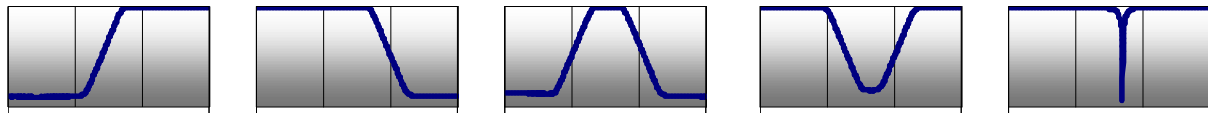


- Very versatile, easy to use
- 2 Independent Channels
- 1 Hz – 255 kHz filter range
- +70 dB gain
- Single ended / differential Input
- 5 filter responses, 135 dB/Octave
- Non-volatile memory
- BNC connectors
- Signal overload indication
- Built in RS 232 interface
- Highpass / Lowpass / Bandpass / Bandstop / Notch



The Kemo VBF 42 is a top of the range laboratory filter, with 5 built-in filter responses, 2 low pass, 2 highpass, and one bandpass. The VBF42 is a compact 1U high 19" benchtop or rack mounted instrument, manufactured in a stainless steel chassis. Control is an easy to use 'menu' style control with a LCD panel, selection buttons and index wheel.

The VBF 42 can store up to 9 filter settings. External control via the built in RS232 interface, is easy using the Kemo text based FICL command language. This allows custom drivers to be easily written, or direct control from any RS232 terminal device.

The VBF 42 has a wide range of gain control. +40 dB (x 100) is available before the filter, in 20 dB (x10) steps. There is also a 10 dB (x 0.31) input attenuator. After the filter there is – 10 dB to + 30 dB of gain in 2 dB steps. This combination allows optimisation of signal levels both before and after the filter.

Filter cut-off frequencies are set using the easy to use LCD panel and controls. The VBF 42 has 4 frequency ranges, each with 255 steps. Covering a range from 1 Hz to 255 kHz. The control of the 2 channels of the VBF42 can be coupled to provide 'ratio setting', which are ideal for bandpass, bandstop, and notch filtering, and a 'stereo' mode where both channels are set to identical settings.

The combination of frequency range, pre and post-filter gain, 5 filter responses, and compact size make the VBF 42 a very versatile flexible filter amplifier. 5 filter responses used in series or parallel is a very powerful analogue filter combination.

Due to continued product development Kemo Limited reserve the right to change specification without notice.

### • Kemo Limited

Unit 1, Dene Yard  
Green Street Green Road  
Dartford Kent DA2 8DH  
[www.kemo.com](http://www.kemo.com)  
Tel + 44 (0)1474 705168  
Fax + 44 (0)1474 705366

### • Kemo Inc.

5 Northbrook Way  
Greenville  
SC 29615

Tel (864) 297 2522  
Fax (864) 675 1530

# VBF42 Performance Specification

<b>Electronic</b>	Typical specifications after 30 minutes warm up at 20°C ambient temperature.	
Channels	2 (common earth)	
Tuning modes	Separate, Stereo, Ratio.	
Connection modes	Separate, series, parallel add, parallel subtract.	
Filter modes	Lowpass 1, Lowpass 2, Bandpass, Highpass 1, Highpass 2.	
Frequency range	1 Hz – 255 kHz in 4 ranges of 255 steps	
	1 Hz – 255 Hz	10 Hz – 2 550 Hz
	100 Hz – 25 500 Hz	1 kHz – 255 kHz
Cut-off accuracy	2 % of $F_c$	
Bandwidth	> 1 MHz, 1 volt signal, 0dB gain, filter highpass and bypass modes	
Input impedance	1M $\Omega$ , 150pF	
Input gain	0 dB to +40 dB (x100), in 20 dB steps, switchable -10 dB input attenuator	
Input voltage, linear	+/- 10 V	
Input voltage maximum	+/- 40 V	
Input modes	DC, AC, Single Ended/ Differential switched on front panel	
Input AC coupling	-3 dB @ 1.6 Hz	
Output type	Single ended	
Output gain	-10 dB to + 30 dB in 2 dB steps	
Output impedance	50 $\Omega$	
Output voltage	+/- 10 V (load > 2k $\Omega$ )	
Output noise	< 100 nV/ $\sqrt{\text{Hz}}$ (lowpass)	
Output linearity	<0.03%	
Offset voltage	<2.5 mV (RTI)	
Offset drift	200 $\mu\text{V}/^\circ\text{C}$	
Crosstalk	> -70dB	
Amplitude matching	+/- 0.1 dB to 0.8 of $F_c$ (< 100 kHz, lowpass)	
Phase matching	+/- 1 $^\circ$ to 0.8 of $F_c$ (< 100 kHz, lowpass)	
	The VBF 42 is a complex filter, typical matching values given. For more detailed response and matching data contact Kemo.	
Power	105-125, 210-250 Vac 50/60 Hz 30 VA	
Connector	IEC 6 Amp	

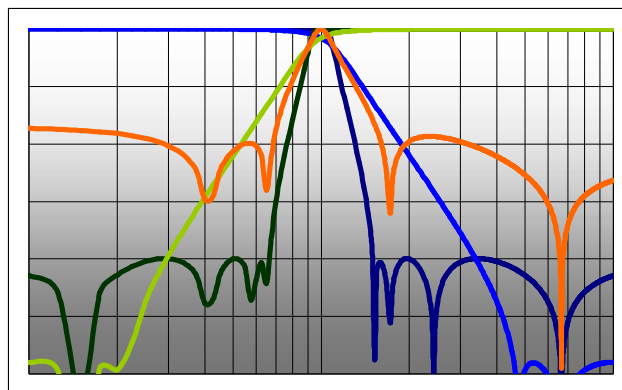
## Mechanical

Size and Weight	430 x 380 x 44 mm, 3.7 Kg	17" x 15" x 1.7" 8.2 lb
	1U 19" rack mounting, 388mm (15.3") deep	

## Filter Responses

- Lowpass L1** Flat to  $F_c$  -80 dB at 1.5  $F_c$   
Stopband -80 dB
- Lowpass L2** Flat to 0.6  $F_c$  -96 dB at 4  $F_c$   
Stopband -96 dB
- Highpass H1** Inverse of L1
- Highpass H2** Inverse of L2
- Bandpass B1** 10 dB at  $F_c$  -35 dB at 0.67 $F_c$  and 1.5  $F_c$ ,  
Stopbands -35 dB

The combination of series/parallel connection of the two filter channels, and the 5 filter responses make the VBF42 a highly versatile filter, able to generate complex filter shapes, including two bandpass frequencies, lowpass plus a bandpass, highpass plus a pass band, are some examples.



Due to continued product development Kemo reserve the right to change specification without notice.

### • Kemo Limited

Unit 1, Dene Yard  
Green Street Green Road  
Dartford Kent DA2 8DH  
[www.kemo.com](http://www.kemo.com)  
Tel + 44 (0)1474 705168  
Fax + 44 (0)1474 705366

### • Kemo Inc.

5 Northbrook Way  
Greenville  
SC 29615

Tel (864) 297 2522  
Fax (864) 675 1530