

# Optical Chopper – 200mm disc

## Model 340CD

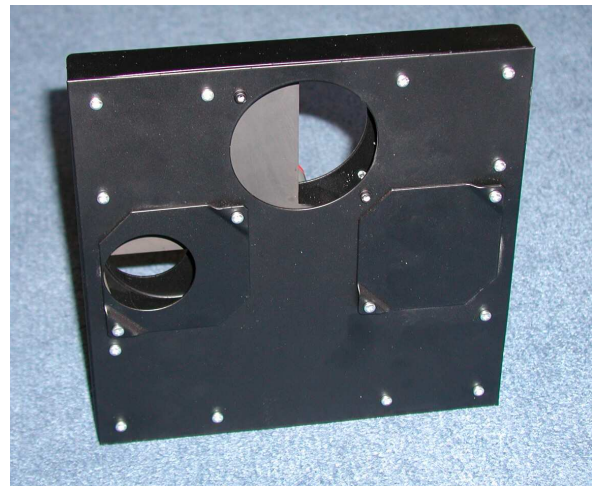


↑ 340CD chopper system

- Scitec Instruments Model 340CD is a high stability variable frequency optical chopper. The basic system consists of control unit, chopping head and a choice of one of two chemically blacked photo etched discs. This system provides operation over the frequency range 5 Hz to 220 Hz, depending on the choice of disc. A selection of additional discs and accessories is available to satisfy individual requirements.
- Chopping frequency can be controlled externally by applying an analogue voltage to a 'Control' BNC. A 'Reference' BNC provides a TTL level output, generated directly from the opto-switch on the chopping head. This signal has constant phase relative to the chopping action and can be used as the reference for other instruments such as lock-in amplifiers.

## Features

- The Model 340CD is an optical chopper based on 200 mm diameter discs.
- The larger disc size allows larger diameter beams to be chopped. Unfortunately, it does not allow smaller diameter beams to be chopped at a faster rate.
- 5 Hz – 220 Hz standard frequency range, depending on disc choice.
- The chopper system comes with a choice of two 200mm discs.



↑ 340P Blade Protector



↑ 340H chopper head

- The 340H chopping head supplied with the standard system may be bench bolted or optical stalk (bench rod) mounted. Mountings are provided to enable parts, such as a blade protector, to be attached.
- Standard discs are chemically blacked. Other finishes, such as gold plating, are available. See our website, [www.scitec.uk.com](http://www.scitec.uk.com) for more details.



# Optical Chopper – 200mm disc Model 340CD

## Specifications

### 340CDU Control Unit

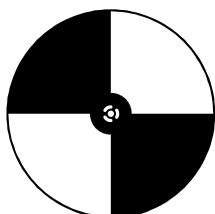
- **Output voltage:** 15 V DC maximum.
- **Stability:**  $\pm 0.01\%/^{\circ}\text{C}$
- **Frequency control:** Internal - Manual control via 10 turn potentiometer fitted with a turns counting dial. External - BNC connector for 0 to 15 V.
- **Frequency Read Out:** 5 digit 14mm LED display with 0.01Hz resolution, 0.1Hz or 1Hz resolution depending on frequency.
- **Frequency stability:** Short term - see phase jitter. Long term -  $\pm 0.1\%$  of maximum frequency
- **Reference output:** 5V HCT TTL signal via BNC socket.
- **Power requirement:** 100-130V or 200-260V AC, 50 or 60Hz, 12 VA.
- **Dimensions:** 254(W) x 76(H) x 178(D) mm.
- **Weight:** 2.6 kg.

### 340H Chopping Head

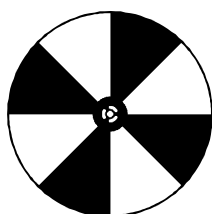
- **Motor:** 11 pole dc motor, sleeve bearings with more than 6000 hours lifetime, 0-6000 rpm reversible.
- **Reference pick-up:** IR led and phototransistor pair with Schmitt trigger.
- **Dimensions:** 122(H) x 75(L) x 40(W)mm, without disc.
- **Mounting:** Optical stalk: adjustable between 6.5 and 14.0 mm in diameter. Mounting holes: 2 x 3 mm.

### 340D Chopping Discs

- **Disc types:** 2 and 4 slot
- **Material:** Half hard brass, 1mm thick.
- **Diameter:** 200 mm.
- **Surface Finish:** Chemically blacked.
- **Mark-Space Ratio:** 1:1 with one blade.



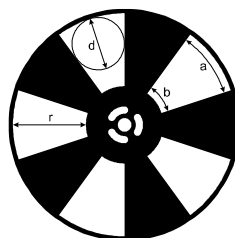
→ 340D2



→ 340D4

### Frequency Range

Blade	Frequency (Hz)	Aperture (mm)				Phase Jitter Max
		r	a	b	d	
340D2	5-110	78.0	153.9	31.4	78.0	TBA
340D4	12.5-500	78.0	77.0	15.7	54.2	TBA



### Accessories

- **The 340P blade protector** is designed for use with our 200mm optical systems (such as the 340CD). It has apertures at 3, 9 and 12 O'Clock of 70mm diameter. Each of these apertures can be blanked off using the blanking plates provided or reduced to 44mm diameter using alternate plates also provided.

See separate data sheet for details of the complete range of chopper discs and accessories that can be used with the Model 340CD Optical Chopper system.

### Ordering Information

- **Model 340CD Optical Chopper System:** A complete optical chopper system with frequency display includes: 340CDU Control Unit, 340H Chopping Head, 340I Interconnecting Cable, a single 200 mm chopping disc (please select on order) and IEC mains lead.

Order online at [www.scitec.uk.com](http://www.scitec.uk.com) or contact us on the details below.

### Enquiries

Scitec Instruments Ltd  
Bartles Industrial Estate  
North Street  
Redruth  
TR15 1HR  
United Kingdom

t. +44 [0]1209 314 608  
f. +44 [0]1209 314 609

i. [www.scitec.uk.com](http://www.scitec.uk.com)  
e. [scitec@scitec.uk.com](mailto:scitec@scitec.uk.com)