

SENSOR SPECIFICATIONS AND CROSS SENSITIVITIES

All performance specifications are subject to change without notice and are based upon conditions at 68°F (20°C), 50% relative humidity and 1 atm (1013 mBar).

Combustibles (LEL)

Sensor Type: Protected catalytic bead
Gases detected: most combustible gases and vapors
Range: 0-100% LEL
Resolution: 1% LEL
Response Time (t₉₀): 30 sec.
Bias & Equilibration: No bias; 10 min after installation
Drift: <10% LEL/month
Lifetime: 2 years
Warranty: 2 years
Calibration Gas: 50% LEL of Methane, or 2.5% by volume, balance air
Shelf Life: 2 years

Response data LEL

Compound	LEL Relative Sensitivity	LEL CF
Methane	100	1.0
Propane	62	1.6
Propene	67	1.5
n-Butane	50	2.0
Isobutylene	67	1.5
n-Pentane	45	2.2
n-Hexane	43	2.3
Cyclohexane	40	2.5
Benzene	45	2.2
Toluene	38	2.6
n-Heptane	42	2.4
n-Octane	34	2.9
Turpentine	34	2.9
Leaded Gasoline	48	2.1
Methanol	67	1.5
Ethanol	59	1.7
Isopropanol	38	2.6
Acetone	45	2.2
Methyl Ethyl Ketone	38	2.6
Ethyl Acetate	45	2.2
Carbon Monoxide	75	1.2
Hydrogen	91	1.1
Ammonia	125	0.80
Phosphine	385	0.26

* Response of the RAE Systems' LEL sensor to a range of gases at the same LEL, expressed as percent of methane response (=100). These figures are for guidance only and are rounded to the nearest 5%. For the most accurate measurements, the instrument should be calibrated with the gas under investigation. See TN-156 for more details.

Oxygen (O₂)

Sensor Type: Electrochemical
Range: 0-30%
Resolution: 0.1%
Response Time (t₉₀): 15 sec.
Bias & Equilibration: No bias; 10 min after installation
Temp Range: 5°F to 104°F (-15°C to +40°C)
Pressure Range: Atmospheric ± 10%
Operating Humidity: 0-99% non condensing
Drift: < 2% signal/month
Lifetime: 2 years in air
Warranty: 2 years
Storage Life: 6 months in sealed container
Storage Temp: 32°F to 68°F (0°C to 20°C)
Calibration Gas: Ambient air (20.9% oxygen)
Zero Gas: 99.9% N₂
Note: Measurements can be made in pure ethylene; recovery to ambient air may require a few hours. c

Hydrogen Sulfide (H₂S)

Sensor Type: Electrochemical
Range: 0-100 ppm
Resolution: 1 ppm
Response Time (t₉₀): 20 sec
Bias & Equilibration: Bias off; 10 min after installation
Max Overload: 500 ppm
Temp Range: -4°F to 113°F (-20°C to 45°C)
Pressure Range: Atmospheric ±10%
Operating Humidity: 15-90% non-condensing
Drift: < 2% signal/month
Lifetime: 2 years in air
Warranty: 2 years
Storage Life: 6 months in sealed container
Storage Temp: 32°F to 68°F (0°C to 20°C)
Calibration Gas: 10 ppm H₂S, balance N₂
Calibration flow rate: 400 cc/min
Shelf Life: 1 year

Cross-sensitivity Data H₂S

Gas	Conc.	Response
CO	300 ppm	≤1.5 ppm
SO ₂	5 ppm	about 1 ppm
NO	35 ppm	<0.7 ppm
NO ₂	5 ppm	about -1 ppm
H ₂	200 ppm	≤ 1 ppm
HCN	10 ppm	~0.6 ppm
NH ₃		No response
PH ₃	50 ppm	30 ppm
COS		No response
CS ₂	100 ppm	No response
Methyl sulfide	100 ppm	15 ppm
Ethyl sulfide	100 ppm	10 ppm
Methyl mercaptan	100 ppm	about 45 ppm
Ethylene	100 ppm	< 0.2 ppm
Propene	1000 ppm	about -0.5 ppm
Isobutylene	1000 ppm	about -0.3 ppm
Toluene	10000 ppm	No response



Turpentine	3000 ppm	about 70 ppm
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Note: High levels of polar organic compounds including alcohols, ketones, and amines give a negative response.

Carbon Monoxide (CO)

Sensor Type: Electrochemical
Range: 0-500 ppm
Resolution: 1 ppm
Response Time (t₉₀): 20 sec
Bias & Equilibration: Bias off; 10 min after installation
Max Overload: 1500 ppm
Temp Range: -4 °F to 113°F (-20°C to 45°C)
Pressure Range: Atmospheric ±10%
Operating Humidity: 15-90% non-condensing
Drift: < 2% signal/month
Lifetime: 2 years in air
Warranty: 2 years
Storage Life: 6 months in sealed container
Storage Temp: 32 °F to 68°F (0 °C to 20°C)
Calibration Gas: 50 ppm CO, balance air
Calibration flow rate: 150 cc/min
Shelf Life: 2 years

Cross-sensitivity data CO

Gas	Conc.	Response w/o Filter	Response w/ Filter
H ₂ S	24 ppm	0 ppm	
SO ₂	5 ppm	0 ppm	
Cl ₂	10 ppm	0-1 ppm	
NO	25 ppm	0 ppm	
NO ₂	5 ppm	0 ppm	
NH ₃	50 ppm	0 ppm	
PH ₃	5 ppm	0-1 ppm	
H ₂	100 ppm	40 ppm	
Ethylene	100 ppm	16 ppm	
Acetylene	250 ppm	250 ppm	
Ethanol	200 ppm	1 ppm	
Ethylene oxide	125 ppm	≥40 ppm	
Propane	100 ppm	0 ppm	
Isobutylene	100 ppm	0 ppm	0 ppm
Isobutylene	1000 ppm	7 ppm	2 ppm
Hexane	500 ppm	0 ppm	
Toluene	400 ppm	0 ppm	
Nitrogen	100 %	0-4 ppm	

Sulfur Dioxide (SO₂)

Sensor Type: Electrochemical
Range: 0-20 ppm
Resolution: 0.1 ppm
Response Time (t₉₀): 15 sec
Bias & Equilibration: Bias off; 10 min after installation
Max Overload: 150 ppm
Temp Range: -4 °F to 113°F (-20°C to 45°C)
Pressure Range: Atmospheric ±10%
Operating Humidity: 15-90% non-condensing
Drift: < 2% signal/month
Lifetime: 2 years in air
Warranty: 1 year
Storage Life: 6 months in sealed container
Storage Temp: 32 °F to 68°F (0 °C to 20°C)
Calibration Gas: 5 ppm SO₂, balance N₂

Calibration flow rate: 400 cc/min
Shelf Life: 1 year

Cross-sensitivity data SO₂

Gas	Conc.	Response
CO	50 ppm	0.3 ppm
CO	300 ppm	<3 ppm
CO ₂	1.5%	0 ppm
H ₂ S	15 ppm	0 ppm
H ₂ S	250 ppm	0.3 ppm
NH ₃	100 ppm	0 ppm
NO	25 ppm	≤ -2 ppm*
NO ₂	5 ppm	about -5 ppm
ClO ₂	0.5 ppm	≤ -2 ppm*
HF	70 ppm	0 ppm
Toluene	100	0 ppm

* More negative than -2 ppm

Nitric Oxide (NO)

Sensor Type: Electrochemical
Range: 0-250 ppm
Resolution: 1 ppm
Response Time (t₉₀): 20 sec
Bias & Equilibration: Bias on; 24 hr after installation
Max Overload: 1000 ppm
Temp Range: -4 °F to 113°F (-20°C to 45°C)
Pressure Range: Atmospheric ± 10%
Operating Humidity: 15-90% non-condensing
Drift: < 2% signal/month
Lifetime: 2 years in air
Warranty: 1 year
Storage Life: 6 months in sealed container
Storage Temp: 32 °F to 68°F (0 °C to 20°C)
Calibration Gas: 25 ppm NO, balance N₂
Calibration flow rate: 250 cc/min
Shelf Life: 6 months

Cross-sensitivity data NO

Gas	Conc.	Response
CO	300 ppm	0 ppm
SO ₂	5 ppm	0 ppm
H ₂ S	25 ppm	2 - 9 ppm
ClO ₂	1 ppm	-0.2 ppm
NH ₃	50 ppm	0 ppm
NO ₂	5 ppm	about 0.5 ppm

Nitrogen Dioxide (NO₂)

Sensor Type: Electrochemical
Range: 0-30 ppm
Resolution: 0.1 ppm
Response Time (t₉₀): 25 sec
Bias & Equilibration: Bias off; 10 min after installation
Max Overload: 150 ppm
Temp Range: -4 °F to 113°F (-20°C to 45°C)
Pressure Range: Atmospheric ±10%
Operating Humidity: 15-90% non-condensing
Drift: < 2% signal/month
Lifetime: 2 years in air

Warranty: 1 year
Storage Life: 6 months in sealed container
Storage Temp: 32 °F to 68°F (0 °C to 20°C)
Calibration Gas: 5 ppm NO₂, balance air
Calibration flow rate: 400 cc/min
Shelf Life: 6 months

Cross-sensitivity data NO₂ ^c

Gas	Conc.	Response
NO	25 ppm	2.2 ppm
NH ₃	50 ppm	-0.2 ppm*
CO	50 ppm	-0.2 ppm*
CO	300 ppm	15 ppm
H ₂ S	25 ppm	-2.2 ppm
SO ₂	5 ppm	0 ppm
Cl ₂	1 ppm	-1 ppm
ClO ₂	1 ppm	-2 ppm

* Causes a transient drop upon exposure to this compound.

Hydrogen Cyanide (HCN)

Sensor Type: Electrochemical
Range: 0-50ppm
Resolution: 1 ppm
Response Time (t₉₀): 200 sec
Bias & Equilibration: Bias off; 10 min after installation
Max Overload: 100 ppm
Temp Range: -4 °F to 122°F (-20°C to +50°C)
Pressure Range: Atmospheric ±10%
Operating Humidity: 15-90% non-condensing
Drift: < 2% signal loss/month
Lifetime: Two years in air
Warranty: 1 year
Storage Life: 6 months in sealed container
Storage Temp: 32 °F to 68°F (0 °C to 20°C)
Calibration Gas: 10 ppm HCN, balance N₂
Calibration flow rate: 1000 cc/min
Shelf Life: 1 year

Cross-sensitivity data HCN ^c

Gas	Conc.	Response
CO	300 ppm	about 0.5 ppm
H ₂ S	15 ppm	see note below
SO ₂	5 ppm	~8 ppm
NO	35 ppm	about 3.5 ppm
NO ₂	5 ppm	about -10 ppm
H ₂	200 ppm	0 ppm
Ethylene	100 ppm	about 1 ppm

Due to a very high cross-sensitivity to H₂S, this sensor is unsuitable for use in atmospheres that contain H₂S.

Ammonia (NH₃)

Sensor Type: Electrochemical
Range: 0-50ppm
Resolution: 1 ppm
Response Time (t₉₀): 150 sec
Bias & Equilibration: Bias on; 24 hr after installation
Max Overload: 200 ppm
Temp Range: -31 °F to 86°F (-25°C to 30°C)
Pressure Range: Atmospheric ±10%
Operating Humidity: 15-90% non-condensing

Drift: < 10% signal loss/month
Lifetime: 1 year in air
Warranty: 1 year
Storage Life: 6 months in sealed container
Storage Temp: 32 °F to 68°F (0 °C to 20°C)
Calibration Gas: 50 ppm NH₃, balance N₂
Calibration flow rate: 1000 cc/min for 3 min
Shelf Life: 1 year

Cross-sensitivity data NH₃ ^c

Gas	Conc.	Response
Triethylamine	50 ppm	25 ppm
CO	300 ppm	0 ppm
H ₂ S	15 ppm	about 15 ppm
SO ₂	5 ppm	about 3 ppm
NO	35 ppm	about 7 ppm
NO ₂	5 ppm	0 ppm
Cl ₂	1 ppm	about -0.5 ppm
H ₂	100 ppm	0 ppm
HCN	10 ppm	about 0.5 ppm
HCl	5 ppm	0 ppm
Hydrazine		3:1
Ethylene	100 ppm	0 ppm

Phosphine (PH₃)

Sensor Type: Electrochemical
Range: 0-5 ppm
Resolution: 0.1 ppm
Response Time (t₉₀): < 60 sec
Bias & Equilibration: Bias off; 10 min after installation
Max Overload: 20 ppm
Temp Range: -4 °F to 113°F (-20°C to 45°C)
Pressure Range: Atmospheric ±10%
Operating Humidity: 15-90% non-condensing
Drift: < 10% signal loss/month
Lifetime: One year in air
Warranty: 1 year
Storage Life: 6 months in sealed container
Storage Temp: 32 °F to 68°F (0 °C to 20°C)
Calibration Gas: 5 ppm PH₃, balance N₂
Calibration flow rate: 1000 cc/min
Shelf Life: 6 months

Cross-sensitivity data PH₃ ^c

Gas	Conc.	Response
Arsine	150 ppb	0 ppb
Silane	1000 ppb	900 ppb
Diborane	300 ppb	105 ppb
Germane	600 ppb	510 ppb
NH ₃	100 ppm	0 ppm
NO	100 ppm	0 ppm
SO ₂	5 ppm	1 ppm
CO	1000 ppm	1 ppm
CO ₂	50000 ppm	0 ppm
H ₂	1000 ppm	30 ppm
H ₂ S	25 ppm	5 ppm
HCN	10 ppm	0.6 ppm
Methane	50000 ppm	0 ppm
Ethylene	100 ppm	1.8 ppm
Isobutylene	250 ppm	0 ppm
Hexane, n-	1500 ppm	0 ppm
Benzene	100 ppm	0 ppm

Toluene	100 ppm	0 ppm
Ethylene oxide	10 ppm	0 ppm
CF ₂ Cl ₂	100 ppm	0 ppm
Chloroform	Headspace	0 ppm
Trichloroethylene	Headspace	<0.3 ppm

Chlorine (Cl₂)

Sensor Type:	Electrochemical
Range:	0-50 ppm
Resolution:	0.1 ppm
Response Time (t₉₀):	30 sec
Bias & Equilibration:	Bias off; 10 min after installation
Maximum Overload:	50 ppm
Temp Range:	-4 °F to 104°F (-20°C to 40°C)
Temperature Effect:	no effect on sensitivity or zero
Pressure Range:	Atmospheric ±10%
Operating Humidity:	5-95% non-condensing
Drift:	< 10% signal/six months
Lifetime:	2 years in air
Warranty:	1 year
Storage Life:	6 months in sealed container
Storage Temp:	32 °F to 68°F (0 °C to 20°C)
Calibration Gas:	10 ppm Cl ₂ , balance N ₂
Calibration flow rate:	1000 cc/min for 2 min.
Shelf Life:	8 months

Cross-sensitivity data Cl₂

Gas	Conc.	Response
NH ₃	65 ppm	0
CO	300 ppm	0
CO ₂	10%	0
H ₂ S	10 ppm	-0.3 ppm
SO ₂	5 ppm	-1.2 ppm
NO	35 ppm	<3 ppm
NO ₂	5 ppm	0.1 ppm
N ₂	100%	0
H ₂	1000 ppm	0
HCN	10 ppm	0
HCl	20 ppm	0
Br ₂	1 ppm	1 ppm
ClO ₂	0.32 ppm	0.3 ppm
Ethanol	6.6%	0
Hydrocarbons	% Range	0

Carbon Dioxide (CO₂)

Sensor Type:	Non-dispersive infrared (NDIR)
Range:	0-50,000 ppm (0-5 vol%)
Resolution:	10 ppm
Response Time (t₉₀):	60 sec
Bias & Equilibration:	No Bias; 10 min after installation
Temp Range:	-4 °F to 122°F (-20°C to 50°C)
Pressure Range:	Atmospheric ±20%
Operating Humidity:	5-95% non-condensing
Drift:	< 5% signal/month
Lifetime:	2 years in air
Warranty:	1 year
Storage Temp:	-40 °F to 122°F (-40°C to 50°C)
Calibration Gas:	5000 ppm CO ₂ , balance air

Calibration flow rate: 500 cc/min for 2 min.

Shelf Life: 2 years

Cross-sensitivity data CO₂

Gas	Conc.	Response
CH ₄	25,000 ppm	<20 ppm
Ethane	10,000 ppm	<20 ppm
Ethylene	13,500 ppm	<20 ppm
Acetylene	12,500 ppm	<20 ppm
Propane	10,000 ppm	<20 ppm
Acetone	10,000 ppm	<20 ppm
Carbon disulfide	10,000 ppm	<20 ppm

Chlorine Dioxide (ClO₂)

Sensor Type:	Electrochemical
Range:	0-1 ppm
Resolution:	0.01 ppm
Response Time (t₉₀):	120 sec
Bias & Equilibration:	Bias off; 10 min after installation
Temp Range:	-4 °F to 104°F (-20°C to 40°C)
Pressure Range:	Atmospheric ±10%
Operating Humidity:	5-95% non-condensing; no effect
Drift:	< 5% signal/six months
Effect of Temperature:	<0.02 ppm increase from -4 °F to 122°F (-20°C to 50°C)
Lifetime:	2 years in air
Warranty:	1 year
Storage Temp:	32 °F to 68°F (0 °C to 20°C)
Calibration Gas:	0.50 ppm ClO ₂ from gas generator
Calibration flow rate:	1000 cc/min for 2.5 min. Requires on-site gas generator or quarterly factory calibration

Cross-sensitivity data ClO₂

Gas	Conc.	Response
Cl ₂	1 ppm	0 ppm*
Cl ₂	1 ppm	0.4 ppm [#]
ClF ₃	1 ppm	1 (theor.) ppm
O ₃	0.1 ppm	0.03 ppm
H ₂ S	10 ppm	0 ppm*
H ₂ S	25 ppm	-1.1 ppm [#]
SO ₂	5 ppm	0 ppm [#]
CO	1000 ppm	0 ppm
CO	50 ppm	0 ppm [#]
CO ₂	5000 ppm	0 ppm
HCl	5 ppm	0 ppm
HF	3 ppm	0 ppm
H ₂	10,000 ppm	0 ppm
NH ₃	50 ppm	0 ppm [#]
PH ₃	300 ppm	0.3 ppm
AsH ₃	1 ppm	0.8 ppm
HCN	10 ppm	0 ppm
H ₂ Se	0.1 ppm	0 ppm
NO	25 ppm	0.9 ppm [#]
NO ₂	5 ppm	1.5-2.3 ppm [#]
Chloropicrin	100 ppm	0 ppm [#]
Hydrocarbons	% range	0 %
Alcohols	1000 ppm	0 ppm

* Short exposure of <few minutes of <100 ppm, with filters

[#] Onboard filters removed.

Notes on ClO₂ sensor calibration and operation:

ClO₂ sensors require a ClO₂ generator for calibration because this gas is too unstable to store in a cylinder. RAE ClO₂ sensors contain a built-in filter that removes

H₂S and Cl₂ and therefore cannot be calibrated using Cl₂ surrogate gas. NO₂ may be used, but response varies with sensor. This sensor should also not be calibrated using a mixed gas containing H₂S because H₂S plugs the ClO₂ sensor. Therefore, it is not advisable to install a ClO₂ sensor into a unit also containing an H₂S sensor unless the filter inside the ClO₂ sensor is removed.

NO ₂	±0.3 ppm or 10% of Reading
HCN	±2 ppm or 10% of Reading
Cl ₂	±0.5 ppm or 10% of Reading
ClO ₂	±0.1 ppm or 10% of Reading
NH ₃	±3 ppm or 10% of Reading
PH ₃	±0.3 ppm or 10% of Reading

Sensor Accuracies:

Sensor accuracies depend on many factors including temperature, pressure, proper calibration, age of the sensor, and the presence of interferences. The values listed below apply to standard calibration gases within one day of calibration under the same environmental conditions. The accuracy limitation is always the greater of the two choices. For example, for the CO sensor, below 20 ppm the error is 2 ppm and above 20 ppm the error is 10% of the reading (e.g, 5 ppm @ 50 ppm).

Sensor	Estimated Accuracy
LEL	±3% LEL or 10% of Reading
TC	±5 Vol % or 15% of Reading
O ₂	±0.4 Vol % or 2% of Reading
CO ₂	±100 ppm or 10% of Reading <10,000 ppm ± 15% of Reading >10,000 ppm
CO	±2 ppm or 10% of Reading
H ₂ S	±2 ppm or 10% of Reading
SO ₂	±0.3 ppm or 10% of Reading
NO	±2 ppm or 10% of Reading

Sensor Cross-Sensitivities:

Electrochemical sensors, like many other sensors, are known to have cross-sensitivity to gases other than its target gas. Depending on the nature of the reaction in the sensor, the gas can either decrease the signal (negative cross-sensitivity) or increase the signal (positive cross-sensitivity). The cross sensitivity data listed here are based on at most a few batches of electrochemical sensors. The actual cross sensitivity may vary between batches because the cross sensitivity is not typically controlled during the manufacturing process.

For safety concerns, a negative cross-sensitivity may present more risk than a positive one, as it will diminish the response to the target gas and so prevent an alarm. When calibrating a multi-gas sensor that has two sensors whose gas have significant cross-sensitivity, be sure to allow adequate time between calibrations to allow the sensors to clear.

Use extreme caution with mixtures of gases!

The following table and data are based on % cross-sensitivity of a multi-sensor gas monitor to a single gas (for the sensor calibration time, at 0% relative humidity). Mixtures of the gases were not tested and results with mixed gases are unpredictable.

Cross-sensitivity table for selecting sensors for RAE Monitors:	
*	Slight sensitivity (< 10% reading of the specified gas)
**	Moderate sensitivity (10 - 50% reading of the specified gas)
***	high sensitivity (> 50% reading of the specified gas)
NR	not recommended due to possible damage to sensor
nd	No data
blank	no cross-sensitivity

		S E N S O R S									
		CO	H ₂ S	SO ₂	HCN	Cl ₂	PH ₃	NH ₃	NO	NO ₂	ClO ₂
G A S	CO									*	
	H ₂ S	*			***	*	**	***	**	**	NR ^{\$}
	SO ₂	*	**		***		**	***	*	*	*
	HCN	nd	**	**			*	*	nd	nd	nd
	Cl ₂		*	*	***		nd	***	*	***	**
	PH ₃	*	**	**	***	nd		***	nd	nd	nd
	NH ₃					*				*	
	NO	*	*	*	*		nd	**		*	*
	NO ₂		**	***	***	**	nd	*	**		**
	ClO ₂	nd	nd	***	nd	***	nd	nd	**	***	

^{\$}H₂S can be used with the ClO₂ sensor only if the on-board filter is removed

		SENSOR									
		CO	H ₂ S	SO ₂	HCN	Cl ₂	PH ₃	NH ₃	NO	NO ₂	ClO ₂
G A S	CO	100 %	0.5	≤ 1	1	0	0	0	0	-1 ~ -10 #	0
	H ₂ S	0	100 %	1	160 ~ 300	-3	20	360	<60 *	-8 ~ -20 #	> -5 ^α
	SO ₂	0 ~ 5	20	100 %	490	0	20	75	≤10	-3 ~ -15	-1
	HCN	nd	5 ~ -20	35	100 %	0	9	5 ~ 7	nd	nd	nd
	Cl ₂	0	-5 ~ 10	-10 ~ 10	-70	100 %	nd	-50~-100	8	-100 ~ 25	35~45 ^α
	PH ₃	0 ~ 5	60	20	1600	nd	100 %	325	nd	nd	nd
	NH ₃	0	-1	1	-1	0	0	100 %	0	≤-2 #	0
	NO	< 10	<10	> -5	-10 ~ 0	< 1	nd	20	100 %	≤10	4

NO₂	0	-20 ~ -35	> -30	-300	0 ~ 45	nd	-4	10 ~ 30	100 %	30 ~ 50
ClO₂	nd	nd	> -240	nd	100	nd	nd	-15 ~ -20	240	100 %

- Response in percent of applied gas concentration, after calibration to target gas. These numbers are rough guidelines only and liable to change at any time. # Transient response that decays to <10% positive or negative effect after >1 minute. ^aWith filters removed. This sensor plugs easily on exposure to H₂S with filters in place.

Extended Calibration Times:

Some RAE instruments incorporating electrochemical or NDIR sensors have a fixed calibration time (typically 60 seconds). This time accommodates most sensors, but a few have longer response times. In these cases it is necessary to apply the calibration gas before starting the 60-second automatic calibration step. The table below summarizes the recommended pre-exposure times.

Sensor	t(90) (sec)	Total Calibration Time (sec)	Pre-exposure Time (sec)
HCN	200	230	170
PH ₃	60	120	60
NH ₃	150	150	90
Cl ₂	30	120	90
ClO ₂	120	150	90
CO ₂	60	120	45 (std cal. time is 75 s)

Sensor Expiration Statement

RAE sensors can be used in all our single gas and multi-gas meters beyond the expiration date that appears on the display during start-up, provided that the sensor is properly zeroed and calibrated and the resolution is acceptable for the purpose of the measurements. The resolution can be tested by simply observing the zero fluctuations, or more accurately by measuring the response in the instrument Diagnostic Mode according to Technical Note 123. The expiration date is provided on the instrument only as a reminder to the user that the warranty period for that sensor is complete and that it may become necessary to replace the sensor in the near future. However, the sensor can operate properly beyond the expiration date as long as it responds to the gas of interest and is tested as noted above.