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

v.1.2 Data taken from company literature available as of 30 June 2019, or WatchGas testing when unavailable.

PID PRODUCT	WATCHGAS NEO PPM/PPB	RAE SYSTEMS MINIRAE /ppbRAE	ION SCIENCE TIGER
Size (w/boot)	9.1 x 3.1 x 2.4 in. (23.0 x 7.7 x 6.0 cm)	10.4 x 3.1 x 2.6 in. (26.5 x 8.0 x 6.5 cm)	13.4 x 3.6 x 2.4 in. (34.0 x 9.0 x 6.0 cm)
Weight (w/boot)	25.0 oz (710 g)	28.4.0 oz (806 g)	25.9 oz (734 g)
Sensor	Photo-ionization sensor with standard 3/8” diam. 10.6 eV lamp or optional 9.8 eV lamp and stainless steel cap	Photo-ionization sensor with standard 1/2” diam. 10.6 eV lamp or optional 9.8 eV or 11.7 eV lamp and plastic cap	Photo-ionization sensor with standard 1/4” diam. 10.6 eV lamp or optional 10.0 eV (in Tiger Select) or 11.7 eV lamp and plastic cap
Range Listed	0.001 – 15,000 ppm	0.1 – 15,000 ppm (0.001 – 15,000 ppm on ppbRAE)	0.001 – 20,000 ppm
Range Measured	0.001 – 8.000 ppm	0.1 – 6000 ppm (0.005 – 6000 ppm on ppbRAE)	0.005 – 6000 ppm
Rise Time t90	3 seconds (t90) [isobutylene]	3 seconds (t90) [isobutylene]	3 seconds (t90) [isobutylene] (≤2 sec. claimed)
Clear Time t0.1	4 seconds [100 ppm xylenes]	6 seconds [100 ppm xylenes]	90 seconds [100 ppm xylenes]
Clear Time t0.01	9 seconds [100 ppm xylenes]	10 seconds [100 ppm xylenes]	900 seconds (15 minutes) [100 ppm xylenes]
Accuracy	±3% (at calibration point)	±3% (at calibration point)	± 5% display reading ± one digit
Battery & Run Time	Battery & Run Time Rechargeable Li-Ion: 24 hours typical	Rechargeable Li-Ion: 16 hours typical Alkaline: 12 hours	Rechargeable Li-Ion: 24 hours typical Alkaline: up to 8.5 hours

WatchGas Application:Product Comparison v1.2 31-08-23 © 2023 WatchGas B.V.
WatchGas is dedicated to continuously improving its products.
Therefore, the specifications and features mentioned in this datasheet are subject to change without prior notice.

Best OK Lacking

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

v.1.2 Data taken from company literature available as of 30 June 2019, or WatchGas testing when unavailable.

PID PRODUCT	WATCHGAS NEO PPM/PPB	RAE SYSTEMS MINIRAE /ppbRAE	ION SCIENCE TIGER
Keypad	4 Operation & programming keys	1 Operation, 2 programming & 1 flashlight keys	6 Operation & programming keys
Pump Speed	3 Settings from 300 to 450 cc/min	500 cc/min	220 cc/min
Sample Distance	Up to 100 ft (30 m)	Up to 100 ft (30 m)	
Display	128 x 128 graphical LCD, 45 x 44 mm, with LED backlight for enhanced readability	4 lines, 28 x 43 mm, with LED back-light for enhanced display readability	35 x 50 mm, with LED backlight for enhanced display readability
Direct Readout	Real-time reading of gas con-centration (ppb, ppm, mg/m3, µg/m3), PID measure-ment gas and correction factor, lamp on/off, Man-Down alarm on/ off, battery status, pump status, datalogging on/off, wireless on/off, temperature and time	Real-time reading of gas concentra-tion (ppmv or mg/m³); High values, STEL and TWA; Battery and shut-down voltage; Date, time, and tem-perature	Real-time reading of gas concentra-tion (ppmv or mg/m³); High values, STEL and TWA; Battery and datalog status; alarm buzzer on/off

WatchGas Application:Product Comparison v1.2 31-08-23 © 2023 WatchGas B.V.
WatchGas is dedicated to continuously improving its products.
Therefore, the specifications and features mentioned in this datasheet are subject to change without prior notice.

Best OK Lacking

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

v.1.2 Data taken from company literature available as of 30 June 2019, or WatchGas testing when unavailable.

PID PRODUCT	WATCHGAS NEO PPM/PPB	RAE SYSTEMS MINIRAE /ppbRAE	ION SCIENCE TIGER
Alarms	Audible (90 dB @ 30 cm), visual (flashing bright red LEDs), and onscreen indication of alarm conditions plus wireless remote alarm notification • High, Low, TWA and STEL alarms • Over range, battery low, and pump stall alarm • Man-Down alarm with pre-alarm and real-time remote wireless notification	Audible (95 dB @ 30 cm) buzzer and flashing red LED to indicate exceeded preset limits • High: 3 beeps and flashes per second • Low: 2 beeps and flashes per second • STEL and TWA: 1 beep and flash per second • Alarms latching with manual override or automatic reset • Additional diagnostic alarm and display message for low battery and pump stall	Audible (95 dB @ 30 cm) sounder and flashing LED • Selectable vibrating alarm • Pre-programmed TWA and STEL for over 480 compounds • Pump stall alarm
Low Flow Alarm	Auto pump shutoff at low-flow condition	Auto pump shutoff at low-flow condition	Auto pump shutoff at low-flow condition

WatchGas Application:Product Comparison v1.2 31-08-23 © 2023 WatchGas B.V.
WatchGas is dedicated to continuously improving its products.
Therefore, the specifications and features mentioned in this datasheet are subject to change without prior notice.

Best OK Lacking

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

v.1.2 Data taken from company literature available as of 30 June 2019, or WatchGas testing when unavailable.

PID PRODUCT	WATCHGAS NEO PPM/PPB	RAE SYSTEMS MINIRAE /ppbRAE	ION SCIENCE TIGER
Datalogging Capacity	12 months at 1-min intervals or 565,000 points Storage interval adjustable from 1 to 3,600 sec	6 months at 1-min intervals or 280,000 points	13.4 x 3.6 x 2.4 in. (34.0 x 9.0 x 6.0 cm)
Calibration	Two/three-point calibration	Two/three-point calibration	Two/three-point calibration
Charging and Communication	Charging, data download, instrument setup and firmware upgrades on PC or laptop via Micro USB. Wireless data and alarm status transmission via built-in BLE or RF modem	Download data and upload instrument set-up from PC through charging cradle or using BLE module and dedicated APP• Wireless data transmission through built-in RF modem	Charging cradle separate, Communication via direct USB 1.1 connection.
Wireless Range	Up to 15 ft (5 m) for BLE to Android App 1,000 ft (300 m) line of sight (LOS)	Up to 15 ft (5 m) for BLE EchoView Host: LOS > 660 ft (200 m) ProRAE Guardian: & RAEMesh Reader: LOS > 660 ft (200 m) & RAELink3 Mesh: LOS > 330 ft (100 m)	Not Available
Correction Factors	Integrated CF library of >200 compounds (>800 com-pounds coming soon) – Technical Note 106 can be used for the NEO.	Integrated CF library of >350 compounds	Integrated CF library of >800 compounds

WatchGas Application:Product Comparison v1.2 31-08-23 © 2023 WatchGas B.V.
WatchGas is dedicated to continuously improving its products.
Therefore, the specifications and features mentioned in this datasheet are subject to change without prior notice.

Best OK Lacking

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

v.1.2 Data taken from company literature available as of 30 June 2019, or WatchGas testing when unavailable.

PID PRODUCT	WATCHGAS NEO PPM/PPB	RAE SYSTEMS MINIRAE /ppbRAE	ION SCIENCE TIGER
IP Ratings	IP-66/67 IP-65 (unit running	IP-65 (unit running) IP-67 (unit off, no flexi-probe)	IP65, CE 1180, EN50270:2006 & CFR 47:2008 Class A
EMI/RFI	Highly resistant to EMI/RFI Compliant with EMC Directive 2014/30/EU	Compliant with EMC directive (2004/108/EC)EMI and ESD test: 100MHz to 1GHz 30V/m, no alarm Contact: ±4kV Air: ±8kV, no alarm	EMC tested to EN613261:2006
Intrinsic Safety Certifications	UL/cUL Class I, Division 1, Groups ABCD T4, -20°C ≤ Tamb ≤ +50°C IECEx Ex ia IIC T4 Ga ATEX II 1G Ex ia IIC T4 Ga European Conformity	cCSAus Class I, Division 1 Groups ABCD ATEX II 2G EEx ia IIC T4	UL Std. 913, 61010-1 CAN/CSA Std. C22.2 No. 61010-1. Class 1 Division 1 Groups ABCD IECEx ITS 10.0036X 3193491 ATEX II 1G Ex ia IIC T4 Ga (ITS09ATEX26890X) T4, -15°C ≤ Tamb ≤ +45°C (w/ alkaline battery pack)
Temperature	-4° to 122°F (-20° to 50°C)	-4° to 122° F (-20° to 50° C)	-4° to 140° F (-20° to 60° C) [Non-Intr. safe @ hi T]
Humidity	0% to 95% Relative humidity (noncondensing). 45% sensitivity loss @90% RH	0% to 95% Relative humidity (non-condensing). 45% sensitivity loss @90% RH. Up to 60% overcompensation with Humidity Compensation on	0% to 99% Relative humidity (noncondensing). No sensitivity loss @90%RH using fence electrode

WatchGas Application:Product Comparison v1.2 31-08-23 © 2023 WatchGas B.V.
WatchGas is dedicated to continuously improving its products.
Therefore, the specifications and features mentioned in this datasheet are subject to change without prior notice.

Best OK Lacking

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

v.1.2 Data taken from company literature available as of 30 June 2019, or WatchGas testing when unavailable.

PID PRODUCT	WATCHGAS NEO PPM/PPB	RAE SYSTEMS MINIRAE /ppbRAE	ION SCIENCE TIGER
Attachments	Durable rubber boot, color coded for different models. Stainless steel tube holder for NEO BENZ MP186	Durable rubber boot, color coded for different models. Plastic tube holder for UltraRAE benzene version	Durable rubber boot. Hard plastic tube holder for Select benzene version
Warranty	2 Years on instrument and 10.6 eV lamp; 1 Year on 9.8 eV lamp	1 Year on instrument; 3 years on 10.6 eV lamp; 6 Months on 9.8 eV lamp; 3 mo. 11.7 eV lamp	1 Year on instrument extendable to 5 years if instrument is sent in for annual maintenance. 1 Year on 10.6 eV lamp; on receipt 11.7 eV lamp
Languages	English and Chinese, more languages coming soon.	Up to 10 languages	5 or more languages
Static charge	No static charge	No static charge	Static electricity on display (plastic rub) causes issues. A wonder how they have been certified ATEX. Probe US not certified static electricity. Manual tells you not to use it in certain conditions (static).
Sensor contacts			Sensor contacts are bad, only designed to be pulled out 15 times. Caused be service people frequently.
Fence electrode			No connection to fence electrode, Fence system is disabled!

WatchGas Application:Product Comparison v1.2 31-08-23 © 2023 WatchGas B.V.
WatchGas is dedicated to continuously improving its products.
Therefore, the specifications and features mentioned in this datasheet are subject to change without prior notice.

Best OK Lacking

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

v.1.2 Data taken from company literature available as of 30 June 2019, or WatchGas testing when unavailable.

PID PRODUCT	WATCHGAS NEO PPM/PPB	RAE SYSTEMS MINIRAE /ppbRAE	ION SCIENCE TIGER
Battery contacts			Battery contacts are weak
Microprocessor			Microprocessor locks up
Drop test			The instruments fails drop test!
Sounder & vibrator fixing			SWWWounder and vibrator issues, it needs glueing to be fixed well.
Self zeroing	Yes	Yes	No
Other	Superior reading stability in continuous operation and accuracy among multiple PID detectors.	Self-cleaning Flashlight	Fence electrode

WatchGas Application:Product Comparison v1.2 31-08-23 © 2023 WatchGas B.V.
WatchGas is dedicated to continuously improving its products.
Therefore, the specifications and features mentioned in this datasheet are subject to change without prior notice.

Best OK Lacking