

PRODUCT COMPARISON. UNVEILING THE TRUTH

ION Science have produced this product comparison table, providing you with honest, reliable and transparent handheld PID test data.

In a crowded landscape where navigating choices can be challenging, ION Science extends an invitation to decision-makers to make choices founded on transparency, ensuring the safety and well-being of their workforce and the environment.



PRODUCT COMPARISON TOP LINE PIDS FROM ION SCIENCE, WATCHGAS AND RAE



Data taken from company literature as of 17th November 2023, or ION Science testing.

PID PRODUCT		ION SCIENCE TIGER XT	WATCHGAS NEO PPM/PPB	RAE SYSTEMS MINIRAE
Size	D	370 x 91 x 60 mm	260 x 78 x 58 mm (with boot)	255 x 76 x 64 mm
Weight	D	870g	708g (with boot)	738g
Sensor	D	Photoionisation sensor (MiniPID 2, manufactured by ION Science) with 10.0 eV, 10.6 eV and 11.7 eV lamp options	Photoionisation sensor with 10.6 eV and 9.8 eV lamp options	Photoionisation sensor with 9.8 eV, 10.6 eV and 11.7 eV lamp options
Range Listed	D	0.001 - 20,000 ppm	0.01 - 15,000 ppm	0.1 - 15,000 ppm
Rise Time T90 (Isobutylene 1000 ppm)	T	3 seconds	4 seconds	5 seconds
Clear Time T10 (Xylene 100 ppm)	T	6 seconds	6 seconds	4 seconds
Accuracy	D	± 5% display reading ± one digit	± 3% (at calibration point)	± 3% (at calibration point)
Battery & Run Time	D	Rechargeable Li-ion: Typically 24hrs Alkaline: Typically 8.5hrs	Rechargeable Li-ion: Typically 24hrs Alkaline: Not Available	Rechargeable Li-ion: Typically 16hrs Alkaline: 12hrs

Accuracy is defined in different ways, the Tiger XT is ± 5% display reading ± one digit across detection range. NEO and RAE is ± 3% at calibration point.

D = Datasheet T = Test Data.

ION Science Application: Product Comparison V1.0.

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Keypad	D	6 Operating Buttons	4 Operating Buttons	4 Operating Buttons
Flow Rate	D	≥ 220 ml/min	300-430 ml/min	500 ml/min
Sample Distance	D	Up to 66 ft (20 m)	Up to 100 ft (30 m)	Up to 100 ft (30 m)
Display	D	38 x 53 mm, with LED backlight for enhanced display readability	45 x 44 mm, with LED backlight for enhanced readability	4 lines, 28 x 43 mm, with LED backlight for enhanced display readability
Direct Readout	D	Read-time reading of gas concentrations (ppm, ppb, mg/m ³ , µg/m ³), high values, STEL and TWA, battery and datalog status, gas type, response factor, high/low alarms, date, time, factory calibration date, customer calibration date, sensor mV reading	Read-time reading of gas concentration (ppb, ppm, mg/m ³ , µg/m ³), PID measurement gas and correction factor, lamp on/off, man down alarm on/off, battery status, pump status, datalogging on/off, wireless on/off, temperature, time	Instantaneous reading VOCs as ppm by volume (mg/m ³) High values STEL and TWA Battery and shutdown voltage Date, time, temperature

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Alarms	<p>Flashing LEDs Amber (low alarm) Red (high alarm)</p> <p>Sounder 95 dBA at 300 mm (12")</p> <p>Vibration on alarm</p> <p>Pre-programmed TWA and STEL</p>	<p>Audible (90 dB @ 30 cm), visual (flashing bright red LEDs) and onscreen indication of alarm conditions plus wireless remote alarm notification</p> <p>High, Low, TWA and STEL alarms</p> <p>Over range, battery low, and pump stall alarm</p> <p>Man-down alarm with pre-alarm and real-time remote wireless notification</p>	<p>Audible (95 dB @ 30 cm) buzzer and flashing red LED to indicate exceeded preset limits</p> <p>High: 3 beeps and flashes per second</p> <p>Low: 2 beeps and flashes per second</p> <p>STEL and TWA: 1 beep and flash per second</p> <p>Alarms latching with manual override or automatic reset</p> <p>Additional diagnostic alarm and display message for low battery and pump stall</p>
Low Flow Alarm	Auto pump shutoff at low-flow condition	Auto pump shutoff at low-flow condition	Auto pump shutoff at low-flow condition

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Datalogging Capacity	D 120,000 points including data and time stamp	12 months at 1-min interval. Storage interval adjustable from 1 to 3,600 seconds	6 months at 1-min intervals
Calibration	D Two/three point calibration	Two/three point calibration	Two/three point calibration
Communication	D Communication via direct USB 1.1 connection Instrument setup and firmware upgrades on PC Software Data download	Communication via Micro USB connection Instrument setup and firmware upgrades on PC Wireless data and alarm status transmission via built-in BLE or RF modem	Communication via charging cradle or using BLE module and dedicated APP Wireless data transmission through built-in RF modem
Charging	D Charging cradle	USB charging cable	Charging cradle
Wireless Range	D Not Available	1,000 ft (300 m) line of sight	Up to 15 ft (5 m) for BLE EchoView Host: LOS > 660 ft (200 m)

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IP Rating	D	IP65	IP67 IP66 when turned on	IP-65 (unit running) IP-67 (unit off, no flexi-probe)
Certification	D	Class 1 Division 1. Approval for Groups A, B, C & D, T4 II 1G Ex ia IIC T4 Ga Tamb=-25°C≤Ta≤+45°C (with lithium ion battery pack) Tamb=-25°C≤Ta≤+40°C (with alkaline battery pack)	UL: Class I, Div 1, Groups A,B,C,D, T4, -20°C ≤ Tamb ≤ +50°C IECEX: Ex is IIC T4 Ga ATEX: II 1G Ex is IIC T4 Ga CE: Conformité Européene	US and Canada: CSA, Classified as Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, D Europe: ATEX II 2G EEx ia IIC T4
Operating Temperature	D	-20°C to +60°C (-4°F to 140°F)	-20°C to +50°C (-4°F to 122°F)	-20°C to +50°C (-4°F to 122°F)
Humidity	D	0% to 99% Relative humidity (noncondensing).	0% to 95% Relative humidity (non-condensing).	0% to 95% Relative humidity (non-condensing).
Response Factors	D	Integrated RF library of >1000 compounds	Integrated RF library of >700 compounds	Integrated RF library of >350 compounds

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Warranty ^D	1 Year on instrument extendable to 5 years if instrument is registered online.	2 years including lamp and sensor (1 year for 9.8 eV lamp)	3 years on 10.6 eV lamp, 1 year on pump, battery, sensor and instrument
Languages ^D	5 or more languages	English and Chinese	Up to 10 languages
Fence Electrode Technology ^D	Yes - Patented Fence Electrode eliminates the effects of humidity.	No	No

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Battery Connection	T	Good	Good	Good
Drop Test	T	Passed	Passed	Passed
Sounder	T	Good	Good	Good
Self Zeroing	T	Yes	Yes	Yes

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