

Comparison of Specifications for High Precision Ozone Monitors

	2B Tech Model 106-L	2B Tech Model 202	2B Tech Model 205	2B Tech Model 211	2B Tech Model 211-G	2B Tech POM	Teledyne-API Model 430	Teledyne-API Model T400	Ecotech SERINUS 10	Thermo Model 49i
Optical Bench	Single Beam	Single Beam	Dual Beam	Dual Beam	Dual Beam	Single Beam	Single Beam	Single Beam	Single Beam	Dual Beam
Linear Range	0-100 ppm	0-250 ppm	0-250 ppm	0-2 ppm	0-2 ppm	0-10 ppm	0-20 ppm	0-10 ppm	0-20 ppm	0-200 ppm
Resolution	0.1 ppb	0.1 ppb	0.1 ppb	0.1 ppb	0.1 ppb	0.1 ppb	0.1 ppb	0.1 ppb	0.1 ppb	0.1 ppb
Pneumatics	Internal diaphragm pump, ~800 cc/min	Internal diaphragm pump, ~800 cc/min	Internal diaphragm pump, ~1600 cc/min	Internal diaphragm pump, ~1600 cc/min	Internal diaphragm pump, ~1600 cc/min	Internal diaphragm pump, ~800 cc/min	Internal diaphragm pump, ~800 cc/min	Internal diaphragm pump, ~800 cc/min	User-supplied external pump (internal pump option), ~500 cc/min	Internal diaphragm pump, 1000-3000 cc/min
Filter	Optional external PTFE particle filter	Optional external PTFE particle filter	Optional external PTFE particle filter	Optional external PTFE particle filter	Optional external PTFE particle filter	Optional external PTFE particle filter	Internal particle filter	Internal PTFE particle filter	Internal PTFE particle filter	Optional PTFE particle filter
Dimensions	3.6 x 7.9 x 9.4 in 9 x 20 x 24 cm	3.7 x 8.5 x 11.8 in 9.5 x 21.5 x 30 cm	3.7 x 8.5 x 11.8 in 9.5 x 21.5 x 30 cm	17 x 14.5 x 5.5 in 43 x 37 x 14 cm	17 x 14.5 x 5.5 in 43 x 37 x 14 cm	5 x 3 x 1.5 in 12.7 x 7.6 x 3.8 cm (with GPS, no battery) 4 x 3 x 1.5 in 10.2 x 7.6 x 3.8 cm (no GPS, no battery)	4.2 x 7.1 x 10.2 in 10.7 x 18 x 25.9 cm	7 x 17 x 23.5 in 18 x 43 x 60 cm	8 x 20 x 29 in 17.5 x 43 x 64 cm	8.6 x 16.8 x 23 in 22 x 43 x 58 cm
Volume	270 cubic inches	370 cubic inches	370 cubic inches	1,356 cubic inches	1,356 cubic inches	18 cubic inches	304 cubic inches	2,800 cubic inches	4,640 cubic inches	3,300 cubic inches
Weight	4.2 lb, 1.9 kg	5.5 lb, 2.5 kg	5.8 lb, 2.6 kg	14.7 lb, 6.7 kg	~14.7 lb, 6.7 kg	0.8 lb, 0.36 kg (without battery); 1.0 lb, 0.45 kg (with battery)	5.2 lb, 2.4 kg	28 lb, 12.7 kg; 30.6 lb, 13.8 kg with IZS	38 lb, 17.2 kg	55 lb, 25 kg
Power	6 watt; 100-240 V AC, 50/60 Hz; 11-28 V DC (500 mA at 12 V DC)	7.2 watt; 100-240 V AC, 50/60 Hz; 11-14 V DC (600 mA at 12 V DC)	8 watt; 100-240 V AC, 50/60 Hz; 11-14 V DC (650 mA at 12 V DC)	12 watt; 100-240 V AC, 50/60 Hz; 11-14 V DC (1 A at 12 V DC)	18 watt; 100-240 V AC, 50/60 Hz; 11-14 V DC (1.5 A at 12 V DC)	3 watt; 100-240 V AC, 50/60 Hz; 7-12 V DC (250 mA at 12 V DC)	9 watt; 12 V DC	110 watt; 100-240 V AC, 50/60 Hz	65 VA; 100-260 V AC, 50/60 Hz	150 watt; 100-240 V AC, 50/60 Hz
Reporting Units	ppb, ppbm, ppm, mg/m ³ , µg/m ³	ppb, ppbm, ppm, mg/m ³ , µg/m ³	ppb, ppbm, ppm, mg/m ³ , µg/m ³	ppb, ppbm, ppm, mg/m ³ , µg/m ³	ppb, ppbm, ppm, mg/m ³ , µg/m ³	ppb	ppb, ppm	ppb, ppm, mg/m ³ , µg/m ³	ppt, ppb, ppm, mg/m ³ , µg/m ³ , ng/m ³	ppb, ppm, mg/m ³ , µg/m ³
Humidity Control	DewLine™ Nafion tube	DewLine™ Nafion tube	DewLine™ Nafion tube	DewLine™ Nafion tube	DewLine™ Nafion tube	DewLine™ Nafion tube	None	None	None	None
Zero Noise	≤ 1.5 ppb (rms)	≤ 1.5 ppb (rms)	≤ 1.0 ppb (rms)	≤ 0.5 ppb (rms)	≤ 0.5 ppb (rms)	≤ 1.5 ppb (rms)	< 1 ppb (rms)	< 0.2 ppb (rms)	< 0.25 ppb (rms)	0.25 ppb (rms)
Lower Detectable Limit (LDL)	≤ 3 ppb for 10-s avg ≤ 1.3 ppb for 1-min avg	≤ 3 ppb for 10-s avg ≤ 1.3 ppb for 1-min avg	≤ 2 ppb for 10-s avg ≤ 0.9 ppb for 1-min avg	≤ 1 ppb for 10-s avg ≤ 0.5 ppb for 1-min avg	≤ 1 ppb for 10-s avg ≤ 0.5 ppb for 1-min avg	≤ 3 ppb for 10-s avg ≤ 1.3 ppb for 1-min avg	< 2 ppb	< 0.4 ppb with 80-sample digital filter	0.5 ppb with Kalman filter	0.5 ppb
Precision	Greater of 1.5 ppb or 2% of reading	Greater of 1.5 ppb or 2% of reading	Greater of 1.0 ppb or 2% of reading	Greater of 0.5 ppb or 1% of reading	Greater of 0.5 ppb or 1% of reading	Greater of 1.5 ppb or 2% of reading	0.5 ppb or 0.5% of reading above 100 ppb	< 0.5% of reading above 100 ppb	Greater of 0.5 ppb or 0.2% of reading	1.0 ppb
Zero Drift	≤ 2 ppb per day ≤ 6 ppb per year	≤ 2 ppb per day ≤ 5 ppb per year	≤ 1 ppb per day ≤ 3 ppb per year	≤ 1 ppb per day ≤ 3 ppb per year	≤ 1 ppb per day ≤ 3 ppb per year	≤ 2 ppb per day ≤ 5 ppb per year	< 1 ppb per day	< 1 ppb per day	< 0.3 ppb per day; < 0.3 ppb per 7 days	< 1 ppb per day
Span Drift	< 1% per day < 3% per year	< 1% per day < 3% per year	< 1% per day < 3% per year	< 0.5% per day < 3% per year	< 0.5% per day < 3% per year	< 1% per day < 3% per year	< 1% per day	< 1% per day	< 0.5% per 7 days	< 1% per 30 days
Rise and Fall Time	4 s	20 s	4 s	4 s	4 s	20 s (fast mode: 4 s)	< 15 s to 95%	< 20 s to 95%	30 s to 95%	20 s
Linearity	1% of full scale	1% of full scale	1% of full scale	1% of full scale	1% of full scale	1% of full scale	1% of full scale	1% of full scale	< 1% of full scale	1% of full scale
Operating Temp.	0-50°C	0-50°C; -20 to 50°C with optional cold weather package	0-50°C; -20 to 50°C with optional cold weather package	10-50°C	10-50°C	0-50°C	5-40°C	5-40°C	0-40°C	0-45°C
Outputs	0-2.5 V and 4-20 mA for user-specified range, RS232 serial, USB	0-2.5 V for user-specified range, RS232 serial, flash memory, optional USB adapter, optional 4-20 mA analog current output	0-2.5 V for user-specified range, RS232 serial, flash memory, optional USB adapter, optional 4-20 mA analog current output	0-2.5 V for user-specified range, RS232 serial, flash memory, optional USB adapter, optional 4-20 mA analog current	0-2.5 V for user-specified range, RS232 serial, flash memory, optional USB adapter, optional 4-20 mA analog current	0-2.5 V for user-specified range, RS232 serial, flash memory, optional USB adapter, optional 4-20 mA analog current	USB, RS232 serial	0-5 V, RS-232, SD card	4 Analog voltage outputs; 8 digital outputs; 2 RS232 serial outputs; 2 USB ports; Ethernet	Analog current or voltage, 8 digital outputs, USB, 2 RS232 serial outputs, Bluetooth, flash memory

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				output	output					
Internal Data Logger	32,736 lines; 5 min avg = 3.7 mo	16,383 lines; 5 min avg = 1.9 mo	16,383 lines; 5 min avg = 1.9 mo	16,383 lines; 5 min avg = 1.9 mo	16,383 lines; 5 min avg = 1.9 mo	8,192 lines; 5 min avg = 1 mo	10,000 lines; 1 hr avg = 1.1 yr	Yes	N/A	None
Options	Battery, Particle Filter, Bluetooth, Flow-Through Configuration, High-Altitude Package, Custom Requests	Battery, Particle Filter, GPS, Bluetooth, 4-20 mA Output, External USB Adapter, Cold-Weather Package, High-Altitude Upgrade, Rack-Mount Configuration, Extra-Long-Life Internal Pump, Low-Power Option, Custom Requests	Battery, Particle Filter, GPS, Bluetooth, 4-20 mA Output, External USB Adapter, Cold-Weather Package, High-Altitude Upgrade, Rack-Mount Configuration, Extra-Long-Life Internal Pump, Low-Power Option, Custom Requests	Battery, Particle Filter, Bluetooth, 4-20 mA Output, External USB Adapter, Lamp Heater, High-Altitude Upgrade, Custom Requests	Battery, Particle Filter, Bluetooth, 4-20 mA Output, External USB Adapter, Lamp Heater, High-Altitude Upgrade, Custom Requests	Included: GPS Options: Particle Filter, Sampling Probe	External rechargeable battery	Various options for pneumatics, input, output, communications, calibration and mounting brackets	Various options for communications and calibration; internal pump, dual filter, mounting brackets	Various options for output, input, and calibration; Teflon particulate filter, mounting brackets
Lag Time	2 s	10 s	2 s	2 s	2 s	10 s (fast mode: 2s)	< 20 s	< 10 s	20 s	10 s

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