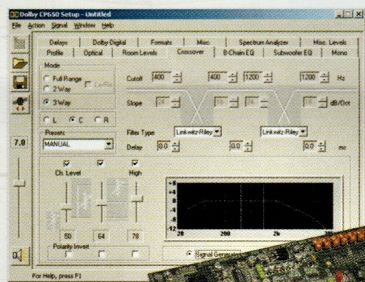


Cat. No. 790 card

CAT. NO. 790 DOLBY DIGITAL SURROUND EX CARD [with digital inputs]

The Cat. No. 790 card enables the CP650 to decode Dolby Digital Surround EX and additionally provides four AES3 digital inputs that allow the processor to accept audio from sources including servers, disks, tape playback systems, satellite, and cable links, which can then be fed into the existing sound system.

The addition of the Cat. No. 790 makes the CP650 the most comprehensive cinema processor available, now and into the future.



Cat. No. 791 card and setup screen

CAT. NO. 791 DIGITAL CROSSOVER CARD

The addition of the Cat. No. 791 card integrates screen channel crossovers within the CP650. Combined with an extensive PC setup software package, a variety of settings (depending on your screen channel configuration) are available for configuring the playback chain of the cinema.

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CP650 Specifications

Signal Inputs

Optical: Balanced inputs for two projectors with stereo solar cells or analogue LED readers, digitally controlled gain and digital slit-loss EQ, power available for external cell preamp circuits; 9-pin D-connectors

Digital film reader: Inputs for two Dolby Digital soundheads; 25-pin D-connectors

Nonsync: Two stereo inputs, 21 k Ω , sensitivity: 0.2–4 V (NS 1), 0.06–1.5 V (NS 2); RCA-type phono connectors

Six-channel analogue input: For external digital processor, 10 k Ω (L, R), 27 k Ω (C, Ls, Rs, SW), 300 mV operating level; 25-pin D-connector

Microphone: Balanced input for Auditorium Assist microphone, PA mic, or B-chain alignment mic (or multiplexer), 15 V phantom power switchable via front-panel DIP switch; rear-panel XLR and front-panel 9-pin D-connector

AES digital inputs: Accommodate stereo PCM audio at 48, 44.1, or 32 kHz, also accept Dolby Digital bitstreams; input via 25-pin D-connector with optional adapter board Cat. No. 790 (75 Ω \pm 20%, single-ended equipped with four inputs)

Signal Outputs

Balanced, output impedance: 100 Ω (load >600 Ω)
Maximum level: +26 dBu (15.5 V), balanced loads;
+20 dBu (7.75 V), unbalanced loads. Dolby level output adjust range: -31 to -12 dBu (20–780 mV)

Other Connections

Cat. No. 779 remote control unit and Cat. No. 771 remote fader connector (terminals for stripped wires)
Connectors (front and rear) for external PC control and setup, RS-232C (9-pin D-connector)

Hearing impaired output: centre-weighted sum of L, R, and C; output impedance 100 Ω , output level 200 mV fixed; unbalanced (RCA-type phono connector)

Automation connector for controlling and indicating format, fader select, and mute; interface similar to Model CP65

Connector for Ethernet link, RJ-45

Dolby Decoding

5.1 channels: Dolby Digital and Dolby Digital Surround EX

Four channels: Dolby A-type

Two channels: Dolby SR

Dolby Pro Logic®

Loudspeaker Equalization

L, C, R, Ls, Rs, Bsl, Bsr: digital 27-band, 1/3-octave, plus bass and treble control

Le, Re (when equipped with optional Cat. No. 791): digital 27-band, 1/3-octave, plus bass and treble control
SW: digital parametric with 12 dB cut capability

Distortion

Typically 0.005% in Dolby SR mode (output -10 dBu, input 10 dB over Dolby level)

Dynamic Range

Typically 99 dB with fader set to 7

Power Requirements

Main supply: 100–120 and 200–240 VAC, 50–60 Hz, 100 W maximum (including built-in bypass power supply)

Unit designed to operate from a centrally switched power source

Dimensions and Weight

3-U rack-mount chassis; faceplate: 133 x 483 mm (5.25 x 19 inches)

Maximum projection behind equipment rack rail:

365 mm (14.4 inches)

Maximum projection in front of mounting plate: 38 mm (1.5 inches)

Net weight: 10.4 kg (23 lb)

Environmental Conditions

Operating: 0° to 40°C (32° to 104°F), forced-air cooling

Humidity: 20 to 80% relative humidity, noncondensing

Regulatory Notices

North America: This unit complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules, and Industry Canada ICES-003 specifications. It is UL Listed for the US and Canada.

Europe: This unit complies with the requirements of Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC and carries the CE marking accordingly.

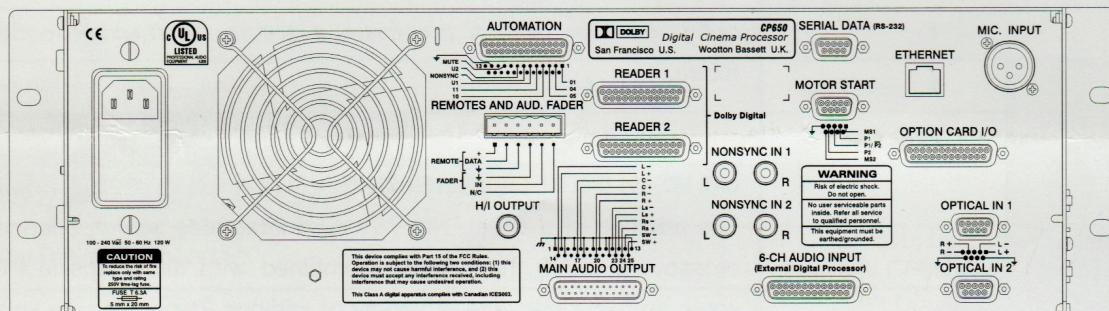
Warranty

One year limited, parts and labour; see disclaimer below

Specifications subject to change without notice.

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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 or implied warranties and no warranty of merchantability or fitness for a particular purpose.

LIMITATION OF LIABILITY:

It is understood and agreed that Dolby Laboratories' liability whether in contract, in tort, under any warranty, in negligence, or otherwise, shall not exceed the cost of repair or replacement of the defective components, and under no circumstances shall Dolby Laboratories be liable for incidental, special, direct, indirect, or consequential damages (including but not limited to damage to software or recorded audio or visual material), or loss of use, revenue, or profit, even if Dolby Laboratories or its agents have been advised, orally or in writing, of the possibility of such damages.