

LA SERIES

COMPRESSOR/LIMITERS

SPECIFICATIONS

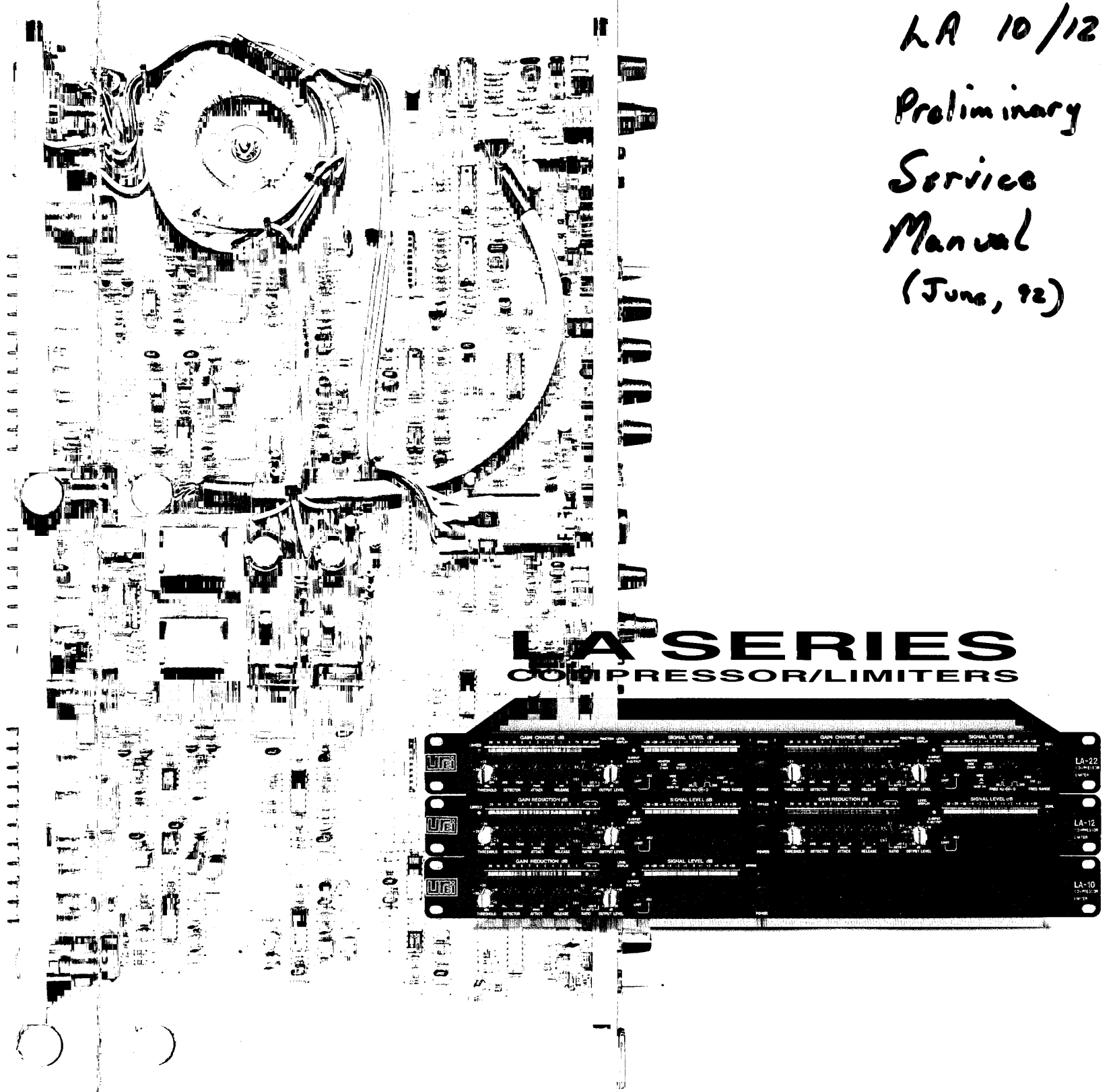
	LA-10	LA-12	LA-22
Inputs:	Active balanced bridging.	Active balanced bridging.	Active balanced bridging.
Input Impedance:	40k Ω balanced input, 20k Ω unbalanced (with detector normalised to input).	40k Ω balanced input, 20k Ω unbalanced (with detector normalised to input).	40k Ω balanced input, 20k Ω unbalanced (with detector normalised to input).
Detector Input Impedance:	100k Ω balanced input, 50k Ω unbalanced.	100k Ω balanced input, 50k Ω unbalanced.	100k Ω balanced input, 50k Ω unbalanced.
Maximum Input Level:	+24 dBu (12.3 V rms).	+24 dBu (12.3 V rms).	+24 dBu (12.3 V rms).
Gain:	± 20 dB, adjustable with front panel output level controls.	± 20 dB, adjustable with front panel output level controls.	± 20 dB, adjustable with front panel output level controls.
Frequency Response:	20 Hz - 20 kHz ± 0.2 dB	20 Hz - 20 kHz ± 0.2 dB	20 Hz - 20 kHz ± 0.2 dB
Dynamic Range:	< 115 dB	< 115 dB	< 115 dB
Signal To Noise Ratio:	110 dBA, 22 kHz A weighted noise bandwidth.	110 dBA, 22 kHz A weighted noise bandwidth.	110 dBA, 22 kHz A weighted noise bandwidth.
THD:	< 0.006% typical @ 1 kHz, 0.02% maximum @ +14 dBu input.	< 0.006% typical @ 1 kHz, 0.02% maximum @ +14 dBu input.	< 0.006% typical @ 1 kHz, 0.02% maximum @ +14 dBu input.
Attack Times			
Average Detectors:	1 - 50 ms	1 - 50 ms	1 - 50 ms
Peak Detectors:	$\leq 100 \mu s$	$\leq 100 \mu s$	$\leq 100 \mu s$
Output Peak Limiters:	50 μs	50 μs	50 μs
Release Times			
Average Detectors:	100 ms - 5 s for 10 dB of release.	100 ms - 5 s for 10 dB of release.	100 ms - 5 s for 10 dB of release.
Peak Detectors:	10 ms	10 ms	10 ms
Output Peak Limiters:	40 ms	40 ms	40 ms
Compression/Expansion Ratios:	Adjustable from 1.5:1 to ∞ :1.	Adjustable from 1.5:1 to ∞ :1.	Adjustable from 1.5:1 to ∞ :1.
Threshold of Limiting/Expansion:	Adjustable from -40 dBu to Off.	Adjustable from -40 dBu to Off.	Adjustable from -40 dBu to Off.
Outputs:	Transformer isolated, symmetrical floating.	Transformer isolated, symmetrical floating.	Transformer isolated, symmetrical floating.
Maximum Output Level:	+24 dBm into 600 Ω	+24 dBm into 600 Ω	+24 dBm into 600 Ω
Connectors			
Inputs and Outputs:	XLR type 3 pin (pin 2 high), 6.3 mm (1/4 in) TRS phone jack.	XLR type 3 pin (pin 2 high), 6.3 mm (1/4 in) TRS phone jack.	XLR type 3 pin (pin 2 high), and barrier strip.
Limiting Detectors:	6.3 mm (1/4 in) TRS phone jack normalised to input.	6.3 mm (1/4 in) TRS phone jack normalised to input.	Barrier strip.
Link:	Barrier strip.	Barrier strip.	Barrier strip.
AC Power Requirements:	100-120/220-240 V AC, 50-60 Hz, 25 W maximum.	100-120/220-240 V AC, 50-60 Hz, 25 W maximum.	100-120/220-240 V AC, 50-60 Hz, 30 W maximum.
AC Line Cord:	Detachable, IEC type.	Detachable, IEC type.	Detachable, IEC type.
Front Panel Dimensions:	1U (44 mm x 483 mm; 1 3/4 in x 19 in).	1U (44 mm x 483 mm; 1 3/4 in x 19 in).	1U (44 mm x 483 mm; 1 3/4 in x 19 in).
Depth Behind Panel:	260 mm (10 1/4 in).	260 mm (10 1/4 in).	273 mm (10 3/4 in).
Finish:	Powdercoated black	Powdercoated black	Powdercoated black
Net Weight:	6.4 kg (14 lbs).	6.4 kg (14 lbs).	6.4 kg (14 lbs).

Standard Accessory (common to all models): Security cover, Part No. SC8

UREI

SIGNAL PROCESSING

LA 10/12
Preliminary
Service
Manual
(June, 92)



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COMPRESSOR/LIMITERS

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LA SERIES COMPRESSOR/LIMITERS

A HISTORY OF HITS.

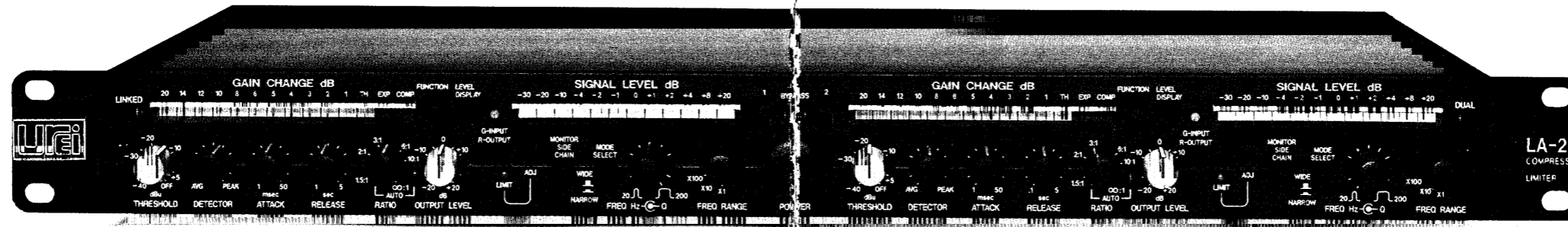
It is virtually impossible to determine how many major recordings have been impacted by UREI products. For well over two decades, recording engineers have considered UREI Compressor/Limiters to be essential tools of the studio.

Likewise, these same devices have been staples of the Live Sound and Broadcast industries, aiding engineers in achieving the desired levels of sonic performance for their respective audio needs.

Experience is the ultimate teacher and UREI engineers have been to class. Combining proven performance with modern technology, the LA Series family of Compressor/Limiters was developed to meet the needs of today's audio professional.

LA Series Compressor/Limiters deliver transparent control over audio levels, employing Smart-Slope™ compression ratios from 1.5:1 through infinity:1. Ultra low noise circuitry and intelligent feature selection make LA Series ideal for the most demanding applications, including all levels of recording, broadcast, installed sound and sound reinforcement.

The three LA Series models, LA-10, LA-12 and LA-22, all share virtually identical performance



LA-22

The "flagship" of the LA Series, the two channel LA-22 is truly the most flexible device of its type. This unit was designed with two key features which significantly increase its corrective and creative utility.

First, a front panel pushbutton switch converts the LA-22 from a gain "reduction" system to a dynamic gain "expander".

Secondly, the LA-22 is equipped with an onboard fully parametric filter system which can be used to "focus" the gain reduction or

Dual Channel Frequency Selective Compressor/Limiter/Expander

expansion action at a specific center frequency as narrow as 1/6 octave or as wide as 2-1/2 octaves.

In the gain reduction mode, the "spectral agility" provided by the parametric filter (continuously variable center frequency selection from 20 Hz to 20 kHz) makes the LA-22 a particularly effective "De-esser". It can also be utilized as a very precise feedback suppressor. Its creative application is limitless.

In the expansion mode, one example of its utility would be to use the parametric filter to enhance vocal intelligibility of

recordings, sound reinforcement systems or paging systems. This would be achieved by setting the parametric filter center frequency and 'Q' to expand only the range of the human voice. Once again, its creative capabilities are limited only by your imagination.

The parametric filters are fully accessible via the rear panel barrier strips and can be used as single channel independent equalizers or can be fed to the Side Chain to achieve frequency dependent control of the full bandwidth signal.

The onboard parametric filter circuit adds a degree of flexibility to the LA-22 previously unavailable in products of this type.

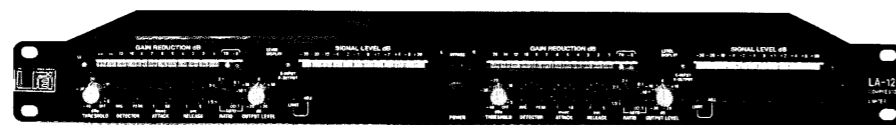
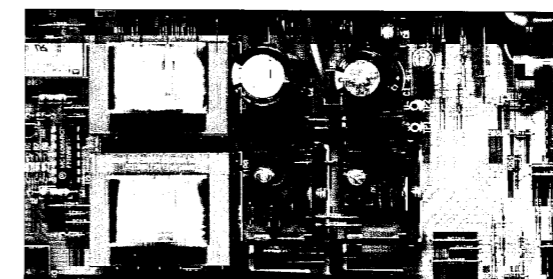
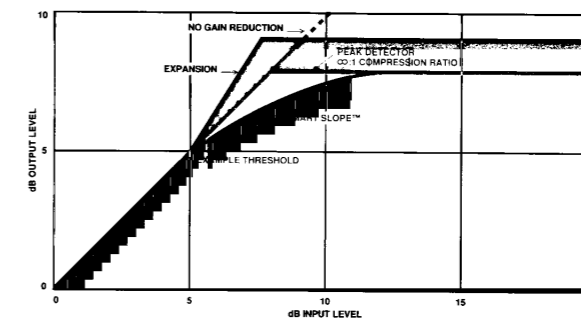
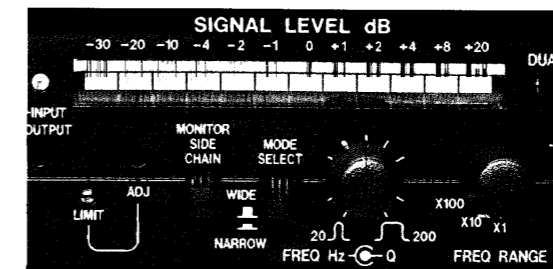
Center frequency selection is continuously variable from 20 Hz to 20 kHz with the 'Q' adjustable from 1/6 to 2 1/2 octaves. This enables you to gain reduce or expand within a limited range of frequencies, without effecting the remainder of the audio signal. The parametric filter can also be routed to the side chain so that full band gain reduction or expansion can occur as a result of a specific frequency(ies).

Transparent Gain Reduction or Expansion from Smart-Slope™ Compression Ratios.

Typical input vs. output level curves for LA Series Compressor/Limiters.

To achieve ideal isolation, the output stage incorporates real transformers integrated with our patented active circuit.

This combination of technologies virtually eliminates the distortion and saturation often associated with transformer output stages.



LA-12

A dual channel version of the LA-10, the LA-12 packs more performance in the same size chassis. The two channels can be operated independently, linked for stereo, or linked to other units

Dual Channel Compressor/Limiter

for multi-channel applications. The LA-12 offers solid gain reduction capability in a package that is ideal for the recording studio, broadcast studio or live sound reinforcement system.



LA-10

The LA-10 is a single channel device, ideal for use in sound contracting and broadcast. Its simple design makes it cost effective for use in basic systems

Single Channel Compressor/Limiter

without sacrificing performance or features. The LA-10 can be linked via a rear panel barrier strip to work in conjunction with other units for stereo or multi-channel applications.

characteristics and differ only in terms of number of channels and features.

Housed in a compact 1U rack space chassis, LA Series Compressor/Limiters feature three separate gain reduction circuits: Peak, Average and Peak Output Ceiling limiting. Front panel controls allow total command over Threshold, Detector mode, Attack, Release, Ratio and Output Level. When rotated completely counter-clockwise, the Ratio control activates an "Auto" function which sets the Compression Ratio and Peak/Average to factory preset values for quick set up. Two high visibility LED displays provide visual indication of Input/Output levels and Gain Reduction.

Active Balanced Bridging circuitry on the inputs permits these units to be driven by signals in excess of +24 dBu. The output stage incorporates a real transformer to attain ideal isolation, optimized by a patented active circuit which virtually eliminates the distortion and saturation sometimes associated with transformer output stages.

These hot new tools from UREI can help you produce great hits. LA Series, a new standard from the people who have set the standards for compressor/limiters for over 20 years.