

Optical Chopper



MC1000A
Includes Controller,
Chopper Head, 10 Slot
Blade, and Interface Cable

Actively Stabilized
Frequency
Crystal Controlled
Phase-locked Loop



The MC1000A Optical Chopper, which includes a 10-slot (36°) chopper blade (MC1F10), is a precision instrument system utilizing advanced features to meet the most demanding applications. The MC1000A features a microprocessor control and a crystal stabilized phase-locked loop (PLL) motor control for ultimate chopping stability and drift-free performance.

An internal, crystal-stabilized frequency synthesizer provides an accurate and stable reference frequency for ultra-low, long-term frequency drift. Unlike conventional, open-loop speed control designs, the PLL speed control circuit also allows the MC1000A Optical Chopper to be synchronized to external reference signals, including other MC1000A Optical Choppers and reference sources such as DSP lock-in amplifiers.

The standard 10-slot (36°) chopper blade (MC1F10) is capable of chopping from 25Hz to 1kHz. Optional blades (MC1F2, MC1F15, MC1F30, MC1F60, and MC2F57) extend the chopping frequency range. The external reference input allows the MC1000A to lock precisely the phase and frequency to an external reference signal such as a lock-in amplifier, which provides the flexibility necessary for multiple chopper configurations.

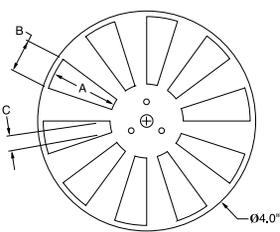
For more advanced measurements, the MC1000A can lock to a harmonic, sub-harmonic, or fractional-harmonic of an external reference frequency. A second PLL circuit is used to multiply the external reference up to the 15th harmonic. This multiplier is followed by a digital divider to divide the reference down to the 15th sub-harmonic. By combining both the frequency multiplication and division together, a fractional harmonic can be obtained

By setting the easy-to-use controls, the MC1000A can be programmed to chop at a harmonic or sub-harmonic of the reference signal. An optional 2-frequency blade with 7 outer slots and 5 inner slots allows the MC1000A to be used in pump-probe and other nonlinear experiments. The sum and difference reference frequencies are provided for use with lock-in amplifiers.

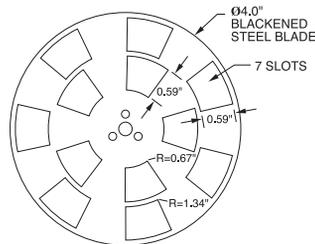
Multiple configurations can be easily saved and recalled from non-volatile RAM for quick setup. An RS-232 serial interface allows all of the MC1000A features to be controlled remotely.

MC1000A Features

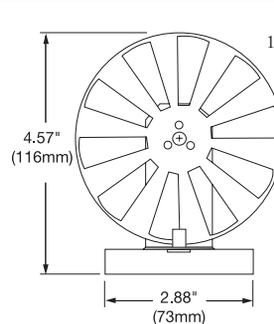
- 25Hz to 1kHz (6kHz With MC1F60 Blade) Chopping With One Blade
- Crystal Stabilized Phase-Locked Loop for Low Drift
- Low Phase Jitter – 0.2° RMS at 1kHz, 10 Slot Blade
- 2-Frequency Blades Available for Pump-Probe and Other Nonlinear Experiments
- Phase & Frequency Lock on External Reference
- Harmonic and Sub-Harmonic Chopping With Sum & Difference Reference Outputs
- Microprocessor Controlled
- Low Frequency Drift <100ppm (parts per million)
- Save and Recall User Setups in Non-Volatile RAM
- RS-232 Interface Standard Feature
- CE Certified



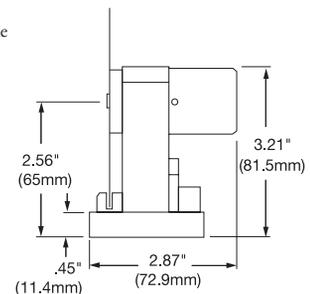
MC1F10
10-Slot Blade



MC2F57
2-Frequency Blade



MC1F15
15-Slot Blade



PART#	SLOTS	A	B	C
MC1F2	2	1.00"	2.63"	1.05"
MC1F10	10	1.25"	0.60"	0.21"
MC1F15	15	1.25"	0.40"	0.14"
MC1F30	30	1.25"	0.20"	0.07"
MC1F60	60	1.25"	0.10"	0.04"

ITEM#	\$	£	€	RMB	DESCRIPTION
MC1000A	\$1,018.00	£ 641.30	€ 946.70	¥ 9,721.90	Optical Chopper System - 115/230VAC
MC1F2	\$ 52.90	£ 33.30	€ 49.20	¥ 505.20	2-Slot Blade – 1Hz to 99Hz
MC1F10	\$ 37.50	£ 23.60	€ 34.90	¥ 358.10	10-Slot Blade – 25Hz to 1kHz
MC1F15	\$ 37.50	£ 23.60	€ 34.90	¥ 358.10	15-Slot Blade – 38Hz to 1.5kHz
MC1F30	\$ 37.50	£ 23.60	€ 34.90	¥ 358.10	30-Slot Blade – 75Hz to 3kHz
MC1F60	\$ 37.50	£ 23.60	€ 34.90	¥ 358.10	60-Slot Blade – 150Hz to 6kHz
MC2F57	\$ 53.90	£ 34.00	€ 50.10	¥ 514.70	2-Frequency Blade – 7 Outer, 5 Inner Slots

- Detectors
- Power Meters
- CCD Camera
- Spectrometer
- Optical Chopper**
- Beam Profiler & Fabry-Perot
- Digital Delay Generator
- Temperature Controller
- Filter Wheel & Shutter