

# GasFinder MC - Technical Summary

Boreal Laser's GasFinder MC (US Patent No. 5,748,325) measures gas concentrations in up to 8 measurement channels. GasFinder MC employs the same patented (US Patent 5,637,872) TDL (Tunable Diode Laser) technology that is used in the popular GasFinder open path monitor. A Central Control Unit, housed in a 19" Schroff cabinet, 6" (15cm) high, contains the laser diode source, drive electronics, detector signal processing and microcomputer subsystems. Fibre-optic cable carries the laser light to transmitter heads, which direct the beam along a path to a reflector. The return light is collected on a non biased photo-detector. The photo current is returned to the central box using coaxial cable. The transmitter heads are therefore intrinsically safe. The remote retro-reflector is initially targeted using a two axis instrument mount assisted by a telescopic sight.

A portion of the laser beam is passed through an onboard reference cell to provide a continuous calibration update. The measure and calibration signals are processed by the micro-controller to determine the gas concentration in each optical path. The computed gas concentration is displayed on the front panel of the Central Control Unit as well as being transmitted to the customer's central computer where the data may be collected, stored, and displayed.

## Specifications

<b>Central Control Unit:</b>	Weight	12 kg
	Dimensions (W x D x H)	44cm x 38cm x 13cm
	Power requirement	<1A @ 110 Vac
	Ambient Temperature	0°C to 50°C
<b>Open path transmitter:</b>	Weight	4 kg
	Dimensions (L x dia)	35cm x 10cm
	Ambient Temperature	-45°C to +80°C
<b>Duct transmitter:</b>	Weight	2 kg
	Dimensions (L x dia)	25cm x 12 cm
	Ambient Temperature	-45°C to +80°C
Number of channels/paths		Up to 8
Maximum cable lengths		1500m
Data I/O Interface Options (with optional interface module)		RS232, RS 485, Modbus 4-20mA Current Loop
Hazardous Area Classification (with optional IS barrier module)		CSA CI 1 Div 1 Gp A,B,C,D Cenelec EEx ia IIC T4
Laser Type		semiconductor laser
Eye Safety Class (ANSI Z136)		Class I

## Sensitivity

HF	0.1 ppmm
H2S	20 ppmm
NH3	5 ppmm
CH4	1 ppmm
CO2	1000 ppm-m
Others	On request
Scan Rate	1 sample/sec
Distance Range	1-1000 m
Data availability	>95% per month

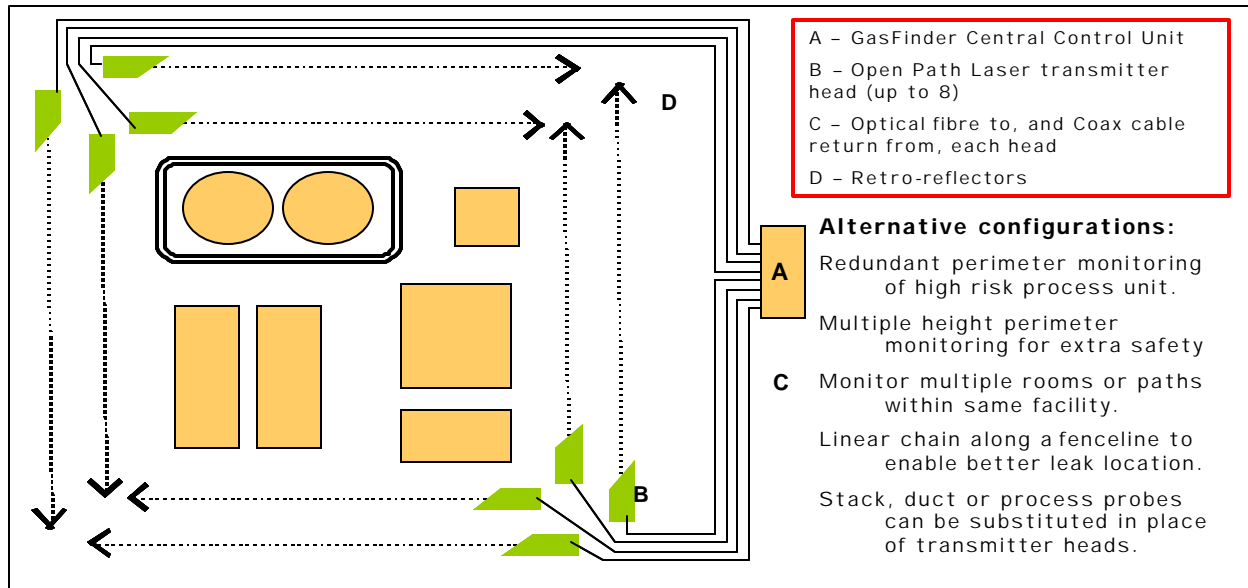
Sensitivities for one-second averaging.

### Cables

**Optical fiber:** 9 micron single mode fiber (e.g. SMF-28) with FC/APC connectors.

**Coaxial cable:** Belden 9880

## Configurations



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**BOREAL LASER**