

Model SR540 Optical Chopper

- 4 Hz to 3.7 kHz -



FEATURES

- VERY LOW PHASE JITTER
- SINGLE AND DUAL BEAM EXPERIMENTS
- SUM AND DIFFERENCE REFERENCE OUTPUTS
- SYNTHETIC CHOPPING TO 18.5 kHz
- BOLT CLAMP OR ROD MOUNTING

The model SR540 light beam chopper will handle common chopper requirements as well as dual beam and intermodulation experiments. The SR540 has a voltage control input, four-digit frequency display, ten-turn frequency control, and two reference outputs with selectable operating modes. These features were perviously available only in choppers costing much more. The SR540 can be mounted with bolts, clamps, or on a rod.

SPECIFICATIONS

Chop Frequency	4 Hz to 400 Hz with 5/6 slot blade 400 Hz to 3.7 kHz with 25/30 slot blade	Reference Modes	Switch	Left BNC	Right BNC
Frequency Stability	250 ppm/°C typical	Dimensions	up	f_{inner}	f
Long Term	< 2%, 100Hz < f < 3700 Hz		middle	$5 \times f$	f
Frequency Drift		Power	down	$f + f_{inner}$	$f - f_{inner}$
Phase Jitter	0.2°rms from 50 Hz to 400 Hz 0.5°rms from 400 Hz to 3.7 kHz		Warranty	Controller 7.7" x 5.1" x 1.8"	
Frequency Display	4-digit, 1 Hz resolution, 1 Hz accuracy	Chopper Head 2.8" x 2.1" x 1.0"			
Frequency Control	10-turn pot with 3 ranges: 4 Hz to 40 Hz 40 Hz to 400 Hz 400 Hz to 3.7 kHz	Blade Diameter 4.0"			
Input Control	0 to 10 VDC for 0-100% of full scale.	Control Cable Length 6 feet			
Voltage	Control voltage overrides requency dial.	100/120/220/240/ VAC			
		50/60 Hz			
		12 Watts			
		One year parts and labor on materials and workmanship.			
		*90 days on motor.			

APPLICATIONS

SINGLE BEAM EXPERIMENT

In this application, a single optical beam is chopped by the outer row of slots, and the reference output from the right BNC is used to lock the lock-in amplifier to a chop frequency (figure 1). Note that the inner row of slots could be used, in which case the reference from the left BNC would be used. In either case, the REFERENCE MODE switch is in the "up" position.

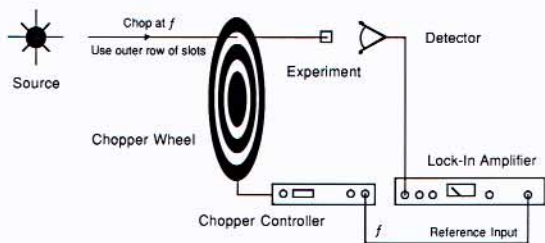


Figure 1

DUAL BEAM EXPERIMENT

In this arrangement, the output from a single source is split in two and chopped at two different frequencies by the same chopper wheel (figure 2). One of the beams passes through the experiment, while the other beam, a reference beam, passes through a control arm. The beams are recombined and sent to the same detector.

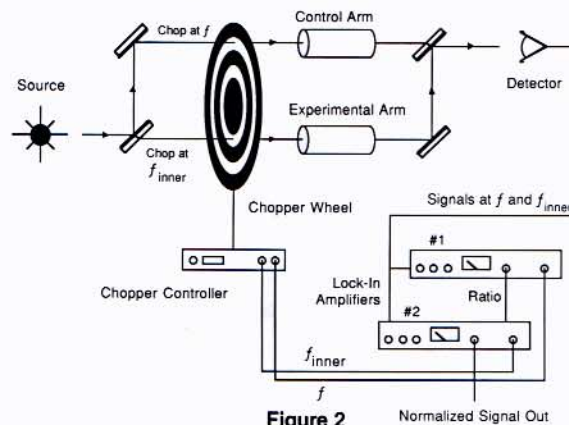
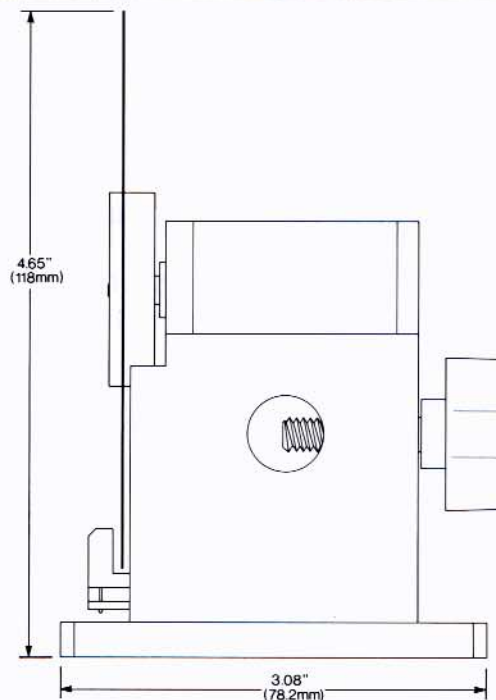
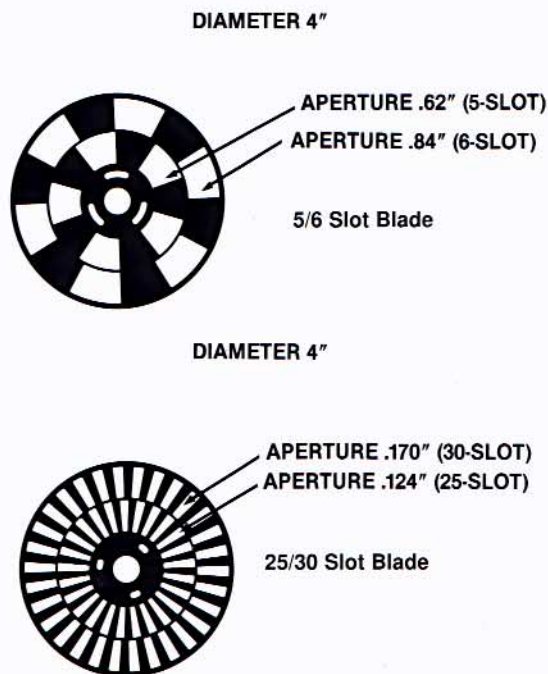


Figure 2



Chopper base measures 2.70 x 3.08 x .25" with mounting slots on 2.0" centers.

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