

## Casella APEX Air Sampling Pumps

### Introduction

The new Apex range of personal sampling pumps has been developed to provide sampling capabilities between 0.005 and 5 l/min. They are suitable for a wide range of applications and offer many advanced features not found in comparable products. Two main models are available in the range; the Apex Standard and the Apex Pro. Ease of use and utmost reliability have been uppermost in the designer's minds during the development of these quality pumps from Casella CEL. Digital circuitry ensures precise and constant control of the flow rate.

### Applications

- ❑ Personal sampling for particulates in the breathing zone
- ❑ Designed to comply with EN1232, MDHS 14/3, NIOSH 0600 requirements
- ❑ Available in single kits
- ❑ Available in comprehensive multiple 5 pack kits with all the necessary accessories
- ❑ Three buttons on the pump and a customized LCD make the user interface a snap

### Operation and use



The Pump Manager software is available for use with the logging functions of the Apex Pro model and handles all the setup and downloading of relevant pump data for comprehensive archiving. A drop in fast charger intelligently charges the Apex pumps and maintains them at peak readiness for a new measurement. An optional dry cell battery pack is also available for those really urgent jobs when there is no time to recharge a unit prior to use.

### Key benefits

- ❑ Wide operating range from 5 ml/min to a true 5 l/min flow
- ❑ Direct volumetric flow control
- ❑ Long term stability between calibrations
- ❑ Multi-lingual displays
- ❑ Infra-red communications for simplicity of downloads
- ❑ Pro model stores up to 100 events in memory
- ❑ Drop in fast charger to get back up and running quickly
- ❑ Gas bag outlet for grab sampling of gasses
- ❑ Emergency dry cell battery backup option
- ❑ Standard model upgradeable to Pro version via PC

A full range of sampling heads and filters are available from Casella CEL for measuring respirable, total inhalable and the PM fractions depending on the measurement regime being followed. You can be confident that the pump will maintain a constant flow during the measurement and will alert the user should a problem occur with the flow due to a restriction or blocked filter.



Technical Information					
Flow range	0.8 to 5.0 liters/minute standard (5 to 750 milliliters/minute with Low Flow adaptor)				
Flow control accuracy	<±5.0% for selected flow				
Flow performance (Flow, max vacuum pressure)	1.0 liters/minute @ 31.5 in H <sub>2</sub> O 2.0 liters/minute @ 31.5 in H <sub>2</sub> O 3.5 liters/minute @ 12.6 in H <sub>2</sub> O 4.0 liters/minute @ 7.1 in H <sub>2</sub> O 5.0 liters/minute @ open flow				
Battery voltage and capacity	4.8 V NiMH / 2.5 Ah				
Inlet pulsation ratio	<10% using cyclone @ 2.0 liters/minute approx. 3.0 in H <sub>2</sub> O Satisfies NIOSH 0600 and EN 1232				
Displayed values	Real time flow rate, volume sampled, elapsed sample time, temperature, operating mode, program details				
Pump MTBF (service interval)	Typically >2500 hours				
Operating temperature	41 to 104 °F (5 to 40 °C)				
Storage temperature	50 to 122 ° F (10 to 50 °C)				
Charging technique	Drop in intelligent fast charger				
Typical charge time	dT/dt fast charge termination with safety time out				
External Power Supply Unit (for drop in charger)	Standby trickle charge mode keeps pump ready for use				
Memory storage of data	100 events saved				
Memory protection time (with main battery removed)	Approximately 20 minutes				
Communications	Infra red (via RS232 IR transducer)				
Recorded values	Start and stop times, flow rate, average sample temperature, total volume sampled (in l or m <sup>3</sup> )				
Physical characteristics					
Size	5.8 x 3.4 x 1.8 in (145 x 85 x 46 mm)				
Weight (including battery)	17.8 oz (500 gm)				
Pump Performance					
	Typical filter pressure load in inches of H <sub>2</sub> O, typical battery life in hours				
Filter type	1.0 liters/min	2.0 liters/min	2.2 liters/min	3.5 liters/min	4.0 liters/min
25 mm GFA	2.0 in, 34 hrs	3.5 in, 22 hrs	3.7 in, 20 hrs	6.3 in, 12 hrs	7.1 in, marginal
25 mm 0.8 µm	7.0 in, 21 hrs	12.2 in, 14 hrs	13.4 in, 13 hrs	22 in, N/A	25.2 in, N/A
25 mm 1.2 µm	4.3 in, 27 hrs	8.3 in, 16 hrs	9.0 in, 15 hrs	14.6 in, N/A	16.5 in, N/A
37 GFA	1.2 in, 40 hrs	2.0 in, 25 hrs	2.4 in, 23 hrs	3.5 in, 14 hrs	4.3 in, 12 hrs
37 mm 0.8 µm	2.6 in, 33 hrs	5.1 in, 20 hrs	5.5 in, 18 hrs	9.0 in, 11 hrs	10.4 in, N/A
Ordering information					
182093B	Apex AA pump with alkaline battery pack				
182000B	Apex standard pump less charger				
182063B	Apex Pro pump less charger				
182000K1	Apex standard pump including charger				
182063K1	Apex Pro pump including charger				
182000K5	Apex standard kit (5 pumps) including charger and case				
182063K5	Apex Pro kit (5 pumps) including charger, PC software and case				
182091A	MS Windows based Pump Manager software with IR link and cable				
182052B	Battery charger for Apex and Apex Pro pumps				
182094A	Emergency dry cell battery pack for Apex and Apex Pro				