

Q1: What configurations of QRAE 3 are available?

A: The initial QRAE 3 release (launched in 2014) was based around four models (PGM2500, PGM2510, PGM2520, and PGM2530).

Initial model configurations were not supposed to be changed:

- For example, a customer purchasing a PGM2500/D could not later replace the H₂S sensor with an SO₂ sensor.
- It was also important to ask customers ordering a QRAE 3 with three sensors about future potential configuration needs. A potential fourth sensor would have defined the model to be quoted.

Today's new design overcomes these technical limitations:

We provide two models, PGM2500/D and PGM2560/D. These platforms have the ability to support multiple configurations (the only limitations are related to sensor cross-sensitivity; refer to RAE Systems Technical Note TN-114 for details).

PGM-2500 PGM-2500D	Slot 1	Slot 2	Slot 3	Slot 4
LEL	X			
EC		X (Group P)		X (Group P)
OXY			X	
PGM-2560 PGM-2560D	Slot 1	Slot 2	Slot 3	Slot 4
LEL	X			
EC		X (Group N)		X (Group P)
OXY			X	

Group P: CO, H₂S, SO₂, HCN, NH₃. and PH₃

Group N: Cl₂ and NO₂





QRAE 3

Rev 3

Frequently Asked Questions

Q2: I purchased a QRAE 3 few months ago. Can the configuration be changed?

A: Absolutely! We have taken into consideration existing customers and are providing upgrade capability on existing products (PGM2500/D; PGM2510/D; PGM2520/D; PGM2530/D). These models can only be upgraded with sensors from Group P (positive polarity).

To upgrade, do the following:

- Purchase the required sensors
- Upgrade ProRAE Studio to V1.9
- Upgrade your instrument with firmware version 2.02
- Install new sensor(s) in the QRAE 3 (refer to the QRAE 3 User’s Guide for sensor slot allocations)
- Set the QRAE 3’s configuration using ProRAE Studio II (refer to the user’s guide)
- Verify that the proper sensor configuration is shown on the instrument’s screen
- Calibrate the QRAE 3 using the correct calibration gas, and take into consideration the proper calibration order (to avoid cross-sensitivity issues)

Q3: I notice that HCN sensor resolution has recently changed. Why?

A: Phase I instruments only used a 4R format sensor (PN: 032-0127-000) with 0.5ppm resolution. We have a new 3R HCN sensor (PN: 170-0093-000) with better resolution, 0.2ppm. We recommend upgrading 4R sensors to the 3R sensor format if you need better resolution or if you want to have the ability to use an LEL/O₂/HCN/CO configuration.

Q4: If I Purchase a non-wireless QRAE 3, can I upgrade it to wireless operation later?

A: Unfortunately, this is not technically possible.

Q5: If I Purchase a QRAE 3 diffusion model, can I upgrade to a pumped version later?

A: Unfortunately, this is not technically possible.

Q6: What is the default calibration interval for QRAE 3?

A: Policy enforcement default values are:

- Bump test = 0 days / Can bypass
- Calibration = 180 days / Can bypass

Q7: What are the recommended span gas concentrations for QRAE 3?

A: These are the recommended span gas values for QRAE 3:

Sensor	Standard Span Values
CO	50 ppm
H ₂ S	10 ppm
O ₂	18.0%
LEL	50% LEL Methane
SO ₂	5 ppm
HCN	10 ppm
NH ₃	50 ppm
PH ₃	5 ppm
NO ₂	5 ppm
Cl ₂	10 ppm

Q8: The Price Guide indicates that I should take into consideration EC (electrochemical) cross-sensitivity. Please explain.

A: Even if EC sensors are supported (mechanical and electrical compatibility) on QRAE 3 models, there are EC sensor combinations that are cross-sensitive and we do not recommend using them in a single instrument. Cross-sensitivity could potentially lead to false alarms and in the worst cases (especially when negative) lead to gas not being properly detected by the instrument.

As a general best practice, we recommend that our customers refer to RAE Systems Technical Note TN-114 to make sure gas configurations do not lead to cross-sensitivity issues.

Q9: Can I change the sensor configuration without using ProRAE Studio II?

A: Yes, it is possible by using diagnostic mode on the QRAE 3. We do not recommend this operation, because using this mode is more complex and generally reserved for properly trained service personnel. In addition, the instrument would not have sensor serial number details properly entered into its memory. As a result, reports (bump test, calibration, datalogging, etc.) would not show the proper sensor serial number. Therefore, we strongly recommend performing this operation by using ProRAE Studio II.

Q10: Where can I find QRAE 3 Sensor specifications?

A: Our TN-114 lists all of our sensor specifications. You will find data in this document.

Q11: Why don't you mention in your literature that sensors are field-changeable?

A: QRAE 3 does not use "smart sensors," so all the technical data are stored on the instrument's printed circuit board, not inside the sensor (this is the main difference between sensors used in ToxiRAE Pro and MultiRAE-series instruments). The change implemented in FW 2.02 gives flexibility for end-users to change the product configuration and also to help our distribution channel to handle their stock more easily.