



# Product Information

## PROTEA 3.24CL DIGITAL CROSSOVER/SYSTEM PROCESSOR

## PROTEA 3.24CL-D DIGITAL CROSSOVER/SYSTEM PROCESSOR/ZONE DISTRIBUTION



Both the 3.24CL and 3.24CL-d were developed for smaller audio systems requiring fewer inputs and outputs without sacrificing sonic quality. Either version has three inputs and six outputs coupled with an incredibly easy front panel user interface with all the audio processing tools you need for precise crossover, system control and superior sound.

The Protea 3.24CL-d is a variant of the 3.24CL with the only difference being the adjustable input and output delay times. Input delay is 85ms and output delay is 256ms. With the 3.24CL-d's longer delay on the outputs, distribution of audio to zones is possible.

Each input allows you to control gain, delay and six filters (each of them your choice of parametric, low or high shelf). Each output permits you to set your crossover frequencies and may be assigned to any one or a combination of inputs. Additionally, you can program four filters (each of them your choice of parametric, low or high shelf), control delay for time delay adjustments, adjust output gain, reverse polarity and control a compressor/limiter for speaker protection. All this in one rack space with XLR input and output connections.

- Three Inputs - Six Outputs
- Extremely Intuitive User Interface
- Programmable by Front Panel
- Superior Sonic Quality
- One Rack Space
- Outputs Assignable to Any Input
- Crossover, EQ, Delay and Limiter Functions
- Linkwitz-Riley, Bessel and Butterworth Filters
- 12, 18, 24 and 48dB/Octave Slopes
- Parametric EQ: 1/64th to 4 Octave Range
- Input and Output Delay
- Limiter on Each Output
- Individual Input and Output Metering
- Balanced Inputs and Outputs
- XLR Audio Connections
- Factory Loaded/Editible Presets
- Four Levels of Security

### Common Applications

#### Conventional PA Systems

Stereo 3-way low-mid-high system  
Up to three 2-way monitor mixes  
Up to six single monitor mixes

#### Portable and Small Club Venues

Stereo 2-way for full range, compact, portable loudspeakers and aux fed sub

#### Houses of Worship

L-C-R configurations  
Multi-zoned systems

### SPECIFICATIONS:

Input:	Active balanced, 18kOhms
Max. input level:	+20dBu
Output:	Active balanced, 100Ohms
Max. output level:	+20dBu
Frequency response:	20Hz-20kHz, ±0.25dB
THD:	<0.01% @1kHz, +20dBu
Dynamic range:	>110dB (20Hz-20kHz) unweighted
Output noise:	<-90dBu unweighted
EQ filters:	
Number:	6 per Input, 4 per output
Parametric	
Bandwidth:	1/64th octave to 4 octave
Range:	+15/-30dB, 0.1dB increments
Frequency resolution:	1/24th octave
High-shelf	
Slope:	Selectable 6 or 12dB/octave (1 high shelf, 2 high shelf)
Frequency range:	19.7Hz to 2kHz
Range:	+/-15dB, 0.1dB increments
Low-shelf	
Slope:	Selectable 6 or 12dB/octave (1 low shelf, 2 low shelf)
Frequency range:	3.1886kHz to 20.1587kHz
Range:	+/-15dB, 0.1dB increments
Crossover filters	
High pass filter	
Type:	Linkwitz-Riley, Bessel, Butterworth
Slope:	12, 18, 24 and 48dB/octave
Frequency range:	Off to 21.983.3kHz, 245 step increments
Low pass filter	
Type:	Linkwitz-Riley, Bessel, Butterworth
Slope:	12, 18 and 24dB/octave
Frequency range:	Off to 21.983.3kHz, 245 step increments
Delay	
Input maximum delay:	682.5ms [CL], 85ms [CL-d]
Output maximum delay:	21.33ms [CL], 256ms [CL-d]
Increment:	20µs
Input and output gain:	
Range:	+12/-40dB, 0.1dB increments
Polarity:	0 or 180 degrees (selectable in the output gain stage)
Compressor/limiter:	
Threshold:	-20dBu to +20dBu, 1dB increments
Ratio:	1.2 :1 to Infinity (1.2, 1.5, 2., 3, 4, 6, 10, 20, Infinite:1)
Attack:	0.5ms to 50ms per dB
Release:	10ms to 1 sec. per dB
Range:	20Hz to 10.6kHz
Processor:	
Input A/D:	24 bit
Output D/A:	24 bit
Processor:	24 bit, 56 bit accumulator
Sample rate:	48kHz
Propagation delay:	1.46ms
Other:	
Power requirements:	80-260VAC, 30W
Shipping weight:	10 lbs
Dimensions:	19.0" L x 1.75" H x 6.0" D
I/O connectors:	XLR
Environmental:	40-120 deg. F, non-condensing

