

# Protea

Protea specifications

Protea 3.24CL / 3.24CL-d Speaker 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 is a three input/six output digital signal processor capable of precise control of a broad range of audio functions. The front panel interface offers an incredibly easy user interface allowing quick access to all control parameters by offering dedicated function buttons, eliminating the need for hidden sub-menus.

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.

The Protea 3.24CL or 3.24CL-d utilize state of the art DSP technologies, beginning with 24 bit, 48kHz delta-sigma A/D converters with 128x oversampling. Digital processing includes Gain, Polarity Invert, Parametric EQ, Shelving Filters, Time Delay, Crossover Functions, Compression, Limiting, and Signal Routing, all taking place in twin, high performance DSP processors. D/A conversion uses 24 bit delta-sigma converters with 128x oversampling. All inputs and outputs are precision balanced and RF protected using XLR connectors. 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.

When your application requires fewer inputs and outputs without sacrificing precise audio processing and superior sound, the Protea 3.24CL or 3.24CL-d three-input six-output speaker processors will more than satisfy your audio or financial requirements.

## Features:

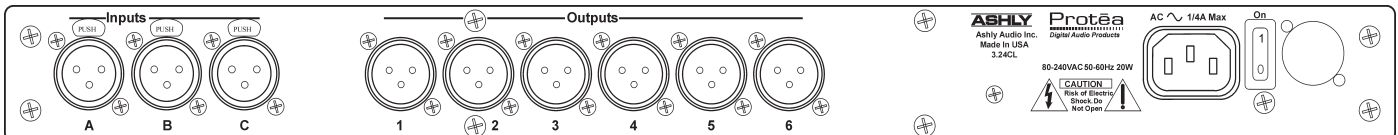
- One Rack Space
- Three Inputs - Six Outputs
- Extra Input Allows for Aux Fed Subs
- Extremely Intuitive User Interface
- Front Panel Programming and Control
- Crossover, EQ, Delay and Limiter Functions
- Outputs Assignable to Any Input
- Superior Sonic Quality
- Identical in Performance to the 4.24C
- XLR Audio Connections
- Balanced Inputs and Outputs
- Parametric Filters and Comp/Limiter to Control Feedback Problems
- 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
- Four Levels of Security

## 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 subHouses of Worship
- L-C-R configurations
- Multi-zoned systems

**Protea 3.24CL / 3.24CL-d Speaker Processor / Zone Distribution**

|                               |                                   |                                  |  |
|-------------------------------|-----------------------------------|----------------------------------|--|
| Input                         | Active Balanced, 18 kohms         | Crossover High Pass Filter Type  | Linkwitz-Riley, Bessel, Butterworth        |
| Max Input Level               | +20dBu                            | Crossover High Pass Filter Slope | 12, 18, 24 and 48dB/Octave                 |
| Input Gain Range              | +12/-40dB, 0.1dB Increments       | Crossover High Pass Filter Range | Off to 21.98KHz, 245 step incr             |
| Output                        | Active Servo Balanced, 110 ohms   | Crossover Low Pass Filter Type   | Linkwitz-Riley, Bessel, Butterworth        |
| Max Output Level              | +20dBu                            | Crossover Low Pass Filter Slope  | 12, 18, 24 and 48dB/Octave                 |
| Output Gain Range             | +12/-40dB, 0.1dB Increments       | Crossover Low Pass Filter Range  | Off to 21.98KHz, 245 step incr             |
| Polarity                      | 0 or 180 degrees                  | Compressor/Limiter Threshold     | -20dBu to +20dBu, 1dB incr                 |
| Frequency Response            | 20 Hz-20kHz, $\pm 0.25$ dB        | Compressor/Limiter Ratio         | 1.2, 1.5, 2, 3, 4, 6, 10, 20:1, Infinite:1 |
| THD                           | <0.01% @1 kHz, +20 dBu            | Compressor/Limiter Attack        | 0.5ms to 50ms per dB                       |
| Dynamic Range                 | >110 dB (20 Hz-20 kHz) unweighted | Compressor/Limiter Release       | 10ms to 1Sec per dB                        |
| Output Noise                  | <-90 dBu unweighted               | Compressor/Limiter Range         | 20Hz to 10.6KHz                            |
| EQ Filters                    | 6 per input   4 per output        | Input A/D                        | 24 bit                                     |
| Parametric EQ Bandwidth       | 1/64th Octave to 4 Octave         | Output A/D                       | 24 bit                                     |
| Parametric EQ Range           | +15/-30dB, 0.1 dB incr            | Processor                        | 24 bit, 56 bit accumulator                 |
| Frequency Resolution          | 1/24th octave                     | Sample Rate                      | 48KHz                                      |
| High-Shelf EQ Slope           | 6 or 12dB/Octave                  | Propagation Delay                | 1.46ms                                     |
| High-Shelf EQ Frequency Range | 19.7Hz to 2KHz                    | Power Requirements               | 90-240VAC, 40W                             |
| High-Shelf EQ Range           | +/-15dB, 0.1dB incr               | Shipping Weight                  | 13lbs (Maximum)                            |
| Low-Shelf EQ Slope            | 6 or 12dB/Octave                  | Dimensions                       | 19.0"W x 3.5"H x 8.5"D                     |
| Low-Shelf EQ Frequency Range  | 3.189KHz to 20.159KHz             | Connections                      | XLR  |
| Low-Shelf EQ Range            | +/-15dB, 0.1dB incr               | Environmental                    | 40-120 deg. F (4-49 deg. C) non-condensing |
| Maximum Input Delay           | 682.5ms, 20uS incr                |                                  |  |
| Maximum Output Delay          | 682.5ms, 20uS incr                |                                  |  |
| Delay Increment               | 20uS                              |                                  |  |



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