

LIGHTWIND OPTICAL EMISSION RGA

Lightwind offers two optical RGA's differentiated by plasma sources designed for specific pressure Regimes. Within those respective ranges differential pumping is not required significantly simplifying installation

Neither system uses filaments and are therefore much more reliable with the additional benefit of requiring significantly less maintenance.

The **L3** is designed for higher pressures and uses an inductively powered plasma source. It has been used in halogen containing processes as well as CVD and ALD.

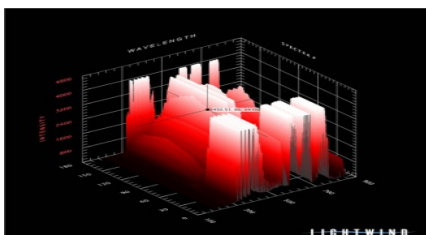
The **Lx** is designed to operate at traditional pressures associated with standard RGA's, but has a higher pressure (10⁻² Torr) capability comparable with much costlier RGA's. Both come with a choice of spectrometers and software.



Features	L3	Lx	Comment
Plasma Source	Inductively coupled Size 8 x 5 x 10.5 inches	Internal cathode Size 4x4 x 10 depending on configuration	The Lx uses a hub shown above
Materials exposed	Ceramic, Aluminum, Sapphire	Stainless steel or titanium	All O'rings are PTFE for plasma and temperatures to 200 C
Exposure to high pressure excursion	Plasma extinguishes above 3 Torr but reignite when the pressure drops	Plasma shuts off above 1x 10 ⁻² and will reignite when the pressure drops	
Spectrometers	CCD 2048 or 3980 pixels 200 to 850 nm 1.3 nm resolution	CCD 2048 or 3980 pixels 200 to 850 m 1.3 nm resolution	
Power Supply	RF 13.56 MHz	DC 24 Volts	
Software	Lightwind or Avenir	Lightwind or Avenir	Depends on spectrometer choice

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Feature/Benefit	Lightwind	Traditional RGA
Pressure Range	10 ⁻⁷ to 2 x 10 ⁻⁰ Torr	Narrow; needs differential pumping
Contamination Resistance	High (optical window isolation)	Low; quadrupole contamination common
Detection Method	Remote plasma OES	Mass Spectrometer
Real Time Quantification	Yes	Yes, but slower and drift prone
Maintenance	Low	High (cleaning and recalibration)
Process Compatibilty	Very broad	Limited by pressure and chemistry
Installation Complexity	Simple	Complex (turbo pump, valves)

Why Lightwind is Better

Processes above 10⁻⁷mTorr (PVD, CVD, ALD, HIP, plasma spray)

Hydrocarbon, polymer, or metal-organic environments where RGAs foul quickly

Continuous monitoring (endpoint detection, leak detection, outgassing)

Low-maintenance environments where uptime matters

Situations where differential pumping is impractical



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Wavelength Reference

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