

## Casella APEX Intrinsically Safe Air Sampling Pumps

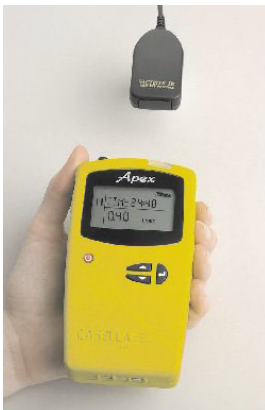
### Introduction

The new Apex IS range of personal sampling pumps has been developed to provide sampling capabilities between 0.005 and 4 l/min. Approval from the UL in the USA mean that the pumps can be used in any circumstance where intrinsic safety is an issue. Two main models are available in the range; the Apex Standard IS and the Apex Pro IS. Ease of use and utmost reliability were 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 multiple 5 pack kits with a 5 way charger or 5 separate chargers
- ❑ Three buttons on the pump and a customized LCD make the user interface intuitive

### Operation and use



UL, ATEX, ANSI, CSA approved  
for use in hazardous areas



The Casella Pump Manager software is available for use with the logging functions of the Apex IS Pro model and handles all the setup and downloading of the relevant pump run data for comprehensive reporting and archiving. Maintain a database of your measurements including the pump details and individual personal data. A drop in fast charger intelligently charges the Apex IS pumps and maintains them at peak power ready for a new measurement.

### Key benefits

- ❑ Wide operating range from 800 ml/min to 4 l/m directly
- ❑ 5 to 750 ml/m with low flow adaptor for vapors
- ❑ Direct volumetric flow control
- ❑ Long term stability between calibrations
- ❑ Infra-red communications for simplicity of downloads with Pro model
- ❑ 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
- ❑ Standard IS model pump upgradeable to Pro IS pump version via PC software

A full range of sampling heads and filter cassettes are available from Casella CEL for measuring respirable, total inhalable and the PM fractions depending on the measurement protocol 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.



<b>Technical Information Intrinsically Safe Models</b>					
Flow range	0.8 to 4.0 liters/minute standard flow rate (5 to 750 milliliters/minute with Low Flow adaptor)				
Flow control accuracy	<±3.0% for selected flow digitally controlled for utmost stability				
Flow performance (Flow, max back pressure)	1.0 liter/minute @ 32 in H <sub>2</sub> O (80 cm H <sub>2</sub> O) 2.0 liters/minute @ 22 in H <sub>2</sub> O (55 cm H <sub>2</sub> O) 3.5 liters/minute @ 6.4 in H <sub>2</sub> O (16 cm H <sub>2</sub> O)				
Battery voltage and capacity	4.8 V NiMH / 1.7 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 >3000 hours				
Operating temperature	41 to 104 °F (5 to 40 °C)				
Storage temperature	14 to 122 ° F (-10 to 50 °C)				
Charging technique	Drop in intelligent fast charger <1.5 hrs gives 8 hr run time				
Typical charge time	Fast charge with safety time out, takes 4.5 hours to fully charge pump				
External Power Supply Unit (for drop in charging)	Casella 182261B single pump fast charger or 182226A 5 way pump fast charger keeps pump(s) always ready for use				
Memory storage of data	100 events saved in Apex Pro IS model				
Memory protection time	Approximately 20 minutes (with main battery removed)				
Communications	Infra red (via RS232 IR transducer) to Pump Manager software				
Recorded values	Start and stop times, duration flow rate, average sample temperature, total volume sampled (in l or m <sup>3</sup> ) error conditions such as blockages				
Physical characteristics					
Size	5.8 x 3.4 x 1.8 in (145 x 85 x 46 mm)				
Weight (inc. battery)	17.8 oz (500 gm)				
Intrinsic Safety Approvals	UL/CSA Class I, Divisions 1 & 2, Groups C & D; Class II, Divisions 1 & 2, Groups E, F & G; Class III hazardous locations ATEX: 100-94/9/EC Directive EEx ia IIB T4, Equipment group II Category 1 G Gas, EN 50014, EN 50020, EN 1232 : 1997				
<b>Pump Performance</b>					
	<b>Typical filter pressure load in inches of H<sub>2</sub>O, typical battery life in hours</b>				
<b>Filter type</b>	<i>1.0 liter/min</i>	<i>2.0 liters/min</i>	<i>3.0 liters/min</i>	<i>3.5 liters/min</i>	<i>4.0 liters/m</i>
25 mm GFA	2.0 in, 51 hrs	3.0 in, 26 hrs	4.0 in, 15 hrs	5.0 in, 11 hrs	5.3 in, 2 hrs
25 mm 0.8 µm	6.5 in, 31 hrs	11.0 in, 13 hrs	15.0 in, 1 hrs	17.0 in, N/A	19.0 in, N/A
25 mm 1.2 µm	4.5 in, 42 hrs	11.0 in, 18 hrs	10.0 in, 11 hrs	11.8 in, <1 hr	12.5 in, N/A
37 mm GFA	0.5 in, 58 hrs	1.5 in, 31 hrs	2.0 in, 17 hrs	2.5 in, 13 hrs	2.6 in, 12 hrs
5" backpressure	33 hrs	20 hrs	13 hrs	11 hrs	3 hrs
<b>Ordering information</b>					
182150B	Apex Standard IS pump with NiMH battery pack (less charger unit)				
182160B	Apex Pro IS pump with NiMH Battery pack (less charger unit)				
182150B/K1	Apex Standard IS pump including charger unit				
182160B/K1	Apex Pro IS pump including charger unit				
182150B/K5	Apex Standard IS kit (5 pumps) including 5 way charger and case				
182160B/K5	Apex Pro IS kit (5 pumps) including 5 way charger, s'ware and case				
182091A	MS Windows based Pump Manager software with IR link and cable				
182261B	Single battery charger for Apex IS & non-IS pumps (not UL approved)				
182226A	5 way battery charger for Apex IS & non-IS pumps (not UL approved)				
182013C	Replacement battery pack for Apex IS pump models				