

## EOPC-SC-20

The SC-20 type scanners are low cost compact size components especially suited for high volume OEM and for custom industrial applications.

The fixed frequency resonant optical scanner is an electromagnetically driven moving mirror device, which deflects a light beam with a sinusoidal motion. The mirror assembly is attached at the center of a spring. The scanning frequency range of the SC-20 type scanner is from 10 Hz to 1.5 kHz, fixed at any one value within the range. The scan angle is inversely proportional to the frequency, and is a function of the mirror size.

High device "Q" insures frequency stability, low reaction forces and low electrical drive power. High flexural stiffness provides good resistance to shock and vibration, as well as low wobble and good scan repeatability. Resonating at the natural frequency makes the device an excellent candidate for long life operation for a multitude of applications that require good imaging with minimal distortion.

The scanners can easily be incorporated in small size and portable instruments. The scanners require only minimal power. Since they are components that have no wearing parts, they provide excellent repeatability and long life.

Glass mirrors are standard. Metal mirrors, gratings, lenses, optical attachments and special configurations are available as a special order.

Drive electronics with different packaging, regulation and power supply options are available.

For large volume OEM manufacturing we would consider providing free information to build your driver, incorporate it within your drive electronics or build it to your desired size.

Special pricing for OEM applications.

Operation at resonant frequency is sustained by a feedback amplifier type [ED driver](#) or the [AGC driver](#), using the scanner as a frequency source. The [AGC driver](#) also provides a higher amplitude stability (0.01%) and a position output signal. The [PLD-1S driver](#) will phase lock the scanner to an external clock signal. The [PLD-2S driver](#) will phase lock two scanners as a "master/slave" scanning system and the [PLD-2SXY driver](#) will phase lock two scanners as an "X-Y" scanning system.

### SPECIFICATIONS:

#### MIRROR:

Size: to 25x25mm, as a function of frequency; larger size available

Thickness: 1.0mm, standard; other thickness values available

Flatness: 1/4, 1/2 and 1 wavelength as a function of size

Surface quality: scratch and dig: 60-40

#### ELECTRICAL:

Drive coil resistance: 50, 150, 400, 950 and 2000 ohms as a function of frequency

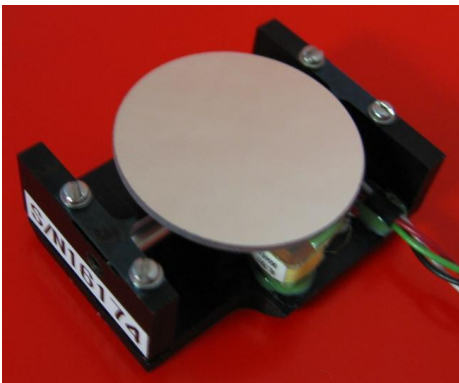
Sense coil resistance: 950 ohms

Connector: female 4 pin plug on 0.1-inch centers, Molex P/N 22-01-3047 or equiv.

Scan frequency range: 5 Hz to 1.5 kHz

Frequency accuracy: +/-2% at 25°C, closer accuracy available upon request

Scan angle: to 60° peak to peak optical as a function of frequency and mirror size



Applications include:

- Surface and quality inspection
- Pattern forming and image recognition
  - Biomedical imaging
  - Non-impact printing
    - Readers
  - Laser scanners
- Confocal microscopy
  - Printers
  - Ophthalmology
  - Quality inspection
- Outer space and environmental research

## SC-20 RESONANT OPTICAL SCANNER:

ONE FIXED FREQUENCY from the range of 10Hz to 1500Hz

The following should serve as guidelines only:

FREQ. (Hz)	SCAN ANGLE (P-P DEG OPT)	MIRROR SIZE (mm)
10-32	60°	25×25
33-95	50°	25×25
96-139	40°	20×20
140-399	40°	10×10
400-599	30°	10×10
600-799	24°	8×8
800-999	20°	8×8
1000-1249	15°	8×8
1250-1500	10°	7×7

