

Standard Specification for *Stratos-HSSD*[®]

A high sensitivity aspirating smoke detection system shall be supplied, installed and commissioned by a specialist contractor.

The aspirating smoke detector(s) should have the following international approvals as a minimum.

- 1). FM
- 2). VdS
- 3). LPCB

The system shall sense smoke by using the principle of mass detection by forward scatter of light that has been generated by a semiconductor laser. The detector sensitivity is to be self-adjusting between the range of 0.05% and 2.0% obscuration in a metre for a full scale deflection of the alarm display bar graph. The sizes of particle to be detected will lie principally between the range of 0.0003 to 10 microns.

The system shall incorporate a microprocessor that will continually monitor the detector output to generate statistically updating histograms. Using this information, the system will adjust its sensitivity to the optimum level for a known nuisance alarm rate and also compensate for any contamination of the air filtration system for the detector chamber.

One main (Master) system will be capable of controlling a minimum of three sub (slave) detectors via a data link of 4-core screened cable. The data link will also have the capacity to drive a remote display and control unit. Each Master system will incorporate a relatively scaled bar graph display to indicate, in ascending stages, any smoke sensed by the detector. The same display will be utilised by any slave detector(s) connected to the Master system.

The main (Master) detector will have an integral power supply capable of supporting the Master detector and up to four Slave detectors. The power supply will also have the ability to maintain a sealed lead-acid battery pack for these detectors with sufficient capacity for a 24 hour standby in accordance with EN 54.

The high sensitivity aspirating smoke detection system will have outputs and indicators for three alarm levels plus a common fault. Indications will also be provided for airflow, detector and power supply faults.

The system shall incorporate fully monitored dust rejection systems comprising both electronic and mechanical filtration methods. Using paired pulse technology the laser light source will identify and reject any dust pollution that may pass through a separator. This separator will remove all particles above 10 microns. The condition of the dust separator will be electronically monitored to allow the system to compensate for deterioration. An independent fault indication will be given when replacement is necessary.

The Master system will incorporate an on-board function programmer plus a connection port for a printer. This port will also allow for full access to the integral event log, system diagnostics and remote set up facility when connected to a computer loaded with the manufacturer's software.

The sampling pipe network connected to the HSSD detector(s) should be installed using appropriate materials as indicated in the British Fire Protection Systems Association Code of Practice for Category 1 Aspirating Detection Systems and as recommended by the HSSD manufacturer. The network(s) and sampling orifices must be modelled on a computer software program capable of producing 3-D representations of the network.

The installed system shall be tested using an appropriate (or specified) system performance test method as described in either Appendix A of BS 6266:1992. or the British Fire Protection Systems Association Code of Practice for Category 1 Aspirating Detection Systems.