1 Scope

1.1 This standard provides minimum requirements for fixed and transportable open path gas detection apparatus.

1.2 This standard specifies the construction, performance and testing of open path (line-of-sight) gas monitors that sense the presence of combustible gas or vapor concentrations in air.

1.3 For apparatus used for sensing the presence of multiple gases, this document applies only to the portion sensing the flammable gas or vapor. Sensing of toxic gases is outside the scope of this document.

1.4 This standard addresses combustible gas monitors intended to provide a broad indication or alarm, the purpose of which is to give warning of possible presence of a potential flammable concentration of gas or vapor.

1.5 Conformance to this standard does not imply suitability for gas monitoring or monitoring apparatus of the laboratory or scientific type used for analysis or measurement, apparatus used for process control and process monitoring purposes, or apparatus used for residential purposes.

1.6 This standard specifies the requirements for gas detection apparatus that are intended to monitor gases or vapors in ambient air by measuring the spectral absorption by the gases or vapors over an extended optical path. The units of measurement and range of the gas detection apparatus are a mathematical integral of the gas concentration along the optical path. The units of measurement are expressed as full concentration of the lower flammable limit (100%LFL or 1LFL) multiplied by the distance, in meters, at that concentration (e.g. LFL·meter, %LFL(Avg)).

1.7 This standard only specifies the requirements for instrument applications where calibration is performed using either the gas to be monitored or another gas for which response conversion data appears in the instruction manual.

2 Definitions

For purposes of this standard, the following terms apply:

2.1 alarm:
an audible, visual or physical presentation designed to alert the apparatus user that a specific measurement level has been reached or exceeded.

2.1.1 alarm set point:
a fixed or adjustable setting of the system that is intended to pre-set the value of integral concentration at which the apparatus will automatically initiate an indication, alarm, or other output function for the selected gas concentration level(s) at which an indication, alarm, or other output function is initiated.

2.1.2 alarm signal:
an audible, visual, electronic or other signal generated by the apparatus when an integral concentration of gas in excess of a preset value is detected.

2.1.3 latching alarm:
an alarm which, once activated, requires a deliberate action to deactivate it.

2.2 alarm only apparatus:
an apparatus having an alarm but not having a meter or other indicating device that would allow measurement of the deviations permitted by the requirements of this standard.