

## SIMPLE SOLUTIONS FOR GAS ANALYSIS



**ENVIRONMENTAL EQUIPMENT, INC.**



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**IMR® Environmental Equipment, Inc.** is one of the leading manufacturers worldwide for portable and stationary flue-gas analyzers. Furthermore, the product range includes leak detectors (HC, refrigerant), thermometers, manometers and anemometers. **IMR®** designs and manufactures combustion analyzers for almost 30 years.

**IMR® emission analyzers** have earned the respect of the industry as the most reliable analyzers on the market. **IMR® flue-gas analyzers** are designed to be rugged and accurate at the same time. They are used by the HVAC industry, energy industry, process control, glass industry, food industry, universities and everywhere gas analysis is required.

**IMR®** manufactures single-cell handheld flue-gas analyzers as well as up to 12-channels of continuous emission monitoring systems. **IMR® gas analyzers** make use of the latest sensor technology (NDIR, electro-chemical sensors) to measure the flue-gas concentration.

Our high technology gas measuring systems for measuring emissions have gained an outstanding reputation from not only our customers in the U.S. but all around the world.

Our excellent reputation is also based on the powerful, reliable and worldwide operating service organization. **IMR® Environmental Equipment, Inc.** has branches in the most important markets and is now covered in 36 different countries by exclusive partners of **IMR®**.

**IMR® Environmental Equipment, Inc.** also offers engineering services and has already designed complete mobile measuring laboratories now being used internationally. Customers take more and more use of these services because of IMR's high tech know-how and well known reliability.

# WHY IS IT IMPORTANT TO MEASURE COMBUSTION GASES?

## Combustion Gas Analysis Computer from IMR

IMR<sup>®</sup> combustion gas analyzers were developed according to the requirements of experienced practitioners. In addition, IMR<sup>®</sup> gas analyzers are measuring instruments which continually and simultaneously measure more values than all measuring instruments on the market. IMR<sup>®</sup> gas analyzers are versatile, simple to operate, flexible, have wide measuring ranges and are extremely accurate.

Oxygen O <sub>2</sub>	Sulphur dioxide SO <sub>2</sub>
Carbon monoxide CO	Hydrogen sulphide H <sub>2</sub> S
Carbon dioxide CO <sub>2</sub>	Exhaust gas temperature T <sub>G</sub>
Nitrogen dioxide NO <sub>2</sub> *	Precision draught/pressure hpa
Nitric oxide NO	Excess $\lambda$
Air entry temperature T <sub>1</sub>	Combustion efficiency $\eta_F$ according to DIN
Soot	

Soot is measured via a filter paper method. The smoke spot number is determined according to DIN using a comparison scale.

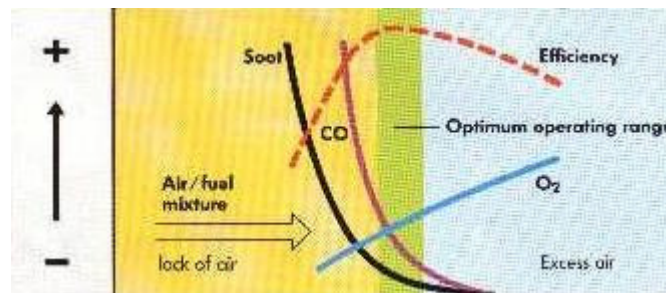
## Heat Generation

The regulations on heating require that heat generating plants be run in such a way that their exhaust losses, related to their heating capacity, do not exceed the values demanded by the law.

Exhaust losses caused by plants which are not optimally adjusted mean high avoidable costs for the operator. The quality of combustion can only be clearly established through exact measurements. IMR combustion gas analyzers measure all parameters necessary to optimize a plant.

Real-life combustion plants cannot have ideal combustion but have to be operated with excess air. Too little excess air means incomplete combustion, soot formation and high CO ratio. In contrast, too much excess air means unnecessary exhaust losses through heat bound in the exhaust gases.

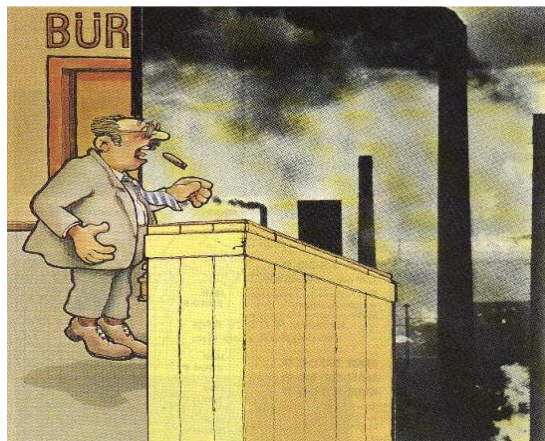
The simultaneous and continuous display of O<sub>2</sub>, CO and excess air enables even the non-specialist to optimally adjust a plant to improve its efficiency.



### Usable for all Fuels

Solid, liquid and gaseous fuels have varying calorific values according to quality. To calculate fuel efficiency the IMR analyzers store the most common fuel factors. Improvements or changes in the fuel/air mixture can be easily measured and quantified. If desired any other fuel factor can be entered by IMR. Additionally, IMR combustion gas analyzers have programmable storage so that the operator can enter unusual fuel factors on the job. The fuel factor program is modified according to each country; therefore the appropriate fuel factors and calculations are always available.

### DON'T DESTROY YOUR ENVIRONMENT



### USE IMR GAS ANALYZERS TO MEASURE AND REDUCE THE POLLUTION



# COMBUSTION GAS ANALYZERS - PRODUCT RANGE

## A new standard in measuring equipment

For the continuous and simultaneous measurement of air temperature/ flue-gas temperature / O<sub>2</sub> / CO / CO<sub>2</sub> / SO<sub>2</sub> / NO / NO<sub>2</sub> / H<sub>2</sub>S / HC / CH<sub>4</sub> / H<sub>2</sub> / NH<sub>3</sub> /

O<sub>3</sub> / HCl / HCN / Cl<sub>2</sub> / losses / efficiency / excess air / draft / soot

Additional gases available upon request

**AUTOMATIC CALIBRATION - SELF-CHECK - EASE OF OPERATION - USEABLE FOR ALL FUELS**

**MEASURING INSTRUMENTS FOR MANY INDUSTRIAL APPLICATIONS**



IMR 1000



IMR 1400C



IMR 2800



DA-75



IMR 400

IMR 5000



IMR 5000



IMR 1400

	O <sub>2</sub>	CO	CO High	CO <sub>2</sub> -Calc	CO <sub>2</sub> -Measured	NO	NO <sub>2</sub>	SO <sub>2</sub>	H <sub>2</sub> S	HC	Draft	Temp	Soot	Efficiency	Ex. Air	Losses	Dryer	Printer	Dust
IMR 1000 1-4	X	X		X		O					X	X			X			O	
IMR 1050X	X	X			X						X	X			X			O	
IMR 1050X-NO	X	X			X	X					X	X			X			O	
IMR 1400 C/CP	X	X	O	X	O	O	S	O	S	S	O	X	O	X	X	X		O	
IMR 1400 P	X	X	O	X	O						X	X	X	X	X	X		O	
IMR 1400 PL	X	X	O	X	O	X	S				X	X	X	X	X	X		X	
IMR 1400 PS	X	X	O	X	O	X	S	X	S	S	X	X	X	X	X	X		X	
IMR 1400 IR	X	X			X	O		O		O	X	X	O	X	X	X		X	
IMR 1400 FL/COFL	X	X	O	X		O					O	X	X	X	X	X		X	
IMR 2000 P	X	X		X	O	X	O	X	S	S	X	X	O		X	X		X	
IMR 2800 P	X	X		X	O	X	X	X	S	S	X	X	O		X	X		X	
IMR 2800 A\IR	X	X			X	X	S	X	S	X	O	X	O	X	X	X		X	
IMR 5000	O	O			O	O	O	O	O	O	O	O							
IMR 400/500																	X		
DA-75																			X

X = Standard Feature, O = Optional Feature, S = can switch for another sensor

## MEASURING INSTRUMENTS

### THERMOMETERS

- Thermocouples: Type J, K, T, E  
Range: up to 1370°C
- Thermistors  
Range: up to 300°C
- Infrared  
Range: up to 420°C

**DT301/DT302/DT304****INF200****DTK2**

### LEAK DETECTORS

- Combustible Gases (HC)
- Halogen refrigerants
- Visual and audible alarm
- Flexible probe, length 45cm

**CD100A****RLD10****CD200**

### ELECTRONIC MANOMETER

- Single or Dual Input
- Range: +/- 150mbar

**EM200**

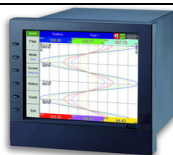
### ANEMOMETER

- Temperature
- Air velocity
- Min/Max/AVG

**DAFM3**

### DATA LOGGERS

- Multiple Inputs
- Able to log and output data
- Up to 18 channels

**SDU5000**

- Temperature
- Type K, J, E, T
- Up to 4 channels

**TX 450**

### AMBIENT AIR DETECTORS

- Multiple Gases O<sub>2</sub>, CO, H<sub>2</sub>S, CH<sub>4</sub>
- High and low alarms

**IX616**

- Single Gas each
- CH<sub>4</sub>, H<sub>2</sub>, H<sub>2</sub>S, CO, O<sub>2</sub>, C<sub>3</sub>H<sub>8</sub>, C<sub>2</sub>H<sub>5</sub>OH, NH<sub>3</sub>, CL<sub>2</sub>, SO<sub>2</sub>
- High and low alarms

**IX170**

### RPM Meter

- Tachometer: 180-10,000 RPM
- DC: 200mV to 1000V
- AC: 200V to 750V
- Ohms: 200 to 2M
- Transistor: PNP and NPN

**RPM METER**

### Soot Meter

- Measures the soot number from 0.0 to 9.9
- More reliable than a paper scale
- Approximately 100,000 measurements on one set of batteries

**Soot Meter**

# CONTACT INFORMATION

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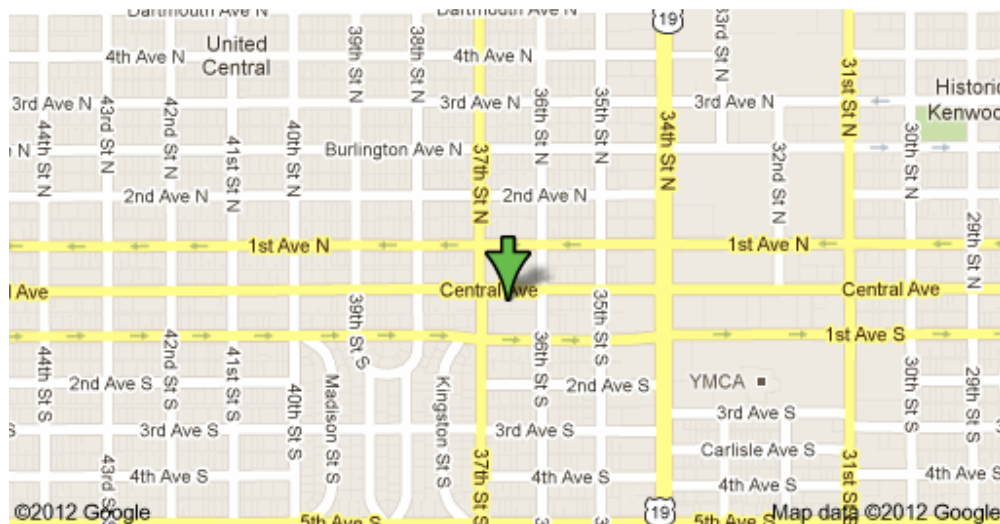
Service: [Service@imrusa.com](mailto:Service@imrusa.com)

## For help or any questions, please call:

1-800-RING-IMR US only

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