

Standard Specification for *Stratos-Quadra*[®]

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

The system shall incorporate up to four (4) detectors in a single enclosure that sense smoke by using the principle of mass detection by forward scatter of light. The light shall be generated by semiconductor lasers. The sensitivity of each detector is to be self-adjusting between the range of 0.25% 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 0.003 to 10 microns.

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

The system will be capable of driving a remote referencing detector and/or a remote display and control mimic via a data link of 4-core screened cable.

Each system will incorporate a relatively scaled bar graph display to indicate, in ascending stages, any smoke sensed by the detectors. Within the single enclosure the 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 sources will identify and reject any dust pollution that may pass through the separator provided for each detector. The condition of the dust separators will be electronically monitored to allow the system to compensate for deterioration. An independent fault indication will be given when replacement is necessary.

The detector assembly will have an integral power supply capable of supporting the unit and its four detectors as well as an external reference detector. 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 system will incorporate an on-board function programmer for each detector 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.